

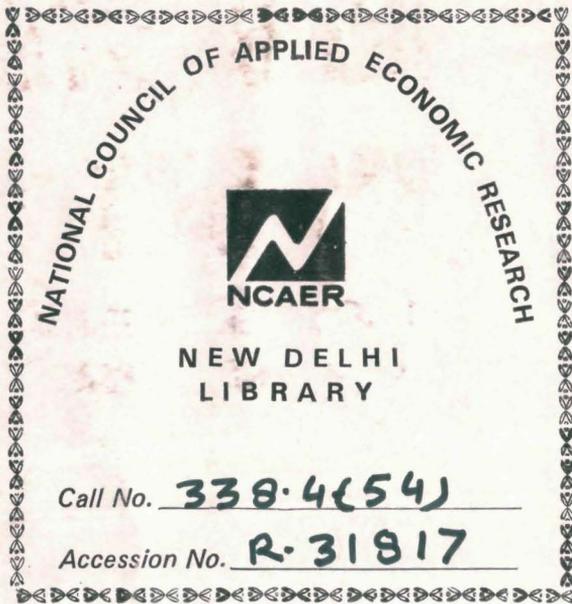
VOLUME I
EXECUTIVE SUMMARY

THE INDIA INFRASTRUCTURE REPORT

POLICY IMPERATIVES
FOR GROWTH AND WELFARE

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ERT GROUP ON THE COMMERCIALISATION
OF INFRASTRUCTURE PROJECTS



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VOLUME 1
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COMMERCIALISATION OF
INFRASTRUCTURE PROJECTS

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Rakesh Mohan
Director General

June 22, 1996

Dear Hon'ble Finance Minister,

I have great pleasure in submitting the Report of the Expert Group on Commercialisation of Infrastructure Projects set up in October 1994 by the Department of Economic Affairs, Ministry of Finance.

Whereas I deeply regret the considerable delay in submitting this report, I hope that its contents will at least partly compensate for this delay. The broad coverage of sectors and the complexity of the many issues involved in the commercialisation of infrastructure provision required much greater thought and examination than originally envisaged.

I would like to place on record my deep appreciation of the contributions made by all members of the Expert Group and of their commitment to the improvement of infrastructure in the country. In particular, I would like to acknowledge the generous assistance provided by Ms. Lalita Gupte, Deputy Managing Director, ICICI and Member Secretary of the Expert Group, in terms of both her own time as well as the staff and other resources of ICICI that she put at the disposal of the Expert Group. Similarly, the staff of the Office of the Economic Adviser in the Ministry of Industry provided support far beyond the call of duty in putting together this report.

The resources required for infrastructure investment in India over the next decade are immense. Our hope in submitting this report is that it will contribute to the deepening of understanding of the many issues involved. The implementation of the policy directions proposed should make it feasible to commercialise many segments of the infrastructure sector. It will then become possible to raise the required volume of resources for infrastructure investment from both domestic and foreign sources.

We believe that only if infrastructure investment is accelerated in this manner that the 7 percent plus average annual income growth rate envisioned by you could be achieved over the next ten years.

With warm regards,

Yours sincerely,

Rakesh Mohan

Shri P.Chidambaram
Finance Minister
North Block
New Delhi 110 001.



Foreword

The Indian securities market has undergone a substantial and speedy change in the last few years. Indeed its present form and content hardly bears any resemblance with its earlier state. This has been possible on account of various factors, one of which is the critical regulatory role played by the Securities and Exchange Board of India (SEBI). The various prudential measures introduced by SEBI has enhanced the investor confidence and consequently the investor population. Both of these remain unquantified. Investor confidence, because of its very nature cannot be measured in precise terms. And for the investor population, no recent estimate has been available for want of a detailed scientific enumeration. This has handicapped SEBI, market intermediaries, researchers and investors in deciding their policies and investment choices respectively. To overcome this problem SEBI requested the National Council of Applied Economic Research (NCAER) and agency known for its expertise and experience in conducting objective and large scale household surveys, to undertake a survey of the Indian investors. Dr Rakesh Mohan, Director General of NCAER readily agreed to our proposal. Our primary objective was to have a demographic profile of investors and investor households investing both directly and indirectly. This was expanded also to find out the investment preferences, perceptions about risks in investments, level of awareness and experience of investors while investing in the Indian securities market and the reasons which inhibit some households from investing in the securities market.

The Survey in a sense amounts to a census of Indian investors, though through a sample survey. The uniqueness of the Survey lies in its comprehensiveness which has been achieved through a sample which covers 300,000 geographically dispersed urban and rural households from which a sub-sample of 25,000 households was chosen. This is for the first time that a survey of Indian investors of this scale and magnitude has been attempted.

One of the efforts of SEBI is to develop and encourage research in the Indian securities market within and outside SEBI. The Survey is an important step in that direction.

I would like to specially compliment Dr. Rakesh Mohan and his team comprising of Dr. I. Natrajan,

Shri J.P. Singh and others for providing us this valuable survey so rich in content and quality. Dr. Rakesh Mohan's experience and his deep and sensitive understanding of the Indian economy has enhanced the quality of the survey. Dr. I. Natrajan and Shri J.P. Singh who have been actively associated with the formulation and analysis of the survey need to be thanked for their special effort. Shri Pratip Kar, Executive Director, SEBI has been mainly responsible for writing the Survey. I would like to express my gratitude for his untiring efforts in directing and guiding the Survey to its fruition. I would also like to express my deep appreciation for the research team of SEBI comprising Dr. M.Y. Khan, Economic Adviser, Shri P.K. Bindlish, Division Chief, and Ms. Varsha Marathe for providing the research inputs and analysis. But for their dedicated work the Survey could not have been completed.

The Survey has thrown up a number of interesting findings which would be relevant not only for SEBI but also for the stock exchanges, mutual funds, intermediaries and other market participants. It has highlighted the need for enhancing the level of investor awareness and investor education and for expanding the market infrastructure to provide investors a better and easy access to the securities market.

The Survey is rich in data. The Statistical Annex, which contains over 200 detailed tables considerably enhances this richness and provides a unique and large database for researchers in Indian securities market. This data would also be of considerable interest especially to the mutual funds and other intermediaries to provide a better understanding and analysis of investor profile and preferences.

SEBI envisions a market which is modern in infrastructure and international best practices, efficient, safe, investor friendly and globally competitive. SEBI in its future policy formulation would keep the findings of the Survey in view of fulfillment of these objectives.

D R Mehta
Chairman
Securities and Exchange Board of India

Preface

Reforms of the Indian economy during the 1990's have helped to bring the Indian securities market into the main stream of the Indian financial system. As a result, the growth in investment by individual investors has become quite significant. This made it pertinent to have a first hand in depth view of the extent of public participation directly in the securities market or through mutual funds.

The National Council of Applied Economic Research (NCAER) has long been the only agency outside the government with the capability of conducting large scale household surveys. The Securities and Exchange Board of India (SEBI) thus requested the NCAER to carry out a survey of Indian investors in order to estimate investor population, their investment preference and to gauge the impact of the growth of the securities markets during the last decade of economic reforms.

The terms of reference of the study were to estimate the number of household and the population of individual investors, their economic and demographic profile, portfolio size., investment preferences for equity as well as other saving instruments. The study was also designed to elicit information from households on their risk perceptions, experiences in investing in security market, return on investment and the like. Other areas to be covered included awareness of investor rights, experiences with grievance redressal mechanisms; indications of investors' future plans of investment and their expectations from the securities market were also obtained. The study also provided estimates of non-investor households and population, their economic and demographic profile, their pattern of investment in various instruments and reasons of non-investment in the equity market.

The data have been collected from about 300,000 geographically dispersed rural and urban households, and a sub sample of 25,000 households was chosen for detailed canvassing through a structured questionnaire. The field survey was conducted between January - March 1999. The sample drawn in this study was taken from a cross section of the households in the country with the objective of enhancing the precision

of the estimates. Because of its sheer size, this is a unique and comprehensive study of Indian investors in the equity market.

NCAER has pioneered the collection of household level data on consumption habits of households with respect to specific consumer goods. Through these surveys NCAER has been able to document the development of the Indian market in a detailed manner. This study builds on our previous work and provides similar detailed information on investor behaviour. I hope that it will be found useful by all practitioners in the capital market. It will provide a very useful benchmark on the state of household investors at the turn of the century.

I would like to place on record my deep appreciation for the confidence placed in NCAER by Shri D.R. Mehta, Chairman, SEBI for conducting this study. We hope that we have fulfilled his expectations. Shri Pratip Kar, Executive Director, SEBI guided us all through the study and also helped us very substantially in drafting the report. His knowledge of the securities market has been invaluable in putting together this final report. Dr. M.Y. Khan, Economic Adviser, SEBI and Shri P.K. Bindlish Division Chief, SEBI provided consistent support throughout the study. A special word of thanks is also due to Ms Varsha Marathe, Officer, SEBI for her dedicated work in helping to put together the final report. Shri. I. Natrajan directed the project at NCAER, Shri J.P. Singh was the Project Leader and Shri S.P. Batra provided the statistical design and analysis. I would like to express appreciation for their dedicated work along with their team.

It is hoped that the findings of the present study will prove to be useful to SEBI and also to other institutions and the general public who have interest in the Indian capital market. This report has also identified a large segment of non investor households as a target for channelising their savings into stock markets.

RAKESH MOHAN
Director General

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The Need for a New Approach

THE availability of adequate infrastructure facilities is vital for the acceleration of the economic development of a country. Governments have traditionally been well aware of this and have accorded high priority to investment in sectors such as railways, roads, power, telecommunications, ports, water supply, sanitation and sewerage and airports.

Infrastructure services are often monopolistic in nature; they usually involve high upfront costs and long payback periods; and investments are typically bulky and lumpy. They are also characterised by the existence of externalities which make it difficult for infrastructure entities to recoup investment costs and operational expenses through the levy of user charges.

Consequently, infrastructure services have been predominantly provided by the public sector in almost all countries for most of the 20th century.

Commercialisation: A New Wave, A New Necessity

A wave of privatisation and deregulation has been sweeping infrastructure sectors around the globe over the last decade or so. These bold new approaches promote improvement in efficiency and service quality. Whereas the specific motivations and circumstances vary by countries, and in countries by sectors, there are five basic pragmatic and non-ideology-related factors that are leading economies all over the world to consider enhanced commercialisation of infrastructure provision:

- The massive investment requirements arising from sharply rising economic growth rates are pushing countries to look for additional sources of financing against the backdrop of fiscal stringency in most countries.
- The rising awareness of the importance of efficiency in investment and delivery, in the context of tight fiscal conditions, is leading to rethinking on the ability of government-owned entities to supply infrastructure services in a businesslike manner.
- Changes in technology now make it easier to charge for marginal use of infrastructure services. Such technological changes are making possible the introduction of competition horizontally and unbundling of services vertically.
- The increasing need for countries to compete in the global marketplace is putting additional pressure on countries to provide efficient infrastructure services to their businesses in a cost-effective and competitive manner. Higher infrastructure costs in terms of both price and time delays can make the difference between firms being globally competitive or otherwise.
- The new dynamism and integration of world capital markets have vastly increased the possibility of raising large funds for infrastructure investment on a commercial basis whereas, earlier, it was governments which had better access to resources. In many cases, it is now the private sector which has the capability of sourcing large funds internationally.

While these forces are pushing most countries towards the commercialisation of infrastructure investment services, there is also increasing understanding of the social dimension

of infrastructure. In poor countries in particular, the state bears a responsibility to provide the impoverished adequate access to basic services such as health, education, *water supply, sanitation and sewerage*. Moreover, despite the new possibilities of competition mentioned above, most infrastructure services retain very strong monopolistic elements. As such, the state continues to be responsible for providing appropriate regulatory frameworks which assist investors and infrastructure entities on the one hand and protect consumers from monopolistic exploitation on the other. The commercialisation of infrastructure and unbundling also lead to a considerable increase in transaction costs which have to be mitigated through transparent and appropriate regulation.

The general conclusion is that whereas the possibility of commercialisation of infrastructure investment and services has increased tremendously over the last decades, the role of the public sector in investment, delivery of services and in regulation will continue to be vital. The future therefore suggests the introduction of a new framework for public-private partnerships in different forms so that appropriate infrastructure investment can fructify.

What This Report Is About

This Report examines in some detail all these issues and provides directions for policy reforms which can help in greater commercialisation of infrastructure along with the promotion of public-private partnerships. Chapter II provides estimates of the infrastructure investments that are required over the next 10 years from 1996-97 to 2005-06. These estimates are made both from a macro-economic viewpoint which provides limits of what is feasible in the context of relatively robust growth of the economy at an average of about 7 per cent per annum, and also from the bottom up for different sectors according to perceived requirements and then aggregated. The latter clearly come out to be greater than the macro-estimates of feasibility. Chapter III provides an approach to commercial-

**There is, today,
considerable
doubt about
Government's
ability to supply
infrastructure
services
efficiently.**

isation of infrastructure projects along with an analysis of the different kinds of risks involved in infrastructure investment, and suggestions for their appropriate allocation. Chapter IV reviews the existing capital market framework in the country and makes projections for the sources of funds that would be required for the investment estimates made in Chapter II. These projections suggest the necessity for a vast expansion of the capital market, particularly on debt side. This chapter then provides policy directions required to activate the debt market, particularly the long-term debt which is essential for infrastructure investments. Chapter V reviews the country's overall regulatory framework governing different infrastructure sectors. It provides pointers to the approach required to make regulation of infrastructure transparent, and to provide appropriate protection to investors and infrastructure entities, as well as consumers. Finally, Chapter VI gives some suggestions for fiscal reforms which may be necessary to channelise the kind of resources required over the next decade into infrastructure.

The last six chapters take an in-depth look at the investment requirements and necessary regulatory practices in each of six sectors. These are:

- **Urban Development**
- **Power**
- **Telecommunications**
- **Roads**
- **Industrial Parks**
- **Ports**

The approach in each of these sectoral reviews is consistent with the overall approach adopted in the main part of this Report. Some key sectors where it was not possible to give a similarly appropriate level of examination include railways, civil aviation and airports, shipping and water transport.



The Investments Required: 1996-2006

THIS exercise in the estimation of infrastructure requirements over the next 10 years has involved full-scale macro-economic projections with certain built-in assumptions about expected growth of the Indian economy. A key issue that needs to be grasped is that the kind of economic growth projected will not be possible without a substantial improvement in all areas of infrastructure. Conversely, it will also not be possible to find the necessary resources implied in this exercise unless the country's economic growth accelerates.

The spirit of the projections is that such investments will take place if the policy framework in each sector is made investor-friendly and transparent. To the extent that there will be leads and lags between different sectors in the setting up of appropriate regulatory mechanisms and other facilitation activities, there are likely to be imbalances between sectors over time. For example, it is likely that the power and telecommunication sectors could receive greater investment than suggested by our projections in the initial years, whereas investment in roads and urban infrastructure could possibly come with some lag. However, we expect that our overall projections for total infrastructure investment will broadly emerge to be about right. The Expert Group has not made any estimation regarding investment in railways, airports and civil aviation.

Accelerating Growth

The Indian economy has been projected to accelerate its growth from the current 6 to 6.2 per cent to 7.5 per cent by 2000-01 and

8.5 per cent by 2005-06. Such growth would require a rise in the investment rate from the current 25 per cent of GDP to about 29 per cent in 2000-01 and 31.5 per cent in 2005-06. The economy would have to become much more efficient: the Incremental Capital Output Ratio (ICOR) would have to decline to about 3.5, around the levels achieved by the East and South-east Asian countries. The rate of industrial growth would have to accelerate from the 8 to 8.5 per cent a year achieved during the 1980s to a range of 10 to 12 per cent per annum over the next 10 years.

Why Trade Needs to Expand

Achieving the desired investment level would need significant mobilisation of external capital inflows to finance the burgeoning industrial and infrastructure investment needs, and of the equipment imports implied by such expansion. The sustainability of such economic growth would require continuing high growth in exports, perhaps declining from the current 20 per cent annual growth to about 10 per cent by the end of the next decade, giving an average of about 15 per cent over the period. If this takes place, total exports should reach about US \$ 66 billion in 2000-01 and US \$ 115 billion by 2005-06.

At these levels, exports would comprise about 15 per cent of GDP in 2000-01 and about 17 per cent by 2005-06, up from the current level of about 10 per cent. It would then become feasible for India to sustain a wider current account deficit which is required for the non-inflationary absorption of external capital inflows. A sustainable level of current account deficit should increase from the current level of 1.5 per cent of

And Domestic Savings Must Grow

Broadly speaking, external savings cannot be expected to finance much more than 10 per cent of total domestic investment requirements, or about 12 to 15 per cent of non-physical investments. The bulk of resources for overall investment in infrastructure would have to emanate from domestic savings.

Our analysis suggests that if an adequate level of resource generation is to take place in the country for the required investments, public sector savings must rise significantly. This implies greater efficiency and financial viability of public sector enterprises (PSEs) such as the State Electricity Boards (SEBs). Improvement in public sector savings is likely to crowd in private savings into infrastructure sectors. Public sector savings have been projected to improve from the current level of about 1.7 per cent of GDP to 2.5 per cent by 2000-01 and 3 per cent by 2005-06. It would, however, be desirable for public sector savings to be targeted to improve even more than these projections.

The private corporate sector has exhibited a very encouraging trend in the generation of savings through higher profits and retained earnings in the last few years. Their share in total savings can be

expected to continue to increase as more segments of the economy become corporatised. Similarly, household savings show a continuing increase in financialisation since the early 1980s, along with a corresponding fall in physical savings. We have projected household financial savings to increase from the current level of 11 per cent of GDP to about 13 per cent in 2000-01 and 14.5 per cent in 2005-06. Accounting for the fall in physical savings, total household savings are projected to increase only modestly from the current 18 per cent of GDP to about 19.5 per cent in 2000-01 and 20 per cent in 2005-06.

Whereas the capital market can be expected to continue to mobilise household savings for investment in equity, new measures will be needed to direct an increasing volume into long-term debt instruments and into contractual savings such as life insurance, pension and provident funds.

This will require urgent reforms in these sectors. This is particularly important for infrastructure sectors which require financial resources with longer maturities, as are typically provided by life insurance, provident and pension funds.

GDP to 2.5 per cent in 2000-01 and 3 per cent in 2005-06.

It would then be possible for the net capital inflow to rise from the current level of about US \$ 7 to 8 billion to about US \$ 17 to 20 billion by 2000-01 and about US \$ 25-30 billion by 2005-06. In order to keep the debt-service requirements at a manageable level, the debt-equity ratio of such net capital inflows would have to be in the region of unity. It should be noted that the implied gross annual debt flows would be an increase from the current level of about US \$ 6 to 7 billion to US \$ 12-13 billion by 2000-01 and US \$ 22 to 24 billion by 2005-06. The net foreign investment inflow implied by these projections, including both foreign direct and portfolio inflows is an increase from the current US \$ 4-4.5 billion to about US \$ 9-10 billion by 2000-01 and US \$ 15-16 billion by 2005-06. Our expectation is that about 40 per cent of the external capital inflows could flow into the infrastructure sectors. The sustained inflow of such volumes of external capital would require an open foreign investment regime. Simultaneously, attention should be paid to keeping the macro-economic fundamentals stable.

A point worthy of note is that the expectation regarding official net debt flows is relatively pessimistic: therefore most of the new portfolio would have to be commercial, which would be highly dependent on the maintenance of high credit ratings for India and its borrowing entities. Keeping such a credit rating would be helped by the maintenance of a high level of foreign exchange reserves equivalent to about 6 to 7.5 months of imports. This would imply the level of reserves rising from about US \$ 17 billion to US \$ 50 billion in 2000-01 and US \$ 90 billion in 2005-06.

Our projections suggest that total external debt would increase from the current level of about US \$ 100 billion to

about US \$ 140 billion in 2000-01 and US \$ 200 billion in 2005-06. These projections imply that debt-service ratios would be maintained at between 15 and 20 per cent of current receipts.

The Investments Required

Our projections of domestic savings (see box) suggests that it is quite feasible for total investments in infrastructure to increase from the current level of 5.5 per cent of GDP to about 7 per cent by 2000-01 and 8 per cent by 2005-06. In absolute terms, this implies the annual level of investment rising from the current Rs 600 billion (US \$ 17 billion) to about Rs 1,100 billion (US \$ 30 billion) by 2000-01 and Rs 1,800 billion (US \$ 50 billion) by 2005-06.

This implies total infrastructure investment requirements of about Rs 4,000 to 4,500 billion (US \$ 115 to 130 billion) over the next five years. This would rise to about Rs 7,500 billion (US \$ 215 billion) in the following five years (2001-02 to 2005-06). If, as we expect, about 40 per cent of total external capital inflows go into the financing of infrastructure, we could expect about 15 per cent of total capital requirements for infrastructure to be externally financed. The rest—as much as 85 per cent—will have to be domestically financed.

The Expert Group also made bottom-up estimates for requirements in each infrastructure sector. The aggregate of the estimates provided by sectoral experts exceed the macro-estimates given above by about 40 to 50 per cent. That may be seen as an indicator of the gap between what is feasible and what is desired for achieving a more rapid attainment of a decent level of infrastructure services in the country.



Commercialisation of Projects

INFRASTRUCTURE projects are characterised by large financial outlay requirements and long gestation periods. Investment involves high upfront costs and long-term financing since the payback period is long. Historically, initiatives to implement infrastructure projects in India have generally been vested in the public sector. With infrastructure services being perceived as natural monopolies, it was argued that only the Government should be entrusted with its provision. There was also the view that the financial outlays involved were beyond the resources available with the private sector. Both these views have since undergone a change. In the current fiscal situation, the Government will be very constrained to raise resources from the market for providing budgetary support to departments or PSEs engaged in infrastructure development. Technological improvements and organisational innovations have enabled unbundling of services and this, in turn, has debunked the view about economies of scale and the purely monopolistic nature of infrastructure activities.

A solution to the problems associated with the traditional approach to infrastructure can be found in commercialising these projects. The recovery of investments should be through a system of user charges which bear a direct relation to the specific benefits that the facility provides to the user.

The Allocation of Risks

The key problem in commercialisation of infrastructure projects is the appropriate allocation of risk. When infrastructure

is provided by the public sector, all the risks are internalised within the Government and hence the issue of risk allocation does not arise. Successful design of an infrastructure project involves the appropriate demarcation and allocation of risks to the different stakeholders in the project. Clarity in this allocation is essential to avoid confusion in the financing and implementation of commercialised infrastructure projects as the tendency of each stakeholder is to shift the risk to others.

A key issue in infrastructure financing relates to what recourse the lenders have if investments fail to produce the expected returns. The financing is usually non-recourse with lenders being repaid only from the cash flow generated by the project. Nowadays, financial markets have growing experience of non-recourse financing where the focus is not to tie down the balance sheet of the promoter. The assessment of the cash flow stream of an infrastructure project determines the eventual financing structure and the range of instruments required to realise it. In all cases, the viability of the project should be assessed at commercial rates of return.

Build-Operate-Transfer (BOT): The concessionaire approach has been adopted recently by many developing countries for attracting private sector funds for infrastructure development. The most prominent, and possibly the most widely used, is the Build-Operate-Transfer (BOT) arrangement. As the term suggests, the private investor (concessionaire) builds, operates and transfers the facility back to the Government at the end of a specified period, called the concession period. A transparent regulatory framework is needed to make BOT-

type projects easier to negotiate and implement.

Public-Private Partnerships

We should recognise that during the period of transition from 100 per cent state investment in infrastructure towards increasing participation of the private sector, there will be continued need for state support in many infrastructure projects. In this regard, it is imperative to promote public-private partnerships. Infrastructure investment is particularly risky during the construction period and in the initial years of a project, before a clear income stream emerges. The Government should therefore consciously use its available scarce resources to take significant equity positions in infrastructure projects which otherwise would not receive adequate funding and use this to crowd in commercial equity funds as well as debt from different sources. This way, significant leverage would be obtained in the use of Government funds for infrastructure investment. Once a project becomes commercially viable, and income streams become secure, the Government should disinvest and reinvest in new projects in the nature of a venture capitalist.

Valuing Guarantees: Contingent Valuation Funds

Governments are increasingly using guarantees to private lenders rather than directly financing infrastructure projects. Though government guarantees targeted at specific sovereign risks are relatively new, loan guarantees that cover some or all of the repayment risk have been frequently used by governments to pursue policy objectives. It has been observed that such loan guarantees are of significant value, particularly when the underlying risk is high and the term of the loan exceeds 10 years. As such, when governments give guarantees, they are providing substantial comfort to lenders.

However, government guarantees for infrastructure projects involve risks which are often unexpectedly high for both the government and the private investor. The government faces the risk of such unforeseen liabilities that may occur when the guarantee is called and when it may possibly lack the necessary budgetary resources to honour the com-

We Recommend...

For meaningful commercialisation of infrastructure projects, the Government must

- **Ensure that project risks are clearly demarcated and allocated to different stakeholders.**
- **Set up a transparent regulatory framework so BOT-type projects are easier to negotiate and implement.**
- **Take significant equity positions in projects to crowd in commercial equity and debt, and once the project becomes viable, disinvest and re-invest in new projects in the nature of a venture capitalist.**
- **Form a Contingent Valuation Fund as additional back-up to any project guarantees that are given by Government.**

mitment. Similarly, because of this possibility of unforeseen future risk, the private investor also finds such guarantees to be less than credible, particularly at lower levels of government. Often, the market may also not attach much value to them and hence the credit enhancement provided by government guarantees is negligible. It is therefore suggested that government at both Central and state levels should consider setting up Contingent Valuation Funds for providing additional back-up to any infrastructure project guarantees that are given. It is possible to value guarantees and thereby to set aside specific funds from the budget on an annual basis so that the Contingent Valuation Fund has adequate resources to fund the guarantees in case they are called. Such a mechanism would both provide safety to the government as well as additional comfort to creditors.



The Role of the Capital Markets

THE projected macro-economic framework for the next 10 years (1995-96 to 2005-06) envisages an increase in the rate of annual economic growth from the current 5 per cent or so to over 8 per cent by the end of the period. This increase is predicated on a substantial expansion in industrial investment accompanied by an improvement in the marginal efficiency of investment. As in the past, the household sector would continue to provide the bulk of the domestic savings, but this would be augmented substantially by the private corporate and the public sectors. The increased public savings are projected to arise out of an improvement in efficiency, a move towards market-based pricing of public sector services—especially infrastructure services—and progressively increasing commercial orientation of PSEs.

The public sector, the engine of infrastructure investments in the past, will continue to have a major role in this sector, even as its share declines from over 80 per cent to 55 per cent by the end of 2005-06. Private investment in infrastructure is projected to rise almost sevenfold from Rs 120 billion in 1995-96 to over Rs 800 billion in 2005-06. The focal areas for private investment in infrastructure are likely to be initially in power generation and telecommunications, and subsequently ports, roads, civil aviation, and urban infrastructure.

Hitherto, as the Government implemented and financed the bulk of infrastructure outlays, all the attendant project risks were also borne by the Government. Resource mobilisation—essentially domestic—was mainly through pre-emption of funds from banks and insurance companies backed by issue of dated

securities. Foreign savings, mainly in the form of project-specific aid from bilateral/multilateral sources supplemented domestic resources. Thus, infrastructure financing was relatively simple and straightforward—but undoubtedly inefficient and lacking accountability. The pattern of financing witnessed in the past will undergo a change as the transition from predominant state investment in infrastructure to increasing private/foreign participation occurs. While the reliance on domestic savings would continue as hitherto, these would need to be augmented by foreign savings—both in the form of equity as well as debt.

Distinctive Characteristics Of Infrastructure Finance

The nature of infrastructure projects and their inherent complexities make them different from traditional industrial projects with which the financial institutions (FIs) have been familiar. Most of the projects involve new techniques such as BOT/BOOT (Build-Own-Operate-Transfer). In addition to traditional financial, technical and economic appraisal capabilities of project financing, infrastructure projects require deep understanding of the legal, regulatory and institutional arrangements under which the project promoters would operate. Most infrastructure projects are non- or limited-recourse financing, and hence bear higher risk compared to traditional industrial lending where the risk is covered by the balance sheet of the sponsor, with tangible assets as security.

Privately financed infrastructure projects need well-

developed domestic capital markets and provide an opportunity to develop them. Since most of these investments generate revenues in local currency, it may not be sustainable in the long run to finance these investments out of foreign savings. There is both the scope and the need to develop financial instruments and the market systems to tap domestic capital markets to finance infrastructure investments.

Private investment and financing, while offering the benefit of additional funds, will also importantly encourage better risk-sharing, accountability, monitoring and management. Empirical evidence suggests that infrastructure projects, irrespective of their sectoral characteristics, have high leverage ratios. Since the level of retained earnings (after meeting capital-servicing costs, tax payments and statutory capital reserve requirements, if any) over and above the depreciation provisions is low, infrastructure firms typically fund projects through debt finance. They also tend to diverge from the conventional 'pecking order' of corporate finance, vis-a-vis using retained earnings in preference to debt and debt in preference to public issues of equity capital to fund asset acquisition. Not only is the initial recourse to debt funding very high for infrastructure investments, but subsequent expansion/ renovation/ modernisation are also funded substantially through debt finance.

The central financial issue in infrastructure investment is not adequacy of funds, but more importantly the institutional framework and other related mechanisms which facilitate convergence of investment horizons of ultimate savers and borrowers in the economy.

How The Capital Markets Have Developed In India

During the 1980s, the Indian capital market emerged an important source of funds for corporate units in both private and public sectors. Between 1988-89 and 1994-95, the total volume of capital issues has risen nearly fivefold. In terms of amounts mobilised, it doubled between 1988-89 and 1990-91 and further quadrupled to Rs 450 billion by 1994-95. While public and rights issues were the preferred modes for issue of capital upto the mid-80s, private placements with investment institutions, mutual funds and commercial banks have become a popular and cheaper form of raising capital by private and public sector companies since then. In marked contrast to the '80s, when debt predominated in resources mobilised from the primary market, during the '90s, equities and convertible debt have come to dominate primary issuance in a big way. Bulk of the equity issues have come from companies in the private sector, while PSEs operating in infrastructure areas continue to be the principal issuers of debt securities in the primary market. With the deregulation of interest rates on capital market debt instruments in 1991, PSEs have been forced to offer market-determined interest rates on such debt instruments.

The equity market has been highly active as the bulk of the

The central issue is not adequacy of funds, but the mechanisms that bring together the ultimate savers and borrowers in the economy.

resources raised in the primary market are in the form of direct equity or convertible debentures. In the secondary market, the market capitalisation of the 7,000-odd listed companies in 23 stock exchanges has risen at a very fast pace, particularly since 1990-91. At the end of December 1995, aggregate market capitalisation of stocks listed on the Bombay Stock Exchange amounted to Rs 4,260 billion (US \$128 billion) which was around 30 per cent below its historical high of Rs 5,955 billion (US \$ 190 billion) reached in September 1994. This growth in market capitalisation conceals the fact that the secondary market still operates with antiquated trading and settlement systems. The debt market has however remained undeveloped due to an illiquid secondary market in such instruments. Measured in terms of the outstanding value of debt instruments, the size of the tradable debt market has been estimated at Rs 3,000

billion—comprising Rs 2,650 billion of bonds and Rs 350 billion of money market instruments. Apart from this, there is an untraded debt market estimated at about Rs 600 billion, comprising small savings instruments of about Rs 440 billion and company fixed deposits of Rs 160 billion. As a sizeable part of household savings continues to be attracted to fixed-income financial instruments, development of the debt market, both at the wholesale and retail level, would be necessary for supporting investments in infrastructure projects. With the deregulation of interest rates, both in the capital market (in 1991) and the credit market (in 1991 and 1994), there have been significant changes in the issuance methods and trading pattern of bonds. The most significant changes have occurred in the government bond market. Issuance of bonds at administered interest rates with pre-determined 'notified' amounts has been largely replaced by an auction system of issuance. Apart from fixed-rate bonds, the government has also issued floating-rate bonds, zero-coupon bonds and partly-paid bonds. However, liquidity continues to be thin in the secondary market, even with the moveover to screen-based trading on the National Stock Exchange. The debt market in the country has not really developed, largely due to several policy constraints. A few of these constraints have been removed but a great deal remains to be done.

Fund Requirements from the Capital Market

It is expected that public sector investment in infrastructure will rise from the current Rs 475 billion to about Rs 690 billion in 2000-01 and Rs 1,000 billion in 2005-06. In the past, substantive support was provided from budgetary sources. In view of the fiscal stringency that exists, and competing demands from social sectors, budgetary support for infrastructure projects has been projected to remain roughly constant at Rs 100 billion over the next 10 years. Consequently, internal generation of funds within PSEs is projected to rise from the current 40 per cent of requirements (Rs 200 billion) to 45 per cent (Rs 300 billion) by 2000-01 and 50 per cent (Rs 500 billion) by 2005-06. Even if direct market borrowing is kept constant at 20

per cent of requirements, public sector infrastructure borrowing needs from the capital market would rise from about Rs 100 billion now, to about Rs 140 billion in 2000-01 and Rs 200 billion in 2005-06. The rest of the requirements would be sourced from financial institutions and banks, and from foreign sources, the latter ranging from 8 to 12 per cent of the total. Foreign financing is expected to rise from the current Rs 40 billion (US \$ 1.2 billion) to about Rs 75 billion (US \$ 2.2 billion) by 2000-01 and Rs 115 billion (US \$ 3.3 billion) by 2005-06.

The share of private sector investment in infrastructure has been projected to rise from the current 1 per cent of GDP to 2.5 per cent by 2000-01 and 3.5 per cent by 2005-06. This means that in absolute terms, this investment would have to rise from about Rs 120 billion now to Rs 380 billion in 2000-01 and Rs 800 billion in 2005-06. With the absence of existing private corporate sector entities in infrastructure, retained earnings, as a source of finance, can only grow gradually: from the current Rs 10 billion or so to Rs 110 billion in 2000-01 and Rs 265 billion in 2005-06. Funding support from banks and financial institutions is projected to rise from the current Rs 25 billion to about Rs 100 billion in 2000-01 and Rs 200 billion in 2005-06. This could be higher but for the sector exposure norms that the FIs would need to observe for prudential purposes. Net external financing is expected to rise from the current Rs 10 billion (US \$ 300 million) to about Rs 40 billion (US \$ 1.2 billion) in 2000-01 and Rs 90-100 billion (US \$ 3 billion) in 2005-06. The remaining requirements would have to be raised directly from the capital market: about Rs 120 billion by 2000-01 and Rs 240 billion by 2005-06.

Under these projections, only about a third of net foreign savings flowing into the economy has been taken to be devoted to the infrastructure sector, approximately equivalent to the share of infrastructure in total non-household investment. Given the importance of infrastructure, all efforts should be made towards channelling a greater proportion of foreign savings, say 40 per cent, to infrastructure. If this happens, the demand from other sources would fall correspondingly.

In addition to the direct demand for funds from the capital market made by both public and private sector infrastructure entities, amounting to about Rs 260 billion in 2000-01 and about Rs 440 billion in 2005-06, the financial intermediaries themselves and the Government will also need to raise resources from the market. This would amount to about Rs 160 billion (Rs 100 billion for FIs) in 2000-01 and Rs 280 billion (Rs 200 billion for FIs) by 2005-06.

On this basis, the total funding requirements for infrastructure to be financed from the domestic capital market would rise from the current Rs 250 billion to Rs 420 billion by 2000-01 and Rs 720 billion by 2005-06.

This volume of resource mobilisation amounts to about 40 per cent of total infrastructure investment requirements. But this projection is based on relatively optimistic assumptions regarding internal generation of funds. The actual draft could well be higher. Consequently, the activation of the domestic debt market is of paramount importance for infrastructure investment. Extraordinary measures have to be taken towards this end.

In order to appreciate the enormity of the task ahead, we have also estimated the 'non-infrastructure' requirements for

resources from the capital market. These would amount to volumes at least as much as for infrastructure. Thus total resources raised need to almost double every five years.

The huge gap between investment demand and the supply of finances provide complex challenges to the different constituents of the financial system which compel a search for alternative ways of financing these investments. This necessitates a coordinated approach to the development of a sound and vibrant capital market.

Institutional Sources of Funds

Domestic Sources: In developed countries, infrastructure projects raise financing from institutional investors (insurance companies, pension funds, endowments, and the like), either through the bond markets, or through direct private placements. In India also, the contractual savings institutions (LIC, GIC, PFs, EPF) that have long-term liabilities make natural investors in private infrastructure projects. Apart from these institutions, other institutional investors such as charitable and religious trusts can also be a source of substantial funds. With the development of an active and liquid market for securitised corporate debt, mutual funds, commercial banks and financial institutions could also emerge as potentially large investors. However, all this calls for substantial reform in the debt market.

At present, all the contractual savings institutions are under the control of the Government which largely pre-empt

We Recommend...

Fiscal Incentives

- Equity investments in long-gestation infrastructure projects be granted tax reliefs like the erstwhile 80CC provision.
- Dividends payable on equity investments be made cumulative for payment for the period till the project goes on-stream.
- Dividends be made tax-free to the individual shareholder upto a reasonable level on the equity investment.
- Projects have nominal ordinary equity capital and large measure of cumulative convertible preference shares (CCPS) with the proviso that at the end of a specified period, the CCPS will be compulsorily converted into equity shares through a pre-determined pricing formula.
- Suitable changes be made in the Income Tax Act to provide for sharing of depreciation charges, especially in the case of joint/leveraged leasing for infrastructure projects.

their funds. If infrastructure has to be financed through the capital markets, it is necessary to initiate major reform in the area of contractual savings institutions allowing for the entry of private companies and institutions in each of these areas. The Government's programme to reduce its fiscal deficit would also bring down its pre-emption of funds in existing institutions. The more widespread availability of contractual savings instruments which provide good returns can be expected to lead to increasing financial savings rates of households.

To leverage their core competence of project appraisal, the FIs would need to adopt a number of strategies, such as taking of loans onto their books and then syndicating them, or lending to projects during the construction and start-up stages, and securitising the loans or selling down the bonds, once operations have begun and the project is investment-grade. FIs would thus bring to bear their risk-assessment capabilities during the riskier pre-operative phase, with securitisation made easier in the post-completion phase. Such turnover of portfolio would have a salutary effect on the quantum of funds mobilised. However, securitisation as a financing mechanism would require a fair amount of reform in the legal framework.

Securitisation enables financial intermediaries to overcome asset-liability mismatches. While borrowers can get access to funds with 'elongated' maturities, lenders are able to convert assets into cash to meet repayment obligations. For the originator, securitisation provides an additional source of

funds, reduces funding costs, besides resulting in economy in the use of capital and greater recycling of funds that leads to higher turnover and profitability. It also improves capital adequacy by removing from the balance sheet loan assets or by substituting them with lesser risk-weighted assets. For the investor, it increases the diversity of investment avenues. In India, however, securitisation seems beset with hurdles, notwithstanding the manifold inherent benefits. The extant rigid legal framework and extortionist stamp and tax laws have so far scuttled any meaningful securitisation moves. The absence of a secondary debt market in which such instruments can be freely traded has compounded the problem.

Securitisation as a vehicle of financing provides perhaps the most promising and viable funding option for infrastructure projects in the coming decade, provided some of the legal and fiscal irritants are removed.

Foreign Sources: In addition to the standard sources of foreign funds like the multilateral financial institutions, much greater effort will have to be made to tap commercial sources. This will be increasingly necessary since the future outlook for official debt flows is not optimistic. Syndicated loans and direct borrowing will have to be resorted to in foreign markets, along with an increased openness to foreign investment. The process of granting approvals for external commercial borrowing (ECB) would have to be made more transparent and systematic. Borrowing in foreign markets would also be helped by sovereign benchmark issues of Government debt instruments.

A new important source of equity finance for infrastructure is the set of infrastructure funds that are increasingly being set up for investment in developing countries, particularly in Asia. At present, each equity investment sought to be made from these funds has to be routed through the foreign direct investment approval route of the Foreign Investment Promotion Board (FIPB). Equity investment from such funds could be put on a special footing, allowing them ease of investment in eligible infrastructure projects.

Kickstarting The Debt Market

If the trend toward private investment in infrastructure is to continue, financial markets will have to respond by providing the necessary long-term resources. Parallel to the innovations in the structuring of contractual agreements, which are critical to making a project financeable, delivering long-term finance through alternative institutions and instruments would be critical success factors. Overall balance-of-payments constraints and the sheer size of infrastructure investments imply that a sustained infrastructure programme will have to be accompanied by a strategy for mobilising domestic funds. In turn, an increasing share of domestic savings will need to come from private sources as the Government reduces its involvement in infrastructure.

Synergistic links can develop between private infrastructure projects and domestic financial intermediation through capital markets. Infrastructure developers and private (especially contractual) savers share a long-term horizon. Bringing compatible savers and investors together is the task of the capital markets. At the same time, the financing of infrastructure projects improves appraisal capabilities and expands

We Recommend...

Insurance, Provident and Pension Funds

- General Insurance Company and its four subsidiaries be split up into smaller entities to increase competition in the insurance business.
- Privately-owned insurance companies, both domestic and foreign, be allowed and encouraged to enter so the debt market can be developed.
- The Employee Provident Fund be split up and managed by professional asset management companies on a competitive basis.
- New private (and public) provident and pension funds be allowed.
- The existing issuer-based guidelines for deployment of funds be replaced with guidelines based on prudential norms, which permit investment in securities with minimum specified credit ratings. Fund managers be provided greater operational flexibility.
- Suitable fiscal incentives be provided for contributions to pension funds.

risk-diversification possibilities for local commercial banks, equity and bond markets, and institutional investors such as insurance companies and pension funds.

Successful implementation of the envisaged investment would call for reform in all segments of the financial system. The major areas, where comprehensive policy and procedural changes would be necessary would largely be in the institutional segment of contractual savings—insurance, pension and provident funds—and the debt market. The policies relating to the equity and forex markets, ECB and fiscal concessions to infrastructure projects also need to be reviewed.

Deepening and widening of the market in debt instruments through financial innovations are expected to go a long way in stepping up the overall domestic savings rate. This would, of course, also crucially hinge on the speed with which the policy framework is made conducive.

The reforms in the debt market can be broadly classified under market-related reforms and regulatory changes. While the market-related reforms would go towards expanding the size and scope of the market, the regulatory changes would facilitate the smooth functioning of the market.

Market-related reforms require

- A stock exchange-type clearing house for transparent trading of debt instruments of different varieties
- A sovereign benchmark for aiding the pricing of other issues; the existence of a yield curve arising from these benchmarks
- An operating system of primary dealers as market makers
- Widening and deepening of the markets with the entry of a large number of institutional players, both foreign and domestic, and greater retail distribution of debt instruments.
- A number of regulatory reforms are also required to remove the impediments that inhibit smooth trading in debt instruments, such as differential tax deduction at source for different instruments, inhibitive stamp duty, multiple regulatory authorities, and the like.

Institutional Innovations to Activate Debt Markets:

International experience suggests that the traditional approaches to financing that involve term loans from FIs and banks and equity offerings in the domestic capital markets are inadequate to match the risk-returns profile and payback periods of infrastructure projects. FIs and banks are constrained by the time profile of their own liabilities and hence cannot prudently lend large volumes of debt. Hence an intermediary would be needed to provide credit enhancements to extend the maturity of the funding raised for infrastructure projects.

Even after the various reforms proposed for developing a debt market are put in place, there may be difficulty in actually issuing long-term debt instruments since few borrowing agencies at present have a credit quality high enough to go to the market. Even the all-India financial institutions are currently

Comprehensive policy changes are needed in the contractual savings segment—pension, insurance, provident funds—and the debt market.

finding it difficult to raise long-term funds in the capital market. The last year has seen some welcome innovations in the form of deep discount bonds, flexi-bonds and the like which have been issued by FIs to tide over the 1995-96 credit crunch. However, while raising these funds, these institutions have had to offer basically similar interest rates for different term maturities that have been provided for in these instruments. Long-term real interest rates of over 10 per cent will not be suitable for infrastructure investment. Innovative institutional interventions would be required to help kickstart the debt market, particularly for medium- and long-term bonds.

The basic issue is the credit enhancement of borrowing entities. This can be done through institutional innovations such as

- Upgradation of appraisal institutions
- Bond insurance
- Provision of guarantees
- Credit rating of infrastructure projects and companies
- Funding of pre-feasibility and feasibility studies
- Securitisation of assets

India is lucky to already have a reasonably well-developed framework of financial institutions. The liberalisation of the financial sector and the capital markets that has taken place in the last few years has also seen the entry of newer institutions such as ILFS and SCICI. It is however likely that even these established institutions may need additional enhancement of their credit quality in order to borrow long in both domestic and international markets. In most countries, some special arrangements have been made to make possible the issuance of different kinds of bonds meant mainly for raising resources from the capital market at the lowest possible cost and with the longest possible debt maturities. For example, in the US, much of urban infrastructure is financed through the sale of municipal bonds which have been given tax-free status by the federal government. A complex market structure exists to make these bonds marketable. The availability of credible ratings, financial guarantees, bond insurance and the like help in this respect. Similarly, the development of the widespread housing mortgage system in the US was helped by government intervention through the creation of government-sponsored agencies such as Fannie Mae. In Germany, much of infrastructure finance is done through the sale of mortgage bonds called Pfandbriefs which are backed either by state guarantees or mortgages that can be conveyed. In Japan, the widespread postal savings system provides funds to different infrastructure financing institutions such as the Japan Development Bank and the Long Term Credit Bank.

Given the complexity of risks inherent in infrastructure projects, lenders and investors may often perceive the project cash flows and the collateral as insufficient inducement to take up the financing risks. In such a situation, to gain the confidence of lenders and investors, 'credit enhancement' mechanisms may be needed to improve the overall credit quality of the project. In simple terms, credit enhancement mechanisms enable the

issuers of debt to secure a higher credit quality assessment than would have been possible on a 'standalone' basis. Credit enhancement benefits the issuer in terms of possibly lower interest costs and easier marketability due to the high safety of the instrument. Credit enhancements thus essentially provide a risk-mitigating mechanism to investors and lenders.

The principal credit enhancement measures used so far in India have been government guarantees and Special Reserve Accounts (SRA). While guarantees increase the comfort levels of the lenders in the initial phases, extensive use of these measures can lead to a strain on government finances and ultimately impact the overall sovereign rating. In the SRA arrangement, the inflows from the concerned project are pooled into a separate bank account, managed by the trustees, and all debt-servicing obligations are fulfilled before releasing them for further utilisation. In most cases, Escrow Accounts of SEBs are backed by a State Government Guarantee as an additional credit enhancement. The limiting feature of such a mechanism is that it can be utilised only for on-stream projects.

Some of the other credit enhancement measures that can be deployed to improve the credit quality of infrastructure investments, within the existing legal framework, are:

■ **Bank Letter of Credit:** A bank may provide a letter of credit to be drawn upon when needed to cover shortfalls in revenues.

■ **Sponsor/Issuer Limited Recourse:** The issuer may provide recourse for defaulted receivables (user charges) by pledging additional cash flows and assets, upto a specified level of underlying losses. This is called Limited Recourse Financing.

■ **Subordination/Overcollateralisation:** A pool of assets can be divided into senior and subordinated interests. In the event of a default, the senior securities typically have first claim on assets in the pool as well as cash flows. This protects against expected losses and deterioration in performance of the assets and is known as overcollateralisation. The subordinated investors, on the other hand, absorb the first losses in exchange for a higher return.

For the purpose of providing credit enhancements, an institution can be set up by the Central Government and the Reserve Bank of India and possibly multilateral agencies such as the World Bank, ADB, and IFC(W) with the specific objective of providing credit enhancements whenever necessary to other financial intermediaries and project entities in order to kickstart the debt market. The intermediary's capacity to offer competitive financial services will hinge on its ability to obtain a favourable rating based on the credit standing of its shareholders, combined with prudent management practices. It would also need to induce a form of disintermediation from the institutional banking system, which operates with relatively high funding spreads. To be able to respond to market demand, the intermediary would need to provide a menu of products to private sector developers of infrastructure projects. A mix of guarantee and lending products appears appropriate. These could include the following: policy risk (including convertibility risk)

guarantees and insurance; bond insurance; rollover bridge financing; other liquidity products; and combinations of the above, with or without lending products. The intermediary should be seen as an independent entity with a single board representing the key shareholders. Management of the intermediary would need to be assumed by a reputable financial institution (or a consortium of institutions) with an equity stake in the intermediary.

If private investment in infrastructure has to proceed on a sustainable basis, it is necessary to reduce both the perception and the reality of risk. While the private sponsor would need to bear the commercial and managerial risks, the Government would need to manage the country and the political risk. The latter would involve maintenance of a stable macro-economic environment to ensure price and exchange rate stability and facilitate stable and modest real interest rates. Policy actions for moving towards foreign exchange convertibility would also be significant if foreign investor interest in India's infrastructure development has to be sustained. The Government would also need to create a transparent and equitable regulatory framework governing corporate activity, stable and predictable tax regimes, a credible and reliable judicial system and dispute resolution mechanism.

India needs an institution to specifically provide credit enhancements to projects, and kickstart the debt market.

Recommendations

Fiscal Incentives: To attract equity capital in the construction and pre-operative phases, equity investment in long-gestation infrastructure projects could have tax reliefs like the erstwhile 80CC provision. Also, dividend payable on equity investments in infrastructure should be made cumulative for payment for the period until the project goes onstream. Dividends could be made tax-free to the individual shareholder upto a reasonable level on the equity investment.

The debt-equity norms for funding infrastructure will have to treat the compulsorily and fully convertible debentures as quasi-equity and such debentures could be subordinated both for principal and interest to all secured and unsecured creditors of the project. Projects could have nominal ordinary equity capital and large measure of cumulative convertible preference shares (CCPS) with the proviso that at the end of a specified period (say the 10th year), the CCPS will be compulsorily converted into equity shares through a pre-determined pricing formula.

The tax holidays provided in the 1994-95 and 1995-96 budgets for infrastructure projects in the initial years would usually not be of much use, given the high depreciation outgo in the initial years. Leasing could greatly ease the situation by giving/transferring the fiscal benefit to tax-paying entities. Joint and leveraged leasing structures are used internationally to co-finance the asset. However, the Income Tax Act does not permit sharing of depreciation where assets are owned jointly. Suitable changes would need to be effected in the provisions of the Income Tax Act to provide for sharing of depreciation charges, especially in the case of joint/leveraged leasing for infrastructure projects.

Insurance, Provident and Pension Funds: As recommended by the Malhotra Committee on Insurance Sector Reforms, General Insurance Company and its four subsidiaries can be split up into smaller entities to increase competition in the insurance business. The reform programme for the insurance sector should be accelerated with a sense of urgency. Privately-owned insurance companies, both domestic and foreign, should be allowed and encouraged to enter as soon as possible: this is essential for developing the debt market for infrastructure requirements.

The Employee Provident Fund (EPF), with a corpus in excess of Rs 350 billion and currently managed by the State Bank of India (SBI), could be split up and managed by professional asset management companies on a competitive basis. Such a measure would usher in greater competition in the provident fund business and provide incentives to these institutions to invest and trade in debt instruments more actively. Further, in order to motivate fund managers, a performance-based incentive structure may be introduced as is the case in developed insurance markets.

Arrangements should be made, under a suitable regulatory framework, to allow the establishment of new private (and public) provident and pension funds. These would provide added avenues for safe contractual savings for even those outside the organised sector.

Current guidelines on deployment of funds by insurance companies, provident and pension funds are not flexible enough from the point of view of efficient fund management and yield maximisation. The existing issuer-based guidelines could be replaced with guidelines based on prudential norms, which permit investment in securities with minimum specified credit ratings. Prudential guidelines, as in the case of mutual funds, specifying maximum limits will have to be devised for this purpose. The existing guidelines have directed the flow of funds into specific sectors, instead of controlling the interest rate and credit risks to which these institutions are exposed. It may be appropriate to modify the guidelines so as to eliminate/minimise this form of "directed credit" and increase the responsibility of the investment managers. Market and credit risk restrictions may need to be enforced as insurance companies, pension and provident funds have extremely long maturity liabilities. We also recommend that the guidelines be modified so as to provide greater operational flexibility to fund managers.

Suitable fiscal incentives need to be provided for contributions to pension funds. Such a measure would channelise a large pool of savings into long-term assets. It would also help to reduce the incidence of savings getting diverted to the parallel economy and also help transform the financial market.

Forex Markets and External Commercial Borrowing: The process of granting approvals by the Ministry of Finance (MoF) and the RBI for all aspects of the external commercial financing may need streamlining. Arbitrary ceilings put on the "spread" over US Treasury yields for foreign currency debt financing or the shortening of maturities as specified in the guidelines on ECBs make it difficult for foreign investors to finance projects.

If Indian corporates and financial institutions are to tap the global capital markets periodically for mobilising

resources, it may be in India's best interest to consider a sovereign offering which will serve as the bellwether for future issuance. The establishment of a "benchmark" issue will be important for the development of India's access to the capital markets. Much as investors use the US Treasury as a benchmark to determine valuation of other issues, foreign investors would prefer a sovereign security which could serve as the benchmark for valuation of Indian paper.

The imposition of a 20 per cent withholding tax on foreign-domiciled debt investors can work against the policy objective of restraining foreign currency borrowing. This regulation can have the effect of decreasing the available investor market for any given issue, as the potential administrative burden of withholding tax credits between countries etc. can discourage most passive investors, which make up the bulk of the available financing sources. Another anomaly which currently exists relates to the withholding tax of 20 per cent on interest and dividend incomes on investments by FIIs. There is no such tax (on approval by the Government on a case-by-case basis) on ECBs by Indian entities abroad. It is a bit incongruous that when an investor takes a rupee risk, he pays withholding tax, while he does not pay any such tax when he is isolated from any currency risk.

Appropriate changes in exchange control regulations by the RBI are called for if risk-hedging mechanisms such as forwards and futures are to emerge in the foreign exchange market.

Foreign Infrastructure Funds: At present, there is no special channel for such funds to invest in infrastructure projects in India, except for going through the FIPB like any other foreign investment. It would be very desirable to place investments from such funds on a preferred footing. They could be treated in a manner similar to the investments made in the capital market by FIIs at present. FIIs have to register with SEBI, consequent to which they are permitted to invest in listed companies. A similar channel could be opened for recognised infrastructure funds. They could be registered with SEBI based on transparent guidelines related to their recognition. They could then be allowed to invest in eligible infrastructure projects—in

We Recommend...

Forex Markets and External Commercial Borrowing

- A sovereign offering be considered which will serve as the bellwether for future issuance.
- The 20 per cent withholding tax on foreign-domiciled debt investors be abolished.
- Appropriate changes in exchange control regulations be made by the RBI so risk-hedging mechanisms such as forwards and futures can emerge in the foreign exchange market.
- Investments from foreign infrastructure funds be placed on a preferred footing.

IFDC: The Apex Authority

A Specialised Financial Intermediary: Since the capital market—more particularly the market for corporate debt—has not yet developed, many of the infrastructure projects may not be able to mobilise the required volume of draft resources of the requisite long maturities directly. Hence an intermediary would need to be created which can inspire confidence among capital market investors to induce them to lend long-term funds at the lowest possible market rates.

It is proposed that an Infrastructure Finance Development Corporation (IFDC) be set up to promote infrastructure investment by evaluating and offering various forms of financial assistance and technical advice to project-lending financial intermediaries and priority infrastructure projects. Its products would include:

- Financial guarantees for bonds issued by financial intermediaries and project entities
- Subscription to equity and bond issues of financial intermediaries and project entities to enhance market confidence in these issues
- Asset securitisation
- Rollover bridge financing
- Direct finance for projects (on an exceptional basis)
- Insurance Products
- Bond insurance
- Policy risk insurance and guarantees

Its functions would essentially be for credit enhancement of instruments issued by lower credit-quality institutions; to encourage competition in the capital market and in infrastructure lending; to kickstart the debt market through issuance of its own higher credit-quality instruments.

For the IFDC to have higher credit quality than the all-India financial institutions, it must have the backing of the Government of India, Reserve Bank of India, multilateral financial institutions and international investment banks. It is pro-

posed that the IFDC be formed through equity contributions of roughly equal proportion (about 25 per cent each). Of this equity, only one-third would be in cash, and the rest would be 'callable'. In order to boost its credit rating, its gearing ratio would be kept below 1:2; it would be allowed to borrow only upto double its equity (including callable capital). This would provide leverage of about 1:6 for the equity contributions in cash. If the IFDC provides its backing to its clients of upto 20 per cent of their resource requirements through equity or bond subscriptions, a leverage of about 1:4 would result. Consequently, the total leverage resulting from the cash-equity contributions to the IFDC would be 1:25 or thereabouts. This kind of leverage would provide a good jumpstart to the debt market.

It is proposed that the authorised equity capital (including callable capital) of the IFDC should be about Rs 200 billion. On this basis, the contribution of the Government of India and the RBI would be Rs 100 billion, or Rs 33 billion in cash. This could be contributed over five years, the annual contribution being only Rs 6-7 billion. Similarly, the foreign contribution would be only US \$ 200 million a year over five years. These contributions being split between the multilateral financial institutions and international investment banks.

With such a structure, the IFDC should be able to access both domestic and international debt markets for traditional and long-term debt: and hence succeed in jumpstarting the Indian debt market. The IFDC would be incorporated as a commercial entity. The management and staffing should be contracted out on an international basis.

Since the IFDC would be a totally new kind of institution, with perhaps no parallel in the world, this proposal should be fleshed out by convening a task force of capital market experts with representation from multilateral financial institutions, international investment banks, credit-enhancing institutions such as Fannie Mae, bond insurance companies and the like.

listed or unlisted companies, including infrastructure special purpose vehicles (SPVs). The eligible infrastructure projects could be

- Those approved by the Central Board of Direct Taxes (CBDT) for granting of fiscal benefits as infrastructure projects under section 80-1A.
- Telecommunication companies which have received a licence from the Department of Telecommunications.
- Power projects which have been approved by the Central or state governments.

The level of foreign investment allowed under this window could remain subject to the overall guidelines covering each sector. This procedure would obviate the need for obtaining FIPB approvals on a case-by-case basis. Guidelines as indicated above would automatically ensure that eligible receiving

projects have already been approved by the relevant authorities.

Debt Market Reforms

Creating Benchmarks and Yield Curve: It would be desirable to permit banks and institutions to set up Primary Dealer counters as part of their overall banking and lending activities. This would facilitate broad-based holding of debt instruments—especially at a retail level. Such a measure would be necessary if it is recognised that the medium- and small-sized banks could play an important role for dealing in and distributing retail the entire range of debt instruments, including Government securities and Treasury bills.

It is necessary to evolve a benchmark rate on the pattern of London Inter-Bank Offered Rate (LIBOR). For creating a meaningful inter-bank rate in India on the lines of the LIBOR

or the US Fed Funds rate, it is essential to remove barriers in the free flow of funds among banks. In line with the recommendations of the Sodhani Committee, the Cash Reserve Ratio (CRR) and Statutory Liquidity Ratio (SLR) stipulation in inter-bank borrowing should be abolished for encouraging the emergence of a meaningful rate on the pattern of LIBOR.

Apart from dispensing with CRR and SLR on inter-bank deposits, the RBI could consider changing the basis of calculating CRR as a proportion of the lagged average of the Net Demand and Time Liabilities (NDTL). This could considerably enlarge the scope for differing perceptions among the main money market participants and thus go some way towards a healthier development of the money market.

The RBI could also consider reactivating the Bank Rate and using it as a general reference rate within the banking system. The Bank Rate could be used to send interest rate signals into the market and would also lend stability to the inter-bank money market rate.

The debt market also needs a single clearing agency that will co-ordinate with the different securities settlers, as also the funds settlers to monitor that all trades are settled, and ensure 'delivery versus payment'.

If debt market intermediaries have to become significant traders in their own right, they would need access to institutional finance. It will thus be necessary to evolve norms for funding the activities of these intermediaries, including working capital limits, as in the case of providers of any other financial service.

Widening and Deepening the Debt Market:

To widen and deepen the market for debt instruments, it would also be necessary to bring in, apart from new insurance companies and pension/provident funds, investors such as the FIIs who will not only be effective fund-based participants, but will also bring with them the knowledge and experience of development of the debt markets in other countries. The objective of containing any excessive growth in external indebtedness, arising out of the holding of rupee-denominated debt by foreign investors, including FIIs, could be achieved if the Government fixes the limit upfront on the domestic debt that foreign investors can hold and do away with the present 70:30 rule.

The other equally important aspect relates to making debt securities of a single issuer 'fungible'. This would be particularly relevant for infrastructure projects where the gestation period is relatively longer, and the need to source modest to large volumes of funds from the market periodically is greater. Such a measure would impart greater depth and liquidity in the market and provide larger volumes of a single security for trading among investors.

In order to enhance liquidity further, 'repo' transactions can be re-introduced for all listed debt securities with adequate and suitable safeguards. At a later date, when depositories become operational and electronic clearing and settlement is possible, 'securities lending' can be introduced with suitable legislative changes.

Money market mutual funds (MMMFs) must have the

flexibility to structure the pattern of investments of their fund in accordance with their objectives. No restrictions need be placed on the kinds of instruments in which MMMFs can invest. One sure way of broadbasing the debt market would be to encourage banks and institutions to set up MMMFs and debt-oriented mutual funds.

At the moment, a distribution network of brokers and sub-brokers does not exist for debt instruments in the same way as it exists for equities. Until it becomes possible to develop an extensive network of brokers and sub-brokers and market makers, it would be appropriate to use the network of commercial banks, and perhaps the postal banking system, which can combine the roles of distributors and resourceful market makers.

The CRR and SLR stipulation in inter-bank borrowing should be abolished to create a meaningful inter-bank rate on the pattern of LIBOR.

Regulatory Reforms: For more effective regulation and development of the debt market, it would be desirable that there is a single regulatory authority, preferably SEBI, for the debt market.

To spur trading in debt instruments, it would be necessary to have uniform valuation norms on a marked-to-market basis for all the major classes of investors: banks, investment institutions, mutual funds, non-bank financial companies (NBFs) etc. Frequent periodic revaluation of debt assets in response to changes in market prices will minimise the extent of capital losses to be booked on investments. It will also facilitate the decision making process relating to switching of portfolios in response to changing yields and maturity patterns.

Tax Deduction at Source (TDS) acts as an inhibiting influence on the tradability of instruments especially where it requires fine adjust-

ments to price between different categories of holders. Differing TDS rates make it impossible to have a uniform price-quoting mechanism for instruments. It is desirable that the RBI does not insist on differential rates of TDS and accepts the market practice which is in favour of a single TDS rate for all debt instruments. In order to introduce uniformity in the system of price quotation, it is desirable that market participants should adopt a practice of quoting all prices on gross basis inclusive of TDS. On corporate debt instruments too, such a mechanism of standard TDS rate across all categories of holders is very necessary.

There appears to be no clear-cut reason why private sector infrastructure companies are not permitted to issue tax-free bonds. If certain categories of infrastructure entities are not allowed to issue tax-free bonds, they should be permitted to issue bonds with a single tax rate to be deducted at source. Such an issuance procedure would significantly simplify trading in such instruments.

In the absence of practices such as Advance Tax Ruling, issuers have to face considerable delay in finalising the nature of the debt instrument to be issued and also the terms thereof. A clear example of this is the confusion among issuers regarding the tax treatment of income on debt instruments such as deep discount bonds, zero-coupon bonds, etc. A clear tax ruling in this regard could help develop a market for debt securities, similar to that of STRIPS in the US.

We Recommend...

Debt Market Reforms

- Banks and institutions be permitted to set up Primary Dealer counters to broadbase holding of debt instruments at the retail level.
- The Cash Reserve Ratio (CRR) and Statutory Liquidity Ratio (SLR) stipulation in inter-bank borrowing be abolished for encouraging the emergence of a benchmark meaningful rate on the pattern of LIBOR.
- Debt market intermediaries be given access to institutional finance.
- FIs be allowed to participate in debt market.
- 'Repo' transactions be re-introduced for listed debt securities with suitable safeguards.
- No restrictions be placed on the kinds of instruments in which Money Market Mutual Funds can invest.
- There be a single regulatory authority, preferably SEBI, for the debt market.
- A single TDS rate be developed for all debt instruments.
- Private sector infrastructure companies be permitted to issue tax-free bonds.
- Stamp duty on primary issues of debt securities need to be made uniform across all states. Stamp duty on secondary market transactions should be abolished.
- A municipal bond market be developed. Municipal bodies be given powers to set levels for user charges for the services provided.

Stamp duty on primary issues of debt securities need to be made uniform across all states. Stamp duty on secondary market transactions act as a significant barrier to trading and should be eliminated.

The legal framework for securitisation of loans needs to be simplified, so as to make it cheaper and easier. In long-gestation infrastructure projects, the creation of a Debenture Redemption Reserve (DRR) over and above the usual depreciation provisions would put avoidable financial stress on companies in regard to their dividend payment policies. If equity and debt investments have to be attracted to infrastructure projects, the current provisions relating to DRR would need to be discontinued.

If unhealthy competition among brokers via undercutting of prices has to be curbed, the RBI must prescribe the minimum level of brokerage payable by banks to brokers. NSE already specifies the

maximum amount of brokerage payable. As in the case of foreign exchange markets, the RBI should persuade banks to pay appropriate rates of brokerage so that they do not adopt the unhealthy practice of compensating brokers through non-transparent ways.

Institutional Innovations

Developing a Municipal Bond Market: India needs to explore the possibilities of developing a municipal bond system for supporting market borrowings to meet state and urban infrastructure investment requirements. It is essential that appropriate arrangements are explored within the constraints posed by the poor market image of service providers in this sector. Although development of a municipal bond market in India seems beset with hurdles, it does appear to be the desirable long-term objective for urban infrastructure financing. Initially, it would be preferable to use the revenue bond structure, which relies on specified sources of revenues from facilities and services that are financed out of the bond proceeds. The use of revenue bonds would help raise local awareness regarding service delivery and enhance its efficiency, since the success of these bonds depends on the potential revenue streams that, in turn, are dependent on the quality and coverage of service provision. Revenue bonds generally carry strong covenants regarding rate-setting to meet debt-service coverage requirements. As a municipal bond market develops, it may become necessary to explore the need for bankruptcy legislation for local authorities. Similarly, other changes in listing of municipal bonds and other requirements for their active trading will need to be explored. Most of the municipalities require approval of the state government for open market borrowing. Certain states like Maharashtra and Gujarat have legislation which has explicit provisions for open market borrowing. Other states must make similar provisions. Also, the Local Authorities Act, 1914 needs to be amended to foster growth of the municipal bond market. Municipal bodies need to be given powers to set the levels for user charges for the services provided. Development of a municipal bond system will help address the need for enhancing access to the capital market for infrastructure investment while simultaneously introducing market-based discipline in such borrowing. This will help to provide the necessary incentives and motivation for various governmental entities to introduce the long-needed reforms in service provision and delivery. Secondly, it must be remembered that, in India, even the state governments have not been given widespread powers to raise general-obligation debt. Thirdly, as municipal bodies generally have a poor market image in the financial community, more explicitly demonstrable project or service revenue streams will be more acceptable to potential investors.

But most importantly, a specialised financial intermediary needs to be set up to promote infrastructure investment across the spectrum of options (see box on IFDC). This proposal needs to be fleshed out carefully since there is possibly no parallel anywhere in the world for the type of institution we are proposing. However this institution is both necessary and viable.



The Necessary Regulatory Frameworks

THE fact that there is now a market for providing infrastructure services has two implications. One, that such services can be provided by the private sector and second, that private capital would have to be accessed on competitive terms. To meet the twin objectives, regulation must primarily be viewed as a mechanism which brings about risk allocation between the service providers and various other entities in the process, making it easy to access capital. When risk allocation becomes easier, it results in reducing the cost of capital. Hence it is necessary to have an articulate regulatory framework, which is radically different from the existing legal framework in terms of transparency, clarity of obligations, duties and responsibilities between the participants in the infrastructure projects. The new framework must reduce the layering of approvals or bring about a greater degree of certainty in obtaining them within a definite time frame. Such a regulatory framework is very critical if private sector participation is to be encouraged.

There must be certainty that the 'rules of the game', once set, would not be changed too frequently and without notice, so that providers of infrastructure services may be afforded reasonable planning horizons. However, these changes, to occur, will need a demonstrable political and bureaucratic will for the process and this may not be easily achievable.

Simplification of the Existing Legal Structure: Each infrastructure sector is beset with numerous legislations to be complied with. This is not only time-consuming, but also, since the authorities are multiple, makes compliance difficult. In

addition, it lends a significant degree of uncertainty to obtaining approvals and to compliance within a period of time. If a project sponsor has obtained a clearance under one set of laws, he is not sure whether clearances under another set of laws would be forthcoming within a period of time. It is therefore imperative to make a paradigm shift to a simple legal structure.

Existing sector-specific enactments need to be unified into a single statute. For example, various regulations for telecommunications could be combined into a single Act. This modernisation will simplify the Act and make compliance easier. Certain sections of the existing acts which are anachronistic would also have to be deleted and even some of the acts repealed. But such unification may not be an easy task, and cannot be achieved within a short period of time. The process of private sector participation should not however be held up, pending completion of the work. Needless to say, a beginning must be made now, even though completion may take some time.

A similar process has been attempted with securities market regulations. After the statutory empowerment of the Securities and Exchange Board of India (SEBI), the provisions of Securities Contracts (Regulations) Act, 1956, are now administered by SEBI. Besides, for certain sections of the Companies Act, 1956, which concern the securities market, SEBI is empowered to take action. The erstwhile Capital Issues Act has been repealed and SEBI has issued new guidelines for the issue of capital.

Establishment of an Autonomous Regulatory Body for Each Sector: Unification of the legislations must be supplemented

We Recommend...

A Simple Regulatory Framework

- Existing sector-specific enactments be unified into a single statute.
- An autonomous regulatory body be set for each infrastructure sector, on the lines of SEBI.
- The roles of the regulator and the operator must be separated in every sector.
- Mechanisms to settle disputes quickly must be set up.
- An overarching legislation be made for project formats such as BOT, BOO and the like governing projects across all sectors, on the lines of the BOT Law of the Philippines.
- An Infrastructure Coordination Committee be constituted on the same lines as the Foreign Investment Promotion Board which will clear projects on a national level based on broad principles.
- The present restrictions in FII guidelines be removed for investment in infrastructure projects, or separate guidelines similar to FII guidelines without investment limits be issued. Similar guidelines and tax regime should govern any offshore fund set up by a domestic asset management company registered with SEBI, or by a domestic institution.
- Special Purpose Vehicles (SPVs) be used for funding infrastructure projects. Such SPVs should be able to vary their capital with ease; they should be easy to wind up; they should be tax-transparent.

enter into a contract. This will lay down the procedure for public bidding for projects and the manner in which the bids could be evaluated and contracts awarded.

■ Provision for direct negotiation of contracts if required, the manner in which a project proponent could be repaid by authorising him to charge/collect reasonable tolls, fees and rentals for the use of the project facility; lay down a formula for ensuring that such tolls, fees, rentals and charges are reasonable; provide for minimum output, standards and specifications; provide for a process of competitive bidding and economic parameters for bidding, basis of pre-qualification of contractors, feasibility study, and preliminary engineering design; provide for grounds on which a contract could be terminated; and provide for setting up regulatory boards or agencies for implementing these regulations in each sector.

An Infrastructure Coordination Committee

Most infrastructure services in emerging market countries are traditionally being provided by centrally managed monopolistic PSEs or government departments. This has been true till recently in our case as well. Organisations need to be created which would oblige suppliers of infrastructure services to be efficient and responsive to the user needs. However, creating these conditions may not be an easy task given the various vested interests that may be involved.

It might also be desirable to constitute an Infrastructure Investment Coordination Committee at the Central level on the same lines as the FIPB which will clear projects on a national level based on broad principles. It may be easier for projects to obtain sanctions from other agencies once clearance has been received from the Committee. Before giving clearance to a particular project, the Committee may obtain the views of the regulatory agency concerned with that project.

Financial Regulation

The credibility of the regulatory regime for a capital market determines the bounds of available finance. As has been seen, the sources, methods, maturity, cost and even the very availability of finance on market terms for an infrastructure project that is to be run on commercial lines depends to a large extent on the perceptions of financial intermediaries and investors about the regulatory framework relating to the project. In addition, the state of development and regulatory structure of the financial intermediation sector contributes to the financing possibilities available to projects in the infrastructure sector. India has all the ingredients for such a credible regulatory structure with the setting up of SEBI. The availability of credit rating institutions, and efficient disclosure and enforcement frameworks instituted by SEBI have strengthened the regulatory regime.

The issue of finance for the infrastructure sectors assumes importance because of the non-excludable and non-contestable nature of these projects. Relying on the public sector for providing infrastructure services has meant that most of the financing has come from the public purse, from the Central or from the state or local governments. The need for budgetary support for infrastructure services has been further strengthened by the not uncommon practice of providing these services at an overall subsidy to the users (that is, even above cross-subsidisation). Budgetary sources come under further pressure because the cost on which the subsidy is provided is in several cases inflated by the inefficiencies that creep in on account of these services being provided on a non-competitive basis.

Given the vast investment in infrastructure that is required in India, it is not enough to put in place various regulatory mechanisms for attracting funds from the financial markets. Efforts must also be made to broaden and deepen the markets with a variety of market-making players and a range of instruments to meet the requirements of a broad investor base so that financial markets are able to meet the needs of these sectors.

Development of an Active Bond Market: The absence of such markets makes the Indian securities market incomplete. Illiquidity of government paper and absence of active trading in corporate bonds have been identified as the major problems of Indian bond markets. The principal policy changes relating to the setting up of a system of primary dealers for government securities and establishing depositories to facilitate trading and settlement have already been announced. The other issues which remain to be resolved are :

■ **Opening up the market to a larger number of participants:** One of the principal reasons for illiquidity in the debt market is the narrow investor base. Investment guidelines for domestic investment institutions as also provident, pension and trust funds need to be relaxed to broaden the investor base for primary issuance.

■ **A single regulator for the bond market:** The prevalent system of multiple regulators needs to be replaced with a single regulatory authority: SEBI.

■ **Adoption of uniform standards for valuation of investments by all classes of investors:** Regulatory changes in accounting standards for valuation of investments by banks and all other classes of investors, would need to be effected such that ideally the entire portfolio would be "marked to market" on a periodic basis. This should be the goal though the exact timetable can be worked out.

■ **Abolition of stamp duty on secondary market transactions:** The vexatious practice of levying a stamp duty by individual states at different rates on secondary market trades, specifically on corporate debentures and mutual fund units, needs to be ended for encouraging trading in these instruments. While admittedly such a measure would involve deeper issues of Centre-state finances, in the first phase, the problem could be mitigated to some extent by prescribing a uniform rate of duty by all the states. This would also effectively tackle widespread avoidance and evasion of stamp duty. In order to promote the growth of securitisation of debt, stamp duty on derivative instruments should be abolished. Such a measure would also enable institutions such as IDBI, ICICI, SCICI, HDFC and IFCI to augment their resources by issuing securitised debt instruments based on the underlying loans given to corporate units.

Foreign Infrastructure Funds: Foreign private capital has to be attracted in the same manner as Foreign Institutional Investment or offshore venture capital funds. In fact, a simpler way will be to amend the existing guidelines to allow all registered FIIs to invest in infrastructure projects. This implies investment in unlisted securities, which FIIs are not allowed to do under the existing guidelines. It would be up to the FII to set up a separate fund for investment in infrastructure projects or take an exposure from one of its existing funds. The present investment restrictions in FII guidelines should be removed for investment in infrastructure projects. The investment will be in the form of equity. Since investment in infrastructure is a

long-term investment, the possibilities of 'hot money' flow will be remote. Alternatively, separate guidelines similar to FII guidelines without investment limits may be issued by the Government. The tax regime will be the same as for FII investment. Similar guidelines and tax regime should govern any offshore fund set up by a domestic asset management company registered with SEBI, or by a domestic institution.

Special Purpose Vehicles: Internationally, Special Purpose Vehicles (SPVs) have been used for funding infrastructure projects. To be successful in the Indian context, SPVs would need to have the following characteristics:

- It must be easy to vary the capital of the vehicle.
- It must be easy to wind up a vehicle, i.e. to create a vehicle with a limited lifespan.
- The vehicle must be tax-transparent, i.e. the income of the vehicle must be not be taxed in the hands of the vehicle, in addition to being taxed in the hands of its ultimate investors. Mutual funds are examples of such tax-transparent vehicles.

Limited partnerships are a commonly used legal structure internationally. Such an entity cannot be formed under Indian laws. In India, two possible legal structures are available: a company incorporated under the Companies Act; or a trust established under the Trust Act, each of which poses its special difficulties. In the case of a company, it is extremely difficult in terms of procedure to wind it up or vary its capital. In case a trust (e.g. in the case of mutual funds) is established, this problem does not exist. The difficulties of the trust structure are on account of the need for a public trustee to vote any shares in a company invested in by the trust, and the requirement of complying with onerous disclosure requirements under the Companies Act. In the case of companies, there are no such restrictions on voting rights.

So far, the only collective investment vehicles which enjoy tax transparency in India are mutual funds (venture capital funds, set up in accordance with SEBI regulations which are expected soon, will also be tax-transparent). Requests are, therefore, being made to SEBI for using the mutual fund route to avail of a tax-transparent structure. As mutual funds are a social type of collective investment scheme, it may not be appropriate to use this route for SPVs purely so that such vehicles are able to use the tax advantages granted to mutual funds. Instead, the following is recommended:

- The enactment of special legislation, within the Companies Act or separately, which allows investment companies with the above characteristics - ease of winding up and variation of capital, without any restrictions on voting rights - to be incorporated as legal entities. These entities could be regulated by SEBI in the issuance of securities or participative interests by them, and in their investment activities. They would not carry on any business other than investment.
- The grant of tax transparency to such specially incorporated investment companies

Norms should be changed so FIIs can invest in infrastructure projects. This implies allowing them to invest in unlisted securities.

or vehicles. The enactment of such broad legislation would also benefit other types of collective investment vehicles in addition to those set up specifically for the infrastructure sector, such as venture capital funds, which at present are constrained by the limitations of the trust and company structures as they presently exist.

■ In the meantime, the tax authorities should separately allow the use of the trust route, which may be more convenient for infrastructure funds, and not tax the income derived by such funds under a similar dispensation as in section 10 23 (D) of the Income Tax Act. In other words, income from any infrastructure fund set up as a trust will not be taxable under the principle that the fund is only a pass-through SPV and the income is taxed in the hands of the

investors in the fund. The fund could then issue units which could be subscribed to by the institutional investors. Being high-risk investments, these may not be subscribed to by the general public, at least to begin with. The broad regulatory framework should be on the lines proposed by SEBI for venture capital funds. At least 75 per cent of the funds may be invested in one or more infrastructure projects and the balance in any other instrument to meet the liquidity needs of the investor. Since the CBDT has already granted concessions of similar nature to domestic and offshore funds and venture capital funds, to extend these benefits to infrastructure funds in view of the importance of the sector should not be difficult. At some stage, listing of SPVs may also be considered with appropriate disclosure norms.



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Fiscal Issues

Direct Taxes

Section 36(1)(viii): The benefit under this section is currently available to financial institutions engaged in providing long-term finance for industrial and agricultural development or development of infrastructure facilities in India. It is thus restricted to institutions such as ICICI and IDBI, which extend long-term finance for industrial development or development of infrastructure facilities.

However, it is also important to involve the banking sector in infrastructure projects. The recent RBI announcement providing limits to the banking sector for investment in infrastructure projects is a welcome step in this direction. However, at the current juncture, benefits under Section 36(1)(viii) do not include the banking sector in the definition of eligible financial institutions.

Section 801A: This section gives a restricted meaning to 'infrastructure facility', covering infrastructure relating to transport, such as surface transport, air, waterways and rail. Infrastructure, however, includes other services such as land area development, establishment of township, water and sewerage systems, social welfare like education, and healthcare. These sectors have not been included in the definition. It is therefore recommended that the scope of 'infrastructure facility' be expanded to include all these sectors.

The section also specifies that the infrastructure facility should be "new". Accordingly, it may not include projects which involve remaking or expansion. Most infrastructure projects would involve acquisition of existing facility to meet the increased demands, e.g. a surface transport project could involve remaking the existing road and extending or converting two lanes into four lanes. Similarly, water and sewerage projects could

involve taking over the existing distribution system or treatment facilities and building additional facilities to augment increased requirements. In most cases, it is necessary to capture revenues from existing facilities to make the expansion viable. We recommend that the scope of definition should be extended to include projects involving expansion or remaking existing facilities.

The section requires the infrastructure facility to be 'owned' by the enterprise. In many infrastructure projects, it may not be feasible to own all the facilities. As a financing strategy, some of the equipment may be procured under a leasing or other financing arrangement. It is therefore necessary to clarify that the scope of this section extends to include cases where part of the infrastructure facility is procured under a lease or any other financing arrangement.

The benefits under this section are available only to enterprises owned by a company—or a consortium of companies—incorporated in India. Given the nature of infrastructure projects, it would be necessary to have access to technological and financial participation from international sources. It is therefore necessary to extend the benefits to all enterprises including those where majority of shareholding is held by foreign companies.

In most infrastructure projects, it would be necessary to consider the grant of rights from the Government to develop ancillary facilities such as land for building townships, developing adjacent areas or operating utilities like petrol pumps, restaurants, etc. The current meaning of Section 80-1A defines tax holiday on 'profits derived from infrastructure business'. Accordingly, the revenue authorities could argue that revenues or profits derived from such ancillary development are not eligible for tax holiday. But in that case, the project would not be in a position to claim the tax holiday benefit on income purely derived from the user charges of infrastructure facilities

We Recommend...

Fiscal Policies

- Benefits under Section 36(1)(viii) be extended to include the banking sector in the definition of eligible financial institutions.
- The definition of “infrastructure facility” in Section 801A be expanded to include all infrastructure sectors. The scope of the definition also be extended to include projects involving expansion or remaking existing facilities, and cases where part of the infrastructure facility is procured under a lease or any other financing arrangement. The benefits be extended to all enterprises including those where majority of shareholding is held by foreign companies.
- A clarification be provided in Section 801A stating that entire project income inclusive of income from ancillary development will qualify for tax holiday.
- Investment in the share capital of SPVs undertaking infrastructure projects be eligible for tax rebate. Similar deduction be provided in respect of expenditure on eligible infrastructure projects, and also expenditure incurred by companies on project development work.
- An appropriate amendment be made to Section 11 (5) (ix) so resources can be accessed from trusts engaged in charitable and religious activities for financing infrastructure projects.
- An amendment may be effected to Section 88 to induce retail investors to invest in the equity of SPVs implementing infrastructure projects.
- Section 80L be amended to include income accruing from debt instruments issued by SPVs for financing eligible projects.
- Selective reduction of indirect taxes/levies on project costs be considered for projects structured on the transfer-of-asset principle.
- State governments eliminate, or reduce to nominal proportions, stamp duties levied on the issuance and trading of financial instruments related to the financing of infrastructure.

because these revenues will not generate significant profits. To avoid any dispute in this matter, we recommend that a clarification should be provided in Section 801-A stating that the entire project income inclusive of income from any ancillary development will qualify for tax holiday benefit.

Section 35AC: The prerequisite for getting a project off the ground is the availability of risk capital by way of subscription to equity and/or preference shares. Equity support is essential from the business community, especially corporate bodies.

To provide an incentive for funds to flow into the infrastructure sector on lines similar to those provided for other areas of national importance such as scientific research, we recommend that investment in the share capital of SPVs undertaking infrastructure projects be eligible for tax rebate. This incentive could be provided through an amendment to the provision of Section 35AC of the Income Tax Act, 1961, or through a new section, say Section 35AD. Under Section 35AC, any expenditure by way of payments of any sum to public sector companies or a local authority or to any association or institution approved by a national committee for carrying out any eligible project or scheme for promoting social and economic welfare is allowed as deduction. Expenditure directly incurred on such projects or schemes is also allowed as deduction. We recommend that similar deduction be provided in respect of expenditure on eligible infrastructure projects. Further, deduction should also be provided in respect of expenditure incurred by companies on project development work. Projects eligible for benefits under Section 35AC could be defined as those where the financing is fully underwritten in a

credible manner, or where the state government or Central Government is a partner with a minimum equity stake of 10 per cent.

Section 10(15)(iv): Under Section 10 (15) (iv) (c), interest payable by an industrial undertaking on monies borrowed or debts incurred in a foreign country for purchase of raw material and plant and machinery to the extent to which such interest does not exceed the amount of interest calculated at the rate approved by the Central Government is exempt from taxes. So too, under Section 10 (15) (iv) (f), for interest payable by an industrial undertaking on monies borrowed in foreign currency from sources outside India under a loan agreement approved by the Central Government to the extent to which such interest does not exceed the amount of interest.

Section 11(5) (ix): A number of trusts engaged in charitable and religious activities have investible surpluses. It would be appropriate if resources could also be accessed from such trusts by sponsors for financing infrastructure projects. This could be facilitated by an appropriate amendment made to Section 11 (5) (ix) of the Income Tax Act, 1961.

Section 88: Risk capital for infrastructure projects could also be accessed from retail investors. Currently, incentives are provided for investments made in specified savings schemes, which include subscriptions for schemes launched by mutual funds. We recommend that an amendment may thus be effected to Section 88 to induce retail investors to invest in the equity of SPVs implementing infrastructure projects.

Section 80L: The provisions of Section 80L of the Income Tax Act are applicable to individuals, HUFs and AOPs. Interest and/or dividend earned on instruments issued by specified institutions as detailed in Section 80L are eligible for deduction from income upto specified levels. We recommend that an amendment to Section 80L be effected to include income accruing from debt instruments issued by SPVs for financing eligible projects. This would render such projects on par with other areas of national importance.

Indirect Taxes

Indirect taxes can be classified into two categories: those that are levied on the initial project cost and those levied during the operational phase. The first category of taxes results in an increase in the initial cash outlays. These taxes include:

- Import duty on construction inputs (Central tax)
- Excise duty on construction inputs (Central)
- Work contract taxes (state)
- Stamp duty on documents/agreements (state)
- Sales tax on construction inputs (state)

Taxes during the operational phase which increase the operating cost or reduces the operating cash flows include:

- Tax on interests (Central)
- Tax on dividends (Central)
- Income tax (Central)
- Sales tax and excise duty on operational cost inputs (state)

Of these, only the last named is classified as an indirect tax. These taxes influence infrastructure projects in the following areas:

- Return available to investors and therefore their incentive to invest
- Cost of infrastructure and price charged for infrastructure services

While considering taxation concessions for infrastructure projects, the issues considered by Government would be:

- Whether tax incentives are required to ensure individual project viabilities
- What format the tax concession should take to ensure that maximum incentives are offered for the revenue foregone
- To what extent can tax incentives be used to achieve desirable pricing in infrastructure services

Tax concessions on the first category of indirect taxes, i.e. on project costs, would reduce the initial project cost and therefore the investment outlays required. This would have a positive effect on the project returns and thereby could be used effectively to attract investments. These taxes would also result in higher prices being charged for the infrastructure services to make the project commercially viable. It can

therefore be concluded that tax concessions that reduce the initial project cost would meet the twin objectives of incentive to invest and reduction in prices charged for services. Another argument for such reduction could be that at a macro level, the amount paid by various businesses for using infrastructure assets such as telecom, power, water, which ultimately becomes a tax deduction in arriving at the firms' taxable profits, would get reduced. In other words, taxes foregone on infrastructure can increase future tax revenues to the Government, by reducing the cost to companies of using the infrastructure facilities.

Such multiple layers of duties may, in some instances, not generate corresponding taxes from the project entity. There

is hence merit for considering selective reduction of such taxes/levies for projects that are structured on the transfer-of-asset principle.

Taxes foregone on infrastructure can increase future tax revenues by reducing the cost to companies of using infrastructure facilities.

State Levies

At the state level, there exists a wide disparity in the levels and layers of taxes that impact project cost. These include:

- State sales tax
- Works contract tax
- Stamp duties and levies on the issuance and subsequent trading of financial instruments issued by the project SPVs

Stamp duties in relation to financial instruments are at varying levels in different states. Given the magnitude of resources required for projects of this genre, stamp duties on the issuance and subsequent trading of such financial instruments impact the cost to the issuer of such securities.

Responsibility of the state: Each state would need to formulate its policy to effectively compete for investments required for developing infrastructure within the state. Thus at the state level, levies could be rationalised for defined projects. Eligible projects could be defined as those where financing is fully underwritten in a credible manner, or where the state or Central Government is a partner with a minimum equity stake of say 10 per cent.

While the taxes at the state level are subject to the sovereign principles adopted by the state concerned, there is merit in the Central Government recommending a policy framework that reduces the impact of cascading taxes on BOT projects or variations thereof.

We recommend, in particular, that state governments should eliminate, or reduce to nominal proportions, stamp duties levied on the issuance and trading of financial instruments related to the financing of infrastructure. This is essential so that such instruments can be made fully tradable so that private resources can flow more easily to infrastructure projects. A detailed note on stamp duty appears in the Annexure to Chapter VI in the main Report.



Urban Infrastructure

THE likely increase in urban productivity and population due to the new economic policies of the Government of India will place a heavy demand on all kinds of urban infrastructure and services. The infrastructure bottlenecks in urban centres are likely to pose serious impediments in enhancing productivity.

The situation is grim. As per Census of India estimates, approximately 20 per cent of urban households do not have access to safe drinking water. Only 23.35 per cent had toilet facilities and up to March 1992, 52 per cent of the population was left uncovered by sanitation facilities. The coverage in terms of organised sewerage system ranged from 35 per cent in class IV to 75 per cent in class I cities. The drainage system for rain water disposal covers only 66 per cent of the urban population. The city roads are inadequate for traffic requirements, leading to congestion and fast deterioration in quality of roads due to excess loads.

Apart from deficiencies in terms of access to facilities, the operation and maintenance (O&M) of infrastructure leaves a lot to be desired. And the investment requirements are colossal. It is estimated that the total funds required for the above purposes for the period 1996-2001 would fall in the range of Rs 800 billion to Rs 940 billion. The requirement for water supply and toilet facilities alone has been estimated at Rs 210 billion for the period 2001-2011 and Rs 228 billion for 2011-2021.

Urban infrastructure services are provided by local level agencies. Funds have generally been in the form of loans/grants from the Central and state Governments. The ULBs' own resources have been insufficient even to meet the O&M requirements of these services. Since most urban infrastructure services have been treated as public services and the concept of cost recovery has never been considered relevant, a commercial approach to these services has not developed. Even if the facilities were

funded by loans, the repayment of loans were generally book adjustments or paid out of grants made by state governments. Even when user charges are levied, the price per unit is too low to cover even the variable cost of providing the service.

The fact that infrastructure services do not pay for themselves and the Government does not have the financial capacity to continue to subsidise the beneficiaries has resulted in low availability of funds. With increasing requirements, this has meant deficiency in volumes as well as quality of service. Consequently, a parallel unorganised sector for provision of many of these services has developed, resulting in high prices and qualitatively deficient services. From a societal point of view, these are expensive solutions. It is high time that a commercial approach is adopted.

The supply orientation in infrastructure policy has not succeeded, having been unable to respond adequately to the evolution of demand. A commercial approach requires a demand orientation: services should be supplied in response to demand rather than in anticipation of demand. This will also improve cost recovery and financial viability of such projects.

Commercialisation and the Public Sector

Infrastructure services have the following characteristics:

■ **Natural Monopolies:** Most urban infrastructure services are natural monopolies and their marginal cost declines over a very large range of output. As such, it has been feared that the private sector might exploit its monopolistic situation. Such services include water, waste water management, telephone, electricity, bridge, and road networks.

■ **Externalities:** Many services like sanitation and solid waste

disposal (SWD) have significant external economies. As a consequence, market-based systems may fail to provide the service in adequate quantity and quality.

■ **Non-excludability:** It is difficult to exclude anyone from using, say, roads or public lighting. The consumer may refuse to pay for the service since he may be able to use it free of charge legally or otherwise.

■ **Price elasticity of demand:** Certain infrastructure services being necessities (like water) have almost inelastic demand. Private provision of these could result in exploitative pricing unless prices are regulated.

■ **Requirement of heavy investment in capital equipment:** This has discouraged private sector entry into certain infrastructure segments.

The above mentioned characteristics have for long been used as valid arguments for blocking entry of the private sector into infrastructure. The arguments, however, are slowly losing their validity due to many technological and organisational innovations. Unbundling of services has been a major mechanism through which the misconception about the economies-of-scale argument has been overcome. Technological innovations in the areas of sanitation and sewerage have permitted low-cost supply options. Increasing range and quality of service has reduced the cost of providing the service, making the operation commercially viable as also opening up areas for private sector operation. The recognition of the demand aspect has made remunerative pricing possible in some segments.

Though there are examples of efficient provision of infrastructure services by governments—power in Mexico, most sectors in Korea and Singapore, water in Togo and Botswana—by and large, governments have not been very effective suppliers of many services. The cost of government failures has been much higher than the possible cost of market failure. Commercialisation of infrastructure projects basically means efficient provision of service to the consumers' satisfaction on cost-recovery basis. Since the public sector in most cases is an inefficient provider due to its inherent characteristics, promotion of privatisation itself becomes an instrument for commercialisation.

Costing and Cost Effectiveness: The major elements of the strategy to minimise cost should be technological appropriateness, proper attention to maintenance, curbing misuse of services and efficient institutional arrangements for providing services. To promote cost effectiveness, different infrastructure projects may be packaged together like water supply and drainage projects. Coordination between different departments providing different services will also reduce overall cost of provision and should be encouraged through appropriate institutional engineering. Technological upgradation is a must (see box).

Water Supply: Technological upgradation and improved design can hike efficiency and rationalise consumption. Regularity in supply could mean lower project cost and greater willingness to pay on the part of the con-

sumers. We recommend differential treatment of water for different uses. Micro-level systems need to be designed to recycle water at the household level. The supply should be metered to plug leakages.

Solid Waste Management (SWM): The cost of collection, treatment and disposal of the solid waste is to be reduced through various mechanisms. Technological innovation to improve the reusability of the recycled waste will increase returns and make projects viable. Privatisation of as many operations as is feasible in an urban area will improve efficiency and reduce cost.

■ Greater attention to segregation of different kinds of waste at the collection point itself will reduce cost of disposal.

■ Toxic waste should be collected and disposed of separately. The frequency of collection can be as low as once a month.

■ Biodegradable waste should be tackled locally to avoid storage and transportation over longer distances. This waste can also be coupled with the local sewers and horticulture waste from streets in biodigesters. This will produce three important by-products—biogas, compost and recyclable water, which will improve the viability of disposal.

■ Building debris (Malba) should be kept separately and used for filling building sites and low-lying areas.

■ Remaining waste in each Indian city gets recycled by rag-pickers. The small components left over can be disposed of through incineration or sanitary landfills.

■ Wherever environmentally acceptable, disposal can be decentralised to save on transportation cost.

■ We need to use the right technologies to improve the quality of processed waste. An improved quality of compost may fetch a higher price and reduce process time and mechanisation. Similarly RDF (Refuse-derived fuel) seems to have good scope for providing cooking fuel, process steam and power generation. These should be promoted. Converting waste management into biogas with fertiliser as the by-product is a commercially viable SWD method. The small scale of operations and pricing structure have been the major constraints in this area. This may be tackled by providing supportive service to start operations on an economical scale. Landfills can be scientifically organised to minimise pollution from leaching. The biogas produced in a properly-designed landfill can be harnessed and utilised.

Roads: Technological upgradation should be used to reduce maintenance cost. Better coordination with other departments like telecom/sewerage boards can reduce frequency and cost of levelling of dug-up roads.

Sanitation: Use of low-cost technologies like that of Sulabh Shauchalayas must be promoted. SWD services can be unbundled and most functions entrusted to the private sector. This is one area where privatisation has shown consistent productivity gains and cost reductions. Proper packaging—for instance, clubbing water supply and drainage projects together—can reduce project cost and improve viability. Similarly, road development and stormwater

Cost minimisation needs appropriate technology, proper attention to maintenance, curbing misuse of services, efficient service provision.

The Changing Technological Content

The implications of certain technological changes for infrastructure have begun to be widely exploited only in recent years as they have provided support for the concurrent global trend towards economic liberalisation. What is the true significance of technological alternatives for the availability of new supply options and for changes in demand patterns for infrastructure?

● **Better technology reduces conditions for natural monopoly:**

In telecommunications, technological change has reduced economies of scale in long-distance transmissions, undermining natural monopoly in this area. In local exchange service, new transmission technologies such as cable-based telephone access, cellular radio, and direct microwave create some de facto competition in the market. Digitalisation has simplified maintenance functions, thus reducing economies of scale in overhead activities such as O&M. In the power sector, technologies such as gas turbine generation have reduced economies of scale in generation.

● **It permits low-cost supply options:** Intermediate sanitation technologies have lower construction costs than conventional sewerage, making them affordable for low-income communities. Changes in design parameters for conventional sewerage, based partly on technological advances, have also permitted lower-cost alternatives such as condominal sewerage to be used where communities organise and participate in planning and implementation. Among alternatives to traditional large-surface schemes in irrigation, options such as drip, bubble and sprinkler systems, and low-level canals with low-

drain management can be clubbed with commercial development of adjacent areas.

Pricing and Cost Recovery

Water Supply: Pricing is to be on cost-recovery basis in the long term or over the full life of the project. In the short term, since prices cannot be increased at one go, the Government will have to continue to provide subsidies. The water tariff should be increased gradually to reach cost-recovery level. Part of the required increase may be capitalised and charged as connection charges or advance registration charges. Cost recovery may also be made by including water tax, water benefit tax, betterment charges or development charges. The ULBs may experiment with improving seasonal tariff and charge higher rates in times of scarcity.

Cross-subsidisation of domestic use of water by commercial and industrial use may provide self-defeating if the latter diversify their sources of water. Metering of water supply must be promoted. To improve monitoring of leakages, bulk metering should be adopted. A block tariff system may be adopted under which consumption of water is priced at a low initial rate upto a specified volume of use and at a higher rate per block thereafter. Differential pricing may also be related to time of use.

lift pumps which require farmers to pump the water the last meter, are responsive to demand for water. They promote conservation, and foster private manufacture and ownership of the equipment involved.

● **It increases range and quality of service:** Value-added services in telecommunications (e.g. facsimile), which form the most dynamic source of demand in this sector, combine transmission technologies with computer processing. The container revolution in transportation permits rapid and cost-effective transfer of freight in multiple transport modes. Combined with electronic communications systems, intermodal transport has greatly reduced transport costs and improved the quality and speed of trade logistics.

● **It facilitates the unbundling of assets and operations:** Non-destructive testing and remote monitoring permit the condition of fixed infrastructure facilities to be assessed and problems diagnosed without costly and time-consuming excavation or dismantling. This also implies that where the ownership and operation of fixed assets are vested in different entities (e.g. in a regional water supply/sanitation system or toll road), the owner or regulatory authority can independently monitor the condition of these assets.

● **It expands options for demand management:** In the roads sub-sector, electronic road pricing is beginning to be used to devise road use charges which can manage congestion, reflect the actual impact of different vehicle loads on road deterioration, and internalise the social costs of pollution.

Solid Waste: The 'polluter pays' principle should be applied. Operations which create waste may be charged a levy and the returns from the same may be used for financing waste disposal programmes.

Roads: Narrow earmarking of specific taxes and fees that are closely related to use of facilities helps overcome resistance to taxes. Apart from taxation/user charges and impact fees, costs may be recovered by giving advertisement rights, limited development or license rights (like running kiosks), long lease for trees and the right to use their product.

Sanitation: Cost of drainage and sewerage can be piggybacked on to the water tariff since these projects can be taken up as one package. The cost of stormwater drainage projects can be recovered by commercial use of adjacent lands. We recommend taking up of integrated Area Development Schemes rather than isolated water supply or sanitation schemes. Even in older areas, augmentation of water supply schemes and other facilities can be financed out of impact fees or valorisation charges or by a temporary surcharge on property tax.

The property tax base needs to be freed from the Rent Control Act. The Rent Control Act should be amended and pending that, the property tax should be made independent of

We Recommend...

Urban Infrastructure

- **Public-Private Partnerships (P-P-P) be adopted for the present.** In water supply projects, it is possible to privatise sourcing, treatment and bulk supply. The retail distribution and pricing may remain with the public sector. Solid waste disposal can be privatised fully. Low-cost sanitation may be privatised fully on the model of Sulabh Shauchalaya. Maintenance of roads can be entrusted to the private sector subject to quality control.
- **Differential treatment of water for different uses.** Micro-level systems need to be designed to recycle water at the household level. The supply should be metered to plug leakages.
- **The cost of collection, treatment and disposal of the solid waste be reduced.** Greater attention to segregation of different kinds of waste at the collection point itself will reduce cost of disposal. Wherever environmentally acceptable, disposal can be decentralised to save on transportation cost.
- **Proper packaging—for instance, clubbing water supply and drainage projects together—be used to reduce project cost and improve viability.**
- **In solid waste management, the “polluter pays” principle be applied.**
- **In the roads sector, apart from taxation/user charges and impact fees, costs may be recovered by giving advertisement rights, limited development or license rights (like running kiosks), long lease for trees and the right to use their product.**
- **The property tax base be freed from the Rent Control Act.**
- **The ULB be responsible for providing all urban infrastructure in the city area. The multiple agencies in charge of providing various services should be merged under the ULB.**
- **A state-level Nodal Infrastructure Financing Corporation be set up to channelise funds available from various sources and under various programmes to smaller municipalities.**

the controlled rent. Resistance to tariff increases may be overcome through providing detailed and well-communicated information about cost of supply to the consumers.

Institutional Structure

We recommend that the ULB be responsible for providing all urban infrastructure in the city area and be entrusted with the functions of planning, coordination and policy for supply of services. The multiple agencies in charge of providing various services should be merged under the ULB. The ULB will be responsible for deciding on the operations to be contracted out, carrying out all necessary preliminaries, preparation of contract documents and monitoring of private operation. The ULB may coordinate with the metropolitan or regional/state level agencies and with other ULBs whenever required.

The Government should set up a state-level Nodal Infrastructure Financing Corporation which will channelise funds

available from various sources and under various programmes to smaller municipalities. The bigger municipal corporations may access funds directly from the financing institutions.

An Infrastructure Fund may be set up for the transition period till the debt market is developed. A facility to provide guarantee to private sector investment may also be set up. The seed money for the same may be provided by the Government. The existing financing institutions should set up separate departments or cells to promote commercialisation of projects. This would entail providing information about technologies, cost and remunerative pricing of different projects; preparation of feasibility reports; carrying out demand surveys and providing consultancy to infrastructure agencies in project design, formulation and implementation.

Lastly, we recommend that a state-level regulatory body be set up to monitor quality of service provided and price charged. This regulatory agency can have separate departments for each infrastructure segment.



Power

ELECTRICITY generation in the country which was only 4.1 billion units (kwh) in 1947 increased to about 350 billion units for the year ended March 1995, marking a compound annual growth rate of 7.5 per cent. Despite this, the power sector has been plagued by serious shortage of supply vis-a-vis demand. At the commencement of the Eighth Five Year Plan (April 1992), the country faced a peaking shortage of around 19 per cent and energy shortage of about 8 per cent. Corresponding figures at the end of March 1995 were 16.5 per cent and 7.5 per cent. While supply shortages have not aggravated over the first three years of the Eighth Plan, SEB finances have been steadily deteriorating. Commercial losses which amounted to Rs 41 billion in 1991-92 had increased by over 50 per cent to Rs 63 billion in 1994-95.

Although coal, oil, gas and hydro-electric potential constitute the conventional sources of electricity generation, coal-based thermal power plants and hydro-power have been the mainstay. It is assessed that 78 per cent of the country's hydel potential remains as yet unexploited. Besides, wind and solar energy are also available for tapping. There is little doubt that coal-based generation will continue to be the bedrock of India's power sector for the foreseeable future. But with logistical and environment-related issues coming to the fore, an integrated medium- and long-term fuel policy for power needs to be hammered out urgently.

Growing Demand, Looming Shortages

Domestic and agricultural segments, power for both of which is subsidised, have shown maximum growth in consumption in the last three decades. This has contributed to the worsening of the SEBs' financial situation. Domestic consumption is certain to remain a high-growth area whereas growth in agricultural consumption is expected to taper. Long-term projections indicate a fairly stable division of demand with the domestic and agricultural components together accounting for about 47 per cent of the total with commercial, industrial and others making up the rest. Thus, unless major power tariff reforms are carried out, the financial problems of the SEBs will continue.

Additions to installed capacity during the Eighth Plan period were originally planned at 30,538 MW, but due to the shortfall experienced in the first three years, actual likely capacity addition is now re-estimated at only 18,023 MW inclusive of 1,348 MW in the private sector. The main reasons for this shortfall are deficiencies in project management, problems related to externally-aided projects, law and order problems and resource constraints. Due to this serious slippage in planned capacity addition, the shortage in peaking and energy at the end of the Eighth Plan are projected to be as much as 29 per cent and 15 per cent respectively. Clearly, there is urgent need to accelerate investment in power in both the public and private sectors immediately. The

Investment in power must be accelerated urgently. Any further delay in clearing private power projects will inflict incalculable costs on the economy.

Investment Required: 1996-2006

Based on the 14th Electric Power Survey findings, the CEA had prepared a National Power Development Plan in 1991, covering the period upto 2006-07. According to this, the requirement of additional generating capacity to provide target levels of reliability in power supply is about 142,000 MW reflecting an annual capacity growth rate of 9 per cent as against the demand growth rate of 7.5 per cent. Capacity addition needed for the next 10 years (from 1996-97 onwards) is thus, calculated at 111,500 MW (44,000 MW during 1996-2001 and an additional 67,500 MW during 2001-06). Total investment required for this should be of the order of Rs 6,244 billion at fixed prices (Rs 2,464 billion between 1996-97 and 2000-01 and an additional Rs 3,780 billion during the period 2001-02 to 2005-06). This includes investment in transmission and distribution and assumes an average price of US \$ 1 million per MW of generation capacity and dollar-to-rupee conversion rate of Rs 35. There are, however, measures through which investment in capacity addition could be reduced. These measures include:

- Removal of current inefficiencies;
- Improvement in capacity utilisation;
- Raising end-use efficiency through targeted programmes to effect industrial, agricultural and lighting efficiencies;
- Cogeneration and captive generation of electricity.

Alternative capacity scenarios have been developed taking into consideration the above measures to reduce requirements. This projection assesses the capacity saving potential at 25 per cent of the estimated additional requirement of 111,500 MW

reducing the needed additional capacity over the next decade to 83,625 MW (32,750 MW during the period 1996-97 to 2000-01 and additional 50,875 MW from 2001-02 to 2005-06) and lowering the investment requirement from Rs 6,244 billion to Rs 4,683 billion (Rs 1,834 billion between 1996-97 and 2000-01 and an additional Rs 2,849 billion from 2001-02 to 2005-06). An additional investment of Rs 312 billion would be needed during the next 10 years for plant renovation and cogeneration. Overall investment requirement is estimated to be Rs 4,995 billion, say Rs 5,000 billion.

If investment of this order is not facilitated and utilised optimally over the next 10 years, the power sector will fail to support the economy just when it is poised for rapid growth. The total investment requirements are envisaged to be shared by both the public and private sectors depending on the extent to which the private sector is inducted in the generation, transmission and distribution. The shares of public and private sectors have been estimated at Rs 2,070 billion and Rs 2,925 billion respectively. Clearly, the private sector will have a massive role to play. If private investments in power sector in the needed volumes are to materialise, the basic prerequisite will be to provide the degree of security that private promoters would need concerning their

expected cash flows. Of equal importance is the need to upgrade the public sector to promote healthy partnership with the private sector. These objectives call for a whole set of policy inputs covering pricing, structural and regulatory reforms which remain to be enunciated in adequate detail.

Household financial savings are projected to rise from the current 11 per cent of GDP to 14.5 per cent in 2005-06.

costs of any further delay in the clearing of power projects will inflict incalculable costs on the economy.

Transmission and distribution (T&D) losses are alarmingly high in India. As against deemed normal T&D losses of 8 to 10 per cent, in India they were in excess of 20 per cent up to 1993-94. So far as financial performance is concerned, only two of the 18 SEBs of the country are expected to reach the target of ensuring a minimum return of 3 per cent of the value of fixed assets in use as specified by the Electricity (Supply) Act, 1948. At the root of the chronic inability of SEBs to raise needed investments is the uneconomic subsidised pricing of electricity for domestic and agricultural segments. According to provisional figures, average tariff per unit (kwh) sold was 133 paise in 1994-95 as against cost per unit of 160 paise.

Existing Regulatory Framework

■ The Central Government has regulatory power vis-a-vis bulk generators as well as distribution licensees with regard to

important elements in the permitted tariff.

■ The Central Electricity Authority (CEA) is responsible for planning regulation of the entry of new bulk-generating units and central clearance to all major projects of SEBs, licensees and generating companies.

■ The state governments have power of direction in relation to SEBs and regulatory functions vis-à-vis all distribution licensees.

■ Apart from being in a position to exercise monopoly power as the sole agency controlling state-level transmission, SEBs also exercise regulatory functions in relation to distribution licensees including control over operations and reserve power in the tariff area.

Commercialisation Potential

Among all infrastructure facilities, power possesses some inherent advantages from the viewpoint of commercialisation, principally the marketability of the products and services and the availability of basic organisational structures for

their marketing. In addition, the power sector is characterised by a predictable and stable pattern of demand and high level of private investors' interest, both Indian and foreign. Despite such advantages, the task of commercialisation of power projects in the current state of the sector is extremely complex due to the following reasons:

- The economy growing significantly faster than in the past calls for a matching rate of growth of the power infrastructure. In order to support a sustained high GDP growth rate of around 7 per cent per annum, demand for power can be expected to rise at the rate of around 9 per cent annually for the next decade. Given the limitations of Government funding for sectoral expansion, new financing strategies like attracting private investments without country-of-source restrictions has been recognised by Government policy for all types of power projects.
- To become a globally competitive economy, it is crucial to have a power infrastructure that matches its international competitors on quality.
- The economy's competitiveness will be adversely affected if quantitative and qualitative improvements are brought about at excessive cost, hence the need for high levels of efficiency in technical, commercial and financial operations. Price reform is needed for economic pricing of the transaction at each level.
- There is urgent need to remedy the inadequacies of sector entities through restructuring.

Reform Agenda

Price Reform: Thorough reform of the present uneconomic consumer pricing is a matter of immediate urgency. Though pricing reform has to be implemented at the state level by the SEBs, the policy in this regard could be worked out by the Centre. Price reform must aim at (a) reaching cost-based pricing for each consumer segment in a phased manner through a 10 per cent increase in average tariff per annum net of inflation; (b) replacing unmetered supply by providing metering at the consumer end or at an intermediate distribution point; (c) identifying institutional means to administer subsidies to target consumer groups; (d) independent regulation of prices with provision for price reform to be balanced by improvement in quality of service, technical as well as commercial. Reform of pricing for agricultural consumers would have to be done in phases for it to be feasible.

Regulatory Reform: Regulatory reform should aim at autonomy of regulatory agencies both at the state level and at the Centre. State-level regulation would cover, in its scope, consumer tariffs, overseeing sector undertakings within the state, both public and private, in equitable terms, monitoring service standards and approving projects below the threshold specified for Central clearance. Central regulation must focus on bulk generation and inter-state transmission tariffs, approvals for larger projects, and enforcing the right of access to the inter-state and inter-region network.

Private Participation in Power: Current Government policy permits 100 per cent foreign-owned companies to set up power projects of any capacity and type and repatriate profits,

and also for liberal capital structuring with attractive rates of return. Certain amendments have also been notified to impart greater flexibility to the pricing arrangements as regards thermal and hydro-electric generation. This has resulted in a large number of proposals and MoUs, which indicate the interest of Indian and foreign investors, but there is considerable scepticism as to how many of the MoUs will actually translate into viable project arrangements. Two sets of inhibiting factors are seen as standing in the way: (i) issues that are specific to the MoU route and (ii) those relating to the problems of the sector itself.

The former set of issues concerns requirements for negotiating balanced Power Purchase Agreements in each case, in a manner transparent enough to find public acceptance. If balanced agreements are to be negotiated through this route, the negotiating position of SEBs would need to be strengthened. Key requirements in this regard are (i) a pre-determined benchmark price per unit of energy and (ii) an unambiguous political mandate to secure the target price or break off negotiations. The superiority of the competitive bidding route rests entirely on the bids eliciting adequate competition and the bid format being so designed as to permit evaluation and comparison in a transparent manner. The present approval process is not transparent enough from the

We Recommend...

- **Cost-based pricing for each consumer segment in a phased manner through a 10 per cent increase in average tariff per annum net of inflation.**
- **Independent regulation of prices with provision for price reform to be balanced by improvement in quality of service.**
- **A central Electricity Regulatory Commission outside the Government's operative control. Autonomy of regulatory agencies both at the Centre and state levels.**
- **A pre-determined benchmark price per unit of energy as the basis for allowing private power projects, and an unambiguous political mandate to secure the target price or break off negotiations.**
- **Urgent restructuring of SEBs into compact, viable, corporatised units that separate to a feasible degree the generation, transmission and distribution functions.**
- **Replacement of Plant Load Factor by Plant Availability, adoption of time-of-day pricing, and introduction of power pooling.**
- **The evolution of a medium-term fuel policy.**

point of view of public acceptability of large and highly visible projects. Experience elsewhere is that an autonomous approving agency that sets down its own procedures for project approvals is the best guarantee for transparency. India should follow this model by setting up a Central Electricity Regulatory Commission that would be outside the Government's operative control and would consist of members of the CEA as well as experts drawn from outside.

Restructuring of State Electricity Boards: The reform programme can be realised to the fullest degree if measures are taken forthwith to restructure the SEBs into compact, viable, corporatised units that separate to a feasible degree the generation, transmission and distribution functions. Delay in this may push back private investment flows into transmis-

sion and distribution and cause underutilisation of generation capacity. Some of the CEA's functions should be decentralised to high-powered Regional Electricity Authorities to provide an effective institutional medium to coordinate sector reform from a level closer to the field of activity.

Other Recommendations: The suggestions relating to replacement of the Plant Load Factor (PLF) yardstick by Plant Availability, adoption of 'time-of-day' pricing and introduction of 'power pooling' arrangements which have been aired in several studies are also reiterated, basically to bring the power sector in step with concepts proved in advanced systems. The need to evolve a medium-term fuel policy has also been recognised. This is necessary for speediest implementation of the process of commercialisation.



Telecommunications

TELECOMMUNICATIONS is now universally acknowledged as one of the prime movers of the modern day economy, hence its vital importance for a developing economy like India. There is already a large unmet and unsatisfied telecom demand which needs to be addressed at the earliest. By adopting the National Telecom Policy, declared in 1994, the Government has placed the required emphasis on the rapid growth of the sector, and has embarked on major sector reforms.

The telecom network in India today is not small in absolute terms. With over 12 million lines, it is the 14th largest in the world. Yet it suffers from an abysmally low penetration of 1.3 per 100 population when the world average is over 10. More than 2.1 million consumers are in the queue waiting for a telephone line.

Paradoxically, India may be fortunate to have such low tele-density. Unlike many advanced countries, it does not suffer from large sunk investments in technologies which today are fast becoming obsolete: it has the opportunity to leapfrog technologies and provide its people the benefits that are increasingly feasible from the incredible and continuing change that the telecommunications industry is going through worldwide. India's vast size, the large number of spread-out settlements and its large unserved population provide a huge potential for the expansion of telecommunication services. This opportunity must be seized.

For this, the need of the hour is to

■ Raise substantially the penetration ratio in order to provide access to dependable voice communication means with at least national Subscriber Trunk Dialling (STD) connectivity to a

much larger cross-section of the population.

- Satisfy the more demanding audio, video and data communication needs of the business community in all major business districts in the country, and
- Make provision for easy upgradation of the network to meet future communication needs.

The Sixth Largest Network by 2001

All this would need very rapid expansion and upgradation of the existing network. If the telecom network in India is able to grow at even the current annual growth rate of 20 per cent for the next five years, then, by the year 2001, it would rank among the six largest networks in the world. This in absolute terms would mean an addition of 30 million more basic telephone lines—a number which is expected to be second only to China. India has also expressed its firm commitment to make large investments in value-added services by opening up this sector. All this would place India among the leading countries in terms of equipment purchase. This highlights the importance that India would command in the global telecom business in the near future—a fact which should be used for strategic leveraging. Concerted efforts need to be made to attract foreign companies to set up manufacturing bases in India for supporting domestic as well as export sales.

Substantial investments will be required to ensure that India acquires the status of a global player in telecom. This cannot be achieved through governmental efforts or through a monopoly state-owned operator alone. The Government of India has realised as much and initiated the process of progressive deregulation of the telecom sector.

Investment Required: 1996-2006

The demand for basic services is expected to be of the order of 31 million lines by the year 2001 and 64 million by 2006. The current basic services network of the DoT has around 12.2 million subscribers, with another 2.1 million in the waiting list. Thus an additional 19 million basic telephone lines would be required to be added in the next five years and another 33 million in the subsequent five years to meet the expected demand. Of this, DoT and the Mahanagar Telephone Nigam (MTNL) can put in an additional 10.3 million lines by 2001 and another 19 million by 2006 through internal accruals (assuming a growth rate of 13 per cent sustainable through internal accruals beyond 1996). The rest of the demand, which should be about nine million by 2001 and an additional 14 million by 2006, is expected to be met by the private sector. Also, the demand for cellular mobile services in India is expected to be of the order of two million by 2001 and grow to five million by 2006.

Basic services demand will reach 31 million lines by 2001 and 64 million by 2006.

The total funds required by the sector for the provision of basic and cellular mobile telecom services by 2006 will be of the order of Rs 1,915 billion. Of this, DoT is expected to invest from internal generation Rs 315 billion in the next five years, i.e. 1996-2001, and Rs 581 billion between 2002-2006. The contribution from the private sector in the two corresponding five-year periods is expected to be of the order of Rs 425 billion and Rs 594 billion respectively. The figures are at today's prices and duty structures.

Over and above this, funds would be required for other value-added services such as paging, radio trunking, e-mail, VSATs, mobile satellite systems etc. However, when compared with the combined requirement of basic and cellular mobile services, the investments required for other value-added services are lower. The sector would also require funds to set up capacities for manufacturing telecom equipment.

Apart from opening up the basic as well as value-added market segment of telecom services to the private sector, the Government has taken major initiatives in offering a level playing field to operators by promulgating an ordinance constituting the Telecom Regulatory Authority of India (TRAI). The Ministry of Communications is also examining restructuring of the Department of Telecommunications (DoT) into two separate bodies; one dealing with policy planning and the other in charge of service operations. However, a great deal more needs to be done, especially in terms of implementation strategy, so that the country can enjoy the benefits of the reforms.

Recommendations

Policy Level: Telecommunications should continue to be treated as a major element of infrastructure for growth and development of the Indian economy. In view of the long-term interests of the nation for rapid and balanced growth of the sector, the Government should not view it as an opportunity area for additional general resource mobilisation. This needs to be reflected in its licensing and taxation policies.

We recommend that the inter-circle long-distance services be opened to the private sector by 2001. The process leading to this action should incorporate appropriate lessons from the experience of privatisation of the telecom services in India and abroad.

With the entry of private operators in basic and other services, it is essential that urgent actions be taken to enable the existing operator, DoT, to grow and compete effectively with the new entrants. First, DoT would require enormous

funds for its projected growth. Second, it will also require much greater management flexibility at the operational level to compete with the private operators. The Expert Group therefore recommends the strengthening of DoT through its corporatisation as India Telecom as soon as possible. This would help DoT to effectively leverage its vast asset base to raise the resources required for its growth. Further, in order to provide effective autonomy at the regional level, and to provide adequate management flexibility, it would be desirable to structure India Telecom as a holding company, with regional subsidiary companies and other functional subsidiaries such as a separate long-distance service company. The exact structure may be decided once India Telecom is formed. The objective must be to enable India Telecom to operate as an effective global-sized telecom operator which is necessary in the present competitive global scenario; while also maintaining a competitive edge domestically through its subsidiary companies.

Since considerable disinvestment has already taken place, MTNL should continue as a separate corporation, but its further privatisation must be considered. MTNL may form joint ventures with various companies for offering value-added services in order to complement its own skills in areas such as marketing.

MTNL, and also DoT, once India Telecom is established, should leverage their experience of running such large telecom networks and seek global presence through investments in joint ventures with telecom companies abroad for provision of telecom services in other countries.

Tariff Policy: Currently it is evident that there is definite cross-subsidisation where the international and domestic long-dis-

tance tariffs subsidise local tariffs. The Expert Group recommends a more cost-oriented tariff structure. This should be initiated with a major tariff study to understand the level of cross-subsidisation existing today. The study could provide vital inputs to formulate a sound tariff policy which aims at providing a tariff structure which is reasonable and affordable for telecom users, and an implementation plan that would induce competition, without ignoring Government's social welfare plans.

As the Indian telecom network is already the 14th largest in the world and is expected to become a global player, it is important that the country starts investing in developing equipment manufacturing capabilities. This will help India establish itself as a manufacturing base that can take care of the future telecom requirements of the country as well as export sales. The Expert Group recommends that rationalisation of import tariff should be extended to components and inputs required by manufacturers of such products so as to encourage domestic production. This is in compliance with the National Telecom Policy objective of ensuring that India emerge as a major manufacturing base and an exporter of telecom equipment.

The import duties applicable on telecom equipment and products are high today. This is especially true for network elements for cellular mobile services and handsets. Duties on these products are around 50 per cent. On the other hand, there is no significant domestic manufacturing of these items. The high rate of import tariffs translates to high cost for provision of services. Import tariffs should be rationalised to help reduce cost of service and also bring down the overall fund requirement.

All telecom license fees should be put in a Fund that will provide debt and take equity stakes in various infrastructure projects.

Legal and Regulatory: A new and forward-looking legislation needs to be introduced to replace the century-old Indian Telegraph Act of 1885. The Act should take into account the impact of the vast advancement in technology that has taken place in the past 100 years and reflect the current status of the telecom sector and the Government's policies.

In order that the TRAI may successfully carry out the wide canvas of responsibilities entrusted to it, the three-member apex body needs to be supported by a team of highly qualified professionals from fields like law, economics, technology (telecom or related fields), finance and accounting or business administration. The members of the support team should be drawn from both within the Government and outside it, and the staff should be trained quickly in regulatory matters.

Within a couple of years, there may be as many as 100 or more service providers who would come under the telecom regulatory net. It must be emphasised here that telecom regulation will necessarily be technically complex and hence the TRAI must be appropriately equipped to deal with the many issues that are likely to arise. The success or failure of deregulation will largely depend on how well the TRAI functions. One such important issue is to do with interconnection between networks of different operators. The TRAI should ensure that the interconnectivity is seamless as far as consumers are concerned and the agreements legally, commercially and financially sound so as to support private sector entry.

Regulation in the area of tariffs and access charges will also become increasingly complex as the number of service providers increases. There will be a plethora of tariff regimes

We Recommend...

- **Inter-circle long-distance services be opened up by 2001.**
- **DoT be corporatised as India Telecom, perhaps a holding company with subsidiary companies in each circle, and another as a long-distance company.**
- **Further privatisation of MTNL be considered.**
- **MTNL and DoT seek global presence through joint ventures with foreign companies for provision of telecom services in international markets.**
- **Steps be taken to encourage the development of major telecom equipment manufacturing capabilities both for the domestic market and exports.**
- **The Indian Telegraph Act, 1885 be replaced with a new legislation that takes into account the vast advances in technology that have taken place in the last 100 years and reflects the current status of the telecom sector and Government policies.**
- **The TRAI be appropriately staffed and equipped to deal with the complex and multifarious issues that are likely to arise, for instance, interconnection between networks of different operators.**
- **All telecom license fees be transferred to an Infrastructure Fund, which will provide debt and equity to infrastructure projects. Telecom can have the first option to utilise a certain portion of this fund.**
- **A highest-level inter-ministerial committee be set up to consider an integrated national policy on telecom, broadcasting and information technology.**

which will require regulation along with appropriate consumer protection. Hence we recommend that the members and staffing of the TRAI should reflect the complexity of the tasks that it is going to handle.

Funding Issues: The private sector is expected to invest over Rs 1,000 billion by 2006 for providing telecom services in the country. These projects will be greenfield ventures with large upfront investments. In the current regulated tariff environment, with revenues comparatively low and expected to grow at a very slow pace, there is very little scope for any significant operating cash flows in the early stages of the project. Therefore the Government should adopt liberal policy guidelines and directives to encourage long-term investments (both domestic and foreign) in this sector. New sources of long-term funds and suitable instruments for the same need to be created. Sector-specific guidelines and entitlement limits for external commercial borrowing are also necessary.

DoT would require enormous funds in order to provide the estimated additional 29 million lines by 2006. It should be allowed to leverage its existing asset base to raise resources. For this, DoT needs to be corporatised as a holding company with regional and functional subsidiary companies, as already recommended in the policy-level recommendations.

The Government will be receiving large amounts of funds from the telecom sector in the form of licence fees, duties and taxes. It is important that this money be used as seed money for developing infrastructure facilities in the country including telecom. Therefore, the group recommends that an Infrastructure Fund be created and all telecom licence fees be transferred to this Fund. The Fund should provide debt and participate in equity of various infrastructure projects. The telecom sector could be given the first option to utilise a certain portion of this fund. The Expert Group recommends that the portion earmarked for the telecom sector be utilised as follows:

- Providing equity and long-term debt funds to all the players in the sector. This fund could be administered by The Infrastructure Finance Development Corporation (IFDC) recommended in Chapter IV of this Report with trans-

MTNL and DoT should seek a global presence through joint ventures abroad to provide telecom services across the world.

parent Government guidelines regarding fund allocation.

- Providing resources for evaluation of the new emerging technologies and their relevance in the Indian context.
- Funds needed for addressing the needs of technical manpower training of both existing employees of the DoT as well as of future personnel.
- Funds required for the initial establishment of the TRAI and specialised training for its personnel.
- Funding initial investments required to create an information superhighway in the country.

Future Implementation Issues: DoT and MTNL figure among the big telecom operators in the world in terms of network size. They should now aim to establish themselves as

global players in telecom through investments in joint ventures with other telecom companies abroad.

A major development in the recent past has been the convergence of telecom, broadcasting and information technology. Primarily driven by emerging technologies, the information era is fast demolishing the traditional walls between telecom, broadcasting and computer technology in the marketplace. Government policymakers have to take cognisance of this happening and shape future policy accordingly. A broader regulatory body will then be called for to address issues like airwaves regulation which does not fall under the current ambit of the recently constituted TRAI.

Today, the Ministry of Information & Broadcasting, the Department of Telecom and the Department of Electronics are responsible for the three sub-segments. We recommend that a highest-level inter-ministerial body be constituted that can consider an integrated national policy on information technology which is binding on the three ministries/departments.

There are substantial implementation issues which still remain to be resolved till it can be ensured that adequate funds flow into the sector. The Expert Group feels that a long-term Implementation Monitoring Group should be created to ensure that those of the above recommendations which are accepted by the Government are effectively implemented.



Roads

ROADS in India, for the purpose of their management and administration, are divided into National Highways, State Highways, district roads and village roads. Under the Constitution, responsibility for the development and maintenance of National Highways rests with the Central Government, while all other roads are the responsibility of the state governments concerned.

While the National Highways are intended to facilitate medium- and long-haul intercity passenger and freight traffic across the country, State Highways are supposed to carry the traffic within the state. Together, they provide the main mobility function in the transportation system. District roads and village roads serve to connect villages to provide accessibility and market linkages. Major district roads provide the secondary function of linkages between the main roads and the rural roads.

Presently, the National Highways are being developed, maintained and managed under an agency system. The overall responsibility including planning, budgeting, standardisation is handled by the Ministry of Surface Transport (MOST). The Government of India has, however, under an Act of Parliament in 1988, established the National Highways Authority of India (NHAI) for developing, maintaining and managing the National Highways as a single agency. Presently, the functions relating to externally-aided projects, implementation of the policy of private sector participation and development of wayside amenities along the National Highways have been assigned to NHAI.

From 1951 to 1994, the average yearly growth of road traffic has been of the order of 8 to 10 per cent. Freight traffic has increased from 6 BTK in 1951 to 350 BTK in 1994 and passenger traffic from 23 BPK to 1,500 BPK during this period. Factors that contributed to this are flexibility, door-to-door service, reliability and speed. In line with the increase in traffic carried by roads, the total number of vehicles has also grown from 0.3 million in 1951 to 25.3 million in 1994. It is expected that the total number of registered vehicles will increase to 54 million by the year 2001.

However, the main road network comprising of National and State Highways has not matched this traffic growth. Much of the expansion of the road network has been through building the rural roads constructed to provide connectivity to rural masses, although 50 per cent of the villages are still to be connected with all-weather roads. The expansion of National Highways has been by only about 55 per cent from about 20,000 km in 1951 to 34,000 km in 1995 and of State Highways by 118 per cent from 60,000 km in 1951 to 131,000 km in 1995.

The main roads have also not kept pace with the traffic demand in terms of their quality. Out of the total 165,000-km length of National and State Highways, only 2 per cent of their length is four-lane, 34 per cent two-lane and 64 per cent single-lane.

Inadequate road networks have led to higher transportation costs which have also severely eroded international competitiveness of the Indian economy. Commercial vehicles

Substantial portions, if not all, of taxes on motor vehicles and transportation fuel should be earmarked for road development.

Investment Required: 1996-2006

The Working Group on Roads for the Eighth Five-year Plan predicted that freight and passenger traffic will increase further to 800 BTK and 3,000 BPK respectively by the year 2001. The 20-year perspective plan (1981-2001) prepared by a Group of Chief Engineers under the auspices of the IRC worked out the need for a 66,000-km National Highway and 145,000-km State Highway network by 2001. An ADB-funded study has established a need for a 10,000-km expressway network in India by 2015. The existing grid also needs upgradation by way of widening, strengthening, provision of user-friendly improvements and the like.

A broad assessment of the development and expansion needs of the main roads in the next 10 years has been made by the Expert Group. According to these estimates, overall resource requirements for National, State and Supernational Highways would be Rs 320 billion from 1996-97 to 2000-01 and an additional Rs 630 billion between 2001-02 and 2005-06.

The maintenance of roads is more important than their upgradation and expansion. The vast network of roads built over the years with huge investments needs to be preserved. Overall requirement of resources for maintenance is estimated to be Rs 90 billion from 1996-97 to 2000-01 and an additional Rs 115 billion from 2001-02 to 2005-06.

The road sector has been progressively underfunded in successive Five-year Plans. The allocation of funds for roads constituted 6.7 per cent of the total First Five-year Plan public sector outlay, which has come down to only 3 per cent in the Eighth Five-year Plan. In the case of National Highways, the investment—1.4 per cent of the total plan outlay in the First

Five-year Plan—has declined to only 0.6 per cent of the total public sector outlay in the Eighth Five-year Plan. In absolute terms, only a sum of Rs 7 billion per year was available for development work on the National Highways during 1995-96. For maintenance, a meagre allocation of Rs 2.25 billion is available. Similar trends exist in the case of State Highways.

India's spending on roads is only about one-third of the revenue raised through road taxes and related levies. The balance is diverted to other sectors. The trend in developed countries in this regard is quite different. Road user taxes and other levies are almost totally set aside for roads in countries like the US, Switzerland, Norway, Germany, Japan and Australia.

A small sum of about Rs 100 million per year is available for development and maintenance of roads by way of setting aside an amount equal to 3.5 paise per litre of the customs duty and excise levied on motor spirit. The fund is utilised entirely for development and maintenance of state roads. Parliament, in 1988, adopted a revised resolution which provided for setting aside an amount not less than 5 per cent of the basic price out of the duties levied on motor spirit and diesel. As per the revised resolution, 35.5 per cent of the accruals from the fund is to be utilised by the Central Government for development and maintenance of National Highways. An additional sum of the order of Rs 6 billion would have accrued for roads from this source, but this resolution is still to be implemented.

The Central Government levied a fee for use of the bridges on the National Highways that cost Rs 2.5 million or more, and opened for traffic on April 1, 1976 or after. The cost of bridges qualifying for the levy of such fees has now been increased to Rs 10 million. A sum of Rs 400 million per year approximately accrues to the National Highways from this source.

**From 6.7 per cent
in the First Five
Year Plan,
allocation for
roads has dropped
to 3 per cent in
the Eighth Plan.**

are able to run only 200-250 km on an average per day, as compared to 500-600 km per day in developed countries. The problem is further compounded by congested sections, existence of railway level crossings, octroi posts and other tax barriers, all of which lead to abnormal delays in travel and higher fuel cost. The economic losses due to the bad condition of the main roads are estimated to be of the order of Rs 200 to Rs 300 billion per annum. Add to that security, safety and pollution problems.

The main roads comprising National and State Highways need strengthening and capacity augmentation. Supernational Highways are also necessary for safe, fast and economic travel. This trunk route system should be properly planned to meet the road traffic needs at optimum cost to the economy. A 20-year master plan for development of these roads should be prepared.

Sources of Financing

All over the world, four sources, as given below, are used to build and maintain quality road infrastructure. In India, only the first has as yet been tapped.

- Allocations from the existing user taxes collected as part of general revenue
- Creation of an earmarked fund through levy of specific user tariffs
- Development and maintenance of highways on "user pays" basis by raising commercial and multilateral loans
- Private sector participation

For National and Supernational Highways, of the total requirement of Rs 880 billion (Rs 270 billion from 1996-97 to

2000-01 and Rs 610 billion from 2001-02 to 2005-06), budgetary sources including resources from a Highway Development Fund would provide only Rs 295 billion (Rs 110 billion from 1996-97 to 2000-01 and Rs 185 billion from 2001-02 to 2005-06). From multilateral and bilateral sources, an additional Rs 150 billion (Rs 40 billion from 1996-97 to 2000-01 and Rs 110 billion from 2001-02 to 2005-06) could become available. Some funds can also come from toll levies, but there would still be a gap of Rs 230 billion (Rs 100 billion from 1996-97 to 2000-01 and Rs 230 billion from 2001-02 to 2005-06) which would have to be supplemented through private sector participation.

Similarly, for the State Highways, of the total requirement of Rs 300 billion (Rs 130 billion from 1996-97 to 2000-01 and Rs 170 billion from 2001-02 to 2005-06), the private sector would require to invest nearly Rs 60 billion (Rs 30 billion from 1996-97 to 2000-01 and Rs 30 billion from 2001-02 to 2005-06) as Government budgetary sources could at best provide Rs 170 billion, and multilateral/bilateral loans Rs 70 billion.

Highway Development Fund: Keeping in view these huge fund requirements, and given the massive backlog of the previous years, all sources of financing will have to be tapped—public and private, domestic and foreign. We recommend that a Highway Development Fund be created as an assured extra-budgetary source for funding Indian highways. Some highway improvements will have to be carried out on 'user pays' basis through NHAI or any other agency which can borrow money from the market and repay the loans through tolls. In addition, it is necessary to involve the private sector to supplement the Government's efforts which, in addition to bringing in additional funds, may also bring in the benefit of private sector management and entrepreneurial skills.

The development and maintenance of financing viable Supernational Highways, bypasses to congested towns/cities and spot improvements on existing highways, such as bridges, interchanges and road overbridges should be taken up through the private sector or in collaboration with it.

Further, a Highway Infrastructure Savings Scheme (HISS) should be set up on the pattern of the National Savings Scheme (NSS) to provide assured funds for commercial roads. The withdrawals from the scheme will be recouped out of toll revenues. Furthermore, the resolution on the Central Road Fund passed by Parliament in 1988 should be implemented.

The development of the proposed Supernational Highway network in the country will take quite some time. Except for bridges, bypasses and certain other super-links, it would be difficult to fund the construction through toll finance. The substantial portion of the development of both National and State Highways will have to be undertaken by the Government. However, the volume of funds required will not be available from standard budgetary sources. It is therefore essential to specifically earmark sources of funds for road development. In particular, the various taxes which are currently levied on motor vehicles of different types, the use of fuel in transportation etc should really be viewed as charges for road usage. Consequently, substantial portions of such revenues, if not all, should be earmarked for road development. In any case, a quantum jump is required from the present allocation of only about Rs 10 billion annually for the maintenance and development of the National Highways.

Development Strategy

It is imperative that the development plans for the main roads be highway-user-oriented. Priority should be given to the reconstruction of weak and distressed bridges and major missing bridges. Improvement works must be taken up depending on the intensity of vehicular traffic. This approach has already been initiated for National Highways by dividing the network into high, medium and low traffic volume zones. A similar approach should be followed for the State Highways.

Corridor development should form the basis of highway strategy. Based on the traffic volume to be served and other development potential in the corridor, improvements have to be planned in the form of expressways, widening to four-lanes, construction of paved shoulders and strengthening of pavement etc. for a period of 20 years and projects taken up accordingly in stages and in order of priority. Highway policy should address the issue of the sources of funding such improvement projects.

A central body like a Roads Board should be established to ensure coordinated development of the trunk route system. The roles of the Central and state governments have to be clearly defined. A highway development policy should be prepared and adopted by the Government.

Maintenance and Management of Highways: The maintenance of existing highways should be given priority over their improvements. Existing assets cannot be allowed to deteriorate. Modern maintenance and management systems have to be implemented. Maintenance depots should be established all along the highway network. Maintenance activities should also

We Recommend...

- **Supernational Highways, by-passes and spot improvements be taken up through the private sector or in collaboration with it.**
- **A Highway Infrastructure Savings Scheme be set up on the pattern of the National Savings Scheme.**
- **Substantial portions, if not all, of the revenues from taxes on motor vehicles and transportation fuel be earmarked for road development.**
- **A Roads Board be set up to ensure coordinated development of the trunk route system. A highway development policy be prepared and adopted by the Government.**
- **Four-laning of some of the existing highways be done through the public toll-road method.**
- **Comprehensive guidelines and procedures be laid down for approval of private sector projects.**

begin to be contracted out in a gradual manner. The management of highways should encompass the maintenance of the entire right-of-way: prevention of encroachments on highway land, regulation of the development along highways within a defined width of say 200 m, facilities to be provided for traffic, including providing relief to accident victims and ensuring removal of bottlenecks in traffic movements. Entire control of the traffic as well as of the highway land should thus form part of highway management activities.

Highway Improvements on "User Pays" Basis:

Four-laning of some of the existing highways should be done through the 'public toll roads' method. Funds should be borrowed from World Bank or ADB for this purpose. The local-counterpart funds may be raised from financial institutions. Some support may be given by the Government. The funds so raised will be repaid from toll revenues. Traffic on existing roads as well as newly-constructed ones should be charged. This concept is gaining acceptability the world over, since it is considered prudent to charge the traffic rather than deny the facility. The National Highways Act, 1956 already provides an enabling provision in this regard. The legal opinion is that an alternative free facility is not necessary.

A Central Roads Board should be set up to plan the highway programme, mobilise funds, and manage the highway network.

Institutional Needs: A Road Board should be set up at the national level to facilitate the following tasks. Similar Road Boards should also be set up in the states.

- Plan and implement the highway programme in a time-bound and proposed manner;
- Mobilise the required private funds from domestic and international markets;
- Maintain and manage the National and State Highway networks.

Need for Comprehensive Guidelines for Highways:

Guidelines and procedures must be laid down for the approval of private sector projects, spelling out the nature of clearances required and the authorities to be approached. The onus of traffic running smoothly, quick attention to maintenance, speedy help to drivers, efficient traffic management, removal of encroachment etc will be primarily on the private party, and it is this agency which will have to take the brunt of the decisions. Other regulatory agencies, no doubt important, will have a somewhat smaller role. A Central legislation in the form of a Highway Act covering all these aspects and for assignment of these functions to private parties needs to be enacted.



Industrial Parks

IN the context of the huge demand-supply gap in infrastructure, an industrial park is an ideal vehicle for providing integrated infrastructural facilities. Industrial parks are an essential requirement for industrialisation in developing countries which, unlike the developed world, do not have uniformly good infrastructural facilities throughout the nation. They can serve as an intermediate solution to the lack of well-developed and uniformly good infrastructural services.

Industrial parks should be targeted at small- and medium-scale industries with a focus on high value-added output. Pre-built factories provide readymade factory space which can cater to the needs of small- to medium-scale industries, serving as incubators before they grow in size and shift to a larger industrial space.

Private sector participation is expected to lead to better development of industrial parks due to the state of the private sector promoters' finances and energies, the opportunities for generating profits and surpluses, and the resulting competition. International experience indicates that industrial parks need active support from the Government by way of a clear industrial policy and incentives for private sector development of industrial parks.

Key Success Factors

The location of the industrial park is the key factor determining its success. The location should be decided based on an analysis of the competitive advantage and inherent strengths of the region.

State governments must dovetail the conceptualisation and development of the industrial park with an integrated

development plan for the region. In the short term, existing industrial parks should be upgraded while in the long run, a suitable policy should be identified for their commercialisation. While private sector participation in the development of industrial parks would increase with time, in the medium term, the State Industrial Development Corporations (SIDCs) which hold large pieces of land can strike an alliance with the private sector for development of industrial parks.

Commercialisation requires a collaborative approach and participation from various parties including the private sector, financial institutions, SIDCs and the state and local governments. Even if the Government/SIDC does not opt for equity participation, it should play the role of facilitator in the project. An MOU which includes a mutually agreed-upon timetable with penalties for time and cost overruns should be signed. As a partner, the Government should provide an exit policy which facilitates the pullout of the private sector from a venture which turns out to be unviable. A suitable dispute redressal system would need to be designed and put in place right at the beginning of the project to facilitate smooth operation of the park after construction.

Participation of industrial units within the park by way of an equity stake in the operations and maintenance of the industrial park is expected to lead to a kind of cooperative concept as opposed to the present owner vs user concept.

In order to facilitate speedy statutory clearances and provision of other civic facilities, the Government should encourage the setting up of Business Support Centres (BSCs) in these parks. The BSCs should be delegated the authority to grant clearances/approvals subject to specified norms. A system of public audit should be introduced to ensure that accountability and discipline work in respect of both the partners and that the 'public purposes' foundation remains secure.

Recommendations

As Foreign Direct Investment is very important for the success of industrial parks, the foreign investment policy with reference to the parks should be clarified. Establishment of holding companies for investment in the parks can be encouraged.

Land Acquisition: Private sector land acquisition would be in tune with the policy of commercialisation of industrial parks through private sector participation. In this case, terms of negotiated land purchase should be primarily determined by the market forces. The Government may acquire land in exceptional cases where private sector acquisition of land is difficult and where there is a clear case for public good in the acquisition of the land. The Land Acquisition Act enshrines the 'enabling' provisions adequately for fair and equitable compensation to serve public purpose.

Since compensation for the land acquired is often a major cause for dissatisfaction, an independent valuer should be asked to fix the price which should be related to the average of the market prices in the recent past. The Government should also encourage the provision of alternate locations for displaced owners. It should be recognised that the Government is assisting in the land acquisition process and not in the fixation of any price.

Promotional and Regulatory Policy: The Government should announce a comprehensive legal policy for industrial parks based on speed, transparency and enforceability. It is essential to recognise industrial parks as infrastructure projects and provide the same incentives including tax/tariff reliefs and special dispensations that are available to an infrastructure project in the power, telecommunications or roads sector.

A statutory State Industrial Parks Promotional Authority (SIPA) may be set up in each state, on the lines of bodies such as the Industrial Estates Authority of Thailand, as a one-stop agency involved in development of industrial estates either by itself or through joint ventures with the private sector. The authority should focus on monitoring and adjudicating.

Uninterrupted and quality power supply is a key success factor for any industrial estate. State Governments should encourage the supply of adequate power to the industrial park either through small captive power plants or through the support of the SEBs, which must announce a clear policy for cogeneration so that captive power plants set up to serve industrial parks can be of economic size by also supplying the grid.

Adequate financing through long-term debt is of critical importance for the projects. Industrial parks should be eligi-

We Recommend...

- **Negotiated land purchase for industrial parks by the private sector be primarily determined by market forces.**
- **The Government announce a comprehensive legal policy for industrial parks based on speed, transparency and enforceability.**
- **Industrial parks be treated as infrastructure projects, And the same incentives including tax/tariff reliefs as are available to power, telecom or roads be extended to them.**
- **A State Industrial Parks Promotional Authority be set up in each state, on the lines of bodies like Industrial Estates Authority of Thailand.**
- **Industrial parks be made eligible for funds from financial institutions.**

ble to receive FI financing. We recommend that the FIs announce guidelines for eligibility for financing and the associated conditionalities.

Fiscal Concessions: Industrial parks should be recognised as eligible investments in infrastructure and therefore receive the benefit of nil tax under Section 80(i)(A) of the Income Tax Act. This will entitle them to a five-year tax holiday as is given now to other infrastructure projects like roads. Industrial parks should also be eligible for tax-free import of capital goods required for the setting up of the parks under the Export Promotion Capital Goods (EPCG) scheme. This concession should be available to the parks which could utilise foreign exchange earnings from their constituent industrial units, and would be mainly targeted towards the setting up of common facilities such as testing laboratories, common effluent treatment plants and the like.

In order to encourage private sector financing of industrial parks, FIs providing loans to industrial parks may also be granted exemption from income tax on the profits from loans to industrial parks. To encourage further investments in industrial parks and also to discourage repatriation by foreign investors, a 40 per cent tax rebate may be allowed on profits reinvested in the industrial park or in any other infrastructure project.



Ports

INDIA has 11 major ports and the primary responsibility for development and management of these ports rests with the Central Government. These ports are governed by the Major Port Trusts Act, 1963, which enables these ports to conduct regulatory as well as commercial functions. The State Governments administer 139 intermediate and minor ports. Each major port has a Board of Trustees representing various interests.

The total capacity as on March 31, 1995 in all major ports was about 175 million tonnes which is expected to be over 215 million tonnes by the end of the Eighth Five Year plan in 1997.

Most Indian ports are operating at more than 100 per cent capacity utilisation, and yet are inefficient when compared to other ports in the region. One reason for this anomaly is that due to certain economic compulsions, the general cargo berths are often used to load or unload bulk cargo such as coal. This temporarily increases capacity utilisation of the ports.

One criterion for determining the efficiency of berth use is berth occupancy. In India, the percentage of idle time at berth to time working at berth is around 36 to 37 per cent. The productivity of the ports in terms of Average Ship Turn Around (ASTA) and Average Ship Berth Output (ASBO) also does not compare favourably with that of efficient ports in the Asian region. Labour and equipment productivity levels too are low.

The major ports account for 95 per cent of total traffic handled. During the decade 1951-61, traffic growth was only around 5.2 per cent per annum. Between 1961 and 1971, it increased to around 6.8 per cent per annum and slowed to 4.4 per cent in 1971-1981. However, between 1981 and 1991, traffic grew faster, by around 8.9 per cent per annum.

Over time, the commodity composition of traffic handled at major ports has also undergone a substantial change. Petroleum and petroleum products accounted for only 8 per cent of

the total traffic in 1950-51 but today account for over 41 per cent.

Problems Faced by Indian Ports: The key problem is low productivity. The major factors contributing to this have been identified:

- Operational constraints such as frequent breakdown of cargo-handling equipment due to obsolescence and wrong specification;
- Inadequate dredging and container-handling facilities;
- Inefficient and nonoptimal deployment of port equipment;
- Lack of proper coordination in the entire logistics chain.

Containerisation which brought about a technological revolution in the transportation world is still to make an impact in India. By 1993-94, container traffic was accounting for only 6.8 per cent of total traffic.

Indian ports are costlier than other ports in the region for handling containers. The additional cost burden due to use of second- and third-generation vessels has been estimated at US \$ 250 million a year. Container delays at Indian ports cost US \$ 70 million a year.

Port Capacity Requirement By 2005-06

Port traffic consists of overseas and coastal traffic. The former is determined by the structure and pattern of international trade whereas coastal traffic depends on the structure and pattern of inter-region domestic trade. We estimate overall port traffic to reach around 390 million tonnes by 2000-01 and over 650 million tonnes by 2005-06. Overall port capacity required to handle this projected traffic is 325 million tonnes in 2000-01 and 540 million tonnes in 2005-06.

Need for additional capacity has been worked out assuming an additional improvement in utilisation at the rate of 3 per

Investment Required: 1996-2006

Our estimates indicate that creating 350 million tonnes of additional cargo handling capacity by 2005-06 will require about Rs 250 billion. During 1996-2001, the requirement would be about Rs 100 billion and an additional Rs 150 billion during 2001-06. The resource requirements are significantly higher when compared with actual expenditure of just under Rs 16 billion in the last four years (1992-96). Total plan allocation in 1990-1997 was also only Rs 42 billion. The

cent per annum from 1996-97 onwards for a period of five years in container and general cargo-handling and coastal trade. In the year 2005-06, traffic-to-capacity ratio would be roughly 1.207 as against around 1.147 now. Additional capacity required to be commissioned annually is estimated to be 138 million tonnes between 1996-97 and 2000-01 and 215 million tonnes from 2001-02 to 2005-06.

Recommendations

Commercialisation: The major ports urgently need to upgrade their handling technology, modernise their equipment and management and raise adequate resources, both for the creation of additional port facilities and to improve existing ones. This demands a complete new approach. Ports worldwide have used commercialisation, liberalisation, privatisation, and modernisation of port administration as strategies to deal with these issues. These strategies are not of the either-or type, but need to be pursued in combination.

We believe that it is quite feasible to raise the required resources. However, this will require adoption of innovative methods. Autonomous port authorities should operate on commercial lines so they can raise resources from the primary market by way of equity and debt and from FIs. On the basis of the existing tariff levels, it should be possible for the port authorities to service debt obligations and pay a reasonable return to investors on equity.

Immediate Actions: There is urgent need to delegate adequate powers to the Port Trusts to facilitate the speedy creation and operation of assets. At present, they have powers to incur expenditure up to Rs 50 million only. However, PSEs which have signed MOUs and have a gross block of over Rs 2 billion have powers to incur expenditure on additions, modifications and new investments up to Rs 500 million. In case of expenditure on replacement and renewal of assets, they can incur expenditure up to Rs 1,000 million. It is, therefore, suggested that powers may be delegated to the Major Port Trust Boards to incur capital expenditure to the

resources required over the next 10 years will either have to be internally generated by the ports or will have to come from other new sources.

The internal accruals of the ports are expected to be about Rs 135 billion (Rs 60 billion between 1996-97 and 2000-2001 and Rs 75 billion from 2001-02 to 2005-06). Additional requirements are estimated at Rs 40 billion from 1996-97 to 2000-2001 and Rs 80 billion between 2001-02 and 2005-06.

same extent. Further, projects to be executed through private participation involving no investment by the ports should not require the approval of the Expenditure Finance Committee or the Public Investment Board. Port authorities should also be delegated powers to create necessary technical posts required for modernisation.

Private Sector Participation: Indian ports have the potential for emerging as Asian hubs. Quantitative and qualitative improvement in port infrastructure cannot be achieved without some sort of autonomy to the ports and exposing them to competition by way of private sector participation for various cargo-handling activities.

The Major Port Trust Act, 1963 permits private sector participation in port development. MOST had, in 1992, 1993 and 1995, issued guidelines on land management at ports and privatisation. These guidelines relate mainly to leasing of lands and do not provide for construction of additional facilities through private investment. As a result of these guidelines, there has been some limited success in private investment in ports, but this has not led to any significant addition to port capacity. Amendments to the Act are necessary to permit projects to be taken up on a BOT basis in ports.

The Standing Committee on Transport and Tourism has recommended private sector participation in ports for creation of additional capacity only. Such an approach would be unduly restrictive and would also mean that cost-effective strategies for the existing investment cannot even be experimented with. There is need to consider leasing out existing berths or other assets of the ports wherever it is cost-effective.

Indian ports will have to upgrade their technology levels to be comparable to international standards. In the modernised ports, cargo would be mechanically handled, there would be special facilities for handling container and bulk cargo, and computer-based cargo clearance including customs clearance.

Labour resistance is perceived as a primary impediment to greater private sector participation. The Government must deal with this as a priority issue as this is a critical barrier to overcome in any privatisation

Two ports, one each on the east and west coasts, may be developed as megaports: the warehouse for the Indian sub-continent.

process. Modernisation and restructuring of ports are to be considered a continuous process for reallocating productive assets, labour, capital and management. The process of restructuring and modernisation would essentially involve a shift to a better management and change in a worker's job description. This would require upgradation of the worker's skills in line with new needs.

Port authorities also need to take up area rejuvenation programmes. Indian ports have large tracts of urban land which could be optimally utilised for facilitating the required restructuring. This would require an integrated and comprehensive approach and possibly an appropriate institutional mechanism.

The existing system of labour compensation too needs a relook. It may be advisable to move from a monolithic pay structure to piece-based wage structure. This would set up an incentive system which would increase efficiency and innovation at the lowest level.

Ports being strategic assets, while the Government retains the controlling stakes, privatisation of certain services of ports needs consideration. Ports perform multifarious activities. These include cargo handling, storage, warehousing, customs clearance, security and administration. Each of these activities could be considered as separate profit centres and appropriate policies should be evolved for commercialisation and private sector participation in each case. It may be better to make the ports work as corporate entities with administrative independence and the ability to raise finances for development.

Indian ports now need to plan with a 15-20-year perspective. Some of the ports must become megaports operating as the warehouse for the Indian subcontinent. It may be advisable to develop at least two ports for this purpose, one each on the east and west coasts. The world over, a port which handles cargo of roughly 70 to 100 million tonnes is considered to be of optimal economic size. This is the size we should target for the super- or megaports.

Port authorities currently have both regulatory and commercial functions. Combining these functions in a single entity may not be viewed as transparent by private sector investors who would perceive this arrangement to have in-built biases. We recommend that while the commercial operation of the ports be entrusted to existing port authorities with adequate autonomy, a separate regulatory authority should be set up to deal with issues relating to pricing and conditions which would govern private sector participation, and operation and maintenance of the port assets. This regulatory authority should have due representatives from the Port Authority, the Ministry of Surface Transport, Ministries of Industry and Commerce and representatives from industry associations. A comprehensive review of the existing Port Trust Act should be undertaken and necessary amendments made for setting up of this Regulatory Authority and for further facilitating private sector participation in the ports.

The Government should also consider letting ports which have private participants to continue to be exempted

We Recommend...

- **Port authorities be permitted to raise resources from the primary market by way of debt and equity and from financial institutions.**
- **Major Port Trust Boards be delegated powers to incur capital expenditure up to Rs 500 million to facilitate speedy creation and operation of assets.**
- **The Major Port Trust Act, 1963 be amended to permit expansion projects to be taken up on a BOT basis.**
- **Options of leasing out berths or other assets, wherever it is cost-effective, be considered.**
- **A moving away from a monolithic pay structure for workers to a piece-based wage structure.**
- **At least two ports, one each on the east and west coasts, be developed as megaports—the warehouse for the Indian sub-continent.**
- **While commercial operation of ports be entrusted to existing port authorities with adequate autonomy, a separate regulatory authority be set up to consider issues relating to pricing and conditions which would govern private sector participation.**
- **Ports with private participation be continued to be exempted from corporate taxes to augment internal resource base and increase eligibility for raising resources from the market.**

from paying corporate taxes to augment their internal resource base and also increase their eligibility/credibility for raising resources from the market.

While the BOT arrangement may envisage transparent tender procedures for selection of the developer, there are cases where entrepreneurs setting up port-based industries may seek approval for the creation of captive facilities. These may be allowed, provided the firm is willing to pay the maximum realisation that the port is receiving from a similar facility without recourse to tendering.

A tendering approach also fails to effectively tackle greenfield projects or innovative proposals. These are concepts prepared at considerable cost by entrepreneurs and in some cases are patented intellectual property. In such cases, negotiated purchase of the concept within the specified parameters through a committee should be considered.



ABBREVIATIONS AND ACRONYMS USED IN THE TEXT

ADB	Asian Development Bank	MoST	Ministry of Surface Transport
BOO	Build-Own-Operate	MOU	Memorandum of Understanding
BOOT	Build-Own-Operate-Transfer	MTNL	Mahanagar Telephone Nigam Ltd
BOT	Build-Operate-Transfer	NBFC	Non-banking Finance Company
CBDT	Central Board of Direct Taxes	NDTL	Net Demand and Time Liabilities
CCPS	Cumulative Convertible Preference Share	NHAI	National Highways Authority of India
CEA	Central Electricity Authority	NSE	National Stock Exchange
CRR	Cash Reserve Ratio	O&M	Operation & Maintenance
DoT	Department of Telecommunication	PF	Provident Fund
DRR	Debenture Redemption Reserve	PLF	Plant Load Factor
ECB	External Commercial Borrowing	PPP	Public Private Partnership
EPF	Employee Provident Fund	PSE	Public Sector Enterprise
FI	Financial Institution	RBI	Reserve Bank of India
FII	Foreign Institutional Investor	SBI	State Bank of India
FIPB	Foreign Investment Promotion Board	SCICI	Shipping Credit and Investment Corporation of India
GIC	General Insurance Corporation	SEB	State Electricity Board
GoI	Government of India	SEBI	Securities & Exchange Board of India
HDFC	Housing Development Finance Corporation	SIDC	State Industrial Development Corporation
ICICI	Industrial Credit and Investment Corporation of India	SLR	Statutory Liquidity Ratio
ICOR	Incremental Capital Output Ratio	SPV	Special Purpose Vehicle
IDBI	Industrial Development Bank of India	SRA	Special Reserve Account
IFCI	Industrial Finance Corporation of India	SWM	Solid Waste Management
IFC(W)	International Finance Corporation (Washington)	T&D	Transmission & Distribution
IFDC	Infrastructure Finance Development Corporation	TDS	Tax Deduction at Source
ILFS	Infrastructural Leasing & Financial Services	TRAI	Telecom Regulatory Authority of India
LIC	Life Insurance Corporation	ULB	Urban Local Body
MMMF	Money Market Mutual Fund	ULCRA	Urban Land Ceiling and Regulation Act
MoF	Ministry of Finance		

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