

OECD India Investment Roundtable

Opportunities & Policy Challenges for Investment in India

Background Paper

**October 19, 2004
New Delhi, India**

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Department of Industrial Policy & Promotion,
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Contact Information

Department of Industrial Policy & Promotion,
Ministry of Commerce and Industry,
Government of India,
Udyog Bhavan,
New Delhi 110 011
Tel: +91 11 2301 4212
Website: <http://dipp.nic.in>
E-mail: dipp_sia@ub.nic.in

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FOREWORD

The path of economic reforms in India, particularly since 1991, has been characterised by a well-defined policy and direction. Several path-breaking reform measures have been successfully undertaken during this period. The investing community would perhaps have liked it to be quicker. However, as we look back over our decade-long experience, the one aspect that is clearly discernible is that the reforms have been doggedly and persistently moving in the same direction. Challenging as it has been, to shape the consensus around key reform initiatives, it is also clear that there has been no hint in favour of reversing, or even stopping, the process. The continuity of commitment to reforms over the period is, in itself, a significant contribution to the development of a stable, long-run investment climate in the country.

Long-term investors, like those in infrastructure sectors, would evaluate the attractiveness of investment on the basis of three kinds of risk – policy risk, regulatory risk and business risk. One of the key focus areas of our reforms is the redefinition of the respective roles of the public and private sectors in infrastructure and, within the private sector, the contribution of foreign investment. Going beyond general principles, there are, inevitably, debates around the optimal strategy for each sector. However, the prevalence of divergent views should not detract from the entrenchment of the general principles themselves. There is recognition that the private sector, including foreign investors, has a significant role to play in raising the standards of infrastructure services in the country. This virtually eliminates the risk of there being reversals and ‘flip-flops’ on basic policy principles.

The recognition of the private sector’s role brings with it the need to set up efficient regulatory structures, which are capable of balancing the interests of consumers and providers, within the overall context of stated policy objectives. As with the larger reforms process, this too has been an arduous journey, with several twists, turns and dead ends. But, there are also substantial achievements to show for the effort. In many sectors, regulators have been established, with their scope and powers protected by legislation. They, along with the Government and other stakeholders, are rapidly learning how to go about doing their business with maximum effectiveness. In the process, several barriers are being encountered, but there is a determination to clear these as quickly as possible. The emergence of an independent, predictable regulatory framework will ease concerns about regulatory risk.

This leaves us with business risks. The question is - even with the right policies and regulatory framework in place, is doing business in India, particularly with the long-term commitments that infrastructure sectors demand, still too risky? The undeniable fact is that the large percentage of young people in India’s population guarantees that demand for many products, including that for infrastructure services, will continue to grow for a long time to come. Let alone future generations, India’s commitments to its current citizens to offer better standards of living, through expanded opportunities for employment and productivity growth, will ensure the emergence of the right mix of policy and regulation sooner, rather than later. A market of this size and potential growth, which is steadily and systematically being de-risked, simply cannot be ignored or passed by.

This paper has been prepared as a ‘Background Paper’ for the OECD-India Investment Roundtable on “Opportunities and Policy Challenges for Investment in India” focusing in particular on the infrastructure sectors. Although, all possible care has been taken, particularly with regard to the policy regime in the economy, in general, and infrastructure sectors in particular, this should not be taken as a pronouncement of policies. The objective behind putting together this paper is to provide the conceptual background for facilitating discussions at the OECD-India Investment Roundtable.

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EXECUTIVE SUMMARY

The early nineties saw a dramatic shift in the structure of the Indian economy. Domestic industry was freed from licensing and other controls, while the external sector was opened up to let in foreign capital and other resources. The growth record of the last decade has been healthy, with the annual GDP growth averaging 6.1 per cent. However, the Government recognises the need to step up the growth rate with the Tenth Five Year Plan (2002-2007) targeting an average annual growth rate of 8 per cent.

Realising that this target would need a sharp increase in investments; in the post-liberalisation regime, the Government has reduced its role of a direct investor and has taken on the mantle of providing an 'enabling' environment for the private sector. The package of economic reforms introduced through the nineties, has led to a significant improvement in the investment climate. Besides, the Government has taken a series of steps to improve the quality of governance and the quantum and quality of infrastructure. Both should translate into stronger flows of private investment and help the economy move on to a higher growth trajectory. Besides this, the Government remains a key participant in the social sector where private involvement is often found to be inadequate.

Providing the optimal quantum of infrastructure remains the critical challenge that the Government needs to meet. While a number of significant measures have been taken in the past, a fair gap remains between the current and actual levels of infrastructure availability and the optimal level required. Going forward, a number of policy initiatives announced by the Government should address this gap. Quite clearly, domestic funds alone cannot support the entire investment requirement of infrastructure. Foreign investment, from both the private sector and multilateral agencies is needed to bridge the gap. Some of the policy initiatives in the infrastructure sectors and the resultant investment opportunities are given below:

Power

- Central Electricity Regulatory Commission and State Electricity Regulatory Commissions set up
- Indian Electricity Grid Code established
- Accelerated Power Development and Reforms Programme formulated
- Electricity Act notified in 2003
- Automatic approval (RBI route) for 100% foreign equity in power generation and distribution
- Thermal Power completely delicensed

Telecommunications

- Introduction of 'Calling Party Pays' in May 2003
- Unified Access Services Licensing Regime introduced in Oct 2003
- Communication Convergence Bill 2001 to oversee national infrastructure for information based society
- Interconnection User Charge introduced in 2003-04
- No industrial licence required for telecom equipment manufacturing

Civil Aviation

- Private equity participation in airport infrastructure modernisation permitted
- Private sector participation in greenfield airports with FDI up to 100% equity stake

- Inland Air Travel Tax abolished
- Bilateral aviation agreements based on reciprocity initiated

Roads

- Private participation through BOT toll-based and annuity based structures
- 100 per cent FDI allowed in the roads sector
- 10 year corporate tax holiday
- National Highways Authority of India (NHA) permitted to participate in equity in BOT projects up to 30 per cent
- Duty-free import of specified modern high capacity equipment for highway construction
- Capital grant of 40 per cent of project cost by NHA

Railways

- Computerised Freight Operation Information System
- Online passenger reservation system
- Private participation in projects through BOT scheme
- State participation through cost sharing and SPVs
- Tariff rebalancing and rationalisation of fare and freight structures
- National Rail Vikas Yojana announced in August 2002

Ports and Shipping

- Increased emphasis on modernisation and restructuring of ports
- Increased thrust on public-private partnerships for the development of ports and infrastructure for inland water transport
- Private investment to the tune of US\$ 2345 million is expected
- Private participation with respect to inland transport infrastructure connecting ports
- Investment requirement of US\$ 20 billion in maritime sector upto 2012

India presents unique opportunities to investors. A growing middle class and a process of demographic transition that puts a significant percentage of the population in the working age group creates large markets for a wide range of goods and services. The right set of policy measures will enable investors to leverage these opportunities. This background paper covers the policy changes and investment opportunities in the infrastructure sectors in India.

CHAPTER 1: THE INDIAN ECONOMY: AN OVERVIEW

Following independence, India pursued a development policy based on centralised planning, regulation and control of private enterprise, state ownership, trade protection and limits on the penetration of foreign capital and technology. This regime determined India's economic development until the mid-1980s when there began some movement towards economic liberalisation and market orientation. India experienced a crisis in its balance of payments in early 1991, which threatened to destabilise the economy.

In response to this crisis, the Government implemented a programme of structural reforms, aimed at stabilising the economy and promoting reliance on market mechanisms, broadly referred to as 'liberalisation'. The main components of the structural reforms programme were exchange and trade liberalisation; financial sector reforms and control of the budget deficit; inflation and money supply. A great deal of significance was placed on promotion of foreign technology transfers and foreign investment in key areas, as well as, the further development of the private sector.

Box 1.1: Critical Reforms in the Indian Economy

- Rupee made fully convertible on trade account as of March 1, 1993 and gradual movement towards capital account convertibility set underway
- Abolition of industrial licensing, except in a few 'strategic' sectors
- Rationalisation of indirect and direct tax structures
- Removal of all quantitative restrictions on imports and decontrol of interest rates
- Foreign Direct Investment (FDI) allowed in most sectors of the economy, including services. Bulk of this investment allowed through the 'automatic' route, not requiring specific Government permissions
- Portfolio investments by Foreign Institutional Investors (FIIs) allowed in both equity and debt markets
- The Fiscal Responsibility and Budget Management (FRBM) Act enacted in 2003
- Foreign Direct Investment (FDI) limits raised in telecom, refining and banking; and permitted in insurance

Macro Economic Performance

The policy of liberalisation translated into fairly robust economic performance on almost all fronts. The average Gross Domestic Product (GDP) growth during the period 1992-93 to 2003-04 was a healthy 6.1 per cent as compared to 5.6 per cent during the previous decade. From an international perspective, India figured among the fastest growing economies even in the last decade (Chart 1.1) The Government of India in its Tenth Five Year Plan (2002-2007) has expressed a need to enhance the growth rate further and has set a target of an 8 per cent average annual growth in GDP.

Chart 1.1: Average GDP Growth (1990-2002)



Source: WDI 2004.

The key characteristics of the post-liberalisation growth path include:

- The steady growth and rising share of the 'services' sector (Chart 1.2). This captures the buoyancy of sectors such as information technology, telecommunications and banking & financial services in the economy.

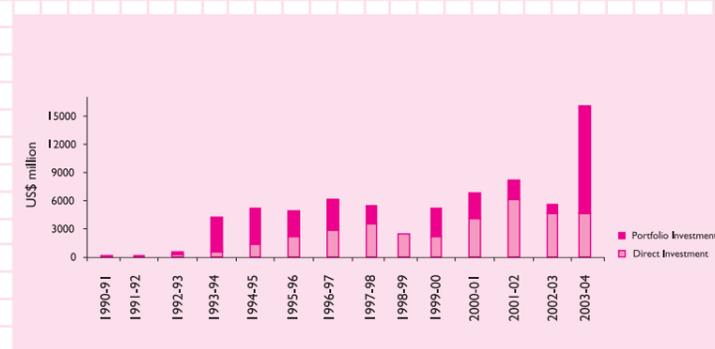
Chart 1.2: Rising Contribution of Services Sector to Overall GDP



Source: CSO

- The growing role of the private sector in investment, both on a stand-alone basis and in partnership with the Government. As a percentage of GDP, the share of private sector investments has gone up from 12.5 per cent in the eighties to 15.4 per cent in the nineties
- The increased importance of foreign resources, both in the form of 'portfolio' and 'Foreign Direct Investments' (Chart 1.3). The result has been a dramatic increase in foreign exchange reserves that are likely to ward off any possible external crisis. The foreign exchange reserves stand at US\$ 118.2 billion as on end September 2004

Chart 1.3: Foreign Investment Inflows



Source: RBI
*Data for 2003-04 is provisional.

The Fiscal Scenario and Policy Initiatives

One of the more serious concerns about the Indian economy has centered on the budgetary position of the Government. For 2002-03, the consolidated fiscal deficit of the Central and State Governments put together touched 9.4% of the GDP (Chart 1.4). Such high deficit levels could potentially act as a brake on the economic growth rate by raising interest rates and diverting expenditure to debt-servicing, rather than more productive expenses.

Chart 1.4: Central and State Government Fiscal Deficit (per cent)



Source: CGA
RBI State Finances

Some critical initiatives have been taken, both at the central and state levels to address these issues, notably the enactment of the Fiscal Responsibility and Budgetary Management Act (FRBMA) and the planned introduction of a VAT regime by the State Governments by April 2005 (see box 1.2). Both are likely to help in bringing the fiscal situation under control.

Box 1.2: FRBM Act and State VAT

Fiscal Responsibility and Budget Management Act

The Fiscal Responsibility and Budgetary Management Bill (FRBMB) was introduced in the Parliament in 2000 and enacted by the Parliament in August 2003, resulting in the Fiscal Responsibility and Budget Management Act (FRBMA). It provides a legal and institutional framework for reducing the deficits and stabilising debt over the medium term. It sets a clear-cut target for the elimination of revenue deficit by 2008. The Act also requires the Central Government, to place before the Parliament, along-with the budget each year, the following statements: a medium-term Fiscal Policy Statement, specifying three-year rolling targets for specified fiscal indicators; a Fiscal Policy Strategy Statement, dealing with the fiscal strategy in the following year and a rationale for deviation in fiscal measures related to taxation, subsidies and borrowings etc; and a Macroeconomic Framework Statement, containing assessment of growth prospects of the economy alongwith underlying assumptions.

This Act, thus, provides a medium term perspective to the fiscal policy of the Central Government, binding it to a pre-specified path of fiscal consolidation, while providing flexibility in fiscal management under extraordinary circumstances like war and natural calamities.

State VAT - Issues and Initiatives

Commodity taxes in India are levied by the Centre in the form of excise and customs duties and by the States in the form of sales tax, octroi (an entry tax) and State Excise Duties. The bulk of Central Excise already works under a Value Added Tax (VAT) regime called CENVAT. The State VAT seeks to replace the commodity taxes imposed by States with two important benefits:

- elimination of tax-cascading
- facilitation of faster movement of goods across States

State VAT is likely to be implemented by April 2005. This is likely to lead to a sharp increase in productivity across States and enhance State tax collections in the medium term.

Demographic Transition – Opportunities and Challenges

Changing population structure constitutes one of the key opportunities and challenges confronting the Indian economy. Estimates by the Planning Commission show a rising share of the 'working age' (15-59) population over the long term (see table 1.1) and a relative decline in the dependent (0-14) age-groups .

Age group	2001	2006	2011	2016
0-14	35.6	32.5	29.7	27.1
15-59	58.2	60.4	62.5	64
60 +	6.3	7	7.9	8.9
All age groups	100	100	100	100
Population	1,027.00	1,113.70	1,194.40	1,267.50

Source: Planning Commission, Government of India

This clearly has implications in terms of:

- Creation of a large pool of labour that can support industrial growth without putting excessive pressure on wages
- A larger share of wage earners in the population also means a higher demand for consumer goods and services. This will help support growth in these sectors

However, the critical challenge clearly lies in providing employment to those entering the labour force. This has to come from enhanced buoyancy of the industrial and service sectors. It is thus, important to ensure that the accelerated GDP growth target of 8 per cent envisaged for the Tenth Five Year Plan period is met.

Indian Industry – Sunrise Sectors and Opportunities

Economic liberalisation and increased globalisation have effectively changed the Indian industrial landscape. Increased opportunities, greater access to resources and knowledge and the forces of competition have transformed it quite dramatically. A number of knowledge and technology intensive sectors have emerged as the sunrise sectors. This section reviews the recent performance of three such 'sunrise' sectors to illustrate the changing shape of India's industrial economy.

Information Technology

The Indian IT industry is heavily leveraged on the global IT market (estimated at US\$ 1 trillion), with more than 50 per cent of its total revenues of about US\$ 17 billion in 2002-03 coming from exports. The biggest buyer is the US with a 60 per cent share, followed by the EU with about 25 per cent. The growth of this sector has led to tremendous pay-offs in terms of wealth creation and employment. The Government has taken a number of initiatives to help sustain its growth (see box 1.3) The key to sustaining this growth lies in the ability of Indian companies to move up the value chain and into areas like IT consulting and systems integration, as well as targeting new industries such as healthcare and retailing.

Box 1.3: Major Government Initiatives in the IT Sector

- Setting up of a new Ministry of IT in October 1999, which was re-christened as Ministry of Communication and IT in September 2001
- Creation of an IT Venture Capital Fund of about US\$ 21 million in 1999
- Enactment of the Information Technology (IT) Act, 2000, which provides legal recognition to transactions through electronic data interchange
- Lowering custom duties on IT products
- Allowing 100 per cent Foreign Direct Investment (FDI) in the sector, raising the limit on the issue of American Depository Receipts/Global Depository Receipts (ADR/GDR)
- Computerisation of Government departments by spending up to 3 per cent of the budget on IT
- Information Technology Agreement (ITA) of 1996 under which members agreed to reduce the tariff on information technology products to zero
- e-Governance and Software Technology Parks

Finally, a number of Indian companies are exploring the Business Process Outsourcing (BPO) business, also referred to as IT Enabled Services. This is the fastest growing area in the IT segment with an average growth of close to 70 per cent over the last three years, taking the size of the segment to about US\$ 1600 million in 2001-02.

Critical challenges in the sector, however, still remain to be tackled, and are likely to form the basis of new policy initiatives in the sector. These include:

- A revamp of education policy to meet the manpower needs of the sector. According to a McKinsey-NASSCOM study, India would require 2.2 million IT professionals by 2008
- Efforts to enhance the role of the computer hardware sector that currently accounts for 40 per cent of total revenues of the IT sector. This, in turn, would help in raising personal computer penetration from the current 5.8 per cent
- To effectively use IT, to enable better delivery of public goods and services (e-Governance)

Pharmaceuticals

The year 2005 will be a watershed year for the Indian pharmaceutical industry when India will start implementing a product patent regime (only process patents are recognised now). The industry is adequately geared to meet these challenges. In fact, the process of preparing for this shift in regime has shaped the domestic industry that has strong skills in pharmaceutical manufacturing and chemistry, resulting in globally competitive manufacturing costs and a basket of exportable goods (mainly formulations).

Thus, the Indian pharmaceutical industry is not only able to service domestic markets, but is also actively involved in exports. Exports accounted for nearly 38 per cent of the total pharmaceuticals production with the main focus on the generics market (drugs that do not enjoy patent protection) and bulk drugs (raw materials). The Indian industry has devoted a significant amount of resources to obtaining regulatory clearances for marketing in the developed markets. The growing affluence of the Indian population, the proposed increase in spending on health by the Government and an increasing number of drugs coming off patent (estimated at US\$ 65 billion in the 2003-2008 period) are likely to help maintain the current momentum of the industry.

Auto Ancillaries

The US\$ 3.75 billion Indian auto ancillaries and components industry has established itself as a major player in both the domestic and international markets. A major feature of the auto ancillary industry is its high degree of export orientation - exports had grown from US\$ 330 million in 1997-98 to US\$ 800 million in 2002-03. Exports to US and Europe forms around 60 per cent of total component exports, followed by exports to Asian markets. India's presence in the international market is likely to grow further as global manufacturers leverage India's low-cost and highly skilled labour to reduce their cost of inputs.

Several Government initiatives have helped the industry. The Auto Policy of 2002 removed earlier stipulations on indigenisation and import-balancing requirements and granted 'automatic' permission to foreign automobile manufacturers to set up wholly owned subsidiaries in India. This had strong multiplier effects for the components industry. In addition, the recent Government initiatives such as improvement in road infrastructure, better connectivity to ports, and faster clearance of export consignments have reduced the time taken in exports, thereby saving on working capital requirements. The Government has also reduced customs duties on raw materials required to manufacture components, making Indian components more cost-competitive. The duty regime is targeted to match the ASEAN levels in the near future.

Infrastructure: Bottlenecks and Solutions

Infrastructure constitutes the backbone of any economy. Supply bottlenecks of critical services can hamper growth and development. The urgency to revamp infrastructure, stems not only from the need to service existing sectors, but also from the rapidly growing needs of the 'sunrise sectors', fuelled by their rapid growth. An increase in domestic penetration of IT services, for instance, needs expansion of broadband linkages in telecom. Global competitiveness of manufacturing sectors like auto-ancillaries require better road and port facilities, to keep costs down. Energy demands by China and India are already having a profound impact on fuel prices.

Successive Indian Governments have laid considerable emphasis on infrastructure; there is a substantial gap between rising demand and the supply or availability. India not only lags behind the developed countries, but also its developing country peers (see table 1.2).

Table 1.2: Some International Comparisons of Infrastructure Availability

	Electric power consumption (kWh per capita)	Telephone mainlines (per 1,000 people)	Roads paved (per cent of total roads)	Personal computers (per 1,000 people)
China	827	137	22	19
Hong Kong	5,447	580	100	387
India	582	38	46	6
Indonesia	384	35	46	11
Malaysia	2,628	196	76	126
Singapore	6,948	471	100	508
South Korea	5,607	486	75	256
Thailand	1,448	99	98	28
UK	5,601	588	100	366
US	12,331	667	59	625

Source: WDI 2003

However, recent policy initiatives in a number of these sectors address some of the critical bottlenecks in the infrastructure sectors, in a comprehensive fashion. Most importantly, they attempt to remove the barriers to greater private participation in these sectors, including Foreign Direct Investment. This section reviews some of the developments in the five critical areas of power, telecommunications, roads, railways and civil aviation.

Power

Despite a rapid expansion of power generation (from 1300 MW in 1947 to 1,13,506 MW in 2004) and simultaneous growth in transmission and distribution, the sector has not been able to keep pace with the growth in demand, resulting in a chronic shortage. During the Ninth Five Year Plan period, for instance, only 19,015 MW of actual capacity addition took place, compared to a target of 40,245 MW.

State Electricity Boards (SEBs), have traditionally been responsible for generating and supplying power. This in turn, has led to un-economic tariffs for the agricultural sector, lower slabs for domestic consumption and high transmission and distribution (T&D) losses that often result from theft and poor billing and collection efficiency.

A number of power sector reforms have been initiated since 1991. Some key reforms were:

- The Central Electricity Regulatory Commission (CERC) was set up at the national level and State Electricity Regulatory Commissions (SERCs) were set up in 23 states; with more in the offing
- The issue of one-time settlement of dues payable by SEBs was addressed by securitising the dues
- The Electricity Laws (Amendment) Act passed in 1998 to enable private participation in the transmission sector
- In 2000, the Indian Electricity Grid Code was established to ensure grid discipline
- An Accelerated Power Development and Reforms Programme (APDRP) was formulated to provide support to States undertaking distribution reforms

The process of reform in the sector culminated in the passage of the Electricity Act in 2003. The main features of the Act are:

- A National Electricity Policy was formulated
- Thermal generation was delicensed and captive generation permitted freely
- The regulatory commissions allowed open access to the distribution network
- Trading was recognised as a distinct trading activity
- Consumer tariffs were based on progressively reduced cross subsidies and move towards actual cost of supply
- Metering of connections to be made mandatory
- Provision for generation and distribution in rural areas was permitted without a licence.

The implementation of the Electricity Act is likely to bring far reaching changes in the sector and help incentivise both public and private investments. 11 Independent Power Producers (IPPs) with 4000 MW of capacity have already achieved financial closure in the last one year. Large investments are likely in all three critical areas - transmission, distribution and generation.

Telecommunications and IT

The telecommunications sector in India has seen a rapid transformation over the past decade manifested in a sharp rise in tele-density (see chart 1.5). Much of this change has been driven by policy initiatives and reforms (see box 1.4), recognizing the sector's role in the overall economic development as well as in supporting the expansion of Information Technology and related services.

The National Telecom Policy (NTP) explicitly recognises this dual role of the sector and emphasizes both:

- The provision of universal services to all uncovered areas
- Creation of a modern and efficient telecommunications infrastructure, taking into account the convergence of media, telecom and consumer electronics

Chart 1.5: Tele-density (connections per '00 households)



In terms of the pattern of growth, the bulk of the growth in telephony over the last five years has come from cellular services with fixed line telephony lagging behind.

Box 1.4: Telecom Sector Reforms

- Telecom equipment manufacturing deregulated in 1991
- Cellular phone services and basic services thrown open to the private sector in 1992 and 1994 respectively
- The National Telecom Policy (NTP) allowing private sector participation in basic services announced in 1994 and replaced by NTP in 1999
- NTP'99 also provides for registration of Other Service Provider category to promote BPO activities
- Telecom Regulatory Authority of India (TRAI) set up in 1997 as an independent regulator
- New policy for Internet Service Providers (ISPs) announced in 1998, opening the area to the private sector
- Migration from fixed licence fee to revenue sharing regime in August 1999
- Establishment of a dispute settlement mechanism called Telecom Disputes Settlement and Appellate Tribunal through TRAI (Amendment) Act, 2000
- National long distance service opened to competition in August 2000
- International Long Distance (ILD) services and Internet telephony opened for competition with effect from April 1, 2002
- Introduction of Calling Party Pays (CPP) in May 2003

- Unifies Access Service Licensing regime for basic and cellular operators introduced in October 2003
- Interconnection usage charge introduced in 2003-2004
- Reduction in the licence fee for basic / cellular / unified access services with effect from April 1, 2004

While there has been considerable expansion of tele-density over the last few years, the levels are low compared to both developed and developing economy standards. To achieve the optimal level of service provision, the Government's broad policy of taxes and regulation will have to be largely promotional. As pressures build up on the radio frequency spectrum, the policy of allocating frequency spectrum will also have to be revisited.

A large number of policy initiatives in the Indian telecom sector and the huge potential that the Indian market offers, are likely to enhance the volume of investment in this sector and help meet the objective of increasing the tele-density.

Railways

The Indian railway network is one of largest railway systems in the world with a capital base of about US\$ 11.5 billion. It has an extensive network, spread over 63,122 Route Kilometres (Rkm). Approximately, 26 per cent of the railway network is electrified.

One of the critical problems in Indian railways has been the decline in share of its internal resources, which has negatively impacted its financial position. This decline is due to the loss of its freight market share to road transport, which has seen massive investments in the highway and pipeline sectors. Relatively higher freight rates in order to subsidise ordinary passenger segments have also taken their toll. Besides this, there is a large speed differential between freight and passenger services that reduces the traffic throughout the system. The use of IT in freight segment is also somewhat short of the potential.

In order to ease these bottlenecks, the Government has adopted a number of new initiatives:

- World's largest reservation system has been set up. It connects 2,500 terminals through the Internet.
- First phase of computerised Freight Operation Information System completed to enable online tracking of cargo
- Freight structure rationalised by reducing the number of classes and the ratio between the highest and lowest freight rates
- High speed goods trains, time tabled parcel trains and integrated transport facilities are being developed through the terminal warehousing scheme
- A new BOLT scheme, which envisages private participation, has been initiated
- Various models of participation by State Governments (cost-sharing model) in railway projects have been initiated
- Finally, the National Rail Vikas Yojana announced in August 2002, focuses on:
 - Strengthening of the golden quadrilateral to enable the railways to run more long-distance mail and freight trains at higher speed
 - Strengthening of rail connectivity to ports and development of multimodal corridors to the hinterland
 - Completion of four mega bridges, 'last mile' and other important projects

Roads

The Indian road network of 3.3 million kms is the second largest in the world. Roads carry about 70 per cent of the freight and 85 per cent of passenger traffic and can be broadly divided into national highways, state highways, major district roads and rural roads. A number of initiatives have been taken by the Government in the last few years to improve the quality of the road network (see box 1.5). The result of the initiatives is now visible and has dramatically enhanced the quality of road travel and transport in India.

Box 1.5: Road Sector Initiatives

- System of annuity based BOT system in place to attract private sector investors
- The National Highways Development Project (NHDP) comprising:
 - 5,846 km Golden Quadrilateral (GQ) connecting the four metro cities with an investment of US\$ 11 billion
 - 7,300 km North-South and East-West corridors
 - 1,133 km of port connectivity
- Creation of a Central Road Fund to mobilise resources through cess to fund road construction
- 100 per cent Foreign Direct Investment (FDI) allowed in road sector projects
- Duty-free import of specified modern high capacity equipment for highway construction
- State Government initiatives such as enacting infrastructure development acts, amendments to the Indian Tolls Act and setting up of State Road Development Corporations

The thrust in this critical area is likely to continue with the Government playing an active role in investments. The partnership with the private sector in this area is likely to gain momentum.

Civil Aviation

The civil aviation sector in India has made significant strides in coping with domestic and international traffic. During the month of July 2004, all operational airports together handled 57.94 thousand aircraft movements (excludes defence & other non-commercial movements), 4.57 million passengers and 105.53 thousand tonnes of cargo. Indian Airlines Ltd. and private airlines provide domestic air services, while Air India Ltd., Indian Airlines Ltd. and other international airlines operating to India handle international air services. Private operators cater to nearly 60.1 per cent of the domestic air traffic.

The Indian Government has in the last few years taken major policy initiatives to improve the viability of airports (See box 1.6). The Expert Committee on Civil Aviation headed by Shri Naresh Chandra submitted its report in December 2003 and has recommended a hike in FDI limit up to 49 per cent, allowing all private domestic carriers to fly some international routes; privatisation of not only the Delhi and Mumbai airports but all airports, and a sharp reduction of taxes to enhance the quality of this service along-with the creation of incentives for new investments. While many of the recommendations have been implemented, others are at various stages of consultation.

Box 1.6: Initiatives in the Civil Aviation Sector

- The Airport Infrastructure Policy, 1997, permits private equity participation in development of airport infrastructure to bridge the resource gap as well as to bring greater efficiency

- FDI in joint ventures for modernisation of Mumbai and Delhi airports allowed up to 49 per cent
- Domestic Air Transport Policy allows participation by foreign individuals/companies (except foreign airlines) of up to 40 per cent and the participation of non-resident Indians (NRIs) of up to 100 per cent in domestic air transport services
- New International airports are being set up in Bangalore, Hyderabad and Goa with private sector participation
- Excise duty on ATF halved from 16 per cent to 8 per cent in February 2004

Ports and Shipping

Ports and shipping are a crucial segment of the transportation infrastructure. There are 12 major ports and 185 Minor/Intermediate ports located along India's 7,517 kms long coastline. Maritime transport accounts for about 95 per cent of the country's foreign trade in terms of volume and 70 per cent in terms of value.

Given the increased impetus on trade, there is an urgent need for better port connectivity and infrastructure for handling larger vessels. Focus on providing hinterland connection to various ports through railways and roads will reduce congestion levels at many ports. The pace of privatisation and corporatisation of ports has been stepped up. Though the average turnaround time for ships has improved, it is still lower compared to international standards. In order to ease the problems, the government has taken several initiatives in this sector. Listed below are some of them:

- FDI up to 100 per cent under automatic route allowed in construction and maintenance of ports and harbors, shipping and inland water transport sectors
- Government has taken steps for phased corporatisation of major ports
- Public-private partnership in the ports sector is being encouraged
- Guidelines for formation of joint ventures by major ports issued
- Inland Water Transport Policy approved by the Government
- Government has introduced tax incentives (tonnage tax) in the budget
- Action has been initiated to formulate a National Maritime Policy to provide fiscal, financial, administrative and legislative measures for growth and development of the maritime sector including ports, shipping and inland water transport in India

The Investment Scenario

The Indian investment scenario has undergone rapid transformation in the post liberalisation phase. The new regime did away with licensing, capital controls, quantitative restrictions on imports and decontrolled interest rates and reduced restrictions on foreign imports. Together, these led to a significant improvement in the 'investment climate', creating incentives for private investors, both domestic and foreign. Besides, Central and State Governments continue to offer a number of incentives for investment projects (see box 1.7). As a consequence, the share of private investment rose sharply from 12.5 per cent of GDP in the eighties to 15.4 per cent in the nineties.

Box 1.7: Investment Incentives

Central Government Investment Incentives

- 100 per cent profit deduction for developing, maintaining and operating infrastructure facilities
- Tax exemption of 100 per cent on export profits for ten years
- Deduction in respect of certain inter-corporate dividends to the extent of dividend declared

- Various capital subsidy schemes and fiscal incentives for expansion in the north-eastern and other industrially backward regions
- Export infrastructure improvements schemes

State Government Investment Incentives

- Single window approval system for setting up industrial units
- Electricity duty, registration fee and stamp duty exemptions
- Reservation of plots for NRIs, EOUs and Foreign Investment Projects
- Rebate on land cost, tax concessions and octroi refunds
- Interest rate and fixed capital subsidy
- Various incentives for backward area development and industrial development like capital subsidy, exemption from sales tax levy, subsidies on power rates, cheap developed land, loans etc.

Investments across the world follow a cyclical pattern and India is no exception. Thus, the investment cycle peaked in 1995-96 and subsequently went into a period of decline. Current indicators point to an incipient recovery in investments fuelled by a resurgence in the manufacturing sector and a steady decline in interest rates.

Foreign Direct Investment

The critical role of FDI in the economic development process is widely recognised, not just as a source of financial capital but also as a tool to enhance knowledge and technology transfer and integration into global production chains. A number of studies have showed a strong link between FDI flows and export growth.

Chart 1.6: Net Average FDI Inflow (1997-2002)



Given India's size, the quantum of FDI inflow falls well short of its potential (see chart 1.6). In fact, it has one of the lowest FDI inflows to GDP ratios among all economies. However, the FDI policy has been revamped continuously to encourage foreign investments. Foreign investment is allowed freely in almost all sectors including services. In some sectors the existing and notified sector policy permits FDI within a ceiling. Besides, virtually all items/activities can be brought in through the automatic route under powers delegated to the RBI. For the remaining activities, Government approvals are accorded on the recommendations of the Foreign Investment Promotion Board (FIPB). The automatic route is available not just to new ventures but to existing companies as well. Foreign technology agreements have also been actively promoted by the Government, to attract the desired investment through the automatic route.

Table 1.3: Share of Top Investing Countries in FDI Inflows January 1991 - July 2004 (US\$ million)

Rank	Country	1991	2000	2001	2002	2003	2004 Jan-July	FDI inflows	Percentage of total
1	Mauritius	3420.1	829.9	1667.5	1517.6	562.2	473.8	8471	34.68
2	USA	2310.3	418.4	367.6	282.8	413.9	274	4067.1	16.16
3	Japan	817.6	229.2	221.5	412.6	94.4	16.8	1792.1	7.34
4	Netherlands	607.9	127.2	229.2	155.7	252.6	329	1701.6	6.96
5	UK	657	65.5	285.3	353.9	187.6	110.9	1660.2	6.8
6	Germany	661	86.4	133.1	138.1	78.8	71.2	1168.6	4.78
7	France	270.9	79.4	132.3	110.5	35.7	36.4	665.1	2.72
8	Korea (South)	571.8	17.7	4.5	37.8	24.6	20.1	676.4	2.77
9	Singapore	343	116.6	35.7	47.1	36.5	27.1	606.1	2.48
10	Switzerland	233.6	43.5	39.6	52.4	93.3	58.9	521.3	2.13

Source: SIA (FDI Data Cell)

Mauritius is the top investing country, while the electrical equipment sector attracts the largest share of FDI inflow.

Table 1.4: Sectors Attracting Highest FDI Approvals and Inflows August 1991 - July 2004 (US\$ million)

Rank	Sector	Amount of FDI approved	Percent of Total FDI approved	Amount of FDI Inflows	Percent of Total FDI Inflows	Inflows as Percent of approvals
1	Fuel (i) + (ii)	19040	28.19	2374	9.97	14.43
	(i) Power	11855	17.21	-	-	-
	(ii) Oil refinery	7185	10.98	-	-	-
2	Telecommunications	11635	17.1	2659	11.08	26.44
3	Transportation industry	5352	8.4	2805	11.56	56.09
4	Electrical equipment	4941	7.75	3543	14.83	78.07
5	Metallurgical industries	4202	6.22	421	1.76	11.52
6	Services sector	3782	5.8	2104	8.37	58.95
7	Chemicals (other than fertilisers)	3359	4.83	1518	5.74	48.47
8	Food processing industries	2742	3.87	1125	4.43	46.76
9	Hotel & Tourism	1354	1.99	230	0.97	19.85
10	Paper & Pulp (including paper products)	832	1.26	336	1.27	41.1

Source: SIA (FDI Data Cell)

Defining Foreign Direct Investment (FDI): Some Critical Issues

According to the IMF, FDI is the category of international investment that reflects the objective of obtaining a lasting interest by a resident entity in one economy, in an enterprise resident in another economy.

There is a divergence in the definitions of FDI as stated by the IMF and used by the RBI for reporting its FDI statistics. According to the Balance of Payments manual of the IMF, FDI includes equity capital, reinvested earnings of foreign companies, inter-company debt transactions, short-term and long-term loans, financial leasing, trade credits, grants, bonds, non-cash acquisition of equity, investment made by foreign venture capital investors, earnings data of indirectly held FDI enterprises and control premium, non-competition fee, and so on. The concept of FDI includes the following organisational bodies:

- Subsidiaries (in which the non-resident investor owns more than 50 per cent)
- Associates (in which the non-resident investor owns between 10 and 50 per cent)
- Branches (unincorporated enterprises, wholly or jointly owned by the non-resident investor)

Statistics on FDI reported earlier by the RBI in the balance of payments included only equity capital and this tended to underestimate the quantum of FDI inflows. According to the International Finance Corporation, India's adoption of a standard method of FDI computation would raise its net annual FDI inflows from US\$ 2-3 billion to US\$ 8 billion and would be 1.6 per cent of its gross domestic product.

Table 1.5: FDI Inflows in India (US\$ million)

Item/year	2000-01	2001-02	2002-03	2003-04
FDI - by data currently published	2907.6	4221.9	3133.9	2776.1
FDI - by international definition	4029.0	6131.0	4660.0	4675.0
Additional amount on account of international definition	1121.4	1909.1	1526.1	1898.9

Source: DIPP, RBI

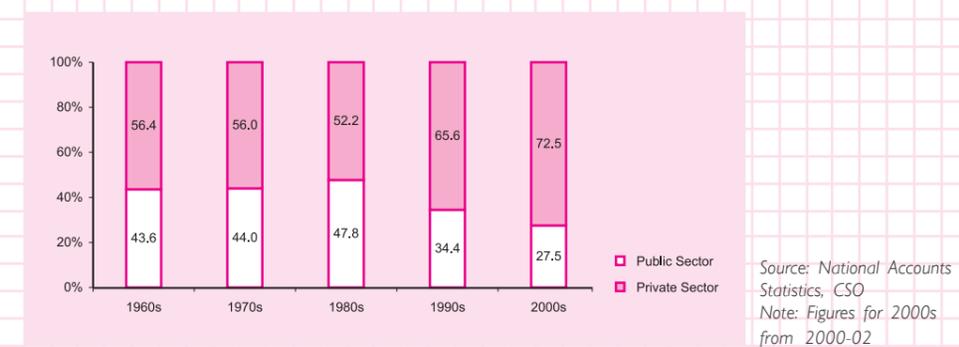
The RBI has revised the FDI definition, 2000-01 onwards, to include equity capital, reinvested earnings and other direct capital.

CHAPTER 2: THE GOVERNMENT- INVESTMENT NEXUS

The Indian investment scenario has undergone a rapid transformation since independence. While the share of investment (measured as gross domestic capital formation) in overall GDP has risen from 14.7 per cent in 1960s to around 23.3 per cent in early 2000s, there have been massive shifts in the composition vis-a-vis public and private investment.

Until the 1980s, the policy framework encouraged the dominance of the public sector, while the private sector faced controls in the form of industrial licences, industry reservation and price and distribution controls on various industrial products, resulting in lower private sector investments. Liberalisation and the dismantling of controls gave a fillip to private sector investments. As a result, the percentage share of the private sector in total investment surged from 52.5 per cent in the 1980s to 65.6 per cent in the 1990s and further to 72.5 per cent in the early 2000's.

Figure 2.1: Share in Investment



Industrial Policy Reforms and Investment

The new Industrial Policy of 1991 promoted investment, both domestic and foreign, through de-restriction of domestic production and investment. A number of measures have since been taken to further ease the process of private participation in investment. Of these, the two most critical ones were:

- First, industrial licensing was virtually abolished, except for industries where licensing continues purely on public health, safety and security considerations
- Second, the number of industries reserved for the public sector was reduced to just two [(a) atomic energy, and (b) railway transport]

Besides these, procedural delays were eliminated. Industries exempted from licensing are now required to file only the relevant information in the prescribed Industrial Entrepreneurs Memorandum (IEMs) with the Secretariat for Industrial Assistance (SIA) with no requirement of further approvals. At the State level, serious efforts for simplifying the rules and procedures for setting up and operating industrial units have been made. A 'single window' system is now in existence in most of the States for granting approval for setting up industrial units.

Fiscal Incentives - Centre & States

The change in the industrial regime in the post liberalisation period was coupled with a range of fiscal incentives offered by both the Central and State Governments. Both the Centre and the States promote investment through general fiscal incentives for industries (see box 2.1). Tax holidays from the Centre in the form of deductions are available for various types of

investment. 100 per cent tax exemption is available in special economic zones and for export-oriented units.

Moreover, with a view to attract investors including those from overseas, many States are offering incentive packages in the form of various tax concessions, capital and interest subsidies, reduced power tariffs etc.

Box 2.1: Investment Incentives

Central Government investment incentives

- 100 per cent profit deduction for developing, maintaining and operating infrastructure facilities
- Tax exemption of 100 per cent on export profits for ten years
- Deduction in respect of certain inter-corporate dividends to the extent of dividend declared
- Various capital subsidy schemes and fiscal incentives for expansion in the north-eastern region
- Tax deduction of 100 per cent of profits for 5 years and 50 per cent for next two years for undertakings in Special Economic Zones (SEZs)

State Government investment incentives

- Single window approval system for setting up industrial units
- Electricity duty, registration fee and stamp duty exemptions
- Reservation of plots for NRIs, EOUs and Foreign Investment Projects
- Rebate on land cost, tax concessions and octroi refunds
- Interest rate and fixed capital subsidy

Foreign Investment Policy

The liberalisation era also witnessed a spurt in foreign investments that buttressed the growth in private investment. A number of initiatives were taken to facilitate foreign investments. In addition to the fiscal incentives and delicensing, drastic changes in the Foreign Exchange Management Act (FEMA), FDI and foreign technology procedures were initiated to attract foreign investment into India.

While, initially, most investments were subject to prior approval from the Foreign Investment Promotion Board (FIPB), even those activities were progressively opened up to foreign investment that required only post-facto reporting to the RBI. The FIPB has been set up to streamline the procedures at the Central Government level to decide on the proposals within of fifteen days. Most sectors now come under this automatic route. To liberalise the FDI regime further, even sectors considered sensitive such as insurance (up to 26 per cent); integrated township development (up to 100 per cent); defence industry (up to 26 per cent); tea plantation (upto 100 per cent subject to divestment of 26 per cent within five years to FDI) and private banking (up to 74 per cent) were opened up.

The Foreign Investment Implementation Authority (FIIA) was set up to facilitate the quick translation of approval into implementation.

Other Economic Reforms and their Impact on Investment

Reforms affect the quality of the investment environment, not merely through direct measures to facilitate investments but also through the more indirect measures aimed at improving the quality of the 'operating environment' for firms and businesses. Some other key reform measures taken by the Indian Government that have played a role in improving the investment environment are:

- Full national treatment of foreign companies incorporated in India
- Large tariff reductions and a stable tax regime with just 3 rates for both excise as well as customs duties
- Foreign nationals have the option of being taxed under the tax treaties that India may have signed with their country of residence
- Simplification of the earnings repatriation procedure
- Financial sector reforms included decontrolling of interest rates, resulting in a large decline in interest rates, particularly since 2001, further promoting private investment
- Import of capital goods and other intermediaries liberalised to expose the industry to external competition
- Concerted efforts at increasing public sector investment in strategic, hi-tech and essential infrastructure and encouraging private sector, as budgetary constraints limited public spending

As a consequence of the above reforms, the period from 1991 to 1996 saw a boom as lifting of controls on licensing, technology import and foreign investment led to a dramatic rise in industrial investment. Industrial intentions peaked at 6,900 proposals worth US\$ 42 billion in 1995. While there was a slowdown subsequently, triggered by both global and domestic factors such as high interest rates, current indicators point to an incipient recovery in investments fuelled by a turnaround in the manufacturing sector and a steady decline in interest rates.

The reforms process has been instrumental in bringing about four key changes in the relationship of foreign firms with India:

- (a) Foreign firms now invest more freely in India
- (b) Indian firms are considered cost-competitive
- (c) The rise in competition has led to an increase in demand for investing in new technology in India
- (d) The Indian market is perceived as one of the largest untapped markets with a large number of middle class consumers

Hence, economic reforms in general have played a key role in the emergent price mechanism, greater efficiency, enormous investment opportunities, lesser bureaucratic controls and a greater role for private initiative. Government policies have facilitated investments. Moreover, the adverse impact of a decline in public investment is outweighed by the decline in the cost of capital and favourable investor perceptions.

The Role of the Government

Over the years, while the role of the Government as a direct investor has diminished with the advent of liberalisation, it remains an active player in the investment domain. Four critical roles of the Government have emerged in the current scenario:

- As an 'enabler' of private investment activity by nurturing an environment that is conducive to private interest
- As a provider of critical infrastructure that can support production activity and thereby encourage investment

- As a partner of the private sector in 'public-private' partnerships
- As an investor in sectors such as health and education where private interest and participation may not be adequate to serve the needs of society

The Role as 'Enabler' and the Importance of Governance

Governance refers to the management of all such processes which in any society define the environment that enables individuals to increase their capability levels and provide opportunities to realise their potential and enlarge the set of available choices. It spans an entire range of issues and activities including the quality of regulation, the delivery of public goods and services, the efficiency of resource mobilisation, the management of public finances, the empowerment of the public and the quality of judiciary. The three pillars on which the edifice of governance stands are institutions (parliament, judiciary etc), delivery mechanisms (primarily the executive apparatus) and the supportive framework of rules, procedures and laws.

The quality of governance is a critical determinant of the investment climate. Good governance can improve the incentive to invest in the following ways:

- Establishing credibility – Credibility and continuity of policy are critical to investment flows. Investors will agree to invest only if they believe that policies will remain unchanged and independent of the regime in power, particularly for infrastructure projects that have longer gestation periods
- Fostering public trust: Governance has to improve the mutual trust between Government and industry. The absence of trust in Government with respect to industry can lead to excessive regulation which in turn breeds rent-seeking behaviour. On the other hand, mistrust of the Government by investors can lead to an aversion to invest and attempts to circumvent the regulatory or policy environment in taking business decisions.

At a fundamental level, India's superiority in the governance domain lies in the robustness of its institutions. It is a functioning democracy with an established civil service and independent judiciary. However, it is now an accepted fact that in the pre-liberalisation era, excessive intervention or the 'license permit raj' skewed the incentive structure considerably.

The key step in reducing the impact of excessive regulation was to reduce the degree of intervention in the economy. Steps like the abolition of licensing, removing import quotas, as well as reservations are an integral part of improving governance. Current industrial, trade and investment policy aim at 'facilitation' rather than control

Box 2.2: The rise of e-governance

The current emphasis in the Government's e-governance initiative is on providing connectivity, networking, technology upgradation, and selective delivery systems for information. The real challenge however lies in re-engineering procedures and rules, making them simpler and easier to implement.

National e-Governance Action Plan (2003-07) - (NeGAP)

To implement a comprehensive programme to accelerate e-Governance at all levels of the Government to improve efficiency, transparency and accountability, the Government of India has initiated the National e-Governance Action Plan for implementation during 2003-2007. The plan seeks to create the right governance and institutional mechanisms, set up the core infrastructure and policies and implement a number of Mission Mode Projects at the Centre, State and integrated service levels to create a citizen-centric and business-centric environment for governance.

The e-Governance framework would include Back-ends (databases of the different Government agencies, service providers, State Governments etc.), Middleware and the Front-end delivery channels (home PCs, mobile phones, kiosks, integrated citizen service centres etc.) for citizens and businesses. The Middleware comprises of communication and security infrastructure, gateways and integrated services, facilitating integration of inter-departmental services.

e-Biz

e-Biz is one of the five integrated services projects that are part of the NeGAP. The main purpose is to provide a single window Business to Government portal, offering services to investors, industries and businesses regarding information on forms & procedures, approvals, clearances and permissions, reporting, filing, payments and compliances throughout their lifecycle. The pilot e-Biz project is planned to be implemented in Andhra Pradesh, Maharashtra, Haryana and Uttar Pradesh.

The other core integrated services projects include:

India Portal

Single window web based delivery of information and Government services at the National level

State Portals

Single window web based delivery of information and State Government services at the State level

Electronic Document Interchange

Formatted transaction of business documents (invoice and purchase) electronically

e-Procurement

Publishing of tenders, bidding online, block tendering, empanelment of agencies etc.

Payment Gateway

Facilitating transactions involving payments etc.

Policy-making in the post-liberalisation phase has focused on a long-term perspective and has signalled a commitment to the process of reform – a process of continuous improvement. Despite changes of Government at both the Centre and States, there has been no reversal of any major reform initiatives that affect investments.

Box 2.3: Governance Initiatives in Intellectual Property Rights

The smooth functioning of the Intellectual Property Rights (IPR) regime is critical to the growth and development of knowledge intensive sectors such as pharmaceuticals and Information Technology (IT). The government has recently taken a number of initiatives in modernising and revamping the IPR regime in the country:

- India will recognise both product and process patents from 2005
- Indian IPR laws have been made TRIPS compliant
- The Intellectual Property Appellate Tribunal was made functional from September 15, 2003
- Major initiatives are underway for modernising Intellectual Property Administration such as computerisation of intellectual property administration and creation of a digital database of patents, trademarks, liquidation of backlog and design records

This is not to suggest that further improvement is not warranted. Despite the mechanism of 'single-window' clearance in the process of setting up a production unit, there can be significant

delays in getting projects cleared. Surveys reveal that the number of days taken to set up a new business in India is higher than that of peer economies like China. The percentage of management time spent in dealing with regulators is also significantly higher. Both Central and State Governments are aware of these problems and are exploring strategies for reforming the administrative structure.

The Role as a Provider of Infrastructure

While the Government has taken a number of measures in the past to improve the availability and the quality of infrastructure, there is little doubt that infrastructure facilities are below what could be termed optimal to support India's growth potential (Ch 3 and 4 discuss this issue in detail). Sunrise sectors like IT have their specific infrastructure needs that have to be met if their growth momentum is to be sustained.

Given these pressures, the Government has to play an active role in improving infrastructural facilities. Given the quantum of the need, it is impossible for the Government to attempt to provide everything on its own and a large amount of both domestic private and external funds are necessary to bridge the gap.

In the past, the desired amount of private domestic or Foreign Direct Investment did not flow to the infrastructure sector for a number of reasons. User charges in key infrastructure sectors like power have not been determined by the market, entry norms in these sectors have not been clearly defined. However regulation had potential for large scale improvements and over the last few years, the Government has taken a number of initiatives to rectify these problems and create a healthy environment for investment inflows. Independent regulators for sectors like power and telecom have been set up both at the Central and State levels, who are given the freedom to set tariffs. Entry norms have been simplified with particular emphasis on enabling private sector participation. FDI norms have also been eased considerably. The recently enacted Electricity Act, for instance, introduces a comprehensive framework for reform in virtually every aspect of the sector (See Chapter 3).

The Role as Investor in Social Sectors

Social sectors like health and education are critical to the development process. However, these sectors are susceptible to 'market failure' in the sense that the market, on its own, cannot ensure that optimal amounts of these public goods & services are provided. Returns on projects in these sectors are often too low to invite significant participation and charging market rates may mean that the sections of society which need these goods and services the most may not be able to afford them. Besides, the Government needs to focus on programmes specifically targeted at vulnerable groups. Thus, it needs to undertake investments in programmes aimed at poverty alleviation or providing employment in times of crisis such as crop failure.

Therefore, in these sectors, the Government needs to be an active investor. Total investment by the Central Government in community, social & personal services was US\$ 7.3 billion in 2001-02 and by the State Governments' (on developmental expenditure on social services) was US\$ 29 billion in 2003-04. As the Government steps out of other sectors, it should ideally step up the investment levels in the social sectors. While there is no mechanical yardstick by which the 'optimal quantum' of social sector investments can be determined, the National Common Minimum Programme of the Government targets investments in these sectors at 6 per cent of GDP over the medium term.

The Government has historically been a key participant in investments in social sectors, spanning an entire range of sectors and activities. Table 2.1 lists some of the key programmes that the Government has undertaken along with allocations made to them.

Table 2.1: Social Sector Initiatives

Sector	Programme	Objective	Outlay /Period
Education	Janshala	To make primary education more accessible and effective, especially for girls and children in deprived communities, covering 139 blocks in 9 states	US\$ 21.4 mn (1998-2002)
	Sarva Shiksha Abhiyan	<ul style="list-style-type: none"> All children (in age group 6-14) in school by 2003 All children (6-14) to complete 5 years of primary education by 2007 All children (6-14) to complete 8 years of schooling by 2010 	US\$ 198 mn (2000/01 to 2001/02)
Rural Development	Jawahar Gram Samridhi Yojana	To create need-based rural infrastructure at village levels; to boost rural economy in general and improvement of quality of life in particular. Also provides individual assets to the poorest of the poor SC/ST families	US\$ 5487 mn (1990/91 - 2001/02)
Food and Nutrition	Integrated Child Development Scheme	To improve the nutritional status of pre-school children and pregnant and lactating women. The initial geographic focus was on drought-prone areas and blocks with a significant proportion of SC/ST population	US\$ 925 mn (1995/96-2000/01)
Poverty	Swarnjayanti Gram Swarozgar Yojana (SGSY)	To bring the poor families above the poverty line by organising them into Self Help Groups (SHGs) through the process of social mobilisation, training and capacity building and provision of income generating assets through a mix of bank credit and government subsidy	US\$ 162 mn (2001/02)

Source: Government Documents

The budget for the current fiscal year 2004-05 also has a number of measures for the social sectors that are in keeping with the National Common Minimum Programme. Some of the major initiatives are as follows:

- Antyodaya Anna Yojana to cover 20 million families with a subsidy of nearly US\$ 730 million
- National Employment Guarantee Act to guarantee an employment of 100 days in a year to one able-bodied person in every poor household
- Food for Work programme in 150 districts classified as most backward and identified as areas in immediate need of such a programme
- The allocation for programmes concerning the Scheduled Castes is US\$ 246 million and for Scheduled Tribes is US\$ 240 million
- Additional allocation of US\$ 10.4 million made for the National Minorities Development and Finance Corporation
- About US\$ 1 billion in a full year to be earmarked for education, including provision of a nutritious, cooked mid-day meal
- Universal Health Insurance Scheme exclusively for persons and families below the poverty line with an outlay of US\$ 8.3 million

The Government as Partner in Investment Schemes

In a number of instances, both public and private participation - on their own, have been found inadequate in providing the quantum of infrastructure required. In urban development, for instance, the private sector may face hurdles in assembling large chunks of contiguous land, face delays in approvals from local authority etc. On the other hand, the public sector could face constraints with lack of expertise or lack of commitment to quality. Thus there is potential for a synergistic partnership between the public and private sectors in infrastructure projects of this nature and the Public-Private Partnership (PPP) model is an important way of tapping these synergies.

To encourage the above synergies, the Indian Government has recently issued guidelines for support to public-private partnerships in infrastructure. It has proposed provision of support through 'viability gap funding' (Box).

Box 2.4: Guidelines for Support to PPP in Infrastructure

Criteria

To be eligible for funding under PPP, the project must be implemented with at least 40 per cent private equity and must be related to road, railways, seaports, airports, power, water supply and sewerage or international convention centres. The total support from the Government, States and other agencies, must not exceed 20 per cent of the total project cost. The extent of viability gap funding shall be determined on the basis of the net present value of the actual viability gap, where the interest rate on 10-year gilts will be the rate of discount.

Funding

- Viability gap funding can be in the form of capital grant, subordinated loans, Operations & Management (O&M) support grants or interest subsidy
- Funding will be contingent on physical and performance levels achieved
- Funding will be provided in instalments with at least 15 per cent of the funding to be disbursed only after the project is fully functioning

Appraisal and Approval procedures

An empowered committee will consider the project proposals with viability gap funding of up to US\$ 11 million. The Finance Minister will approve viability gap funding beyond US\$ 11 million. The project proposal should be accompanied by an appraisal by a public financial institution and a letter of commitment on behalf of the lending institutions.

One of the most successful applications of public-private partnerships has been in the roads sector. The following box encapsulates the modes of this partnership.

Box 2.5: PPP in India – the Roads Sector

The roads sector in India is a good example of PPP in Indian infrastructure. Of the various modes of collaboration between the public and private sectors in the roads sector, two examples are:

The SPV model:

In this model, the National Highways Authority of India, the government agency invests around 30 per cent of the project as equity, with the clear intention of offloading its stake after the project is completed. The private sector partner contributes 5-10 per cent and the balance is raised from the market. Till date about 13 projects have been implemented through the SPV route.

BOT- Annuity Based Projects

Under this model, the private concessionaire is responsible for the construction and maintenance of the project highway and NHAI makes a semi-annual payment to the concessionaire. The concession contract is awarded to the bidder quoting the lowest annuity amount. Under this approach, there is no direct reference to the number of vehicles using the highway and hence the traffic risk is borne by the Government. Eight projects have been awarded by the NHAI under this scheme.

The Government Investment Nexus: Conclusion

Though in the post liberalisation environment, the Government has withdrawn from a number of production activities, it is still a major participant in the investment process. It remains the provider of public goods in social sectors that are known to be prone to market failure. It is also an enabler of private investment and can improve the investment environment for the private sector through governance initiatives. The steps towards improving governance include measures to reduce the regulation and make the process of entry easier, for both domestic private investors and foreign investors. This is particularly true of the infrastructure sector where there is a wide gap between actual investments and the optimal or desirable levels to support a higher growth momentum. Finally, it has to be an active partner of the private sector in public-private partnership projects in order to bring together the synergies of the government and the private sector to a fruitful fusion.

CHAPTER 3: THE INFRASTRUCTURE CHALLENGE

The infrastructure sector comprising of transportation, communications, electricity and other services constitutes the backbone of any growing economy. Supply bottlenecks of critical services can severely hamper growth and development. The Tenth Five Year Plan has targeted an annual growth of 8 per cent in GDP over 2002-07 as compared to the average of 5.6 to 5.7 per cent recorded during the eighties and nineties. However, further acceleration of growth requires significant investments in infrastructure. The energy-transport infrastructure, in particular, will be a major determinant of an acceleration in GDP growth.

According to the Tenth Five Year Plan, the cumulative investment requirement during 2001-02 to 2005-06 has been estimated at US\$ 156 billion. Of this, 40 per cent is required in the power sector, 11 per cent in telecom and around 14 per cent in roads and railways. With US\$ 38 billion already invested between 2001-02 and 2002-03, there still exists a target of US\$ 118 billion to be met over the next three years.

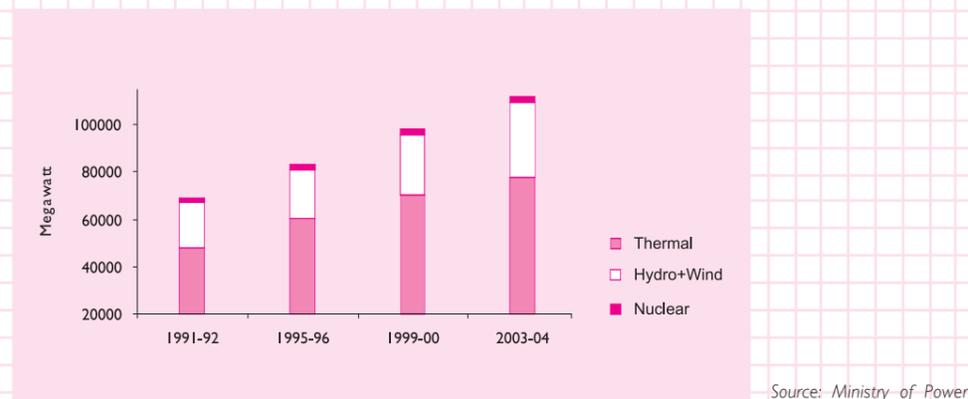
All the infrastructure sectors need sufficient funds for expansion and maintenance of existing facilities. To address this need as well as improve efficiency, a number of policy measures have been initiated recently. In order to create an adequate provision of various public goods, the Government has changed its role from direct producer of public goods and focuses on facilitating and encouraging public-private partnership, including Foreign Direct Investment. This effort has borne fruit over the last five years. According to a World Bank report, India was amongst the top ten developing countries to receive private participation in infrastructure projects worth US\$ 27.7 billion (in 2001). Changes have also been initiated with an emphasis on implementing commercially viable projects, well-enforced user charges and a regulatory framework that fosters competition.

This chapter reviews the availability of infrastructure, key challenges, regulatory changes, future targets and public-private participation and opportunities in critical infrastructural segments of power, IT and telecom, civil aviation, roads, railways and ports & shipping.

Power

Power is one of the most critical infrastructure sectors which determines economic development. The growth in demand for power is generally higher than the GDP growth rate. In India, the elasticity ratio during the 1990s was projected at around 1.5 and a similar elasticity is expected to hold, when going forward. Hence, to support a GDP growth of 8 per cent per annum, the power supply needs to grow at around 12 per cent annually.

Figure 3.1: Power Generation Capacity (in megawatt)

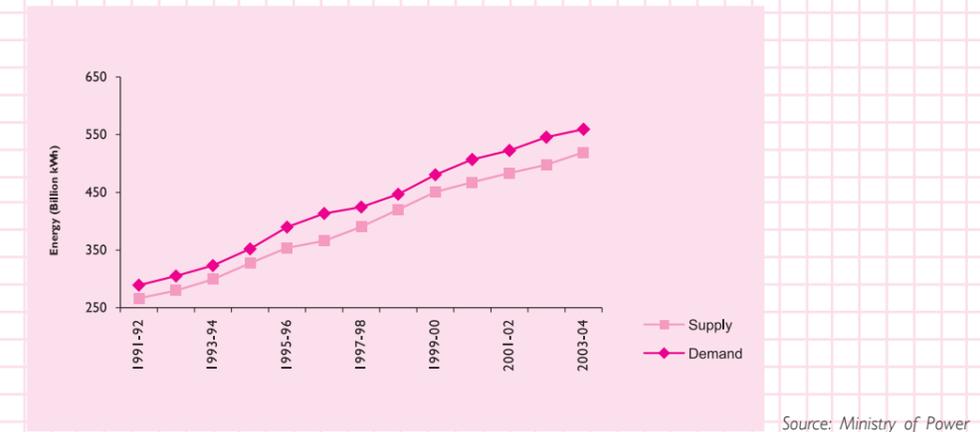


The power generation capacity in India grew at a compounded annual rate of 4.1 per cent during 1991-92 to 2003-04. In 2003-04, thermal sources accounted for almost 70 per cent of the power generation capacity. Hydro, wind and nuclear sources accounted for 28 and 2 per cent respectively. Indian policy has attempted to encourage hydel and wind energy sources that do not rely on fossil fuel, and hence, avoid carbon emissions. This has resulted in a faster growth of the hydel and wind sources.

Demand-Supply Gap in Power

The demand for power has grown at a Compounded Annual Growth Rate (CAGR) of 5.66 per cent from 289 billion kilo Watt hour (kWh) in 1991-92 to 559 billion kWh in 2003-04. Power supply in the same period has increased at a CAGR of 5.72 per cent from 266 billion kWh to 519 billion kWh. As a result, the energy shortage has widened from 22.6 billion kWh in 1991-92 to 39.9 billion kWh in 2003-04.

Figure 3.2: Power: Demand-Supply Gap



Some Problems in the Power Sector

The shortage in power supply is a result of a set of problems that the Government is actively addressing. These problems include inadequate power generation capacity, lack of optimum utilisation of the existing generation capacity, inadequate inter-regional transmission links, inadequate and ageing sub-transmission & distribution network, slow pace of rural electrification and inefficient use of electricity by the end consumer. In addition, poor cost recovery in distribution (since revenues from selling electricity fall short of the cost of buying or producing it), has resulted in weak financial status of the State Electricity Boards (SEBs). Moreover, price signals in the power sector have been distorted through highly subsidised power for agriculture and domestic consumers.

Recent Reform Initiatives in the Power Sector

A number of power sector reforms have been initiated since 1991 to address the above problems. Some of the key reforms were:

- The Central Electricity Regulatory Commission (CERC) was set up at the national level and State Electricity Regulatory Commissions (SERCs) were set up in 23 States
- The issues of one-time settlement of dues payable by SEBs was addressed by securitising the dues

- c In 2000, the Indian Electricity Grid Code was established to ensure grid discipline
- d An Accelerated Power Development and Reforms Programme (APDRP) was formulated to provide central support to States undertaking distribution reforms
- e The Central Electricity Tariff Commission's recent guidelines provide for a 14 per cent ROE in its tariff calculations

Future Targets

Table 3.1 lists the future targets in the power sector set in the Tenth Five Year Plan
 Table 3.1: Sector-wise/mode-wise capacity addition (in MW) during the 10th Pan (2002-07)

Source	Central	State	Private	Total
Hydro	8,742	4,481	1,170	14,393
Thermal	12,790	6,676	5,951	25,417
Nuclear	1,300	-	-	1,300
Total	22,832	11,157	7,121	41,110

Source: Planning Commission

Private Sector Participation in the Power Sector

Private investment in the power sector was first encouraged through the opening up of investment in power generation. This was subsequently extended to distribution and transmission projects through passing of Electricity Laws (Amendment) Act in 1998. The response from the private sector has been encouraging. Since 1991, a total capacity of around 7400 MW from 37 private power plants has been commissioned. The 9th Plan witnessed 5,061 MW of power capacity addition by the private sector. An additional 37,473 MW of private power generation capacity is likely to be added during the 10th Plan.

In the initial phase, the low private sector participation was a fallout of the absence of an enabling regulatory, legislative and market environment, slow pace of reforms in power and related sectors, inability to deliver bankable contractual frameworks, inefficient distribution mechanism and discouraging competition in generation. Investment in generation through Independent Power Producers (IPPs) who would sell power to the State Electricity Boards (SEBs) also failed to work as fear of non-payment by SEBs - the monopoly transmission and distribution companies, deterred the private sector. The Electricity Act 2003 was enacted to fill these lacunae and encourage private investment (Box 3.1).

Box 3.1: Electricity Act 2003 – Key Features

- Captive generation freely permitted
- Non-discriminatory open access in transmission introduced to encourage competition between generators and distributors
- Provision for generation and distribution in rural areas permitted without licence
- Consumer tariffs to progressively reduce cross subsidies and move towards actual cost of supply
- Spot trading of electricity permitted and possibility of futures and options on electricity being explored

In order to encourage investment in the private sector, automatic approval (RBI route) for 100 per cent foreign equity is allowed in power (except in nuclear power). In addition, duty concessions are offered on import of capital goods for setting up mega power projects. The enactment of the Electricity Act is bringing about far reaching changes in the power sector, making it substantially easier for private players to participate. Box 3.2 describes some of the critical changes that the Act is expected to foster.

Encouraging results of the Act are already evident. 11 Independent Power Producers (IPPs) with 4000 MW of capacity have already achieved financial closure in the last one-year.

Box 3.2: Electricity Act 2003

Before	After
<ul style="list-style-type: none"> • Dominance of SEBs & Central Generating Stations. • High accounts receivables, as they supplied power to financially weak SEBs • Weak payment security mechanism for IPPs • T&D the weakest link in the system, marred by huge losses (>40 per cent) • Poor infrastructure, inadequate investment, unremunerative tariff structure and theft - main reasons for losses • No third-party access available to this infrastructure • Poor financial state of SEBs driven by huge T&D losses and skewed tariff structure • Single supplier with poor quality 	<ul style="list-style-type: none"> • Structural reforms undertaken by various SEBs to improve payment security • Captive power generation and third-party sales encouraged • Unbundling & corporatisation of T&D business by SEBs • Higher infrastructure investments • Tremendous opportunities for private power utilities in distribution activity • Stringent norms imposed • Cross-subsidies to fall gradually and tariff imbalances to be removed • Consumers above 1 MW allowed to source power from the supplier of choice • Quality of supply to improve in the long run

Investment Opportunities for the Private Sector

Investment opportunities for the private sector in the distribution of power have expanded as several State Governments have agreed to their entry in distribution. With a total capacity addition of 1,13,000 MW expected during 2002-12, an investment of US\$ 200 billion in power generation, transmission and distribution is envisaged. The private sector can also participate in import of LNG for setting up large capacity combined cycle power plants, renovation and modernisation, cross country grids and energy audit and monitoring.

Telecommunications and Information Technology

The telecommunications sector has grown at a phenomenal rate since 1995 with the increasing significance of knowledge based sectors such as Information Technology (IT) and IT Enabled Services (ITES). Tele-density in India (per '00 households) has increased from 1.3 in 1995-96 to 7.02 in 2003-04. Much of this jump has been driven by policy initiatives and reforms, recognising the sector's role in economic development and encouraging greater competition.

The total number of mobile telephone connections as on March 31, 2004 was 33.7 million while the number of fixed lines was 42.84 million. In rural telephony, of the 60 million villages identified in the 1991 census, 52.2 million had a Village Public Telephone (VPT) as of March

2004. In bandwidth connectivity, India has a total of 20.5 gigabits per second of international connectivity.

Competition among private players has resulted in a sharp drop in tariff rates and hence a large rise in telephone connectivity. In 2003-04, mobile connections grew at 160 per cent while basic telephony grew at 3 per cent. Of this, the share of public operators in overall (fixed and mobile) telephone connection has fallen from a total monopoly in the early 1990s to around 60.7 per cent in 2003-04. The private sector holds a 39.3 per cent share. There has been a shift in access technology from fixed to mobile telephony in recent years. Mobile subscribers have already surpassed fixed line connections in the Delhi, Mumbai, Chennai and Punjab telecom circles. The large rise in share of private players in the Indian telecom sector in the last two years is an indication of the existing opportunity in this sector.

Recent Reform Initiatives in the Telecom Sector

One of the key challenges facing this industry is the rapid technological change necessitating a mature regulatory framework with broad policy of taxes and regulation that is largely promotional. The policy framework also needs to consider the active competition between Global System for Mobile (GSM) and Code Division Multiple Access (CDMA) mobile telephony. With these objectives in mind, the Indian telecom sector reforms have created a favourable environment that fosters competition and buttresses growth (Box 3.3).

Further, to enable the adoption of latest technologies, a separate Ministry of IT was established in 1999 and an Information Technology Act was passed in 2000. The investment policy in the IT sector allows for foreign equity up to 100 per cent in the software industry, via the automatic route. A number of states have developed their own IT policies to promote the software sector. Investment incentives being offered include tax holiday up to 2010 for IT units in Software Technology Parks (STPs) and tax holiday for up to 10 years with 125 per cent tax concession for R&D units.

Box 3.3: Telecom Sector Reforms

- Telecom equipment manufacturing deregulated in 1991
- Cellular phone services thrown open to private sector in 1992 and basic services in 1994
- The National Telecom Policy (NTP) formulated in 1994 and later replaced by NTP '99.
- NTP '99 also provided for registration of Other Service Provider category to promote BPO activities
- The Telecom Regulatory Authority of India (TRAI) set up in 1997 as an independent regulator
- Private sector allowed in Internet Service Provider (ISP) sector in 1998
- Migration from fixed licence fee to revenue sharing regime in August 1999
- Establishment of a dispute settlement mechanism called Telecom Disputes Settlement and Appellate Tribunal through TRAI (Amendment) Act, 2000
- National long distance service opened to competition in August 2000
- The Communication Convergence Bill introduced in Lok Sabha in August 2001
- International Long Distance (ILD) services and Internet telephony opened for competition in 2002
- Introduction of the Calling Party Pays (CPP) in May 2003

- 'Unified licensing regime' for basic and cellular operators introduced in October 2003
- Interconnection Usage Charge introduced in 2003-04
- Reduction in the Licence fee for Basic / Cellular / Unified Access Services with effect from 01.04.2004

Future Targets

Tele-density of 7.67 has already been achieved (July 2004) and the industry expects a much higher tele-density than the Planning Commission target of 9.91 by March 2007.

Private Sector Participation in the Telecommunication Sector

India is one of the most deregulated telecom markets in the world with private participation in international long distance (ILD), National Long Distance (NLD), basic, cellular, Internet, radio paging and other value added services. Private players dominate the cellular telephony (78.5 per cent share) with an increasing share in basic telephony.

Investment Opportunities for the Private Sector

- Indian tele-density at 7 is low as compared to emerging markets like Brazil and China at 42.38 and 42.32. In the rural market, this density (at 1.58), is even lower. This opens up a huge potential market for participants
- Major impetus to tele-density is expected to arise from semi-urban and rural markets
- Investors can acquire licences issued to existing operators who are divesting equity stakes to foreign investors
- 100 per cent FDI is permitted in the telecom equipment manufacturing sector through the automatic route
- Participation in telecom equipment marketing

Civil Aviation

The civil aviation sector in India has made significant strides in coping with domestic and international traffic and has played a crucial role in the development of trade and tourism. During the month of July 2004, all operational airports handled 57.94 thousand aircraft movements (excludes defence & other non-commercial movements), 4.57 million passengers and 105.53 thousand tonnes of cargo.

There are 125 airports in the country, controlled by the AAI, of which 11 are international airports. The infrastructure facility at Indian airports is managed by the Airports Authority of India (AAI). Among air operators, Indian Airlines Ltd. and other private airlines provide domestic air services while Air India Ltd., Indian Airlines Ltd. and other international airlines operating to India handle international air services. In addition, there are 37 non-scheduled operators providing air taxi/non-scheduled air transport services.

Recent Reform Initiatives in the Civil Aviation Sector

The Indian Government has taken major policy initiatives to improve the viability of airports (See box 3.4). The Expert committee on Civil Aviation headed by Shri Naresh Chandra submitted its report in December 2003 and implementation of its recommendations is expected to enhance the quality of this service along with creation of incentives for new investment.

Box 3.4: Initiatives in the Civil Aviation Sector

- The Airport Infrastructure Policy, 1997, permits private equity participation in development of airport infrastructure to bridge the resource gap as well as to bring greater efficiency
- Domestic air transport policy allows participation of foreign individuals/companies up to 40 per cent and the participation of non-resident Indians (NRIs) up to 100 per cent in domestic air transport services. However, no direct/indirect equity participation by foreign airlines is permitted in domestic air transport services
- The International Air Transport Policy permits domestic private carriers to utilise international air transport bilateral traffic rights subject to a first refusal by Air India and Indian Airlines
- New international airports are being set up in Bangalore, Hyderabad and Goa with private sector participation
- In January 2004, the excise duty on ATF was reduced from 16 to 8 per cent and both Foreign Travel Tax (FTT) and Inland Air Travel Tax (IATT) were abolished
- Foreign equity participation in airport infrastructure is permitted up to 49 per cent for modernisation of Delhi and Mumbai airports and 100 per cent for greenfield projects
- Open sky policy for cargo and charters is allowed till 2007

Future Targets

The country has witnessed an immense growth in air traffic over the past three decades and given the low penetration rate and expected fall in airfares, this surge is likely to continue. The domestic traffic is projected to rise from 12 million passengers in 1996-97 to 52.3 million in 2016-17. The international passenger traffic is expected to rise from 10.9 million in 1996-97 to 33 million in 2016-17. In addition, the AAI has set aside US\$ 800 million to modernise and expand airspace management and infrastructure over the next five years. This presents an enormous opportunity for private sector players.

Private Sector Participation in the Civil Aviation Sector

The private sector has participated in domestic air services, greenfield airport construction and financing in India. In domestic air services, the number of passengers availing of private airlines has increased from 15,000 in 1990 to 6.7 million in 2001. In 2003-04, private operators catered to nearly 60.1 per cent of the domestic air traffic.

The equity of the new international airport at Cochin was financed by funds from the State Government, Non-Resident Indians, travelling public, financial institutions and airport service providers. The Government of Kerala and State Government undertakings jointly invested 51 per cent of the equity, while the public and private sector have invested the balance 49 per cent of the equity.

The Bangalore Airport is the first-ever 'greenfield airport' in the country, being implemented on a Build Own and Operate (BOO) basis. The airport would be constructed through a private-public partnership, with the joint venture company comprising Karnataka State Industrial Investment and Development Corporation (KSIIIDC) and Airports Authority of India (AAI) as well as a consortium of companies including Siemens (Germany), Unique Zurich (Switzerland) and Larsen and Toubro (India).

Investment Opportunities for the Private Sector

The investment opportunities for the private sector exist in the following areas:

- Restructuring and modernisation of the Mumbai and Delhi airports through the Joint Venture route
- Two new greenfield international airports with private sector participation to be set up at Bangalore (implemented) and Hyderabad, where the private partners will hold 74 per cent equity
- Setting up of a new international airport in Goa has been approved in principle
- Participation can also be in the form of privatisation through long-term lease
- Construction of terminal facilities and ground handling
- Manufacture of aircraft
- Logistics and support services including their infrastructure

Roads

The Indian road network has witnessed a quantum leap as new institutional arrangements (based on a self financing revenue model comprising tolls and cess) and highway engineering of international standards have led to better connectivity. The Indian road network of 3.3 million kms is the second largest in the world. Roads carry about 70 per cent of the freight and about 85 per cent of passenger traffic.

The road network can be broadly divided into Expressways, National Highways, State Highways, District Roads and Rural Roads. The National Highways have a length of about 65,569 km and carry about 40 per cent of the road-based traffic; the state highways and district roads cover about 5,98,000 kms while the rural and other roads cover about 2,650,000 kms of road length.

Recent Initiatives in the Roads Sector

A number of road projects have been initiated to strengthen the road network (Box 3.5). The National Highways Development Project (NHDP Phase I & II) comprises of 5,846 km Golden Quadrilateral (GQ) connecting the four major metro cities, 7,300 km of North- South & East- West corridors and 1,133 km of port connectivity and other projects at an investment of US\$ 12 billion. Already over 4000 kms of road length has been constructed (Table 3.2). To tackle the resource constraint, Central Road Fund (CRF) has been augmented to mobilise the dedicated cess fund levied on diesel and petrol. This fund is being leveraged for market borrowings and is being used for implementation of NHDP. In addition, innovative methods of financing such as BOT, annuity based BOT and SPV systems have been put in place to attract the private sector.

Box 3.5: Road Reforms

Measures initiated by the Government to improve the road network are as follows:

- Capital grant up to 40 per cent of project cost to enhance viability on a case-to-case basis
- Entrepreneur allowed to collect and retain tolls in BOT projects
- 100 per cent Foreign Direct Investment (FDI) allowed in road sector projects
- 100 per cent tax exemption in any consecutive 10 years out of 20 years
- Duty free import of specified modern high capacity equipment for highway construction

- Control of National Highways Bill 2002 passed to prevent unauthorised occupation of highway land
- The Central Road Fund was augmented and the corpus of this fund would be utilised for the development of State and National Highways. The Government has imposed a cess of US\$ 0.03 per litre on petrol and diesel to mop up funds for the development of roads

Table 3.2: Progress of NHDP (as on August 31, 2004)

Length (in kms)	GQ	NS-EW	Port Connectivity and other projects	Total
Total	5846	7300	1133	14279
Completed	3121	653	263	4037
Under implementation	2725	410	350	3485
Balance length to be awarded	0	6211	520	6731
Cumulative expenditure (US\$ billion)	4.09	0.49	0.35	4.93

Source: Department of Road Transport & Highways, Ministry of Shipping, Road Transport & Highways

Future Targets

The 10th Plan has targeted the completion of the GQ and N-S, E-W corridors under NHDP Phase I and II by 2005 and 2007, respectively. In addition, a total length of over 10,000 km under NHDP Phase-III is proposed to be widened to 4-lane or 2-lane highways with paved shoulders (where 4-laning is not justifiable immediately) at an estimated cost of US\$ 12 billion on BOT basis. Under NHDP Phase-III, upgradation of these 10,000 km includes (a) Connectivity of all State capitals in Phase I & II (b) Stretches of high traffic volume not included in Phase I & II (c) Connectivity from NHDP to places of tourist importance, heritage sites, places of economic importance, pilgrimage centres and agricultural 'mandis'.

Private Sector Participation in the Roads Sector

Liberalisation of the economy has resulted in a noticeable increase in private sector participation in construction and operation of highways. The Government has initiated about 50 'public private partnership' projects costing around US\$ 2 billion under the Build-Operate-Transfer (BOT) scheme (Toll Based, Annuity and SPVs). This includes an agreement between NHAI and CIDB Inventure, Malaysia, in May 2001 for four-laning of NH-5 and NH-9 for US\$ 0.15 billion. Other foreign players who have participated in the roads sector are - AIDC Group of USA and STRADC of Philippines for the Vivekananda Bridge project; DS Construction Ltd of UK (JI-DSC) for Delhi-Gurgaon Expressway Project (along with Jaiprakash Industries Ltd). NHDP Phase-III projects are to be funded on BOT basis.

Investment Opportunities for the Private Sector

- Around 50 National Highways projects costing about US\$ 1924 million are in different stages of construction or in operation with extensive private sector participation
- Four-laning of 10,000 km at an estimated cost of about US\$ 12 billion to be taken up on Build-Operate Transfer (BOT) basis

- Model Concession Agreements (MCA) for large BOT projects costing more than US\$ 21 million, small BOT Projects costing up to US\$ 21 million and annuity based projects have been finalised
- Investment of US\$ 34.3 billion required to remove deficiencies in National Highways
- Participation in construction of bridges, by-passes and other highway-related en route activities
- Private sector as investors in BOT projects on BOT and annuity basis and participation in bonds and direct borrowings
- Manufacture of construction equipment
- Improvement in urban roads and connectivity in major metros of Delhi, Mumbai, Bangalore, Chennai, Kolkata and Hyderabad

Railways

Indian Railways is one of the largest railway systems in the world with a capital base of about US\$ 11.5 billion. It is the principal mode of transportation for carrying bulk freight and long distance passenger traffic. In 2003-04, Indian Railways carried around 557.4 million tonnes of freight and 5112 million passengers.

Indian Railways has an extensive network, which is spread over 63,122 Route Kilometres (Rkm), comprising Broad Gauge (45,622 Rkm), Metre Gauge (14,364 Rkm) and Narrow Gauge (3,136 Rkm). Approximately, 26 per cent of the railway network is electrified.

Recent Initiatives in the Railway Sector

To align the tariff imbalance, rationalisation of fare and freight structures including reduction in the number of classes for freight tariff from 59 to 27 and a reduction in the ratio of highest to lowest freight rates from 8 to 2.8 has been made. More importantly, railways have created focused business organisations such as Rail India Technical and Economic Services (RITES) for consultancy in transportation, Indian Railway Construction Company (IRCON) for construction, Container Corporation of India (CONCOR) for container operations, Indian Railway Tourism and Catering Corporation (IRCTC) for catering and tourism and Railtel for telecom, to help improve profitability. Other initiatives adopted by the railways are stated in Box 3.6.

Box 3.6: Railways Reform Measures

- Direct purchase of power from the producers at a lower tariff and closure of uneconomic branch lines
- In the passenger segment, the world's largest reservation system that connects 2,500 terminals through the Internet, has been extended to more than 100 major cities in India
- In the freight segment, the first phase of the computerised Freight Operation Information System has been completed to enable online tracking of cargo
- High speed goods trains, time-tabled parcel trains and integrated transport facilities are being developed through the terminal warehousing scheme
- Finally, the National Rail Vikas Yojana announced in August 2002 focuses on:
 - Strengthening of the Golden Quadrilateral to enable the railways to run more long-distance mail and freight trains at higher speed
 - Strengthening of rail connectivity to ports and development of multimodal corridors to the hinterland
 - Completion of four mega bridges and of 'last mile' and other important projects

Future Targets

According to the tenth Plan, a total of 1310 km of new lines are to be completed between 2002 and 07.

Table 3.3: Projection for Railway Traffic

	2001-02	2006-2007
Freight Traffic		
Originating Freight (Million Tonne)	489	624
Freight Tonne Km. (Billion Tonne)	323	396
Passenger Traffic		
Originating Passengers (Million)	5000	5885
Passenger Km. (Billion)	473	625

Source: Tenth Plan Document, Planning Commission.

Private Sector Participation in Railways

Although railways is a strategic sector, financial participation by the private sector was launched through a Build-Operate-Lease-Transfer scheme in 1994. Poor response to it led to the evolution of a new Build-Operate-Transfer scheme, which envisaged participation by a consortium of construction contractors and financiers. Since then, public-private partnerships in operation, maintenance of tracks, gauge conversion and construction of broad gauge lines have been undertaken. Railways have also entered into a range of MOUs with State Governments for cost sharing (Box 3.7). In 2003-04, the public-private joint participation in railways is likely to mobilise US\$ 90 million.

Box 3.7: Public Private Partnerships Entered into by the Indian Railways

- A Special Purpose Vehicle (SPV) named PRCL (Pipapav Railways Corporation Ltd) formed with equal equity participation from Railway Ministry, Gujarat Pipapav Port Ltd for construction, operation and maintenance of Surendranagar - Pipapav Gauge Conversion/New Line Project
- SPV named HMRDC (Hassan-Mangalore Rail Development Company) formed for construction (Gauge Conversion), operation and maintenance of broad gauge track between Hassan and Mangalore with participation of Govt. of Karnataka, Karnataka Rail Infrastructure Development Company and other strategic investors
- SPV called KRCL (Kutch Railway Company Ltd) for gauge conversion work between Palanpur and Gandhidham providing a short route to ports of Mundra and Kandla
- A 54-km long railway line from Adipur to Mundra constructed by Gujarat Adani Port Ltd and to be operated by the Indian Railways under an agreement

Investment Opportunities for the Private Sector

- Provision of a complete logistics chain (a pilot project of providing warehousing facilities through CWC at Whitefield in Bangalore has already been implemented).
- Construction along major routes through partnership with railways
- Commercial exploitation of rail space and private investments in railway infrastructure and rolling stocks
- Investment of US\$ 152 million for execution of new lines, doubling, gauge conversion and electrification
- Strengthening of the Golden Quadrilateral and its diagonals at an estimated cost of US\$ 12 billion
- Strengthening of rail connectivity to ports and development of multimodal corridors to the hinterland at a cost of US\$ 0.63 billion
- Construction of 4 mega bridges costing about US\$ 0.73 billion
- Production of railway equipments such as wagons and wheels; construction and operation of high-speed passenger corridors; and construction of other exclusive freight corridors

Ports and Shipping

Introduction

Ports and Shipping are an important part of the transportation infrastructure. There are 12 major ports and 185 Minor / Intermediate ports located along India's 7,517 km long coastline along the mainland and island territories of India. Out of the 12 major ports, 11 are managed by their respective Port Trust Boards; constituted under Major Port Trusts Act, 1963, and are under the overall control of the Central Government. These are at Kolkata/Haldia, Mumbai, Chennai, Jawaharlal Nehru Port at Nhava Sheva/Mumbai, Cochin, Visakhapatnam, Kandla, Mormugao, Paradip, New Mangalore and Tuticorin. The 12th major port at Ennore near Chennai, which is also under the overall control of the Central Government, is managed by Ennore Port Limited, a company incorporated under Indian Companies Act, 1956. The 185 minor/intermediate ports are under the jurisdiction of the respective State Governments. Maritime transport accounts for about 95 per cent of the country's foreign trade in terms of volume and 70 per cent in terms of value.

Recent Initiatives in the Ports, Shipping and Inland Water Transport Sectors

Modernisation and development of major and minor ports have been an essential part of India's Five Year Plans. Sustained focus on creation of additional capacities resulted in additional capacity of 124.40 million tonnes per annum (MTPA) in the 12 major ports during the 9th Five Year Plan period (1997-2002). This period also witnessed the phenomenal growth of minor ports particularly in the State of Gujarat. The share of minor ports in the country's cargo traffic at present is about 25 per cent. Under the current guidelines for Private Sector Participation (PSP), the major ports have been allowed to lease out existing assets of the port to private partners for management and operation. Private sector participation in major ports has also been allowed for construction of new berths and terminals, warehousing and storage, container freight stations and tank farms and for dry docking facilities/ship repair on BOT basis. Maritime States are responsible for the planning and development of other ports within their region. For speedy implementation of their plans, the States of Gujarat, West Bengal, Maharashtra and Tamil Nadu have constituted autonomous regulatory bodies, namely, Maritime Boards.

A Scheme for joint ventures without tender between major ports and minor ports, as well as between major ports and companies following the tender route and, between major ports and publicly owned foreign ports has been approved and guidelines on joint venture formation by major ports have been issued.

13 private or captive projects, with a capacity addition of about 45 million tonnes per annum (MTPA) and an investment of about US\$ 511 million have so far been completed/ operationalised in the ports sector. 24 private sector projects with a capacity addition of around 88.5 MTPA and an investment of US\$ 1443 million are at various stages of evaluation and implementation.

The Union Budget 2004-05 provides a significant fillip to the port sector, given its higher focus on the infrastructure sector. The setting up of the inter-institutional group for development of infrastructure and higher commitment on the Sethusamudram Ship Canal Project will ensure a focused lending approach and speedier project-approval process. The development of the International Container Trans-shipment Terminal (ICTT) at the Kochi Port will help it compete with the Dubai and Colombo ports which are currently used as trans-shipment hubs. The Union Budget 2004-05 has given a boost to the shipping industry with the introduction of tonnage tax as an alternative to the current 7.5 per cent corporate tax. The tonnage tax regime will provide a level playing field to the industry vis-à-vis international players and would make the investment climate conducive to the growth of India's shipping tonnage. As a result, Indian tonnage is set to grow in coming years, consequently, making the India's Exim Trade more competitive.

Box 3.8: Ports and Shipping Reforms

Measures initiated by the government to improve Ports and Shipping are as follows:

- Automatic approval for FDI up to 100 per cent in Ports and Shipping
- Facilities at par with 100 per cent EOUs for the ship repairs industry
- Action has been initiated to formulate a National Maritime Policy to provide fiscal, financial, administrative and legislative measures for growth and development of the maritime sector in India
- The Government has taken steps for phased corporatisation of major ports
- Private sector participation in the ports sector has been allowed
- Scheme for formation of joint ventures by major ports approved
- Inland water transport policy approved by the Government
- The Government has introduced tonnage tax regime for shipping
- Most categories of ships have been brought under the Open General Licence (OGL) to facilitate acquisition at competitive prices
- Automatic approval is also available for acquisition by ship-owning companies for the categories which are not covered under OGL i.e. barges, tugs and boats etc
- The shipping companies are now permitted to get their ships repaired in any shipyard without seeking prior approval from the Government
- The Reserve Bank of India releases foreign exchange for ship repair/dry docking and spares for imported capital goods without any value limit
- 100 per cent investment by NRIs in Shipping with full repatriation benefits

Future Targets

The all India average turnaround time for major ports has improved from 5.7 days in 1995-99 to 3.5 days in 2003-04. However, considerable effort is still needed in order to match world standards. A higher focus on investment in the ports sector will provide better facilities and reduce the turnaround time for ships.

The focus during the 10th Five Year Plan period (2002-2007) is on modernisation, cost effective service, enhancement of service quality and increased public-private partnership. This Plan has targeted capacity addition of about 126 MTPA in the major ports. An amount of approximately US\$ 944 million from public funds has been earmarked for modernisation and development of major ports during the 10th Five Year Plan period. In addition to Plan allocations for major ports, investment to the tune of US\$ 2345 million is expected from the private sector during the 10th Five Year Plan period (2002-2007). There are plans to increase the share of coastal shipping from 7 per cent to 12-13 per cent of the total domestic cargo by 2012. Lower vessel rates (40 per cent lower than foreign bound vessels) are expected to act as an incentive in this regard.

Private Sector Participation in the Ports and Shipping Sector

Under the BOT route, new container terminals have been commissioned in the private sector by P&O Australia at Jawaharlal Nehru Port & Chennai Port, United Liner Agencies at Visakhapatnam Port and by PSA at the port of Tuticorin. A Licence Agreement has also been signed between Jawaharlal Nehru Port Trust and Gateway Terminals India Pvt. Limited, a joint venture company formed by Maersk A/S CONCOR Consortium for development, management and operation of a third container terminal at the Port on BOT basis. The Government has also approved the award of a contract for development, management and operation of an International Container Trans-shipment Terminal at Kochi Port on BOT basis to Dubai Port International, Dubai. The bidding process for a container terminal on BOT basis at Kandla Port is in progress. Jawaharlal Nehru Port is planning to have its fourth container terminal by the end of the current decade. Ennore Port Ltd. is in the process of firming up its plan for a container terminal in the port. Ennore Port has also planned the development of an iron ore berth, liquid cargo terminal and a coal berth on BOT basis. There is also a new phenomenon of private ports such as Pipavav and Mundra.

Investment Opportunities for the Private Sector

- Increased emphasis on modernisation and restructuring of ports
- Increased thrust on public-private partnerships for the development of ports
- Private investment to the tune of US\$ 2345 million is expected
- Private participation with respect to inland transport infrastructure connecting ports
- Investment needs worth US\$ 20 billion in the maritime sector upto 2012

CHAPTER 4: FDI AND INFRASTRUCTURE

The economic model followed by India after independence relied on import substitution and selective foreign capital inflow, both through portfolio investment and the Foreign Direct Investment (FDI) route. This changed radically with the liberalisation measures post-1990. Both portfolio and Foreign Direct Investment were not only allowed but also actively encouraged. The Foreign Investment Promotion Board (FIPB) was created to approve FDI proposals speedily and in most sectors, particularly infrastructure. The Reserve Bank of India gives automatic approvals for investments.

During the decade of the nineties, the 'ceilings' on FDI in different sectors were progressively raised. From 2001, 100 per cent foreign investments were allowed in several industrial sectors. Currently, 100 per cent Foreign Direct Investment is allowed in almost all the infrastructure sectors.

Foreign Direct Investment: An International Perspective

Cross border investments and technology transfers that broadly constitute Foreign Direct Investment have multiplied greatly over the past two decades especially since the mid-1980s. Several global economic changes have fuelled this growth. These include:

- Liberalisation and economic reforms across a large swathe of national economies
- The emergence of regional trading blocks particularly in Europe and North America
- Rapid technology absorption and industrialisation in East Asia

As a consequence, the annual magnitude of FDI flows across the globe has risen from US\$ 55 billion in the early eighties to US\$ 1393 billion in 2000 and then declined to US\$ 560 billion by 2003.

Table 4.1: Foreign Investment Inflows (USD bn)

	1995	1996	1997	1998	1999	2000	2001	2002	2003
World	333.8	385	481.9	686	1,079.1	1,393.0	823.8	679	560
Developed countries	204.1	221.6	269.7	472.3	824.6	1,120.5	589.4	490	367
Developing countries	114.9	149.8	193.2	191.3	229.3	246.1	209.4	158	172
Central and Eastern Europe	14.8	13.6	19	22.5	25.1	26.4	25	31	21

Source: World Investment Report 2004, UNCTAD

The Role of Foreign Direct Investment

The role of Foreign Direct Investment in an economy goes beyond simply easing financial constraints. FDI inflows are associated with multiple benefits such as technology transfer, market access and organisational skills. Consequently, there is an increasing and intense competition between countries to maximize the quantity of FDI inflows. Any successful policy for attracting FDI has to keep this competitive scenario in mind.

The Benefits of FDI Inflows can be broadly identified as:

- Bridging the financial gap between the quantum of funds needed to sustain a level of growth and the domestic availability of funds
- Technology transfer coupled with knowledge diffusion that leads to improvement in productivity. It can, thus, fasten the rate of technological progress through a 'contagion' effect that permeates domestic firms

- The transfer of better organisational and management practices through the linkages between the investing foreign company and local suppliers and customers

In the context of a developing country like India, the role of FDI in easing financial constraints becomes critical. According to the Planning Commission, at current levels of efficiency in the economy, the increase in investment needed to achieve a percentage point rise in the overall growth would be 6 percentage points. Since this addition to investment cannot come entirely from domestic sources, a substantial portion will have to be funded by FDI.

FDI in Infrastructure: Alternative Modes of Investment

Of the total quantum of FDI flows across the globe, a large fraction has gone into infrastructure projects. Growing pressures on Government budgets and a general concern about the quality of service provision by incumbent entities saw an explosion of private sector FDI into infrastructure, particularly in the developing countries. Between 1990 and 1998, infrastructure projects in the developing countries attracted about US\$ 63 billion through the following routes:

- Privatisation sales
- Concessions
- Leases and other contractual agreements
- New capacity creation through Build-Operate-Transfer (BOT) Agreements¹

The bulk of infrastructure FDI in terms of quantum of investment has flowed into the telecom and power sectors. This is not surprising since projects in these sectors tend to be large. In terms of the number of projects, the distribution is more or less even across sectors.

Box 4.1: Infrastructure FDI in Asia and Latin America: A Contrast

Internationally, countries have followed two routes to infrastructure development. Latin American economies generated the vast majority of their infrastructure FDI inflows through privatisation. This constituted about 88 per cent of total inflows during 1999-2000 with the rest coming from green-field investments and concessions. In Asia, on the other hand, Governments relied exclusively on green-field investments through the BOT route. India has followed the Asian route where the bulk of FDI in infrastructure has come in through the green-field route rather than through privatisation. The Government, for instance, has allowed strategic investment in major airports with a 74 per cent equity ceiling.

Modes of Foreign Direct Investment in India

FDI can enter India through two possible channels:

- The automatic route under which companies receiving Foreign Direct Investment need to inform the Reserve Bank of India within 30 days of receipt of funds and issuance of shares to the foreign investor
- For sectors that are not covered under the automatic route, prior approval is needed from the Foreign Investment Promotion Board (FIPB)

The Infrastructure Focus of India's FDI Policy

The effort of attracting FDI should not be an end in itself but a means of industrialisation and development. Thus, FDI is not an undifferentiated black box – the specific nature of the FDI determines its impact on development and growth. In the Indian case, expanding infrastructure investments are viewed as critical adjuncts to the policy of stepping up the growth rate of the economy. This is coupled with the view that domestic sources alone may not be adequate to provide commensurate resources (Box 4.2 provides a brief case study of the funding needs of the telecom sector).

Box 4.2: The FDI Needs of the Telecom Sector in India

The telecom services sector in India has seen explosive growth over the last two years. Revenue growth in the sector touched 16 per cent in 2003-04 and it is likely that a similar growth rate will be sustained in 2004-05. From 13 million in March 2003, the mobile phone subscriber base grew to 33.7 million by March 2004. This rapid growth necessitates a sharp rise in capital investment over the next few years. Total FDI inflows into the telecom sector were US\$ 2.6 billion between August 1991 and July 2004. Industry estimates put the quantum of investments required in the sector over the next four years at about US\$ 20 billion. A substantial portion of this investment is to come from FDI.

Thus throughout the phase of liberalisation, the Indian Government has adopted a liberal approach towards allowing FDI in the infrastructure sectors. This is reflected in the sectoral mix of investment inflows where energy and telecommunications account for 43 per cent of total FDI approvals and 23 per cent of inflows.

FDI Norms in Infrastructure Sectors

Automatic clearance for foreign investment (not requiring the approval of the FIPB) was first introduced for infrastructure sectors like power and roads. The sectoral investment limits for the critical infrastructure sectors are presented in table 4.2.

Table 4.2: FDI ceilings under automatic route

Sectors	Per cent)
Telecom	49
Electricity generation, transmission and distribution (except nuclear power)	100
Roads and Highways	100
Ports and Harbours	100
Civil Aviation (in Greenfield airport ventures)	100

Source: DIPP Manual

Other determinants of FDI in Infrastructure

While a liberal 'entry' policy can go a long way in encouraging foreign investments in infrastructure, the willingness to invest in infrastructure projects has been restrained by a number of constraints across a number of economies. Thus, any successful strategy of attracting Foreign Direct Investment into these sectors will have to deal with these issues directly. These are:

- *Subsidised prices:* In most developing countries, infrastructure services are priced below the cost of supply. Subsidies may be hidden as increasing arrears to the banking system or outstanding payments to State agencies (like State Electricity Boards). This undermines the financial viability of projects.
- *Mixed signals from different constituencies:* Many diverse groups with varying levels of influence on Government policy have a stake in the policy that affects private infrastructure operations. Consumers benefitting from subsidised prices may resent price increases associated with privatisation. Managers and employees of public utilities are understandably concerned about their jobs. This often influences policy related to private infrastructure and affects the investment environment.

- *Loss of authority:* Governments are often reluctant to abdicate control over key sectors of the economy particularly where foreign ownership is involved. Most Governments do not have a strong record of regulating private industries because the public sector has been so dominant. This often results in rules prohibiting private entry into certain sectors, imposing limits on foreign ownership.
- *Misunderstanding regarding what private involvement can offer and what investors require:* Although private sector involvement does offer extra financing and the willingness to manage some risks (construction and operation risks), they are unwilling to bear risks that they cannot control (policy or regulatory risk).

The Indian Government's Policy Initiatives

The Government of India's recent policy announcements relating to infrastructure address most of these possible barriers to foreign investment. Infrastructure is the biggest opportunity in India with an investment of US\$ 150 billion required in the next few years (Box 4.3). The new Electricity Act, for instance, explicitly seeks to remove cross-subsidisation across consumer groups and move towards the actual cost of supply. In cases where there is a clear reason for continuing with subsidies (such as subsidising telecom connectivity in backward regions), it is done explicitly rather than through hidden cross subsidisation. The case of the Universal Service Obligation (USO) fund is an instance of this explicit subsidisation in the telecom sector where operators in commercially viable regions have to pay into a central subsidy fund to finance telecom expansion in backward regions. This makes the subsidy regime more transparent and comprehensible.

Box 4.3: Prime Minister's Speech at the NYSE

In a recent speech at the New York Stock Exchange on September 23, 2004, the Indian Prime Minister, Dr. Manmohan Singh, stressed upon India's need for US\$ 150 billion in the next few years for infrastructure development. Increased investment was required - domestic and foreign, private and public - in infrastructure, especially power, communications, airports and urban amenities to achieve a quantum leap (in this sector) in the next few years, as domestic resources were not enough for upgradation. He also promised a simplified regulatory mechanism and tax systems that would succeed in creating a climate where there is more transparency.

The new policy framework in the infrastructure sector seeks to move away from direct control to indirect control through empowered regulatory agencies whose mandate is to monitor the state of competition in the sectors and also to make sure that other goals that the Government may have are also being implemented. The Government is also stepping into manage and mitigate risk in sectors where there is uncertainty regarding future revenue flows in the future. In roads, for instance, the Government is following an annuity-based model to attract BOT projects.

Most importantly, the infrastructure policies of the Government have a long-term horizon and provide a roadmap that investors can follow in structuring projects and assessing viability. This will go a long way in mitigating the regulatory and political risks that investors typically identify with these projects and help attract investment flow

The Role of Multilateral Agencies

Given the various risks associated with infrastructure projects, the role of bilateral and multilateral agencies in funding these projects becomes critical. There can be three reasons for this:

- Given their structure, they are better able to absorb these risks than pure private participants

- Their participation often gives 'comfort' to private investors who are more likely to participate in projects where there is some involvement of a multilateral agency
- The relatively long history of participation of the sector in 'development finance' also equips them better to assess the viability and risk of projects in developing countries

Multilateral and bilateral agencies have played an important role in funding infrastructure in India. The box below lists some of the key projects funded by bilateral and multilateral agencies in India.

Box 4.4: Multilateral Funding in Indian Infrastructure

Multilateral agencies such as the World Bank, The Department for International Development (DFID), Japan Bank for International Cooperation (JBIC) and Asian Development Bank (ADB) etc. have financed projects in India across infrastructure sectors such as power, roads and highways, telecom, irrigation etc. Some of the key projects are:

Road and Highways

- National Highway Loans, JBIC:** A loan of Japanese Yen 11,360 million was signed in January 1994 for four-laning of Chilakaluripet-Vijaywada Section of NH-5 in Andhra Pradesh. The civil work on three contract packages commenced in March 1999, whereas civil work on the fourth contract for construction of 2.88 km long two-lane bridge over river Krishna commenced in May 1999.
- Tumkur-Haveri Project, ADB:** Upgrading of Tumkur-Haveri section of NH-4 to a four-lane divided carriageway for a length of 259 km. ADB approved a loan amount of USD 240 million to incorporate a number of road safety measures such as partial access control, enlarged cross culverts etc.

Power

- Rajasthan Power Sector Restructuring Project, World Bank:** Loan of US\$ 266.8 million approved in 2001 to reduce Rajasthan State Electricity Board's (RSEB) technical, and non-technical losses; reinforce transmission/distribution systems; install system electronic (static) meters and provide technical assistance in the areas of reform project management etc.
- Orissa GRIDCO Restructuring Project, DFID:** Loan of British Pound 6,000,000 granted to Government of Orissa for completion of the power sector reforms process in Orissa resulting in an efficient, self-financing and accountable power sector which provides quality services to consumers at reasonable prices.

Telecom and IT

- Telecommunication Sector Reform Technical Assistance Project, World Bank:** Loan amount of US\$ 72 million granted to the Department of Telecommunications to strengthen its policy making capacity; and, modernise the Wireless Planning and Coordination (WPC) wing's radio frequency management. This included financing of software, and hardware equipment, in addition to capacity building, and strengthening the capacity of the Telecommunications Engineering Centre.

Figure 4.1: Multilateral IDA to India



Synergies and areas of Collaboration with the OECD

Economic ties with the OECD have played a significant role in India's growth performance, especially in the post-liberalisation phase particularly in the infrastructure area. In terms of FDI, the OECD accounts for around 54 per cent of the total FDI inflows into India. Of this, the United States, United Kingdom, Japan and Germany together account for around 65 per cent of the total FDI investments from the OECD countries.

India has for several years been interacting actively with the OECD and its autonomous agencies. Seminars, Global Forums, Workshops and meetings organised by the OECD provide opportunities for a two-way policy dialogue and exchange of ideas and views in a wide range of fields such as trade, environment, agriculture, competition, Information and Communication Technology, Biotechnology, governance and taxation etc. It would be useful to further build upon the initiatives of cooperation in these fields.

Conclusion

India's rising growth trajectory requires rapidly expanding infrastructure facilities to support it. The Government recognises the fact that domestic resources alone may not be adequate to sustain the required expansion in infrastructure. Thus, it has followed a strategy to create incentives for Foreign Direct Investment. India, today, has an extremely liberal regime for FDI in terms of entry norms. International experience shows that there can potentially be a number of other barriers to the willingness to invest in infrastructure projects. The Government has taken systematic initiatives to address these problems largely through comprehensive reforms in sectors like power and telecommunications. The combination of domestic private foreign investment and multilateral investments is likely to propel India's economic growth momentum in future.

CHAPTER 5: INVESTING IN INDIA: THE ROAD AHEAD

The Growing Investment Opportunity

Since the advent of liberalisation, the Indian economy has seen rapid change in its structure with new opportunities for growth and expansion. The Indian manufacturing sector has streamlined itself and is on the road to becoming globally competitive. Sunrise industries such as pharmaceuticals and auto components have emerged on the horizon and established a presence not only in the domestic market but also in the international markets. The service sector has seen dramatic growth, fuelled by Information Technology, Business Process Outsourcing (BPO), consumer retailing and tourism. New opportunities have emerged in agriculture and allied sectors in areas such as food processing & packaging, contract farming

This change in structure has come on the heels of rapid growth. The average annual GDP growth rate of 6.1 per cent over the last decade has been amongst the highest rates of growth seen across the world and is likely to accelerate further. This combination of growth and structural change has opened up a range of investment opportunities for the three key sets of players:

- Domestic investors
- Foreign investors
- The Government

Explaining the Investment Opportunity

From an analytical perspective, investment opportunities are driven by two sets of factors:

- The existence and growth of markets
- The availability of resources and global competitiveness

The Indian economy offers an abundance of both these factors. For one, there has been an exponential growth in the market for a wide range of consumer products. This has had strong backward linkages with basic goods and intermediates. For instance, a boom in the passenger car markets has translated into a sharp growth in steel demand. The housing boom has had strong linkages to cement and 'long' products in steel.

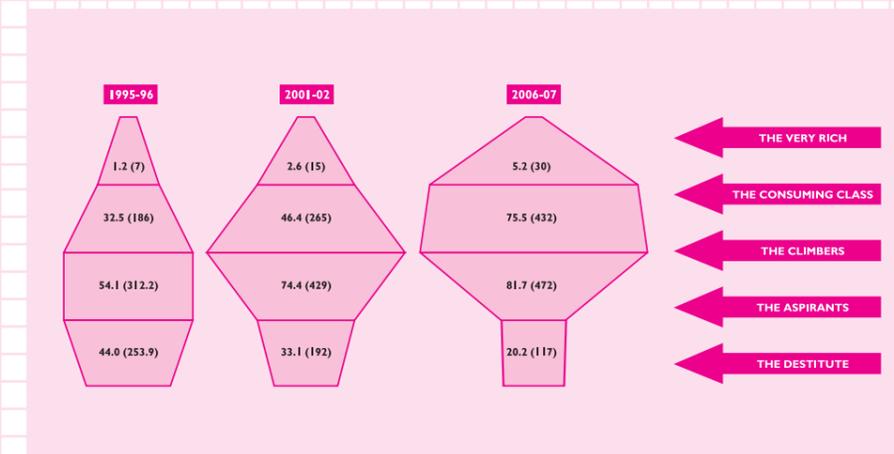
Table 5.1: Key Consumer Markets: Growth and Size

(US\$ Million)	2001-02	1998-99	CAGR(%)	Share(%)
New Housing	26,042	22,821	4.5	69.8
Passenger Car	4,369	2,602	18.9	11.7
Two wheelers	3,079	2,085	13.9	8.3
Consumer durables	3,194	2,390	10.1	8.6
-Colour Television	1,350	1,108	6.8	3.6
-Washing machine	283	188	14.9	0.8
-Refrigerator	690	458	14.5	1.8
-AC (window & mini split)	325	292	3.6	0.9
-Music system	229	135	19.2	0.6
-B/W Television	317	208	15	0.8
Personal computers	273	167	17.9	0.7
Mobile handsets	350	79	64.6	0.9
Total	37,306	30,144	7.4	100

Source: Industry estimates

The boom in consumer demand has come in the wake of demographic transition that has put a larger percentage of the population in the income earning age-groups. This trend, coupled with rising economic growth has translated into growing levels of affluence. Estimates and forecasts by leading agencies such as the National Council of Applied Economic Research (NCAER) show a sharp fall in the numbers and proportion of destitute families and a significant increase in the consuming classes.

Chart 5.1: Household Income Distribution (households & population in millions)

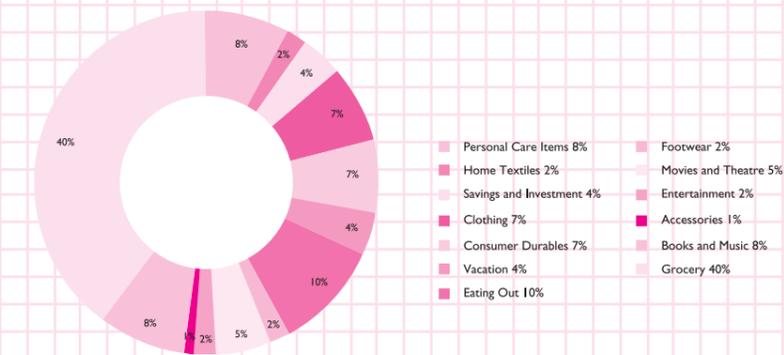


Source: NCAER.

Certain critical institutional changes have also lent a helping hand to the boom in consumer spending. The expansion of retail credit disbursal from the banking system is a good example. A sharp fall in interest rates coupled with aggressive forays by Indian banks into retail lending has seen Indian consumers borrowing to buy. According to banking industry estimates, personal credit off-take has increased from about US\$ 10,417 million in 2000 to about US\$ 33,333 million in 2003.

Finally, the Indian middle-class consumer's consumption patterns are also witnessing a rapid transformation and this is driving the rapid change in the markets for goods and services. The Indian consumer is spending a significant fraction on 'discretionary' items like entertainment, books and music and consumer goods. Thus, the market characteristics of the Indian middle class and top strata of society are fast approaching the sophistication levels of the developed markets.

Chart 5.2: Indian Consumption Pie



Source: KSA Technopak - Consumer Outlook 2004

The Resource Factor and Global Competitiveness

India also offers a number of critical resources that enhance its attraction as an investment destination. The most critical resource is the large pool of cost-effective and highly skilled labour giving the Indian industry an edge over others. This, naturally, translates into low wage levels. Chart 5.3 describes the average wage in an equivalent job as a multiple of the Indian wage against a selection of developed and developing economies.

Chart 5.3: Country-Wise Wages (multiple of Indian wages) -2002



Box 5.1: The Manpower Advantage and Global Sourcing

Given the advantages that India offers in terms of availability of quality manpower, India has become a major base for sourcing manufactured products as well as research and development. Some examples are:

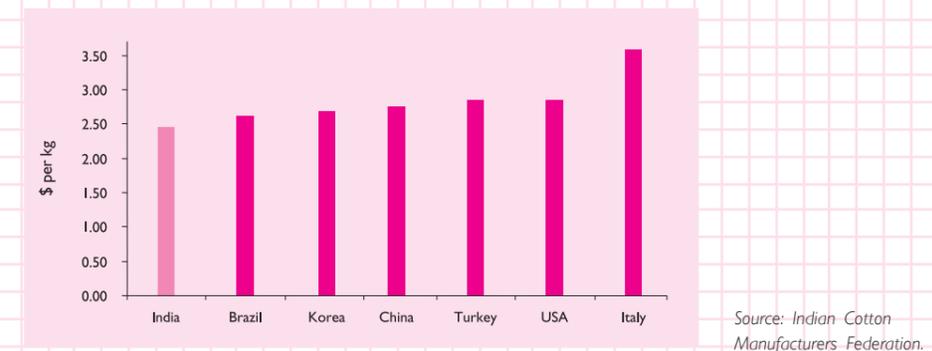
- GE's largest R&D centre outside the US is located in India
- Most major MNCs like Volvo, GM, GE, Chrysler, Ford, Toyota and Delphi source components and hardware from India
- Korean auto manufacturer Hyundai Motors has India as its global base for the manufacture of small cars
- China purchases steel worth more than US\$ 1 billion from India

Besides, it is not just the cost of labour, but also the availability of skilled manpower that gives India an advantage over other developing economies. There are about 380 universities and 1500 research institutions that account for an annual increment of 200,000 engineering graduates, 300,000 post-graduates from non-engineering backgrounds, 2,100,000 other graduates and roughly 9000 PhDs. It is among the only three Asian countries with super-computing competence.

Unlike a number of other emerging economies, India has a large domestic entrepreneur class responsible for indigenous investment initiatives. Its financial infrastructure is among the best in the world - India has highly developed capital markets and a banking system that follows international best practices. It has a strong judicial structure with continuous improvement in areas like Intellectual Property Rights (IPR). For instance, from 2005, Indian IPR laws will recognise both product and process patents.

India is also richly endowed with natural resources that help keep costs of production at competitive levels. For instance, India is an indigenous producer of cotton and this will give it an enormous competitive advantage in competing in global markets when the textile quotas under the WTO's Agreement on Textiles and Clothing (ATC) are dismantled.

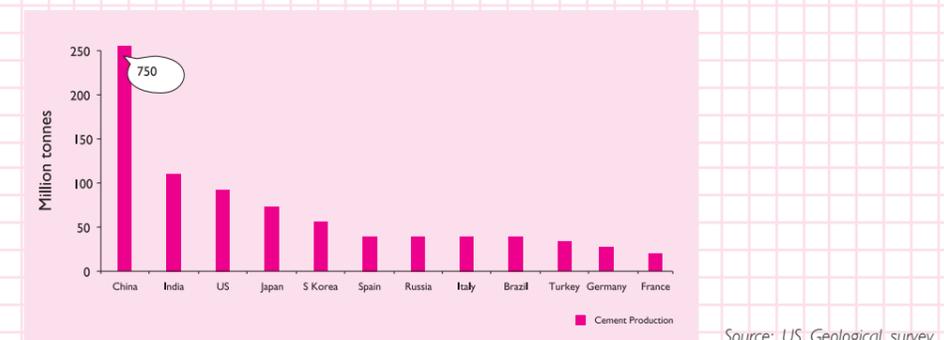
Chart 5.4: Cotton Yarn Manufacturing Cost Comparison -2003



To take another example, India has large reserves of limestone and coal, lending a competitive edge to cement producers. In fact, the combination of indigenously available inputs and the ability of cement producers to absorb cutting edge technology have together made India the second largest producer of cement in the world.

India is also a signatory to all major international trade and investment agreements and enjoys many bilateral and multilateral Free Trade Agreements/Common Market Agreements. India has developed several product specific industrial/service clusters of global class. The infrastructure improvement programmes undertaken also make India an attractive investment destination.

Chart 5.5: World Cement Production - 2003



India's growth and investment potential has drawn the attention of most global investors. According to US investment bank, Goldman Sachs, India, China, Brazil and Russia (the BRIC economies) are expected to be the key players in the global economy in the next fifty years. Of these, India will show the most rapid growth. In fact, while growth rates in the other economies is expected to decline, India's growth rate remains over 5% through the period and has the potential to raise per capita income in 2050, to 35 times the current levels.

India's Critical Advantages, according to this report, are:

- Growing proportion of working age population
- Growth in capital stock in the wake of rapid growth in investment
- Technological progress manifested in improving productivity levels

The Link with Infrastructure

The rapid growth in the conventional industry as well as 'sunrise' sectors like IT, retailing and services, in turn entails expansion in infrastructure support. The sustenance of high growth rates in IT and BPO, for instance, is contingent on the expansion in telecommunications. On the other hand, for the more conventional manufacturing industry, infrastructure inputs such as roads, port facilities and power hold the key to sustained expansion. This requires a combination of private and public initiatives. The Government's strategy has been to focus on creating incentives for the private sector as well as participate directly as a key investor. Some of the steps taken in this direction are:

- Progressively reducing Government control and allowing easy entry of the private sector. Foreign Direct Investment norms, for instance, have been continuously eased with 100 per cent investment allowed in most of the sectors
- Announcing consistent long-term policy measures and delegating control to independent regulators. The enactment of the Electricity Act in 2003 and the establishment of the Telecom Regulatory Authority of India (TRAI) are important examples.
- Undertaking programmes to step up the quantum of infrastructure facilities through public-private partnerships

These measures have led to a significant expansion in the opportunities for private participation in infrastructure investment. Some of the specific policy initiatives in each sector along with the opportunities for private participation that they present are discussed in the next section.

Finally, in areas where there is an established history of 'market failure' such as in health, education and poverty alleviation, the Government has a direct role to play. In fact, as it withdraws from direct participation in production, it is imperative for it to step up investments in the social sectors. The Government is currently an active investor in these sectors and has committed to enhancing its share of social sector investments to 6 per cent of GDP over the long term.

Critical Changes and Emerging Opportunities for Investing in Infrastructure

The opportunities for investment thrown up by the critical infrastructural segments of power, IT & telecom, civil aviation, roads, railways and ports & shipping, and regulatory changes are mentioned below.

Power

Changes

- CERC and SERC set up
- Indian Electricity Grid Code established
- Accelerated Power Development and Reforms Programme formulated
- Electricity Act notified in 2003
- Automatic approval for 100 per cent foreign equity
- Power generation completely delicensed

Opportunities

- Private sector entry into generation, transmission, distribution and trade
- Investment of US\$ 200 billion during 2002-12
- 41,110 MW generation capacity target during 2002-07
- Import of LNG for combined cycle power plants
- Renovation and modernisation
- Cross country grids
- Energy auditing and monitoring

Telecommunication and Information Technology

Changes

- Introduction of Calling Party Pays in May 2003
- Unified Access Service Licensing Regime introduced in Oct 2003
- Communication Convergence Bill 2001 to oversee national infrastructure for information based society
- Interconnection User Charge introduced in 2003-04
- No industrial licence required for telecom equipment manufacturing

Opportunities

- Low tele-density, high potential
- Excellent growth potential in rural areas as the rural area is virtually untapped
- Cellular subscribers to rise by 100 million during 2004-07
- 175 million basic telephone connections by 2010
- No restriction on number of players in ILD, NLD, Basic telephony, Internet Services
- 100 per cent FDI in telecom equipment manufacturing

Civil Aviation

Changes

- Private equity participation in airport infrastructure permitted
- Private sector participation in greenfield airports with 100 per cent equity stake
- Inland Air Travel Tax abolished
- Bilateral aviation agreements based on reciprocity initiated

Opportunities

- Delhi, Mumbai airports to be modernised/restructured with private participation
- Target of US\$ 800 million set by AAI for modernisation
- New international airports to come up in Hyderabad, Bangalore and Goa
- Low penetration rate
- Passenger traffic to touch 85.3 million passengers by 2016-17

Roads

Changes

- Private participation through BOT toll-based and annuity based structures
- 100 per cent FDI allowed in roads sector
- 10 year corporate tax holiday
- NHAI permitted to participate in equity in BOT projects up to 30 per cent
- Duty-free import of specified modern high capacity equipment for highway construction
- Capital grant of 40 per cent of project cost by NHAI

Opportunities

- National Highways Development Project covering 13,140 km of highway development.
- Estimated investment of US\$ 11.5 billion in NHDP
- Private sector as investors – BOT projects and direct borrowings
- Consultancy in feasibility studies, project preparation, construction supervision
- Construction equipment manufacturing

Railways

Changes

- Computerised Freight Operation Information System
- Online passenger reservation system
- Private participation in projects through BOT scheme
- State participation through cost sharing and SPVs
- Tariff rebalancing and rationalisation of fare and freight structures
- National Rail Vikas Yojana announced in August 2002

Opportunities

- 1310 km of new lines to be completed during 2002-07
- More than US\$ 3 billion investment in removing capacity bottlenecks
- Investment in port connectivity at US\$ 0.63 billion
- Provision of complete logistics chain
- Investment in railway infrastructure and rolling stock
- Production of railway equipment

Ports and Shipping

Changes

- Public-private partnership including joint ventures
- Inland water transport policy approved by the Government
- Introduction of tonnage tax

Opportunities

- Private investment of about US\$ 2345 million expected
- Increased thrust on public-private partnerships for the development of ports
- Private participation with respect to inland transport infrastructure connecting ports
- Investment needs of US\$ 20 billion in the ports sector

TO CONCLUDE

This paper attempts to provide a balanced account of the many developments that are going on in India's infrastructure sectors today. The phase of economic reforms, which began in 1991, put enormous emphasis on infrastructure development, based on the recognition that the twin objectives of growth and social welfare would be severely hindered without it. Realising that severe fiscal constraints would necessarily limit the role of the government as a builder and maintainer of infrastructure facilities, the policy thrust was to facilitate the entry of private investment into these sectors. Private, of course, was not limited to domestic; foreign investment was seen as an essential means of enhancing the resource flows to these funds-starved sectors.

While the process began with these good intentions, the path proved to be difficult and uncertain. This report documents, for each major infrastructure sector, the progress down the road of government disengagement, private entry and economic regulation. As it clearly points out, in many sectors, the simultaneous achievement of all three simply did not happen. In every sector, however, the stakeholders have shown the ability to learn from their mistakes and converge towards a restructuring that addressed all their needs. In some sectors, like telecom, the process has been relatively quick, while in others, like power, it has taken over a decade to enact the enabling legislation, which is critical to the reform and restructuring of the sector.

However, the report also underlines the point that, long and difficult, as the process in any particular sector may have been, the effort has invariably been in the right direction. The fundamental objectives of reform – increasing access and efficiency through private provision and effective regulation – have never been abandoned or even diluted. The path of policy and regulation has consistently adhered to the pursuit of these objectives. Change in policy or regulatory structures, when it has happened, has been basically motivated by the perception that business-as-usual was not going to get the system any closer to those objectives. What may have, from an up-close and short-term perspective, seemed to be disorderly, even chaotic, appears with the benefit of hindsight to have been a slow, but steady convergence towards an outcome that combines economic rationality with political acceptability.

It is the inevitability of this convergence and the steadfast commitment of the Government to rapid infrastructural growth, that characterises the investment climate in Indian infrastructure today. Even as the finer details of private and foreign investment in individual sectors continue to be debated and developed, the broad principles underlying the Government's objectives have remained on solid foundations. The investment opportunity, never in doubt, as far as the potential itself was concerned, has now been made even more attractive by the force of convergence. The government recognises the need for private and foreign investment in infrastructure, welcomes it and stands ready to facilitate it in any way that promotes the interests of all the stakeholders in the process.

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