Development Research Group

Study No. 28

FINANCING TRANSPORT INFRASTRUCTURE AND SERVICES IN INDIA

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ACKNOWLEDGEMENTS

The transport sector serves as one of the key factors in the developmental process of any economy. Obviously, financing the sector in an effective way becomes crucial especially in an emerging liberalised economic framework. It is against this background that this study was taken up sometime back.

We deeply appreciate the encouragement of this initiative by the Reserve Bank of India. We must mention the special interest taken by Dr.A.Vasudevan, the then Executive Director. We are thankful to DRG for the excellent support rendered to us during the course of the study. We also gratefully acknowledge the inputs derived from discussions with Shri. S.A. Bhagali, Shri. R.J. Chand, Dr. Urjit Patel, Shri A. K. T Chari and Shri R. Venkatesan. We are also thankful to Dr.N.Sreejith for his help in data analysis and preparation of the presentation of the study.

Finally, we acknowledge that we are solely responsible for the errors, if any, that may have crept in.

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Mumbai
January 15, 2009

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Abbreviations

ADB	Asian Development Bank
BLT	Build,Lease and Transfer
BOO	Build,Own and Operate
BOOT	Build,Own,Operate and Transfer
BOR	Build, Operate and Renewal
BOT	Build,Operate,Transfer
BPK	Billion Passenger Kilometres
BRT	Build,Rent and Transfer
BT	Build and Transfer
BTK	Billion Tonne Kilometres
BTO	Build,Transfer and Operate
CES	Consulting Engineering Services Ltd.
CIRT	Central Institute of Road Transport
DBFO	Design,Build,Finance and Operate
DCMF	Design,Construct,Manage and Finance
EIRR	Economic Internal Rate of Return
EMU	Electrical Multiple Unit
EPF	Employees Provident Fund
FU	Fleet Utilisation
GOI	Government of India
GRF	Guarantee Redemption Fund
IDF	Infrastructure Development Fund
IDFC	Infrastructure Development Finance Company
IL & FS	Infrastructure Leasing and Financial Services Ltd
IRC	Indian Roads Congress
JPSEF	Jamaica Private Sector Energy Fund

KMPL	*Kilometre per Litre*
KRC	*Konkan Railway Corporation*
LF	*Load Factor*
MCP	*Marginal Cost of Provision*
MDR	*Major District Roads*
MOST	*Ministry of Surface Transport*
MOT	*Modernise,Own/Operate and Transfer*
MPB	*Marginal Private Benefit*
MRTP	*Monopolies and Restrictive Trade Practices Act*
MSB	*Marginal Social Benefit*
MSRTC	*Maharashtra State Road Transport Corporation*
NBFCS	*Non Banking Finance Companies*
NCAER	*National Council of Applied Economic Research*
NH	*National Highway*
NHAI	*National Highway Authority of India*
NHB	*National Housing Bank*
PPF	*Public Provident Fund*
PSEDF	*Pakistan Private Sector Energy Development Fund*
PSUS	*Public Sector Undertaking*
RFFC	*Railway Fare and Freight Committee*
RITES	*Rail India Technical and Economic Services*
ROO	*Rehabilitate,Own and Operate*
ROT	*Rehabilitate,Own and Transfer*
S/B Ratio	*Staff-Bus Ratio*
SBI	*State Bank of India*
SH	*State Highway*
SRTCs	*State Road Transport Undertakings*
VU	*Vehicle Utilisation*

EXECUTIVE SUMMARY

1. The transport sector, comprising the Railways, roads, ports and civil aviation, has been one of the principal areas of State intervention in India. Given the transport sector's fundamental contribution to economic growth and social welfare, State intervention was perceived to be necessary, as in the case of many other infrastructure sectors, because of the market failure hypotheses, high risk perception emanating from long gestation periods, irregular revenue flows, higher average debt-equity ratio, and economies of scale as well as substantial sunk costs reflected in the high costs of entry and exit, in turn, leading to (natural) monopolistic tendencies/practices.

2. Public Sector ownership, management and financing of the transport sector in India, however, suffers from several forms of inefficiencies and has been found to be unresponsive to user demand. Further, services are usually priced below costs which impedes the generation of adequate internal surpluses, in turn, leading to excessive dependence on budgetary support.

3. Moreover, in recent times, (i) contemporary cost curves do not justify the natural monopoly of State and (ii) technological developments have allowed unbundling and competition in many infrastructure services, once viewed as the natural monopoly of State.

4. Furthermore, the on-going structural reform process in India, initiated in the early nineties, has cast a new dimension to the overall framework for the financing of transport infrastructure and services. Some of the major elements of the reform process are to bring about an orderly correction of fiscal imbalances, develop and strengthen financial institutions and capital markets and (further) liberalise the economy with a view to encouraging private initiative and competition. In the transport sector, this has translated, *inter-alia*, into encouraging public sector entities to maximize internal resource generation in order to finance future expansion programs without having to depend (excessively) on budgetary support. Given the tapering

off of the conventional sources of funds to finance new investment as well as for the maintenance of the transport system, there is an imperative need to assess and access alternatives sources that are emerging in the context of the changing policy and operating environment.

Organisation of the Study

1. Role of the State in Financing Transport Infrastructure and Services with specific reference to Roads, Road Transport and the Railways;
2. Private Sector Participation in Transport Infrastructure: International Experience and the Indian Scenario;
3. Financial System and Transport Financing;
4. Policy Suggestions.

I. Role of the State in Financing Transport Infrastructure and Services: Scope for Improvement

A. Roads

5 Road planning and financing in India has always been the responsibility of both the Central and State Governments, with the Centre being responsible for the construction, operation and maintenance of the National Highways (NHs) and the State for all the other type of roads such as State Highways (SHs), Major District Roads (MDRs), except certain special categories of roads. Though NHs and SHs constitute less than 10% of the total road network in the country, this arterial network handles over 75% of the total road-based traffic. The NHs network alone is estimated to carry over 40-45% of the traffic carried over the arterial trunk route system.

6 Observations and Recommendations of **the Expert Group on Commercialisation of Infrastructure Projects** (Chairman: Dr. Rakesh Mohan) (1996) with respect to the **Road Sector**:

- **Observations:** (i) Road networks have not kept pace with increase in road traffic leading to higher transportation costs and adverse impact on the international competitiveness of the Indian economy; (ii) The allocation for the road sector has declined steeply from 6.7 per cent of outlay of the First Five-Year Plan to 3.0 per cent in the Eighth Plan; (iii) Expenditure on roads is only about one-third of the total revenue raised through road taxes and related levies. The balance is used to finance other expenditures; (iv) Economic losses arising from bad (main) road conditions were estimated at Rs.20,000 crore to Rs.30,000 crore per annum. Besides, there are security, safety and pollution problems; (v) Only user taxes have been tapped as a source of financing road infrastructure in India, though there has been private financing of a few projects ; (vi) Of the total projected requirement of Rs.61,000 crore for national and supernational highways during the period 2001-02 to 2005-06, around 30 per cent is expected to be financed by budgetary resources including Highway Development Fund, 18 per cent through bilateral/multilateral loans, 14 per cent through toll levies and the balance of 38 per cent would need to be financed through private sector participation. In respect of State Highways, of the total requirement of Rs.1,700 crore for the period 2001-02 to 2005-06, the shares of government budget, multilateral/bilateral loans and the private sector are placed at 59 per cent, 23 per cent and 18 per cent, respectively .
- The **specific recommendations** of the Expert Group include: (i) creation of a Highway Development Fund to serve as an assured extra-budgetary source for funding India's highways. The Fund is to be created by levy of cess on diesel, petrol, automobiles and automobile components; (ii) setting up a Highway Infrastructure Savings Scheme on the pattern of the National Savings Scheme with a view to providing assured funds to commercial roads. Toll revenues would make good the withdrawals from the Scheme;

(iii) Major part of revenues from taxes on motor vehicles and transportation fuel to be earmarked for road development; (iv) The maintenance of existing highways should be given priority over their improvements. Contracting out of maintenance activities may be initiated in a gradual manner; (v) The Resolution on Central Road Fund passed by the Parliament in 1988 which, *inter-alia*, provided that 35.5 per cent of the accruals of the Fund are to be utilised by the Central Government for the development and maintenance of National Highways, should be implemented; (vi) The development and maintenance of financing viable Supernational Highways, bypasses to congested towns/cities and spot improvements on existing highways, should be taken up through or in collaboration with the private sector; (vii) A Road Board should be set up at the national level (with similar boards at the State level) to plan and implement the highway programme in a time-bound manner, mobilise private funds from domestic/ international markets and maintain and manage the National and State Highways; and (viii) Comprehensive guidelines and procedures to be formulated for the approval of private sector projects.

7 In recent years, the significance of road transport has enhanced manifold, aided by the expansion and improvement in the highway network. **Recent developments:** (i) The National Highway Development Project (NHDP) launched in 1998-99 comprises the Golden Quadrilateral (GQ) and the North-South, East-West corridors; the GQ was expected to be completed by 2003 and the two corridors by 2007; (ii) The Central Road Fund has been revamped by crediting a cess of Re.1 per litre of petrol and diesel. The Central Road Fund Act, 2000 was enacted in December 2000 to give statutory effect. Rs.5590 crore was allocated under the revamped fund during 2000-01; (iii) With a view to encouraging **private sector participation**, Model Concession Agreements have been finalised for (a) major projects costing more

than Rs.100 crore to be undertaken under BOT Scheme; (b) projects less than Rs.100 crore and (c) based on annuity approach.

8 **It was also stressed that there is a need for a clear policy stance with regard to the utilisation of Road Funds in order to avoid systemic bias against maintenance expenditure. The international experience also supports this view.**

B. Road Transport

9 **The State Road Transport Corporations (SRTCs) have played an important role as providers of road transport services.** The financial position of SRTCs has, however, been under strain for many years. During 1999-2000, the total losses of all SRTCs was placed at around Rs.1,950 crore. The situation has not changed with losses amounting to nearly Rs.2000 crores in 2006-07. The losses have been attributable to a variety of factors such as inefficiency in operations and management, uncompensated burden of social obligations and uneconomic pricing of services.

10 **The financial performance of an SRTC, like any other organisation, is closely linked to its physical performance which, in turn, depends on the efficiency of operations and policy related variables.** This link was analysed by means of a model. **Projections** relating to **financial performance** of SRTCs in terms of Profits/ Losses were made for the period **2000 - 2005**. **Physical productivity** measures as reflected in Fleet utilisation (FU), Vehicle Utilisation (VU), Fuel Efficiency (KMPL) and Staff / Bus ratio (S/B) are the major supply-side parameters while **Load factor (LF)** was a significant demand variable. The average fare charged was taken to be a **policy variable** since it is almost always fixed exogenously. The model took a disaggregated look at the costs: fixed and variable. The fixed cost components are the interest and depreciation provisions while the variable cost components include wages, diesel costs, other material costs and passenger taxes. ***In the model, the physical efficiency is***

linked to the financial efficiency through the following equation:
Traffic Revenue = Average Fare * (Capacity*Effective KM*Load Factor).

11 **The above model indicated that some of the SRTCs , for example, can be categorised in the following manner:**

Financial Performance	Physical Performance	
	High	Low
High	Karnataka, Himachal, Andhra. TamilNadu, Punjab	
Low		Maharashtra,Gujarat

12 **The model reveals that in** the case of Tamil Nadu, for instance, SRTCs achieve a high level of physical efficiency and have high Load factors. This performance, however, does not get reflected in the financial performance since price levels are low. Although efficiency levels are found to be high, a uniform tariff for units across the State despite varying sizes and characteristics and low levels of such a tariff as compared to SRTCs in Maharashtra, Karnataka, etc. have resulted in huge losses of these units.

13 High fare levels but low physical efficiency performance have contributed to losses in states like Maharashtra and Gujarat. The model showed that improvement of physical performance to optimal levels could see the emergence of huge surpluses.

14 Thus, this analysis reveals that the **Load factor (LF) and a critical fare level are significant influences on the financial performance of a SRTC.** Given the emerging liberalised economic framework, SRTCs would need to effectively tackle the problem of low load factors in a variety of ways. In the Indian context, demand for transport services are price inelastic and at times supply induced. Therefore, an appropriate fare strategy alongwith efficiency enhancement is required to set the organisation on a long-term growth path.

C. Railways

15 Budgetary support to the Railways has been decreasing sharply since

the 1980s but has increased marginally in the recent past. Accordingly, the share of internal and extra budgetary resources (IEBR) has been rising. In 2000-01, the dependence of the Railways on Union budgetary support was 38 per cent with 32 per cent covered through IEBR and the balance covered by market borrowings whose share went up to 30 per cent. Budgetary support has come down to as low as 20 per cent in recent years.

16 **The study notes that market borrowings should be used within prudential limits in financing the resource gap. Increased financing of the railway system through market borrowings can be unsustainable in the long run.**

17 **Internal resource generation can be enhanced if effective operating policies are adopted. It is necessary to: a) keep loaded wagons moving for longer hours per day, b) reduce the delays in loading, classification, unloading, etc., by imposing a tariff rate per wagon utilised per day rather than tonnage, and c) improve wagon allocation procedures by appropriate scheduling and reduction in empty wagon movements.**

18 **Given the accumulation of arrears of track renewals, rolling stock replacement and under-investment in line-haul facilities, it is also necessary to recognise that there is a limit to the better utilisation of facilities.**

19 Empirical studies have pointed out that operational improvements on the Indian Railways do not get reflected in the same degree of financial improvement primarily because tariffs are not in alignment with the changes in input costs. On the basis of notional adjustments (to take care of changes of input costs), the relationship between operational indicators and financial performance is found to be strong, thereby supporting the case for tariff adjustment commensurate with changes in input costs.

20 **Pricing of railway services** has been insensitive to changes in the relative advantages of modes (as reflected by elasticities) as is evident from the gradual diversion of high-valued as well as low-valued items from the Railways to the highways. At the same time, the scope for mobilising large-scale internal surpluses by raising tariffs is limited due to proven shift away from the Railways. Consequently, there exist large gaps between costs incurred by the Railways and prices charged by them especially in respect of passenger services.

21 Passenger traffic earned only about 30% of the Railway's total earnings while freight traffic earned 70%. Thus, the entire social burden of the Railways is almost entirely borne by freight traffic. The freight rates are, therefore, pitched at a level higher than fully distributable costs. Accordingly the average rate per tonne km. is nearly 3.5 times the rate per passenger km. Thus, passenger services are increasingly being underpriced while freight services are overpriced. Consequently, the rail is losing competitiveness vis-a-vis the road transport sector.

22 **Accordingly, it is suggested that freight rates should be brought down or at least not raised till the revenue per passenger km. exceeds the revenue per tonne km. There is, thus, definitely a case for raising passenger fares. This may be specifically true for traffic in the second class mail/ express component (mainly long-distance intercity non-suburban). This segment accounted for nearly 50% of the passenger-km. and 55% of the revenue generation. Even a mere 10 paise increase per passenger-km. could result in additional earnings of around Rs.1800 crore**. And it is widely believed that there would not be an adverse revenue impact to passenger fare increase (in other words, inelastic demand).

23 The **Expert Group on Railways** set up by the Ministry of Railways in 1998 identified that the main cause of the financial problems of the Railways is the absence of adequate productivity increases that are in line with real wages over time. In this context, the Group has

recommended, *inter-alia*, (i) a "High Growth Strategy" that will entail "focussed remunerative investment and corresponding organizational restructuring of the Indian Railways internally and in relationship with government, including corporatisation"; (ii) stop unremunerative investments; and (iii) setting up of the Indian Rail Regulatory Authority to regulate tariffs. The Report of the Group is being examined by the Government.

24 **Railway Budgets in the past decade have taken steps** towards the much needed rationalisation of the tariff structure especially in regard to freight rates. The Budget, while resisting any across-the-board increase in freight rates, proposes a higher relativity index for upper class travel (except first class AC, where the relativity index has been lowered to make it more competitive vis-à-vis air travel). The minimum fare of passenger travel also goes up marginally from 15 to 16. In other words, there is a policy signal to eventually correct the existing imbalances between freight rates and passenger rates.

25 A major factor impacting upon the financial performance of the Railways is their **social burden**. Conceptually, the social burden on the Railways can be categorised into (a) losses on transport of essential commodities; (b) losses on coaching services; (c) losses on uneconomic branch lines; and (d) losses on strategic lines. For the period 1980-93, the magnitude of the social burden is estimated to have ranged between 13 per cent and 20 per cent of the Railway's gross traffic receipts and 13 per cent to 21 per cent of their total working expenses. Since the onset of economic reforms, the social obligations of Railways have declined, touching 11 per cent of total expenditure. In 2001-02, the social obligation of Railways is estimated at 13.8 per cent of **total** receipts (14.6 per cent of total expenditure). Studies have shown that if the Railways were relieved of their social burden, they would not have to depend upon budgetary support to finance their Plan outlays. Alternatively, it has been argued that the level of tariffs could have been lower even after meeting the dividend liabilities.

26 Such losses are covered through cross-subsidisation, via higher freight rates on some commodity groups. While cross-subsidisation is intended to benefit economically weaker sections, in reality, the benefit of subsidy is appropriated by economically well-off segments of society.

27 **The Study thus recommends systematic pruning of those subsidized services that will not reach the target groups**.

II. Private sector participation in transport infrastructure and services:

A. The International Experience

28. Although private participation can provide immediate access to a considerable pool of additional funds and private management skills, it is recognised that it may not necessarily be a panacea for the problems confronting all infrastructure projects. Accordingly, there is a need to understand the international experience in respect of practices, regulations, institutional arrangements and risk management with a view to devising a framework that is fair, predictable, satisfactory and, above all, one that delivers services with greater efficiency.

29. The international experience indicates that private sector participation in the transport sector has usually taken the following **three forms**:

(a) sale of public enterprises in the transport sector;

(b) contracting and outsourcing of specific services and

(c) private financing and management of new projects in transport.

30. The international experience with transport privatisation, as succinctly brought out by Gomez-Ibanez and Meyer (1993), suggests **five conditions** that facilitate and are, most often, crucial **for successful privatization**:

(i) Effective competition;

(ii) Large efficiency gains;

(iii) Few transfers;

(iv) Limited environmental problems and other externalities; and

(v) Reasonable but not excessive profitability.

31. A Table, on their assessment of the **prospects for privatization** of certain activities in respect of both developed and developing countries, an abridged version of which is given below, is interesting:

	Prospects for					
Activity and Stage of Development	**Competitive Market**	**Large Efficiency Gains**	**Minimal Transfers**	**Few Extern-alities**	**Profitability from user charges**	**Overall Success**
Toll Roads						
Developed	Medium	Medium	Low	Low	Low	**Low**
Developing	Medium	Medium	Low	Medium	Medium	**Medium**
Intercity Passenger Rail (new lines)						
Developed	Strong	Strong	Medium	Low	Low	**Low**
Developing	Medium	Strong	Medium	Low	Medium	**Medium**
Urban Rail Transit (new lines)	Strong	Strong	Low	Low	Low	**Low**
Intercity buses						
Developed	Strong	Strong	Medium	Low	Medium	**Medium**
Developing	Strong	Strong	Medium	Medium	Strong	**Strong**
Urban Transit Buses						
Developed	Medium	Strong	Medium	Strong	Low	**Medium**
Developing	Strong	Strong	Medium	Strong	Strong	**Strong**
Domestic Airlines (except U.S.)	Medium	Strong	Low	Strong	Medium	**Medium**
Internatio-nal Airlines	Strong	Strong	Medium	Strong	Strong	**Strong**

32 **Lessons** from the international experience of (transport) privatisation:

- The **State** has an **active role** to play by ensuring an appropriate policy environment and providing active support at the project level.

- Governments can significantly reduce the costs for the private sector by conducting **prudent macroeconomic policies**, supporting secure property rights and deregulating and liberalising the financial system so that private players can do their best to take advantage of low-cost funding opportunities. Transaction costs of privatisation projects seem to have more to do with the characteristics to the policy environment than with the characteristics of the project.
- **BOT projects** are exceedingly complex both from a financial and legal point of view. These projects require an extended period of time to develop and negotiate. In fact, it is feared that the longer negotiation time required to develop private infrastructure projects relative to more traditional forms of direct investment has been one of the factor limiting investment in transport sector.
- Whether an infrastructure project is structured and framed under a BOT scheme or a non-BOT scheme does not alter the fundamental risks associated with it. But the key difference is the participation of the private sector in a BOT project and hence the **transfer of risk from the public to the private sector** which would lead to a reduction in budgetary support but give rise to the need for non-conventional financial analysis of the project scheme. Conventional financial analysis in evaluation of infrastructural projects uses deterministic estimates of important parameters with the implicit assumption of certainty. This assumption of total certainty in, say, analysis of BOT projects which are prone to risk elements would be inappropriate and could be prove expensive to both the government. and project sponsors. Many factors such as construction cost, traffic volume and toll revenue cannot be estimated with precision due to nature of the project itself.
- The private sector is generally willing to undertake those risks that it considers it can best handle while seeking government

support for only those risks it feels it is unable to control. But the experience is that infrastructure privatization in the developing world has frequently been accompanied by **extensive residual risk bearing by governments** which not only threatens to vitiate its efficiency benefits but also confronts governments with large financial liabilities. Typically, private investors seek to reduce risks by asking for Government support in the form of grants, preferential tax treatment, debt or equity contributions or guarantees.

- In effect, the Government substitutes a contingent liability for a recurrent liability in the form of a variety of **guarantees** some of which are specifically project oriented such as traffic guarantees in the case of toll roads while others relate to macro-level parameters such as exchange rate, interest, etc. Given the experience are developing countries, guarantees can be expected to efficiently support private infrastructure where participation programmes are an interim measure while the reform process is being set in place to allow various elements of the market to handle the relevant risks. While issuing guarantees, government must consider the expected value of commitments. In other words, whichever risk a Government takes on, it needs to consider how it can **measure the value of (expected) commitments and incorporate it in its accounts and budgets**. Various techniques in this regard are prevalent. Valuation of guarantees enables decisions to be made on the basis of real rather than apparent costs and benefits.

- The global trend towards infrastructure privatisation has pushed **regulatory issues** to the forefront, because regulation is complicated by three related considerations: (i) prices are invariably based on political pressures/ considerations; (ii) investors are aware of these pressures. In the absence of credible government commitments, capital will be more expensive

which results in higher tariffs. In terms of privatisation, this translates into smaller proceeds from sale of existing enterprises and higher financing costs for new (greenfield) projects; and (iii) the long-term nature of most infrastructure investment makes credible commitments difficult. It is necessary to devise systems of regulation and support that provide the encouragement and room for maneuver that the private sector needs while at the same time minimising government. exposure to the host of commercial and financial risks surrounding the projects.

- The **synchronization** of demand and supply of transport finance through coordination of government privatization programme and release of contractual saving towards funding transport infrastructure and services is very important.

B. The Indian Scenario

33 **The Expert Group on Commercialisation of Infrastructure Projects** (Chairman: Dr. Rakesh Mohan) (1996) dwelt at length on the issues relating to **privatisation** in respect of the Indian economy**.** The Report called for sweeping reforms in the debt and capital markets and drastic deregulation and privatisation of the ***infrastructure*** sector in order to attract annual investments of Rs.1.80 trillion by 2005-06. The Group estimated the requirement of external finance to the extent of 15% or Rs. 2.70 billion ($ 7.71 billion) per year. The **recommendations** of the Group in this regard **include**:

- an overarching legislation to be made for projects formats such as BOT, BOO, etc., governing projects across all sectors on the lines of the BOT law of the Philippines;
- an infrastructure Co-ordination Committee to be constituted on the same lines as the FIPB which will clear projects on a national level based on broad principles;

- the present restrictions in FII guidelines to be removed for investment in infrastructure projects, or separate guidelines similar to FII guidelines without investment limits to be issued; and
- SPVs to be used for funding infrastructure projects. Such SPVs should be able to vary their capital with ease; they should be easy to wind up and tax-transparent.

34. In India, at the initial stages of **road privatisation**, around 1995-96, the response of the private sector was lukewarm, primarily because of the absence of **'concessions'**. Notable among the concessions sought was that the **land** required for the purpose would have to be acquired for the project by the government and handed over to the private firm.

35. With respect to roads where **toll financing** was feasible, it was suggested that it would be necessary to offer substantial incentives to the private sector since traffic levels to sustain a high-standard network would be too low to ensure attractive financial returns.

36. The Government has initiated a number of **measures** and offered a number of financial incentives. These include amendments to the National Highway Act to permit imposition of tolls on existing roads, no compulsion to have a toll-free facility, relaxation of MRTP provisions to enable large firms to enter the sector, acquisition of land for the facility which would be given to the firm on lease for the period of concession, etc. Further, a number of **financial incentives** have also been announced. As a result, nearly 20 National highway projects have gone on stream on a BOT basis. Of the nearly 10 road projects (others being bridges), two - the Udaipur by-pass and the Thane-Bhivandi by-pass are fully operational while others are at various stages of planning (physical and financial) / construction.

37. An interesting case is that of the Coimbatore by-pass in respect of which **"take-out financing"** has been used for the first time in India.

Such a structure allows lenders to exit from the project loan without really recalling the loan.

38. On the other hand, the Moradabad by-pass is the first project to be promoted by the NHAI on a **commercial return basis**. The NHAI for the first time has made a foray into the debt market through a **Special Purpose Vehicle** - the Moradabad Toll Road Company Limited (MTRCL) - which helps it to multiply its leveraging capability. The entire financing is to be done on a limited recourse basis with the only assurance being that a sovereign-owned subsidiary will operate the project. However, the financial restructuring does envisage some comfort to the lenders: the toll revenues are to be credited into an escrow account on which the debtors will have the right of charge. NHAI is expected to divest from MTRCL when it goes into the operation and maintenance phase. This has been recommended in order to create a benchmark in financial markets for future. Such disinvestment either by the private sector BOT operator or by the NHAI also help raise additional resources for such investments.

39. A problem faced by financial institutions in funding such projects has been that of providing **physical asset cover**. Most financial institutions either insist on corporate guarantees from the promoters or extend long-term finance only by mortgaging the physical assets of the project. In fact, financial institutions demand a physical asset cover of 1.5 times of the loans extended by them, which is in line with existing term loan conditions. But **collaterisation** of physical assets is virtually impossible in national highway projects. This is because BOT operators neither have the **leasehold nor ownership rights over the land** used since the ownership is vested with the government and not the Special Purpose Vehicles set up for the projects. Moreover, mortgaging of physical assets is not necessarily the solution to all the problems nor does it insulate creditors from defaults. In fact, it only provides some comfort in the books of the creditors. This apart, mortgages do not necessarily ensure prompt

repayment of either the principal or the interest amount and the level of comfort is restricted to recovery of dues through the sale or auction of physical assets.

III. Financial System and Transport Financing: Developments and Issues

To obtain an idea of the financial requirements of the transport sector, given the growth rate of GDP and the share of transport sector in the economy, a simulation exercise was conducted. The simulation exercise examined the financing need of the transport sector over the period 2000-01 to 2004-05. The historical simulation estimate financing requirement of the sector based on: (1) growth rate of GDP and (2) share of investment in transport in the GDP. It is estimated that if the growth rate averages 5 per cent and the share of investment in transport in GDP moves upwards gradually by 0.1 per cent per annum, the financing needs that arises from the sector would be placed at Rs.16,372 crore. In the 7 per cent growth scenario, the required investment would be Rs.23,151 crore over the period 2000-01 to 2004-05.

A. Banking Sector

40. The commercial banking sector's involvement in transport financing could be broadly classified into two groups: (a) Advances to transport operators including those under **priority sector lending** scheme, and (b) **Project financing**.

41. The percentage **share of transport sector credit** to total outstanding credit by scheduled commercial banks rose sharply but declined gradually from nearly 5.5% in the early eighties to about 1.8% in 1999. A major share of bank credit was accounted for by land transport (90% or more). The major share of credit (70%) has been for heavy commercial vehicles (trucks and buses), with intermediate public transport modes (Taxis and Autorickshaws) receiving about 13-14%

of credit, non-mechanized (land) and water transport modes receiving about 7-8% each. The share of bank credit to transport sector provided at "less than 14 per cent" **interest rate** has declined sharply from 72 per cent in 1989 to less than 12% in 1999 with 88% of the credit provided in the interest rate range of "14% and above". Of the outstanding credit to the transport sector, a little more than 7 per cent has been provided under the **priority sector schemes**.

42. An important factor contributing to the reduction in bank finance to the sector was the increasing number of **default** cases. "The rising proportion of non-performing loans has limited the volume of credit that banks can extend to new clients" (World Bank,1990, p.55).

43. **Main reasons for the poor recovery** included: a) inability of small operators to repay loans; b) willful default due to political influence; c) legal complications; and d) National system of permits which enables a truck operator to operate in number of states. Further, poor recovery varied from State to State. While repayment was found to be satisfactory in States like Rajasthan and Tamil Nadu, where there is an efficient back-up government machinery, in the case of States like Bihar and U.P., the recovery performance was poor. **It is strongly felt that the flow of funds from the banks would improve considerably if the recovery mechanism could be made more effective.**

Project financing by commercial banks

44. Long-term commitments (either by way of loans or equity contributions) to infrastructure projects would create a serious maturity mismatch between the assets and liabilities of these institutions. This mismatch could be even more precarious in the absence of efficient and liquid money markets that would otherwise provide banks with some tools to manage their liquidity and interest rate risks.

45. In order to promote and strengthen infrastructure financing, the **Reserve Bank of India** has liberalised term loans extended by banks for this purpose. Earlier, there were prudential ceilings on the overall exposure that a bank could take on a single infrastructure project which have been liberalised. Each bank is now free to sanction term loans to all projects within the overall ceiling of the prudential exposure norms prescribed by RBI. In **April 1999**, banks were permitted to sanction term loans to technically feasible, financially viable and bankable projects through **four broad modes of financing**: (i) financing through funds raised by subordinated debt (Tier II); (ii) entering into take-out financing; (iii) direct financing through rupee term loans, deferred payment guarantees; and (iv) investments in infrastructure bonds issued by project promoters and financial institutions.

46. **Take-out Financing** mechanism, though in its nascent stage in India, provides opportunities to the commercial banks to create long term assets from short term liabilities. The participation of a long-term player is crucial in this mechanism. After a specified period of time, the long-term asset is transferred to the books of the long-term financial institution. Take-out financing can be done through number of routes:
    a) where the risk is borne by the primary lender and the liquidity support is given by the long term financial institutions ;
    b) where the risk is fully taken over by the term lending institutions; and
    c) a blend of the both, (a) and (b) above.

B. Non-Bank Finance Companies

47. It is felt that the commercial banking system was very rigid its approach in respect of financing transport operators which often resulted in considerable delays in processing loan applications. The financing of transport operators through NBFCs is an emerging route. **In view of the large numbers of individual borrowers, management**

efficiency considerations suggest that creditworthy NBFCs should act as intermediaries in the entire process.

48. In other words, banks could play the role of "Wholesale financing/ banking" while the NBFCs could play the role of "retail financing/ banking". Some of the major players in the NBFC segment have, over the years, developed a special expertise in evaluating credit worthiness of potential borrowers (especially in truck financing) which is supported by an effective delivery system, in turn, backed up by an effective recovery management system which operates on the basis of a large retail network. This has occurred because many of NBFCs have focussed exclusively on commercial vehicle operators. From the demand side, it appears that operators prefer NBFCs to banks for a variety of reasons ranging from the attention they get for individual needs such as design of customer-oriented funding options to flexibility in recovery such as restructuring of payments in the case of genuine financial difficulties.

49. At the same time, there is a need to increase bank support to NBFCs in the near future, mainly because:

- It will provide substantial relief to transport financiers (NBFCs) which have been facing a severe resource crunch following restrictions on the mobilisation of public deposits. Banks look upon NBFCs as their competitors in terms of both deposit mobilisation and credit expansion.
- The classification of bank support to NBFCs under priority sector lending will enable banks to fulfill their targets under the scheme, which would also be based on a satisfactory recovery mechanism.

C. Financial Institutions

50. All India financial institutions, including, IDBI, IFCI, ICICI, SIDBI and IIBI play a crucial role in providing infrastructure finance. They alongwith State Industrial Development Corporations provide long term

finance to transport sector. Furthermore, the Infrastructure Development Finance Company (IDFC) was set up as a specialized intermediary to address the needs of the infrastructure sector and to facilitate the flow of private finance to commercially viable projects. The role of IDFC is crucial in transport financing in terms of (a) mitigating commercial and structural risk of transport projects and (b) designing innovative products. The Union Budget for 2002-03 entrusted additional responsibilities on the IDFC by creating an Infrastructure Equity Fund of Rs.1000 crore which would be structured and managed by IDFC and by requiring the company to play a coordinating role for debt financing by major financial institutions and banks for infrastructure projects larger than Rs.250 crore.

D. Bond and Equity Financing

51. In East Asian economies, although government bonds continue to be the predominant mode for infrastructure financing, the move towards privatisation of infrastructure services and new investment by the private sector has not only reduced the need for government bond financing but has also facilitated and accelerated the pace of corporate issues and the development of corporate bond markets. Two features that stand out in regard to the development of the debt market in developing countries in recent years. (i) availability of contractual savings for infrastructure financing; and (ii) divestment of public enterprises and role of existing enterprises in mobilising long-term debt.

52. In India, since the Malhotra Committee recommendations, there has been progressive liberalization of investment norms of contractual savings instruments. This opens up supply of funds for transport sector, among other long term investment areas. The demand for such investible funds can come from (a) growth of private sector and (b) disinvestment of public sector enterprises in the transport sector (through bond issues by such PSEs).

53. The **disinvestment** process is poised to pick up. The Economic Survey 2001-02 indicated that disinvestment in respect of Public Sector Units like Air India, Indian Airlines, Shipping Corporation of India is on the cards. Furthermore, the recommendations of the Disinvestment Commission in its Report submitted in January 2002, included those in respect of the Rail India Technical and Economic Services Limited (RITES).

E. Debt Market and Infrastructure Financing

54. A well-developed debt market with a diversified investor base helps the commercial banks to manage their asset-liability mismatches. The development of bond markets facilitates the development of derivative products such as credit derivatives to hedge against credit risk. A deep liquid debt market ensures setting up benchmarks and helps the price discovery process. It also ensures the unbundling of credit risks, interest rate risk and liquidity risk. Major steps towards development of the debt market include: (i) developing a system of primary dealers in the government securities market; (ii) introduction of liquidity adjustment facility (LAF) to address temporary liquidity mismatches of financial institutions and also to provide interest rates segment to the market; and (iii) investment norms for contractual saving institutions were liberalized to promote a more proactive role of debt market towards infrastructure financing.

F. Role of Guarantees

55. Contingent Liabilities (such as guarantees) perform a crucial role in the mitigation of risks to long term funding of transport projects. Project sponsors typically insist on government guarantees to bring in funds for road sector projects. Financial institutions, Banks and NABARD insist on guarantees while investing in infrastructure projects to contain default risk. Such guarantees are given by respective State Governments. The insistence on guarantees for project finance increases the fiscal risk of State Governments in

India. The reliance on guarantees as a substitute for debt has witnessed a sharp rise since the mid-nineties. Between 1996 and 2000, aggregate guarantees extended to state level entities grew at a rate of 24.1% as compared to 7 per cent between 1992-96. The Executive Committee on State Government Guarantees, RBI, advised institution of statutory administrative ceiling on guarantees and ensuring greater transparency. In 2002, the RBI constituted a working group to assess the fiscal risk of State Government guarantees. The report is yet to be placed in the public domain.

G. Recent Incentives in respect of the Transport Sector

56. (i) A ten year tax holiday was proposed in the Union Budget 2001-02 for core infrastructure activity, including roads and highways; (ii) tax incentives have also been provided in respect of long term project financing for interest income, dividend and to capital gains; (iii) budgetary provisions for roads and railways have been enhanced. An additional Rs.200 crore has been provided in the Union Budget 2002-03 to NHAI for completion of the 'Golden Quadrilateral' work. Another Rs.100 crore has been provided to other roads and inter-State importance; and (iv) the Insurance Regulatory Authority of India (IRDA) in April 2001 has further liberalized the investment guidelines for Life Insurance Companies and Pension Funds. The life insurance companies now are required to invest not less than 15% of their funds to the infrastructure and social sector while the general insurance companies and pension funds will have to invest a minimum of 10 per cent of its investments for infrastructure and social sectors. Such investment proposals will enhance the flow of investments to the infrastructure sector.

IV. Policy Suggestions

(A) From the point of view of an analysis of the resource gap being a reflection of the inefficiency of service delivery from existing transport infrastructural facilities provided mostly by the public sector within

an inadequate policy framework and the recognition that the public sector has a relevant, explicit but focussed role to play in direct infrastructure and service provision, the following observations are in order:

1. Pricing and cost recovery policies in the past have often not taken account of the fiscal effects and the cost of public funds. There have, thus, been major adverse effects of distorted pricing on resource allocation, operational and managerial standards of infrastructure services and the environment Thus, **setting user charges to economically efficient levels should be an important element** of an infrastructure financing strategy. This has to be true not only with respect to services provided by the railways and road transport (the major modes) but also in regard to roads in which case though user taxes do represent genuine user prices to a large extent, many governments have never seen it fit to set these taxes in accordance with accepted public utility pricing principles.

2. Besides an appropriate tariff strategy, **efficiency enhancement strategies to result in better utilisation of existing infrastructure and services** is required to be in place to set public sector organisations like the Indian Railways and State Road transport Corporations on a long-term growth path.

3. A financing plan based on efficient prices that also provides for equitable coverage would almost always require subsidies to cover total costs. The traditional method of cross-subsidisation made possible by a mark-up over marginal costs must be abandoned in favour of **explicit subsidies**. In the case of the railways as well as public sector road transport services, there is a need for systematic pruning of those subsidised services that do not reach the target groups.

4. Moreover, the strategy should be one that alters direction of the use of the system of user charges which is currently devoted mostly to (at least supposed to) funding investment to a system that emphasises

maintenance and also controls levels of service usage. This is especially required for road (highway) infrastructure which is most complex in terms of high network implications and accordingly implies a complex maintenance function which requires an effective maintenance strategy. **A strategy of earmarking for the roads sector is recommended** since the most attractive feature of such a scheme is to link the volume and quality of services (as reflected by operating costs) and the user charges (willingness to pay) with a view to ensure adequate allocation of resources to a low profile economic activity with particularly high rates of return. A basic pre-requisite would be an efficient Road administration under a Road Board which can pursue a genuine purchasing agency approach towards an efficient means of road provision and maintenance. By doing so, the Govt. would be promoting the longer-term process of institutional development.

The above observations, thus, point out the need for a thorough – going reform of policy relating to existing facilities.

(B) From the perspective of additional resource mobilisation to take care of the genuine resource gap and keeping in line with the growing belief in the past two decades or so that the private sector has an increasingly important role to play in the creation of wealth given that the incentive effects of private ownership are important, the following prescriptions are important:

5. Though it is widely recognised that the public sector should retain an important role in infrastructure finance and in the provision of infrastructure services, economic efficiency usually does not require a particular form of intervention. In particular, public ownership, operation and direct financing of infrastructure is often not necessary. Accordingly, in funding infrastructural deficits, it is desirable to **draw on market-based financing** as much as possible, keeping in view **sustainable/prudential norms**. These entities can rely on their stable and longer-term revenue profile in issuing debt securities ,

especially ling-term debt instruments. Such debt instruments helps set important benchmarks for the longer end of the debt market and provide attractive opportunities for contractual saving institutions. This objective may be met by devolving investment responsibilities to **autonomous agencies**, which are better positioned to gauge users' investment priorities.

6. The objective may also be met by turning select investment responsibilities to the **private sector under public guidelines, support and regulation**. In the sphere of urban transit, **competition for the market (via franchising/contracting) rather than competition in the market that needs to be encouraged** since that framework appears to be the primary cause of increased efficiency among, for example, bus operators in areas where such deregulatory measures have been attempted.

7. As user charges become more relevant and sophisticated, it should be easy to **promote public-private partnerships** which could ultimately depend on user charges alone. To serve as prototypes, merger of revenues from, say, tolling with taxes should provide a secure revenue base which could open up access to new sources of non-conventional funding such as the capital market, external funding, etc. The experience of both developed and developing countries illustrates the requirement of a close relationship between the need and the desire to **develop and tap capital and debt markets** (domestic and to a lesser extent, international). This process is still very much in its nascent stage in India and should be encouraged by ensuring a healthy balance between investor and user concerns within the framework of an appropriate regulatory framework

8. Given the experience in developing countries, government guarantees can be expected to efficiently support private infrastructure as an interim measure while the reform process is being set in motion to allow the market to handle the relevant risks. **But the Government**

must consider the expected value of commitments in issuing guarantees. Such valuation of guarantees and other contingent liabilities help in comparing guarantees with cash subsidies. Essentially, valuation enables decisions to be made on the basis of real rather than apparent costs and benefits.

9. **The financing mechanism chosen for infrastructure support should encourage greater domestic savings for investment rather than merely divert resources from other investments and the financial saving of the household sector is crucial for additional resource generation for transport financing.**.

10. The banking sector is a major source of financial savings of the households in the country. The traditional model reveals that the commercial banking sector's involvement in transport sector financing has been almost exclusively limited to loans given to transport operators. But recoveries being low, flows have been limited. **In the presence of an efficient recovery mechanism, the flow of funds from the banks is likely to improve considerably** .

11. Given the strength of adequate funding available with the banking system and the inherent efficient credit delivery and recovery mechanisms of NBFCs especially in regard to truck financing, **commercial banks themselves should play the role of "Wholesale financing/banking" while the NBFCs should play the role of "retail financing/banking".**

12. **Financing agencies should (over a period of time) insist on viability of operations either as a firm or as an association/evaporative with a viable fleet and requisite infrastructure as a pre-requisite for lending to truck operators.**

13. Financial innovations like **take-out financing** should be encouraged in the context of transport project financing.

14. Contractual savings form one-third of the financial savings of the households in India. Pre-empted use of these funds by the Government (through requirements to invest in Government securities) has been a major impediment to the development of contractual savings as a source of long-term finance. **There is a definite need to liberalize investment norms of contractual savings instruments**. While such a liberalization of norms represents the sources side from the flow of funds perspective, the **demand for such funds needs to be created through a well-planned programme of disinvestment of public sector (especially infrastructure) entities** with a view to promote private participation in infrastructure, to reduce budgetary support and management obligation and to promote competition. Such a supply (of) and demand (for) funds can contribute to development of domestic capital market.

FINANCING TRANSPORT INFRASTRUCTURE AND SERVICES IN INDIA

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Chapter I
Introduction

The importance of infrastructure financing towards economic growth can hardly be overemphasized. It has remained a principal area of State intervention in India, given the sector's fundamental contribution to economic growth and social welfare. The extent of State intervention was justified by market failure hypotheses, high risk perception emanating from long gestation periods, irregular revenue flows, higher average debt-equity ratio, and economies of scale as well as substantial sunk costs reflected in the high costs of entry and exit. While the Government entered many spheres of the infrastructure sector, public sector ownership, management and financing of infrastructure in India started showing several forms of inefficiencies which has impeded the generation of adequate internal surpluses leading to excessive dependence on budgetary support.

In most countries, the predominant source of financing of transport infrastructure and services has traditionally been the State, with the private sector playing a secondary role. In recent years, a major issue in providing adequate transport is the insufficiency in the flows of funds from conventional sources (mostly public agencies) to meet the requirements of new investment and maintenance of transport systems, due to inefficient public sector management of its transport assets, and pricing of services which have been kept at a lower level to fulfill the social objectives. The need for more efficient alternatives has stemmed from a changing perspective regarding the role of governments in the provision of transport services over the last two decades, which has been further strengthened by success of the private sector in the creation of wealth and incentive effects in various segments of the transport sector. Accordingly, intense interest in the private provision of transport infrastructure and services and the necessity of forging effective public-private alliances have emerged.

The Developing Country Perspective

The provision of infrastructure services through traditional institutional arrangements - public sector financing and operation - has generally been fraught with inefficiencies. Low productivity of labour and capital, weak incentive structures, neglect of timely maintenance, lack of sufficient links between demand and supply, soft budget constraints, the absence of financial risk management and the entwining of financial management of public enterprises providing infrastructure services with macroeconomic management are only a few sources of inefficiencies that have characterized the provision of infrastructure services especially in developing countries. The World Development Report (World Bank, 1994) has provided some information on the annual costs to developing countries of inefficiencies in the traditional structure of provision of infrastructure services (Table 1.1) and considerable gains that can be achieved through appropriate reform (Table 1.2).

Transport Financing in India : Problems and Challenges

Emerging Requirements for the Transport Sector

Available demand based and need based estimates of the financing gap in the transport sector indicate the investment requirements of a very

Table 1.1: Potential Savings to Developing Countries from Increased Efficiency in the Provision of Infrastructure Services

(billions of US dollars)

Sector	Annual Savings	Sources of Inefficiencies
Roads	15	Investment requirements Created by improper Maintenance
Power	30	Transmission, distribution and Generation losses
Water	4	Leakages
Railways	6	Excess fuel use, overstaffing, inadequate motivation
TOTAL	**55**	

Source : World Bank (1994)

Table 1.2: Fiscal Burden to Developing Countries of Underpriced Infrastructure.

(billions of US Dollars)

Sector	Potential Annual Savings from Better Pricing	Source
POWER	90	Underpricing
WATER	18	Underpricing, Illegal Connections
RAILWAYS	15	Underpriced passenger services
Total	**123**	

Source : World Bank (1994)

high magnitude. The most comprehensive effort at estimating the investment requirement for the transport sector was done by the India Infrastructure Report. The Report projected gross domestic investment in infrastructure in India to grow from the current level of 5.5 per cent of GDP in mid nineties to about 7 per cent in 2000-01 and 8 per cent in 2005-06. Thus, it would continue to comprise 22 to 25 per cent of gross domestic investment. While arriving at the overall macro estimation, the report took into consideration the Indian experience over the past 15 years, observing broad generalities of infrastructure investment across the world and examining in particular the East and South East Asian experience over the past two decades. Sectoral additional requirement of funds were also estimated by the report. For the road sector, investment requirement was about Rs.100 billion in 2000-01 and Rs.150 billion in 2005-06. The requirements for ports estimated by the Report was about Rs.24 billion in 2000-01 and Rs.40 billion in 2005-06.

The India Infrastructure Report observed that the projected share of the private sector in infrastructure investment would increase from the current 25 per cent to 40 per cent in 2000-01 and to about 45 per cent by 2005-06. This would mean an increase in private sector infrastructure investment from 1.0 - 1.3 per cent of GDP to 2.8 – 3.0 per cent of GDP by 2000-01 and to 3.5 per cent by 2005-06. In absolute numbers, it implies

an increase from the current Rs.160 billion to about Rs.430 billion in 2000-01 and about Rs.800 billion by 2005-06.

Other estimates of investment requirement include the estimates by the Expert group on Commercialisation of Infrastrcture projects, which estimated that to meet projected growth of infrastructure, India would have to invest $ 115-130 billion and $ 215 billion for the five years after that. This effectively means an additional 20,000 crore per year in Ninth Plan, which will be further enhanced to Rs.30,000-35,000 crores a year in the Tenth plan.

The working group on roads for the Eighth Five Year Plan predicted that freight and passenger traffic are expected to rise further to 800 BTK(Billion Tonne Kilometre) and 3000 BPK(Billion Passanger Kilometre) respectively by 2001. The existing network also needs upgradation by way of widening, strengthening, provision of user friendly improvements

Estimates by Rail India Technical and Economic Services (RITES) indicate that the amount required for urban transport infrastructure investment in cities with population 100,000 or more during the next 20 years would be of the order of US $ 49.28 billion.

The Department of Road Transports and Highways has placed the investment requirement for Road Transport projects at Rs. 1, 72,000 crores for the seven year period 2005-06 to 2011-12. On an average, this implies an annual investment of Rs. 24,571 crore. The private sector is estimated to contribute Rs. 10,714 crore (43.6 per cent) while the public sector is estimated to finance Rs. 13,857 crore(56.4 per cent) annually during the period.

A recent report by OECD titled “Infrastructure to 2030: Telecom, Land Transport, Water and Electricity” observes that infrastructure investment requirements over the coming decades will be massive, running into trillions of dollars. The bulk of investment will be in the developing

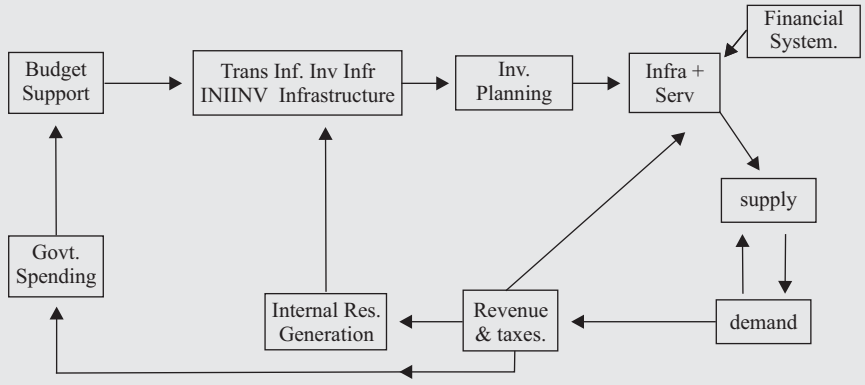
world, especially in the major economies such as China, India and Brazil (OECD,2006).

Traditional Form of Financing the Transport Sector

The transport sector, as a whole, has traditionally been one of the principal recipients of budgetary support in India. According to the World Development Report,1994 (World Bank,1994), excessive financial dependence on the state, poor performance of governments in providing transport infrastructure and services and unresponsiveness to user demand are major factors that have contributed to operational inefficiency, poor quality and unreliable delivery of transport services. These factors apart, pricing of services invariably below the costs of provision has resulted in constraining providers from generating internal surpluses leading to excessive dependence on budgetary support.

Figure 1 illustrates the flow of resources involved in Transport Sector Financing within the traditional framework. The framework shows that

Figure 1: Flow of Resources to the Transport Sector in India



Government Budgetary Support to infrastructure and internal resource generation are the main sources of transport financing in India, supported to some extent by the financial system.

An important component of the new economic policy framework introduced in India in the early nineties is the resolve to correct the fiscal deficit by emphasizing internal resource generation with a view to reduce budgetary support to public sector organizations in general including the transport sector. This envisages encouraging the public sector to generate maximum internal resources to finance future expansion programmes without having to depend on government support by motivating them to operate on business- like principle without relying on public funds to close the resource gap. For a developing country like India which has built up substantial transport infrastructure capacity, strategies for further development must necessarily take into account the issue of whether the dependence on budgetary resources is one of resource availability or efficient management of service delivery or both.

Scope of the Study

It is against this background that our attention in the Indian context would need to be focussed on examining:

a) possible improvements in the overall efficiency of state- controlled enterprises ;

b) the continuing role of the state in financing of transportation infrastructure and services;

c) opening up of transport activities for private sector participation and the appropriate course of action for the process of unbundling of activities to the private sector and

d) the emerging role of the increasingly competitive and liberalized financial system in financing transport infrastructure and services.

The present study addresses the above issues relating to the financing of transport infrastructure and services. Reviewing the existing literature in the national and international context, the study tries to develop a pragmatic policy framework in India. The introductory chapter discusses the problems with transport financing. We discuss the existing estimates of resource gap in transport sector in India and the problems that constrain the transport sector. Chapter 2 deals with the inefficiency of public sector in transport. Two segments of transport sector are discussed in this chapter-*viz.*, the Railways and the road transport undertakings. Both sectors are affected by inefficiencies and social pricing of services. Discussing the two sectors, the study tries to evolve a strategy towards improved resource generation. Chapter 3 deals with the role of the State in financing transport infrastructure and services. Given the central role of the State in the provision of roads, due to its strong public goods traits, the Chapter highlights that state presence is critical in the sector in the coming future. However, the study stresses the need for a significant transformation in the modes of state intervention. A critical aspect of State intervention in India would be to facilitate greater public-private cooperation in the sector. The scope of public-private sector cooperation is discussed in the Chapter with respect to the road sector, the railways and the seaports in India. Discussing the international experience, the chapter tries to evaluate the lessons learnt from the Indian experience and tries to chalk out the road ahead towards effective public-private partnerships in the road sector.Chapter 4 evaluates the emerging role of the financial sector in India in financing transport infrastructure and services. The financial sector in India has undergone a radical transformation over the last decade in India resulting in the availability of a wide range of financial instruments and the development of financial markets. The changing face of the financial sector paves the way for a more active role of the financial sector in ransport financing. The Chapter discusses the prospects of the financial sector in

mobilizing resources towards the transport sector. Chapter 5 presents the concluding remarks and the policy suggestions of the study.

The study is not designed to be a thorough review of the transport sector. Rather, it tries to address specific issues relating to transport financing in India. While discussing the issues, appropriate sector specific examples have been highlighted.

Chapter II
Utilisation of Existing Potential - Case Studies

The design of an infrastructure financing strategy must necessarily be shaped in part by the character and magnitude of the capital investment to be carried out and by the size of the financing gap (*i.e.* the difference between investment needs and currently available finance). It is recognised that there is substantial variation among countries in the size of the gap between infrastructure needs and the resources plausibly available for investment. The present chapter tries to address issues related to the resource mobilization through better utilization of the existing potential in the Indian context. The present section focuses on two sectors : Indian Railways and the State Road Transport Undertakings in India. Both these examples reveals the linkages between the efficient utilization of resources, internal resource generation and external financing. Financing of transport services is critically linked to the strategies aimed at greater internal resource generation, removal of inefficiencies and appropriate pricing of services.

Case Study I

The Indian Railways – Improving Internal Resource generation

Given the predominant public sector presence in transport, the bulk of the investment in the sector has come from within either by way of internal resources or budgetary support. From Table 2.1, it is observed that budgetary support to the railways has been decreasing sharply since the 1980s but rose marginally in the recent past. Accordingly, the contribution of internal and extra budgetary resources (IEBR) has been rising steadily. The share of IEBR (mostly internal resources) was quite high in the First Plan and went down since the Second Plan only to be significant once again during the latter half of the 1980s.

In 1993-94, the dependence of the railways on the Central Exchequer was brought down to as low as 15 percent with 85 percent to be covered

Table 2.1: Role of Internal Resources for Financing of Railways Plan

(Rs. Crore)

Plan	Internal Resources		External ResourcesTotal				Capital From Internal & External Resources		Gen.exche quer		Total
			Market borrowing (IRFC)		Others						
	AMT	%	AMT	%	AMT	%	AMT	%	AMT	%	
I	280	66%	—		—	—	280	66%	142	34%	422
II	467	45%	—		—	—	467	45%	576	55%	1043
III	545	32%	—		—	—	545	32%	1140	68%	1685
A	320	42%	—		—	—	320	42%	442	58%	762
IV	397	28%	—		—	—	397	28%	1031	72%	1428
V	384	25%	—		—	—	384	25%	1141	75%	1525
A	316	25%	—		—	—	316	25%	935	75%	1251
VI	2783	42%	—		—	—	2783	42%	3802	58%	6585
VII	7089	43%	2520	15%	—	—	9609	58%	6940	42%	16549
VIII	18830	58%	5565	17%	596	1.8%	24991	77%	7311	23%	32268

Source: Government of India, Ministry of Railways, Budget Documents, various years.

through IEBR. The gap between requirements (by way of Plan size) and available resources was covered by market borrowings whose share went up to 41 percent in 1999-2000. Thus, internal generation of resources failed to finance plan outlays in a significant manner while market borrowings which were expected to have only a limited role in closing the resource requirement gap, began to assume a dominant role in financing the railway budget.

In this context, the need for increasing efficiency of railway services to generate more internal resources assumes importance. In railways, increase in productivity arising from better utilisation of existing capacity by improved operating and scheduling practices can result in substantial cost savings and thereby increase internal resource generation. In the context of examining the extent of resource gap in rail freight services in the 1970s and 1980s, Rao and Sriraman (1985) observed that it would be very pertinent to concentrate on developing effective operating policies to augment the short and medium - run supply potential. More specifically,

it is necessary to:

a) keep loaded wagons moving for longer hours per day,

b) reduce the delays in loading, classification, unloading, etc., by imposing a tariff rate per wagon utilised per day rather than tonnage, and

c) improve wagon allocation procedures by appropriate scheduling and reduction in empty wagon movements. (Sriraman, 1988).

Since the mid-eighties, productivity increases have been observed on the Indian Railways both in terms of capital and labour inputs since the mid- 1980s (Dalvi, 1997). This has been achieved by better utilisation of assets like rolling stock, motive power, etc., as is indicated by the various indices. However, the accumulation of arrears of track renewals (see, GOI, 1990, 1998), rolling stock replacement and under investment in line-haul facilities, sets a limit to better utilisation of facilities (GOI, 1993). Wagon usage levels as measured by the turnaround time have gone up substantially (turnround time has reduced to nearly 8 days in 1997-98 as compared to 12 days in 1990-91).

But an equally important issue is whether these operational improvements get converted into financial achievements? Subramaniam (1998) with the help of a correlation exercise points out that operational improvements on the Indian railways do not get reflected into the same degree of financial improvements primarily because tariffs are not in alignment with the movements of input costs. On the basis of notional adjustments (to take care of changes of input costs in tariffs), the fit between operational indicators and financial performance is found to be remarkable thereby supporting the argument in favour of tariffs being allowed to move in concurrence with input costs. We now turn to the pricing of railway services.

In determining prices for the outputs of multi-product firms like the railways, policy-makers have long faced a number of issues that flow inexorably from the basic economic characteristics of the industry. The endemic economies of scale and scope imply that straightforward measures of cost cannot be used to dictate pricing. Economies of scale imply that marginal cost pricing will not allow the firms to break even. Further, shared costs that are a concomitant of economies of scope cannot be unambiguously identified with individual products, so that any rule selected to associate shared costs with individual services will be arbitrary. Such arbitrary measures as fully distributed (or fully allocated costs), therefore, cannot substitute for marginal cost measurements as decision rules for proper pricing and the search for any purely cost based estimate is a remnant of inappropriate reliance on the model of perfect competition. Alternatively, there are sound pricing principles, which promote economic efficiency while simultaneously removing impediments to appropriate reforms for operators. These principles lead to differentiated prices, sometimes referred to as Ramsey prices, which apportion all unattributable fixed and common costs of a railway among its services on the basis of the value of those services to consumers - mathematically expressed as their elasticities of demand. By providing that each service is priced at a mark-up over marginal costs which is inversely related to the elasticity of demand for that service, economically efficient differential pricing combines cost and demand factors in an optimal manner (Baumol and Bradford, 1970). Hence, where the demand for a service is highly inelastic, a substantial addition must be made to the marginal cost. Where demand is perfectly elastic, revenue above the short-run marginal cost can be used to meet the financial target without distorting the allocation of traffic between services. These principles result in lower prices generally by establishing a set of rates, which encourage the purchase of more rail transportation

services thereby creating a larger base over which unattributable costs can be apportioned (Kessides and Willig, 1995).

Historically, these principles have served as the theoretical basis for what has been popularly termed the "value of service pricing principle" which has been adopted by a number of railway systems including the Indian Railways. But it must be noted that such an approach was feasible in the absence of any effective competing mode. However, the rapid expansion of road transport services, over a period of time, has severely limited the scope of discriminating pricing (as it is based on the theory of price discrmination) which used to provide adequate returns to capital earlier. Essentially, the point is that railway user charges (especially on high-valued items) cannot be raised beyond the level at which the elasticity of demand for railway transport works against the interests of the railways. In other words, there is no evidence to bear out that the value of service pricing principle that is justified on theoretical grounds is the kind that is found to be practised on the Indian Railways. This is obvious from the observation that the rate-making process has been highly insensitive to changes in the relative advantages of modes (as reflected by elasticities) as is evident from the gradual diversion of high-valued as well as low-valued items from the railways to road transport. Following the recommendations of the Railway Tariff Enquiry Committee (GOI, 1980), there have been sharp increases in tariffs over the past two decades. For instance, the average rate per passenger km. rose from 4 paise in 1980-81 to 20 paise in 1998-99 while the average rate per tonne km. rose to nearly 70 paise from 10.5 paise during the same period. It was in this context that the Railway Fare and Freight Committee (GOI, 1993) observed "the scope for mobilising large-scale internal surpluses by raising tariffs is limited due to proven shift away from the railways" (p.189). It is obvious that passenger fares have risen much less when compared to freight tariffs. When viewed from

the perspective of cost recovery, Dalvi and Sriraman(1998) point out that there exist large gaps between costs incurred by the railways and prices charged by them especially in respect of passenger services.

An important point to note is that while passenger traffic as a whole is being cross-subsidised by freight traffic, there are wide differences in the level of subsidy accruing to, say, suburban and intercity (non-suburban) traffic. The total subsidy going to suburban services (mostly accounted by EMU services in the metropolitan cities) was around Rs.360 crores in 1998-99. On the other hand, losses on account of non-suburban services amounted to Rs.3952 crores. All these losses were accounted for by ordinary passenger trains (Sriraman, 2000). At present, it is estimated that only about a quarter of the railway costs are directly attributable to either passenger or freight traffic and 75 per cent expenses are joint costs which are distributed between passenger and freight traffic on the basis of certain performance factors. If we look at the total revenue of the railways in 1998-99, it is observed that passenger traffic earned only about 30 per cent of the railways' total earnings while freight traffic earned 70 per cent. In fact, according to GOI (1993), the entire social burden of the railways is fully borne by freight traffic. The freight rates are, therefore, pitched at a level higher than fully distributable costs. Thus, the fixed costs are almost wholly borne by freight traffic. Accordingly the average rate per tonne km. is nearly 3.5 times the rate per passenger km. Anand (1998) observes "since 1950-51, the quality of passenger services has improved and its standards progressively upgraded thus increasing the average cost per passenger km. On the other hand, Indian Railways has, as a policy, nearly eliminated the wagon load and part wagon load traffic and consequently done away with a large part of its costly marshalling and shunting operations at junctions, thus reducing the average cost per tonne km. Therefore, the ratio of rate per pass-km. to the rate per tonne-km should

have gradually appreciated over its initial value of 47 per cent in 1950-51. On the contrary it has gone down to 28 per cent in 1997-98" (p.126). Thus, he concludes that passenger services are increasingly being underpriced while freight services are overpriced. Considering a train as a rough unit of cost, he points out that the rate per passenger km. should be higher than the rate per tonne km. instead of being only a third as it is now. Accordingly, it could be suggested that freight rates should be brought down or at least not raised till the revenue per passenger km. exceeds the revenue per tonne km. There is, thus, definitely a case for raising passenger fares. This may be specifically true for traffic in the second class mail/ express component (mainly long-distance intercity non suburban). This segment accounted for nearly 50 per cent of the passenger-km. and 55 per cent of the revenue generation. Even a mere 10 paise increase per passenger-km. could result in additional earnings of around Rs.1800 crores. And it is widely believed that there would not be response to fare rise (in other words, inelastic demand). Preliminary market surveys (Mckinsey Report as quoted in Thoopal, 1999) suggest that only 27 per cent of passengers travelling second class have annual incomes less than Rs.30000. Further, as much as 15 per cent of second class travel is represented by affluent passengers with incomes exceeding Rs.72000.

The Ninth Plan document (GOI, 1999) observed that the overall fare structure on the railways does not generate sufficient resources to generate the surpluses necessary for capacity expansion. Additional resources cannot be raised by increasing freight rates at the upper end where they are already too high. Railway budgets have attempted very little in the past decade by way of rationalising the tariff structure so as to provide a clear direction for the railways to formulate a dynamic tariff policy especially in the context of the new economic policy framework where they are required to operate on a commercial basis and generate adequate internal surpluses. Whatever

little has been attempted especially in the case of freight tariff has only contributed to upsetting the rate structure which is normally expected to be based on a certain perspective reflecting relative costs, class rates, traffic rates and socio-economic importance of different commodities. What is required is adjustment of passenger fares and fares on items of mass consumption to levels closer to the real cost of providing these services. A phased adjustment over a certain time period would, however, be essential.

Social Burdens of Railways

A major factor impacting upon the financial performance of the Railways is their social burden. Conceptually, the social burden on the Railways can be categorised into (a) losses on transport of essential commodities; (b) losses on coaching services; (c) losses on uneconomic branch lines; and (d) losses on strategic lines.

The costs of public service obligations carried by railways have been estimated to be Rs.3, 050 crore in 1997-98, (GOI, 1997-98). The RFFC (GOI 1993) had estimated that the cost of such obligations for the period 1975-93 was Rs. 18,729 crore. For the period 1980-93, the cost of social burdens is estimated to have ranged between 13 percent and 20 percent of the railway's gross traffic receipts and 13 percent to 21 percent of their total working expenses, Indeed the RFFC (GOI 1993) quoting a statement of the railways observed that if the railway were relieved of their social burden, they would not have to depend upon budgetary support to finance outlays of the eight plan. Alternatively, it was argued that the level of tariffs could have been lower even after meeting the dividend liabilities, if the burden was taken off their shoulders. Generally, the railways carry their social burdens by providing services below their average unit costs- in some instances- (for example, in operating new railway lines) even below their short-run marginal costs.

Losses are covered, as observed, earlier by a process of cross-subsidisation. The existence of considerable cross-subsidisation, as happens extensively in infrastructure, exposes public operators to selective private competition, which greatly deteriorates the supplier's financial position. The policy of cross subsidisation on the railways has resulted in the freight rates of several commodity groups reaching unreasonably high levels, resulting in diversion of traffic to other modes, especially road transport with attendant social costs in terms of higher energy consumption and environmental damage. The continually increasing levels of subsidisation in passenger fares are also generating excessive demand leading to extreme congestion and deterioration of services. Excessive demand for passenger traffic displaces freight and reduces the speed at which freight can be transported by the railways. The benefit of subsidised services also does not always accrue to genuine passenger but is appropriated as ' rent' by the intermediaries. (Govt. uses cross- subsidies to help the poor but these groups tend to lack access to the subsidised facilities).

Economists are unanimous in their view that the social burdens carried on equity distribution grounds (such as provision of subsidised services to students, suburban travelers or even to remove regional imbalances) have no justification on allocative efficiency grounds. It is normally argued that these burdens should be properly quantified and, in all fairness to the railways, passed on to the exchequer to bear them. The same point can be made about obligations borne because of the 'public good ' characteristics of railways (to meet defence needs, or to maintain law and order)- there is no conceivable logic why railways should support losses incurred by the railways on these movements. However, there could be an externality argument which introduces an altogether different dimensions in the case for cross subsidisation; if the railways are causing less environmental

damage vis-à-vis other transport modes of transport such as road transport, railway services could be under priced and resultant losses met by increasing the prices charged by environmentally more damaging modes of transport and not by the railways (as a cross-subsidy) or general body of tax payers. It is a fairly widely accepted proposition that losses incurred on suburban rail services should be met by charging road users the full costs including pollution costs of the road services.

Thus a systematic pruning of railway's social burdens would help a great deal in improving internal resource generation by the railways. This can be done through

a) reducing cross subsidization by introducing appropriate user charges on underpriced passenger fares;

b) bringing the freight rates to competitive levels, to a level that enables them to compete with freight on road transport;

c) losses incurred on suburban rail services should be met by charging road users the full costs including pollution costs of the road services.

The Expert Group on Railways set up by the Ministry of Railways in 1998 identified that the main cause of the financial problems of the Railways as the absence of adequate productivity increases that are in line with real wages over time. In this context, the Group has recommended, *inter-alia*, (i) a "High Growth Strategy" that well entail "focussed remunerative investment and corresponding organizational restructuring of the Indian Railways internally and in relationship with government, including corporatisation"; (ii) stop unremunerative investments; and (iii) setting up of the Indian Rail Regulatory Authority to regulate tariffs. The Railway Budget 2002-03 was a positive step towards the much needed rationalisation of the tariff structure. The Budget, while resisting any

across-the-board increase in freight rates, proposed a higher relativity index for upper class travel (except first class AC, where the relativity index was lowered to make it more competitive vis-à-vis air travel). The minimum fare of passenger travel went up marginally from 15 to 16. In other words, there was a policy signal to eventually correct the existing imbalances between freight rates and passenger rates. The momentum in the Railway Budget of 2002-03 was fortunately sustained. The rationalization of the tariff structure by appropriate revision in passenger fares, providing incentives to bulk freight movements and rebates to slack season freight rates contributed in effectively tackling the challenges posed by low cost airlines and the flexible road network (Sriraman,2005). The Integrated Railway Modernization Plan introduced in Railway Budget, 2005-06 aimed at upgrading existing capacity and ensure better maintenance. All these measures contributed to a dramatic fall in operating ratios from 98 to 2004 to 86.6 per cent in 2006-07. There was a fall in the per unit cost of freight from 61 paise per net tonne Km in 2001 to 56 paise per net tonne km in 2005. While Indian Railways is still saddled with a number of problems, including, raising sufficient capital for project expansion, effective use of public-private partnerships and improving the efficiency of freight movements a turnaround has occurred, mainly due to reforms from within. This demonstrates how internal reforms and proper utilization of existing capacity can contribute towards growth and efficiency of infrastructure sectors.

Case Study II

State Road Transport Undertakings in India

A scrutiny of the financial performance of State Road Transport Corporations (SRTCs)(CIRT, 2001) in India for the year 1999-2000 revealed that the total losses of all SRTCs taken together was around Rs.1950 crores. Only 87 per cent of the costs could be recovered through revenue

receipts. Table 2.2 portrayed the then existing scenario for rural, hill-based and urban SRTCs. This classification is based on the consideration of pre-dominance of rural, hill-based and urban routes in respect of the different Corporations - following the practice of the Central Institute of Road Transport, Pune. The situation has hardly changed in recent years.

Losses are partly attributable to inefficiency and partly due to the uncompensated burden of social obligations such as concessions, unremunerative routes, failure of prices to keep up with input costs, etc. The fundamental issue is that there are no quantitative estimates of the losses segregated in this manner especially those relating to inefficiencies and failure of tariffs to be in alignment with costs.

In a study undertaken for the Eleventh Finance Commission (Govt of India), Sriraman (1999) examined these issues in detail within the framework of an analytical model which investigated the impact of physical performance on the financial performance of SRTCs. The study noted that there are optimal pricing strategies with specific goals to be achieved (Button, 1993). The optimal price to achieve profit maximisation will differ from that needed to maximise social welfare or sales revenue. If there is more than one objective to attain, some of these are treated as goals while

Table 2.2 Magnitude of Profits and Losses 1999-2000

(in Rs. crore)

Total Costs	Rural	Hilly	Urban
13151.24	10370.88	357.12	2424.23
Revenue			
11187.25	9065.22	243.15	1878.71
Profit/Loss			
-1963.99	-1350.66	-113.97	-545.35

Source : 'State Transport Undertakings : Profile and Performance', 1999-2000 Central Institute of Road Transport, Pune.

others are treated as constraints. The split of the objectives between goals and constraints is usually a political decision. It is within this framework that publicly owned transport systems have been allowed to operate commercially, but, at the same time, they are required to bear certain social obligations laid down for them by the Govt. (Dalvi and Sriraman, 1998). According to Gwilliam (1987), "payments made by political authorities, either for specific transport services, or as global sums for the maintenance of the network, or as supplemental payments related to the carriage of passengers at concessionary rates, count as subsidy. Subsidy thus does not necessarily represent a lack of value in the product but may result from a conscious political decision that a valued product should be paid for in a particular way" (p.6). Thus the problem of the SRTCs, for example, is one of constrained maximisation where the objective is revenue maximisation based on fares while the constraints spell out, among other things, the social obligations. In practice, Government approval is necessary for tariffs can be implemented. The Government has the power to modify the recommended tariffs and even if no modifications are made, its approval, it is observed, is accorded after a long delay. The delay in approval often means that the relationship between costs and tariffs on which recommendations were made are no longer valid (the case of the Indian Railways is different since tariffs automatically come for review at the time of the preparation of the Railways Annual Budget).

In the context of an emerging competitive market, an essential requirement for these Corporations to function on "business-led principles" (as directed in the RTC Act of 1950) is for them to enjoy complete autonomy to set prices in line with costs but wherein efficiency considerations would also be of primary importance. And these are the two factors that emerge as being significant in influencing the financial performance of the SRTCs. We now consider the analytical model now.

Methodology for Analysis of Financial Performance of SRTC's

The financial performance of any organisation is closely linked to its physical performance which, in turn, depends on the efficiency of operations and policy related variables. In this section, the methodology for analysing the financial performance of SRTCs based on physical performance and related policy variables is spelt out. The same methodology was adopted for projections relating to financial performance in terms of Profits/ Losses for the period 2000 - 2005. The relationships used in the methodology are given below. Physical productivity measures as reflected through Fleet utilisation (FU), Vehicle Utilisation (VU), Fuel Efficiency (KMPL) and Staff/ Bus ratio (S/B) are the major supply -level parameters while Load factor (LF) is a significant demand variable. The average fare charged is taken to be a policy variable since it is almost always fixed exogeneously.

The Model in brief
FU (%)= [(Number of buses on road) / (Number of buses in fleet)] * 100
(VU - Kms) = (Total Effective Km. operated on a day) / (Total buses on road an average day)
(LF)(%) =[(Passenger Kilometres) / (Capacity Kilometres)]* 100
Dead Kilometrage (%) =[(Dead Kilometres) / (Total Effective Km)]*100
Average Wage per employee (Rs.) = Personnel Cost / (Staff Strength)
Average fare (paise) = Traffic Revenue/ (Passenger Kilometres)
Staff Bus ratio (S/B) = Staff Strength /(Number of buses held)
Buses on Road = Average buses held * Fleet Utilisation
Effective Kilometres = Buses on road * Vehicle-Utilisation rate.
Gross Kilometres = Effective- Kilometres + Dead Kilometres.
Diesel Consumption = Gross- Kilometres/KMPL
Traffic Revenue = Average- fare *(Capacity* Effective-Kms* Load-Factor)
Total Revenue = Traffic-Revenue + Non-Traffic-Revenue
Personnel Costs = Buses held* (S/B)* (Average Wage/Employee)
Diesel Cost = Price of Diesel* Diesel Consumption.
Passenger tax rate = Passenger tax/Traffic Revenue
Break- even fare = Total cost/Passenger-Kilometres.
Passenger Kilometres = Load factor* Capacity* Effective Kilometres.
Other Material Cost rate = Other Material costs/ Traffic Revenue.

The model provides for a disaggregate look at the costs in terms of fixed and variable costs. The fixed cost components are the interest and depreciation provisions. The variable cost components include wages, diesel costs, other material costs and passenger taxes. The model provides variable cost and fixed cost per Effective (bus) Kilometre. As far as projections are concerned, fleet expansion, wage increases, interest and depreciation provisions are assumed on the basis of past trends. Tax levels are assumed to remain at 1997-98 levels. Diesel costs, which form a significant part of the total costs, are computed on the basis of recent and expected revision of the price of fuel.

Scenario Simulations

Exercises based on simulation of the base-year model for the different SRTCs revealed three scenarios. The first scenario related to the case of Undertakings in Tamilnadu where there were 20 such Corporations that were registered as Companies under the Companies Act. Almost all of them achieved a high level of physical efficiency in terms of the physical efficiency parameters and have high Load factors. This performance did not get reflected in the financial performance since price levels are low. A uniform tariff for units across the State inspite of varying sizes and characteristics and low levels of such tariffs (15 to 16 paise per pass.km. compared to 25 to 30 paise or more in the case of Corporations in Maharashtra, Karnataka, etc.) have resulted in huge losses of these units despite high levels of efficiency. On the other hand, under Scenario 2, high fare levels but low physical efficiency performance have contributed to losses in states like Maharashtra, Gujarat, etc. Improvement of performance to optimal levels could see the emergence of huge surpluses. For example, an increase in Load factor in Maharashtra State Road Transport Corporation(MSRTC) could bring in an additional revenue at 1997-98 levels. Under Scenario three, Corporations needed take care of

both price increases as well as measures to promote efficiency. Thus, this analysis revealed that the Load factor (LF) (efficiency) and a critical fare level (prices) are significant influences on the financial performance of an SRTC. Given the emerging liberalised economic framework, SRTCs would need to effective tackle the problem of low load factors in a variety of ways. It must be understood that while LF is mostly demand -driven, it is also supply-induced. Once this is realised, an appropriate fare strategy is required to set the organisation on a long-term growth path.

A Sum Up

Inefficiency of services and improper pricing are two major causes affecting adequate internal resource generation in the transport sector. In the case of Indian railways, budgetary support has been decreasing sharply since the 1980s and the share of internal and extra budgetary resources (IEBR) has been rising.In the absence of increasing internal resource generation,the share of market borrowings has increased. The study notes that market borrowings should be used within prudential limits in financing the resource gap. Increased financing of the railway system through market borrowings can be unsustainable in the long run. Internal resource generation can be enhanced if effective operating policies are adopted. It is necessary to: a) keep loaded wagons moving for longer hours per day, b) reduce the delays in loading, classification, unloading, etc., by imposing a tariff rate per wagon utilised per day rather than tonnage, and c) improve wagon allocation procedures by appropriate scheduling and reduction in empty wagon movements. Given the accumulation of arrears of track renewals, rolling stock replacement and under-investment in line-haul facilities, it is also necessary to recognise that there is a limit to the better utilisation of facilities.Pricing of railway services has been insensitive to changes in the relative advantages of modes (as reflected by elasticities) as is evident from the gradual diversion of high-valued as well as low-valued

items from the Railways to the highways. At the same time, the scope for mobilising large-scale internal surpluses by raising tariffs is limited due to proven shift away from the Railways. Consequently, there exist large gaps between costs incurred by the Railways and prices charged by them especially in respect of passenger services. Passenger traffic earned only about 30 per cent of the Railway's total earnings while freight traffic earned 70 per cent. Thus, the entire social burden of the Railways is almost entirely borne by freight traffic. The freight rates are, therefore, pitched at a level higher than fully distributable costs. Accordingly the average rate per tonne km. is nearly 3.5 times the rate per passenger km. Thus, passenger services are increasingly being underpriced while freight services are overpriced. Consequently, the rail is losing competitiveness vis-a-vis the road transport sector.Accordingly, it is suggested that freight rates should be brought down or at least not raised till the revenue per passenger km. exceeds the revenue per tonne km. There is, thus, definitely a case for raising passenger fares. This may be specifically true for traffic in the second class mail/ express component (mainly long-distance intercity non-suburban). This segment accounted for nearly 50 per cent of the passenger-km. and 55 per cent of the revenue generation. Even a mere 10 paise increase per passenger-km. could result in additional earnings of around Rs.1800 crore. And it is widely believed that there would not be an adverse revenue impact to passenger fare increase (in other words, inelastic demand). The study thus recommends systematic pruning of those subsidized services that will not reach the target groups.

In the context of the State Road Transport Corporations (SRTCs), the study observes that

- the financial position of SRTCs has been under strain. During 1999-2000, the total losses of all SRTCs was placed at around Rs.1,950 crore.

Financial Performance	Physical Performance	
	High	Low
High	Karnataka, Himachal Pradesh, Andhra Pradesh.TamilNadu, Punjab	
Low		Maharashtra,Gujarat

- The losses are attributable to a variety of factors such as inefficiency in operations and management, uncompensated burden of social obligations and uneconomic pricing of services.
- The Study notes that the financial performance of an SRTC is closely linked to its physical performance which, in turn, depends on the efficiency of operations and policy related variables.

Through a modeled including physical and financial variables, the SRTCs can be categorised in the following manner:

The model revealed that in the case of Tamil Nadu, for instance, SRTCs achieved a high level of physical efficiency and have high Load factors. This performance, however, did not get reflected in the financial performance since price levels are low. On the other hand, high fare levels but low physical efficiency performance have contributed to losses in states like Maharashtra and Gujarat.Thus, this analysis revealed that the Load factor (LF) and a critical fare level are significant influences on the financial performance of a SRTC. Given the emerging liberalised economic framework, SRTCs would need to effectively tackle the problem of low load factors in a variety of ways. In the Indian context, demand for transport services are price inelastic and at times supply induced. Therefore, an appropriate fare strategy alongwith efficiency enhancement is required to set the organisation on a long-term growth path.

Since 1950, when the Road Transport Corporations Act was passed, 70 State road transport undertakings have been created all over the country. During 1999-2000 these undertakings incurred a total loss of around Rs.

2,000 crores, forcing States to embark upon restructuring exercises. Not many studies are available to indicate recent improvements in this sector. However, this sector remains another classic case study of how lack of proper utilisation of physical resources, can put strain on financial performance.

Chapter III
Public-Private Partnerships in Transport Sector

Traditionally, in developing (as well as many developed) countries, a large part of infrastructure finance has been provided by the state. This model of finance does not seem to have been fully satisfactory, as attested by the large (and growing) infrastructure deficits in recent decades in many countries. Experience has shown it to be particularly weak in providing steady, reliable investment budgets that can finance project construction as well as provide for maintenance and also grow overtime with inflation and population growth. Further, in recent years, the financial flexibility of the state has been enormously weakened by the burden of international debt payment as well as the steep decline in new external capital flows. Since public finance has been a major resource base for infrastructure, the budgetary vulnerability of infrastructure finance has posed critical issues for public policy. In the context of fiscal stress, it appears unrealistic to look to the state, drawing on general funds, to finance the magnitude of additional investment that will be necessary to overcome the growing infrastructure deficits. But at the same time, it is recognised that even though the share of privately funded infrastructure is rising, governments will have to continue to be a significant source of finance, either singly or in partnership with private enterprise. Such a recognition, it appears, accords a limited but focussed role for the state. This Section deals with this important issue of the continuing but a relevant, explicit role that the state needs to play in the content of provision of certain facilities like roads and other similar facilities which not only have "public good" characteristics associated with their use but also involve market failure in terms of generating external effects.

Infrastructure has been one of the fastest growing sectors in the world in terms of private participation and financing since the late 1970s when countries began turning to private sources to provide services conventionally offered by the public sector. The transport sector was no

exception to this emerging pattern; in fact, it led the process in many ways. The generally poor performance of state-owned monopolies combined with the rapid globalisation of world economies brought into sharp focus the economic costs of an inadequate transport infrastructure. Operational inefficiency, lack of technological dynamism, poor service to users have widely characterised public sector transport infrastructure providers. But the most striking indictment of public sector provision was its failure to deliver a key social objective - universal accessibility. In other words, a system was perpetuated that was neither efficient nor accessible to large sections of the population, especially the poor.

The "public good" nature of many infrastructure services deserves re-examination. Most infrastructure functions in the past have involved a number of fundamentally different tasks. These may traditionally have been bounded together in a single, publicly provided service but the justification for public intervention in a more recent context and the type of public intervention that is called for, can be quite different depending upon the task to be performed and the objective that is to be served

Traditional Dependence on State Financing

The provision of roads has been one of the most important functions performed by governments in most countries. However, the evolving financing mechanism for roads has been one characterised by changes to take care of emerging requirements. Roads have traditionally been conceived to be genuinely collective goods because a road, once constructed, is equally available to all potential users. As long as congestion did not become serious (rivalry), the road usage of one person did not reduce the services that were available for others. An adherence to this viewpoint has associated road development facilities with such functions such as administration of justice and so on- "to be conducted likewise on the basis of collective

estimate of its relation to the collective interest of society with but incidental concern for the interests and the obligations of identifiable beneficiaries" (Peterson, 1930). Accordingly, road construction and maintenance appears as a typical function of government having to do with the aspects of social-well being. To begin with, the main function of roads was access to property and it was believed that adjacent property owners should pay for them. Thus, the roads were primarily considered a local government responsibility funded by taxes, the major source being property tax. With the growth of vehicular population and an increasing demand for more and better roads, the main sources of road financing, especially the property tax, were inadequate and local governments became incapable of developing roads to the degree that was required. The state / provincial government began searching for additional alternative revenue sources. According to Buchanan (1966) "this traditional conception of the road or highway function was, of course, essentially correct" (p.555).

The possibility of construing the road function in common welfare terms weakened over a period of time. Essentially, this was because the road no longer served primarily as a means of providing access to property and as a means of general communication among localities. Highway services began to constitute a major input for the production and distribution of a significant portion of national income. In other words, the great volume of traffic and particularly the long-distance movement of men and goods came to rapidly endow the roads with a transportation significance of a very definite sort that outweighed their more general social implications. The result was the acceptance of the idea that road service, unlike other basic government activities, could be developed by ordinary investment standards and financed by specific beneficiaries rather than the public. Thus, emerged the concept that the modern road network

can more appropriately be classified in the public utility category. In other words, the road in its most essential characteristics resembles the public utility more than the collective good. Though, the "public utility" conception of road function has never been fully accepted, nevertheless the fiscal pressures on Government have forced a de facto recognition of this modified view of the road. Regarded from this viewpoint, roads were to be improved, financed and controlled entirely with reference to their value and cost as a transport facility serving the traffic moving over them. Such recognition of the private and divisible nature of highway services has suggested the implication that, for reasons of both equity and efficiency user prices should be used. However, since by definition, a genuinely collective good cannot be directly priced, highway user taxation has been a universal phenomenon. In some sense the road function was singled out for different treatment(Zettel, 1954).

Although user taxes do represent genuine user prices to a large extent, many governments have never seen it fit to set these taxes in accordance with accepted public utility pricing principles. From a demand point of view, highway infrastructure is most complex: high network effects widespread intermediate inputs, difficulty of operating highways competitively, etc. Highways thus require most different solutions. Further, there has also been a failure in a number of cases to experimentally determine explicitly the effect upon fuel consumption, tyre wear and other aspects of vehicle operations of various types of improvements which may be effected on a road as a basis for ascertaining the expenditure that is warranted. Moreover, with ever- increasing vulnerability of budgetary provisions, there have arisen serious problems of inadequate or extravagant investment. It is in this context, that the issue of the separation of highway (road) tax revenue (or ear marking) assumes great significance and relevance.

Road Financing: The Indian Experience

Road planning and financing in India has always been the responsibility of both the Central and State Governments, with the Centre being responsible for the construction, operation and maintenance of the National Highways (NHs) and the State for all the other type of roads such as State Highways (SHs), Major District Roads (MDRs) except certain special categories of roads. The State Governments on an agency basis execute the actual work on National Highways. Though NHs and SHs constitute less than 10 per cent of the total road network in the country, this arterial network contributes for over 75 per cent of the total road based traffic. The NHs network alone is estimated to be carrying over 40-45 per cent of the traffic carried over the arterial trunk route system(GOI, 1999).

Sources of Finance

Basically, the sources of funds available presently for construction and maintenance of the road network in India are as follows:

a) The Central Road Fund

The Central Road Fund was set up by the Government of India in 1929 (following the recommendations of the Jayakar Committee (1927)) for promoting road development. The rate of accrual to the fund was initially fixed at 2 Paise per litre of petrol in 1931 and later at 3.5 paise. No levy was placed on diesel. The rate was not revised till 1988 in spite of the steep increase in the price of petrol. The fund was utilised entirely for the development and maintenance of the state roads. The state was allotted funds from this Fund on the basis of petrol sales in the state and was required to spend this amount on road programmes specifically approved by the Ministry of Surface Transport which administered this Fund. The Parliament in 1988 adopted a resolution which provided for setting aside an amount not less than 5 per cent of the basic price out of the duty of

customs and excise levied in petrol and diesel. Moreover, 35.5 per cent of accrual were to be used for development and maintenance of National Highways. Accruals to the Fund have been of the order of Rs 300 Crores annually- a small sum by any standards when compared with the requirements.

b) Budget allocation for roads from general revenue (and depending on other competing requirement) at the central and state levels.

In India, as in many other countries, revenues generated from road taxes go to the general revenue and have not been earmarked specifically for road development. Road user taxes in India mainly consists of :

a) Sales tax and excise duties on fuel and lubricants
b) Motor Vehicle Registration taxes and fees
c) Taxes on passengers and goods traffic levied by the state
d) Customs and excise duties on motor vehicles and accessories

The National Road Transport Policy, 2005 (draft) has proposed rationalization of motor vehicle taxes, creation of equipment leasing companies, accredition of vehicle body manufacturers, and a differential taxation system to encourage multi-axel vehicles. Heavy vehicles like buses and trucks are expected to see modernization and upgradation as a result of the new policy.

Implications

Though it is claimed that achievements have been satisfactory as far as accessibility to villages (providing all weather) is convincing, it is still a fact that nearly 250000 (out of 560000) villages have no access to an all weather road (GOI, 1997). Moreover the slow expansion of the main arterial network as also the low service levels provided by a major portion of this network have been characteristic features.

This situation has been viewed with increasing concern since the past two decades or so when the share of the road transport sector has been steadily increasing-a significant development in the country's transport situation. Assuming that its recommendations would be implemented, the National Transport Policy Committee (GOI,1980) had predicted that the eventual modal split by the turn of the century would be 72 per cent in favour of rail and 28 per cent in favour of road transport in the long distance freight market as against the base year (1977-78) share of 67 per cent for rail and 33 per cent for road. This Committee had given an over riding importance to the railways in recommending its modal split in the context of the energy crisis. In actual practice, however the Committee's predictions have not only failed to materialise but the modal split that has emerged has gone in the reverse direction (Patankar,1994). The Steering Committee on Transport Planning (GOI,1988) showed that in 1986-87, the railways accounted for 66.5 per cent of the freight traffic and roads for 30.5 per cent with coastal shipping accounting for 3 per cent. However, since the Committee's (both) estimates focused only on long-distance inter-regional traffic, the share of roads was supposed to have been underestimated. More recent estimates (GOI,1998) reveal that the share of roads in freight traffic has gone up to 60 per cent, while in the case of passenger traffic, it is as high as 80 per cent. Thus, road transport appears to have emerged as a dominant transport mode in sharp contrast to expectations. However, the funding pattern for the road infrastructure that is required to support the growing requirements has not been forth coming. When considering that the target of 66000 kms. of NHs was to have been reached by 2000, the shortfall has been considerable. Due to revenue constraints, the development of National Highways by the Centre and State highways by the respective States has been undertaken in the past as a stage development process-by spreading resources thinly and widely over the main arteries, (Gupta, 1999).

This policy has led to serious deficiencies not only in terms of road width but also structural strength besides weak bridges and poor riding quality. About two-thirds of the main road network is still single lane an unhappy situation -since it is required to have a minimum of two lane carriageway on the main roads irrespective of the volume of traffic. This is for reasons of safe overtaking passing maneuvers. Moreover a good percentage of the road network is still unsurfaced. Moreover, according to Patankar (1999) only 20 per cent of the surfaced road network is in good condition. "Thus the road length quantum of 3.29 lakh kms. is only cosmetically of respectable size. As much as half of it is not constructed for road traffic and out of the other half, 80 per cent are only crumbling roads"(Patankar,1999,p.3).

The virtual absence of an effective maintenance culture is a widely prevalent feature in almost every field of activity in India and this does not exclude the road sector. In the context of an acute shortage of funds for building up capital assets (roads), periodic upkeep of already existing assets assumes great significance. Consider the National Highways - the maintenance and upkeep of which are the direct charge of the Central Government. The general experience has been that funds placed at the disposal of the Ministry for maintenance of these crucial links have fallen short of requirements.(which are calculated on the basis of recommendations of technical groups, appointed from time to time.) "Maintenance of roads has not received adequate attention in the past primarily because of lack of funds. It was estimated that availability of funds for maintenance generally do not exceed 60 per cent of normal requirements and in case of rural roads it is still less."(GOI,1992). In fact, figures reveal that the shortfall has been increasing over the years. Even at the level of the States, the overall gap between requirements and allocations have been large and growing. If road expansion has received

only low priority under the Five Year Plans, planned, timely maintenance has been given a much lower priority. Timely upkeep and maintenance for the preservation of large public investment in roads would serve to

a) Prolong the life of the road network and bridges.
b) Optimise vehicle operating costs.
c) Maximise road user safety
d) Optimise carrying capacity of roads.
e) Reduce pollutant emissions.

The need for timely maintenance of roads has acquired great significance because of the crush load capacity traffic through out the day and night on many routes. While most of the routes have bituminous surfacing, riding quality is far from satisfactory (as observed earlier). The World Bank aided Vehicle Fleet Modernisation and Road User Charges study (W Bank,1990) found that nearly one tenth of the length of the network surveyed in the study was found to have roughness measurements above the acceptable limit of 4000 mm per km. It was also assumed that Total Vehicle Operating Costs in the country amounted to roughly Rs. 100000 crores per year and that a saving of about Rs 15000 crores could result through adequate repair and maintenance of the main arterial network. Of this saving, the fuel saving would alone be to the tune of Rs 2500 crores bulk of which is in terms of foreign exchange. There should, therefore, be no doubt that upgradation and maintenance of the existing road network is emerging as one of the key sources for road development policy. In this context, the focus of the Ninth Plan on strengthening crucial sectors of the existing highway network through phased removal of deficiencies and multilaning of high density corridors is an attempt in the right direction (GOI,1999). Thrust areas would be the highly congested corridors where traffic levels exceed 35000 PCUs (passenger car units) per day. These will be taken up for four laning while routes with daily traffic

exceeding 20000 PCUs would be strengthened in respect of existing physical parameters. Equally significant is the stress on converting single lane roads to two lanes, and the proposed improvements in geometric and riding quality of all the National Highways in general.

The structure of user taxation can be examined from two angles:

a) the distribution of tax burden by vehicle type
b) the distribution by road category.

As regards (a), the position is most unsatisfactory. Vehicle taxation in India is road damage related but levied on gross vehicle weight rather than potential axle loads, resulting in under-taxation of 2-axle trucks relative to those with more axles. The former being a major source of revenue to the states, rationalizing and strengthening the administration of this tax is likely to lead to increased revenue mobilisation (W. Bank, 1990). Considering the urgent need to mobilise additional resources, one of the key areas of concern therefore is to examine ways and means of rationalising the road tax structure with a view to ensuring that the tax structure is distributed fairly amongst different types of vehicles according to the PCUs (Passenger Car Units) occupied as well as the road damage caused by each type of vehicle. As regards (b), there is no easy charging mechanism on the basis of this criterion except by tolling which is emerging as a possibility on limited sections of the network.

Given the traditional sources of funds and thereby the past trends in allocation, additional revenue mobilisation from the road sector itself cannot be expected to result in higher allocations which is the crying need of the day. Even currently, only about 40 per cent of the revenue from road levies is spent on road development whereas the trend in developed as well as in other developing countries has been different. "Whatever may be the fiscal constraints on the Govt, strong economic demand exist for a

quantum jack- up in budgetary funds for roads to protect and preserve the existing main road network as well as for their proper maintenance, upgradation and expansion consistent with the growth of traffic"(GOI,1996, p-116). It is in line with this trend of thinking that establishment of an earmarked fund which is also robust (unlike the Central Road Fund) and administered independently enough to meet emerging requirements is being strongly advocated..

Assuming the possibility of creating a road fund, it would need to address certain basic issues. First, what road expenditure items should the road fund protect? The most commonly identified problem, systematic bias against maintenance occurs in fiscal regimes that fund both investment and maintenance. The creation of a road fund with both investment and maintenance functions need not automatically ensure against such a systematic bias as reflected in experience. This suggests that road funds be exclusively dedicated to maintenance. Several countries (including Japan, Republic of Korea, South Africa and theUnited States) introduced road funds to fund crash investment programmes. These governments considered road investments programmes too large for the general budget, thus justifying special treatment including extra special purpose taxation. In the Indian context, the adoption of the National Highway Development Plan in 1998 has raised the issue of enormity of fund requirements for the road sector including this Plan. The past few years have witnessed the imposition of a levy of Re 1 on every litre of motor spirit (petrol) to begin with, followed by a cess of Re 1 on every litre of diesel. While the cess on petrol is expected to fetch around Rs 800 crores annually, the levy on diesel would result in revenues to the tune of Rs 4000 crores. The latter collection is to be given in part for road development as well as rail safety works. As a part of special drive to mobilise huge amounts for the road programme, additional levies on diesel could be imposed. Diesel is still

relatively cheaper and this has its implications. It was suggested (World Bank, 1995) that raising the price of diesel to the OECD level of US$ 0.45 could help moderate diesel use while at the same time generate additional revenue. This additional revenue, according to the study, was almost a third of the then estimated annual shortfall in the amount spent on construction and maintenance on roads.

Originally mooted in 1998 in India, the Highway fund based on the petrol and diesel levies was formally approved only recently. Faced with a burgeoning fiscal deficit, the finance ministry had been reluctant to approve of this fund. It is still not clear what is the extent of the maintenance function that is expected to be covered by the fund. It is most likely that fund would greatly favour investment not only in the immediate future but later too since such arrangements do create a temptation to misallocate funds to lower priority investments if the Fund continues to generate large amounts of revenue after real need that stimulated their creation has been taken care of. This view is reinforced by the most likely possibility that the Ministry of Surface Transport would manage the fund, and not, as suggested by us, by an independent board. Money indeed could be forthcoming but it would be managed by the same old people, most likely in the same old way.

Notwithstanding the constraints, India has emerged with the second largest road network in the world. Highway spending is going to be a key component of sustaining India's growth momentum.

NHDP has made notable progress, even though the first phase (The Golden Quadrilateral) of the NHDP has fallen behind schedule, missing the original deadline of December 2003 and the extended deadline of December 2004. Phase II, the East -West and North -South corridor linking Srinagar to Kanyakumari and Porbunder to Silchar has began, with 777 km of 7300 km transformed into 4-lane roads.

Private sector participation in transport infrastructure and services: Lessons from International Experience and Indian Scenario

Although private participation can provide immediate access to a considerable pool of additional funds and private management skills, it is recognized that it may not necessarily be a panacea for the problems confronting all infrastructure projects. Accordingly, there is a need to understand the international experience in respect of practices, regulations, institutional arrangements and risk management with a view to devising a framework that is fair, predictable, satisfactory and, above all, one that delivers services with greater efficiency.

The international experience with transport privatisation, as succinctly brought out by Gomez-Ibanez and Meyer (1993), suggests five conditions that facilitate and are, most often, crucial for successful privatization:

(i) Effective competition;
(ii) Large efficiency gains;
(iii) Few transfers;
(iv) Limited environmental problems and other externalities; and
(v) Reasonable but not excessive profitability.

Table 3.1: Status of NHDP Projects : August 2005

	Golden Quadril-ateral	NS-EW Corridors	Port Conmne-ctivity	Other NHAI Projects	NHDP Phase III Pradhan Mantri Bharat jodo Pariyojona	Total
Total Length(Km)	5846	7300	365	811	4015	18328
Already 4 laned (km)	4976	777	99	287	-	6139
Under Implementation (km)	870	2925	251	156	886	3016
Contracts under implementation(no)	50	45	7	6	2	110

Source : www.nhai.org.

The international experience indicates that private sector participation in the transport sector has usually taken the following three forms:

(a) sale of public enterprises in the transport sector;
(b) contracting and outsourcing of specific services and
(c) private financing and management of new projects in transport.

To suit these forms (and a combination of them), a wide variety of competitive, regulatory and subsidy pollicies has accompanied this process of privatisation.

This first type has occurred in the U.K and Japan where the rail systems have been privatised. The primary motivation has been a widespread belief that the private sector is inherently more efficient than the public sector. These efficiency gains, if real, eventually reduce the cost to the taxpayers of supporting state- owned enterprises.

The second form has been popular, at least, in an experimental sense according to Gomez & Meyer (1993). BOT (Build, Operate and Transfer) is the term used for a model or a process that undertakes to use private investment for application in infrastructure development that has historically been the preserve of the public sector. In other words, in a typical BOT project, a private company is given a concession to build and operate a facility that would normally be built and operated by the government. The private company is also responsible for financing and designing the project. At the end of the concession period, the private company returns the facility to the government. The concession term is determined primarily by the length of time needed for the facility's revenue stream to pay for the company's debt and provide reasonable rate of return for its efforts and risks. As seen by lenders, a BOT project involves a private sector borrower who seeks financing either on a limited resource basis or a non- resource basis. In a non-resource financial arrangement, the lenders

Table 3.2 Prospects for Privatisation in Transport Sector

	Prospects for					
Activity and Stage of Development	**Competitive Market**	**Large Efficiency Gains**	**Minimal Transfers**	**Few Externalities**	**Profitability from user charges**	**Overall Success**
Toll Roads						
Developed	Medium	Medium	Low	Low	Low	Low
Developing	Medium	Medium	Low	Medium	Medium	**Medium**
Intercity Passenger Rail (new lines)						
Developed	Strong	Strong	Medium	Low	Low	**Low**
Developing	Medium	Strong	Medium	Low	Medium	**Medium**
Urban Rail Transit (new lines)	Strong	Strong	Low	Low	Low	**Low**
Intercity buses						
Developed	Strong	Strong	Medium	Low	Medium	**Medium**
Developing	Strong	Strong	Medium	Medium	Strong	**Strong**
Urban Transit Buses						
Developed	Medium	Strong	Medium	Strong	Low	**Medium**
Developing	Strong	Strong	Medium	Strong	Strong	**Strong**
Domestic Airlines (except U.S.)	Medium	Strong	Low	Strong	Medium	**Medium**
International Airlines	Strong	Strong	Medium	Strong	Strong	**Strong**

look only to the project assets and revenue streams for payment and not to additional sources of security such as total assets or balance sheets of the project sponsor. This form has often been referred to as "Project Financing" which has been the cornerstone of the BOT approach. In practice, almost all BOT projects such as toll roads have been financed on a limited resource basis.

It is often suggested that the BOT concept had its historical origins in the concession system of the 19th and early 20th centuries. Under this system, the private sector was virtually entitled to the free use or 'exploitation' of the project with very little public participation and control by the government. However, in a properly structured BOT project today, "the host government decides on the need for the project and its scope,

requires that the design, performance and maintenance of the project be tailored to the objectives of the countries and selects the private sponsors by means of an appropriate bidding and evaluation process in order to arrive at a price that is fair to both the host government and sponsors" (UNIDO, 1997, p.3). More over, unlike the old concessions, modern BOT schemes have been designed and implemented as public/ private partnerships with private sector finance and efficiency serving the public interest.

The third form has essentially been in the nature of take over of conventional public sector functions by a process of contracting/ out sourcing out to the private sector in areas such as waste disposal, urban transit operations, sewerage and water treatment, etc. In this form, the main attraction is the prospect of immediate financial gain to government. This can be expected to happen only if private sector income exceeds costs but the prospect of some recovery is often considered advantageous.

Major lessons from the international experience of (transport) privatization are summarized below:

a. The State has an active role to play by ensuring an appropriate policy environment and providing active support at the project level.

b. Governments can significantly reduce the costs for the private sector by conducting prudent macroeconomic policies, supporting secure property rights and deregulating and liberalising the financial system so that private players can do their best to take advantage of low-cost funding opportunities. Transaction costs of privatisation projects seem to have more to do with the characteristics of the policy environment than with the characteristics of the project.

c. BOT projects are exceedingly complex both from a financial and legal point of view. These projects require an extended period of time to

develop and negotiate. In fact, it is feared that the longer negotiation time required to develop private infrastructure projects relative to more traditional forms of direct investment has been one of the factors limiting investment in transport sector.

d. Whether an infrastructure project is structured and framed under a BOT scheme or a non-BOT scheme does not alter the fundamental risks associated with it. But the key difference is the participation of the private sector in a BOT project and hence the transfer of risk from the public to the private sector which would lead to a reduction in budgetary support but give rise to the need for non-conventional financial analysis of the project scheme. Conventional financial analysis in evaluation of infrastructural projects uses deterministic estimates of important parameters with the implicit assumption of certainty. This assumption of total certainty in, say, analysis of BOT projects which are prone to risk elements would be inappropriate and could be prove expensive to both the government. and project sponsors. Many factors such as construction cost, traffic volume and toll revenue cannot be estimated with precision due to nature of the project itself.

e. The private sector is generally willing to undertake those risks that it considers it can best handle while seeking government support for only those risks it feels it is unable to control. But the experience is that infrastructure privatization in the developing world has frequently been accompanied by extensive residual risk bearing by governments which not only threatens to vitiate its efficiency benefits but also confronts governments with large financial liabilities. Typically, private investors seek to reduce risks by asking for Government support in the form of grants, preferential tax treatment, debt or equity contributions or guarantees.

f. In effect, the Government substitutes a contingent liability for a recurrent liability in the form of a variety of guarantees some of which are specifically project oriented such as traffic guarantees in the case of toll roads while others relate to macro-level parameters such as exchange rate, interest, etc. Given the experience in developing countries, guarantees can be expected to efficiently support private infrastructure where participation programmes are an interim measure while the reform process is being set in place to allow various elements of the market to handle the relevant risks. While issuing guarantees, government must consider the expected value of commitments. In other words, whichever risk a Government takes on, it needs to consider how it can measure the value of (expected) commitments and incorporate it in its accounts and budgets. Various techniques in this regard are prevalent. Valuation of guarantees enables decisions to be made on the basis of real rather than apparent costs and benefits.

g. The global trend towards infrastructure privatisation has pushed regulatory issues to the forefront, because regulation is complicated by three related considerations: (i) prices are invariably based on political pressures/ considerations; (ii) investors are aware of these pressures. In the absence of credible government commitments, capital will be more expensive which results in higher tariffs. In terms of privatisation, this translates into smaller proceeds from sale of existing enterprises and higher financing costs for new (greenfield) projects; and (iii) the long-term nature of most infrastructure investment makes credible commitments difficult. It is necessary to devise systems of regulation and support that provide the encouragement and room for maneuver that the private sector needs while at the same time minimising government exposure to the host of commercial and financial risks surrounding the projects.

h. The synchronization of demand and supply of transport finance through coordination of government privatization programmes and release of contractual saving towards funding transport infrastructure and services is very important.

A Detailed account of the International Experience is enclosed as Annexure II.

Private Sector in Transport: The Recent Indian Experience

The private sector has, traditionally, played a fairly significant role in the provision of transport services such as bus services, road freight services, etc. Currently, more than 50 per cent of passenger movement by road is undertaken by the private sector (varies from state to state) while nearly all the freight movement is in private hands. The private sector also has a significant share in the provision of shipping services - both coastal and international. But in the provision of basic infrastructure like Road, the State has played an overwhelming role in the provision of these facilities in the past. In these transport infrastructure, new forms of public-private mix have recently been tried out in India.

Roads

Though we have envisaged an almost exclusive role for the State in the provision of roads, the experience under the efforts undertaken by the Government in encouraging private sector participation at the margin would be useful to review. Privatisation of roads as a concept has been in the limelight ever since the Government of India came out with an offer to the private sector in 1985 to finance, build and operate toll roads/ bridges of their choice. Under this initial scheme, the private sector was to be allowed to build and operate the facility for a designated period of time and authorised to levy tolls to recover the firm's investment at a pre-determined

rate of return before the facility was to be handed over to the Government Thus, the offer was under the BOT approach. The decision to implement such a scheme was, as emphasised earlier, made in the context of a growing realisation on the part of the government to build a new generation of limited-access expressways to meet the increasing traffic flows and emerging constraints on public sector finances. Under this scheme, the private sector would have to raise funds through open market borrowings and toll rates would be set on commercial principles. The government also identified the following projects as potential candidates for private sector participation: a) Expressways, b) Major bridges and Tunnels, C) Bye-passes, d) widening of existing two-lane National Highways to four lanes or more.

To begin with, the private sector's response was lukewarm. In fact, the government was flooded with requests for a number of concessions in the absence of which, the private parties contended, they would be unable to undertake the projects (Koshy, 1991). Notable among the concessions sought was the land required for the purpose would have to be acquired for the project by the government and handed over to the private firm. Further, the private party would have to be in a position to develop the lands adjoining the corridor on a commercial basis.

It must be noted, however, that the planning for an expressway network began in the early eighties when the World Bank approved a loan for the construction of eight inter-city expressways, the first of which was to be the 92 km. long link between Ahmedabad and Vadodara. And keeping in line with the then existing thinking (World Bank) that tolls must not be levied, the facility was to be a toll free one. The estimated cost of this high-standard facility was to be around Rs. 140 crores. However, dithering on part of the concerned state officials resulted in the Bank's withdrawal from the project although construction had already begun. A feasibility study conducted at that point of time by a private firm revealed that toll

charges would be very high if the project was to be financially viable (Sinha, 1989).

In a study undertaken by the Central Institute of Road Transport, Pune (CIRT, 1989) on the financial viability of toll-based expressways on 3 major corridors: Delhi-Kanpur, Vadodara-Mumbai and Mumbai-Nashik, it was found that the proposed facilities could hardly be financially viable based on toll revenues alone, given the then existing and emerging levels of traffic. On all the three corridors, it was found that when tolls were to be fixed at 30 per cent of the savings in Vehicle operating costs (as is the normal practice), toll collection would hardly be in a position to service the debt. In a more broad-based study undertaken by the Ministry of Surface Transport, Government of India on behalf of the Asian Development (ADB, 1991), it was found that there was an immediate need to improve and upgrade the existing road network throughout the country. The arterial road network (the main routes) would alone be required to be developed as follows:

1. about 10000 kms. of expressways to be built in phases during the period 1995-2015.
2. 4 - laning of 15000 kms. of existing 2- lane National Highways
3. 2- laning of 4000 kms. of existing single lane National Highways
4. Strengthening of about 16000 Kms. of existing 2-lane National Highways
5. Construction of 44 bye-passes.

The expressway network was expected to cost about Rs.50000 crores (more recent estimates put the figure at Rs.80000 crores or more). This network would constitute about 70 per cent of the existing high-density corridors in the country and would provide connections to all the major metropolitan cities. Though these proposals have served as a basis for

plans to upgrade the highway network in the nineties, the more recently announced (1998) National Highway Development Plan incorporates them only to some extent with the plan for the Expressway network almost completely shelved. The Ninth Plan document (GOI, 1999) which reflects this plan of action remarks that large scale introduction of expressways is not feasible in our circumstances though "there may be some scope, albeit limited, of constructing expressways where traffic density is exceptionally high, there are alternative routes for slowing moving local traffic and the need for cross traffic is low"(GOI, 1999, p.). In fact, the ADB study (1991) had indicated that the expressways were found to have the potential to generate high economic internal rates of return (EIRR) - in some cases, even more than 50 per cent - although in financial terms, the returns were expected to be much less. Accordingly, it was suggested that even on these corridors where tolls are expected to be the major revenue source, there would be a necessity to offer substantial incentives to the private sector since traffic levels to sustain a high-standard network would be low to ensure attractive financial returns.

A study (CES, 1997) showed that the proposed Faridabad -Noida-Ghaziabad Expressway could prove to be economically viable with an Economic Internal Rate of Return (EIRR) of 22 per cent even without considering time savings in the benefit stream which can be substantial from project. But a value EIRR only reflects the measure of a project's success to the government thereby satisfying the minimum criteria to be a potential candidate project. However, the Financial Internal Rate of Return (14 per cent) did not qualify the project for private sector participation without some level of subsidy or seed capital from the government.

Even the scaled down plan incorporating the upgradation of the National Highway corridors connecting the major metropolitan cities would, it appears, require substantial government support to be viable

commercially even in those limited stretches which are proposed to be developed by the private sector. Koshy (1991) had contended that for ensuring an early and effective entry of the private sector into the field of construction, operation and maintenance of road projects, issues requiring active government intervention and support were to be tackled on a priority basis. While some of these related to legal requirements mainly concerned with imposition of tolls, others were concerned with incentives to be provided to the private sector. Accordingly, the Government has come up with a number of measures and offered a number of financial incentives. These include amendments to the National Highway Act to permit imposition of tolls on existing roads, no compulsion to have a toll-free facility, relaxation of MRTP provisions to enable large firms to enter the sector, acquisition of land for the facility which would be given to the firm on lease for the period of concession etc. As a result nearly 20 National highway projects have gone on stream on a BOT basis (GOI, 2000). Of the nearly 10 road projects (others being bridges), two - the Udaipur bye-pass and the Thane-Bhivandi bye-pass are fully operational while others are at various stages of planning (physical and financial) / construction.

At the State level, some progress has been made. In the early nineties, the Government of Maharashtra took a decision to invite the private sector to develop roads on certain conditions. Under this scheme, certain roads/ bridges were to be built and operated on a BOT basis by private parties who would recover the costs through tolls. Only one project arose out of the scheme- the Kolhapur-Jaysingpur bye-pass, which went in to operation in Feb.1992. But by May 1992, the toll collection had stopped due to stiff opposition. Thus, the first road privatisation exercise did not succeed due to non-acceptability of the concept of payment of tolls for the facility provided to a rural section of the population (Parchure, 1994). According to Borkar (1994), the rural population is unable to perceive timesaving, savings in

vehicle operating costs and other indirect benefits. It is suggested that a toll concept may be more acceptable to the travelling public in urban areas. This is most probably true since the other private toll roads - the Rau Pithampur road near Indore and the Thane-Bhivandi bye-pass have been successful. The Rau-Pithampur road began doing well only after two and half years after it was commissioned. The sole source of revenue for recovering the cost is the toll collection. In the first year of its operations, collections remained well below the expected level of Rs.30000 a day. But once one of the remaining approach roads was completed, toll revenues increased to such levels which was considerate adequate to service the loan of Rs.7 crore which was sponsored entirely by the Infrastructure Leasing and Financial Services (IL&FS)- a financial institution. The organisation of the facility was restructured by transferring it to M.P. Tolls Ltd., a special purpose vehicle. The IL&FS held 80 per cent equity in this company while the Madhya Pradesh Industrial Development Corporation holds the rest. In Gujarat, a special purpose vehicle called the Gujarat Toll Road Company undertook the construction of two major toll roads - the Vadodara- Halol highway and the Ahmedabad-Mehsana highway. The private partner is the IL&FS, which is also promoting the Noida-Delhi Toll Bridge One of the challenges before each of these projects has been financing. Although the basic financing structures differ, each project has essentially used the deferred payment mechanism under a BOT structure where the objective is cost recovery through tariffs. Almost all the projects had funding limited to the project's cash flows with varying support mechanisms. In the case of the Durg bye-pass project, the debt repayment was supported by the National Highway Authority of India - a sovereign entity. In the case of the Coimbatore bye-pass, the concept of "take-out financing" has been used for the first time in India. Such a structure allows lenders to exit from the project loan without really recalling the

loan. More specifically, the Infrastructure Development Finance Company (IDFC)- a public financial institution - has structured a "liquidity support" arrangement for the project under which cover will be extended for Rs.30 crores being the loan given by the State Bank of India (SBI) to the project. Such a support enabled SBI to access long-term funds even as the bank will have a refinancing option at the end of a certain period of time. IDFC will be taking in only the bank risk while the bank itself will continue to bear the project risk. On the other hand, the Moradabad bye-pass involved a unique arrangement. It was the first project to be promoted by the NHAI on a commercial return basis. The NHAI for the first time made a foray in to the debt market through a special purpose vehicle -the Moradabad Toll Road Company Limited (MTRCL) - which helps it to multiply its leveraging capability. The entire financing was to be done on a limited recourse basis with the only assurance being that a sovereign owned subsidiary will operate the project. However, the financial restructuring envisaged some comfort to the lenders: the toll revenues were to be credited into an escrow account on which the debtors will have the right of charge. NHAI was expected to divest from MTRCL when it goes into the operation and maintenance phase. This has been recommended in order to create a benchmark in financial markets for future such disinvestment either by the private sector BOT operator or by the NHAI and also help raise additional resources for such investments.

A problem in funding such projects faced by financial institutions has been the issue of providing physical asset cover. Most financial institutions either insist on corporate guarantees from the promoters or extend long-term finance only by mortgaging the physical assets of the project. In fact, financial institutions have demanded a physical asset cover of 1.5 times of the loans extended by them - which is in line with existing term loan conditions. But collaterisation of physical assets is virtually

impossible in national highway projects. This is because BOT operators neither have the leasehold nor ownership rights over the land used since the ownership is vested with the government and not the special purpose vehicles set up for the projects. Moreover, mortgaging of physical assets is not necessarily the solution to all the problems nor does it insulate creditors from defaults. In fact, it only provides some comfort in the books of the creditors. This apart, mortgages do not necessarily ensure prompt repayment of either the principal or the interest amount and the level of comfort is restricted to recovery of dues through the sale or auction of physical assets. In some cases, where only part of the credit is likely to be recovered such auctions can actually lead to losses whereby creditors find themselves with huge write-offs in the form of non-performing assets. The scenario is worse in the case of roads as FIs are not in a position to sell the projects. As a result, in addition to or as an option to mortgaging assets, the FIs are insisting on government guarantees in the form of traffic flows. But the Ministry of Surface Transport, Government of India has rejected the idea of traffic guarantees especially in the context of fiscal pressures which is already constraining the ability of the Central Government to meet such obligations. Accordingly, it is felt that creditors would have to bear the risk on the basis of project cash flows that are either in the form of direct tolls or shadow tolls. But since according to a study of the Ministry only 22 percent of the projects are viable on a toll basis, cost recovery on a shadow tolling basis (payment to investors on the basis of traffic flows instead of levying tolls) is being mooted. This would imply that investors would be sharing the risk with the NHAI on the traffic. The BOT operators would also be responsible for maintenance of the highways to specified technical parameters. In addition to shadow tolling, the NHAI has also plans of taking up projects on the basis of annuity based payments. While it is true to say that such methods of project funding enable elimination of

multiple cost recovery methods which could lead to user resistance, it is to be recognised that these methods would be required to fall back on earmarked revenues (given that such a system is in place) which is badly required for the expansion of different parts of the network. In such a situation, it is best to seek assignability of concession pacts and bridge loan support from the NHAI or an escrow cover that would provide the creditors the first charge on a project's cash flows.

Seaports

India's coastline is dotted with eleven major ports- six on the West Coast and five on the East Coast. Besides, 163 minor and intermediate ports are situated along the coastline and at sealands. Of these 124 are located on the West Coast, mostly in Maharashtra and Gujarat. The primary responsibility for the development and the management of minor and intermediate ports rests with the concerned State Government while the major ports are under the executive responsibility of the Central Government

As on March 1997, the aggregate capacity of the major ports stood at 217.21 million tonnes annually. In 1999-2000, the 11 major ports handled 271.86 million tonnes as against 251.73 million tonnes in 1998-99. The traffic handled by the major ports accounted for nearly 93 per cent of the total handled in the country including minor ports. According to the India Infrastructure Report (NCAER, 1996), most major ports have been operating at over 100 per cent of their capacity which has been one of the major reasons for the high vessel turnaround time and high levels of port congestion.

Port throughput, which includes export, imports and transshipment, was estimated at 425 million tonnes by the terminal year of the Ninth Plan, that is 2001-02 while it was expected to be double this amount by

the year 2007-08. This translated into a compounded annual rate of growth of more than 12 per cent over the base year figures. The actual growth during the Ninth Plan was far below this figure. While it was around 10 per cent during 1997-98, there was virtually no growth in the following year. Accordingly, the output is expected to be around 360 million tonnes by 2001-02 (Indian Ports Association, 1999). This means that the actual growth rate is likely to be 8 per cent. The shortfall in capacity would be of the order of 150 million tonnes. According to the Ninth Plan, the additions to the capacity from the ports' own resources were expected to be around 160 million tonnes through carry over schemes from the previous Plan and creation of fresh capacity of which at least 45 million tonnes was expected to come from private sector investments in the major ports. In addition, a series of private sector ports was planned both on the west and east coasts for handling bulk and liquid bulk cargo.

Of the proposed investments in the major ports, only the container terminal that has been awarded to a BOT operator at the JN port in Mumbai. is under construction (and due for completion soon for test trials). Of the proposed private Greenfield ports, only two have been commissioned - the Gujarat Pipav Port and the Gujarat Adani Port at Mundhra - both in Gujarat. The Pipav port has been established by a joint venture company called Gujarat Pipav Port Ltd. Its owners include the State-run Gujarat Maritime Board (GMB) and a private sector party Sea King Engineers Ltd., a manufacturer of marine equipment. This port handled one million tonnes in 1998-99 and was expected to double this amount in 2000-01. It was expected to break-even when it handles 2.8 million tonnes a year. The Gujarat Adani Port has been promoted by the GMB and a private party, Adani Exports on the basis of the build-own-operate-transfer (BOOT) format. The project when completely operational would have the capacity to handle 3.5 million tonnes. This 340 crore project is being funded on a

60:40 debt equity ratio. In addition, the port has also been provided with physical cover asset for raising debt finance. Such physical asset cover is possible only under the BOOT scheme, which allows the promoters to mortgage jetties and some of the physical assets to the creditors. In fact, financial institutions have been reluctant to sanction loans on the basis of assignability of the concession pact alone. The Gujarat Maritime Board has divested its stake in the Pipav Ports and has already taken a decision to divest its equity in Adani Port after it enters a certain phase of operation and maintenance. The funds generated through such operations are to be deployed for the development of a series of ports along the coast. The divestment is in line with the state-run organisation's policy of booking capital gains and deploying the funds elsewhere. Its divestment of 26 per cent stake in the Pipav port project gave it Rs.55 crore on its investment of Rs.11 crore.

The experience in encouraging private sector participation in the development of minor ports in other states has been disappointing. The Government of Maharashtra had formulated a fairly ambitious plan for the development of 7 minor ports in the private sector in the Mid nineties. However, it was clear from the very beginning that even if the proposed investments in the State materialised, only two of the seven ports would be financially viable (Sriraman, 1996) since the traffic potential through the other ports was very limited. It must be noted that in the case of Gujarat the development of new multi-user ports (minor) was a response to the establishment of a large number of private captive jetties all along the coast to service movements arising out of huge investments that had already taken place in the eighties. In other words, with the construction of many private jetties all along the coast, it was feared that the development of these facilities would be haphazard. Accordingly, it was decided to encourage private sector multi-user ports close to manufacturing plants.

This would not only serve the existing major users but would also be available for other users in the hinterland. But in the case of Maharashtra and other states, the traffic for the minor ports is to be generated by shore-based plants which are yet to be established.

One of the major reasons cited for the lack of private sector interest in the major ports is that they cannot levy tariffs higher than the existing ones despite the fact that they are in a position to bring in more modern equipment and facility. The Tariff Authority for major ports is seriously considering a submission of the private sector that unlike them, the port authorities do not have to pay income tax or dividends and are also enjoying the advantage of depreciated equipment (Ray, 1999). But at the same time, it must be noted that the port authorities suffer from a disadvantage arising from the existence of a huge pool of labour which is not necessarily efficient. The maritime states have also added to the confusion by going ahead with their own plans without taking into account the need for an integrated development of not only the minor ports in the different states but also other elements of the multi-modal transport system that is required to be put in place. In the case of the Pipav and Adani ports, the rail links to the nearest railheads are to be established on the basis of a deal between the Ministry of Railways and the concerned private sector parties. Moreover, the landlocked states must also be prepared to invest in these facilities in a significant way if their trade with the outside world is to be smooth. In fact, it would be advisable to have a Common Maritime Board (say, for the Western and Landlocked States). While private sector participation and investment would definitely be required, the involvement of a number of states would not only enable sharing of the burden but could pave the way for more active economic cooperation.

Privatisation of Indian Railways

The Indian Railway system has been run as a departmental undertaking under the Ministry of Railways following the structural

reorganisation after Independence. The principal goal has been set in respect of financial targets they are required to achieve on capital given by way of budgetary support from the central government. The Railways have not been allowed to borrow from directly from the capital market to finance their investments. Investment programmes are financed mainly by budgetary support and internal resource generation. Capital funds borrowed from the Govt are not in the form of grants (as was the case with British Rail in the U.K.) but in the form of non- refundable loans on which they have been required to pay a rate of dividend (as fixed by railways convention committee of parliament from time to time). In recent decades the railways have come under increasing financial pressure partly due to competition from other modes and partly due to various policy constraints imposed on them. Given the competitive nature of emerging economic environment, it is increasingly being felt that unless the railways have full control over their pricing and investment policies, improve their efficiency and fully respond to user needs, there is very little chance of their survival in the long run. Accordingly, a total restructuring of the organisation by way of privatisation is being strongly advocated, by those who feel that a privatised management structure for Indian Railways would be best suited to optimise the objectives of both consumers and shareholders.

According to Dalvi (1997), this argument is unassailable in terms of the economic theory of property rights where the focus is to determine an optimal incentive structure for the principal to lay down for agents to minimise internal inefficiency. The question is : whether this framework is suitable (and adequate too) for an organisation while still functioning as a public utility? More specifically, the issue in this context would be: how to account and pay for the benefits enjoyed by the country for the non-commercial output (social burden) produced by them? While it is true

(as suggested earlier) that a careful review of social burdens needs to be undertaken to evolve an appropriate financial strategy for the railways, it must be admitted that the pursuit of development and distributional objectives is still important in the context of India's socio-economic development. Under these circumstances, a "privatised railway system would not be able to achieve these objectives as efficiently as would a publicly owned railway system "(Dalvi, 1997, p.208).

Allocative efficiency issues apart, the very logic of contestablity goes against the privatisation of the system not because the requirements of funds are huge of the sunk nature of substantial part of the investments- an age- old problem which is made formidable by the risks and uncertainties in a mode whose market has progressively shrunk in a mode whose market has progressively shrunk as a result of inroads from other modes especially the road mode.

As an alternative, Dalvi(1997) argues in favour of changing the railway structure from a departmental undertaking into an independent public corporation. The establishment of such a corporation if properly structured and armed with adequate powers for making decisions on key variables such as pricing and investment would in our view provide the management of railways the necessary freedom to run their operations on sound commercial principles. In a competitive environment, the managers come under pressure from four groups: customers, workers, owners and lenders. Customers demand good products at lower prices. Workers ask for competitive salaries. Owners seek high profits and lenders want their loans repaid. The combined pressure means that manages must run their firms well. When we look at a traditionally organised firm like the railways, we observe a publicly owned monopoly. In such a situation, the balance of forces get changed. In the absence of pressure from consumers and owners (consumers don't have a choice and govts are not as interested) the demand

of employees and lenders result in a sacrifice of interest of customers and owners. "A bank's demand for a loan repayment, for example, may be met at the expense of customer services or dividend paid to the owners" (Irwin and Alexander, 1997, p-13). Thus, the need to strengthen owner pressure to an extent through corporatisation initially. Such a model is now being attempted in the case of some major ports like the Jawaharlal Nehru Port, Mumbai. Countries have tried, with some success to restructure their state-owned firms this way.

The Konkan Railway Corporation - A Curious BOT example

The Konkan Railway Corporation (KRC), a 738-km railway infrastructure project between Roha (about 150 km south of Mumbai) and Thokur (22 km north of Mangalore), built at a cost of Rs.3375 crore (Rs.2425 crore investment and Rs.950 crore as capitalised interest) commenced commercial operations on 26th January, 1998. Out of Rs.3375 crore, Rs.800 crore was equity capital (from the state governments of Maharashtra, Goa, Karnataka, Kerala and the Central Government through the Indian Railways). The project was conceived with the objective of bridging the "Konkan Gap" and reducing the distance and travel time between Mumbai and coastal Karnataka and Kerala. Though the KRC was incorporated as a public sector company of the Central Government under the Ministry of Railways in 1990, it was envisaged as a Build-Operate-Transfer operator without, of course, a private sector investor.

In the decade since its inception, the Corporation has attempted every means of finance for the project ranging from public issue of bonds, private placement, secured and unsecured loans, bridge finance, sale and lease back and external commercial borrowings. The tax-free bond has become the biggest mobiliser for KRC, accounting for 61.5 per cent of the total amount of Rs.3247.71 crore that the Corporation has raised so far.

But in years when liquidity was tight, the Corporation has resorted to inter corporate loans, bridge financing which have involved higher costs. This clearly reflected in the fact that of the total cost of Rs.3250 crore, financial charges amount to Rs.950 crore or 28 per cent. Over a BOT concession period of 10 years the IRR for the project works out to be 14 per cent.

A major source of concern for the KRC is that earlier predictions of the initial growth of freight traffic on KRC had not materialised. A recent case study of the KRC (Banerjee et.al., 2000) reveals that KRC's inability to attract traffic has been primarily due to the stiff competition for road transport and coastal shipping. Road transport scored over rail because of strong customer preference as was revealed by a survey on customer satisfaction (A.F.Ferguson, 1997). But more revealing was the unintended source of competition from the rest of the railway system. Given the declining share of the railway system over the years, it is natural to presume that the Indian Railways are facing tremendous pressure to retain its traffic on its traditional routes (by operating at some reasonable level of efficiency) than attempting to feed traffic onto a new route (though shorter - as pointed out by Banerjee et. al. 2000). But a small system (namely the KRC) which is just beginning to move forward with a huge burden of debt payment and expectations of freight traffic to cover 75 per cent of its revenue could be heading towards a financial disaster which may prove fatal to the parent system too which is itself under severe strain.

Public- Private Partnership : The Emerging pattern

One of the major advantages of privatisation is that it can reduce the role of Government bureaucracies in performing entrepreneurial activities for which they may be poorly suited. Where market forces are still weak and important public interest are at stake, the strengthening of relevant

government institution may be a pre-requisite of successful privatisation. But the most significant lesson may be that sharp distinctions between public and private apply neither to practice nor analysis. "Instead, public-private partnerships more than a chike, challenge us to think of new structure that blend private initiative with public accountability "(Mody, 1996, p.xxxii).

Thus, the public-private partnership emerges as a far more viable option in delivering the goods. What is needed is to conceptualise these infrastructural projects within the institutional framework so as to make them commercially viable and self-sustaining entities. Take the case of a BOT project, which is an intricate combination of various forces. These cost money take time and patience for successful implementation. The role of government/ public sector in providing support in one way or the other has certainly helped the cause of the BOT concept/ approach (Augenblick, 1990). The international experience offers considerable insights. The state support to share with the project company revenue from existing assets has eased pressure on capital costs, debt issues, operating expenses, etc. For instance, in the case of Dartford Crossing project in the U.K, the Sydney Harbour project in Australia, the North-South Expressway in Malaysia, existing toll facilities were made available to the project sponsor to collect revenue. Careful project appraisal competitive tendering process and Government's willingness to bail out the Project Company in case of financial difficulties has also played a major role in the success of a BOT project. This is reflected in the successful implementation of Hong Kong's East Harbour Crossing a combined road and rail tunnel under Victoria Harbors. Availability of extensive traffic data with government on corridors, which would be serviced by proposed expressways have also aided the success of BOT projects, so has a guarantee from Government on the minimum level of traffic. We have already noted

the emergence of such partnership in the Indian context in the case of roads and ports. While the role of the government in attempting to attract the private sector (National Highway Authority of India) does appear proactive, equally important is the role of specialist companies which are able to apply their expertise to identification of new facilities and are able to spread the risks over a series of projects. But with major decision continuing to be taken on political rather than economic commercialisation considerations and the private sector having an enlarged administration and managerial role in project implementation, "the public-private partnership, with its clear divsion of functional responsibilities, looks set to became the model for next period of infrastructure investment" (Farrell, 1999, p. 243).

A recent report "Public Private Partnerships, Government guarantees and Fiscal Risk" by the IMF (IMF, 2006) suggests that fostering competition in the PPP framework is also crucial for the success of PPPs. Open bidding for contracts opens up competition and restricts monopoly. An interesting example is the recent Indian initiative of negative bidding in BOT projects of NHDP. In negative bidding, private infrastructure companies bidding for contracts pay the Government a lumpsum amount arrived through the bidding process if the contract is awarded to them. Several projects are already underway. For the Ambala Chandigarh road project, GMR group has given Rs. 105 crore to Government. While Jaypee Group has provided Rs. 61 crore for Delhi-Gurgaon expressway.

Managing Risks in Private Sector Participation

The experience is that infrastructure privatization in the developing world has frequently been accompanied by extensive residual risk bearing by governments which not only threatens to vitiate its efficiency benefits but also confronts governments with large financial liabilities. Governments

are reluctant(or unable) to raise consumer prices to cost covering levels, while investors, keeping in mind the past experience, fear that Governments may renege on promises to maintain adequate prices over the long run. Thus investors ask for Government support in the form of grants, preferential tax treatment, debt or equity contributions or guarantees. All of these forms of support are subsidies(explicit or implicit). Governments in developing countries moving towards a more liberalised regime invariably find themselves unable to introduce all the reforms that would be required for privatisation without Government guarantee. The choice is often between privatisation with significant Government risk bearing and continued ownership. Faced with this choice, the country may prefer second best option of privatisation without the full transfer of commercial risks to the private sector.

As political and regulatory risks emanate from Government action, it is reasonable to conclude that these risks should be borne by Governments and hence ultimately by taxpayers. Since taxpayers are beneficiaries of Government action, they are normally expected to hold Governments accountable. This may not happen always. Risks could be transferred to the consumers rather than taxpayers-as the case is when regulatory actions provide for tariff adjustments. The distributional and efficiency implications of the process will depend on the extent to which consumers are also taxpayers, the relative efficiency of the tax system and tariff system for infrastructure services. The implications for the incentives needed for governments to act responsibly will also depend on the nature of the political system and on the transparency of the liabilities assumed by taxpayers and consumers(Irvin,1997). The higher financing and insurance costs will in the ultimate analysis, be reflected in higher prices, reduced proceeds from privatisation, or greater need for public financing of infrastructure. Reduced profitability affects Government revenues and results in lower

returns for shareholders. Thus, decisions on the allocation of risks have a number of efficiency and distributional implications. But the challenge is to reduce risks to a level at which they do not constitute a significant impediment to private sector participation. In other words, the more stable and predictable the political and regulatory environment in the host country, the lesser is the requirement on the part of investors by way of specific undertakings from government guarantees and other risk reducing instruments.

Though privatization is expected to reduce the need for recurrent financial support from Government, the latter retains some (or extensive) financial liability. In effect, the Government substitutes a contingent liability for a recurrent liability in the form of a variety of guarantees some of which are specifically project oriented such as traffic guarantees in the case of toll roads while others relate to macro-level parameters such as exchange rate, interest, etc.

But some basic questions arise:

a Under what conditions would these guarantees be appropriate?
b How important are the nature of these guarantees?
c if appropriate, what is the level of commitment in future?

Given the experience in developing countries, guarantees can be expected to efficiently support private infrastructure where participation programmes are an interim measure while the reform process is being set in place to allow various elements of the market to handle the relevant risk. Equally important in the context of provision of guarantees is the extent of commitment.(Large commitments raise perception of country risk and affect sovereignty credit rating). This outcome can be avoided if commitments are issued in a fiscally responsible framework with appropriate distribution of risks among parties (protecting private promoter

against traffic revenue risks while obligating them to assume construction and operating costs risks). In issuing guarantees, governments must consider the expected value of commitments. In other words, whichever risk a Government takes on, it needs to consider how it can measure the value of (expected) commitments and incorporate it in its accounts and budgets. This can be done by attempting to measure and control the exposure. At the simplest level, this would require that the Government knows what guarantees it has issued and how much it might bear if the guarantee were called. This is done by estimating what the expected losses are and probabilities of greater losses. Lewis and Mody (1997) show that calculation of expected losses is feasible using relatively straightforward techniques. Moreover techniques developed in the past decades to value the financial derivatives (such as options, futures and swaps) can also be used to value guarantees and contingent liabilities. Valuing Government guarantees and other contingent liabilities help in comparing guarantees with cash subsidies. Valuation of guarantees enables decisions to be made on the basis of real rather than apparent costs and benefits.

In the Indian Context, the aggregate guarantees outstanding for seventeen major states in India was Rs 40,318 crore in 1992, which rose to Rs 1,69562 crore (provisional) by March 2001.Recognizing the growing magnitude of guarantees and its impact on the future fiscal position of states, the RBI constituted a technical committee (RBI,1999) comprising some state finance secretaries to examine all aspects of state government guarantees. The committee's recommendations submitted in 1999 were: (a) to impose a ceiling on guarantees, (b) selectivity in calling for and providing guarantees, (c) disclosure transparency, reporting of guarantees and standardization of documentation, (d) to have a guarantee fee and set up a contingency fund for guarantees and (e) monitoring and honouring of guarantees. Further, in order to ensure that the risk between investment

in state government securities and in state-guaranteed bonds issued outside the market borrowing programmeme is properly reflected, the RBI in October 1999 advised banks that with effect from 2000–1, investments in state government guaranteed bonds outside the market borrowing programmeme would attract risk weight of 20 per cent. Further, in case of a default in the payment of interest and principal of such bonds, banks would assign 100 per cent risk weight for investments in such securities and make appropriate provisions. The enhanced risk weightage applies to the guaranteed bonds of the defaulting entities.

Recently, the Report of the Group to Assess the Fiscal Risk of State Government Guarantees (RBI,2002) recommends, among others, (a) guarantees in regard to liabilities which were clearly intended to be met out of the budgetary resources, should be identified separately and treated as equivalent to debt, (b) states need to publish data regarding guarantees regularly, in a uniform format in the annual budget, (c) a Tracking Unit for guarantees may be designated (in the Ministry of Finance) at the State level,(d) Acts/policies of these central financial institutions should be amended/rationalized so that guarantees are not routinely insisted upon while extending loans,(e) at least an amount equal to 1 per cent of outstanding guarantees may be transferred to the Guarantee Redemption Fund(GRF) each year from the budget.

Need for a Strong and Credible Regulatory Framework

The global trend towards infrastructure privatisation has pushed regulatory issues to the forefront, the prominent among them being the role of regulatory agencies because regulation is complicated by three related considerations. First, prices are invariably based on political pressures/ considerations. There are numerous cases when justifiable price increases have been withheld at the expenses of investors and long- term interests

of the consumers. Second, investors are aware of these pressures. In the absence of credible government commitments, capital will be more expensive which results in higher tariffs. In terms of privatisation, this translates into smaller proceeds from sale of existing enterprises and higher financing costs for new (greenfield) projects. Third, the long-term nature of most infrastructure investment makes credible commitments difficult. Any design of a regulatory framework is thus a complex undertaking that involves the balancing of many influences/elements which include regulatory goals and resources, social institutions and sector characteristics. These elements influence the form, function and scope of regulatory policy.

Of many lessons to be learned from the Mexican toll road programme, perhaps the most important for governments developing a sector based extensively on private investments is the necessity of devising systems of regulation and support that provide the encouragement and room for maneuver that the private sector needs while at the same time minimising govt. exposure to the host of commercial and financial risks surrounding the projects. In the case of Argentina, since the privatisation programme was introduced simultaneously in the care of water, ports and railways, there was a corresponding proliferation of regulatory commissions.

One aspect of privatisation that has not received sufficient attention in Malaysia is the role of the government in the post privatisation era (Naidu & Lee,1997). When considering the scale of privatisation that has occurred, it was under recognised that the country's regulation system is adhoc and still evolving. This concern assumes significance for the simple reason that privatisation of infrastructure in Malaysia has not been accompanied by a competitive restructuring of the products or service markets. In nearly all cases of privatisation in the infrastructure sector of Malaysia, public monopolies have been simply converted to private

monopolies. In the case of privatised roads, for instance, the monopoly power of private companies is already considerable and would increase even further if, for example, the government fails to maintain public sector roads at a level where they constitute an effective alternative to the privatised roads or ensure that user's interests are not affected. Thus, "the Malaysian example underlines the need for a well -crafted and credible regulatory mechanism to serve as a buffer between private sector suppliers, who may enjoy considerable market power, and their users"(Naidu, 1997).

A Sum Up

The chapter observes that the State has a major role to play in road financing. Road planning and financing in India has always been the responsibility of both the Central and State Governments, with the Centre being responsible for the construction, operation and maintenance of the National Highways (NHs) and the State for all the other type of roads such as State Highways (SHs), Major District Roads (MDRs), except certain special categories of roads. Though NHs and SHs constitute less than 10% of the total road network in the country, this arterial network contributes over 75% of the total road-based traffic. The NHs network alone is estimated to carry over 40-45% of the traffic carrying over the arterial trunk route system. The chapter stresses that there is a need for a clear policy stance with regard to the utilisation of Road Funds in order to avoid systemic bias against maintenance expenditure. With respect to roads where toll financing was feasible, it was suggested that it would be necessary to offer substantial incentives to the private sector since traffic levels to sustain a high-standard network would be too low to ensure attractive financial returns.

In recent years, the significance of road transport has enhanced manifold, aided by the expansion and improvement in the highway network.

With a view to encouraging private sector participation, Model Concession Agreements have been finalised for (a) major projects costing more than Rs.100 crore to be undertaken under BOT Scheme; (b) projects less than Rs.100 crore and (c) based on annuity approach.

A major issue in priate sector participation is effective management of risks, including credit risk, market risk, policy risks, legal risks etc. A problem faced by financial institutions in funding such projects has been that of providing physical asset cover. Most financial institutions either insist on corporate guarantees from the promoters or extend long-term finance only by mortgaging the physical assets of the project. In fact, financial institutions demand a physical asset cover of 1.5 times of the loans extended by them, which is in line with existing term loan conditions. But collaterisation of physical assets is virtually impossible in national highway projects. This is because BOT operators neither have the leasehold nor ownership rights over the land used since the ownership is vested with the government and not the Special Purpose Vehicles set up for the projects. Moreover, mortgaging of physical assets is not necessarily the solution to all the problems nor does it insulate creditors from defaults. In fact, it only provides some comfort in the books of the creditors. This apart, mortgages do not necessarily ensure prompt repayment of either the principal or the interest amount and the level of comfort is restricted to recovery of dues through the sale or auction of physical assets.Contingent Liabilities (such as guarantees) perform a crucial role in the mitigation of risks to long term funding of transport projects. Project sponsors typically insist on government guarantees to bring in funds for road sector projects. Financial institutions, Banks and NABARD insist on guarantees while investing in infrastructure projects to contain default risk. Such guarantees are given by respective State Governments. The insistence on guarantees for project finance increases the fiscal risk of State Governments in India.

The reliance on guarantees as a substitute for debt has witnessed a sharp rise since the mid-nineties. Between 1996 and 2000, aggregate guarantees extended to state level entities grew at a rate of 24.1% as compared to 7 per cent between 1992-96. The Executive Committee on State Government Guarantees, RBI, advised institution of statutory administrative ceiling on guarantees and ensuring greater transparency. In 2002, the RBI working group to assess the fiscal risk of State Government guarantees has recommended several appropriate measures to contain the fiscal risk of guarantees.

Finally, the chapter stresses that a well crafted, credible, appropriate framework for regulation is essential for the success of effective private sector participation in the infrastructure sector.

Chapter IV
Financial System Support for the Transport Sector

It is widely recognized that in order to obtain all the benefits of greater reliance on voluntary market based decision making, an economy would need an efficient financial system. In the traditional model, the financial system played a marginal role in infrastructure development in the face of an overwhelming public sector presence. Even given this limited role of the financial system, governments especially in developing countries often paid inadequate attention to regulatory and prudential matters, to the detriment of their financial systems. Two questions can be raised at this point:

(a) Given the emerging liberalized economic framework what sort of an expanded role would financial systems be expected to play in promoting infrastructural development?

(b) And given the expanded role of financial systems, what role should government play in creating and ensuring efficient systems?

This section examines these issues in the light of experience in both developed and developing countries and attempts to identify an appropriate framework which will enable the Indian financial system to provide the requisite services to the transport sector, in particular, in the decades to come. We begin with the traditional model of financing.

The financial system plays a critical role in infrastructure financing by making available the savings of the households, corporates, government and the rest of the world for infrastructural activities. Since the financial saving of the government in the Indian context is rather limited (Table 4.1) and private sector savings is mostly redeployed in the industry where it originates from, the financial saving of the household sector is crucial for additional resource generation for transport financing. The financial saving by households is more than double the savings by private and public sectors and thus crucial from the viewpoint of generating additional saving

Table 4.1- Gross Domestic Savings in India and its Components- 1996-97to 1999-2000).

(percent)

Sources	1993-94 to 1996-97	1997-98	1998-99	1999-2000
1	2	3	4	5
Household Saving	18.3	17.8	19.1	19.8
o/w Financial Saving	10.5	9.9	10.9	10.5
Private Corporate Sector	4.1	4.2	3.7	3.7
Public Sector	1.5	1.5	-0.8	-1.2

Source : CSO, National Accounts Statistics

for the infrastructure sector. Thus, a closer look at the distribution of household financial saving becomes necessary from the point of view of resource generation potential for transport.(Table 4.2)

Table 4.2 Distribution of Household financial saving in india-1970-71 to 1998-99.

Years	Currency	Deposits	Shares and DebentuRes	Claims on Government	Insurance Funds	Provident and Pension Funds	Gross Household Financial Savings
1	2	3	4	5	6	7	8
1970-71	17.9	38.1	3.4	5.3	10.5	24.8	100.0
1975-76	6.8	42.0	0.8	17.8	8.4	24.2	100.0
1980-81	13.4	52.0	3.7	5.9	7.6	17.5	100.0
1985-86	8.7	46.9	7.8	13.4	7.1	16.2	100.0
1990-91	10.6	33.3	14.3	13.5	9.5	18.9	100.0
1992-93	8.2	42.5	17.2	4.9	8.8	18.4	100.0
1995-96	13.4	42.1	7.4	7.8	11.3	18.1	100.0
1998-99	10.1	41.8	2.5	12.3	10.5	22.7	100.0

Source: Percentages calculated on the basis of CSO data

The distribution pattern of financial saving of households (Table 4.2) reveals that the bulk of financial savings was in banking sector instruments, mainly in the form of deposits of various maturities. The banking sector is, thus, the major source of financial savings of the households in the country. However, with the deepening of financial markets, its share has fallen on an average from 45.6 percent in the 1970s to 40.3 percent in the 1980s and further to 40 percent in the 2004-05. The share of non- banking financing companies has grown from 3 percent in 1970s to nearly 8 percent in 1990s. This apart, long term contractual savings like insurance premium and pension funds which accounted for 35 percent of financial saving in 1970s stood at 26 per cent in 2004-05. The allocation of financial savings by the household sector has crucial significance for infrastructure financing. In India, as the households are ready to part with about 26 per cent of their saving, amounting to above Rs. 81,000 crore in 2004-05 alone towards long term contractual aggrements in provident and pension funds and insurance funds and another Rs.25,000 crores in small saving instruments, this provides a huge pool of long term funds which can potentially be utilized for infrastructure financing.

The pattern of funding by the financial sector is dependent on the policy environment in which the savings are made. In the subsequent sections, we analyse the ability of the banking and non banking sectors, the capital markets and the contractual saving institutions to divert funds towards the infrastructure sector. Such sectoral analysis will give us a better idea of financial resources that can flow into infrastructure financing.

Role of Commercial Banks in Transport Sector Financing in India

The commercial banking sectors involvement in financing the transport sector may be broadly classified into two groups:

a. Advances to transport operations including those under priority sector lending scheme.

b. Project financing.

The traditional model reveals that the commercial banking sector's involvement in transport sector financing has been almost exclusively limited to loans given to transport operators, *i.e.*, under group (i) while that under (ii) is assuming increasing importance as a possible component of investment. We examine the group (i) scheme first. Table.4.3 gives the distribution of outstanding credit of Scheduled commercial banks by activity.

It is observed that share of transport in total credit rose sharply from 1.5% in 1973 to really 5.5% in the early eighties and has then gradually declined to about 1.2% in 2005. From Table 4.4 it is observed that much of credit was for land transport (90% or more). The major share of credit (70%) has been for heavy commercial vehicles (trucks and buses), with intermediate Public Transport modes (Taxis and Autorikshaw) receiving about 13-14% of credit, non-mechanised (land) and water transport modes receiving about 7-8% each.

Of the outstanding credit to the transport sector, a little more than 70% or so has been provided under the priority sector schemes under implementation at the instance of the Central Govt. The Committee on Transport Policy & Coordination (GOI, 1966) had emphatically pointed out that "a major source of weakness on the part of the road transport industry and of the position of vulnerability in which the vast majority of small operators are placed lies in the sphere of finance" (p.96). It was also pointed out that total volume of finance available was quite meagre and that was available on extortionate terms. More than a decade later, the National Transport Policy Committee (GOI,1980) held that following the recommendations of the Study Group on Road Transport Financing (GOI,1967) expansion of commercial bank credit had resulted in the flow

Table 4.3 : Sectoral allocation of Total Outstanding Credit Advanced by Scheduled Commercial Banks

	Agriculture	Industry	Transport	Personal &	Trade	FI	MISC	Other	TOTAL
1	2	3	4	5	6	7	8	9	10
1975	8.9	59.1	1.9	1.7	17.5	2.2	5.2	3.6	100.0
1980	14.8	48.0	4.3	2.2	22.2	0.8	4.3	3.3	100.0
1985	17.6	41.3	4.8	3.1	23.4	1.2	5.3	3.3	100.0
1990	15.9	48.7	3.2	3.0	13.9	2.1	6.8	6.4	100.0
1995	11.8	45.6	1.9	2.3	17.1	3.8	8.5	9.0	100.0
1997	11.1	49.3	1.8	3.1	13.2	4.0	7.5	9.9	100.0

Source : BSR Returns

of funds to the road transport sector having improved considerably especially since the early seventies when the operators were made eligible to get credit under the priority lending scheme of commercial banks. While

Figure 4.1 : Share of Transport Credit in Total Outstanding Scheduled Commercial Bank Credit : Selected Years

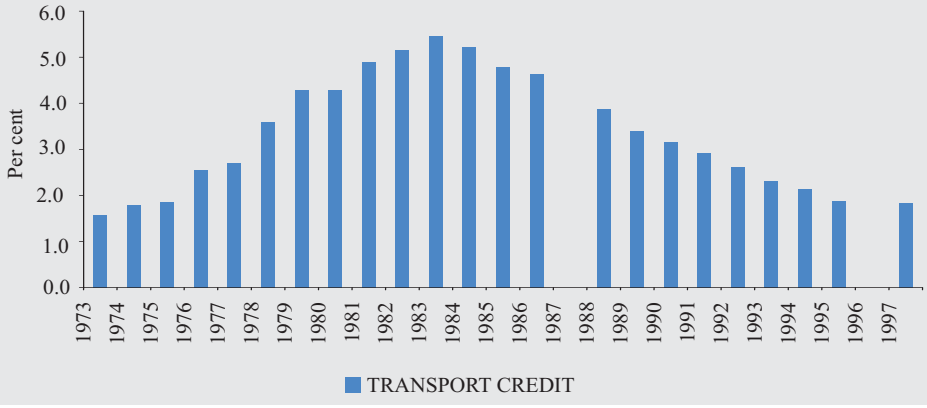


Table 4.4- Share of Transport and its Components in Total Bank Credit (%)

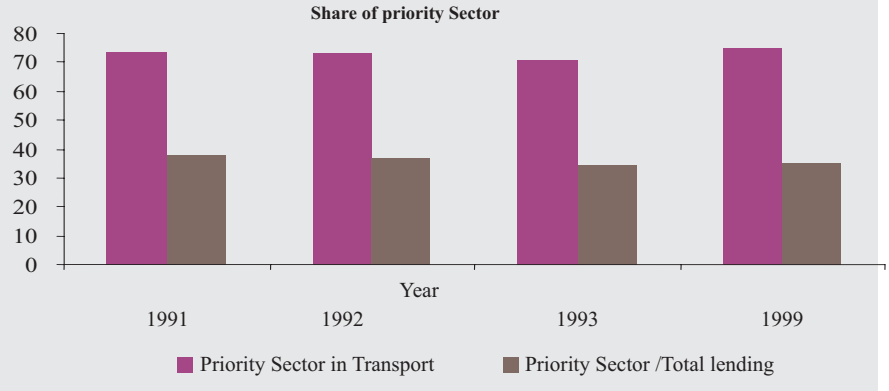
	1989	1990	1991	1992	1993	1995	1999
1	2	3	4	5	6	7	8
A. Transport Operators	**3.4**	**3.0**	**2.9**	**2.6**	**2.3**	**1.9**	**1.85**
I. Land Transport	2.4	2.8	2.7	2.4	2.1	1.7	Break up
a. Cycle Rikshaws	0.3	0.2	0.2	0.2	0.2	0.1	Not
b. Taxi, Auto Rikshaw Scooter	0.5	0.4	0.4	0.4	0.3	0.3	Available
c. Other Land Transport		2.2	2.1	1.9	1.6	1.2	
II. Water Transport	**0.2**	**0.2**	**0.2**	**0.2**	**0.1**	**0.3**	
III. Air Transport	**0.0**	**0.0**	**0.0**	**0.0**	**0.1**		

Source : Reserve Bank Of India BSR Returns, Various Years

this was true till the early eighties, the trend has been reversed since then (Fig. 4.2).

An important factor contributing to reduced bank finance to the sector was the increasing number of default cases. "The rising proportion of non-performing loans has limited the volume of credit that banks can extend to new clients" (World Bank,1990,p.55). This problem was pointed out in

Fig 4.2 Priority Sector Lending : Share in Net Bank Credit and Share in Transport Financing



the study undertaken by the Central Institute of Road Transport, Pune (CIRT,1993)and was also revealed to us in the course of our discussions with senior officials of some major nationalised banks. According to them, the main reasons for the poor recovery included:

a) inability of small operators to repay loans
b) wilful default due to political influence
c) Legal complications
d) National system of permits which enable a truck operator to operate in number of states.

An underlying feature of the problem was the lack of clear operating guidelines/ framework for recoveries. As a result, a major nationalised bank like State Bank of India reported NPA's to the extent of 42 per cent in the case of transport operators while Union Bank of India reported 18 per cent. Further, it was pointed out that the position in regard to poor recovery varied from state to state. While repayment was found to be satisfactory in States like Rajasthan, Tamilnadu etc., where there is an efficient back-up govt. machinery, in case of States like Bihar, U.P., the recovery performance was poor. In the absence of an efficient recovery mechanism, the flow of funds from the banks is unlikely to improve considerably.

From the point of view of the operator, it is felt that the commercial banking system did not demonstrate adequate flexibility in its approach to matter of financing which often resulted in complex procedures being adopted to process a loan application thereby resulting in considerable delays.

The financing of transport operators by the banks takes place directly and indirectly. In the direct method, finance is provided directly to the operators. But an emerging route where banks conceived less risks was

by lending to Non-Banking financial companies.(NBFC's) who, in turn, gave the finance to transport operators. In view of the legal problems involved, the large numbers of individual borrowers, management efficiency consideration suggest that credit worthy NBFC's should act as intermediaries in the entire process. We attempt to understand how - a little later. We now turn to group (ii), namely, project financing by commercial banks.

Project Financing

Traditionally, project finance was limited largely by borrowing and to some extent to equity capital. This framework has continued to persist even in the case of infrastructure financing which has been increasingly oriented on a project finance basis as a result of greater attempts to attract the private sector into infrastructure development. But the similarity ends there. Conventionally, a project sponsor may finance new project using existing projects and hence his total assets- as collateral to secure the funding. Thus any outstanding financial claim against the new project is a claim on the sponsor's total cash flows. With this structure, lenders look at the overall creditworthiness of the project sponsors and are less concerned with the profitability of any individual project. This way, creditors used to fund firms and firms used to fund projects.

But the essence of project financing (*i.e.*, in its new form) in infrastructure lies in the recourse that financiers have to a project's cash flows as primary security with secondary support from the projects assets which may not be of immediate use always unless the aspect is a relatively liquid one. (in the case of a road, the asset is most illiquid). (In the purest form, of project financing, creditors have no resource to the project's assets but only to the cash of the project. This type is uncommon because lenders typically insist on some sort of sponsor- at least in the project development

phase- a completion guarantee from the project sponsor or their parent company). More formidable is the problem of the time taken to create an asset only after which the revenue/cash flow occurs. Further, the recovery period is long term so that tariffs/tolls to service the debt are not prohibitive. Herein lies the inability of banks to provide medium-term to long- term finance, which stems directly from the maturity structure of their liabilities. Most of the liabilities in commercial banks are in the nature of demand and short-term savings deposits. Naturally, making long-term commitments (either by way of loans or equity contributions) to infrastructure projects would create a serious maturity mismatch between the assets and liabilities of these institutions. This mismatch could be even more dangerous in the absence of efficient and liquid money markets that would otherwise provide banks with some tools to manage their liquidity and interest rate risks. A vibrant secondary market for Government securities and corporate debt is also an essential prerequisite of a greater flow of finance to the infrastructure sector.

Government policies and the banking sector's limited experience in dealing with various risks involved in limited/ full resource financing and the lack of knowledge on mitigation methods are also responsible for their insignificant role. The weak base of knowledge stems from the time - honored practice of collateral based lending which guides the extension of credit in most developing countries. The requirement that a borrower post collateral or secure a guarantee from a third party generally means that the borrower's credit worthiness is otherwise insufficient. As a result, with the exception of Malaysia and, to some extent, Thailand and Korea, commercial banks have played a very small role in project finance lending to infrastructure projects. The situation was even much worse in Latin America where high inflation, exchange rate risks and political uncertainty made long-term finance extremely scarce. In India, until financial reforms

were initiated in 1991, 90 per cent of the commercial banking sector was owned by the state. Banks were required to invest 15 per cent of their funds to fulfil cash reserve requirement and 38 per cent in government and government approved securities, in addition, 40 per cent of bank credit were required to be provided as loans to priority sectors at somewhat commercial rates (Vitas and Cho,1995).

Financial sector reforms that revive or establish the role of commercial banks in long-term finance are essential for increasing the share of domestic sources in infrastructure finance. Commercial banks can play an important role in screening and monitoring the behaviour of projects. An effective and deep commercial banking sector is also a pre-requisite for the development of the securities and eventually derivatives market. Bonds, for example, are not easily absorbed by individual investors. Most bonds can be absorbed by financial institution such as banks. Banks can also play a major role in executing repository transaction where regulatory frameworks permit the offering and trading of such instruments.

In order to promote and strengthen infrastructure financing in India, the Reserve Bank of India has liberalised term loans by banks for this purpose. Earlier, there were prudential ceilings on the overall exposure that a bank could take on a single infrastructure project. Each bank is now free to sanction term loans to all projects within the overall ceiling of the prudential exposure norms prescribed by RBI, *i.e.*, 25 per cent of the capital funds in the case of an individual borrower and 50 per cent in the case of a borrower group. The group exposure norm of 50 per cent is allowed to be exceeded upto 10 per cent provided the additional exposure is for the purpose of financing infrastructure projects. A concessional risk weight of 50 per cent applies to project financing in infrastructure, according to the February 2003 guidelines of the RBI. Further banks have been given freedom to decide the period of term loans keeping in view the maturity profile of their liabilities.

Forms of Infrastructure Financing by Commercial Banks

In April 1999 and subsequently in February 2003, the Reserve Bank of India has issued operational guidelines for financing of infrastructure projects. Banks have been permitted to sanction term loans to technically feasible, financially viable and bankable projects undertaken by both the public and the private sector undertakings. Six broad modes of financing has been identified for this purpose:

1) financing through funds raised by subordinated debt,
2) entering into take-out financing
3) avail of liquidity support from IDFC
4) direct financing through rupee term loans, deferred payment guarantees
5) Inter-institutional Guarantees and
6) investments in infrastructure bonds issued by project promoters and financial institutions.

Accordingly, banks have started to inject funds in the infrastructure sector in the form of project finance. The major banks have, in a bid to diversify their portfolio, have opened up project finance divisions to take care of infrastructure projects.

Subordinated Debt

In the case of subordinated debt, the bank raises Tier II capital. In the event of default, subordinated debt will be treated as share capital, increasing the default risk. Consequently, a higher interest rate is charged on this type of debt. Given the higher risk and default probability in long term infrastructure project financing, the higher interest margin may induce banks to such financing.

Take Out Financing

Financial innovations, like the Take out Financing deals provide opportunities to the commercial banks to create long term assets from

short term liabilities. The participation of a long term player is crucial in this deal. After a specified period of time, the long term asset is transferred to the books of this long term financial institution. Take out financing can be done through number of routes:

a) where the risk is borne by the primary lender and the liquidity support is given by the long term financial institutions,

b) where the risk is fully taken over by the term lending institutions and

c) a blend of the both, whose structure has a number of possibilities.

The takeout structure is defined by a main document, the takeout financing agreement, which would be a tripartite agreement between the project company, bank and the term lending institutions.

In India, take out financing is in its nascent stage. In September 1998, The Infrastructure Development Finance Company Ltd. (IDFC) entered into a Rs. 400 crore take-out financing agreements with the State Bank of India. The IDFC provided liquidity support to SBI to the extent of Rs. 400 crore initially, which will go up to Rs. 5000 crores over the next five years. the structure will be applied to three projects- Bharati Telnet, Narmada bridge in Gujarat and Coimbatore bypass in Tamilnadu. In these projects, the debt fund was to be provided by SBI for 5 years, at the end of which SBI had the option to continue or call back the principal. At that point IDFC was take out SBI for the principal amount of the loan. the project companies, therefore would be able to get funds for a longer duration. Both IDFC and SBI would participate in the credit risk for the principal and the interest respectively. The takeout financing fee would be around 0.25 to0.5 of the liquidity support given.

Liquidity support from IDFC

As an alternative to take-out financing structure, IDFC and SBI have

devised a product, providing liquidity support to banks. Under the scheme, IDFC would commit, at the point of sanction, to refinance the entire outstanding loan (including principal and unrecovered interest) or part of the loan, to the bank after an agreed period, say, five years. The bank would repay the amount to IDFC with interest as per the terms agreed upon. Since IDFC would be taking a credit risk on the bank, the interest rate to be charged by it on the amount refinanced would depend on the IDFC's risk perception of the bank. The refinance support from IDFC would particularly benefit the banks which have the requisite appraisal skills and the initial liquidity to fund the project.

Inter-institutional Guarantees

In terms of the extant RBI instructions, banks are not allowed to issue guarantees favouring other banks/lending institutions for the loans extended by the latter, as the primary lender is expected to assume the credit risk and not pass on the same by securing itself with a guarantee *i.e.* separation of credit risk and funding is not allowed. Keeping in view the special features of lending to infrastructure projects, banks are permitted to issue guarantees favouring other lending institutions in respect of infrastructure projects, provided the bank issuing the guarantee takes a funded share in the project at least to the extent of 5 per cent of the project cost and undertakes normal credit appraisal, monitoring and follow up of the project.

Financing promoter's equity

The Reserve Bank has stipulated(Circular DBOD. Dir. BC. 90/ 13.07.05/ 98 dated 28 August 1998), that the promoter's contribution towards the equity capital of a company should come from their own resources and the bank should not normally grant advances to take up shares of other companies. However, in view of the importance attached

to infrastructure sector, it has been decided that, under certain circumstances, an exception may be made to this policy for financing the acquisition of promoter's shares in an existing company which is engaged in implementing or operating an infrastructure project in India. The conditions,are as follows:

i. The bank finance would be only for acquisition of shares of existing companies providing infrastructure facilities.

ii. The companies to which loans are extended should, inter alia, have a satisfactory net worth.

iii. The company financed and the promoters/ directors of such companies should not be defaulters to banks/ FIs.

iv. In order to ensure that the borrower has a substantial stake in the infrastructure company, bank finance should be restricted to 50% of the finance required for acquiring the promoter's stake in the company being acquired.

v. Finance extended should be against the security of the assets of the borrowing company or the assets of the company acquired and not against the shares of that company or the company being acquired. The shares of borrower company / company being acquired may be accepted as additional security and not as primary security. The security charged to the banks should be marketable.

vi. Banks should ensure maintenance of stipulated margin at all times.

vii. The tenor of the bank loans may not be longer than seven years. However, the Boards of banks can make an exception in specific cases, where necessary, for financial viability of the project.

viii. The banks financing acquisition of equity shares by promoters should be within the regulatory ceiling of 5 per cent on capital market exposure

in relation to its total outstanding advances (including commercial paper) as on March 31 of the previous year.

Transport Financing by Non- Banking Financial Companies (NBFCs)- A Case of Commercial Vehicle Financing

At present, major sources of finance for the trucking sector are the non-banking financial companies and the Scheduled commercial banks. According to a Sub-Committee Report (Sriraman, 1998), the share of different agencies in the truck financing for the Northern Region of India were as follows:

NBFC's	-	64 per cent
Banks	-	23 per cent
Self	-	8 per cent
Others	-	5 per cent

A similar profile emerges in the case of the Southern Region as revealed in another study (ITCOT,1996). Further, extensive discussions with a number of truck operators and agencies [in the course of the work for the Sub-Committee (Sriraman,1998)] confirmed that the non-banking financial sector has emerged as the dominant source of finance for the trucking industry (recall that the share of transport sector credit of commercial bank has been falling since the mid-eighties. This has occurred despite high lending rates by NBFC's. However as a consequence of certain policy measures/regulators undertaken since the mid-nineties, there has been a drastic reduction in the funds available with NBFC's {including those from commercial banks}). Thus, availability of finance as well as the high cost of funds have been major emerging problems in regard to truck financing. When the cost of borrowing is high, borrowers/operators resort to practices of cutting corners to ensure a reasonable return. For example, truckers resort to extensive overloading which has its ill effects. When

availability of finance is constrained, there is a tendency to borrow from high-cost private lenders.

Accordingly the Sub-Committee (Sriraman, 1998) adopted the view that the banking sector needs to strengthen its support of those NBFCs which have an (inherently)strong presence in the business of financing under the priority sector lending scheme of commercial banks. Quoting the Working Group on Financial companies (RBI, 1992) which had emphasised the need to encourage NBFCs which are, by nature, innovative, to evolve new types of financial services and products to meet the emerging needs of the society, the Sub-Committee recommended this new product which would be based on the strength of adequate funding available with the banking system and the inherent efficient credit delivery mechanism of NBFCs especially in regard to truck financing. We support this stand. In other words, banks could play the role of "Whole-sale financing/banking" while the NBFCs could play the role of "retail financing /banking". The reasoning is many-sided. Some of the major players in the NBFC segment have, over the years, developed a special experience in evaluating credit worthiness potential borrowers (especially in the trucking sector) which is followed by an effective delivery system which is further backed up by an effective recovery management system which operates on the basis of vast retail network. This is because many of them have focussed exclusively on commercial vehicle operators. From the demand side, it does appear to be true to say that operators prefer these agencies to banks for a variety of reasons ranging from attention to banks for a variety of reasons ranging from attention to individual needs such as design of customer-oriented funding options to flexibility in recovery such as restructuring of payments in the case of genuine financial difficulties. (See Box 4.1)

Though the Reserve Bank of India issued a notification in late 1998 which enabled classifying bank credit to NBFCs for on-lending to small

Box 4.1 Role of NBFC'S in Commercial Vehicle Financing

The NBFC sector has ben playing an important role in development of the Road Transport sector. The Banks have not been in a position to deploy more than 3 to 4 per cent of their funds to this sector. Therefore, disbursals to SRTOs (small road transport operators) have not been significant enough to support the Road Transport operators. Bank funding as a percentage of total funding in the commercial vehicle market has therefore not exceeded 25 to 30 per cent in the past. Recoveries have also not matched expectations.

Funding SRTOs requires specialised customer evaluation skills and infrastructure that is different from the requirements of typical bank borrowers. The operators are unable to provide necessary documentation and securities required fro processing of the disbursal. The purpose of special schemes for SRTOs has been defeated by this inability to conduct business in this segment. Further, recovery management in this also requires special skills and infrastructure.

The NBFC sector has grown to fill this void. It has developed necessary focus and the infrastructure to operate successfully in this sector. The high share of funding to this sector reflects this fact. The NBFC sector therefore is in an excellent position to develop this role in the Industry.

1) Existence of recovery management systems and infrastructure to ensure high collection efficiency.
2) Retail network geared to handle the funding requirements of commercial vehicle operators due to exclusive focus on this segment.
3) Flexibility to design customized funding options to suit the needs of individual operators.
4) NBFC's jointly participate with manufacturers to provide higher levels of customer service. They are in a position to offer vehicle service packages in addition to funding. This is done jointly with manufactures and dealers.
5) Capability to induct new participants into commercial vehicle operating business by effective utilization of existing database infrastructure.
6) Better capability to manage risk due to focussed infrastructure and activity.

The implications of bank support to NBFCs are as under :

- It will provide substantial relief to transport financiers (NBFCs) which have been facing a severe funds crunch following restrictions on mobilisation of public deposits and as a consequence of various policy measures undertaken by the RBI commercial banks in recent years. Shah (1997) provides another angle of reasoning to the reduced availability of funds. Banks (and not so much financial institutions) look upon NBFCs as their competitors in terms of both deposit mobilisation and credit expansion. This is one of the main reasons why almost every bank would like to do themselves what NBFCs have been doing. Further, it is for the same reason that there is a kind of bias against NBFCs in terms of availability of credit and cost of credit.
- The classification of such funds under the priority-lending scheme will enable banks to fulfil their targets under the scheme, which would also be based on a satisfactory recovery mechanism.
- Availability of bank finances at relatively reduced rates of interest would ultimately be reflected in reduced operating costs to the operators.

transport operators as priority sector lending(a step in the right direction), it is understood from banking circles(in the course of our discussions) that this scheme has not really taken off. Accordingly, immediate and effective implementation of this expanded funding scheme for truck operators is strongly recommended.

Another aspect that is related to trucking sector finance is the viability of small road transport operators (SRTOs) who dominate the sector in an overwhelming way. It is widely felt (among policies makers, banking circles and operators themselves) that it is essential that trucking operations should be made viable in order that the interests of not only the operators but also other stakeholders like the users, financing agencies are taken care of. Previous studies (NCAER,1979,CIRT,1993) and the work of several Committees have pointed out that due to intense competition, profitability is rather low in the case of single-owner operators. Absence of economies

of scale and of advantages arising from bulk purchase of spares lead to several inefficiencies. Even from the point of view of regulation, the presence of a large number of single-owner operators gives rise to several problems. Under such a situation, it is necessary that concept of consolidation of operators by way of formation of associations/cooperatives need to be positively encouraged. Such a trend is already visible in Punjab, U.P, Harayana and Tamilnadu. However, if integration of the industry in some form is considered important towards achieving greater efficiency, there ought to be a major shift in the small- scale approach of the financing agencies especially commercial banks. In other words the limit of minimum number of vehicles to qualify for the Small Roads Transport Operators (SRTOs) financing scheme which is currently at 10, needs to be revised and if necessary raised. Financing agencies should (over a period of time) insist on viability of operations either as a firm or as an association/ cooperative with a viable fleet and requisite infrastructure as a pre-requisite for lending.

The Role of the Capital Market

Capital markets provide debt and equity finance. By making long-term investment liquid, capital markets attempt to mediate successfully between the conflicting maturity preferences of lenders and borrowers. Since mobilisation of resources for infrastructure projects outside the framework of budgetary allocation is an emerging necessity (more so in developing countries), all infrastructure services are increasingly looking to the capital market (largely domestic & to some extent international). Given the long term profile of infrastructure projects, the objective is: to enhance mobilisation of long-term local currency debt which remains a major challenge for financing infrastructure. We begin with the successful experience of tapping the domestic market in other countries and then examine the situation in India.

Of the various instruments that have been used to finance infrastructure projects, long term fixed- rate bonds have been found to be most suitable. The nature of these projects are such that they tend to have stable earning profiles over extended periods of time, thereby providing a degree of predictability about future earnings. But such a profile does not follow sharp swings which may be required, for example, when there are sudden shifts in interest rates, since tariff levels are regulated. These features are compatible with the financing profile of fixed rate bonds.

Fixed- rate bond price is determined by interest rate movements in the currency of the bonds denomination. Thus, a stable macro economic environment is crucial to proper functioning of a long-term bond market. Inflation is a major worry since it erodes the purchasing power of the principal and also affects interest rates. Thus investments in long term fixed rate bonds such as those that can be used to finance infrastructure projects depend on the performance of a specific project as well as on a host of macro economic trends. Floating rate instruments protect investors against interest rate and inflationary movements. But these need to be supported with derivatives such as interest rate swaps in order to offer a predictable cost profile for borrowers. Long term swap markets are naturally as rare as long-term bond markets in developing countries.

Given these criteria, it is only natural to expect that domestic bond markets are either absent or at an enfant stage in Latin America. But given the economic stability that has been achieved since the nineties prospects for development of long-term bond markets have increased. This is partly due to the reformed pension and social security system that is emerging as a major source of demand for long-term debt instruments. (Vittas, 1995)

In East Asian economies, government bonds still dominate but the move towards privatisation of infrastructure services and new investment

by the private sector has not only reduced the demand for budgetary outlays that might generate deficits, but has also facilitated and accelerated the pace of corporate issues and the development of bond markets. In Malaysia, the issue of debt securities increased since the early 1990s as a result of huge projects undertaken by the private sector. The North-South expressway which was financed entirely by local financing was able to raise $400 million by using convertible bonds. The purchase of $550 million of fixed rate bonds as part of a power project by the Employees Provident Fund was an example of a bond market satisfying the financing needs of huge infrastructural projects while at the same time providing an investment outlet for institutional investors looking for alternatives to issues of govt-securities (which were becoming much less frequent)

Till 1990, almost 90 per cent of the bonds outstanding in Thailand were govt. issues. This was the result of certain restrictions on corporations. But by 1992 a new law allowed all public & private companies to issue bonds. As a result, the size and competition of the Thai bond market changed with share of corporate bonds growing from 3 per cent to more than 25 per cent by 1995. This rapid growth enabled greater local financing of infrastructure privatisation and investments.

The tax regime has been a major constraint to the development of bond market in the Phillipines where a stamp tax made borrowing through bond more expensive than loans from commercial banks. The development of a secondary market for debt was inhibited because every sale of a debt instrument was subject to tax. With the replacement of this tax by a value added tax, the distortion has been removed.

According to Ferreira and Khatami (1996), public enterprises, especially in infrastructure and utilities, have been central to the development of bond markets. Given that state enterprises have been more

efficient than their counterparts in other developing countries, these entities have participated in capital markets without requiring preferential treatment while at the same time, also helping to set benchmark for long term securities.

International Experience in Transport Financing through Capital Markets: Lessons for India

The international experience of successfully tapping the domestic capital markets to finance infrastructure projects provides certain interesting insights.

Firstly, the presence of Government to facilitate infrastructure financing in the financial market was crucial. In developed countries like the USA, UK or Canada, the bonds issues were backed by Government guarantees which enabled the companies to obtain a higher credit rating and investor acceptability. Thus, there is abundant evidence of the State in the mitigation of risk through the issue of general obligation guarantees or revenue guarantees. While the former guarantees repayment as well as debt servicing, in the latter, the repayment is tied to a given revenue stream. Such guarantees instilled greater confidence among investors and expanded the market. In India, interestingly, the guarantees route to fund infrastructure projects has been used extensively, which has often raised the issue of fiscal stability of the state governments. In order to meet the growing requirements of financing infrastructure and compensate for the decreasing capital expenditure arising on account of the inability to pierce borrowing ceilings imposed by the Centre, States have been resorting to issuing larger and larger amount of guarantees on behalf of pubic sector entities undertaking infrastructure investment and other developmental activities. No doubt these guarantees represent obligations that may or may not devolve on the government. occur and consequent to the invoking

of the guarantee. Nevertheless, in many cases, guarantees especially those issued after 1993-94 could represent direct liability on the State budget where there are assured payment arrangements and could represent a direct liability on the cash flow of the State. Hence the rising guarantees and assured payment arrangements at the State level, pose issues of sustainability of State finances.

Some countries like UK used treasury bond issues to develop earmarked/dedicated funds for infrastructure for onlending to agencies involved in infrastructure projects. Such earmarking of funds can be an important source of infrastructure financing.

This apart, the direct measures to strengthen the domestic securities market through a host of measures (including, inter-alia, establishment of a legal framework for securities issues and trading, supervision of this process, introducing appropriate regulation for support facilities including underwriters, brokers, dealers and others, introducing adequate disclosure norms for shareholders, introducing regular benchmark issues, establishment of rating agencies, providing fiscal incentives and relaxation of investment regulations of investors, introducing sound payment systems for securities trading and by liberalising the interest rates to allow greater freedom to market participants and promotion of secondary market in debt securities) were also crucial for the debt route of infrastructure finance. The creation of enabling environment has gone a long way in facilitating the growth of infrastructure finance.

Policy makers in Chile, for instance, encouraged the development of long-term investible resources through the pension fund system with the implementation of a revolutionary reform in the social security system in May 1981. Privatisation of pension funds in Chile was responsible for rapid accumulation of long-term funds and led to the emergence of a strong

domestic market. Along side, there was also rapid growth in the holdings of life insurance and pension funds. In Malaysia, a high savings rate, coupled with the creation of Employees Provident Fund in 1991 led to growth in long-term investible resources. Liberalised investment restrictions of EPF (only 50 per cent to be invested in Government securities as against 75-85 per cent in its Indian counterparts), this provided enough resources for infrastructure.

Also, financial and macroeconomic stability is crucial for the development of domestic financial markets. Stable inflationary expectations, reduced volatility of interest rates and increased financial market efficiency helps the growth of debt markets, as the country experience suggests.. This apart, the state can provide incentives to projects by offering performance based grants or contingent lines of credit. In view of the uncertainties regarding return from investment projects, the government may mitigate the risks through contingent credit support which serves to tap private funding that would otherwise not be available.

State can also partially absorb the debt instruments of the projects. Public sector support vehicles exist in many emerging economies and the discussion paper deals with Pakistan Private Sector Energy Development Fund (PSEDF) and Jamaica Private Sector Energy Fund (JPSEF). The report also discusses the benefits of pooling and securitisation structures by the state through Infrastructural Development Fund (IDF). The IDF can raise the investor base, reduce the overall borrowing cost, open up new investor markets and provide stable access to capital. The IDF can identify a pool of projects for provision of finance.

Another innovative pooling method suggested is a Quasi-Blind Pool where government developers, contractors, local investors will pool their resources for a diversified corporate portfolio. Some examples of Quasi-

Blind Pools are Morgan Stanley LIPTEC Fund and California Energy Company.

Chile, Malaysia, Argentina and Thailand all went for disinvestment of public utilities. The state found this a convenient way to generate financial resources needed to sustain the growth of the economy. The impact of such divestiture programme was enormous as the report tells us, the share of infrastructure stocks rose rapidly as a percentage of total stock market capitalisation.

Two features that stand out in regard to the development of debt market in recent years in developing countries referred to above and otherwise are:

1) Availability of contractual saving for infrastructure financing

2) divestment of public enterprises and role of existing enterprises in raising long-term debt.

Pension funds have emerged as a class of financial intermediaries in many developing countries. They sell employees and self-employed people secondary securities in the form of contractual agreements that provide for benefit payments upon the participants retirement. Because their benefits are to be paid in the future, the secondary securities (that is liability of pension funds) are effectively long term and the primary securities (their assets) are long-term. Pension funds are a part of the contractual saving sector. By contractual saving is meant any transaction in which agents enter into an arrangement with institutions, to trade current consumption for future income. Contractual savings institutions (life insurance company, occupational pension schemes, provident funds *etc.*) are often referred to as institutional investors because of their role as investors in capital market. In advanced countries, these institutions are major investors in the securities market especially in long term debt

instruments. A report commissioned by the US Congress on financing future infrastructure investments in the U.S cited further mobilisation of resources of institutional investors as a priority (U.S. Congress, 1993). The report recognised institutional investors not only as potential sources of capital but also as players in infrastructure finance that can bring the discipline of investment risk and return evaluations to infrastructure decision- making. Moreover, the report pointed out that new instruments would be developed to cater to the needs of these institutions. According to the report, the development of securitisation and financial derivatives in the U.S. has been attributed, at least in part, due to the investment and risk management needs of institutional investors.

Emerging market economies have put in place policies to encourage contractual savings institutions. In 1994 domestic institutional investors in Asian countries, including mutual funds, held about $109 billion(World Bank, 1995). Malaysia and Singapore accounted for 70 per cent of this account, thereby suggesting the enormous potential for saving and investment through these institutions in other countries of the region.

In many developing countries, however, the preemptive use of these funds by Govts. (through requirements to invest in govt. securities)has been a major impediment to the development of contractual savings as a source of long-term corporate finance. Govt. borrowing from contractual savings institutions deprives markets of long-term funds, limiting equity investment, stock market growth and credit to private sector.

One factor contributing to the development of domestic capital markets for infrastructure has been the programme of disinvestment of publicly owned enterprises (more specifically, infrastructure companies). In Chile, disinvestment of the state electricity utilities occurred gradually through the eighties. By 1990, individuals and pension funds held around 60 per

cent of the stake in the principal state power utility. In Malaysia, the govt., decided to allow private participation in infrastructure in the 1980s and launched a disinvestment programme. "Today infrastructure stock as a percentage of total share market capitalisation is approximately 30 per cent" (Kumar A.,*et.al.*,1997). The Korea Electric Power Corporation periodically issues bonds to raise revenue to expand power-generating facilities. Similarly highway construction bonds are issued traded like corporate bonds. In the case of Thailand, the supply of debt instruments has increased more notably in the state enterprise bonds. In Argentina the infrastructure disinvestment program during the early nineties, which affected the power, water, gas and rail sectors has relieved heavily in strategic investors, employee equity sales and international issues.

Thus in addition to the development of equity markets, privatisation of public enterprises can provide considerable contribution to the development of the equity market. These entities can rely on their stable and longer –term revenue profile in issuing debt securities, especially long-term debt instruments. Such debt instruments help set important benchmarks for the longer end of the debt market and provide attractive opportunities for contractual saving institutions.

Indian Perspective

From the above strategic perspective, let us now look at the Indian situation. In India, the investment stipulations for insurance and Pension/ Provident Funds have been progressively liberalized. In the Insurance sector, prior to 1950, life insurance companies were required to hold 55 per cent of their assets in government and other approved securities. Investment of the remaining 45 per cent was at the discretion of the user. In the Insurance act of 1950, life insurance companies were required to invest 25 per cent of their assets in government securities, 25 per cent in government or other approved securities and 35 per cent of 'approved

investments' which included, apart from government and approved securities, shares and debentures of public limited companies satisfying certain criteria. Life insurers could invest not exceeding 15 per cent of their assets otherwise than in 'approved investment'. In 1958, in exercise of powers under section 43(2) of the LIC Act of 1956, Section 27A of Insurance Act was made applicable to LIC with minor modification.In 1975, the application of Section 27A of LIC was further modified. Invesmtent requirements for LIC each year : 75 per cent of the accretion to controlled fund to –

A. Central Government Marketable Securities	Not less than 20 per cent
B. A + Loans to NHB	Not less than 25 per cent
C. State Government Securities + B	Not less than 50 per cent
D. Socially Oriented Sector including public Sector, cooperative sector, house building by Policy holders, OYH Schemes + C	Not less than 75 per cent

Rest 25 per cent may be invested in private corporate sector, loans to policy holders, construction and acquisition of immovable property.

The Malhotra Committee in 1994 recommended the following pattern of deployment of life funds

A. Central Government Securities	Not less than 20 per cent
B. State Government Securities & Government Guaranteed Securities inclusive of (A) above	Not less than 40 per cent
C. In socially oriented sectors as may be Prescribed by government from time to time inclusive of (B) above	Not less than 50 per cent

Similarly, the deployment of provident fund accruals as shown below are also based on Government stipulations. The investment pattern of these funds are based on the following rules and regulations :

Pension/Provident Fund	Rules of Investment
1. EPF	Contributions are invested according to the pattern prescribed by the central government.
2. Coal Mines PF scheme	As above
3. PPF	Not available
4. Gratuity	Investment of funds administered by a trust. Investment of trust money has to be in accordance with Rule 67 of Income Tax Rules, 1962.
5. LIC Group Superannuation Fund	Central Government Securities - 15 per cent State Government Securities - 15 per cent Special Deposits - 20 per cent PSU Bonds - 50 per cent
6. Funds pertaining to Annuities *i.e.* after vesting of pension	PSU Bonds - 50 per cent Private Sector Bonds - 50 per cent
7. Malhotra Committee recommendation 1994	(a) Central Government Securities - not less than 20 per cent (b) State Government Securities including (a) - not less than 35 per cent (c) Approved investment including (b) - not less than 75 per cent

In India, the contractual savings form one third of financial saving of households. For long, these funds were invested mostly in approved government securities and thus were a source of finance for the Budget. In the second half of the 1990s, there has taken place a discernable shift in strategy, with the Government allowing greater investment of such contractual savings towards infrastructure activities. This is expected to promote infrastructure investment.

While liberalisation of investment norms represents the sources side from the flow of funds perspective, the demand for such funds were created in many countries through a well-planned programme of divestiture of public infrastructure utilities with a view to promote private participation in infrastructure, to reduce budgetary and management obligations and to promote competition. However, there has been very little disinvestment in the transport sector. Since the 1990s, majority of the Public Sector Enterprises disinvestments have taken place in the Power, Telecom,Oil, Steel,and other infrastructure sectors.

Development of Debt Market in India and Infrastructure Financing

The developed financial markets are characterized by the existence of a sound financial and legal infrastructure that is necessary for the

Table 4.5: Comparative Position of the Indian Corporate Debt Market (2002)

(US$ billion)

	India	Malaysia	Hong Kong	Singapore	USA	Korea	China
1	2	3	4	5	6	7	8
1. GDP	510	95	164	91	10,445	462	1,238
2. Government Bonds	143	47	11	31	6,685	225	201
3. Corporate Bonds	19	36	34	27	9,588	156	212
4. Bank Loans to Corporates	156	135	678	210	6,976	609	2,073
5. Equity	170	123	463	102	11,010	216	463
6. % of Corporate Bonds to GDP	4	38	21	30	92	34	17
7. % of Corporate Bonds to Total Bonds	12	43	76	47	59	41	51
8. % of Corporate Bonds to Bank Loans	12	27	5	13	137	26	10
9. % of Corporate Bonds to Equity	11	29	7	26	87	72	46

Source: BIS, Deutsche Bank, World Bank, World Federation of Stock Markets.

development of corporate bond market, supported by a well-functioning regulatory system. The USA is, by far, the most suitable example where the corporate bond market is deep, efficient and liquid. The bond markets in UK and Euro areas are also reasonably developed. The markets for debt securities in Western European countries and Japan are much smaller than that of the U.S., not only in absolute terms but also as a percentage of GDP. Unlike in the developed financial systems, the corporate bond market has a very short history of development in the emerging market economies. A comparative position of the corporate debt market in developing countries and United States is presented in Table 4.1.

Prior to the process of economic reforms, the debt market, particularly the Government securities market, was passive. Market participants were the captive investors investing in the Government securities market for their statutory requirements. Passive debt management policy alongwith automatic monetisation of the fiscal deficit of the central government prevented the growth of a vibrant debt market. With the phasing out of the ad-hoc treasury bills, the stage was set for the development of both government and non-government segments of the debt market.

A number of policy initiatives were taken during the 1990s to activate the corporate debt market in India. The interest rate ceiling on corporate debentures was abolished in 1991 paving the way for market-based pricing of corporate debt issues. In order to improve the quality of debt issues, rating was made mandatory for all publicly issued debt instruments, irrespective of their maturity. The role of trustees in case of bond and debenture issues was strengthened over the years. All privately placed debt issues are required to be listed on the stock exchanges and follow the disclosure requirements.

The corporate debt market in India has been in existence since independence. Public limited companies have been raising capital by issuing

Table 4.6: Resource Mobilization by the Corporate Sector

(Amount in Rs. crore)

Year	Public Equity Issue	Debt Issues			Total Resource Mobilization (2+5)	Share of Private Placements in Debt Issues (4/5*100)	Share of Debt in Total Resource Mobilization (5/6*100)
		Public Issues	Private Placements	Total (3+4)			
1	2	3	4	5	6	7	8
1995-96	14493	5970	13361	19331	33824	69.12	57.15
1996-97	7928	7483	15066	22549	30478	66.81	73.99
1997-98	1701	2957	30099	33056	34756	91.05	95.11
1998-99	2622	6743	49679	56422	59044	88.05	95.56
1999-00	3230	4475	61259	65734	68964	93.19	95.32
2000-01	3111	3251	67836	71087	74198	95.43	95.81
2001-02	1025	6087	64876	70963	71988	91.42	98.58
2002-03	1233	3634	66948	70582	71815	94.85	98.28
2003-04	3427	4424	63901	68325	71752	93.53	95.22
2004-05	18024	3868	85102	88970	106994	95.65	83.15

debt securities. From 1985-86, state owned public sector undertakings (PSUs) began issuing bonds. However, in the absence of a well-functioning secondary market, such debt instruments remained illiquid. In recent years, due to falling interest rates and adequate availability of funds, corporate debt issuance has shown a noticeable rise, especially through private placements (Table 4.2).

Corporates continue to prefer the private placement route for debt issues than floating public issues. The resource mobilization through private placement picked up from Rs.13,361 crore in 1995-96 to Rs.85,102 crore in 2004-05. The dominance of private placement has been attributed to several factors, *viz.*, ease of issuance, cost efficiency, primarily institutional demand, *etc.* About 90 per cent of the corporate debt outstanding has been privately placed. In the private placement market, 57 per cent of the issuances are by financial institutions and banks, both in the public and private sector. Public sector companies account for 58 per cent of privately placed issues. About 26 per cent represents issues by public sector undertakings and central/state government guaranteed bonds.

The secondary market activity in the debt-segment, in general, remains subdued both at BSE and NSE, due to lack of sufficient number of securities and lack of interest by retail investors. In order to improve the secondary market activity in this segment, the Union Budget for 1999-2000 abolished stamp duty on transfer of dematerialized debt instruments. This enabled a pick up in the turnover in corporate debt at NSE from Rs.5,816 crore in 2002-03 to Rs.17,521 crore in 2004-05. The share of turnover in corporate debt securities in total turnover at WDM segment of NSE, however, remains small at around 2 per cent.

Policy initiatives to promote the Corporate debt market has crucial linkages with the financing of infrastructure sector.

First, a well developed debt market with a diversified investor base helps the commercial banks to manage their asset-liability mismatch for financing infrastructure through the use of derivative products. For instance, the limitations on exposure norms on commercial bank funding of infrastructure projects can be managed with the help of credit derivatives. Likewise, a number of products can exist in a well developed debt market.

Second, the development of the debt market will facilitate the process of asset securitisation in India. The Asset Securitisation Bill is on the anvil, which will encourage the banks and financial institutions to securities receivables and offer investors with liquidity at various stages of the infrastructure project.

Third, from the risk management perspective, a well developed debt market will facilitate the unbundling of credit risk from the liquidity and interest rate risk. As the secondary market in debt develops, debt instruments can be traded freely mitigating liquidity risks of infrastructure finance.

Fourth, the development of debt market leads to setting of benchmarks in the financial markets and helps in the price discovery process. This

ensures that finances are provided for infrastructure projects at market related rates.

At present, India is fairly well placed as far as pre-requisites for the development of the corporate bond market are concerned. There is a developed government securities market that provides a reasonably dependable yield curve. The major stock exchanges have trading platforms for the transactions in debt securities. Infrastructure for clearing and settlement also exists. The Clearing Corporation of India Limited (CCIL) has been successfully settling trades in government securities, foreign exchange and money market instruments. The existing depository system has been working well. The settlement system has improved significantly during the recent years. The settlement in government securities has moved over to delivery *versus* payment (DVP III)[1] since March 29, 2004. The Real Time Gross Settlement (RTGS) is expanding its reach rapidly. RTGS has become operational for the commercial bank transactions in certain cities. The presence of multiple rating agencies provides an efficient rating mechanism in India.

With improvements in the legal and regulatory frameworks, and accounting and auditing standards for issuers, the Indian corporate debt market has the potential to become an important source of infrastructure financing in future.

A Sum Up

The commercial banking sector's involvement in transport financing could be broadly classified into two groups: (a) Advances to transport operators including those under priority sector lending scheme, and (b) Project financing.Of the outstanding credit to the transport sector, a little

[1] Under DVP III mode of settlement, both securities leg and funds leg of transactions are settled on a net basis.

more than 70 per cent has been provided under the priority sector schemes. An important factor contributing to the reduction in bank finance to the sector was the increasing number of default cases. Main reasons for the poor recovery included: a) inability of small operators to repay loans; b) willful default due to political influence; c) legal complications; and d) National system of permits which enables a truck operator to operate in number of states. Further, poor recovery varied from State to State. While repayment was found to be satisfactory in States like Rajasthan and Tamil Nadu, where there is an efficient back-up government machinery, in the case of States like Bihar and U.P., the recovery performance was poor. The study observes that the flow of funds from the banks would improve considerably if the recovery mechanism could be made more effective.

Long-term commitments (either by way of loans or equity contributions) to infrastructure projects by Banks would create a serious maturity mismatch between the assets and liabilities. This mismatch could be even more precarious in the absence of efficient and liquid money markets that would otherwise provide banks with some tools to manage their liquidity and interest rate risks. In April 1999, banks were permitted to sanction term loans to technically feasible, financially viable and bankable projects through four broad modes of financing: (i) financing through funds raised by subordinated debt (Tier II); (ii) entering into take-out financing; (iii) direct financing through rupee term loans, deferred payment guarantees; and (iv) investments in infrastructure bonds issued by project promoters and financial institutions. Take-out Financing mechanism, though in its nascent stage in India, provides opportunities to the commercial banks to create long term assets from short term liabilities. The participation of a long-term player is crucial in this mechanism. After a specified period of time, the long-term asset is transferred to the books of the long-term financial institution.

The commercial banking system is very rigid its approach in respect of financing transport operators which often resulted in considerable delays in processing loan applications. The financing of transport operators through NBFCs is an emerging route. In view of the large numbers of individual borrowers, management efficiency considerations suggest that creditworthy NBFCs should act as intermediaries in the entire process. In other words, banks could play the role of "Wholesale financing/banking" while the NBFCs could play the role of "retail financing /banking". Some of the major players in the NBFC segment have, over the years, developed a special expertise in evaluating credit worthiness of potential borrowers (especially in truck financing) which is supported by an effective delivery system, in turn, backed up by an effective recovery management system which operates on the basis of a large retail network. This has occurred because many of NBFCs have focussed exclusively on commercial vehicle operators. From the demand side, it appears that operators prefer NBFCs to banks for a variety of reasons ranging from the attention they get for individual needs such as design of customer-oriented funding options to flexibility in recovery such as restructuring of payments in the case of genuine financial difficulties.

At the same time, there is a need to increase bank support to NBFCs in the near future, mainly because:

- It will provide substantial relief to transport financiers (NBFCs) which have been facing a severe resource crunch following restrictions on the mobilisation of public deposits. Banks look upon NBFCs as their competitors in terms of both deposit mobilisation and credit expansion.
- The classification of bank support to NBFCs under priority sector lending will enable banks to fulfill their targets under the scheme, which would also be based on a satisfactory recovery mechanism.

All India financial institutions, including, IDBI, IFCI, ICICI, SIDBI and IIBI play a crucial role in providing infrastructure finance. They alongwith State Industrial Development Corporations provide long term finance to transport sector. Furthermore, the Infrastructure Development Finance Company (IDFC) was set up as a specialized intermediary to address the needs of the infrastructure sector and to facilitate the flow of private finance to commercially viable projects. The role of IDFC is crucial in transport financing in terms of (a) mitigating commercial and structural risk of transport projects and (b) designing innovative products. The Union Budget for 2002-03 entrusted additional responsibilities on the IDFC by creating an Infrastructure Equity Fund of Rs.1000 crore which would be structured and managed by IDFC and by requiring the company to play a coordinating role for debt financing by major financial institutions and banks for infrastructure projects larger than Rs.250 crore.

In East Asian economies, although government bonds continue to be the predominant mode for infrastructure financing, the move towards privatisation of infrastructure services and new investment by the private sector has not only reduced the need for government bond financing but has also facilitated and accelerated the pace of corporate issues and the development of corporate bond markets. Two features that stand out in regard to the development of the debt market in developing countries in recent years. (i) availability of contractual savings for infrastructure financing; and (ii) divestment of public enterprises and role of existing enterprises in mobilising long-term debt.

In India, since the Malhotra Committee recommendations, there has been progressive liberalization of investment norms of contractual savings instruments. This opens up supply of funds for transport sector, among other long term investment areas. The demand for such investible funds can come from (a) growth of private sector and (b) disinvestment of public

sector enterprises in the transport sector (through bond issues by such PSEs).

A well-developed debt market with a diversified investor base helps the commercial banks to manage their asset-liability mismatches. The development of bond markets facilitates the development of derivative products such as credit derivatives to hedge against credit risk. A deep liquid debt market ensures setting up benchmarks and helps the price discovery process. It also ensures the unbundling of credit risks, interest rate risk and liquidity risk. Major steps towards development of the debt market include: (i) developing a system of primary dealers in the government securities market; (ii) introduction of liquidity adjustment facility (LAF) to address temporary liquidity mismatches of financial institutions and also to provide interest rates segment to the market; and (iii) investment norms for contractual saving institutions were liberalized to promote a more proactive role of debt market towards infrastructure financing.

Chapter IV
Concluding Remarks and Policy Suggestions

The transport sector comprising the railways, roads, ports and civil aviation, has been one of the principal areas of State intervention in India. Given the transport sector's fundamental contribution to economic growth and social welfare, State intervention was perceived to be necessary, as in the case of many other infrastructure sectors, because of the market failure hypotheses, high risk perception emanating from long gestation periods, irregular revenue flows, higher average debt-equity ratio, and economies of scale as well as substantial sunk costs reflected in the high costs of entry and exit, in turn, leading to (natural) monopolistic tendencies/ practices. Public Sector ownership, management and financing of the transport sector in India, however, suffers from several forms of inefficiencies and has been found to be unresponsive to user demand. Further, services are usually priced below costs which impedes the generation of adequate internal surpluses, in turn, leading to excessive dependence on budgetary support. Moreover, in recent times, (i) contemporary cost curves do not justify the natural monopoly of State and (ii) technological developments have allowed unbundling and competition in many infrastructure services, once viewed as the natural monopoly of State.

Furthermore, the on-going structural reform process in India, initiated in the early nineties, has cast a new dimension to the overall framework for the financing of transport infrastructure and services. Some of the major elements of the reform process are to bring about an orderly correction of fiscal imbalances, develop and strengthen financial institutions and capital markets and (further) liberalise the economy with a view to encouraging private initiative and competition. In the transport sector, this has translated, *inter-alia*, into encouraging public sector entities to maximize internal resource generation in order to finance future expansion programs without having to depend (excessively) on budgetary support.

Given the tapering off of the conventional sources of funds to finance new investment as well as for the maintenance of the transport system, there is an imperative need to assess and access alternatives sources that are emerging in the context of the changing policy and operating environment.

In more general terms, much of the debate about funding mechanism for transport has centered on:

i. a limited but direct role for the State
ii. pricing policies for transport infrastructure and services
iii. the attraction and use of private capital
iv. Government intervention through regulation, financial incentives and a redefined role for public-private partnerships.

Policy Suggestions of the Study

(A) From the point of view of an analysis of the resource gap being a reflection of the inefficiency of service delivery from existing transport infrastructural facilities provided mostly by the public sector within an inadequate policy framework and the recognition that the public sector has a relevant, explicit but focussed role to play in transport infrastructure and service provision, the following observations are in order:

1. Pricing and cost recovery policies in the past have often not taken account of the fiscal effects and the cost of public funds. There have, thus, been major adverse effects of distorted pricing on resource allocation, operational and managerial standards of infrastructure services and the environment Thus, setting user charges to economically efficient levels should be an important element of an infrastructure financing strategy. This has to be true not only with respect to services provided by the railways and road transport (the major modes) but also in regard to roads in which case though user taxes do represent genuine user prices to a large extent, many governments have never seen it fit to set these taxes in accordance with accepted public utility pricing principles.

2. Besides an appropriate tariff strategy, efficiency enhancement strategies to result in better utilisation of existing infrastructure and services is required to be in place to set public sector organisations like the Indian Railways and State Road Transport Corporations on a long-term growth path.

3. A financing plan based on efficient prices that also provides for equitable coverage would almost always require subsidies to cover total costs. The traditional method of cross-subsidisation made possible by a mark-up over marginal costs must be abandoned in favour of explicit subsidies. In the case of the railways as well as public sector road transport services, there is a need for systematic pruning of those subsidised services that do not reach the target groups.

4. Moreover, the strategy should be one that alters direction of the use of the system of user charges which is currently devoted mostly to (at least supposed to) funding investment to a system that emphasises maintenance and also controls levels of service usage. This is especially required for road (highway) infrastructure which is most complex in terms of high network implications and accordingly implies a complex maintenance function which requires an effective maintenance strategy. A strategy of earmarking for the roads sector is recommended since the most attractive feature of such a scheme is to link the volume and quality of services (as reflected by operating costs) and the user charges (willingness to pay) with a view to ensure adequate allocation of resources to a low profile economic activity with particularly high rates of return. A basic pre-requisite would be an efficient Road administration under a Road Board which can pursue a genuine purchasing agency approach towards an efficient means of road provision and maintenance. By doing so, the Govt. would be promoting the longer-term process of institutional development.

The above observations, thus, point out the need for a thorough – going reform of policy relating to existing facilities.

(B) From the perspective of additional resource mobilisation to take care of the genuine resource gap and keeping in line with the growing belief in the past two decades or so that the private sector has an increasingly important role to play in the creation of wealth given that the incentive effects of private ownership are important, the following prescriptions are important:

1. Though it is widely recognised that the public sector should retain an important role in infrastructure finance and in the provision of infrastructure services, economic efficiency usually does not require a particular form of intervention. In particular, public ownership, operation and direct financing of infrastructure is often not necessary. Accordingly, in funding infrastructural deficits, it is desirable to draw on market-based financing as much as possible, keeping in view sustainable/prudential norms. These entities can rely on their stable and longer-term revenue profile in issuing debt securities, especially ling-term debt instruments. Such debt instruments helps set important benchmarks for the longer and of the debt market and provide attractive opportunities for contractual saving institutions. This objective may be met by devolving investment responsibilities to autonomous agencies, which are better positioned to gauge users' investment priorities.

2. The objective may also be met by turning select investment responsibilities to the private sector under public guidelines, support and regulation. In the sphere of urban transit, competition for the market (via franchising/ contracting) rather than competition in the market that needs to be encouraged since that framework appears to be the primary cause of increased efficiency among, for example, bus operators in areas where such deregulatory measures have been attempted.

3. As user charges become more relevant and sophisticated, it should be easy to promote public-private partnerships which could ultimately depend on user charges alone. To serve as prototypes, merger of revenues from, say, tolling with taxes should provide a secure revenue base which could open up access to new sources of non-conventional funding such as the capital market, external funding, etc. The experience of both developed and developing countries illustrates the requirement of a close relationship between the need and the desire to develop and tap capital and debt markets (domestic and to a lesser extent, international). This process is still very much in its nascent stage in India and should be encouraged by ensuring a healthy balance between investor and user concerns within the framework of an appropriate regulatory framework

4. Given the experience in developing countries, government guarantees can be expected to efficiently support private infrastructure as an interim measure while the reform process is being set in motion to allow the market to handle the relevant risks. But the Government must consider the expected value of commitments in issuing guarantees. Such valuation of guarantees and other contingent liabilities help in comparing guarantees with cash subsidies. Essentially, valuation enables decisions to be made on the basis of real rather than apparent costs and benefits.

5. The financing mechanism chosen for infrastructure support should encourage greater domestic savings for investment rather than merely divert resources from other investments and the financial saving of the household sector is crucial for additional resource generation for transport financing..

6. The banking sector is a major source of financial savings of the households in the country. The traditional model reveals that the commercial banking sector's involvement in transport sector financing has been almost exclusively limited to loans given to transport operators.

But recoveries being low, flows have been limited. In the presence of an efficient recovery mechanism, the flow of funds from the banks is likely to improve considerably.

7. Given the strength of adequate funding available with the banking system and the inherent efficient credit delivery and recovery mechanisms of NBFCs especially in regard to truck financing, commercial banks themselves should play the role of "Wholesale financing/banking" while the NBFCs should play the role of "retail financing/banking".

8. Financing agencies should (over a period of time) insist on viability of operations either as a firm or as an association/evaporative with a viable fleet and requisite infrastructure as a pre-requisite for lending to truck operators.

9. Financial innovations like take-out financing should be encouraged in the context of transport project financing.

10. Contractual savings form one-third of the financial savings of the households in India. Pre-empted use of these funds by the Government (through requirements to invest in Government securities) has been a major impediment to the development of contractual savings as a source of long-term finance. There is a definite need to liberalize investment norms of contractual savings instruments. While such a liberalization of norms represents the sources side from the flow of funds perspective, the demand for such funds needs to be created through a well-planned programme of disinvestment of public sector (especially infrastructure) entities with a view to promote private participation in infrastructure, to reduce budgetary and management obligation and to promote competition. Such a supply (of) and demand (for) funds can contribute to development of domestic capital market.

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Annexures

Annexure I

Methodology for Analysis of Financial Performance of SRTC's

The financial performance of any organisation is closely linked to its physical performance which, in turn, depends on the efficiency of operations and policy related variables. In this section, the methodology for analysing the financial performance of SRTC's based on physical performance and related policy variables is spelt out. The same methodology was adopted for projections relating to financial performance in terms of Profits/ Losses for the period 2000 - 2005. The relationships used in the methodology are given below.

FU (%)= [(Number of buses on road) / (Number of buses in fleet)] * 100
(VU - Kms) = (Total Effective Km. operated on a day) / (Total buses on road an average day)

(LF)(%) =[(Passenger Kilometres) / (Capacity Kilometres)]* 100
Dead Kilometrage (%) =[(Dead Kilometres) / (Total Effective Km)]*100
Average Wage per employee (Rs.) = Personnel Cost / (Staff Strength)
Average fare (paise) = Traffic Revenue/ (Passenger Kilometres)
Staff Bus ratio (S/B) = Staff Strength /(Number of buses held)
Buses on Road = Average buses held * Fleet Utilisation
Effective Kilometres = Buses on road * Vehicle-Utilisation rate.
Gross Kilometres = Effective- Kilometres + Dead Kilometres.
Diesel Consumption = Gross- Kilometres/KMPL
Traffic Revenue = Average- fare *(Capacity* Effective-Kms* Load-Factor)
Total Revenue = Traffic-Revenue + Non-Traffic-Revenue
Personnel Costs = Buses held* (S/B)* (Average Wage/Employee)
Diesel Cost = Price of Diesel* Diesel Consumption.
Passenger tax rate = Passenger tax/Traffic Revenue
Break- even fare = Total cost/Passenger-Kilometres.
Passenger Kilometres = Load factor* Capacity* Effective Kilometres.
Other Material Cost rate = Other Material costs/ Traffic Revenue.

Physical productivity measures as reflected through Fleet utilisation (FU), Vehicle Utilisation (VU), Fuel Efficiency (KMPL) and Staff / Bus ratio (S/B) are the major supply -level parameters while Load factor (LF) is a significant demand variable. The average fare charged is taken to be a policy variable since it is almost always fixed exogeneously.

The model provides for a disaggregate look at the costs in terms of fixed and variable costs. The Fixed cost components are the interest and depreciation provisions. The variable cost components include wages, diesel costs, other material costs and passenger taxes. Wherever motor vehicle tax and passenger taxes are compounded (as in Andhra Pradesh, for example) and are a function of total revenue, the compounded tax is included as part of the variable cost. The model provides variable cost and fixed cost per Effective (bus) Kilometre.

As far as projections are concerned, fleet expansion, wage increases, interest and depreciation provisions are assumed on the basis of past trends. Tax levels are assumed to remain at 1997-98 levels. Diesel costs, which form a significant part of the total costs, are computed on the basis of recent and expected revision of the price of fuel.

Given below is the format of the model specified the way it is in MS Excel. The model provides the estimation of base year relationships and resultant estimates, which tally exceptionally well with actual figures for the base year (in this case, for Gujarat State Road Transport Corporation for the year 1997-98). Given these relationships estimates based on higher performance levels (in terms of physical parameters- optimal) were worked out to find the impact of such changes on financial performance. The projection exercise incorporates these levels of performance on a gradual basis over the forecast period 2000-05. This is necessary to provide the SRTC's with time to bring about changes to achieve higher efficiency levels. Past performance- achievements or otherwise, comparable situations in other States, the need to provide for an emerging private sector role in road passenger transport, have influenced fixation of optimal levels of performance.

Format of the Model							
Base Year Figures	Actuals		Estimates	Actuals	REVENUES	Estimates	Actuals
Buses Held	8990	Buses on Road	7911.2	7907	Traffic Rev. (Rs. lakhs)	82714.65176	82714
Fleet Utilisn. (%)	88	Effective (Bus)Kms.	9959.291	9954.93	Tr.Rev/bus km(paise)	830.527511	830.8848
Vehicle Utilisn.(KMs.)	344.9	Dead Kms.	95.671893	95.63	Ntraff. Rev. (Rs.lakhs)		3494
KMPL	5.01	Gross Kms.	10054.963	10050.56	Total Rev. (Rs.lakhs)	86208.65176	86208
Load Factor (%)	59.51	Diesel Consmn.	200697.86	200783	Tot.Rev/ buskm(pse)	865.6103296	865.983
Dead Km.(%)	0.96063	Pass.Kms.	397093.86	397533	COSTS		
Av.Fare (Rs.) b.yr.est	0.208068				Pers.Cost (Rs.lakh)	45705	45705
Diesel Rate (Rs.)	10.5				Diesel Cost (Rs.lakh)	21073.27555	21005.57
Diesel Wkshp.					Ot.Mat.Cost (Rs.lakh)	9744.266856	9740
Capacity	67				Pass.Tax (Rs.lakh)	12934.10192	12934
Av.Wage/ emp(Rs.)	78872.44				Misc.Taxes (Rs.lakh)	64.42	64.42
Staff Strength	57948				Misc. (Rs.lakhs)	9714	9714
St.Govt. Cont.Rs.cr)	140.2				Tot.Var. Cost (Rs.lakh)	99235.06432	99162.99
Cent.Gov Cont(Rs.cr).	61.07	Pass.Tax Rate	15.637014		Interest (Rs.lakhs)	3214	3214
Av.fare(paise) (used)	20.83	Oth.Mat. Rate	11.775516		Depr.(Rs. lakhs)	4033.32	4033.32
Staff/Bus Ratio	6.445829	MV tax per bus	5616.129		MV Tax (Rs.lakhs)	504.89	504.89
					O.Taxbuses (Rs.lakh)	362.57	362.57
		O.Matcost/ bkm(Rs.)	0.9784097		ToT.Fix.Cost (Rs.lakh)	8114.78	8114.78
		(Base Yr)			Total Costs (Rs.lakhs)	107349.8443	107277.8
		V.Cost/ bkm(paise)	996.40691	996.1194			
		F.Cost/ bkm(paise)	81.479495	81.51519	Var.cost/ Tot.Cost(%)	92.44080879	92.43573
		T.Cost/ bkm(paise)	1077.8864	1077.635	Fix.Cost/ Tot.cost(%)	7.559191214	7.56427
		Pr/lo onTr. Rev(rslakh)	-24635.19	-24563.8			
		Pr/loonTot Rev(rslakh)	-21141.19	-21069.8			
		P/lon Trrev/ bkm(pse)	-247.3589	-246.75			
		P/lonTorev/ bkm(pse)	-212.2761	-211.652			
		Breakevenfare (paise)(or cost/ pass.km)	0.2703387	0.269859			

Annexure II

The International Experience With Privatisation of Transport Infrastructure and Services

Several useful lessons emanate from an examination of transport privatisation experience across the world. Here, the focus of the examination would be the mode-wise experience in different countries. We begin with the urban transit system.

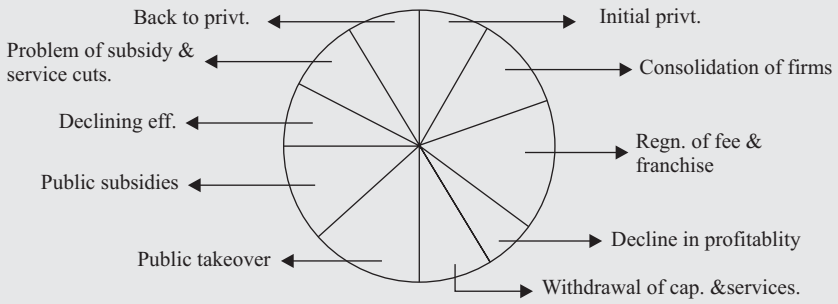
Urban Bus Transit

Privatisation relating to this public transport mode has been always nearly of the third variety. For quite some time, the basic form of ownership of bus systems has been a public authority in many countries. Where bus companies have been privately held, extensive regulation has been a characteristic feature. But in both cases, subsidies to keep fares low or services more extensive have been prominent. However, according to Gomez and Meyer (1993), the private sector had been largely responsible for urban bus services before the advent of the public authority. But over a period of time the process of provision has involved the public sector in a minor way to begin with which was then followed by a gradual and complete take over by the government in many countries. But the cycle seems to have been further extended to include the involvement of private sector once again following what is popularly termed as ' government failure'. The different stages in the cycle can be observed from Figure given below.

This system of urban bus system development and decay has been as common in the industrialised countries as in the developing world.

In the U.K., the urban bus transit industry was privatised and deregulated while still preserving, through competition contracting, the possibility of subsidising' socially worthwhile' but unprofitable services. A key issue in the process was whether the market would prove to be competitive. It is widely recognised that actual competition may not be

Figure Privatisation Cycle



Source : Adapted from Gomez & Meyer (1993)

essential if markets are contestable. Given the fact of entry in the network of almost every county and effective measures at reduction of costs, the threat of entry has been seen to be credible. Gomez and Meyer (1993) observe that the clearest winners from the combined package of deregulation, privatisation and subsidy cuts are the British taxpayers who saw government expenditures in metropolitan counties cut by almost a quarter in real terms. Thus, it may be reasonable to say that the privatisation of much of the UK bus transit industry has clearly demonstrated that significant cost savings can be achieved by a combination of private ownership and competition. But it must be noted that it is competition for the market (via franchising/contracting) rather than competition in the market that appears to be the primary cause of increased cost efficiency among bus operators.

The most common form of private involvement in the US urban bus transit system in recent decades has been the system of contracting with private companies. But such a system has also involved considerable subsidy payments. The key difficulty to achieving higher levels of

commercialisation in the U.S. is the relatively low demand for public transport as a result of which the fare box recovery ratios averaged less than 40 percent.

In many developing countries, the most common scheme for providing urban bus services has been a mixed system of publicly and privately provided services. But this mixed system has often emerged in response to the inadequate services provided by the state -owned, deficit ridden companies and has most often operated within a framework of fare regulation. Such a process has enabled a reduction in subsidies (if not total elimination) while still maintaining or expanding services largely because the costs of private companies are often much lower than their public counterparts. This has been found to true in cities like Jakarta, Accra, Calcutta and Bangalore. In the absence of fare regulation, the experience has not been as successful as in the case of Colombo, Santiago, etc. In Colombo, the role of public sector agency in providing effective competition was significant but it must be noted that the public operator continued to receive subsidies, which were not available to the private operator. In Santiago, the competitive market eventually evolved into a system of anti competitive controls of the route associations, which resulted in steep fare increases.

The striking feature of the bus transit systems in major urban areas of the developing world is the enormous number of private operators especially where the local government has not severely restricted entry. Moreover, this has involved extensive innovation and experimentation which has made the experience with urban bus privatization fascinating while at the same time giving rise to concern. The use of smaller vehicles suited the existing network of narrow roads but also gave rise to congestion and greater pollution. Moreover, unrestricted entry of many operators was the source of several other problems as in Delhi (Ramasamy, 1996). Although the original intention of introducing private buses was to supplement public sector efforts, the private operators were allowed to cut into the revenues of the public sector operator by operating unauthorisedly

on profitable routes. Moreover, the inability to effectively deal with a large number especially in matters relating to safety regulations ultimately got reflected in the high accident rates on Delhi roads.

Privatisation of Highways

Highway privatisation experiments which have been primarily motivated by the need to find alternative (additional) sources of financing for needed new investments have been far more limited.

Though private tolled roads were fairly common in the U.S. in the 19th century, in the modern era. France and Spain have been the pioneers since the sixties when the private sector was encouraged to build an intercity highway network based on tolls. The French experience at least initially, suggested that private companies could build and operate roads more cheaply than public companies. Moreover, toll financing appeared to have improved the quality of investment decisions in both countries. The French experience also pointed out that benefits from toll roads could be enhanced by the adoption of coherent program designed to produce an integrated toll road network. Such a network allowed exploitation of economies of scale in operation and finance: spreading of risks across a portfolio of roads in different location and at varying stages in their life cycle and cross subsidisation between roads. By reducing investment risk, a network lowers finance costs and can significantly cut overall costs. However, over a period of time, the provision of incentives by way of low equity requirements, loan guarantees, foreign exchange insurance resulted in a situation where private parties were more interested in building than operating a toll road. These problems have been less serious in Spain than in France perhaps because government assistance/ support terms in Spain were less generous with the result that only 3 of the 8 major private companies granted concessions in Spain were taken over by the state while in France 3 of the four private companies went into government hands.

The Latin American experience is more recent. When Argentina began commissioning its major roads in 1990, it had a mature, well-connected, but poorly maintained network. The objective of road reforms were reconstruction and maintenance of existing roads. The general strategy was to unbundle viable roads into BOT concessions awarded through competitive bidding. In return for the right to collect tolls, the concessionaires were required to undertake a program of maintenance, rehabilitation and capacity improvements in order to achieve specified service levels. To begin with government provided no guarantees to concessionaires. But later, due to renegotiations arising due to indexation of tolls, tolls were drastically reduced and subsidies had to be provided. On the other hand, the Mexican private toll road programme virtually doubled the toll road network. The investment for this programme was sourced from local commercial banks, concessional equity, federal and state grants and equity contribution. By1995, a significant number of the planned toll roads had been built. But a combination of macroeconomic and project level factors (which turned all investment costs and operating revenues awry) led to an unsustainable set of operating conditions for these limited resource financing plans. As in the case of France and Spain, the project award criteria limited the pool of potential candidates to a handful of local construction companies that were more interested in the construction work than in the long -term viability of the project. Further, tolls were supposed to have been set high with a view to keep the concession short. This led to serious under utilisation of some roads. Some segments were unprofitable met only because of low traffic but because of strong competition from untolled alternatives. But an interesting aspect of Mexico's aggressive private road programme, according to Gomez & Meyer (1993) was the way it has forced the Mexican capital markets to device new financial instruments to tap additional sources of funds. The commercial banks (mostly nationalised) have broadened the pool of domestic investors involved in toll roads. To begin with, most banks financed their share of commercial loans, drawing on existing savings. Later, their contributions

were refinanced by issuing medium- term infrastructure bonds which were guaranteed by the bank since toll revenues were not adequate (especially during the initial stages operation of the road) to serve as security to back these bonds. Some banks even ventured to sell certificates of participation, which were secured only by a claim against toll revenues. But it was also the case that when many projects became increasingly unable to meet their debt service obligations, many banks that had underwritten huge amounts (of non- recourse finance)- such a behaviour being guided by an implicit understanding that even if the projects proved commercially non viable, ultimate recourse was indeed to the government for these projects were unable to refinance these amounts. "Whatever the diagnosis for the poor performance of the sector, from a private investment perspective, the impact was to shut off capital flows to the sector and to add to the Mexican banking system's non performing loan portfolio" (Ruster, 1997, p.117).

The Asian experiment with privatisation of highways began in the mid-eighties in Malaysia and Thailand. The Malaysian decision to go in for private finance was preceded by a decade of activity aimed at building the North-South expressway. In the absence of an effective planning and finance strategy that was required to be taken by the public highway authority (which was created in 1980 to finance the road with govt guaranteed loans from the private capital market), costs proved higher and construction of the facility much shower than expected which resulted in the bankruptcy of the authority. In the face of rejection of a loan request by the World Bank, the government decided to privatise the road in order to compete it. Traffic flows were guaranteed and some of foreign exchange and interest rates risks were to be borne by the government Even on these terms, the private sector companies found it difficult to raise the required finances (on foreign or domestic capital markets). However, with the entry of new private party, the availability of land from the Government for the purpose of operation & maintenance of the express way and financial support by way of a soft loan from the govt, the new concessionaires was able to complete the projects for operation in 1994. Observers have criticised the

expressway for two reasons. One relates to the lack of transparency in awarding the concession. Some bids were more competitive than the firm that got the concession. Further, inappropriate sequencing of the stages of construction was followed: low- traffic segments were taken up first while heavily trafficked stretches were completed at the end of project (Naidu, 1997). As the World Bank had suggested - the highway may have been so over designed and planned so as to be financially risky even with heavy government support.

The Thai experiment has been limited to urban tollways (which are most difficult to undertake due to very high traffic flows in urban areas) around Bangkok. In this case, a good part of the equity came from private sources with the remaining coming from Thai banks. Most of the debt was raised in Thai domestic capital market with a portion of it guaranteed by international banks. However, govt assurances on tolls and land acquisition were critical to the agreement.

The Indonesian programme of toll roads was essentially undertaken by the public sector (as in the United States where private sector activity in toll roads began only in past decade). The Indonesian highway construction was initially charged with financing, constructing, operating and maintaining toll roads all over the state country. But by the 1980's joint ventures schemes in which construction costs were financed by private equity and debt were in place. While, the governments support was initially limited to compensation for land acquisition, in a variety of forms, which included virtually all the debt supplied by the national government development banks. Thus, even the limited attempt at attracting private capital involved significant Govt,. Support.

Attempts made in Eastern Europe to involve the private sector (BOT) have not quite taken off. The issue that has been raised is: whether BOTs reduce claims on government. Blackshaw et. al. (1994) have shown (with the help of hypothetical but not representative example) that for non - urban motorways (toll roads) in the countries, there is a distinct likelihood

that, compared with the alternation of a public sector toll road, BOTs will not reduce the net call on the government budget even during the first ten years of the projects. They conclude that a public toll road authority seems a much better option than a BOT since under the then prevailing circumstances, a public authority enabled private finance to be tapped via bond markets probably on better terms (lower interest rates and longer maturities) than the commercial loans used by a BOT.

Railways:

Argentina privatised many of its railway services by a series of concession contracts during the early 1990s. The strategy was to break up the network into monopoly franchises that combine track and services operations- identifying the profitable and unprofitable segments in the freight and passenger traffic markets, awarding concession to the private sector through competitive bidding. The single - operator strategy meant that competition would not arise from several operators using the same track but several potential operators bidding for the exclusive right to provide a service during the life of concession. Within about three years of award of concessions, commuters railway concession showed a very healthy trend while freight and inter city passenger services were not as fortunate. But one objective of privatisation which was minimisation or elimination of fiscal drain from the railway deficits was achieved to some extent by reducing subsidies to the minimum possible level and which was confined to the commuter network. But this was made possible by inducing the private sector to take over profitable segments of the freight market and also in exchange for the lowest minimum subsidy, the commuter railway lines. A good number of the inter-city passenger seems were taken over by the provinces which agreed to subsidise them and run these services over the network concessioned to the freight and commuter rail operators, paying a fee to the operators for access and use of the track.

The U.K programme has been different. Legislation in the form of the Railways Act 1993 was introduced to provide the statutory framework for

privatisation and liberalisation of the railways in Great Britain. Almost all of the rail industry has been transferred to the private sector including 100% of passenger services. Under the new industry structure, British Rail's track and infrastructure has moved to the private sector and is the responsibility of Rail Track. Passenger services are managed and operated by the private sector through a franchising system and a Rail Regulator has been set up to oversee the industry and ensure no party abuses any access rights to infrastructure. Train operating companies, both passengers and freight, gain access to the rail network through commercial access agreements with the Rail Track. Infrastructure charges for franchised passenger operators are essentially determined through the award of the franchise. The public interest will continue to be protected by the Rail Regulator and through Rail Track's network license and other statutory provisions. Recognising the need to maintain certain unprofitable services- or socially necessary services - the franchising system has been designed to ensure that private operators who operate services which are loss making, can be compensated. The govt pays compensation payments for rail services via the Franchising Director. According to a note circulated (ECMT, 1998), it is difficult to assess the results as the railways had only then been recently restructured and privatised. But early indications showed that they are favorable. The organisation, Rail Track, has been able to fully exploit the potential of the rail network, to deliver improvements to operators and hence to rail users. One issue that has remained open is the one relating to coordination between potential investments required by way of investments and the amounts that are forthcoming. In the case of the U.K, the office of the Rail Regulator is expected to expected to exert pressure on Rail Track to make investments and the Office of Passenger Rail Franchising could shape franchises to encourage investments.

The Japanese government decided to privatise the Japanese National Railways in 1987, breaking the monopoly into six regional companies and one freight company. Two factors hastened the collapse of the public sector monopoly: emergence and proliferation of private vehicles during the 1960s

and pressures during the 1970s, which forced the govt to freeze, rail tariffs. In an extensive study of this experience, Fukui (1992) provided some lessons especially for developing countries. One related to huge debt (25 trillion Yen) that the JNR Settlement Corporation inherited but which had not diminished significantly. The companies managing the railways systems in the islands have not been as viable as the one in the mainland as a result of which they are not in a position to became financially independent. Moreover, such a performance meant that raising capital in the market would not be easy. But in general, it could be shown that the breakup was more successful than envisaged. There has been an increasing demand for railway services, which can be, attributed partly due to economic expansion in the late 80's and partly due to the constancy of rail tariffs. According to Namibu (1997), perhaps most crucial to the services (however limited) was the smooth relationship between the labour union and the railways.

Seaports

Seaports reforms in Argentina have sought to deregulate, decentralise and privatise. These reforms have attempted to introduce competition not only among ports but also for the ports- by inviting operators to bid for port concessions and within ports by dividing large ports into terminals and offering each as a separate concession. Bidders were asked to set their own charges subject to maximum price cap for cargo and concessions were awarded on the basis of highest rental offered for infrastructure and equipment. The results have been generally positive with increased productivity, higher cargo volumes and big reduction in tariffs.

Colombia has had a similar experience. Since privatisation in the early 1990,s, tariffs have fallen substantially and the quality of port services has improved significantly with productivity rises of 60%(or more) and detention times cut by more than half. It must be noted that interventions continue and temporary price caps and floors have been assigned to prevent competition from the undermining the position of the highest cost port.

However, the approach here has aimed at attracting project financing for new facilities leaving existing assets in state hands. This is similar to the model adopted by Asian countries. While this approach has been useful in attracting substantial private capital, it has made the whole process more complex and potentially less sustainable because of the lack of clarity surrounding the private and public roles in regulation operation and investment. More recently the country has moved towards privatising assets - a move which is felt could provide a more enduring basis for reform.

In Malaysia, the guidelines on privatisation issued in 1985 identified the provision of port services as an important area for private participation. This strategy has so far been confined to federal government ports. To begin with, a container terminal in the biggest port was privatised with the terminals moveable assets sold to a private party KCT, while the immoveable assets were leased to the same party. The rest of the facilities at the port were privatised in 1992 to another party, which also developed the container terminal that competes with KCTs terminal. Higher productivity has been reported after privatisation. The process of privatisation of other federal ports is on with the corporatisation of the ports taking places - as a first step towards complete private takeovers. This process may not be sustained due to over provision, which characterises the Malaysian port scene. The basic problem is excessive number of ports that has spread the cargo to thinly among them. This has serious implications for further private sector involvement in the port sector.