The views, interpretations, and conclusions expressed in this paper are those of the author and do not necessarily reflect the views and policies of the Asian Development Bank or its Board of Governors or the governments they represent, the World Bank or the Executive Directors or the governments they represent.
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<tbody>
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<td>AAR</td>
<td>American Association of Railroads (U.S.)</td>
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<td>Australian Transport Safety Bureau</td>
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<td>BR</td>
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<td>Beitbridge Bulawayo Railway (South Africa and Zimbabwe)</td>
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<td>Bases Conversion Development Authority (Philippines)</td>
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<td>Build Own Operate</td>
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<td>BOOT</td>
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<td>Build Transfer Operate</td>
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<td>CATT</td>
<td>Corporation for Advanced Transport and Technology (Japan)</td>
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<td>CLG</td>
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<td>CN</td>
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<td>Council of Australian Governments</td>
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<td>CTA</td>
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<td>Companhia Vale de Rio Doce (Brazil)</td>
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<td>DMCs</td>
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<td>DOT</td>
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<td>Department of Transportation and Regional Services (Australia)</td>
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<td>DPRK</td>
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<td>DRC</td>
<td>Democratic Republic of Congo</td>
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<td>EA</td>
<td>Executing Agency</td>
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<td>EAP</td>
<td>East Asia and Pacific</td>
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<td>Eisenbahn Bundesamt (Germany)</td>
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<td>ECA</td>
<td>Europe and Central Asia</td>
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<td>EIRR</td>
<td>Economic Internal Rate of Return</td>
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<td>EPIC</td>
<td>Etablissement Public Industriel et Commercial (France)</td>
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<td>ERL</td>
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<td>EU</td>
<td>European Union</td>
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<td>Acronym</td>
<td>Description</td>
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<td>EVR</td>
<td>Eesti Raudtee (Estonia)</td>
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<td>Ferrocariles Nacionales Mexicanos (Mexico)</td>
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<td>FRA</td>
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<td>FYP</td>
<td>Five Year Plan</td>
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<td>Government Accounting Office (U.S.)</td>
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<td>GDP</td>
<td>Gross Domestic Product</td>
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<td>ICD</td>
<td>Inland container terminal</td>
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<td>IFC</td>
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<td>IPO</td>
<td>Initial Public Offering</td>
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<td>Japanese National Railway</td>
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<td>Japan National Railway Settlement Corporation</td>
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<td>Jordan Phosphate Mines Company</td>
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<td>JRC</td>
<td>Jordan Rail Company</td>
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<td>KCSR</td>
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<td>KL</td>
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<td>KLMIA</td>
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<td>Kazakhstan State Railways</td>
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<td>Ministry of Railways (India and PRC)</td>
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<td>MOTC</td>
<td>Ministry of Transport and Communications</td>
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<td>MOU</td>
<td>Memorandum of Understanding</td>
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<td>Mass Rail Transit</td>
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<td>Mass Rapid Transit Authority (Thailand)</td>
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<td>MUCTC</td>
<td>Montreal Urban Community Transit Commission (Canada)</td>
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<td>NAFTA</td>
<td>North American Free Trade Agreement</td>
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<td>NBIA</td>
<td>New Bangkok International Airport (Thailand)</td>
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<td>NPV</td>
<td>Net Present Value</td>
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<td>NSW</td>
<td>New South Wales Railway (U.K.)</td>
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<td>NTSB</td>
<td>National Transportation Safety Board (U.S.)</td>
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<td>OPRAF</td>
<td>Office of Passenger Rail Franchising (U.K.)</td>
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<td>ORR</td>
<td>Office of Rail Regulation (U.K.)</td>
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<td>PFIPA</td>
<td>Private Finance Initiative Promotion Act (Japan)</td>
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<td>Private Infrastructure Investment Center of Korea</td>
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<td>PKM</td>
<td>Passenger Kilometers</td>
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<td>PNR</td>
<td>Philips National Railways</td>
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<tr>
<td>PPI</td>
<td>Private Participation in Infrastructure</td>
</tr>
<tr>
<td>Acronym</td>
<td>Description</td>
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<tr>
<td>PPP</td>
<td>Public Private Partnership</td>
</tr>
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<td>PPTA</td>
<td>Project Preparation Technical Assistance</td>
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<td>PR</td>
<td>Pakistan Railways</td>
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<td>PRC</td>
<td>People's Republic of China</td>
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<td>PRCL</td>
<td>Pipavav Rail Co. Ltd. (India)</td>
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<td>PSO</td>
<td>Public Sector Obligation</td>
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<td>PSP</td>
<td>Private Sector Participation</td>
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<td>PTC</td>
<td>Public Transport Corporation (Australia)</td>
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<td>Queensland Railway (Australia)</td>
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<td>RAC</td>
<td>Rail Access Corporation (Australia)</td>
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<td>RAF</td>
<td>Fegie des chemins de fer Abidjan-Niger (Ivory Coast and Niger)</td>
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<td>RDC</td>
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<td>RFF</td>
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<td>SATCC</td>
<td>Southern Africa Transport and Communications Commission</td>
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<td>SCFB</td>
<td>Societe des Chemins der fer du Burkina (Burkina Faso)</td>
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<td>SCT</td>
<td>Specialized Container Transport Co. (Australia)</td>
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<td>SEFICS</td>
<td>Societe d'Exploitation Ferroviarie des ICS (Senegal)</td>
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<td>SHC</td>
<td>Shinkansen Holding Corporation (Japan)</td>
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<td>Societe Ivorienne des Chemins de fer (Ivory Coast)</td>
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<td>State Rail Authority (Australia)</td>
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<td>State Railway of Thailand</td>
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<td>Soviet Union Railways</td>
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<td>SWOT</td>
<td>Strengths, Weakness, Opportunities, and Threats</td>
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<td>TA</td>
<td>Technical Assistance</td>
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<td>TdP</td>
<td>Transportes del Pacifico S.A. (Brazil)</td>
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<td>Transportation Ferroviara Mexicana (Mexico)</td>
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<td>TKM</td>
<td>Ton kilometers</td>
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<td>Train Operating Companies</td>
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<td>Traffic stress index</td>
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<td>Traffic Units</td>
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<td>Union Internationale der Chemis Fer (France)</td>
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<td>UNDP</td>
<td>United Nations Development Programme</td>
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<td>UP</td>
<td>Union Pacific Railroad Co. (U.S.)</td>
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<td>UP-SP</td>
<td>Union Pacific and Southern Pacific Railroads (U.S.)</td>
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<td>Uganda Railways</td>
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<td>U. S. Agency for International Development</td>
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<td>Western Australia</td>
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<td>WTO</td>
<td>World Trade Organization</td>
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<tr>
<td>ZR</td>
<td>Zonal Railways (India)</td>
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EXECUTIVE SUMMARY

The Need for Private Sector Participation

1. This Report is about Private Sector Participation (PSP) in the Asian railways. Within the macroeconomic perspective, developing nations face important structural challenges that must be addressed if they are to maintain sustained economic growth, improve living standards, and continue their pursuit of a greater role in the global economy. Two challenges broadly confronting the developing nations in this respect are meeting the massive demand for infrastructure and adapting the role of the state to the changing economic environment. Unless these challenges are met, economic growth cannot be sustained for long.

2. Continued growth in demand for services, along with changing technology and regulatory approaches, requires a shift from the public to the private sector in infrastructure ownership and service delivery.¹ This does not mean, however, eventual elimination of the public sector in financing infrastructure. “The key issue is not whether financing should be public or private, but how the public and private sector share the risks and rewards in a way that works for both sides.”²

3. The trend of PSP in infrastructure development that began in a few countries in the 1970s and 1980s has gradually spread to other nations. Developing countries have been at the forefront of this trend and are pioneering innovative approaches to provide infrastructure services by the private sector. Now almost all developing countries have some private sector activity in infrastructure development and many Governments have spelled out their policy and regulatory frameworks. The private sector and Governments have been working together in projects that are materially improving the provision of infrastructure and public services. In some countries, Governments have gone further, beyond their usual tasks of policy formulation, streamlining of administrative processes and creating a supportive legal environment. They have established specialized units and devised suitable instruments to provide active support for private sector activities in infrastructure investment and operation.

4. Governments worldwide have increasingly turned to the private sector for additional resources, increased efficiency, and sustainable development in many fields, including transport infrastructure and services. Following trends in other fields, private sector involvement in the transport sector has now become quite common in many countries in Asia and elsewhere. To facilitate private involvement, sector reforms have been initiated, albeit at a slow pace in many Developing Member Countries (DMCs), and many Governments are also considering various other steps. PSP is being increasingly sought in investment, management and expansion of public transport systems; highways, urban rail systems, and new port and airport facilities are increasingly being built and operated following various models of PSP.

Models of PSP in the Railway Sector

5. No two railway systems are alike. Railway operations and services vary from country to country depending on the demand for services as well as the stage of development in other transport modes. For example, railway services range from one percent passenger traffic (in the U.S.) to over 90 percent passenger traffic (in several Asian countries, including Japan, Philippines, Indonesia, and Sri Lanka). Further, railway passenger transport services range from having insignificant suburban service (as in PRC) to as much as 90 percent (as in the Philippines). Because of the widely varying demands for railway services and the divergence in operations, the need for typical and specific solutions is obvious.

6. There are many varieties and degrees of PSP in railway infrastructure investment and operations. And the conditions and approach used in each country is unique, reflecting local circumstances. Figure 1 depicts a simplified range of PSP showing the main varieties and the extent of participation of the private sector growing from low at left to high at right.

¹ The World Bank; Choices for Efficient Private Provision of Infrastructure in East Asia, 1997, p. v.
7. Despite the wide variety of PSP, however, similarities, particularly in form, exist. PSP in operations does not necessarily require ownership of assets. Also in many instances PSP can be in partnership with the public sector. Such Public-Private Partnership arrangements exist in a variety of forms in the railway sector from leasing non-core assets to jointly owned Build-Own-Operate schemes and share holding in a formerly public railway operating entity.

Historical Perspective

8. The history of private participation in railway infrastructure development and operation is quite old. PSP in the railway sector dates back to the 19th Century when the private companies built the American railroads under incentives provided by the U.S. Government such as land grants and mining rights for below ground mineral resources. Similar PSP was also witnessed in many European countries. The situation in many countries in Africa and Asia was not very different either. For example, railways in the Indian subcontinent were first introduced in 1853 through private initiatives. Many railways built in sub-Saharan Africa during the Colonial era in the second half of the 19th and early 20th Century were financed by the private sector to bring the raw materials and minerals from inland areas to the ports of exit for shipment to industrial centers in Europe and North America. In China the initial development of railways was largely through private initiatives with incentives from the Government in the form of concessions. However, at later dates, owing to various reasons Governments nationalized many of the railway transport systems developed by the private sector.3

9. As the railway network expanded, capital intensity of the sector, high infrastructure costs, indivisibility and externalities made rail transport a natural monopoly. Except in North America, railways as public monopolies in many countries passed on under Government control. Governments have viewed rail transport as public services to be provided at subsidized cost. The social objectives underpinning the provision of some rail services, especially passenger services, are in conflict with many of the reforms being implemented, particularly the application of commercially oriented business practices. The desire of Governments to continue pursuing social policies that were also politically acceptable was responsible for reluctance to reforms or reducing Government control over railway operations.

10. The corollary of this lack of commercial focus was that railways generally failed to develop an entrepreneurial culture with respect to management accountability for performance, assessing and reacting to changes in market conditions, and in being innovative and seizing new opportunities. These cultures can be slow to change, as evidenced by the hesitancy of national railway systems to deal with the issues and uncertainties inherent in the reform process.

11. The continued presence of monopoly and absence of competition resulted in monopoly-induced inefficiencies, low productivity and large deficits. Most railways in the world incurred growing deficits during 1970s and 1980s. For instance, despite of significant Government subsidies, the revenues earned by railways in Italy, France and Spain were only half of their operating costs. In 1994, the total debt of Italian railway was almost 4.9 per cent of the country’s GDP. In early 1980s, Japan National Railways incurred a loss of US$10 billion to 15 billion per year. Continued

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3 A.S.M. Abdul Quium; *Private Sector Participation in the Transport Sector Trends, Issues and Institutions in the Asia-Pacific Region*, Transport and Communications Bulletin for Asia and the Pacific No. 72, 2003
financial losses over several years resulted in large debts. In 1985, the total debt of Japan National Railways was around US$200 billion.

**Recent Trends**

12. More recently, there have been considerable attempts to reform state railway enterprises operating on a noncommercial basis, carrying large debts, and providing a range of community services funded by cross subsidies from more profitable services or through budgetary appropriations. The first, on-going stage of the reform process has been to put these organizations on a commercial footing through corporatization, which is still underway in some Asian countries.

13. A factor contributing to the restructuring process was a rapid change in customer demand for higher quality service at lower price. This is especially true for freight customers, who with liberalization and globalization face competition from their global counterparts and hence push for lower transport costs. Competition from other modes of transport such as roads reduced the market share of railways and pressured it to improve productivity through technological upgrading (e.g. high speed passenger service and dedicated container trains).

14. In some cases, reform has entailed the separation of potentially competitive segments from the natural monopoly elements (the above and below rail operations) with a view to encourage new entry by private operators. In others, vertically integrated operations have been retained but with streamlined administrations designed to cope with a more competitive environment. Similar to the situation in other utility sectors in the developing world which grappled with poor performance in the early 1990s, railroads, too, have been struggling with similar problems: a bloated labor force resulting in low productivity, a poorly maintained infrastructure and equipment causing unreliable service, and a bleak financial situation precluding introduction of new technologies and performing routine maintenance and repair.

15. The 1990s have marked the reemergence of private railway operation in developing countries after half a century of nationalization and public sector management. Governments wanting to improve the efficiency of railway networks and reduce the burden of subsidies transferred operations and in many cases investment to the private sector. In some of these countries underinvestment by the public operator had left railways in need of rehabilitation to meet expected demand.

16. In the 15-year period from 1990 to 2004, some 85 railway projects with private participation reached financial closure in 28 developing countries with cumulative investment commitment of US$27.8 billion. From a modest beginning of one railway project in 1990 and 1991 with private participation, the number of such projects steadily increased to an average of 12 projects per year during 1996-1999 (Figure 2). Investment commitments increased from an average US$500 million per year in 1990-1992, to a peak of US$5.9 billion in 1996. Since then PSP in railway projects declined as a result of the Asian financial crisis. In 2002-2004, investments are back to the level of the early 1990s.

17. More than 57 percent of PSP in the railway sector during the 1990-2004 period was in Latin America, which was followed by East Asia and Pacific with 14 transactions or 16.5 percent of the total (Table 1). The experience with private rail contracts in Latin America and elsewhere encouraged some African and Former Soviet Union (FSU) Governments to consider private participation to improve rail service and prevent further deterioration of railway infrastructure. Among all regions, Latin America has clearly led the way in the revival of PSP in the rail sector.

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By contrast, only five projects in just three developing countries reached financial closure during the six years before 1990. Of these 3 were short-term leases for the operation of railways in Thailand that expired in 1991 and were not renewed. The other 2 were a management contract in Mexico and a BOT contract for the Ferronorte railway in Brazil.
Figure 2: Investment in Railway Sector in Asia and Developing Countries

Table 1: Number of and Investment in Railway Projects with Private Participation by Region

<table>
<thead>
<tr>
<th>Region</th>
<th>Railway Projects</th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Share of</td>
<td>Investment</td>
<td>Share of</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total (%)</td>
<td>(US$ million)</td>
<td>Total</td>
</tr>
<tr>
<td>Latin America and the Caribbean</td>
<td>49</td>
<td>57.6</td>
<td>16,228</td>
<td>58.3</td>
</tr>
<tr>
<td>Europe and Central Asia</td>
<td>7</td>
<td>8.2</td>
<td>299</td>
<td>1.1</td>
</tr>
<tr>
<td>Middle East and North Africa</td>
<td>1</td>
<td>1.2</td>
<td>182</td>
<td>0.7</td>
</tr>
<tr>
<td>Sub-Saharan Africa</td>
<td>13</td>
<td>15.3</td>
<td>519</td>
<td>1.9</td>
</tr>
<tr>
<td>East Asia and Pacific</td>
<td>14</td>
<td>16.5</td>
<td>10,530</td>
<td>37.8</td>
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<tr>
<td>South Asia</td>
<td>1</td>
<td>1.2</td>
<td>85</td>
<td>0.3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>85</strong></td>
<td><strong>100</strong></td>
<td><strong>27,843</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Source: World Bank PPI Database. Total may not add due to projects with unknown classification.

Future Outlook

18. After pioneering the industrial revolution in many countries in the 19th and early 20th centuries, and then seeing their existence threatened by stiff competition from other modes in the late 20th century, railways now have a chance to re-establish their relevance in this era of trade liberalization. Indeed, the following five features speak in favor of a greater utilization of rail transport in Asia: (i) twelve of the 30 landlocked countries of the world are located on the Asian continent with the nearest ports often several thousands of kilometers away; (ii) the distances linking the main origins and destinations, both domestically and internationally, are of a scale on which railways find their maximum competitiveness and full economic justification; (iii) the continuing surge in the volumes of goods and products being exchanged make rail transport a necessary ingredient for economic development; (iv) with development there is increasing emphasis on urbanization to improve the lives of peoples, where the railways are the only means that can provide cost effective and safe mobility to large numbers of people in the mega cities of Asia; and (v) rail is increasingly recognized as an energy-efficient, environmentally-friendly, and safe mode of transport. Railways are important to Asian economies as perhaps in no other continent.

19. State-owned railways in most countries are in deep financial trouble. DMCs are most adversely affected because their economies are caught in a vicious cycle: the Government is unable to support railway deficits, leading to the inability of the railways to maintain assets, which in turn leads to deteriorating services and results in adverse impacts on the economy. The problems have been exacerbated because with greater demand, changing technology, increasing complexity for financing the infrastructure projects and the budgetary constraints, the public sector is no longer able to discharge efficiently its role as a provider of infrastructure services.

20. Asian Governments have recognized that PSP including foreign investment is required to supplement the public sector efforts. Various reforms have been made in infrastructure sectors, and rules and procedures for investment have been liberalized in order to provide an enabling
environment conducive for PSP. The role of the Government has changed from ‘owner’ and ‘sole provider’ to that of a ‘facilitator’ and ‘regulator’ to safeguard the interests of the vulnerable sections of the community by an effective legal and institutional framework.

21. Governments have also been rightly worried about borrowing too much, because the build up of debt imposes a burden on future generations to service the debt. In some literature on the subject, it is indicated that PSP enables the Government to get around the budgetary constraints. This statement may not be wholly correct. The private sector cannot provide something for nothing. PSP sets up a future set of obligations to service the payments that are needed to honor the contracts. Nevertheless, PSP is worthwhile because: (i) private sector management can bring in experience in undertaking large scale capital projects; (ii) private sector can also provide a genuine element of risk-taking rare in the public sector; and (iii) above all - although this is rarely said - the private sector brings in people whose own money is at stake in the success of the venture.

Opportunities Ahead

22. The status as of the end of 2004 indicates that the pipeline of railway sector projects with PSP in developing countries has considerably thinned out. The fragility of the railway pipeline of projects and the decline in modal share of investment is a cause for concern, considering the large investment needs of railways in developing countries to provide logistics support for economic development and poverty reduction activities. Railway development around the world in the past two centuries was made possible by Governments which provided appropriate incentives and risk coverage to the private sector at terms that were comparatively more favorable than the alternative investment opportunities. The large size of networks that were built through PSP is testimony to the success of those efforts. It is imperative that Governments in developing countries create the necessary conditions for private participation and offer products for investment in infrastructure, services and management of operations that are attractive compared with other more attractive opportunities for investment available to the private investor.

23. Although a good starting point, the level of PSP in the railway sector in Asia since 1990 cannot be reckoned as adequate considering the needs. In the last few years PRC alone has been investing about US$7 billion to US$9 billion per year on railway development. In the next 15 years to 2020, the investment needs are estimated between US$25 billion and US$40 billion per year. Investment needs in other Asian countries for railway development, though not so large are also significant. This level of investment is clearly beyond the capability of the state-owned railway systems. Asian countries need to take new initiatives to diversify investment sources to meet the needs of their railway systems.

24. Table 2 presents a summary of PSP prospects for DMCs. The need for capacity expansion (new projects) as well as efficiency improvements under competitive market conditions is admitted throughout the region. Some railways are relatively small with little traffic. As such they are more suitable for a single concession transaction or partial divestiture through sale of stock to a strategic private partner. Some railways are large and are more suitable for geographic and functional unbundling and selective PSP through concessioning of particularly branch lines and strategic partnership in public-private joint ventures or sale of shares for larger investments. The suitability of each transaction must be carefully and objectively evaluated for fitness to the Government’s objectives and private sector interest to accept an appropriate risk-reward mix.

Considerations for Asian Countries

25. Privatization policies and implementation measures must be well thought out considering all possible impacts as well as the mitigation measures necessary. Given the vital role of railways in Asia, Asian economies are as yet not mature enough to absorb the shocks of privatization that are known to affect employment and the weaker sections of the society. It may be difficult to make changes rapidly without the risk of severe social disruption, particularly where this involves organizations divesting themselves of traditional social responsibilities that hamper their commercial potential and responsiveness to consumers.
Table 2: Prospects for and Suitability of PSP in Asian Railways

<table>
<thead>
<tr>
<th>DMC</th>
<th>Need for Capacity Expansion</th>
<th>Traffic Density</th>
<th>Employee Productivity (Rail/Employer)</th>
<th>Route Length</th>
<th>Labor Intensity (Employee/Rail)</th>
<th>Importance in GDP</th>
<th>Formation</th>
<th>Need for PSP in Funding New Projects</th>
<th>Need for PSP in Improving Existing Assets</th>
<th>Geographical Unbundling</th>
<th>Concessions</th>
<th>Partial Divestiture</th>
<th>PPP in BOCO</th>
<th>Greenfield Projects</th>
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<tr>
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<td>L</td>
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</table>

VL = Very Low; L = Low; M = Moderate; H = High; VH = Very High; U = Unknown; Lg = Large; VLg = Very Large; Sm = Small; VSm = Very Small.

Particularly for branch lines.

Source: Consultant

26. Governments can also take action prior to PSP transaction to reduce retrenchment and soften the impact on workers. These measures include freezing new recruitment and hiring as long as possible before privatization, reducing the size of the workforce through attrition as much as possible before the enterprise is transferred to private ownership, and guaranteeing the membership of workers in social security schemes or pension plans even if they lose their jobs. The social costs of extensive job losses, while far from insignificant, can be lessened if carefully handled. Well designed concessions of simple and smaller size rail networks or individual railway lines are simpler to analyze for impacts, rather than whole networks.

Concessioning

27. One approach to increasing the role of the private sector is "concessioning". Concessions involve continuing public ownership and oversight of infrastructure, but the transfer of operating responsibility and the delivery of services to the private sector. The reasons for the preference for concessioning over divestiture appear to be reluctance to loss of control over publicly-owned assets. In some countries sale of infrastructure such as track, stations, and other fixed assets require lengthy legislative action, even a Constitutional amendment. Another reason is concessions do not require a large initial investment from the private sector operator. Concessioning can enable the Government to retain ultimate control over the infrastructure while allowing the private sector to operate the railways and compete for customers in the market. Concessions require continuing Government involvement in regulating safety and monopolistic behavior, and in ensuring adherence to the pricing and service requirements of the concession agreement.

Divestiture

28. Full divestiture in a fashion similar to U.K. and New Zealand is not a popular alternative for most if not all DMCs. In many countries sale of the railway infrastructure entails a Constitutional change since the public ownership of what was, and in many cases is still, considered a strategic industry is being disposed. Furthermore, full divestiture without a thorough understanding and establishment of the Government’s regulatory oversight functions carries substantial risks of market failure with dire consequences as experienced in the U.K. In short, the process of creating the necessary legal and regulatory framework is tedious, time consuming, and prone to missteps that are costly.

29. Partial divestiture fashioned in a manner similar to Estonia where the Government maintained a minority share in the new railway company is more suitable in many nations, provided that an arms-length regulatory oversight for safety and monopolistic abuse at the minimum is established and objective monitoring of performance against predefined clear targets is implemented. An alternative to the Estonian experience where the sale was made to a strategic partner, is the PRC model of divestiture through public listing of shares in the stock exchange. For
successful implementation of this strategy, however, the transaction should be large enough to bear the legal and underwriting costs for preparation of the Prospectus, marketing to potential investors, and other preparatory obligations.

30. Given the importance of railways in the Asian economies and the large extent to which railways are intertwined in the social fabric in Asian countries, it is important that the modality of private sector participation is given full consideration with the involvement of those affected – the stakeholders. In Asia, where large regions are underdeveloped and poor, the basic issues are access and providing the means for generating incomes for the poor through direct or indirect employment. These aspects can best be fostered by the public sector.
1 INTRODUCTION

1.1 OVERVIEW AND OBJECTIVES

1. This Report is prepared by TERA International Group, Inc. (TERA) pursuant to the terms and conditions of a Consulting Services Contract dated 25 March 2005 between The World Bank Group and TERA for Best Practices for Private Sector Investment in Railways (Project). The Executing Agency (EA) under the Contract is the Asian Development Bank (ADB).

2. The objectives of the Project are to:
   ♦ Increase awareness and inform Developing Member Country (DMC) Governments and other stakeholders in Asia on how private sector participation (PSP) can increasingly be used for railways;
   ♦ Explore the opportunities and options available; and
   ♦ Prepare best practice case studies and typical examples of private-public transactions for railways.

3. To meet these objectives, this Report as well as the regional workshop organized by ADB in Manila on 14-15 June 2006 (see Appendix 20 for a summary of findings of the workshop) are focused on the following areas of interest:
   ♦ Reviewing global best practices and Asian experience on promoting PSP in railways;
   ♦ Exploring opportunities and options, and assessing general feasibility, and the prerequisites for increased PSP;
   ♦ Providing advice on the design and implementation of policy, regulatory, and institutional reforms supporting or necessary for private sector involvement in the railway sector;
   ♦ Describing the appropriate allocation of risks between the private and public sectors;
   ♦ Describing specific cases, typical transactions and examples of good public-private transactions for railways;
   ♦ Promoting and disseminating best practices to the public officials, private sector companies, and other stakeholders; and
   ♦ Building a general consensus among DMCs on the need for and scope of PSP in the railway sector.

4. In this Section 1 the types of PSP in the railway sector are described. The Section also provides a comparative description of the benefits of PSP options, which are further described in subsequent Sections. Section 2 of the Report provides an overview of PSP trends in infrastructure in developed and developing countries with emphasis on experience in railways world wide and in Asia. Section 3 provides a comparative analysis of railways in DMCs in Asia, and PSP experience in 8 countries visited by the Consultant, and lessons learned. The Section also includes a discussion on PSP prospects in the railways of DMCs. Section 4 provides a discussion on relevant issues in promoting PSP in the railway sector, including policy and planning, regulatory, and legal frameworks. Section 5 presents options for consideration in the preparation of an action plan for PSP.

1.2 PUBLIC PRIVATE PARTNERSHIPS (PPP)

5. PSP is a general term used to describe involvement of non-government entities in the investment in and/or operation of productive facilities that create an economic output, i.e. goods or services which have a market demand. The degree of involvement may range anywhere from complete absence to full presence of the private sector. In the former case, investment in and
operation of productive facilities are completely undertaken by the public sector entities operating either as government departments as or under a ministry or as a State Owned Enterprise (SOE). In this case there is no PSP. Full presence of the private sector, on the other hand, denotes investment/operation under full ownership and control of private sector enterprises. This case describes full PSP. 5

6. Numerous variations in between the two extremes exist where the public and private entities collaborate in the investment and/or operation of productive facilities. These collaborative arrangements are also referred as Public-Private Partnerships (PPP).

7. PPP constitutes a sustained collaborative effort between the public sector and private enterprises to achieve a common objective such as a railway project while they pursue their own individual interests. In a PPP each partner:
   ♦ shares in the design and operational scope of the project;
   ♦ contributes a portion of the financial, managerial, and technical resources needed to execute and operate the project in accordance with each partner's comparative advantage; and
   ♦ partially shoulders the risks associated with the project and obtains the benefits that the project creates.

8. Thus PPP entails a joint alliance between the public and private sectors beyond the traditional contractual relationship. PPP brings the best of each partner's competencies to optimize the achievement of the common objective. Given the mid- or long-term nature of that objective and the transformation generated by the shift in roles, the joint alliance needs to be sustained over a long period of time. The longer the nature of the objective, the larger are the uncertainties associated with the project and the more critical and relevant is the risk-reward distribution among the partners.

9. An increasing number of governments are seeking to encourage private investment in infrastructure and stimulate economic activity by privatizing their national rail systems through sale or by concession to qualified operators. In some situations, particularly in developing countries, the participation of the private sector in a PPP is still viewed as a test of involvement on a stand alone basis. It may be mentioned that no PPP can be successful without complete and unqualified participation, performance of respective obligations, and cooperation by both public and private entities. This is important for fostering a win-win situation for both the private and public entities involved in the collaborative effort. This will be finally reflected as return on the investment for the private partner, and a net benefit to the society and the economy as a whole through the achievement of specific rail transport-related goals, such as the improvement of accessibility to low-cost transport services or the reduction of transport costs. These interests are channeled through the definition of risks. Thus, a clear assignment of risks and rewards is a precondition of the successful implementation of a PPP initiative.

10. The history of private participation in infrastructure development is quite old. PSP in the railway sector dates back to the 19th Century when the private companies built the American railroads under incentives provided by the U.S. Federal government such as land grants and mining rights for below ground mineral resources. Similar PSP was also witnessed in many European countries. The situation in many countries in Africa and Asia was not very different either. For example, railways in the Indian subcontinent were first introduced in 1853 through private initiatives. All railways built in sub-Saharan Africa during the Colonial era in the second half of the 19th and early 20th Century were financed by the private sector to bring the raw materials and minerals from inland areas to the ports of exit for shipment to industrial centers in Europe and North America. In China the initial development of railways was largely through private initiatives with incentives from

5 An alternative term commonly used interchangeably with PSP is Public-Private Partnership (PPP). A partnership between a public entity and a private company exists when the two join resources to produce goods or services which have a market demand. Therefore, at the two extremes of PSP (none and full), there is no PPP. In other words, PPP as a noun, denotes some presence of both the public and private sector in a partnership.
the government in the form of concessions. However, at later dates, owing to various reasons governments nationalized many of the railway transport systems developed by the private sector.6

11. The trend of PSP in infrastructure development that began in a few countries in the 1970s and 1980s has gradually spread to other nations. Developing countries have been at the forefront of this trend and are pioneering innovative approaches to provide infrastructure services by the private sector. Now almost all these countries have some private activity in infrastructure development. Many governments in the Asia-Pacific region have spelled out their policy and regulatory frameworks. The private sector and governments have been working together in projects that are materially improving the provision of infrastructure and public services. In some countries, governments have gone further, beyond their usual tasks of policy formulation, streamlining of administrative processes and creating a supportive legal environment. They have established specialized units and devised suitable instruments to provide active support for private sector activities in infrastructure.

1.3 PRIVATE PARTICIPATION IN INFRASTRUCTURE

12. Developing nations face important structural challenges that must be addressed if they are to maintain sustained economic growth, improve living standards, and continue their pursuit of a greater role in the global economy. Two challenges broadly confronting the developing nations in this respect are meeting the massive demand for infrastructure and adapting the role of the state to the changing economic environment. Unless these challenges are met, economic growth cannot be sustained for long.

13. Continued growth in demand for services, along with changing technology and regulatory approaches, requires a shift from the public to the private sector in infrastructure ownership and service delivery.7 This does not mean, however, eventual elimination of the public sector in financing infrastructure. “The key issue is not whether financing should be public or private, but how the public and private sector share the risks and rewards in a way that works for both sides.”8

14. Governments worldwide have increasingly turned to the private sector for additional resources, increased efficiency, and sustainable development in many fields, including transport infrastructure and services. Following trends in other fields, private sector involvement in the transport sector has now become quite common in many countries in the Asia-Pacific region. To facilitate private involvement, sector reforms have been initiated, albeit at a slow pace in many DMCs, and many governments are also considering various other steps. PSP is being increasingly sought in investment, management and expansion of public transport systems, highways, urban rail systems and new port and airport facilities are increasingly being built following various models of PSP.

15. In a typical private participation in infrastructure (PPI)9 the private sector assumes operating risk during the operating period or assumes development and operating risk during the contract period. In addition, the operator must consist of one or more corporate entities with significant private equity participation that are separate from any government agency. PPP is the umbrella name given to a range of initiatives which involve the private sector in the development and/or operation of public services.

16. PPI is a developing subject and it is indeed difficult to outline the numerous possibilities of PPP. There are many forms and degrees of PPI investment and provision of operations and services in the railway sector. These vary by structure and by scope within each form. Further, these may depend on the country's political situation, status of economic development, socioeconomic conditions, competitive environment, legal and regulatory environment, and other country and railway specific factors.

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7 The World Bank; **Choices for Efficient Private Provision of Infrastructure in East Asia**, 1997, p. v.
9 PPI is focused on private sector investment in infrastructure, whereas PSP is a general term encompassing private sector involvement in all economic sectors, including infrastructure. As such, PPI is a subset of PSP.
17. No two railway systems are alike. Railway operations and services vary from country to country depending on the demand for services as well as the development of other transport modes. As for example, railway services range from one percent passenger traffic (in the U.S.) to over 90 percent passenger traffic (in several Asian countries, including Japan, Philippines, Indonesia, and Sri Lanka). Further, the passenger services range from having insignificant suburban service (as in China) to as much as 90 percent (as in the Philippines). Because of the widely varying demands for railway services and the divergence in operations, the need for typical and specific solutions for PPP is highlighted.

1.4 TYPES OF PSP

18. There are many varieties and degrees of PSP in railway infrastructure investment and operations. And the conditions and approach used in each country is unique, reflecting local circumstances. Figure 1.1 depicts a simplified range of PSP showing the main varieties and the extent of participation of the private sector growing from low at left to high at right.

![Figure 1.1: Extent of Participation of the Private Sector](image)

19. Despite the wide variety of PSP, however, similarities, particularly in form, exist. Figure 1.2 presents a more detailed description of the different degrees of PSP ranging from full public sector ownership and operation to complete private sector investment and operation. The figure distinguishes the public versus private ownership of assets at the top and operations at the bottom as measures to depict the full spectrum of PSP. Obviously, PSP in operations does not necessarily require ownership of assets. Also in many instances PSP can be in partnership with the public sector. As shown in the figure, such PPP arrangements exist in a variety of forms in the railway sector from leasing non-core assets to jointly Build-Own-Operate schemes. Appendix 1 provides a detailed description of each PSP type depicted in Figure 1.2 with specific examples from around the world.

![Figure 1.2: Privatization Continuum in Railways](image)
1.5 POTENTIAL BENEFITS OF PSP

The benefits of various PSP options are summarized in Table 1.1. The list is not exhaustive and the actual situation may depend on various factors, including the stage of economic development; socioeconomic conditions, cultural and political situations; state of development of alternative transport modes; competitive environment; and the regulatory environment. These are but some of the factors, and there may be many more specific to the railway system and the country, and the stage of development of the private sector.

Table 1.1: Potential Benefits of Various PSP Options

<table>
<thead>
<tr>
<th>Service Contracts</th>
<th>Management Contracts</th>
<th>Lease</th>
<th>Concession</th>
<th>BOT/BOOT/BTO</th>
<th>Divestiture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Promotes competition during bidding for service contracts</td>
<td>Can improve service quality</td>
<td>Can increase efficiency of asset management and utilization</td>
<td>Private sector management of operations</td>
<td>Full responsibility for operations, capital raising and investment assumed by private sector</td>
<td>Full responsibility for operations, capital raising and investment assumed by private sector</td>
</tr>
<tr>
<td>Government’s risk is relatively low</td>
<td>Reduced risk to government</td>
<td>Reduced government commercial risk. Guaranteed collection of lease revenue</td>
<td>Relieves government of need to fund investments</td>
<td>Potentially large improvements in operating efficiency of bulk assets</td>
<td>Full private sector incentives in bulk supply</td>
</tr>
<tr>
<td>Contracts of short or long duration with easy retendering if contractor fails</td>
<td>Potential first step to concession contract</td>
<td>Management responsibility and commercial risk transferred to private sector</td>
<td>Full responsibility for operations, capital raising and investment goes to private sector</td>
<td>Full private sector incentives in bulk supply</td>
<td>Attractive to private financial institutions</td>
</tr>
<tr>
<td>Well tested easy-to-implement contractual terms</td>
<td>Potential for setting performance standards with incentives and penalties</td>
<td>Incentives for contractor to minimize costs, provide reliable services and maximize revenue collection</td>
<td>Encourages potentially large improvements in operating efficiency</td>
<td>Attractive to private financial institutions</td>
<td>Addresses any funding shortfall</td>
</tr>
<tr>
<td>Potential starting point for PSP</td>
<td>Allows introduction of private sector management skills. Limited commercial risk</td>
<td>Increased government revenue</td>
<td>Full private sector incentives</td>
<td>Mobilizes private finance for new investments</td>
<td>Could be successful where there is good track record of private sector ownership</td>
</tr>
<tr>
<td>Can increase focus on core business</td>
<td>Can revert to in-house management or contract may be retendered if problems arise</td>
<td>Potential to encourage competition in bidding</td>
<td>Attractive to private financial institutions</td>
<td>Addresses future funding shortfalls</td>
<td>Mobilizes private finance for key investments</td>
</tr>
<tr>
<td>Potential for efficiency gains in the area covered by the contract</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
2 PSP TRENDS IN RAILWAYS

2.1 BACKGROUND
21. This section summarizes the recent growth in PSP in the railway sector in developing countries. It also provides an overview of PSP experience in developed nations. Appendix 2 includes a more complete discussion and analysis of PSP trends in infrastructure (energy, telecommunications, transport, and water sectors) from 1990 to 2004 based on data reported in the World Bank’s PPI Project Database.10 A detailed list of PPI projects included in the World Bank’s Database in the transport sector in Asia is provided in Appendix 3.

2.2 PRIVATE PARTICIPATION IN THE RAILWAY SECTOR – DEVELOPING NATIONS
22. With total investment of $369.6 billion and $270.9 billion, respectively, telecommunications and energy sectors dominated PSP in infrastructure from 1990 to 2004. Transport sector is third with $128.4 billion (16 percent of total), followed by water and sewer projects ($41.4 billion or 5 percent). Within the transport sector PPI investment in the railways amounted to $27.8 billion, which constitutes 22 percent of transport sector projects or only 3.4 percent of all projects. There are varied reasons which explain why railway PPI projects are fewer than other transport projects or projects in other sectors. Geographic and functional unbundling in the railway sector is a complicated task since joint facilities are used for different types of service (passenger, freight, container) and the network is spatially interconnected, making separation difficult. Separation of regulation from operations to an extent which satisfies private sector concerns is slow and in some countries very difficult. The speed with which technological improvements are introduced is slower than high-tech based telecommunications and other industries in which private sector involvement is a pre-condition for successful introduction of innovation to maintain competitiveness. Scale of operations and average size of investment is higher than most other industries, thus limiting the number of potential private sector partners. Despite these factors limiting PSP in railways, the sector has been actively engaged in encouraging private sector involvement with core operations in a variety of forms.

23. The 1990s have marked the reemergence of private railway operation in developing countries after half a century of nationalization and public sector management. Governments wanting to improve the efficiency of railway networks and reduce the burden of subsidies transferred operations and in many cases investment to the private sector. In some of these countries underinvestment by the public operator had left railways in need of rehabilitation to meet expected demand.

24. In 1990-2004, some 85 railway projects with private participation reached financial closure in 28 developing countries with cumulative investment commitment of US$27.8 billion (Table 2.1). From a modest beginning of one railway project in 1990 and 1991 with private participation, the number of such projects steadily increased to an average of 12 projects per year during 1996-1999.11 Investment commitments increased from an average US$500 million per year in 1990-1992, to a peak of US$5.9 billion in 1996. Since then PSP in railway projects declined. In 2002-2004, investments are back to the level of the early 1990s (Figure 2.1).

10 http://ppi.worldbank.org/
11 By contrast, only five projects in just three developing countries reached financial closure during the six years before 1990. Of these 3 were short-term leases for the operation of railways in Thailand that expired in 1991 and were not renewed. The other 2 were a management contract in Mexico and a BOT contract for the Ferronorte railway in Brazil.
### Table 2.1: Investment in Railway Projects with Private Participation by Year, 1990-2004 (US$ million)

<table>
<thead>
<tr>
<th>Year</th>
<th>Rail Projects in Developing Countries</th>
<th>Rail Projects in Asian Countries</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Investment</td>
</tr>
<tr>
<td>1990</td>
<td>1</td>
<td>632</td>
</tr>
<tr>
<td>1991</td>
<td>1</td>
<td>214</td>
</tr>
<tr>
<td>1992</td>
<td>3</td>
<td>815</td>
</tr>
<tr>
<td>1993</td>
<td>3</td>
<td>1,156</td>
</tr>
<tr>
<td>1994</td>
<td>4</td>
<td>577</td>
</tr>
<tr>
<td>1995</td>
<td>4</td>
<td>3,104</td>
</tr>
<tr>
<td>1996</td>
<td>12</td>
<td>5,936</td>
</tr>
<tr>
<td>1997</td>
<td>13</td>
<td>4,599</td>
</tr>
<tr>
<td>1998</td>
<td>11</td>
<td>3,281</td>
</tr>
<tr>
<td>1999</td>
<td>12</td>
<td>2,651</td>
</tr>
<tr>
<td>2000</td>
<td>9</td>
<td>1,144</td>
</tr>
<tr>
<td>2001</td>
<td>6</td>
<td>2,517</td>
</tr>
<tr>
<td>2002</td>
<td>2</td>
<td>190</td>
</tr>
<tr>
<td>2003</td>
<td>2</td>
<td>807</td>
</tr>
<tr>
<td>2004</td>
<td>3</td>
<td>220.7</td>
</tr>
<tr>
<td>Total</td>
<td>85</td>
<td>27,843</td>
</tr>
</tbody>
</table>

Source: World Bank PPI Database. Total may not add due to projects with unknown classification.

![Figure 2.1: Investment in Railway Sector in Asia and Developing Countries](image)

**2.2.1 Investment in Railway Projects by PPI Type**

In the railway sector, concessions were the most dominant form of private participation with 52 projects or 61 percent of the total reaching financial closure, representing investment commitment of US$16.4 billion or 59 percent of the sector total (Table 2.2). Concessions were for managing and operating existing railways and generally involved major capital expenditure by the private operators. The private entity would usually take over the management of existing facilities for a given period under a concession contract while also assuming significant investment risk. Concession contracts allow governments to increase efficiency and investment while retaining ownership of the rail infrastructure. In the rail sector concessions leave ownership of fixed assets with the public sector and transfer operating risk and responsibility to the private sector.
Table 2.2: Investment in Railway Projects by Type of Private Participation in Developing Countries and Asia, 1990-2004 (US$ million)

<table>
<thead>
<tr>
<th>Type</th>
<th>Rail Projects in Developing Countries</th>
<th>Rail Projects in Asian Countries</th>
<th>Asian Share of Developing Countries</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Investment (Share %)</td>
<td>Number</td>
</tr>
<tr>
<td>Concessions</td>
<td>52</td>
<td>16,446 (59%)</td>
<td>0</td>
</tr>
<tr>
<td>Divestiture</td>
<td>10</td>
<td>1,060 (3.8%)</td>
<td>2</td>
</tr>
<tr>
<td>Greenfield</td>
<td>15</td>
<td>10,337 (37.2%)</td>
<td>12</td>
</tr>
<tr>
<td>Management and Lease Contract</td>
<td>8</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>85</td>
<td>27,848 (100%)</td>
<td>15</td>
</tr>
</tbody>
</table>

Source: World Bank PPI Database. Total may not add due to projects with unknown classification.

26. Among regions there is significant variation in the type of private participation preferred in the railway sector (Table 2.3). In the LAC region the dominant form of private participation was concessions. Of the 49 railway projects in LAC that reached financial closure in 1990-2004, some 43 or 88 percent were concessions representing US$15.8 billion in investment commitments or 98 percent of the PSP investment in railways in the region.

Table 2.3: Number of Railway Projects and Investment in Developing Countries by Region and Type of Participation (number and US$ million)

<table>
<thead>
<tr>
<th>Region (Number of Countries)</th>
<th>Con</th>
<th>Div</th>
<th>Gre</th>
<th>Man</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Latin America and the Caribbean (10)</td>
<td>No.</td>
<td>43</td>
<td>4</td>
<td>1</td>
<td>49</td>
</tr>
<tr>
<td>Inv.</td>
<td>15,835</td>
<td>90</td>
<td>303</td>
<td>0</td>
<td>16,228</td>
</tr>
<tr>
<td>Europe and Central Asia (2)</td>
<td>No.</td>
<td>0</td>
<td>4</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>Inv.</td>
<td>0</td>
<td>299</td>
<td>0</td>
<td>0</td>
<td>299</td>
</tr>
<tr>
<td>Middle East and North America (1)</td>
<td>No.</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Inv.</td>
<td>182</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>182</td>
</tr>
<tr>
<td>Sub-Saharan Africa (11)</td>
<td>No.</td>
<td>8</td>
<td>0</td>
<td>2</td>
<td>12</td>
</tr>
<tr>
<td>Inv.</td>
<td>429</td>
<td>0</td>
<td>90</td>
<td>0</td>
<td>519</td>
</tr>
<tr>
<td>East Asia and Pacific (3)</td>
<td>No.</td>
<td>0</td>
<td>2</td>
<td>11</td>
<td>14</td>
</tr>
<tr>
<td>Inv.</td>
<td>0</td>
<td>670</td>
<td>9,859</td>
<td>0</td>
<td>10,530</td>
</tr>
<tr>
<td>South Asia (1)</td>
<td>No.</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Inv.</td>
<td>0</td>
<td>85</td>
<td>0</td>
<td>0</td>
<td>85</td>
</tr>
<tr>
<td>Total (28)</td>
<td>No.</td>
<td>52</td>
<td>10</td>
<td>15</td>
<td>8</td>
</tr>
<tr>
<td>Inv.</td>
<td>16,446</td>
<td>1,060</td>
<td>10,337</td>
<td>0</td>
<td>27,848</td>
</tr>
</tbody>
</table>

Source: World Bank PPI Database. Con=concession, Div=divestiture, Gre=Greenfield, Man=management and lease contracts; No.= number, Inv.=investment (US$ million). Total may not add due to projects with unknown classification.

27. Numbering 15, greenfield railway projects run a distant second to concessions worldwide. Each greenfield project involved significant investment. The total investment in greenfield railway projects was US$10.3 billion. In the EAP region greenfield projects were more predominant comprising 11 of the 14 projects that reached financial closure. Together, these projects represented 93.6 percent of the investment commitments on railway projects with private participation in the EAP region.

28. A majority of the greenfield projects were for metropolitan (urban) light or “heavy” rail systems rather than for long-distance freight lines. The BOT contracts in Asia account for half the passenger and fixed asset projects. Private participation in Asia typically focused on increasing capacity in response to rapid urbanization and growing demand for infrastructure services rather than improving the efficiency of existing public operators as in Latin America.
29. Divestitures accounted for 10 railway projects with investment commitments of US$1.1 billion. Divestitures include full and partial privatizations aimed at either transferring operations to a strategic investor (as was the case in Estonia and Chile) or raising revenue (as in China).

30. There were 8 management and lease contracts, 3 of which were in Europe; 2 each in LAC and SSA, and 1 in EAP.

2.2.2 Segmentation in Railway PSP

31. During 1990-2004, some 15 rail projects with private participation reached financial closure in four Asian countries (including China, Malaysia, and Thailand in the EAP region and India in the SA region). By comparison, during the same period 188 toll road projects in ten Asian countries reached financial closure, representing investment commitment of US$24.5 billion. China clearly was the lead country in terms of both number of projects (107) and investment commitments (US$14.4 billion). The other developing countries with large investment commitments were Malaysia with 23 road projects and US$16.2 billion in investment, India – 35 road projects and US$0.96 billion in investment commitment, and Philippines with 3 road projects and US$1.3 billion in investment.

32. Within the transport sector, railroads present the most diverse product types for private participation in investment. The 85 rail projects implemented during 1990-2004 in all countries are categorized into 10 business segments. The number of projects and investment by segment are summarized in Table 2.4.

Table 2.4: Number of Railway Projects and Investment with PSP by Segment, 1990-2004

<table>
<thead>
<tr>
<th>Railway Segment</th>
<th>Number</th>
<th>Investment (US$ millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Government Assets</td>
</tr>
<tr>
<td>1. Fixed Assets (FA)</td>
<td>7 (8.2%)</td>
<td>12</td>
</tr>
<tr>
<td>2. FA and Freight</td>
<td>28 (32.9%)</td>
<td>1,670</td>
</tr>
<tr>
<td>3. FA and Intercity Passenger</td>
<td>2 (2.4%)</td>
<td>1</td>
</tr>
<tr>
<td>4. FA and Urban Passenger</td>
<td>13 (15.3%)</td>
<td>564</td>
</tr>
<tr>
<td>5. FA, Freight and Intercity Passenger</td>
<td>13 (15.3%)</td>
<td>223</td>
</tr>
<tr>
<td>6. Freight</td>
<td>9 (10.6%)</td>
<td>2,540</td>
</tr>
<tr>
<td>7. Freight and Intercity Passenger</td>
<td>4 (4.7%)</td>
<td>575</td>
</tr>
<tr>
<td>8. Freight and Urban Passenger</td>
<td>2 (2.4%)</td>
<td>0</td>
</tr>
<tr>
<td>9. Intercity Passenger</td>
<td>3 (3.5%)</td>
<td>1</td>
</tr>
<tr>
<td>10. Urban Passenger</td>
<td>4 (4.7%)</td>
<td>262</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>85</strong></td>
<td><strong>5,848 (21%)</strong></td>
</tr>
</tbody>
</table>

Source: World Bank PPI Database. * FA = fixed assets. Total may not add due to projects with unknown classification.

33. Railroad projects involving fixed assets and freight were the most frequent segment with 28 projects, or 33 percent, involving total investment of US$9.35 billion. These include 22 concessions, of which 19 were in the LAC region, including 7 in Brazil, 5 in Argentina, and 2 each in Columbia and Mexico (Appendix 3).

34. The second most favored segment was fixed assets and urban passenger with 13 projects and US$8.8 billion in investment. These include 7 concessions in Latin America (5 in Argentina, 1 in Brazil and 1 in Chile), with investment of US$4.503 million. The remaining 6 were greenfield projects in East Asia (4 in Malaysia and 2 in Thailand), with investment of US$4,329 million.
For the fixed assets, freight and intercity passenger segment there were also 13 projects with total investment of US$2,359 million. These include 6 concessions in Latin America (3 in Brazil, 2 in Bolivia, and 1 in Peru), with total investment of US$1,946 million.

The freight segment had 9 projects, including 5 concessions (with investment of US$3,486 million), 1 divestiture, and 1 management and lease contract, all in Latin America and the Caribbean region.

Of all railroad projects with private investment those involving freight, either as stand alone or in combination with fixed assets and/or intercity passenger and/or urban passenger accounted for the largest number of projects, numbering 75 or 91 percent of the total. The historically dominant use of rail for freight transport partly explains the larger number of freight than passenger projects awarded to the private sector.

The experience with private participation in railroad infrastructure in developing countries indicates that the freight segment is the most attractive. This conclusion is also supported by experience in developed countries, notably in the United States and Canada where freight railroads are owned and operated by the private sector.

In most concessions the government transferred the management of fixed assets and rolling stock to the private sector as a vertically integrated utility, introducing competition at the bidding stage. The standard model for private participation in railways in Latin America involves separating passenger and freight service, leaving long distance passenger services with a public operator. The unbundling of the national railways in LAC, particularly in Argentina, Brazil, and Mexico considerably increased the number of transactions in LAC.

The status as of the end of 2004 indicates that the pipeline of railway sector projects with PSP in developing countries has considerably thinned out. During the peak years of private participation in 1995-1999, an average of 288 infrastructure projects, with an average investment of US$88.6 billion were implemented each year. In the same period, an average of 12 railway projects (or 4.2 percent of all infrastructure projects) with average annual investment commitment of US$4.1 billion (or 4.6 percent of the total) reached financial closure. In comparison, in 2002-2004, the number of railway projects reaching financial closure declined to 2 per year (or 1.6 percent of all infrastructure projects) representing average investment commitment of about US$500 million (or 0.9 percent).

The fragility of the railway pipeline of PPI projects and the decline in modal share of investment is indeed a cause for concern, considering the large investment needs of railways in developing countries to provide logistics support for economic development and poverty reduction activities. Railway development around the world in the past two centuries was made possible by governments which provided appropriate incentives and risk coverage to the private sector at terms that were comparatively more favorable than the alternative investment opportunities. The large size of networks that were built through PSP is testimony to the success of those efforts. It is imperative that governments in developing countries create the necessary conditions for private participation and offer products for investment in infrastructure, services and management of operations that are attractive compared with other more attractive opportunities for investment available to the private investor.

**2.2.3 Railway Projects with PPI by Region and Country**

The following regional review of private participation in the rail sector illustrates the worldwide trend. Since private operators took over freight transport on Argentina’s Rosario to Bahia Blanca railway line in 1991, private participation in the railway sector has grown significantly. By the end of 2004 the governments of 28 developing countries worldwide had involved the private sector in varying degrees of responsibility for new construction, rehabilitation, and operation of railways. In these countries private companies entered into a total of 85 new contracts for the operation and management of the railways during the 15-year period from 1991 to 2004.

For these 85 railway projects representing investment commitments of more than US$27.8 billion, the private sector was involved for rehabilitating existing infrastructure or building new
systems and operating the facilities in accordance with the terms of the agreements. The investment in each project depends primarily on the type of contract, but also on the state of existing infrastructure and expected traffic volumes.

44. The experience with private rail contracts in Latin America and elsewhere encouraged some African and FSU governments to consider private participation to improve rail service and prevent further deterioration of railway infrastructure. Among all regions, the LAC region has clearly led the way in the revival of PSP in the rail sector. In 10 countries of the LAC region, a total of 49 railway projects (57 percent of the sector total) involving private participation reached financial closure. These projects represented investment commitments of US$16.2 billion or 58.3 percent of the total (Table 2.5 and Figure 2.2).

Table 2.5: Number of and Investment in Railway Projects with Private Participation by Region

<table>
<thead>
<tr>
<th>Region</th>
<th>Number</th>
<th>Share of Total</th>
<th>Investment (US$ million)</th>
<th>Share of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Latin America and the Caribbean</td>
<td>49</td>
<td>57.6%</td>
<td>16,228</td>
<td>58.3%</td>
</tr>
<tr>
<td>Europe and Central Asia</td>
<td>7</td>
<td>8.2%</td>
<td>299</td>
<td>1.1%</td>
</tr>
<tr>
<td>Middle East and North Africa</td>
<td>1</td>
<td>1.2%</td>
<td>182</td>
<td>0.7%</td>
</tr>
<tr>
<td>Sub-Saharan Africa</td>
<td>13</td>
<td>15.3%</td>
<td>519</td>
<td>1.9%</td>
</tr>
<tr>
<td>East Asia and Pacific</td>
<td>14</td>
<td>16.5%</td>
<td>10,530</td>
<td>37.8%</td>
</tr>
<tr>
<td>South Asia</td>
<td>1</td>
<td>1.2%</td>
<td>85</td>
<td>0.3%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>85</td>
<td><strong>100%</strong></td>
<td><strong>27,843</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Source: World Bank PPI Database. Total may not add due to projects with unknown classification.

12 The amount of total investment does not necessarily mean only private investment, but gives the total investment on the projects from all sources.
45. In the EAP region, 14 railway projects reached financial closure with investment of US$10.5 billion or 38 percent of the sector total. The LAC and EAP regions taken together accounted for 96.1 percent of total investment in the sector in developing countries.

46. Within each region only a small number of countries accounted for most of the investment in railway projects with private participation. The 6 countries attracting the most investment in projects with private participation accounted for 57.6 percent of the total number of railway projects and 93 percent of investment (Table 2.6).

<table>
<thead>
<tr>
<th>Country</th>
<th>Number of Projects</th>
<th>Investment (US$ million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brazil</td>
<td>14</td>
<td>6,122</td>
</tr>
<tr>
<td>Malaysia</td>
<td>8</td>
<td>5,687</td>
</tr>
<tr>
<td>Argentina</td>
<td>15</td>
<td>5,334</td>
</tr>
<tr>
<td>Mexico</td>
<td>6</td>
<td>3,929</td>
</tr>
<tr>
<td>Thailand</td>
<td>3</td>
<td>2,772</td>
</tr>
<tr>
<td>China</td>
<td>3</td>
<td>2,070</td>
</tr>
<tr>
<td>Total (Share of 6 Countries)</td>
<td>49 (57.6%)</td>
<td>25,914 (93%)</td>
</tr>
<tr>
<td>Total for All Developing Countries</td>
<td>85 (100%)</td>
<td>27,843 (100%)</td>
</tr>
</tbody>
</table>

Source: World Bank PPI Database. Total may not add due to projects with unknown classification.

2.2.3.1 Latin America and the Caribbean

47. One reason for Latin America’s dominance in private railway projects is the region’s positive experience with private participation in other infrastructure sectors. Many Latin American governments have gained experience in concessioning through private participation in electricity and telecommunications. PPI was a key ingredient of the policy package for structural adjustment in Latin America advocated in the 1980s by the U.S., the IMF, the World Bank (the Washington Consensus), and other international organizations. The basic idea behind large scale divestitures of SOEs in the 1980s and 1990s was to raise microeconomic efficiency at the same time of macroeconomic reforms.13

48. Most railway concessions in Latin America have been awarded to consortia of domestic companies, often in partnership with one experienced international railway operator, generally from the U.S.

49. Argentina. Argentina started moving toward private contracting in the late 1980s. It awarded contracts in the early 1990s, with concessions for 5 freight railways reaching financial closure in 1991–93. The freight packages were created for concessioning on 30-year terms, with an optional 10-year extension. The concessionnaires have exclusive use of the tracks, although they must grant access to passenger operations in return for a compensatory track usage fee. These routes have achieved major gains in productivity and revenue.

50. Encouraged by the success of freight concessions, five more concessions covering fixed assets and urban passenger transport were awarded for the operation of suburban railway networks and the Buenos Aires metro. In the suburban networks also productivity increased and subsidy costs have fallen.

51. The freight and passenger concessions in Argentina have faced challenges despite their general success in improving productive efficiency. Initial demand projections proved too optimistic, and sponsors have been unable to fulfill their investment commitments. Argentina’s experience highlights the importance of renegotiation or other adjustment mechanisms that allow concessionnaires to remain in business without the government losing credibility.

52. The productive efficiency of the freight railway networks that are being operated by the private consortia have increased. Urban railways have also shown improved performance and

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13 Jorge Carrera, Daniele Checchi, Massimo Florio; Privatization Discontent and its Determinants: Evidence from Latin America; World Bank, June 2004
reduced levels of subsidy. However, some news reports have been critical of the private management of the passenger and freight railway services. Because of cherry picking of the routes for making the freight concessions attractive for the private sector, the network of railway lines under effective operation has shrunk in almost all countries since privatization. In Argentina, parts of the network excluded from the private concessions were either passed on to the regional governments or were abandoned. In this manner the network is reported to have shrunk by more than a third from the pre-privatization size of 35,000 km, and the number of employees reduced from 95,000 to about 15,000. A brief note on the privatization of railways in Argentina is presented in Appendix 5.

53. In the closing years of the nineties and early 2000s there has been social unrest in some Latin American cities triggered by privatization of utilities, which shows that privatization is not just a matter of attaining productive efficiency, and it has an important distributive (allocative) dimension. These events impacted the ability of Latin American governments to continue privatization of infrastructure and utilities and in recent years there has been a loss of momentum. Currently, privatization is increasingly unpopular in Latin America, as several surveys have shown. A brief note based on a recently published research report on this matter is presented in Appendix 6.

54. **Brazil.** Concessioning of railroad operations started later in Brazil than in Argentina. In 1996, the Brazilian government using the same approach as in Argentina, awarded freight concessions for six exclusive regional railway systems because of the geographic situation, gauge differences and traffic characteristics of each line. Another eight concessions were awarded in 1997 (3), 1998 (3) and 2000 (2) for regional railway networks including freight operation, intercity operation and Rio de Janeiro and Salvador metros. A note on the privatization of railways in Brazil is in Appendix 7.

55. **Chile.** The southern part of the railway network in Chile was partly divested in 1995 to Ferrocarril del Pacifico (FEPASA). FEPASA is owned by the Chilean State Railroad Company Empresa Ferrocarriles del Estado (EFE), which retains 49 percent of the shares, and a consortium Transportes del Pacifico S.A. (TdP) with 51 percent. FEPASA has been granted the right to operate the freight services over EFE’s network. In 1997, IFC provided a loan of US$13.8 million and syndication of another US$6 million to help FEPASA invest in rolling stock to improve operational efficiency and offer reliable, efficient and competitively priced transportation for bulk goods.

56. In 1997, the 2,200 km north-south railroad in Northern Chile (Ferronor), extending from LaCalera near Santiago to its northern terminus at Iquique, approximately 192 km south of Peru, was fully divested to a consortium comprising U.S.-based RailAmerica (55 percent stake) and its Chilean partner Andres Pirozzli y Cia, Ltda. In 2004, RailAmerica sold its 55 percent stake in Ferronor (purchased initially for $6.8 million) to its affiliate for US$18.1 million. The Chilean government awarded, in 1997, a management contract for freight operations on Ferrocarril de Arica a La Paz.

57. **Mexico.** The railways were concessioned in a way that maximized the opportunity for cross border traffic since Mexico is a member of North American Free Trade Area (NAFTA). Six concessions were contracted for freight railroads. A brief presentation on the privatization of railroads in Mexico is presented in Appendix 4.

58. Railway concessions have also been awarded in Bolivia, Colombia, Guatemala, Panama, and Peru. As an exception, Bolivia awarded leases for the operation of both freight and passenger services on each of the country’s two networks. In Jamaica the private sector participated in the partial divestiture of fixed assets and intercity passenger services on one of the main railway routes.

2.2.3.2 **Europe and Central Asia**

59. In the ECA region, the private sector has participated in the railway sector in two countries - the Czech Republic and Estonia. In the Czech Republic, three management and lease projects (two in 1997, and one in 1998) and one divestiture (1998) reached financial closure. In Estonia, three divestiture projects reached financial closure in 1999-2001.

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14 Ibid.
15 RailAmerica, based in Boca Raton, Florida, is the world’s largest owner and operator of short line and regional railroads. In 2004 it operated a diverse network of 49 rail properties and 20,700 km of track.
60. In 1997 the Czech government awarded regional railway leases to private operators willing to maintain local freight and urban passenger services. Since then it has also privatized two previously leased regional railway operations, with the goal to transfer loss-making routes to private operators. The Czech contracts have left ownership of fixed assets with the government, but transferred all rolling stock—freight and passenger—to a private operator.

61. **Estonia.** In Estonia, three projects reached financial closure, one each in 1999, 2000, and 2001, representing investment commitments of US$299 million. Two-thirds of the former state-owned and operated railway system has been divested to the private sector. Baltic Rail Services (BRS), an associate company of US-based Rail World, Inc. and other investors purchased for US$58 million a 66 percent interest in Eesti Raudtee (ER), an integrated rail infrastructure and freight operator. The Estonian government continues to own the remaining 34 percent.

62. Privatization of the Estonian railways has transformed from a single operating division of the former Soviet railway system to one of the most successful and profitable railways in Europe. The simplicity of the network, the key role of the Ports of Tallinn and Muuga for Russia's foreign trade, high levels of transit traffic, and Russian resources boom were some factors contributing to the railways’ success. This was made possible through the government’s initiative and clear-sighted policy of first commercializing the railways, separating out the loss-making passenger services, and privatizing the network.

63. Although the financial performance of ER was already improving before privatization, the impact of private ownership and management has been considerable. The Company has completely replaced the old Soviet era locomotive fleet with reconditioned U.S. locomotives. Virtually all indicators of capacity, staff, and equipment utilization have improved significantly, as has safety. The company had an operating ratio in FY2003 of around 65 percent, easily the best of any national railway organization in Europe. A note on the privatization of the Estonian Railways is presented in Appendix 8.

64. In late 2005 the Government enacted new rules which obligate ER to allow open access up to 100% of its capacity. The majority owner BRS raised strong objections to this rule which it considers as a serious infringement on its ability to run its own freight trains. BRS further claims that most operators requesting access to track are ER’s customers, thus by providing access ER loses its own freight business.

65. What was once applauded as a successful divestiture of the two-thirds of BR to a private sector consortium (BRS) is now fast becoming a failure. In June 2005 a government minister announced that the state would consider buying back the rail infrastructure from the privately controlled company, while the CEO of ER accused the same minister of trying to renationalize the enterprise. A month later, a top government official indicated disappointment with how BRS has been meeting its post-privatization commitments. Ganiger Invest of Estonia, one of the shareholders of BRS, then announced its willingness to sell its share in BR. “One of the most acerbic public-private confrontations in recent Baltic memory erupted in the waning days of December [2006] as the government and the private owners of Eesti Raudtee (Estonian Railway) exchanged bitter words, with the Cabinet going so far as to slap the company with a 1 million euro penalty [for violation of post-privatization commitments].” The company’s future ownership is still undecided and the parties expressed an interest to negotiate rather than litigate their differences.

2.2.3.3 Middle East and North Africa

66. In Middle East and North Africa, the Hashemite Kingdom of Jordan is the only country with private involvement in railway sector. Since the 1990s the Government has been attempting to achieve greater macroeconomic growth and stability through reductions in the role of government in the domestic economy. As part of this process, the Government instituted a privatization program in

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16 BRS investors include RailWorld Estonia LLC, a subsidiary of RailWorld Inc. of U.S., (25.5 percent), UK-based Emerging Europe Infrastructure Fund (25.5 percent), Pittsburgh-based rail operator Railroad Development Corporation (RDC) with 5 percent and Estonian Ganiger Invest with 44 percent.

17 The Baltic Times, Issue # 463, June 29, 2005.

18 Ibid., Issue # 489, January 4, 2006.
1996 that is aimed at reducing the public stake in sectors dominated by SOEs. The Government identified the railways as a potential sector for restructuring and PSP.

67. The Aqaba Railway Corporation (ARC), a public corporation established under the provisions of the Aqaba Railway Law (1972), presently operates railway services for the transport of phosphate rock from the mines to the port of Aqaba under contractual arrangements with the Jordan Phosphate Mines Company (JPMC). In 2003, ARC has transported over 2.5 million tons of phosphate. The decision to privatize the railway was made in 1996 when the Government realized that the railway was providing poor and unreliable service to its one and only customer, the JPMC. In 1997 a Technical and Financial Advisor assisted the Government in carrying out an extensive diagnostic review of the railway, developing the privatization strategy and advising on the structure of the privatization.

68. In July 1999 a consortium led by U.S.-based Wisconsin Central Transportation Company and Raytheon Corporation initialed an agreement with the Government for a 25-year lease of the ARC. However, before the new company, Jordan Rail Company (JRC) took delivery of the rail operation, the Norwegian investors announced their withdrawal from the joint venture with the JPMC, whose production output was to secure 40% of the transport quantities of JRC. Although an amendment to the concession was signed in 2001 to accommodate these new circumstances, JRC was unable to reach an agreement with the JPMC on transport charges and minimum quantities of phosphate that would be transported by rail. Consequently, JRC was unable to begin operations, as the company's commencement of operation was contingent upon signing the transport contract. Unfortunately, the privatization did not go ahead.

69. Despite the setbacks in the concessioning process, the Government remains determined to privatize the ARC. The Government recently received a bilateral grant under the U.S. Agency for International Development (USAID) funded Economic Reform and Development Program for Privatization Technical Assistance administered by the World Bank to support the hiring of a financial advisor to assist in the privatization of ARC. The consulting assistance includes technical, accounting, financial, investment banking, legal and environmental studies, and will recommend restructuring and privatization options for ARC to design and implement the most effective privatization option. As possible options the Government proposes to offer shareholding and management control of ARC, in whole or in part (at least 51%), subject to the response of potential investors/joint-venture partners. This step would be preceded by a preparatory stage to restructure ARC into a public shareholding company with its shares completely owned by the Government initially.

2.2.3.4 Sub-Saharan Africa

70. Thirteen railway projects in Africa reached financial closure in 1990-2004, two with World Bank assistance—the Abidjan-Ouagadougou railway linking Côte d’Ivoire and Burkina Faso and the Maputo Rail network in Mozambique.

71. In March 1993 the Governments of Côte d’Ivoire and Burkina Faso awarded the railway concession for the Abidjan-Ouagadougou railway to Sitarail, a joint-stock company incorporated in Côte d’Ivoire and owned by the two governments (15 percent each), the French Bollore Group (67 percent) and employees (3 percent). Sitarail is technically and financially responsible for: (a) the operation of freight and passenger services, including all equipment maintenance; (b) the maintenance of rail infrastructure and, in part, the renewal and adaptation of infrastructure; and (c) the management of the real estate belonging to the railway.

72. The concession for the Abidjan-Ouagadougou railway is a "rolling concession" with an initial duration of 15 years. At the end of the first 5-year period, and in 5-year intervals thereafter, the concession can be extended by mutual agreement for additional 5-year periods, thus preserving the 15-year concession horizon over time. The consortium provides both freight and passenger services and sets its own tariffs for both. The government of the Ivory Coast, however, maintains control over the domestic oil transport tariff.

73. Sitarail does not own the rolling stock but pays annual lease fees (affermage) to the governments (initially set at US$2 million per year for years 4 to 14). Also all capital investments for infrastructure renewal and development are carried out by the two governments with Sitarail
bearing responsibility for debt service, including principal and interest. Capital investments are made on the basis of Sitarail’s application to the governments describing the need for and the amount of investment.

74. The operational experience of the Abidjan-Ouagadougou Railway has been generally a success story and offers an encouraging example. After nearly 20 years of decline, the Abidjan-Ouagadougou railway is showing encouraging results. Sitarail succeeded in breathing fresh life into the rail network. This has helped to revitalize the economies of both countries - Côte d’Ivoire and Burkina Faso. A detailed note on the privatization of the Abidjan-Ouagadougou Railway is presented in Appendix 9.

75. Other countries where the private sector has participated in the railway sector include award of concessions in Cameroon, Gabon, Madagascar, Malawi, and Mozambique; Greenfield projects in Tanzania and Zimbabwe; and management and lease contracts in Togo and the Democratic Republic of Congo.

2.2.3.5 East Asia and the Pacific

76. In the EAP region two countries dominate private involvement in the rail sector: Malaysia (four projects, two of which have been cancelled and the other two refinanced through government assistance) and Thailand (two, both cancelled). Both countries have awarded greenfield contracts for new metropolitan light railway networks. The only other Asian developing economy with private investment is China, where the government sold shares in the Guangshen Railway Company to raise capital without a transfer of control.

77. EAP had less history of private investment in freight railways and less reliance on freight transport by major exporters. But with rapidly growing cities, many Asian countries face a rising demand for intercity passenger transport. To meet this demand and improve passenger transport within their capital cities, Malaysia and Thailand turned to the private sector, awarding contracts for the construction of new light rail systems. In Malaysia and Thailand established property development and construction companies were attracted by the potential increase in property value from improving local transport facilities. But the importance of property development to the success of projects has made financing difficult, particularly with the recent financial crisis drastically reducing property values.

78. One project in Thailand, Hopewell’s Bangkok Elevated Road and Train System (BERTS), reached financial closure in 1990, but later suffered financial problems and was officially terminated in 1998. To prevent the financial crisis from undermining the country’s second light rail project, the Thai government has provided soft loans to the sponsors.

79. Two of Malaysia’s three light rail systems have experienced financing difficulties, and the already completed Star has reported revenue below expectations. The financial crisis is encouraging Asian governments to look at using private participation to improve the efficiency of existing assets rather than building new systems.

2.2.3.6 South Asia

80. In spite of the dominance of railways in transport sector in many countries in the region, India is the only country where one greenfield project for fixed assets and freight operation reached financial closure in 2002 on the basis of build, own, and operate (BOO). The sponsor of the project is Pipavav Rail Corporation Ltd (PRCL), the first case of PPP in rail transportation. PRCL is a 50-50 joint venture between the state-owned Indian Railways (IR) and Gujarat Pipavav Port Ltd (GPPL) that was set up to construct, maintain and operate the 270 km-long broad gauge railway line connecting the Pipavav port in Gujarat to Surendranagar Junction on the Western Railway.

81. PRCL will be allowed to operate container trains carrying only export-import cargoes on 15 routes between the Pipavav port and several inland container depots, breaking the monopoly enjoyed by IR’s formerly-owned Container Corporation of India Ltd (Concor) in this area. PRCL will have to pay an annual license fee/royalty of 2 percent on its actual turnover to the IR for operating the container trains. The license fee/royalty to be paid by PRCL will be over and above the haulage charges it pays to the IR for using their infrastructure.
2.3 PRIVATE PARTICIPATION IN THE RAILWAY SECTOR – DEVELOPED NATIONS

82. Historically, railways in most countries were set up under private initiatives. These initiatives were made possible because of support from the government in the form of allocation of land (as the land grants in the U.S.), providing concessions that were commercially profitable (as concessions to operate coal mines in China), financing of infrastructure, guarantee of a return on the capital invested (as in India).\(^\text{19}\) As the railway network expanded, capital intensity of the sector, high infrastructure costs, indivisibility and externalities, made rail transport a natural monopoly. Except in North America, railways as public monopolies in many countries passed on under government control.

83. Governments have viewed rail transport as public services to be provided at subsidized cost. The social objectives underpinning the provision of some rail services, especially passenger services, are in conflict with many of the reforms being implemented, particularly the application of commercially oriented business practices. The desire of governments to continue pursuing social policies that were also politically acceptable was responsible for reluctance to reforms or reducing government control over railway operations.

84. The corollary of this lack of commercial focus was that railways generally failed to develop an entrepreneurial culture with respect to management accountability for performance, assessing and reacting to changes in market conditions, and in terms of being innovative and seizing new opportunities. These cultures can be slow to change, as evidenced by the hesitancy of national railway systems to deal with the issues and uncertainties inherent in the reform process.

85. The continued presence of monopoly and absence of competition resulted in monopoly-induced inefficiencies, low productivity and large deficits. Most railways in the world incurred growing deficits during 1970s and 1980s. For instance, in spite of significant government subsidies, the revenues earned by railways in Italy, France and Spain were only half of their operating costs. In 1994, the total debt of Italian railway was almost 4.9 per cent of the country’s GDP. In early 1980s, Japan National Railways incurred a loss of U.S.$10 billion – 15 billion per year. Continued financial losses over several years resulted in large debts. In 1985, the total debt of Japan National Railways was around U.S.$200 billion.

86. More recently, there have been considerable attempts to reform state rail authorities operating on a noncommercial basis, carrying large debts and providing a range of community services funded by cross subsidies from more profitable services. The first, on-going stage of the reform process has been to put these organizations on a commercial footing and remove those regulations which guaranteed freight for rail.

87. Another factor that initiated the restructuring process was a rapid change in customer demand for higher quality services at lower prices. This is especially true for freight customers, who with liberalization and globalization face competition from their global counterparts and hence push for lower transport costs. Competition from other modes of transport such as roads reduced the market share of railways and pressured it to improve productivity through technological upgrading (e.g. high speed passenger service and dedicated container trains).

88. In some cases, reform has entailed the separation of potentially competitive segments from the natural monopoly elements (the above and below rail operations) with a view to encourage new

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\(^{19}\) When railway building started in the 19th century it was not unusual for Governments to help the new means of transportation on its feet in some way or another. This help came in different forms depending on the resources of the State. The U.S. government gave the railroads incentives in the form of low-interest loans and offered generous federal land grants. For the building of the transcontinental railroad in the U.S. the Union Pacific and Central Pacific railroads were granted 400-foot rights-of-way plus ten square miles of land for every mile of track built, which was further enlarged under the Pacific Railroad Act of 1864, to twenty miles of alternating sections on either side of the tracks with full right to all the minerals underneath the land. Other methods used included taking part by the State in the share capital of a railroad, or even outright building of a line by the State, as was done in Virginia, Pennsylvania, and Georgia. In the 1890s, a Treasury Grant helped build the West Highland Railway in a desolate area of western Scotland of U.K. The construction of a railway was seen as a public work to lift that region out of its economic and social misery. France used several methods of Government aid, including loans to private companies, taking part in the share capital, guaranteeing a certain dividend on the shares or the interest on a loan, until in the late 1870s construction of lines was undertaken directly by the State, while the operation was left in the hands of existing companies or given over to a State agency incorporated for the purpose.
entry by private operators. In others, vertically integrated operations have been retained but with
streamlined administrations designed to cope with a more competitive environment.

89. In this section we have reviewed the development of railway private sector and competition
policy and regulation and its impact on the institutional and organizational structures in selected
developed countries. The countries covered in this review include Australia, Canada, France,
Germany, Japan, the United Kingdom, and the United States. This review also covers the EU,
which has provided significant initiatives in developing policy and restructuring for railways in its
member states towards more competition and PSP in railway operations.

2.3.1 Australia

90. A more detailed description of the Australian railway sector is included in Appendix 10. In
the early 1970s, all publicly accessible rail services in Australia were operated by government
agencies. To improve the efficiency of Australia’s rail authorities, the Commonwealth Government
offered to take over all the state owned entities and create one national rail operator. This move
was only partially successful since all states did not agree to participate. In 1975, the Australian
National Railways Commission, replacing the Commonwealth Railways Commission, was
established. The Tasmanian, South Australian and Commonwealth governments entered into
agreements to transfer the Tasmanian and non-urban South Australian Railways to Australian
National Railways. In the early 1980s, a completely new standard gauge line was built from the
transcontinental line at Tarcoola to Alice Springs, replacing the former flood prone narrow gauge
line via Maree, and in 1982 the Adelaide-Port Pirie line was converted to standard gauge. This
allowed standard gauge operations between Perth and Adelaide and Sydney and Adelaide for the
first time.

91. In 1991 the former National Rail Corporation Ltd was established to provide interstate only
freight services over the tracks of the state systems. All governments have since agreed (to a
greater or lesser degree) to introduce competition to their rail activities. On 1 January 2000, under
the Inter-Government Agreement on Rail Operational Uniformity, a non-statutory body - the
Australian Rail Operations Unit was established for developing uniform standards and practices for
further improving efficiencies of the national and state owned rail networks.

92. The first private sector interstate freight rail service commenced in 1995. By 1996, up to four
rail operators were providing freight rail services between Melbourne, Adelaide and Perth. By 1997
a few private-sector organizations were operating services over the tracks of others. Each state has
worked towards providing third-party access to its tracks. The interstate standard-gauge third-party
access is regulated by Australian Rail Track Corporation (ARTC). It is now possible for a company,
which meets acceptable standards, to run train services on any government organization's tracks.

93. With the sale of Australian National Railways completed in November 1997, the track in
Tasmania and intrastate lines in South Australia were leased to the new owners. Thus ownership of
the mainline rail network in Australia had come full circle: from private ownership in the mid 1800s
through to government ownership and then to management by a private company at the turn of the
21st century. State governments still own some of the track, and branch lines, and retain ownership
of suburban train lines.

94. Rail services are affected directly by the competition policy in Australia. In 1995 each State
Government agreed with the Federal Government to implement a national competition policy under
the Council of Australian Governments (COAG) National Competition Policy Agreement. One
aspect requires access to essential infrastructure facilities that are important to competition in other
markets (intermediate inputs) and that would be difficult to replicate and are of national significance.

95. The Australian practice of allowing multiple private users access to track is based on the
principle that users of the infrastructure should not be at a disadvantage in relation to the
infrastructure provider, in other words there should be competitive neutrality. This is seen to require
a clear accounting separation for rail infrastructure, but not structural separation similar to the
British and Swedish lines.

96. Under the Competition Policy Reform Act 1995, competition with major business enterprises
of national significance was opened up by way of third party access. The current state of Australia’s
rail system largely reflects its development as a collection of separate networks with each state
government responsible for the ownership, operation and management of its rail network. Australia
also has a large and efficient private rail system connected to mining interests. A feature of recent
years has been the move away from operators staying within their home state’s boundaries. An
overview of the operator listings at the national and state levels is summarized below.

97. Queens Land. QR is the largest state government owned rail operator and infrastructure
owner in terms of its route network with 9,000 km of track. It is the largest provider of freight
services. QR commenced its restructuring process in 1991, maintaining an integrated rail operation
but with distinct business entities responsible for specific functions. QR perceived net benefits in
vertical integration over separation arising from the close interdependence between infrastructure
and operations and the significant transaction costs associated with fragmentation of a rail system.
In 1995, QR was corporatized.

98. New South Wales (NSW). New South Wales has chosen to replace its integrated rail
operations with a segmented structure. In 1996, the vertically integrated monopoly, State Rail
Authority (SRA), was desegregated into four different business entities, with the primary objective
being the separation of the natural monopoly from the potentially competitive activities. The four
corporatized entities are:

♦ Freight Rail Corporation, a rail based freight transportation business;
♦ State Rail, which provides commuter transport as CityRail (Sydney metropolitan)
  and CountryLink (non-metropolitan);
♦ Rail Access Corporation (RAC), with responsibility to own, operate, maintain and
  enhance rail infrastructure and to actively market access to those facilities by
  existing and potential rail operators; and
♦ Railway Services Authority, the railway engineering and maintenance group.

99. A major development in 2004 was the leasing by NSW of most non-urban track to the
federal government agency, Australian Rail Track Corporation.

100. Victoria. Reform of Victoria’s rail network began in 1989 with the establishment of the
Public Transport Corporation (PTC) to operate urban train, tram and bus services and rural
passenger and freight services. Since 1992, various work-place reforms and efficiency-enhancing
measures have been taken to reduce the financial burden imposed by Victoria’s rail system. Some
of these measures included substantial reductions in staff, replacement of some uneconomic rural
rail lines with private bus services, contracting out selected maintenance activities and rural
passenger services to the private sector. As a result, Victoria’s railways have reduced their need for
government funding.

101. The sale of rail operations to private companies has seen Connex eventually operating the
entire Melbourne suburban passenger network. Freight services were provided by Freight Australia
until its 2004 acquisition by Pacific National, operating exclusively on broad gauge but also with
competition on the standard gauge network. The government retains ownership of the track and
right of way, though responsibility for access rests with the private operators (without their having
the power to reject competition).

102. Australia-National. Pacific National, the recently sold and previously government-owned
freight operator provides services in New South Wales, Victoria, and South Australia.

103. Western Australia (WA). Non-government operators include Australian Railroad Group and
Specialized Container Transport. The national passenger service is provided by Great Southern
Railway.

104. South Australia. The state government owns the urban passenger operator
(TransAdelaide). All freight is privately operated and track privately owned (Australia Railroad
Group). Government attempts to revive services in the southeast had by 2004 failed to attract an
operator despite assurances that broad gauge routes would be converted to standard.
105. **Western Australia (WA).** The state government owns the passenger operator, the Western Australian Public Transport Authority. Interstate freight operations have been sold to Australian Railroad Group. Pacific National also operates on the standard gauge. Track is leased to WestNet Rail.

106. **Northern Territory.** A new line from Adelaide to Darwin has been built for AustralAsia Railway Corporation, the government agency representing the three governments that contributed funds for its construction and the ultimate owner of the track. A Build Own Operate Transfer (BOOT) contract has been signed with Asia Pacific Transport, which is operating freight services via its FreightLink Pty Ltd subsidiary. Passenger services are operated by Great Southern Railway.

107. **Tasmania.** The privately owned freight operator and track owner is Tasrail, which changed ownership in early 2004.

108. The Australian experience provides examples of railway structures that are vertically integrated and horizontally segmented (QR) and vertically separated and horizontally segmented (by business activity) (NSW). QR is maintaining an integrated rail operation but with distinct business entities responsible for specific functions. QR perceived net benefits in vertical integration over separation arising from the close interdependence between infrastructure and operations and the significant transaction costs associated with fragmentation of a rail system. Competitive access to infrastructure can be attained under both structures.

2.3.2 **Canada**

109. A more detailed description of the Canadian railway sector is included in Appendix 11. The railways have formed the backbone of the Canadian transportation system for well over a century. Railway transportation continues to provide the most economical means of moving bulk commodities such as grain, coal, potash and petrochemicals over vast distances.

110. The two principal carriers in Canada, the Canadian National Railway Company (CN) and the Canadian Pacific Railway Company (CPR) own extensive domestic railway networks. CN is larger of the two, with approximately 31,000 route-km of track (in Canada and the U.S.). CPR operates over approximately 2 The majority of goods moved by rail between Canada and the U.S. are exchanged between carriers in Chicago, before moving to a final destination. CN's recent purchase of the Illinois Central Corporation resulted in the addition of about 5,000 route-km to its existing network. This extended the company's direct physical reach into markets as far south as the Gulf of Mexico.

111. In addition to the major railways, Canada is also home to some 51 smaller, regional carriers. A few, like the Algoma Central Railway (owned by the Wisconsin Central Transportation Corporation) and Ontario Northland have been in operation since the early 1900s. The majority, however, are newly created shortline railways. These shortline railways provide very localized rail service and are frequently partnered with major railways. Their emergence has come chiefly from the rationalization of non-core branch line operations by both CN and CP. The operations of these regional and shortline railways now extend to over 13,000 route-km of track.2,000 route-km of track in Canada and the U.S. Together, these carriers control 72 percent of the national railway system.

112. The networks of both carriers extend into the United States. A chief feature of their American networks is the access they provide to Chicago - the major railway hub of North America. The majority of goods moved by rail between Canada and the U.S. are exchanged between carriers in Chicago, before moving to a final destination. CN's recent purchase of the U.S. Illinois Central Corporation resulted in the addition of about 5,000 route-km to its existing network. This extended the company's direct physical reach into markets as far south as the Gulf of Mexico.

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114. **Canadian National**. CN was owned by the Government from 1918 to its privatization in 1995. The *CN Commercialization Act* was enacted into law on 13 July 1995, and by 28 November 1995, the federal government had completed an initial public offering (IPO) and transferred all of its shares to private investors. Presently, it is the largest and only transcontinental railway in Canada. It operates only freight services.

115. **Canadian Pacific Railway (CPR)**. CPR was Canada's first transcontinental railway and for many decades was the only practical means of long distance passenger transport in many regions of Canada, and was instrumental in the settlement and development of western Canada. Its primary passenger services were eliminated in October 1978 after being assumed by VIA Rail. Commuter services provided by CPR in Montreal were transferred to Montreal Urban Community Transit Commission (MUCTC) in 1982. Presently, CPR is primarily a freight railway.

116. **VIA Rail**. Intercity passenger rail services are provided by VIA Rail. It operates Canada's national passenger rail service on behalf of the Government of Canada connecting communities across a 14,000 km network of lines owned by CN and CPR. VIA Rail was established as an independent Crown Corporation in 1977 controlled and funded by the Government for providing intercity passenger rail services that were earlier provided by CN and CPR.

117. **Competitive Access Arrangements**. The Canadian Transportation Agency (CTA) is the principal agency for economic regulation of and competition in the railway sector. Within the basket of competitive access mechanisms in the CTA, both interline switching provisions and the competitive line rate (CLR) are designed to provide a shipper with access to a competing railway at an interchange. Under interline switching, a shipper located on one railway is permitted to have its traffic interchanged to another railway for the line haul when the point of origin of a movement of traffic is within a radius of 30 km of an interchange. The CTA has the responsibility to determine maximum rates charged for an interline switching move. Similar provisions apply to terminating traffic. A shipper located on one rail line and beyond the 30 km interline switching limits can also ask its local railway to establish a CLR for moving goods to a competing railway line. To use this option, the shipper must have already reached an agreement with the competing railway before requesting a CLR from the local railway.

### 2.3.3 European Union

118. A more detailed description of the EU railway sector is included in Appendix 12. The Appendix also includes a description of the regulatory framework, institutional structure, and private sector experience in the railway sector in U.K., France, and Germany.

119. Recognizing the role of Europe’s railways to facilitate efficient trade in the single EU market and to promote economic and social cohesion, the EU has provided guidance to the member states through various directives to develop, extend and improve railway services in the member states. The objective was to make rail an attractive form of transport that is responsive to market changes or customer needs. In order to help EU’s railways to achieve this objective, various directives were issued by the EU. The directives are grouped into three packages establishing the successive phases of the reform and restructuring agenda for railways of the EU.

120. The first EU railway package consists of Directives 91/440EC of 29 July 1991 on the development of the Community’s railways, 95/18EC of 19 June 1995 on the licensing of railway undertakings, and 95/19EC on the allocation of railway infrastructure capacity and the levying of charges for the use of railway infrastructure and safety certification. These directives require the member states to separate the management of railway infrastructure from the provision of railway transport services. The idea behind the directives was for the track operator to charge the train operator a transparent fee to run its trains over the network and allow anyone else to also run their trains under the same conditions.

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20 Before privatization CN divested itself during the late 1970s and throughout the 1980s of several non-rail transportation activities such as trucking subsidiaries, a hotel chain (sold to CPR), real estate, and telecommunications companies. The biggest telecommunications property was a company which was co-owned by CN and CP (CNCP Telecommunications) which, upon its sale in the 1980s, was renamed Unitel (United Telecommunications) and upon corporate affiliation with Rogers Communications, was renamed AT&T Canada.
121. The second rail package, consisting of four directives, aims at further progress in opening the market initiated by the first rail package. Rail operations are to be run as companies to a greater extent. The second package also makes it possible for foreign operators to manage domestic freight traffic (i.e. removal of cabotage restrictions among EU members). The third rail package contains proposals for four acts, which, among other things, aim to open up international rail passenger traffic to competition no later than 1 January 2010. Rail companies fulfilling statutory safety requirements and other technical and administrative requirements shall be given full access to EU railway infrastructure, including cabotage movements. The third package also contains proposals concerning the implementation of joint regulations for the authorization of locomotive and train personnel in both passenger and freight traffic.

122. **France.** The state-owned French National Railways (Société Nationale des Chemins de fer Français (SNCF)) is a part of the SNCF Group, which includes over 640 affiliated companies. SNCF was created in 1937 by the merger of the private companies that were concessionaires of railways in France. SNCF benefits from a high degree of independence in its transportation activity although it is bound to comply with principles of public interest.

123. In February 1997 the French Government passed the railway Reform Law which created the French Railways Infrastructure company (Réseau Ferré de France – RFF). Consequently, SNCF remained in charge of railway operations while RFF assumed authority for investment in and management and development of the national rail infrastructure. SNCF now pays track access charges to RFF for the use of its infrastructure. Also in accordance with the Reform Law, the management and maintenance of the railway infrastructure is undertaken by SNCF (for safety considerations) under contract with and payment of maintenance charges by RFF. Therefore, above rail operations and the maintenance of infrastructure remain in the control of SNCF.

124. A main feature of railway reform in France was the January 2002 transfer of organizational powers from state to regional authorities with full responsibility for planning and financing local passenger rail transport. Under this arrangement a series of agreements have been signed between SNCF and 20 regional authorities. In the agreements, the services are defined by the regional authorities and the corresponding financial contributions by regions to SNCF are added. This leaves SNCF merely as a supplier of trains and staff, for which it retains its monopoly.

125. In comparison with the national railway, the urban and suburban railway services are more open to competition and have more participants. In 90 percent of urban and suburban railways in France, the transport system is granted to semi-private operators (20 percent) or private operators (70 percent) through: (i) management contracts, where the private operator receives a management fee; or (ii) contracts by virtue of which the private operator bears certain industrial and/or operational risks; or (iii) concession contracts, where the private operator fully bears the operation (and sometimes the construction) risks.

126. **Germany.** In December 1993, the Restructuring of Railway Act containing alterations to the German Constitution was passed by the National Parliament. Under this Act, the former West German Deutsche Bundesbahn, East German Deutsche Reichsbahn, and the Railway Property in West Berlin were fused as the Federal Railway Assets. These were then divided into a public section and a commercial section. The public section was divided into the Federal Railway Office (Eisenbahn-Bundesamt - EBA), and the Office for Federal Railway Assets (Bundeseisenbahnvermogen - BEV). The commercial section of the railway became Deutsche Bahn AG (DB AG), charged with managing the railway industry according to good business principles in line with German company law.

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21. SNCF transportation business is largely passenger oriented. Revenues from passenger business account for about 60 percent of total SNCF revenues and freight about 11 percent. The remaining revenues are from providing infrastructure related services and leveraging of SNCF assets and know-how.

22. The first French law to regulate the railways dates from 11 June 1842, under which the French state granted concessions to private companies to develop and operate the railways. There were six major railway companies in France in 1860, five in 1934 and, by 1937, only one remained. The private networks, all more or less in a difficult financial situation, were nationalized in SNCF was created and was initially granted a 45-year concession. Originally, 51 per cent of SNCF’s share capital was held by the French state with the remainder being granted to the previous private concessionaires who never effectively exercised their rights, and so from the date of nationalization, the French state exercised full control over the sector.
127. EBA was created as an independent body under the Federal Ministry of Transport to exercise the rights and duties of the with respect to the restructured railway industry. This office, inter alia, deals with all matters of safety connected with infrastructure and, operation and rolling stock; and with signaling regulations. It deals with the allocation of the funds assigned by the federal government for investment in infrastructure. BEV deals with the non-operational railway properties, the civil service personnel of the former state, and inherited debts. It is responsible for the pensions of railway staff and administration of staff welfare programs.

128. DB AG was established as a joint stock company wholly owned by the Government. DB AG manages the federal railway system and constructs railway lines under contract with the Government. The infrastructure subsidiary of DB AG (DB Netz AG) manages the network on commercial basis. To cover operation and maintenance costs and the depreciation payments, DB Netz AG, imposes access charges (as per EU’s Directive 91/440) on users of the network, including DB AG and other transport operators.

129. Another significant reform was the transfer, in January 1996, of railway passenger local operations to the regional governments. The regionalization of these services is a crucial point in the railway reform and shifts responsibility for both providing and financing such services to regional governments, i.e., institutions demanding transport pay for it.

130. United Kingdom. The railway industry in the U.K. was reorganized in 1994. British Rail (BR), which was a vertically integrated state owned railway company having statutory monopoly over the carriage of passengers and goods by rail, was broken up into more than 100 separate entities, all of which were privatized between 1995 and 1997. The Railways Act 1993 provided the basis for the reorganization. The main objectives of the Act were: (i) to reduce the level of government subsidies for rail transport over the long term; (ii) to open the transport sector to competition to improve services, increase railway productivity, and reduce administrative sluggishness; and (iii) to respond better to market needs, thereby meeting demand and improving financial results. Reforms resulted in the separation of transport operation from railway infrastructure, introduction of a franchise system to passenger rail transportation and privatization of the freight rail transportation business and infrastructure. The reorganization resulted in the division of BR into: (i) a new infrastructure manager – Railtrack that became the sole owner and manager for the entire railway infrastructure including tracks, signaling, electrification, stations, depots and shops; (ii) 25 train operating companies (TOCs) with franchises to run passenger operations; (iii) Four freight train operators; (iv) three rolling stock leasing companies (ROSCOs); and more than 70 other companies connected with various aspects of railway engineering and operation. While the train operating companies were franchises, freight business was completely privatized through the establishment of private companies which bought operating licenses, own their own rolling stock, and operate in an open environment.

131. There were flaws in the management of infrastructure by Railtrack, which caused three serious train accidents. In order to maximize return to shareholders, Railtrack cut costs and tried to get the most out of the assets with less regard for the consequences of deferred maintenance. The resulting costs of replacing hundreds of kilometers of damaged track and compensation to train operators for their damages exacerbated a brewing financial crisis. Railtrack declared bankruptcy on 7 October 2001, and the Government placed it under Administration. In March 2002, Network Rail, a not-for-profit company limited by guarantee (CLG) was established. On 3 October 2002, Network Rail acquired the shares of Railtrack for £ 510 million and took over the ownership and management of the rail infrastructure. Network Rail, is a 'not for profit distribution' company.

132. Since 1994, when the reform program started, Britain’s rail industry has passed through a troublesome phase. Privatization opened the way for new private investment in the railway and encouraged train operators to adopt more customer focus. However, the division of BR into almost 100 independent entities replaced coordinated internal company relations with complex, formal, and costly contractual relationships. The break-up resulted in a heavy, inefficient bureaucracy, an opposition of interests and objectives, and a weakening of responsibilities among the many players. Since each of these companies had distinct commercial interests to protect, in the final analysis it

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23 As a CLG, Network Rail has no shareholders. It can not issue shares under the Companies Act 1985.
133. The U.K. system has virtually no intra rail competition. It is a system of 'horizontal monopolies' based on either geographic considerations (passenger services) or product considerations (freight services).

134. **Japan.** A more detailed description of the Japanese railway sector is included in Appendix 13. The state-owned Japanese National Railway (JNR) had been incurring losses since 1964. In 1986, its freight revenues covered only 68% of costs. In April 1987, under the Reform Law, the JNR was statutorily disbanded and its assets, operations and liabilities were distributed among a number of new companies, known as the Japan Railways Group. The dismemberment legislation provided that JNR's passenger business, its infrastructure and its assets be distributed geographically between six companies, three on Honshu island and one each on Hokkaido, Shikoku and Kyushu. These companies were: (i) JR Hokkaido or Hokkaido Railway Company; (ii) JR Higashi Nihon or East Japan Railway Company; (iii) JR Tokai or Central Japan Railway Company; (iv) JR Nishi Nihon or West Japan Railway Company; (v) JR Shikoku or Shikoku Railway Company; and (vi) JR Kyushu or Kyushu Railway Company. For freight transportation one nation-wide company - JR Kamotsu or Japan Freight Railway Company was established. The six regional passenger JR companies own and manage rail tracks and stations, offering passenger railway services in their respective regions. JR Freight does not own any rail tracks but operates freight trains on tracks owned by the six JR companies.

135. Privatization of the new JR group companies was the ultimate objective of JNR's dismemberment. Initially, all companies remained in the public domain as joint stock companies with the Government as the sole shareholder. Only the Hokkaido, Shikoku and Kyushu companies started free of any inherited debt liabilities, but all three required subsidy for their current operations, which was provided through government-established Management Stabilizing Funds. JR East was fully privatized in 2003. About two-thirds of the shares of both JR West and JR Central are held by the private sector and the remaining are still with the government. In addition, all shares of the other four JR companies are still held by the Government’s JNR Settlement Corporation.

136. Heavy long-term investment needed for railways development coupled with slow generation of revenues over a relatively long period of time have inhibited railway companies to self-finance new lines. In Japan, initially, the national government had been using the general account (budgetary funds) for the construction of railway projects. However, the absence of a funding system independent of the budget was considered a major constraint on railway’s development. In 1991, following sale of the Shinkansen facilities to the operating JRs a Railway Development Fund (RDF) was established by the National Government.24 On 1 October 1997, RDF and the Japanese Maritime Credit Corporation were merged to form a new public entity, the Corporation for Advanced Transport & Technology (CATT). Presently this Corporation provides funding for construction of Shinkansen lines and interest free loans to construct and improve arterial railways.

137. Investment on the development of new Shinkansen railway lines is shared by the National Government, local governments and JR companies. The proportion of subsidies from the national government is fixed, and the source of the subsidies is the profits on sales of the existing Shinkansen lines and the public works project budget. Local governments bear expenditures equivalent to approximately one-half of those of the National Government. After the line is opened, JR companies pay access charges for track usage within the limits of their profit.

138. The three large JR companies which are in the business of passenger transportation are carrying out profitable operations since the restructuring and privatization. It may be mentioned that their operation is not encumbered by historical debt incurred for building much of the network, including the Shinkansen lines. A significant feature of the railway companies in Japan is their involvement in real estate development. As reflected in the financials of JR East, a third of the revenues and about 50 percent of the profits are from the real estate business.

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24 Role and Functions of Railway Development Fund, by Akio Ono, JR & TR, April 1997.
139. JR companies remain vertically integrated. The six passenger companies own and operate the rail network. The only exception is JR Freight that operates freight trains on the meter gauge network on the basis of access provided by the owning passenger companies.

140. The JNR experience has important lessons in the area of planning investment financing for large scale railway projects over a period of time. One of the main causes of JNR’s failure was the enormous debt resulting from huge amounts of money expended on new railway construction projects. The servicing of the debt became a big problem because investments were not financed by increasing fares. Instead of increasing fares in line with the price index, JNR was forced to keep fares low as part of a national price control policy. As a result debt became unmanageable and the interest payments alone ballooned out of proportion to the size of the total operation. This emphasizes the overriding importance of establishing a practical scheme to raise long-term low-interest financing before railway construction is actually taken up.

141. United States. A more detailed description of the U.S. railway sector is included in Appendix 14. The railroad industry in the United States is one of the largest in the world. Although it does not move as many passengers per year as do many other countries, however it does move more freight by rail than any other country, a staggering 2.673 trillion TKM and $40.5 billion in revenues in 2004.

142. Since their creation in the mid-1800s, railroads in the U.S. have been privately owned - both the infrastructure and operations of rolling stock. Two exceptions existed during this period. The first is the Alaska Railroad (ARR), which was built for national defense purposes in the 1940s. However, when it became a profitable railroad in the 1980s by moving large quantities of coal to Alaskan ports for export to Asia, it was sold to the State of Alaska in 1985. The only other exception is the quasi-government National Passenger Railroad Corporation - commonly known as Amtrak. Amtrak is the only inter-city rail passenger entity in the U.S. Amtrak is funded by U.S. Congress in the form of a subsidy. Amtrak owns tracks in the Northeast Corridor between Washington, D.C. and Boston, Massachusetts, but pays user fees to operate over much of the United States on tracks owned by the freight railroads.

143. The Federal Government basically governs intercity transportation, and state and local governments govern urban intra-city transportation. The Federal Department of Transportation (DOT) provides transportation-related services in the U.S. The Federal Railroad Administration (FRA), a modal agency of DOT, was created by the Department of Transportation Act of 1966. The purpose of FRA is to promulgate and enforce rail safety regulations; administer railroad assistance programs; conduct research and development in support of improved railroad safety and national rail transportation policy; provide for the rehabilitation of Northeast Corridor rail passenger service; and consolidate government support of rail transportation activities. FRA is one of ten agencies within the DOT concerned with intermodal transportation.

144. The Surface Transportation Board (STB) was created by the Interstate Commerce Commission (ICC) Termination Act of 1995 as a successor agency to the ICC. The STB is an economic regulatory agency that Congress charged with the fundamental missions of resolving railroad rate and service disputes and reviewing proposed railroad mergers. The STB is decisionally independent, although it is administratively affiliated with the DOT. The STB serves as both an adjudicatory and a regulatory body. The agency has jurisdiction over railroad rate and service issues and rail restructuring transactions (mergers, line sales, line construction, and line abandonment); certain trucking company, moving van, and non-contiguous ocean shipping company rate matters; certain intercity passenger bus company structure, financial, and operational matters; and rates and services of certain pipelines not regulated by the Federal Energy Regulatory Commission.

145. At the end of 2004, there were 549 private freight railroad companies operating on 227,433 route-km. These include seven Class 1 railroads:25 Burlington Northern & Santa Fe Railway Co.

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25 Freight railroad companies are classified by their level of operating revenues adjusted annually for inflation. For 2004, (i) Class I railroads had operating revenues of U.S.$277.7 million or more; (ii) Class II railroads had operating revenues of U.S.$ 22.2 million to U.S.$ 277.7 million; and (iii) Class III railroads had operating revenues of less than U.S.$ 22.2 million.
(BNSF), Union Pacific Railroad Co. (UP), CSX Transportation, Norfolk Southern (NS), Kansas City Southern Railway Co. (KCSR), Grant Trunk Corporation (GTC, a subsidiary of Canadian National Railway), and Soo Line Railroad Co. (SLR, a subsidiary of Canadian Pacific Railway). Besides the seven Class 1 railroads there are 542 regional and short-line railroads which operate their own railroad lines. The regional and short-line railroads are 96.5 percent private- and 3.5 percent public-owned. Regional and short-line systems have been formed from a combination of historic holdings and the pieces of the Class I system that was shed by the larger railroads. Many branch lines operate effectively in conditions where the Class I railroads cannot. Short-line railways operate at much slower speed - and thereby subject to less stringent Federal safety regulations as Class I carriers. They use older equipment - oftentimes bought at reasonable prices from Class I railroads. The regional and short-line systems take advantage of different labor cost structures, non-unionized labor, different profitability targets and business models with innovative budgeting and financing procedures, and may also receive some level of public funding support.

146. Regional and short-line systems play two critical roles in the U.S. freight-rail network. They are important partners for the Class I railroads because they often provide the first and last service miles in the collection and distribution of railcars. This arrangement allows the Class I railroads to focus investment in higher-density, longer-distance line-haul business in key corridors. Regional and short-line systems also ensure rail service for shippers along their lines who rely on rail to move heavy or bulky commodities cost-effectively. Without regional and short-line rail service, these shippers might close or relocate, taking jobs and tax revenue with them. Some of the larger short-lines have been so successful in making a profit, that in recent years their expertise has been sought by countries commercializing and privatizing their rail systems. A number of U.S. short-lines have obtained long-term operating concessions in Argentina, Brazil, Guatemala, Malawi, Mozambique, Estonia, Peru, Chile, Mexico, New Zealand, and Great Britain.

147. Organizationally, the U.S. railroads have continued the traditional structure that is vertically integrated. Every railroad owns and controls its infrastructure as well as the trains operating on that structure. The U.S. railroad companies see advantages in that mode of operation for increasing productivity, reducing costs and being able to react in accordance with the demand for rail transport in a competitive environment. Investment decisions that concern both operations and infrastructure, such as those related to running heavier cars, longer trains, and capacity enhancement can be made by a unified authority and in timely manner. In their view this arrangement provides the best recipe for increasing profitability and increasing return on capital.

148. Following the passing of the Staggers Rail Act in 1980, almost 95 percent of the industry was deregulated and ICC was eliminated in 1995. The Staggers Act gave railroads greater freedom to market their services and to set rates. Railroads, for example, were allowed to enter into contracts with shippers. In addition, the procedures governing the abandonment of uneconomical lines were liberalized and, through various regulatory rulings, the creation of new short line railroads were encouraged to operate over many of the light-density rail lines that might otherwise have been abandoned. The key to economic health of the U.S. railroad industry lies with its legislatively mandated deregulation. The industry aggressively adopted its provisions to nurture itself back to profitability. With deregulation, the U.S. rail freight industry regained its competitive position in the transport sector. Economic regulation of U.S. railroads is at a crossroad. The increasing consolidation of the U.S. rail industry and railroad service failures at mergers have led some to argue that a lack of competition in the industry is the problem and that increased regulatory oversight over railroads is needed to protect shippers. Yet, others claim that the recent western railroad problems were due to one-time merger effects or to long-term capacity constraints rather than to a lack of competition and that railroad regulatory constraints should be kept to a minimum to allow railroads to earn the profits they need to upgrade their infrastructure. The STB has begun working towards a new regulatory framework based on a recent review of these issues.

149. The discussion in the paragraphs above shows that railway systems have gone for the organizational structure that is considered best from the point of view of the country's railway sector and the national interest. Notably, most railway systems remain vertically integrated, which means that the above rail operations and the infrastructure are managed and operated by the same entity. The present status of organizational structures is illustrated in Figure 2.3.
With regard to the railways in DMCs when there is high density of traffic, the vertically integrated system would be suitable. There are distinct advantages in the vertically integrated mode of operation for increasing productivity, reducing cost and being able to react in accordance with the demand for rail transport. Decisions related to enhancement of capacity or running of heavier and longer trains may be taken in a coordinated way without having to rely on a separate authority that has responsibility for infrastructure. The objectives of the infrastructure authority may be quite different from those of the above rail operator.

**Figure 2.3: Privatization and Unbundling**

<table>
<thead>
<tr>
<th>Degree of Privatization</th>
<th>North America (freight) and NZ</th>
<th>Latin America and Japan</th>
<th>North America</th>
<th>Elsewhere</th>
<th>Europe and Australia</th>
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<tr>
<td>Private Firm Unregulated</td>
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<td>Privated Firm Concession</td>
<td>Integrated limited access</td>
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<td>Private Firm Discretionary Regulation</td>
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<td>Public Enterprise</td>
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3 RAILWAYS OF ASIA: TYPICAL PSP TRANSACTIONS, PROBLEMS, AND SUCCESSES

3.1 CHARACTERISTICS OF ASIAN RAILWAYS

151. In order to provide a comparative analysis of Asian railways it is necessary to use a common set of data applicable to as wide a range of railways as possible. The most recent year for which this data set exists is 2003 and the only consistent data source that is available is the Union Internationale des Chemins de Fer (UIC) annual publication on International Railway Statistics 2003 (UIC 2003).

152. Various indicators representing network density, traffic density, and operational efficiency are provided in this section. For each indicator the entire range of values computed for railways which provided data to UIC and included in UIC 2003 is presented in Appendix 15. As shown in the Appendix, there are many countries in which the railway sector is relatively small with a route length of less than 1,000 km. Based on the tabular data included in Appendix 15, a subset of visual comparisons are included in Appendix 16 with the DMCs in Asia indicated in red for ready reference. The subset includes all world railways to the extent data is available and the world average where appropriate averages can be computed.

153. Great caution must be exercised in the use of comparative statistics. Every nation is different with its own unique transport sector development history and evolution of socio-economic and industrial activity. As a result, no two railways in the world are similar or reflect similar conditions. Furthermore, the use of a data set for a specific year does not capture trends unique to each country’s railway sector; it only provides a snapshot for a year. Another limitation is the univariate nature of the comparison, i.e. one indicator at a time. This is a simplistic attempt to characterize a highly complex industry which has been evolving as a result of multiple factors affecting its assets and performance. Moreover, definitions for each data item may be widely different from one country to the other. Last, but not least, the UIC data is collected from UIC members only. Data for Australia, for example, is from Queensland Rail only. Data for most Latin American countries is not reported by UIC since concessioning of the railways in these countries. For these countries data available from other sources have been included to the extent possible. Despite these limitations, UIC statistical data is the only source in the world, which includes the largest number of countries.

3.1.1 Network Density

154. Route density in terms of route km per 1000 sq. km. of land area is generally high among world railways in developed economies with the highest density values occurring in Western Europe and Japan (Figure 16.1 in Appendix 16). The only Asian DMC with a higher route density than the world average is Azerbaijan with 25.69 km per 1,000 sq.km. of land area. The lowest route density among Asian DMCs is Mongolia (1.16 km per 1,000 sq.km.). Generally countries with a large land mass, regardless of their level of development, score low densities. United States and Canada, for example, have a density of less than the world average and Australia has the lowest fourth. Densities are also low in India, PRC, and Kazakhstan, the largest DMCs in Asia in terms of land mass. Despite their low density, however, these three DMCs dominate the railway network in Asia with a total length of 137,338 km, accounting for more than 70 percent of the railway networks among all DMCs in Asia.

155. Undoubtedly, the need to increase route density must be considered in conjunction with the utilization of the existing network (i.e. traffic density) and the geographic distribution of economic and industrial activity within the nation. Low network utilization implies a structural weakness in the nation’s railway sector, which does not justify further investments in increasing the railway route length. On the other hand, railway routes within the country are not typically distributed in a homogeneous manner across regions. Concentration of economic and industrial activity in a few areas of the nation implies a geographically unbalanced development potential, which can be addressed through selected government policies to encourage economic dispersion such as

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special tax breaks, low cost loans, assistance with employee training, heavy public investment in infrastructure to stimulate economic and commercial development, subsidies, and other measures. PRC’s Western development strategy is a good example of a government’s initiative to overcome the imbalance in the level of regional development between the coastal and inland areas. Capital investment in new railway infrastructure to facilitate socioeconomic development in the less-developed but resource rich regions of a country would be justified as part of the government’s macroeconomic development strategy. In many cases, however, these investments would not be justified purely on commercial criteria since traffic during the initial years would not be large enough for profitable operations. Under these circumstances the capital investment and coverage for operating losses during the initial years of operation must be borne by the public sector.

156. In terms of route density expressed in relation to population, Figure 16.2 in Appendix 16 shows a comparison among countries. This indicator does not appear to relate to the country’s level of economic development: there are as many developed and developing countries above as well as below the world average. United Kingdom, Italy, and Japan, for example, have a higher than world average route density in terms of area and a lower than world average route density in terms of population.

157. In general, the value of the indicator tends to be lower than the world average for counties which have both a high population and a high population density. In the case of the Former Soviet Union (FSU) countries included in Figure 16.2 of Appendix 16 (Kazakhstan, Russia, and Ukraine), the high route densities are due to the FSU policy of emphasizing rail transport and discouraging road transport.²⁷ The indicator for Mongolia is high (0.72 route km per 1,000 people) not because the railway network is well-developed (it is the third lowest in the world in terms of route km per 1000 sq.km.) but because of Mongolia’s low population.

158. DMCs from the Caucasus and Central Asia have higher route densities in terms of population compared to South and East Asia. In the case of India and PRC, there is, on average, about 60 meters and 50 meters of route length for 1000 people, respectively which is approximately 15 percent of the world average. This reflects the need for route length expansion particularly when the indicator is compared with the utilization of the current network. It also reflects the relatively small mobility. In PRC, for example, 17.67 billion passenger trips were taken by all modes of transport in 2004 or an average of 13.6 trips per person for the whole year.

3.1.2 Traffic Volume and Density

159. Figures 16.3 and 16.4 of Appendix 16 show the freight traffic expressed in tons and ton kilometers (TKM). Corresponding data for passengers and passenger kilometers (PKM), respectively, are presented in Figures 16.5 and 16.6 of Appendix 16. Some railways such as United States, Australia, Canada, South Africa, and Kazakhstan are heavily oriented towards freight transport. On the other hand, Western European and Japanese railways are oriented towards passenger transport. Some such as PRC, India, Russia, and Ukraine offer mixed freight and passenger transport service.

160. In terms of freight tons (Figure 16.3 in Appendix 16) PRC has the highest traffic volume in the world, surpassing the second-ranked U.S. Class I railways by 22 percent and the third-ranked Russian railways by 72 percent. The three large railway networks among Asian DMCs (PRC, India, and Kazakhstan) carried more than 2.7 billion tons of freight in 2003, accounting for 95 percent of all Asian DMCs and 30 percent of all railways in the world. The other Asian DMCs had considerably less traffic volume ranging from 557 thousand tons in the case of Cambodia to 51.4 million tons in Uzbekistan.

161. In terms of TKM (Figure 16.4 in Appendix 16), China, India, and Kazakhstan again dominate Asian DMCs with a combined volume of almost 2.15 trillion TKM representing 98 percent of the total TKM for Asian DMCs and 28.5 percent of worldwide TKM. In 2003, PRC and India occupied the third and fourth positions in the world TKM after U.S. and Russia. Kazakhstan was the eighth largest in the world. PRC’s freight tons and TKM are more than 19 times the world average freight

²⁷ In the FSU any movement of freight for a distance of 50 km or more had to be shipped by rail. This policy resulted in a relatively large build up of railway networks in relation to population density.
tons and TKM. The other Asian DMCs have considerably low traffic volumes, mostly less than 8 million TKM.

162. With respect to passenger traffic, India and PRC also rank high: India is second worldwide after Japan in terms of passengers and first in terms of PKM. More than 99 percent of all railway passenger trips in Asian DMCs are made in India and China. This is despite the adverse effects of travel in China due to SARS during the first half of 2003. These two countries accounted for about one in four railway passengers in the world in 2003. Other Asian DMCs with relatively high volumes of railway passenger trips include Indonesia (176 million), Pakistan (72.4 million), Bangladesh (43.4 million), Kazakhstan (17.7 million), Uzbekistan (16.5 million), and Vietnam (12.5 million). Most of the remaining Asian DMCs had 10 million or less passenger trips.

163. In terms of PKM, India and China again dominated the world in 2003, occupying the first and second place with 515.0 billion and 462.3 billion PKM, respectively. Intercity passenger traffic in Japan is the third in the world with a PKM level approximately one-half of the second ranked PRC. Almost 99 percent of aggregate PKM in Asian DMCs have been produced in India and PRC. Approximately one PKM of every two worldwide is accounted by these two countries.

164. In terms of Traffic Units (TU) 28, PRC is ranked No. 1 in the world (Figure 16.7 in Appendix 16) with 34.9 million TUs/route km, 63.9 percent higher than the second-ranked Russia and more than 9 times the world average. India and Kazakhstan also rank high in the world (third and sixth, respectively). Other Asian DMCs with TU values more than the world average are Uzbekistan, Mongolia, and Azerbaijan. The lowest in Asia is Cambodia with 300 thousand TUs. Almost 97 percent of all Asian TUs is generated by PRC, India, and Kazakhstan. One of every three TUs produced by the world railways is accounted for by these three countries which collectively have only 13.5 percent of the world’s railway network length.

165. When the traffic density is combined with route density (Figures 16.1 and 16.7 in Appendix 16) a traffic stress index (TSI) on the network can be computed as a comparative value to reflect the need for network expansion in relation to the “typical world railway”. For purposes of this computation, TSI is defined as the “ratio of traffic density expressed in TUs/route km to the world average TUs/route km” multiplied by the inverse of the “ratio of a country’s route density/1000 sq. km. to the world average route density”. Comparative TSI values for 2003 are shown in Table 3.1 for selected countries.

166. It should be emphasized that TSI does not recognize geographic variation of network density and traffic within a country since it assumes a uniform geographic distribution of these values. It also does not distinguish between levels of efficiency in railway operations inherent in a nation’s railway system. In this respect the ratio assumes the world average as a “normal operation”. The world average of 1 indicates that the need to expand railway network length is relatively “normal”, i.e. the network density is adequate to deliver the output. The lower the index the less is the need to expand the rail network coverage. The reverse is true for index values higher than 1.

167. The relative need for network expansion is highest in PRC. The value of almost 35 means that the pressure to expand network length in PRC is about 35 times higher than the average pressure for same in the world. Other DMCs in Asia with a relatively high need to expand network length are Mongolia (TSI value of 24) and Kazakhstan (15). Most other DMCs in Asia have values of less than 10. The TSI for Bangladesh and Cambodia is less than 1 indicating a relatively low need to expand the railway network in relation to the traffic volume.

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28 Also known as Converted Ton Kilometers, Traffic Unit is the sum of TKM and PKM, representing a railway’s total output.
Table 3.1: Index of Traffic Stress on Network

<table>
<thead>
<tr>
<th>Country</th>
<th>Route km/1000</th>
<th>TU/Route km</th>
<th>Traffic Stress Index</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Km</td>
<td>Inverse of Ratio to World</td>
<td>Million</td>
</tr>
<tr>
<td>Azerbaijan</td>
<td>25.69</td>
<td>0.99</td>
<td>3.95</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>21.93</td>
<td>1.16</td>
<td>1.83</td>
</tr>
<tr>
<td>Brazil</td>
<td>3.39</td>
<td>7.53</td>
<td>6.37</td>
</tr>
<tr>
<td>Cambodia</td>
<td>3.42</td>
<td>7.46</td>
<td>0.30</td>
</tr>
<tr>
<td>Canada</td>
<td>6.55</td>
<td>3.89</td>
<td>5.20</td>
</tr>
<tr>
<td>China</td>
<td>6.48</td>
<td>3.93</td>
<td>34.90</td>
</tr>
<tr>
<td>Czech Rep.</td>
<td>122.94</td>
<td>0.21</td>
<td>2.48</td>
</tr>
<tr>
<td>Denmark</td>
<td>53.57</td>
<td>0.48</td>
<td>3.21</td>
</tr>
<tr>
<td>France</td>
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<td>0.48</td>
<td>4.06</td>
</tr>
<tr>
<td>Germany</td>
<td>103.29</td>
<td>0.25</td>
<td>3.98</td>
</tr>
<tr>
<td>India</td>
<td>21.23</td>
<td>1.20</td>
<td>13.75</td>
</tr>
<tr>
<td>Indonesia</td>
<td>3.56</td>
<td>7.15</td>
<td>2.99</td>
</tr>
<tr>
<td>Italy</td>
<td>55.38</td>
<td>0.46</td>
<td>4.26</td>
</tr>
<tr>
<td>Japan</td>
<td>55.05</td>
<td>0.46</td>
<td>13.14</td>
</tr>
<tr>
<td>Kazakhstan</td>
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<td>5.00</td>
<td>11.50</td>
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<tr>
<td>Kyrgyzstan</td>
<td>2.17</td>
<td>11.73</td>
<td>1.41</td>
</tr>
<tr>
<td>Malaysia</td>
<td>5.07</td>
<td>5.03</td>
<td>1.89</td>
</tr>
<tr>
<td>Mongolia</td>
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<td>22.07</td>
<td>4.16</td>
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<tr>
<td>Pakistan</td>
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<td>3.58</td>
</tr>
<tr>
<td>Poland</td>
<td>64.97</td>
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<td>3.37</td>
</tr>
<tr>
<td>Russia</td>
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<td>5.09</td>
<td>21.29</td>
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<tr>
<td>South Korea</td>
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<tr>
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<tr>
<td>Tajikistan</td>
<td>4.39</td>
<td>5.81</td>
<td>1.84</td>
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<tr>
<td>U.K.</td>
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<td>3.58</td>
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<tr>
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<td>1.00</td>
<td>9.75</td>
</tr>
<tr>
<td>Uzbekistan</td>
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<td>2.56</td>
<td>5.00</td>
</tr>
<tr>
<td>Vietnam</td>
<td>8.15</td>
<td>3.13</td>
<td>2.61</td>
</tr>
<tr>
<td>WORLD AVERAGE</td>
<td>25.50</td>
<td>1.00</td>
<td>3.82</td>
</tr>
</tbody>
</table>

Source: Consultant

3.1.3 Operational Efficiency

168. The UIC data presented in Appendix 15 allows a comparison of output to employment and number of employees per route kilometer. These comparisons are provided in this section as broad indicators of labor efficiency. Figure 16.8 in Appendix 16 shows comparative statistics in terms of TUs/employee. With 1.44 million employees, PRC is approximately 60 percent above the world average in employee productivity. Despite its high route density, CR’s employee output efficiency is far below U.S., Canada, Australia, and South Africa. It is even below Kazakhstan. Considering that CR is the largest railway in the world in terms of TUs, its lower rank in employee productivity is a consequence of relatively high employment. This disadvantage is somewhat offset by the labor cost difference between PRC and the developed nations. The other DMC railways show low employee productivity ranging from 130,000 TUs/employee in Kyrgyz Republic to 590,000 TUs in India.

169. Figure 16.9 in Appendix 16 shows another indicator of employee productivity with even more striking results. In terms of average number of employees per route km, CR holds the first rank in the world with a value of 24, followed closely by India (23.3). Even the FSU railways (Ukraine, Russia, Uzbekistan, Kyrgyz Republic, and Kazakhstan), which are still operating with a slant on social responsibility, have lower average employment per route km. The figure shows that the railways of developed economies in Western Europe and North America are lower than the world average, with Canada and U.S. among the best performers in this respect as in the case of TUs/employee illustrated in Figure 16.8 in Appendix 16. It should be emphasized that most railways in developed countries do not provide support facilities for employee health, education, and welfare.
Therefore, the employment data from these railways represent staffing for mainly core transport operations.

170. An important observation from Figure 16.9 in Appendix 16 is that in railways with PSP or under concession the number of employees/route km is substantially below the world average and in railways operated by public agencies it is substantially higher. In PRC, for example, to reach parity with the world average the employment level would be reduced by 72 percent. The desirability and justification for this drastic reduction in employment is not debated here. Given the Government’s overall goal of providing gainful employment to all citizens, it is reasonable that CR would maintain higher than the world average employment. Any consequent disadvantage of this social responsibility will have to be offset, however, through strengths in other areas such as lower operating cost per TKM and PKM, higher infrastructure productivity, and better equipment utilization.

3.1.4 Economic Performance

171. One measure of economic performance is the extent of the railway’s contribution to the national economy, i.e. the dependence of the economy to the railway. This measure is generally expressed in terms of TUs per Dollar of GDP. This relationship is illustrated in Figure 16.10 of Appendix 16. A compendium graph in Figure 16.11 in Appendix 16 shows the number of passenger trips per person as an indication of the extent of the people’s dependence on the railway for transport.

172. Generally the FSU nations show a greater economic dependence to the railway (expressed in TKM/$ of GDP) than developed nations, which reflects their legacy of over-emphasis on railway transport. The world average of 0.42 TKM/$ of GDP indicates a relatively low dependency of the typical country on rail transport. Among the DMCs, Mongolia is highest in the world at 4.9 TKM/$ of GDP, followed by Kazakhstan at 3.9 TKM/$ of GDP and Uzbekistan, sixth in the world, with 1.7 TKM/$ of GDP. The high figures for Central Asian DMCs reflect the FSU legacy of heavy reliance on railways and their landlocked geography which places more emphasis on longer distance transport in relation to coastal nations.

173. Other than the Caucasus and Central Asian DMCs and PRC, the dependence of the national economy on railway transport is low in other Asian countries. When the TKM/$ of GDP is compared with the railway network density (expressed in terms of route km/1000 sq. km. of land area – see Figure 16.1 in Appendix 16), the pressure on some DMC railways to support the national economy becomes more apparent. For example, the dependence of the PRC economy on CR is 3 times the world average and yet the rail network density in PRC is one-fourth of the world average (Figure 16.1 in Appendix 16). In other words, CR is contributing more to the GDP formation with a much less network coverage than the world average.

174. In the case of Mongolia, the railway is contributing 11.7 times more than the world average railway to the GDP formation with a railway network that is only one-twentieth of the world average. In the case of Kazakhstan, the railway’s contribution to the GDP is 8.3 times the world average with a network density of 4.5 percent of the world average.

3.2 DEMAND FOR RAILWAY TRANSPORT

175. The demand for rail transport among DMCs shows a large variance depending on the extent of railway network coverage, its service and cost competitiveness, and other factors which affect modal share. Transport sector data in most DMCs do not provide adequate coverage to estimate the rail modal shares. For example, road transport statistics in many DMCs provide data on the number of vehicles with limited or no information on tons or passengers carried and on TKM and PKM produced by road vehicles.

176. In countries where transport data for different modes exist, modal share estimates lead to misleading observations. For example, in PRC tons and TKM data are reported nationally for different modes of transport. In 2005, the total freight transported amounted to 18.6 billion tons broken down as follows: railways 2.7 billion or 14.5 percent; roads 13.4 billion tons or 72.2 percent;
and inland waterways and coastal shipping 2.2 billion tons or 11.8 percent. In terms of TKM the modal share is vastly different: railways 2.1 trillion TKM or 49.9 percent; roads 869 billion TKM or 20.9 percent; and inland waterways and coastal shipping 1.1 trillion TKM or 26.8 percent. At an average length of haul of only 65 km the nature of road transport in PRC resembles local transport operations as opposed to the longer average hauls in rail (770 km) and inland waterways and coastal shipping (506 km). Similar differences are also observed in the modal share for passengers and PKM. Comparison of modal shares in PRC will, therefore, have to be made carefully and should consider the inherent differences in the types of service typically offered by each mode.

177. Rail transport demand is closely related to the economic activity of the nation. Table 3.2 shows projected rail traffic expressed in TUs for DMCs for 2006, 2010, and 2020. GDP growth rates were assumed for each country for 2003-2006 based on ADB economic data. GDP growth rates for 2007-2010 and 2011-2020 are based on Consultant estimates. The growth elasticity of rail demand is based on the relative dependence of the economy on rail transport. A value of 1 indicates unitary elasticity, i.e. every percent change in the GDP will cause a change of the same rate in the demand for rail transport. A value less than 1 indicates inelastic demand, i.e. the rate of change in demand is less than the rate of change in GDP. Demand is elastic for elasticity coefficients of more than 1, i.e. the rate of change in demand is more than the rate of change in GDP.

178. In the case of DMCs no country has an elasticity coefficient of more than 1. The highest values are for Mongolia (0.95) and Kazakhstan (0.90) where the economy’s dependence to rail transport is relatively high. PRC, India, and Uzbekistan also have higher than average elasticity values ranging from 0.75 to 0.85. In the mid-range are Bangladesh, Pakistan, Thailand, and Vietnam with values between 0.5 and 0.6. The remaining DMCs are at the low end ranging from 0.2 to 0.4.

179. The three countries with large rail traffic (PRC, India, and Kazakhstan) accounted for 96.1 percent of TUs in the DMCs. Their share is projected to increase to 97 percent by 2010 and 97.6 percent by 2020.

3.3 PSP EXPERIENCE IN DMCs

180. With the exception of a few isolated transactions, PSP in Asian DMCs are largely limited to contracting for supplies and services and small scale private sector operations. As part of the Project, the Consultant visited eight countries to interview government and railway officials.

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selected private operators, and other individuals and collect relevant data on the country’s PSP experience. The countries visited for this purpose include Cambodia, PRC, India, Kazakhstan, Malaysia, Pakistan, the Philippines, and Thailand. A question guide was prepared to gather background information and for use in interviews. Following is an overview of each country’s experience and plans for PSP in the railway sector.

### 3.3.1 Cambodia

#### 3.3.1.1 Physical and Operational Characteristics

181. Royal Railway of Cambodia (RRC) operates as a department of the Ministry of Public Works and Transport. The network consists of two main lines (Figure 3.1). The old line runs westwards from Phnom Penh to Sisophon (339 km), and then to Poipet at the border with Thailand. Due to internal unrest, service from Sisophon to Poipet was removed in the 1970s. The new line, opened in 1969, links Phnom Penh with the country’s only deep water port at Sihanoukville, 263 km distant.

182. Railway traffic in Cambodia has been experiencing a declining trend in recent years. Freight traffic, after increasing from 169.7 thousand tons (36.1 million TKM) in 1997 to 557.3 thousand tons (157.9 million TKM) in 2002, declined to 298.4 thousand tons (77.7 million TKM) in 2004. Passenger traffic has declined from 530.5 thousand passengers (49.3 million PKM) in 1997 to 81.9 thousand passengers (10.4 million PKM) in 2004. Traffic so far in 2005 indicates a further decline in both passenger and freight transport from 2004.

183. In parallel to the general trend in traffic, operating revenues have also declined to US$2.19 million in 2003. The railway has relatively small traffic along a short network with average length of haul of approximately 250 km, which makes it difficult to compete with road transport. As a consequence, the operating ratio has been consistently above 1, resulting in Government subsidies to maintain its existence. Operating costs are high mainly because of the age of infrastructure and rolling stock. Labor costs constitute approximately 16% of operating costs, which is considered within the acceptable range among other railways in the world.

184. The Government’s annual subsidy of nearly US$1 million represents approximately 0.25 per cent of the GDP. Compared to the massive subsidies provided by the Governments in Western Europe which amounted to 2 per cent of GDP in France and Germany and as high as 4 per cent of GDP in Italy, the Cambodian subsidy is relatively moderate. However, as a largely poor country with limited financial resources and per capita GDP of slightly above $300, even a small subsidy to the railway sector is a cause for concern and presents an opportunity for improvement of transport efficiency and competitiveness through better management and effective market-based performance.

#### 3.3.1.2 ADB Assistance

185. For the railway to gain its viability and improve cost efficiency, infrastructure improvements and PSP in railway operations are necessary. Recognizing this need, the Government requested assistance from the ADB to undertake a Project Preparation Technical Assistance (PPTA) for rehabilitation of RRC’s infrastructure and provide an Advisory TA (ADTA) for restructuring the railway sector. Consultant selection process by ADB for both TA projects is currently underway and consultants are expected to commence services in January 2006.

186. The objective of the PPTA is to advise and assist the Government with all aspects of rehabilitation and reconstruction of the infrastructure on the two existing railway lines from Phnom Penh to Poipet and from Phnom Penh to Sihanoukville. The objective of the ADTA is to advise and assist the Government with all aspects of restructuring the railway sector and the successful creation and launch of a PPP as the railway operator. It is envisioned that the Government will maintain a minority share in the new partnership and the PPP will principally be responsible for freight transport services. If desired by the Government, a separate agency may be established to operate a small-scale railway passenger service.
3.3.2 People's Republic of China

3.3.2.1 Physical and Operational Characteristics

187. With a route length reaching 75,000 km by the end of 2005, China Railway (CR) is the world's second largest railway (after Russia) under one roof (Figure 3.2). In 2004, CR carried 2.18 billion tons of freight and 1.07 billion passengers, which put it in the first rank among the world's railways.

188. In PRC the railways are particularly important because they constitute the main form of bulk transport of goods and large numbers of passengers at a price accessible to the majority of the population. CR has made significant contribution to the continued rapid growth of the country's economy. CR, however, is facing competition from road transport and problems in financing the maintenance and renewal of the infrastructure and rolling-stock.

189. CR has played a very important role in the development of the national economy and the country's industrial revolution. China is vast in territory, unbalanced in distribution of resources and industries, as well as huge in population. Therefore, the railway is crucial to the passenger and freight transportation needs of the country. The railway will continue to be the mainstay of the Chinese transport sector for a very long period of time. Given the importance of rail service, reform must be carried out with great care to reduce the risk of disrupting services.
190. One of the key determinants of PRC’s ability to continue its economic growth into the 21st century and to distribute the benefits of that growth to a broad spectrum of the population will be the further development of its railroad system. A special problem for PRC has been the uneven distribution of the benefits of rapid economic growth. Even though poverty has been remarkably reduced overall, inequalities of income distribution both between the rich and the poor and between urban and rural populations have been exacerbated by rapid economic growth. Typically, PRC’s worsening pattern of income inequality has a strong geographic component in that the coastal areas are increasingly growing richer while the vast interior regions and rural areas remain relatively poor.

3.3.2.2 Government Policy

191. The Government’s policy on railway development is focused on (i) removing constraints and expanding the system, (ii) encouraging construction of joint venture local railways to promote the development of local economies, (iii) improving efficiency by using new technology and modern management tools in planning and operation, (iv) reducing operating subsidies through appropriate pricing and commercialization of services, (v) instituting institutional and structural reforms to increase CR’s autonomy and accountability, and (vi) encouraging non-government investment in infrastructure and related services.

192. The Government’s Tenth Five-Year Plan, 2001-2005 (FYP-10) identifies transportation, including railway development, as a priority. The Plan envisages, among other goals, constructing 6,000 km of new lines, with the network length reaching a total of 75,000 route-km by 2005. In 2004, the Government approved the Railway Development Plan for 2020 (2020 Plan) that will expands the railway network to 100,000 km by 2020.
193. MOR is in a transition phase with improvements ranging from building transport capacity to institutional development. The Government has broadly defined the framework of railway restructuring including consideration for separating government functions from enterprise functions; separating rail from non-rail functions; rationalizing staff in core transportation, spinning off peripheral and non-core operations; and reforming the railway investment and financing system.

3.3.2.3 ADB Assistance

194. ADB’s strategy for the railway sector focuses on (i) expanding the railway system by constructing new lines in un-served areas that are less-developed and poor; (ii) modernizing and increasing the capacity to improve transport efficiency on key routes of the national railway system; (iii) commercializing railway operations to sustain efficient operations; and (iv) increasing railway competitiveness in the transport sector through restructuring and reform.

195. Policy dialogue has been a major element of ADB assistance to the railway sector, and has complemented ADB’s lending operations. Since 1989, ten Technical Assistance (TA) grants totaling US$4.6 million have been provided for institutional development of local railways, tariff and organizational studies for the Jing Ju railway, enhancing commercial and business operations, marketing and business development, developing human resources, and improving systems of financial management and accounting. Progress has been achieved as MOR has adopted a structured approach to railway reform.

196. There is broad agreement on reforms in the transport sector for further railway development. The reform agenda included in the 2020 Plan seeks to (i) study and learn from worldwide experience; (ii) clearly identify core operations and separate core and non-core transportation businesses; (iii) rationalize and reduce staff; (iv) reform the railway investment and financing system; and (v) establish specialized transportation companies.

3.3.2.4 WTO Commitments

197. PRC’s 11 December 2001 accession to World Trade Organization (WTO) membership poses new challenges to the railway sector. The Government has committed to open the rail freight transport services to foreign operators gradually. Until December 11, 2007 foreign operators can participate in the majority ownership of rail freight transport companies. After that date foreign ownership can be as high as 100 percent.

198. The Government is committed to following WTO rules and to opening railway freight markets and other services auxiliary to transport such as storage and warehousing, cargo handling, cargo inspection, customs brokerage, and freight forwarding to foreign investors. ADB is currently providing policy level advisory services to the MOR to analyze the commitments the PRC has made under WTO in the railway and related sectors, and to review the regulations, domestic legal systems, and laws on investment and nondiscrimination to enable service providers to identify business opportunities.

199. Currently, railway transportation is one of the most tightly controlled sectors in the PRC. CR has had a monopoly over the business for more than five decades. The accession to WTO is expected to boost the reform process in the railway transport and economic system of the PRC, especially quickening the pace of reforms in China’s railway enterprises. The Government is currently considering alternative approaches to separation of government functions from enterprise management and the realization of a commercialized operation. Following is a discussion of the major issues facing the PRC railway sector.

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30 Under the WTO rules, the General Agreement on Trade in Service (GATS) sets a common rule governing trade in services among member countries. The agreement includes provisions on obligations, general principles, and exceptions. GATS includes important obligations on monopoly regulation, franchises for service provision, national treatment, market access and domestic regulation. Disclosure is a key principle of multilateral liberalization because it makes it easier for service providers to access and compete in markets of WTO member countries. As part of the agreed obligations for market liberalization, GATS stipulates that when market access is granted, the member countries must treat foreign and local services and service providers equally within the commitment framework.
3.3.2.5 Railway Financing

200. Further elaboration of the FYP-10 has been prepared by MOR covering the period from 2003 to 2007 (Plan 2003-07). This document serves as a bridge between the 10th and 11th Five-year development plans and provides insight on the mid-term financing needs for CR. For the 2003-2007 period MOR estimates investment needs totaling US$ 56 billion (US$11.25 billion/year). More recent estimates show that railway sector investments from 2006 to 2020 will reach US$250 billion (US$16.7 billion/year).

201. **Domestic Private Sector Financing.** Recently MOR announced that the railway sector is now opening up to domestic investors and operators. The announcement made on July 21, 2005 indicates that according to the principle of equal entry and fair treatment, the domestic private capital shall be allowed to invest in whatever is allowed for foreign capital in such areas as rail construction, operation and transportation equipment manufacturing. Private capital is encouraged to invest in the construction of rail trunk lines, branch lines, local railways and bridges, tunnels and ferry facilities thereof by way of buying shares or project financing in the form of cooperation and co-management.

202. In rail freight operations, private domestic capital is allowed to participate in rail freight operations in the form of joint ventures, cooperation and co-management arrangements or through buying shares. Where conditions allow, it is allowed to establish rail freight operation enterprises with the private capital holding the majority shares or solely owning the enterprise. But in case of rail passenger operation companies established through public-private joint venture, the state capital should hold the majority of shares. Besides, the private enterprise is allowed to loan/invest and operate the luggage car of rail passenger trains, luggage and parcel special trains, and parcel and postal trains.

203. **Foreign Financing.** In follow up of the commitments made during bilateral discussions which culminated in PRC’s December 11, 2001 accession to the WTO, the MOR and the Ministry of Trade and Economic Cooperation (MOFTEC, presently designated Ministry of Commerce) jointly promulgated on August 29, 2000, the ‘Interim Regulations for Review, Approval and Administration of Foreign Investment in Railway Freight Transportation Sector’ (MOR Provisional Regulations), which addresses the issues of establishment, operation and supervision of joint venture rail transport companies in PRC. The MOR Provisional Regulations lay down explicit provisions on issues concerning access conditions, procedures, modes of examination and approval, as well as management of foreign-invested railway transport enterprises. The MOR Provisional Regulations provide the legal and regulatory framework for foreign businesses planning to enter the Chinese market.

3.3.2.6 Legal and Regulatory Framework

204. On July 16, 2004 the State Council issued its Decision on Reforming the Investment System (No. 20) and NDRC its Order No. 22 outlining Interim Measures for the Administration of Examining and Approving Foreign Investment Projects. The reform aims to:

- Fully bring into play the basic role of the market in resource allocation, separate government and enterprise functions, and reduce administrative intervention;
- Establish the position of enterprises as investors whereby enterprises can make their own decisions on investment and be responsible for their own profits and losses, while banks can make their own decisions on loan approval and bear the risks;
- Rationally define the functions of government investment and guide social investment through the formulation of development plans and industrial policies and the use of economic and legal means;
- Improve the decision-making rules and procedures for government-funded projects, make investment decisions more scientific and democratic, and establish a strict system of accountability for investment decisions.
205. The State Council’s Order No. 20 specifies that “Newly built railways (including improvements of existing railway infrastructure) which traverse more than one province, autonomous region or State-designated city or projects of 100 km or more in length shall be subject to the approval of the investment department of the State Council, and other projects shall be approved separately by the competent trade department of the State Council or the competent investment department of the provincial governments according to the subordinated relations”.

206. As indicated by the above summary, PRC has recognized the need to substantially increase PSP in the railway sector and has been taking the necessary legal and regulatory measures to facilitate domestic and foreign private sector investment. There are currently individual investors and foreign/domestic investor groups evaluating PSP options in container terminals, equipment leasing, new line construction, and other railway sector investments.

3.3.3 India

3.3.3.1 Physical and Operational Characteristics

207. Indian Railways (IR) is a vertically integrated system. It is a multi-gauge system having 46,800 route Km of broad (1,676 mm) gauge, 13,300 Km of meter (1,000 mm) gauge and 3,100 km of narrow (762/610 mm) gauge railways (Figure 3.3). The broad gauge network generates 99 percent of freight and 93 percent of passenger output. Besides providing freight, long and short distance passenger services, IR also provides commuter services in three metropolitan areas.

208. IR is owned by the MOR, which has the overall responsibility for its management. A Railway Board in the MOR headed by a Chairman, reports to the Minister and is responsible for formulation of policies, strategies, regulation and operation of railways. An independent Chief Inspector of Railway Safety who is located in another Ministry looks after the safety aspects. IR has its own budget, distinct from the national budget, which is approved by the national parliament. Investment plans need approval of the Planning Commission. Although MOR has nominal powers to make changes in freight tariff and passenger fares, in practice these require approval at the highest political level and are announced in the parliament. IR does not pay any taxes on profits or turnover.

209. The railway system is divided into zonal railways (ZRs), 16 in 2005, each headed by a General Manager. The zonal railways are further divided into divisions (65). The assets of IR including fixed assets and rolling stock (locomotives, freight wagons and passenger coaches) are nominally allocated between ZRs and each is responsible for the upkeep of its respective assets except for routine servicing of rolling stock. The General Managers are responsible for all operational matters but all policy and most investment decisions are made by the MOR. Besides carrying out the core business of rail transport, IR, also owns and manages activities such as design and manufacture of rolling stock, overhaul and remanufacture of rolling stock, construction projects, schools, technical institutes, housing, hospitals, hotels etc. IR supports a work force of about 1.5 million. IR is essentially organized at all levels by functions (departments) and not by businesses. Its employees are governed by central government rules for salary and other conditions of service.

210. IR is also required to function as a commercial organization providing vital transport services to support a growing economy and generate surpluses for its development and expansion. At the same time it is perceived as an instrument for economic development and a provider of essential social services. These multiple objectives, that often require conflicting strategies, have led to confusion and prevented IR from achieving its commercial goals. For example, commercial considerations would require IR to invest its limited resources in projects that would provide additional capacity in corridors where traffic growth is anticipated and to upgrade service quality to meet the challenge from competing modes. The social and political considerations, on the other hand, cause IR to invest in projects that have social benefits but very low or negative financial returns.
211. The railway is an important player in the economic development of the country for long distance transport, especially bulk commodities and long distance movement of materials (average lead about 700 Km). Railways also play an important role in providing mobility to the population and integration of diverse communities. However, the modal share of railways in India for freight as well as passengers has declined over the years (in terms of originating tons from 89 percent in 1950-51 to 30 percent in 2002 for freight and in terms of originating passengers from 80 percent in 1950-51 to 20 percent in 2002) in spite of the fact that the highway system is relatively less developed and suffers from constraints of capacity as well quality of infrastructure. The continued decline in market
Box 3.1: Indian Railways Financial Corporation (IRFC)

In 1986 the Indian Railways (IR) established the Indian Railway Financial Corporation Limited (IRFC) with the purpose of raising financing from market sources, buying rolling stock, and leasing it to the IR to meet its requirements for asset replacement and capacity expansion. This helped to bridge the financing gap following decline of the government's budgetary support and inability of IR to generate sufficient monetary resources from operations to finance the necessary investments.

Since 1987, IRFC has been successfully meeting the requirements of IR for new acquisition and replacement of rolling stock. It has been raising financing through the issuance of taxable and low interest tax-free bonds, long term loans from banks and financial institutions and through external commercial borrowings. For the last several years IRFC has been floating an average of IRs30 billion (US$666 million) worth of bonds every year. IRFC has top credit rating (AAA) from domestic credit rating agencies and a sovereign rating from Standard and Poor's, the international credit rating agency.

With funding raised from market sources, IRFC bought rolling stock, including locomotives, coaches, and wagons worth over IRs230 billion (US$5.1 billion) that were then leased to IR, for which IR pays lease charges to IRFC. This helped to augment transportation capacity and increased the revenue of IR. However, in recent years, because of substantial increase in the cost of servicing IRFC debt, IR is considering a ceiling on this kind of funding.

Share of railways in freight transport is attributed to capacity constraints on its high density corridors due to insufficient investment, indifferent quality of service in respect of speed and reliability of transit time, lack of focus on less than train load traffic, inflexible tariff policies in face of growing competition from deregulated trucking industry and general inability to meet competition from road transport.

212. IR’s pricing policies are dictated by social and political considerations. It has continued to operate passenger services at a loss and made good the deficits by raising freight tariff. This cross subsidy has two negative effects. Firstly, it makes railway freight service price uncompetitive that causes customers to use alternative modes. Secondly, by distorting the price of passenger services, it generates additional demand. As IR strives to meet this demand, some times by diverting capacity from profitable freight business, it makes more losses. This results in a vicious cycle of “low fares-more demand-more capacity-greater losses” in passenger business. As a result IR is not able to raise adequate internal resources to increase capacity and improve service quality but makes large investments that serve social goals but cause operational losses. It does not have a system of differential pricing for new lines.

3.3.3.2 Demand for Rail Transport and Investment Needs

213. The demand projections as per the draft corporate plan of IR estimate rail freight growth at an annual average rate of 5.4 percent and more than doubling the 2004 output by year 2020. The passenger traffic is projected to grow at 4.5 percent per year. A lower growth rate would possibly materialize if IR rationalizes passenger fares to eliminate cross subsidy of passenger.

214. In the ten years until 2003-04 a total of US$21 billion was invested on IR. The average investment was US$2.1 billion per year, though in the last year the investment made was a little over US$3 billion.

215. Traditionally investments on IR were funded by the central government (budgetary support: a loan in perpetuity on which railways pay a dividend of about 7%) and through internal accruals. However, recent years saw scaling down of budgetary support from a peak of 75 percent in the Fifth Year Plan to 23 percent in the 8th FYP (1992-93 to 1996-97) and 34 percent in the Ninth FYP (1997-98 to 2001-02). IR took to market borrowing from 1987-88 to part finance its capital needs. IR is relying on market borrowings increasingly and over 30 percent of total investments made in recent five years were with market borrowings. Market borrowings are made mainly through Indian Railway Finance Corporation (IRFC) a wholly owned subsidiary of IR. IRFC procures rolling stock with funds raised and the same are leased to IR for which IR makes lease payments. Currently the lease payment is of the order of nine percent of working expenses (Box 3.1).

216. The government policy supports the development of railways in India. It has, in early 2005, approved a project to set up dedicated rail freight corridors. These corridors would be designed for significantly higher axle loads and shall be capable of operation of double stack container trains. This would help increase capacity for freight as well as passenger services, improve service quality
and lower unit transport cost and meet the increasing demand for rail transport in the medium and long term. The segregation of passenger and freight trains on busy corridors would eliminate the drag on performance caused by mixed use of trains operating at different speeds. The existing corridors would be improved to allow express train operation at 150 km/h speed.

217. The investment on the two dedicated corridors already identified (2,800 km) is estimated at US$5 billion. It is expected that in the next 10 years, 3-4 other corridors would also be built, bringing the total investment on freight corridors to US$15 billion. Other investments to expand, modernize and improve the existing network for the next 10 years are estimated at US$20 billion. The government is likely to encourage market borrowing and PSP to implement this investment program since it may not be in a position to meet investment needs. It is anticipated that significant investments would be made in the railways, especially the dedicated freight corridors, by the private sector through the PPP route.

3.3.3.3 Private Sector Involvement in Railways

218. Railways in India after independence in 1947 have come under the government ownership, wherein both provisioning of infrastructure and transport services is done by Zonal Railways (ZR), which are independent legal entities under the Railways Act. Port Railways are an exception to this. The ports built and operate these railway systems. At network interchange points the trains are handed over/received to/from the concerned Zonal Railway. Prior to 1947 several models were in existence. These included Government owned and operated by private sector, privately owned and operated by government, pure government and pure private railways. In the last decade, a number of initiatives have been taken to develop many different models of private/state government participation in both provisioning of infrastructure and transport services.

219. Private sector has been largely associated in design, financing, construction and maintenance of fixed infrastructure in railways. In recent times, in two projects operation is being/proposed to be carried out by an agency other than the IR. Largest participation of private sector is in the area of design, financing and construction. Construction activity in rail sector is always done by private sector through contracts. However, now it is being done by award of large EPC contracts with Construction Supervision Consultants supervising the construction work. Design, build, finance, maintain and operate concessions are being given to fully private developers or to Special Purpose Vehicles (SPV), which are joint ventures between the IR and private sector strategic partners. Such concessions pass on all risks to developers including the demand risk. The concession period is typically 33 years. Design, build, finance concessions are also being given in which the demand risk remains with the IR. Such concessions are typically for 10- to 12-year periods. The developer is selected through competitive bidding process and the bidding parameter is the bi-yearly annuity payment. Projects typically involve construction of new railway lines and gauge conversion from meter gauge to broad gauge and additional lines by way of double tracking or building a 3rd or a 4th line. Private freight terminals are also permitted. Rolling stock is acquired through leasing route. In container business Indian Government has announced a policy for permitting private operators to operate private container trains, which involves acquisition of rolling stock and construction and operation of quay-side and inland container depots (ICD). Such permissions are given thorough a concession.

220. Main areas of the private sector involvement and investment in railway sector are indicated in the following paragraphs.

(1) Fixed Infrastructure

221. **Build Own and Transfer.** This model of private investment allows private sector participation in design, build and financing of the project. On completion of construction the project is handed over to IR for operation and maintenance. The ownership of the assets continues with the private developer. The MOR awards a concession for a period of 12 years. After termination of the concession the assets are transferred to the concerned Zonal Railway. During the concession period the private developer gets annuity payment twice a year. Selection of the developer is done through competitive bidding. The construction risk gets transferred to the developer, while the demand risk is with the IR. The developer has an incentive for completing the project early to start getting the annuity payments. So far the IR completed following projects through this model:
Box 3.2: The CONCOR Experience

In order to focus on and promote growth of multi-modal transport business, the Container Corporation of India (CONCOR) was set up in 1988 as a wholly owned subsidiary of IR and it commenced operations in November 1989. By early 2004, CONCOR had over fifty terminals all over the country. The majority of terminals are rail served ICD and CFS that provide international as well as domestic services, while a few are only road served or handle only domestic containers. CONCOR provides regular container train services over several routes that connect major production centers with ports and consumption centers. It runs about five pairs of container trains daily between Delhi and ports at Mumbai. The strategy of CONCOR focusing exclusively on container transport business has paid handsome dividends. The container transport business has grown rapidly and annual growth has exceeded 15 percent in recent years. In the year 2002-03, CONCOR handled 1.3 million TEUs (70 percent international and 30 percent domestic). About 70 percent of container transport was by rail and the rest by road. Government has sold 37 percent of CONCOR’s equity to the public and its stock is listed on the stock market. It is one of the better performing stocks in India. The management is answerable to company shareholders and its success is measured by the market price of its equity.

CONCOR has been singularly successful in achieving rapid growth of containerized multi-modal transport services, and improvement in service quality and profitability. This success arose from empowerment of its management, intense management focus on multi modal transport, commercial approach, sensitivity to customer needs, policy of outsourcing equipment and services and incentives for staff and managers. The Board of Directors of CONCOR has substantial financial authority and is empowered to take all operational and most investment decisions without any reference to MOR.

♦ Viramgam-Mahesana Gauge Conversion – a 60-km long meter gauge to broad gauge conversion project. The project cost was Rs.830 million. The project was completed ahead of schedule.

♦ Pansukra-Kharagpur 3rd Line – a 45-km long 3rd line project. The project cost is expected to be Rs.2 billion. The process for award of concession is in progress.

222. Build Own Operate Transfer. Under this model of private sector participation, the private sector is involved in design, construction, financing, maintenance and operation of the project. This model is normally applied for new line and gauge conversion projects. The concessionaire is generally a strategic partner that has substantial traffic of his own. In case of gauge conversion the maintenance is normally done by IR under a contract. Operation in most of the cases is done by IR under a contract. The following projects have been implemented under this model.

♦ Pipavav Railway Corporation Limited – a 270-km long gauge conversion project with a new line of about 20 km. It provides rail connectivity to the newly developed private port of Pipavav. A Joint Venture SPV with 50:50 partnership between the Private Port of Pipavav and Ministry of Railways was awarded the concession. The project cost is Rs.3.73 billion. The project is operational since April 2003. The project line mainly transports containers.

♦ Hasan Mangalore Rail Development Company Limited – a 191-km long gauge conversion project. It provides rail connectivity to Mangalore Port. The project cost is Rs.3.11 billion. A Joint Venture SPV having equity participation by Government of Karnataka, Mangalore Port Trust, Mineral Enterprise Private Limited, Kudre Mukh Iron-ore Company Limited are the partners. The project line will mainly transport iron-ore for export and containers.

♦ Kutch Railway Company Limited – a 301-km long gauge conversion project between Gandhidham-Bhildi and Palanpur. It provides shorter broad gauge
rail connectivity to Kandla and Mundra Ports. The project cost is Rs.5.5 billion. The project scope is being further enhanced to include gauge conversion of Bhildi-Samdari, a distance of 223 km. The total project cost will increase to Rs.9 billion. A Joint Venture SPV having equity participation by Rail Vikas Nigam Limited\(^{31}\), Government of Gujarat, Kandla Port Trust and Gujarat Adani Port Limited.

- Haridaspur-Paradip New Line - an 82-km long new line project. It provides shorter rail connectivity to Paradip Port for movement of iron-ore for export and also for the steel plants at Paradip. The project cost is Rs.6 billion. Equity partners in the Joint Venture SPV are Rail Vikas Nigam Limited, Government of Orissa, Paradip Port Trust, Jindal Steel & Power, ESSEL Mining & Industries Limited, and Rungta Mines Limited.

223. In addition the following SPVs are under formation.

- Bharuch-Samni-Dahej Gauge Conversion – a 62-km long project. The Project cost is Rs.2 billion.
- Surat-Hazira New Line – a 38-km long project. The project cost is Rs.1.15 billion.
- Obulavaripalle-Krishnapatnam New Line – a 114-km long project. The project cost is Rs.6 billion.
- Tuglakabad-Dadri New Line – a 36-km long project. The project cost is Rs.7 billion.

224. Private Railways: The private sector involvement under this model covers design, construction, financing, maintenance and operation. The operation, if desired by the developer, can be done by the IR under contract. The following projects have been implemented or under implementation.

- Adipur-Mundra New Line Project – a 60-km long new line project providing rail connectivity to the private port of Mundra. The project cost is Rs.1.2 billion. The project concession was given to Gujarat Adani Port Limited. Construction and maintenance including financing is done by the private developer. Operation is being done by IR under a contract.
- Bhadrak-Dhamra New Line Project – a 60-km long new line project providing rail connectivity to the Private Port of Dhamra. The project cost is Rs.1.2 billion. The project concession is given to Dhamra Port Company Limited. All the activities including operation of trains will be done by the private developer.
- Vallarpadam-Idapalli New Line Project – a 8.5-km long new line project providing rail connectivity to the newly developed private container hub of Vallarpadam. The project cost is Rs.2.4 billion. The financing, construction will be done by the private developer.

(2) Private Freight Terminals

225. Under this policy the entire financing, construction and operation of Freight Terminal is done by the private developer. A private terminal has been developed at Garhi Harsaru near Gurgaon by Gateway Distri Park. Many more such terminals are in the offing.

(3) Private Warehouses at Railway Freight Terminal

226. Under this policy construction of private warehouses at existing railway freight terminals is being encouraged. This helps provide storage and distribution facilities at the rail head and avoid

\(^{31}\) The Government of India established Rail Vikas Nigam Limited as a company under the MOR to promote Public Private Partnerships in the railway sector.
double handling. One such warehouse has been constructed at Whitefield near Bangalore. About 18 more warehouses are in the pipeline.

(4) Rolling Stock

227. Rolling stock is being acquired by IR through leasing route from IRFC, BHEL and a number of private companies, particularly cement Industry under the “Own Your Wagon Scheme”. Every year investment to the tune of Rs.30 to 35 billion is being mobilized through this route.

(5) Private Container Trains

228. The MOR has announced a policy of permitting private container train operators for movement of international container traffic. These operators will invest in container flats and construction and operation of private quay-side and inland container depots. Even for running of one train per day, it is expected that an investment of Rs.750 million will be made by each operator.

3.3.4 Kazakhstan

3.3.4.1 Physical and Operational Characteristics

229. The Kazakhstan State Railways (KTZ) network comprises most of the former Almaty, Tselinnaya and West Kazakhstan railways of the former Soviet Union Railways (SZhD). In 1996-97 there was a series of reorganizations, with these three constituent railways shedding divisions in order to create three new railways, making six, with limited independence. One of them was subsequently re-absorbed, leaving five operating regions, which are no longer subdivided into divisions, and have the status of state enterprises under the close supervision of KTZ.

230. There are several lengthy main lines traversing regions of low population (Figure 3.4). The principal route is the 1,507 km Trans-Kazakhstan Railway running from Petropavlovsk on the Trans-Siberian Railway through Kokchetav, Astana and Solonichki to the Karaganda coalfield. This was later extended to Chu, on the Turkestan-Siberian route, and Lugovoy where it connects with lines into Kyrgyzstan and Uzbekistan. The Turkestan-Siberian route runs 1,445 km from Semipalatinsk via Aktogay and Zhangiz-Tobe to Almaty and Chu. From Aktogay the line to the Chinese border at Druzhba now forms part of a through route from the Chinese capital Beijing to Russia and western Europe. This, the Trans-Asian route, provides a Japan-Western Europe link that is claimed to be 2,500 km shorter than the Trans-Siberian route.

231. A third main line in the west of the country links Tashkent, in Uzbekistan, with Orenburg in Russia, via Aralsk, Kandagach and Aktyubinsk, a distance of 1,854 km. In 2002 it was agreed that ownership of three lines totaling some 100 km within Kazakhstan, but operated by Uzbekistan Railways for reasons dating back to the Soviet era, would be transferred to KTZ. The Kazakhstan system has many long stretches of single track; over one third of the network is double track.

232. In early 2001 it was announced that the railways were to be restructured. A first step towards this was the conversion of KTZ into a closed joint-stock company, ZAO KTZ, in March 2002, a move intended to improve management and accounting methods. It is intended that the state will retain ownership of the railway’s infrastructure and rolling stock. A passenger operating company is to be formed, its service levels and fares determined by the government in return for subsidy. Competition is foreseen in the freight sector, including provision for major industries and shippers to run their own trains. A separate joint-stock company providing locomotive maintenance services is to be established by 2006.

233. A wide-ranging restructuring program was initiated by a new Railway Transportation Law enacted in 2001. The 2001 program had three phases:

♦ Phase 1 Commercialization
♦ Phase 2 Competition
♦ Phase 3 Privatization (part)

32 Adapted from Paul Amos, Reform, Commercialization, and Private Sector Participation in Railways in Eastern Europe and Central Asia; the World Bank Transport Papers-4, January 2005.
234. During the last three years there has been significant progress in implementing the first phase of this plan. All social and cultural activities had been divested by the end of 2003 and all supporting activities (for example, track and rolling stock repair workshops, telecommunications, security, etc.) have been created as separate companies. Passenger operations were set up as a separate company under the Ministry of Transport and Communications (MOTC) in 2003. In January 2004 the freight train operations and majority of freight wagons were transferred to the newly-created State-owned freight operator. The locomotives were transferred to a separate company (JSC Locomotiv).

235. In February 2004 the government passed Decree 145 which has re-confirmed the importance of the wider objectives of competition and privatization. It sets out a comprehensive framework and timetable for actions to be taken over the period 2004-2006. The reforms are being rapidly implemented and the situation changes daily.

3.3.4.2 Organization and Management

236. The reforms are currently establishing separate roles between:

- The MOTC, which determines railway industry policy and approves access for private Train Operating Companies (TOCs) wishing to use railway infrastructure;
- KTZ, which will in future be a publicly-owned railway infrastructure company;
- KTZ’s passenger business (JSC Passengers) and freight business (JSC Kazzheldortrans), which will be commercially autonomous (though publicly owned) TOCs; and
♦ The Regulator (the Anti-Monopoly Committee), which will approve the track access regime and track charges on the basis of non-discrimination between TOCs (whether public or private).

237. Much of this structure is already in place in an industry in which, only a few years ago, the State Railway Company itself was effectively policy-maker, regulator, infrastructure owner and exclusive operator of both passenger and freight trains on the public network.

238. KTZ’s freight operations are to be transferred into a new freight company, Kazzheldortrans, which was formally registered in January 2004. However, during the Program period (2004-2006) Kazzheldortrans will remain a subsidiary company of KTZ. The separation of corporate identity and management is certainly a major step, but the retention of corporate linkage is, prima facie, a weak point. It carries with it the danger that KTZ may show favor to its subsidiary freight company compared to private freight operators, and thereby inhibit competition in the freight transport market. However, such arrangements are not uncommon internationally. The great majority of EU railways and some elsewhere, have also retained corporate links between infrastructure and train operating companies, while at the same time promoting third party access.

3.3.4.3 Competition and Private Participation

239. The reform program aims at introducing or extending private participation and competition in the industry in the following areas:

♦ Freight train operations (through open track access): several licenses have been issued and two new freight operators (Bogatyr Trans and Transcom) have been accepted on KTZ’s network; these two coal companies are operating some 6000 wagons.

♦ Passenger train operations (through franchise competitions, assisted by access to passenger rolling stock which will be owned by a special purpose company and hired to winning bidders).

♦ Railway security services (through privatization and competitive tendering).

♦ Track repairs (through privatization of track repair units and competitive tendering).

♦ Locomotive maintenance and repairs (through privatization of workshops and competitive tendering).

♦ Freight and passenger wagon maintenance and repairs (through privatization of workshops and competitive tendering).

♦ Locomotive and wagon ownership (private supply will be encouraged through open access and non-exclusive haulage. This will also encourage a competitive leasing market).

♦ Short lines (through sale of such lines to their major users).

♦ Rail container operations (through sale of 74 percent of shares in Kaztranservice (which runs container trains): and sale of 67 percent of Kedentranservice (which operates terminals) which should give private operators equal access to container yards).

♦ On-board passenger train services (to be leased by competitive tender to private sector)

240. In practice, it may not be practically possible to realize the level of PSP and competition which is sought within the period specified (particularly in passenger train services). But the commitment of the Program to both private involvement and competition is impressive.

241. JSC Locomotiv will hire locomotives (and drivers) to both the public and private train operators who choose to use their services (the Company has no exclusive right of haulage and
any operator can procure their own equipment). The model of a separate locomotive company was chosen:

- to ensure non-discriminatory access to haulage by new entrant private TOCs (the cost of locomotives is seen as an important barrier to new entry which this approach is intended to reduce)
- to ensure no compromise in safety in that the current systems of safety management of the fleet and drivers should not be disrupted during the transition;
- to alleviate the concern that if the fleet were to be divided the system would lose flexibility and utilization;

3.3.4.4 Funding of Passenger Services

242. Only JSC Passenger Transport will receive subsidy from the central government budget. It is intended that the suburban company will contract with and receive subsidies from relevant local governments, or the local governments will be offered the rolling stock to run their own services. Some local subsidies are already received for these services.

243. JSC Passenger Transport’s subsidies will be in the form of a PSO contract which will identify the lines and services which the government is willing to finance. The remainder will be funded by the Company. The company has a management costing model to identify broad costs by route, locomotive type, etc.

244. Some progress is being made in transferring the public service obligation for passenger service from KTZ to the Government. Of the 65 percent of passenger costs not covered by passenger revenue, the Government has agreed to share the subsidy burden in 2005, on the basis of 28 percent by government and 37 percent by KTZ. Ownership of the passenger service company will be transferred in January 2005 from KTZ to MOTC with plans to franchise out the provision of passenger services. Responsibility for funding passenger services, therefore, will be transferred from KTZ to the Government. Subsequently, transit passenger services (for example, Tashkent to Moscow) will be expected to pay their full cost. The Government will subsidize passenger services between oblasts. Funding for passenger services within oblasts (i.e., commuter services) will be the responsibility of the oblast.

3.3.5 Malaysia

245. Malaysia has four principal operators of railway facilities (Figure 3.5): one state-owned company with mixed freight and passenger transport primarily in intercity service, one state-owned company in urban transit in Kuala Lumpur; and two private companies operating light rail transport in Kuala Lumpur. Following is a description of each company’s organization and operations.

3.3.5.1 Malayan Railway Company (KTM)

(1) Organization and Management

246. The railway’s prime route is the 787 km main line from Singapore north through the capital, Kuala Lumpur (KL), to Butterworth, one of Malaysia’s principal sea ports on the west coast of the peninsula. Short branches reach sea ports at Port Klang, Pasir Gudang and Tanjung Pelepas. The other major route is the 528 km East Coast line running northwards from a junction with the Singapore-Butterworth line at Gemas to Kota Bharu and Tumpat. Both lines link with the State Railway of Thailand. At the beginning of 2003 KTM employed 5,024 staff.

247. The government has long been seeking to privatize KTM. Until 1992 KTM was operating as a department of the Government. On August 1, 1992 it became a corporatized entity with a mandate for privatization within 5 years. A contract was signed on July 1, 1997 with the Marak Unggul consortium, comprising Renong, DRB-Hicom, and Bolton Properties to manage KTM operations under contract until December 31, 2001. Discussions regarding full privatization continued between the government and the Marak Unggul consortium, but an agreement could not be reached. Therefore, on January 1, 2002 the Government took over the operations. KTM now operates the trains, maintains track and rolling stock as an agency reporting to the Land Division of
the Ministry of Transport (MOT). The infrastructure is officially owned by Sharikan Prasarana Negara Berhad (SPNB), which reports to the Ministry of Finance.

Figure 3.5: Railways of Malaysia

Source: University of Texas Libraries

(2) Passenger Operations

248. KTM operates both electric suburban services (branded ‘Komuter’) around the capital, Kuala Lumpur, and long-distance trains. Suburban services operate on two electrified routes: Rawang-Seremban and Sentul-Port Klang. These interchange with each other and with the Putra metro and KLA Ekspres (airport express) service at Bandar Tasik Selatan. Long-distance travel soared spectacularly in the 20 years to 1991, lifting the total annual PKM from 620 million to 1,850 million; thereafter patronage began to fall. Following opening of the North-South Expressway (NSE) road in 1994, PKM declined to 1,348 million; in 2000, there was a further fall, to 1,240 million and to 1,152 million in 2005.

249. The stiff competition focused attention on the long-term need to reduce journey times between Kuala Lumpur and Singapore. This is expected to be achieved by doubling and electrifying the whole line for 160 km/h operation. In addition to ordinary train services, KTM operates day and night Singapore-Kuala Lumpur and Kuala Lumpur-Butterworth express trains, and a single daily express between Gemas and Tumpat on the East Coast line. In conjunction with the State Railway of Thailand, KTM runs a daily International Express between Butterworth and Bangkok. All express and night trains on the north-south main line are air conditioned. Intercity trains carry over 10,000 people daily, the KL-Singapore route being the busiest. Orient-Express Hotels of the U.K., operators of the Venice Simplon-Orient Express in Europe, runs a weekly luxury cruise train service, the Eastern & Oriental Express, between Singapore, Kuala Lumpur and Bangkok.
(3) Freight Operations

250. Traffic has fallen slightly in recent years from 1,095 million TKM in 2001 to 1,018 million TKM in 2004. Cement is the most important commodity carried, but fuel, gypsum and dolomite are among other products handled. International traffic is exchanged with the Thai system. Container traffic is a fast-growing business, with 16 daily trains operated in 2003. Begun in 1974, this has become KTM's biggest freight earner. A significant component of the growth has been containers from southern Thailand, which have a quicker haul across the border at Padang Besar to a Malaysian port than to Bangkok. Around a quarter of southern Thailand's rubber exports are shipped through Butterworth. In April 1999, KTM launched a twice-weekly container landbridge service between Bangkok and Port Klang, providing a journey time of 60 hours.

251. The government has been promoting intermodal transport, and KTM formed a wholly owned subsidiary in 1988, the Multimodal Freight Company, which has acquired 225 highway tractors and 1,300 trailers so as to offer door-to-door service. This operates from all major ports and the inland container depots at Kuala Lumpur, Ipoh, Prai, Nilai and Padang Besar.

252. Improvement and expansion of rolling stock has been a recent KTM priority. Flatcar capacity has been added regularly, bringing the total to 3,500 TEU in 2003. Structures have been modified to gain clearance for 9 ft 6 in cube containers on certain routes.

(4) PSP Experience and Prospects

253. Other than a short period for management of KTM operations by the private sector, which is viewed by the Government as a failure, KTM has been managed a public enterprise. The MOT is of the opinion that the corporatized KTM did not properly work since its “Board failed to act in consonance with public policy”.33 With the exception of specific PPP transactions on specialized operations such as container terminals the Government does not envision PSP in KTM’s operations.

3.3.5.2 Express Rail Link

254. In August 1997 Express Rail Link (ERL) was granted a 30-year government concession, with a 30-year extension option, to design, finance, construct, manage, operate and maintain an express rail system linking Kuala Lumpur Sentral at Brickfields and the city's new international airport (KLIA) at Sepang, south of the capital. Land acquisition for the scheme was undertaken by the Malaysian government. The concession contract places the traffic and inflation risk with the concessionaire, but provides an automatic 5 percent per year increase in fares with adjustment in tariff every five years.

255. After some delay due to regional financial difficulties, in October 1998 a DM1.3 billion turnkey contract to build the system was placed with SYZ, a consortium led by the Transportation Systems Group of Siemens AG, which owns a shareholding of 59 per cent, after a financing package was secured from Germany. Construction work was undertaken by local consortium partner Yeoh Tiong Lay Sdn Bhd (YTL). Operations commenced on 19 April 2002.

256. Shareholding in ERL, which was formally incorporated on 29 January 1996, is by Tabung Haji Technologies (60 per cent) and YTL Corporation (40 per cent). Under a contract signed in November 1999, a subsidiary company, ERL Maintenance Support Sdn Bhd (E-MAS), has been established to operate and maintain the system for three years. At the start of operation in April 2002, E-MAS employed 327 staff.

257. ERL plans to operate two services: KLIA Express, a non-stop service linking KL Sentral and KLIA, with a journey time of 28 minutes; and KLIA Transit, a commuter service linking the same two points but with additional stops at three intermediate stations to interface traffic with KTM and other passenger operators. KL CAT, which is located in the KL Sentral development, offers city centre check-in and baggage transfer for departing passengers and a baggage check-out facility for arriving passengers. A service frequency of 15 minutes is provided for 21 hours each day.

258. For KLIA Transit, a half-hour frequency is offered, with a 36 minute journey time. Interchange will be made at Bandar Tasik Selatan with KTM Komuter main line services and with

33 Consultant interview with Mr. K. Patmanathan, Principal Assistant Secretary (Rail) of MOT, Land Division; Kuala Lumpur, October 17, 2005.
the STAR light rail system and with the Putrajaya Monorail at Putrajaya's Western Transport Terminal. At KL Sentral, interchange will be made with KTM Komuter and main line services, the Putra rapid transit system and KL Sentral Titiwangsa services.

259. The total cost for the project was RM 2.4 billion (US$650 million) with a debt/equity ratio of 80/20. Due to the Asian financial crisis, the Government assisted in renegotiating the project's financing by providing a 25 year loan with a 12-year grace period to the concessionaire. The average cost of capital for the loan is said to be less than 3 percent per year. The company's current operating ratio is 0.5, indicating a good return and an ability to pay the principal and interest on the loan when the grace period ends in 2015.

3.3.5.3 M Trans

260. M Trans, a private company which designs, plans, builds, and operates light rail transit systems, was awarded a concession in 1995 to build and operate a 8.6-km long monorail system in Kuala Lumpur. M Trans is also manufacturer of passenger cars, which allowed the company to completely build and equip the monorail system by in-house talent and resources.

261. Due to the financial crisis M Trans was able to receive Government support under the same terms and conditions as Express Rail Link described above. The monorail service commenced operations in 2002.

3.3.5.4 Rapid KL

262. In 1994 a consortium headed by the Renong Group was awarded a 30 year BOT concession with a renewal period of 30 years to finance, build, and operate the Putra rapid transit system. The cost for land acquisition was provided by the Government. The project was completed in 1999 and was operated by the concessionaire for 3 years until 2002. The private investor initially agreed to financing terms (some with foreign lender to be paid in foreign exchange) which now became too difficult to comply with under realistic projected cash flow assumptions. The Government and the concessionaire agreed to cancel the BOT contract and let the Government take over the ownership and operation of the project.

263. In 2002 SPNB of the Ministry of Finance issued a government bond with sovereign guarantee for RM5 billion (US$1.3 billion) to retire Renong’s debt and take over the assets of Putra. In January 2005 Rapid KL was established under the Ministry of Finance to operate the Putra line. SPNB is officially the owner of assets and Rapid KL is the operator. Both are owned 100 percent by the Government and report to the Ministry of Finance. Rapid KL is responsible for maintaining the infrastructure and equipment and pays an asset usage charge to SPNB, which is currently at 12 percent of the company's revenue. This charge is to increase in the future.

264. Rapid KL and SPNB are involved in another concession which failed: the Star Line which was awarded to a U.K.-based investor/operator. The Star project went through the same problems as the Putra Line and was taken over by the Government. Rapid KL is also operating two bus companies. The company does not receive a subsidy and is currently incurring an operating loss of RM3 million (US$0.8 million) per month on total revenue of RM23 million (US$6.13 million) and expenses of RM26 million (US$6.93 million). In addition to paying a track access charge to SPNB, Rapid KL is required to cover track maintenance costs from its revenue. It is not clear as to whether clear guidelines and requirements are in place for minimum maintenance requirements with appropriate independent monitoring to assure safe operations.

3.3.6 Pakistan

265. Pakistan Railways (PR) is an autonomous agency under the Ministry of Railways that operates the rail network. The rail system is based on broad-gauge track except for the meter-gauge Mirpur Khas-Indian border route and scattered narrow-gauge lines connecting to specific industrial processing facilities (Figure 3.6). The rail system includes 11,515 kilometers (km) of track and 7,791 km of routes, of which 7,346 km are 1,676 mm broad gauge and 544 km are electrified (broad-gauge totals 10,960 track km), and 445 km of meter gauge (meter gauge track totals 555 km); 625 stations; and, 592 locomotives, 1,865 passenger coaches, and 21,812 freight wagons.
During 1955-60, rail carried 42% of total passenger traffic and 73% of freight. Currently, rail carries only 10% of the passenger traffic and 5% of freight, with roads handling nearly all of the remainder. Rail's declining share of traffic has been caused by deteriorating infrastructure,
outdated rolling stock, and an inefficient and large staff. Although truck and bus transport charges are generally higher, the unreliability and inefficiencies of the rail network have led to a distinct market preference away from rail to road.

267. The MOR is restructuring and implementing measures that will facilitate private sector participation on various routes. However, the initial results of these efforts will not be known in the immediate future. In the interim, MOR is in the process of rehabilitating track and other infrastructure, and purchasing new locomotives and other rolling stock.

268. Some faltering steps were made towards privatization in the early 1990s. In 1992 it was announced that as a first step the government proposed to franchise out the lines from Lahore to Narowal and Faisalabad, and the Lodhran-Pakpattan route. Initial reports suggested that the franchisees, which took over at the beginning of 1993, had raised income on the routes, but this was due more to tighter security and control of ticketless travel than any immediate improvement to the train services. Both original franchises were later terminated and readvertised, but government approval for new leases was not immediately forthcoming.

269. In July 1997, disappointed by the lack of progress and the chaotic state of the railways, the government instituted a radical shake-up. World Bank-inspired reforms would see the railways and communications ministries merged into a single transport ministry, a rail regulatory authority set up, and PR divided into three bodies responsible for freight, passengers and infrastructure. A fourth business would manage railway-owned facilities such as schools and hospitals and would be responsible for the disposal of non-core businesses. Within three years they would be privatized. A task force was created to implement the restructuring plan, which was to include replacement of the existing board of management. The plan also foresaw massive cuts in PR’s 110,000-strong workforce and the transfer of schools and hospitals for railway staff and their families to local authorities.

270. The division of PR into four businesses took place in September 1998, when rolling stock assets were divided between freight and passenger businesses. Management of the network, including signaling and train control functions, is being handled by the infrastructure unit. Coinciding with this restructuring was the creation of a new senior management board. Through the Privatization Commission, the government plans to offer for sale or by concession its three core businesses, freight, passenger and infrastructure, as well as non-core activities such as rolling stock plants and sleeper manufacturing facilities and railway land and other property.

271. During the last five years the former Ministry of Railway and Communications was reorganized by separating the railway into the new MOR. The Government with assistance from the World Bank is now aiming at corporatizing the PR with autonomy to operate under market conditions.

3.3.7 Philippines

272. The Philippine National Railway (PNR) is responsible for intercity passenger and freight operations. Urban transit operations in Manila are provided by Mass Rail Transit (MRT) and Light Rail Transit (LRT) administrations. PNR, MRT, and LRT all report to the Undersecretary for Rail in the Ministry of Transport and Communications. They are all owned fully by the Government.

273. Much of the northern part of PNR’s network remains closed due to the poor condition of the infrastructure (Figure 3.7). Operations are currently concentrated on the 478 km Southern line from Manila to Legaspi City, on which major rehabilitation work was completed in 1995. Suburban trains run south from Manila on this line as far as Carmona.

274. Intercity passenger traffic has suffered from the poor state of the system; the number of journeys declined to less than 1,000 passengers per day on the only daily train service between Manila and Legaspi. Long-distance passenger figures have continued to languish, but Manila suburban services bounced back sharply after commencement of operations in MRT and LRT projects. Passenger journeys in Manila now reach 400,000 per day.

275. With nearly half the system closed, freight traffic has been in decline for many years. Traffic amounted to less than 5,000 tons in 2003. Since 1997 container services operated by the Manila port authority have been run to a terminal near Santa Rosa (45 km).
276. Plans to privatize PNR had been expected to be put before Congress in 1998 as a way of arresting the deterioration of the network. Ownership of infrastructure was expected to remain with the state, with private-sector concessionaires taking over operation, maintenance and upgrading of the system. No progress with these plans had been reported until today.

277. The Government experimented with PSP through the BOT Law. The MOUs executed with a few project proponents did not proceed to implementation, however, due to financing difficulties. More recently, the Government adopted a new model to finance infrastructure investments through public funds and concessioning operations (including investment in rolling stock) to the private sector. A loan was secured from the Government of South Korea for US$50.4 million to implement Phase 1 infrastructure rehabilitation from Caloocan to Alaban (34 km) south of Manila. Phase 2 is expected to be financed also from the same source for the 26-km Alaban-Calamba section. One condition of the loan is for the Government to franchise train operations upon completion of the project to a private company under a competitively bid contract.

278. The Bases Conversion Development Authority (BCDA) is implementing the Manila North project which includes infrastructure rehabilitation from Caloocan to the former Clark Air Base utilizing the PNR right-of-way. The first phase of this project is funded through an export credit facility from PRC in the amount of US$400 million.
3.3.8 Thailand

279. Rail transport operations in Thailand (Figure 3.8) are provided by the State Railways of Thailand (SRT), a government entity; Bangkok Mass Transit System Public Co. Ltd. (BMTSB), a private company operating the elevated SkyTrain; and Thailand Mass Rapid Transit Authority (MRTA), a public agency operating the Bangkok underground under a PPP arrangement with Bangkok Metro Public Co. Ltd. These operations are described below.

3.3.8.1 State Railway of Thailand (SRT)

(1) Organization and Management

280. The State Railway of Thailand (SRT) is a 106-year old public enterprise operating on a network of 4,071 km meter gauge track. The entity reports to the Ministry of Transport and Communications (MOTC).

(2) Operations

281. In 2003 SRT carried 54.13 million passengers and achieved 10,250 million PKM. The corresponding traffic figures for 2004 are 50.87 million passengers and 9,332 million PKM. SRT attributed this reduction to disruption caused by infrastructure rehabilitation and upgrading and to timetable changes. In 2004 SRT’s freight traffic was 13.8 million tons and 4,097 million TKM, reflecting an increase of 20 percent and 1.3 percent, respectively, from the previous year. The improved performance in freight transport operations was due in part to increased cement traffic in response to the demands of a growing construction industry, to landbridge maritime container traffic from Port Klang and to increased domestic container shipments from Sa Kosi Narai, Surat Thani and Tha Rua Noi terminals.

282. The railway’s share of passenger traffic in Bangkok is 16 percent, and nationally less than 7 percent. With respect to freight transport, the railway’s share is 1.8 percent with roads taking up 92 percent of the traffic and other modes (inland waterways and air) the remaining 6.2 percent. The trend indicates a declining volume for passenger transport and increasing freight transport in the future.

(3) PSP Experience

283. SRT invested more than THB 8 billion (US$195 million) on infrastructure rehabilitation during the last three years and estimates investment needs of BHT 133 billion (US$3.24 billion) for the next 6 years.

284. The Government’s broad PSP policy is for public investment in infrastructure and private investment in rolling stock and operations. This policy, however, has not been widely implemented yet at SRT. Other than small scale PSP in repair of bogies and provision of services on passenger trains, train washing, and repair/upgrading of air conditioning equipment and a PPP in the Inland Container Terminal (ICD) at Lat Krabang, SRT has not had PPP experience. The management of SRT views private sector contracting for services as problematic because of the inability of the new contractor to receive the know-how from the incumbent who lost the bid.34 The ICD project, however, is viewed as a successful partnership where investment was provided by SRT and management by the private sector partners.

285. In January 2005, SRT started construction of the New Bangkok International Airport (NBIA) Link as a fully public funded project. No decision is yet made as to whether PSP will be sought for operation of the NBIA Link under a concession contract.

3.3.8.2 Bangkok SkyTrain

286. The SkyTrain is the first railway transit system in Bangkok. It is operated by Bangkok Mass Transit System Public Company Limited (BTSC). The company was established in 1992 to help alleviate Bangkok’s chronic traffic congestion and provide the city’s commuters with a fast, efficient and affordable means of transportation. The SkyTrain commenced operations five years ago under a 25-year BOT concession which has 15 years remaining. Maintenance is supported by Siemens which is a partner in the concession.

34 Interview with Mr. Arak Ratboriharn, Chief Financial Officer of SRT; Bangkok, September 26, 2005.
Figure 3.8: Thailand Railway

Source: University of Texas Libraries
287. The right-of-way of the system is the median of the road network under the control of the
Bangkok Municipal Authority. The concession is operating successfully with a daily ridership of
400,000 and is in need of further expansion and feeder lines.

288. The Government recently announced its intention to buy back the concession from the
BTSC and operate the SkyTrain as a public agency under the MOTC. The price tag for the
transaction is estimated at THB 30 billion (US$732 million) which will be financed through an Initial
Public Offering (IPO) of shares. The nationalization plan envisages 75 percent ownership by the
Government and 25 percent by BTSC creditors (World Bank’s IFC and Germany’s Kfw).

3.3.8.3 Bangkok Subway

289. Bangkok Subway commenced operations in July 2004. The new system is owned by
Thailand’s Mass Rapid Transit Authority (MRTA) and financed and operated by Bangkok Metro Co.
Ltd. (BMCL) under a concession agreement. The subway has been in the making for a decade, and
construction actually started before the overhead SkyTrain opened for business. The subway
consists of one line, which runs for a total of 21 km on a broadly north-south axis, allowing
interchange with the SkyTrain at three points along the way.

290. BMCL won a 25-year concession to operate the 20-kilometer subway in Bangkok, during
which it will pay at least THB 10.2 billion (US$249 million) to the government. More recent
estimates place the value of total payments to the Government at THB 25 billion (US$610 million).
BMCL, led by CH Karnchang PCL (H.CHK), has invested a total of nearly THB 20 billion (US$488
million) in the project.35

291. In a recent development similar to the nationalization of the SkyTrain, the Government
announced its intention to buy back the concession from the BMCL and operate the subway as a
public agency under the MOTC-MRTA. The price tag for the transaction is estimated at THB 25
billion (US$610 million) which will be financed through an IPO of shares. The company announced
that it would accept a price of THB 35 billion (US$854 million). In a separate move, BMCL recently
announced that its long-delayed IPO will be offered in the first Quarter of 2006.36 The company
expects to raise US$76 million from the IPO: US $73 million from public sale of shares and US$3
million from a private sale to its employees and directors and MRTA. The proceeds will be used to
buy five train sets from Siemens and repay debt.

3.4 LESSONS LEARNED: PROBLEMS AND SUCCESSES

292. Similar to the situation in other utility sectors in the developing world which grappled with
poor performance in the early 1990s, railroads, too, have been struggling with similar problems: a
bloated labor force resulting in low productivity, a poorly maintained infrastructure and equipment
causing unreliable service, and a bleak financial situation precluding introduction of new
technologies and performing routine maintenance and repair. Figure 3.9 is a simplified illustration
of the root causes and effects of the poor performance of public railways. Table 3.3 provides a
synopsis of selected issues and lessons learned from PSP transactions conducted during since
1990. Both the figure and the table are not intended to be comprehensive, but rather illustrative of
selected major issues and suggested ways to deal with them responsibly.

35 BMCL is 29.4 percent owned by construction contractor CH Karnchang, 14.5 percent by property firm Natural Park,
19.7 percent by Bangkok Expressway and 9.9 percent by Krung Thai Bank. The remaining shares are held as treasury
stock for a pending IPO of 2.55 billion shares (21 percent) and private sale to employees and directors and MRTA (5.5
percent).

36 Reuters; Thai subway firm BMCL plans to list in Q1 2006; November 19, 2005.
**Figure 3.9: Root Causes and Effects of Poor Performance of Public Railways**

<table>
<thead>
<tr>
<th>CAUSES</th>
<th>EFFECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bloat Labor force</td>
<td>Low efficiency and productivity</td>
</tr>
<tr>
<td>Politically set tariffs</td>
<td>Inadequate revenues to cover costs</td>
</tr>
<tr>
<td>Railway staff working as public servants</td>
<td>Service deterioration</td>
</tr>
<tr>
<td>Diminishing public financial support</td>
<td>Deteriorating infrastructure</td>
</tr>
<tr>
<td>Non-transparent relationship between government and railway</td>
<td>Loss of market share</td>
</tr>
</tbody>
</table>

**Source:** Consultant

**Table 3.3: Selected Lessons Learned and Good and Bad Practices**

<table>
<thead>
<tr>
<th>Problem/Issue</th>
<th>Country: Description</th>
<th>Reference</th>
<th>Lessons Learned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduced access to remote regions and disadvantaging the poor</td>
<td>Argentina: After concessioning route km decreased by more than one-third</td>
<td>Section 2.2.3.1 and Appendix 5</td>
<td>Government must specify distributive goals to be achieved at the outset and be prepared to pay for non-reumerative services through PSO agreements.</td>
</tr>
<tr>
<td>Unprofitable passenger services</td>
<td>Mexico: After concessioning passenger train services have deteriorated and altogether disappeared on some lines</td>
<td>Appendix 4</td>
<td>Should the Government decide to continue with unprofitable passenger service, one of the following may be considered in the design of PSP: (i) offer passenger service separately with award to the bidder which bids for the least subsidy to continue operation.</td>
</tr>
<tr>
<td>Inability to dispose rolling stock</td>
<td>Brazil: All old rolling stock turned over to the concessionaire for return at the end of the agreement 30-40 years hence</td>
<td>Appendix 7</td>
<td>Change in laws is necessary allowing the Government to dispose old equipment if the private company chooses not to use them.</td>
</tr>
<tr>
<td>Tariff hikes for passenger and freight service</td>
<td>Brazil: Regulation sets product specific maximum prices to be charged for transport services in the contracts</td>
<td>Appendix 7</td>
<td>Often prices do have to increase because tariffs have been kept well below costs for many years, generating a substantial drain on the public purse and diverting scarce resources from other vital areas of public expenditure. In fact, the raison d’etre of a railway is to make money.</td>
</tr>
<tr>
<td>Project faces financial difficulty due to lower than expected traffic or other external factors</td>
<td>Malaysia: Government assisted in financing Express Rail Link and M Trans</td>
<td>Section 3.3.5</td>
<td>Government should be prepared to step in and assist if the financial viability of the project is threatened due to reasons beyond the private company’s control (e.g., Asian crisis). As a general rule, however, the Government should avoid assuming commercial loss making projects.</td>
</tr>
<tr>
<td>Lengthy negotiation process</td>
<td>Ivory Coast-Burkina Faso: Disclosed all conditions in the bidding document</td>
<td>Appendix 9</td>
<td>Disclosing fully the “rules of the game” facilitates negotiations and clarifies ambiguities which may cause disputes during implementation.</td>
</tr>
<tr>
<td>Labor redundancy</td>
<td>Many countries</td>
<td>Appendices 4.5, 7, 8</td>
<td>The private company should be provided the flexibility of selecting its staff from the public entity. Government should be prepared to effectively deal with surplus staff through: (i) training for reemployment elsewhere; (ii) retaining employees in other</td>
</tr>
<tr>
<td>Investment needs are too large to bear by one private company</td>
<td>Estonia: Government is shareholder of the privatized railway PRC: Shares of Guangshen Railway are listed in the stock exchanges</td>
<td>Appendix 8</td>
<td>The Government should consider partial divestiture (Estonia). PPP with the private companies (Ivory Coast and Burkina Faso), or IPO (PRC) to assist with financing.</td>
</tr>
<tr>
<td>Separation of regulator from the operator</td>
<td>Many countries</td>
<td>Appendices 10 to 14</td>
<td>Gradualism in reform can be a merit if it reflects a well thought-out series of steps towards an agreed outcome. Gradualism should not reflect a lack of clarity in ultimate objectives or indecision.</td>
</tr>
<tr>
<td>Reform takes too long</td>
<td>Many countries</td>
<td>Appendices 10 to 15</td>
<td>Gradualism in reform can be a merit if it reflects a well thought-out series of steps towards an agreed outcome. Gradualism should not reflect a lack of clarity in ultimate objectives or indecision.</td>
</tr>
<tr>
<td>Separation of infrastructure from operations</td>
<td>European Union</td>
<td>Section 3.3.2 and Appendix 12</td>
<td>Regulation and oversight must be kept as a public function with operations transferred to the private sector. Under circumstances where there is a public operator, the government’s regulatory functions must be separated from the enterprise in order to ass</td>
</tr>
<tr>
<td>Rail reform is a continuous process</td>
<td>All countries</td>
<td>Government needs to establish mechanisms to ensure proper industry governance and supervision, to review and approve challenging business plans, monitor achievement and take action to hold management accountable for performance.</td>
<td></td>
</tr>
<tr>
<td>Social and political interest in passenger services</td>
<td>All countries</td>
<td>In many countries, railway passenger transport is not independently commercially viable. Provision of a comprehensive national passenger rail service is an issue of public policy choice to be guided by budgetary constraints and a clear and consistent goal.</td>
<td></td>
</tr>
<tr>
<td>Adaptability to change</td>
<td>All countries</td>
<td>The objective of rail reform should not be to achieve a given end-state but to create an industry which is itself capable of future adaptation to markets without constant policy intervention.</td>
<td></td>
</tr>
<tr>
<td>Inconsistent Government policy</td>
<td>Estonia: After divestiture Government enacted new regulations establishing open access, undercutting the company’s traffic</td>
<td>Appendix 8</td>
<td>Government must avoid change in policy which is inconsistent with previous policy under which PSP was implemented.</td>
</tr>
</tbody>
</table>

**Source:** Consultant
293. In the early 1990s, essentially all railways in Latin America and Africa were government owned and operated. Since then, the World Bank, Asian Development Bank, and other international organizations have been helping to resuscitate dysfunctional railway systems in many developing countries through introduction of structural reforms to attract increased PSP. Many developing countries are benefiting from a vibrant and more competitive rail transportation, which is playing a key role in bringing new opportunities to the developing world.

294. As detailed in Section 2, private participation in the railway sector increased significantly during the 1990s, with 28 developing countries reaching financial closure on 85 projects from 1990 to 2004. Mainly due to geographic and functional unbundling of national railways in Latin America (particularly in Argentina, Brazil, and Mexico) the number of concessions is higher than other types of PSP, with most countries turning to the private sector to improve the management of loss-making railways and rehabilitate deteriorating infrastructure. This pattern looks set to continue. Improvements in performance in most of the projects in Latin America have encouraged governments in Africa, the Middle East and the FSU to consider concessions for railway management, operation, and rehabilitation.

295. The concessioning of Latin American freight railways is virtually complete (10 countries). Railway operations in 11 countries in Sub-Saharan Africa have also been transferred to the private sector. The results show increased productivity, lower transportation costs, and expanded access to markets. However there have been some downside effects, particularly in reducing access to remote and less developed regions. Following privatization, traffic on many railway lines was concentrated on high-density traffic, with service discontinuance in unprofitable lines. This sometimes led to the interruption of socially significant services. In Argentina, for example, the network shrank by one-third. The inter-urban lines that did not turn out to be profitable were dismantled, and a number of cities in the interior lost their rail connection to the capital, while railway links between provincial capitals and passenger service to other countries disappeared. As a result, a number of villages became ghost towns and regional economies sustained damage.37

296. The experience with private participation in railroad infrastructure in developing countries indicates that the freight segment is the most attractive. This conclusion is also supported by experience in developed countries, notably in the United States and Canada where freight railroads are owned and operated by the private sector.

297. In most concession contracts the government transferred the management of fixed assets and rolling stock to the private sector as a vertically integrated utility, introducing competition at the bidding stage. The standard model for PSP in railways in Latin America involves separating passenger and freight service, leaving long distance passenger services with a public operator.

298. The status of railway PSP projects as of the end of 2004 indicates that the pipeline of railway projects with private participation has considerably thinned out. The fragility of the railway PPI projects pipeline and the decline in modal share of investment is indeed a cause for concern, considering the large investment needs of railways in developing countries to provide logistics support for economic development and poverty alleviation programs. Railway development around the world in the late 19th and 20th Century was made possible by governments which provided appropriate incentives and risk coverage to the private sector at terms that were comparatively more favorable than the alternative investment opportunities. The large size of networks that were built by the private sector is testimony to the success of those efforts. It is imperative that governments in developing countries create the necessary conditions for private participation and offer products for investment in infrastructure, services and management of operations that are attractive compared with alternative investment opportunities.

299. Although PSP in infrastructure services has become the new belief since early 1990s, there are concerns about the broader social implications. Although it improves productive efficiency, privatization does not always result in improved allocative efficiency. There have been complaints,

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37 A study by economists Daniel Azpiazu and Martín Schorr, at the Latin American Faculty of Social Sciences (FLACSO), says “the privatization of the railway system constitutes one of the biggest failures of the vast privatization program undertaken by Argentina in the 1990s.” (Marcela Valente, *Argentina: Privatization of Trains Derailed*; Inter Press Service News Agency; 19 Sept 2005). http://www.ipsnews.net/interna.asp?idnews=24370
particularly with regard to the shutdown and deterioration of socially important services as a result of economy measures taken in the course of privatization. In the absence of the government’s recognition and agreement to financially support socially significant services, the private entity operating under market conditions would discontinue unprofitable lines. The private sector should not be expected to bear the burden of service continuance in unprofitable lines.

300. It is often argued that privatization leads to tariff hikes that make services unaffordable for the poor. Often prices do have to increase substantially in the context of privatization. Where this happens it is usually because tariffs have been kept well below costs for many years, generating a substantial drain on the public purse and diverting scarce resources from other vital areas of public expenditure. In fact, the raison d’être of PSP in many countries is the chronically low fares and tariffs, which inhibit the public entity’s ability to continue operations without massive subsidy from the government.

301. The limited experience from Kuala Lumpur light rail urban transportation projects suggests that ridership levels did not meet the expectations of the private operators and the projects faced financial difficulties particularly in debt service due to the Asian financial crisis. The public sector ultimately had to come forward in support of these projects. However, the project objectives have been achieved to a large extent. Government’s willingness to renegotiate terms for distressed projects is a constructive approach to move ahead in PPP, as opposed to public attempts to buy back or nationalize successful concessions.

302. The experience with PSP in the railway sector provides the following lessons for consideration by DMCs:

3.4.1 Bidding and Selection Process

303. In order to strengthen competition it is important to widen the effort to find potential operators. It is beneficial to detail the future "rules of the game" of the concession (notably through the draft concession agreement) before requesting bids. This would help in shortening the negotiation process between proposals and the signature of the concession agreement. It is also helpful to sort out implementation details for effective take-over of operations by the concessionaire.

3.4.2 Labor Redundancy

304. The participation of railway workers and their unions in the negotiation process at an early stage eases the implementation of the staff reduction program that takes place at the beginning of the concession. The government should not try to save money on the process of labor restructuring and must be generous towards the workers, giving them more than the minimum entitlements under the law.

305. As much information as possible must be made publicly available about the labor restructuring process. Transparency is important from the political perspective as well as the analytical one. The World Bank and ADB have experience and qualified staff to assist the governments in planning, financing, and implementing effective surplus labor interventions tailor made to the specific needs and requirements of the government and consistent with good international practice.

3.4.3 Investment Financing Scheme

306. When the concessionaire defines the investment program and bears the debt service cost, an effective incentive to a commercial approach to investing is assured. This allows the government to bear the borrowing risks since financial resources are mobilized by the public. This financing scheme is a good compromise in the prevailing investor risk context in many countries including the Philippines, Cambodia, Thailand, and Malaysia, particularly during times of financial uncertainty when the private sector’s ability to raise funds for large investment projects is curtailed.

3.4.4 Separation of the Regulator from the Operator

307. Privatization is likely to succeed through a clear separation of sector regulation and oversight from commercial operations. Regulation and oversight must be kept as a public function with operations transferred to the private sector. Under circumstances where there is a public operator, the government’s regulatory functions must be separated from the enterprise in order to
assure the private sector fair and equal treatment. In more complex conditions involving mixed service, a clear-sighted policy of first commercializing the railways, separating out the loss-making passenger services, and implementing separate PSP transactions for freight and passenger operations should be followed. If loss-making services are to be continued for public benefit PSO contracts must be executed with clear linkage between the private company output and government payment.

3.4.5 Railway Reform is a Long-term Process

308. Putting in place mutually supportive legislative, institutional and management structures to deliver substantive change takes a great deal of time and effort. Gradualism in this process can be a merit if it reflects a well thought-out series of steps towards an agreed outcome. However, gradualism should not reflect a lack of clarity in ultimate objectives or indecision and delay.

3.4.6 Structural Change is Only a Means to an End

309. It is not sufficient to improve performance alone. Governments can create the structural platform for improved industry performance but only managements can deliver it. Greater emphasis needs to be given to investing in the actual process of business change, management, attraction of new skills and experience from inside and outside the industry, creation of a commercial culture, development of incentive-based pay structures and others depending on the country situation.

3.4.7 Separation of Infrastructure from Operations

310. Structural separation of railway infrastructure from rail operations cannot of itself improve business performance. In fact, it may, in the short-term, impede it by becoming too narrow a focus of reform and delaying the business culture and process changes, in both infrastructure and operations, which will actually improve asset and labor utilization. If separation is favored it needs to be followed closely by rigorous business plans in both infrastructure and train operating companies to improve performance.

311. Because of the diversity of railway systems, one structural model is unlikely to be best fit for all parts of it. In particular, for those railways which are very small with low traffic density a preoccupation with structuring into very small infrastructure and operating units appears to be a misplaced priority when survival depends on a combination of aggressive cost-cutting and agile marketing.

3.4.8 Rail Reform is not a ‘Fire and Forget’ Process

312. Governments wish to retain ownership of large parts of the industry. But if they are to be effective owners they need to establish their own mechanisms properly to ensure proper industry governance and supervision, to review and approve challenging business plans, monitor achievement and take action to hold management accountable for performance.

3.4.9 Passenger Transport Services

313. The most promising place to attract the private sector is in rail freight operations. Governments in most countries are committed to ownership of the railway infrastructure network, and also have a clear social and close political interest in passenger services.

314. For most railways in developing countries, railway reform should not necessarily mean stand-alone profitability for each line of business. Railways having modest traffic intensity and a high component of passenger service; will require substantial levels of public assistance for investment and support of passenger services. In many countries, railway passenger transport is not independently commercially viable in the sense that it is able to cover the full costs of infrastructure and operations. Provision of a comprehensive national passenger rail service is an issue of public policy choice to be guided by public finance constraints and a clear public policy.

3.4.10 Adaptability to Change

315. Markets themselves will not stand still. Competition from other modes will increase in all transport markets. New transport needs will emerge with economic transition and development. Railway reforms are, therefore, chasing a moving target. The objective of rail reform should not be
to achieve a given end-state but to create an industry which is itself capable of future adaptation to markets without constant policy intervention.

3.4.11 Social Impact

316. Although privatization policy is believed to be socially beneficial, it faces increasing opposition in several countries. Latin America, which has been in the forefront of privatization, at the end of two decades is facing popular opposition to privatization. Popular surveys have revealed a consistent picture of privatization discontent that points to a combination of perceived distributional concerns.

317. Typically, privatizations focus only on the productive efficiency, whereas there is a lot of redistribution involved in the process. The redistributive dimensions of the reform have been recognized as the most important issue. The poor under privatization suffer the risk of being net losers. The abolition of cross-subsidies in the tariff structure of railway passenger services (as in other utilities) following privatization of the most competitive part (e.g. freight services) may generate a tariff rebalancing that is unfavorable to users of the service at the lower end of the social structure.

318. The Latin American experience shows another dimension of privatization discontent related to excessive divestitures within short periods of time. Under these circumstances the long developed habits of users of public services are suddenly disturbed, and even if the quality of services may gradually improve, and prices decrease, the initial reaction of users to the sudden developments may be negative.

319. If state-owned enterprises have generally underperformed in most countries and privatization raises potential social concerns, what then is the way forward for bringing essential infrastructure services to the world’s poor who still do not have access? The answer is probably not to discard privatization, but rather to make privatization work for the poor. There is considerable evidence that privatization creates substantial dividends. Private management of services often leads to significant reductions in cost, particularly when competition is also introduced or when there is at least effective regulatory control of monopolistic pricing practices.

320. Privatization opened up access to an important new source of capital. The total flow of private capital to developing country infrastructure in 1990-2004 was nearly US$809 billion, or more than three times the foreign development assistance to the infrastructure sectors over the same period. It would clearly be a mistake for any country to overlook dividends of this magnitude. The key question is how the benefits of privatization are distributed among different stakeholder groups in society and whether they can ultimately be channeled toward the poor.

3.5 PROSPECTS OF PSP IN DMCs OF ASIA

321. After pioneering the industrial revolution in many countries in the 19th and early 20th centuries, and then seeing their existence threatened by stiff competition from other modes in the late 20th century, railways now have a chance to re-establish their relevance in this era of trade liberalization. Indeed, a number of features speak in favor of a greater utilization of rail transport in Asia. Firstly, twelve of the 30 landlocked countries of the world are located on the Asian continent with the nearest ports often several thousands of kilometers away; secondly, the distances linking the main origins and destinations, both domestically and internationally, are of a scale on which railways find their full economic justification; thirdly, the continuing surge in the volumes of goods and products being exchanged make rail transport a necessary ingredient for economic development; fourthly, with development there is increasing emphasis on urbanization to improve the lives of peoples, where the railways are the only means that can provide cost effective and safe mobility to large numbers of people in the mega cities of Asia; and lastly, rail is increasingly recognized as an energy-efficient, environmentally-friendly, and safe mode of transport. Railways are important to Asian economies as perhaps in no other continent.

322. State-owned railways in most countries are in deep financial trouble. DMCs are most adversely affected because their economies are caught in a vicious cycle: the government is unable to support railway deficits, leading to the inability of the railways to maintain assets, which in turn leads to deteriorating services and results in adverse impacts on the economy. The problems have
been exacerbated because with greater demand, changing technology, increasing complexity for financing the infrastructure projects and the budgetary constraints, the public sector is no longer able to discharge efficiently its role as a provider of infrastructure services. Asian governments have recognized that private sector participation including foreign investment is required to supplement the public sector efforts. Various reforms have been made in infrastructure sectors, and rules and procedures for investment have been liberalized in order to provide an enabling environment conducive for private participation. The role of the government has changed from ‘owner’ and ‘sole provider’ to that of a ‘facilitator’, and to safeguarding the interests of the vulnerable sections of the community by an effective legal and institutional framework.

323. Governments have also been rightly worried about borrowing too much, because the build up of debt imposes a burden on future generations to service the debt. In some literature on the subject, it is indicated that PSP enables the government to get around the budgetary constraints. This statement may not be wholly correct. PPPs cannot provide something for nothing. PPP also sets up a future set of obligations to service the payments that are needed to honor the contracts. Nevertheless, PPPs are worthwhile for the reasons that: (i) private sector management can bring in experience in undertaking large scale capital projects; (ii) private sector can also provide a genuine element of risk-taking rare in the public sector; and (iii) above all - although this is rarely said - the private sector brings in people whose own money may be at stake in the success of the venture.

324. Although a good starting point, the level of PSP in the railway sector in Asia since 1990 cannot be reckoned as adequate considering the needs. In the last few years PRC alone has been investing about US$7 billion to US$9 billion per year on railway development. In the next 15 years to 2020, the investment needs are estimated between US$25 billion and US$40 billion per year. Investment needs in other Asian countries for railway development, though not so large are also significant. This level of investment is clearly beyond the capability of the state-owned railway systems. Asian countries need to take new initiatives to diversify investment sources to meet the needs of their railway systems.

325. Table 3.4 presents a summary of PSP prospects for DMCs. The need for capacity expansion (new projects) as well as efficiency improvements under competitive market conditions is admitted throughout the region. Some railways are relatively small with little traffic. As such they are more suitable for a single concession transaction or partial divestiture through sale of stock to a strategic private partner. Some railways are large and are more suitable for geographic and functional unbundling and selective PSP through concessioning of particularly branch lines and strategic partnership in public-private joint ventures or sale of shares for larger investments. The suitability of each transaction must be carefully and objectively evaluated for fitness to the Government’s objectives and private sector interest to accept an appropriate risk-reward mix.

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<th>Employee Productivity (Train/km)</th>
<th>Route Length</th>
<th>Labor Intensity (Employment/Train/km)</th>
<th>Importance in GDP</th>
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<th>Formation</th>
<th>Need for PSP in Funding New Projects</th>
<th>Need for PSP in Funding Existing Assets</th>
<th>Geographic Unbundling</th>
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VL = Very Low; L = Low; M = Moderate; H = High; VH = Very High; U = Unknown; Lg = Large; VLg = Very Large; Sm = Small; VSm = Very Small; (1) Particularly for branch lines.

Source: Consultant
3.5.1 Crucial Role of Rail Transport

326. Rail transport will continue to play a very important role in many countries such as PRC, Kazakhstan, India, and smaller countries with substantial bulk freight movements. In PRC, the railways transported approximately 2 trillion TKM of freight and 570 billion PKM in 2004. This volume exceeded the traffic carried by all Class 1 railroads in the U.S. The density of rail traffic in terms of TUs per km was about three times the density on the U.S. rail network.

327. Given the importance of railways in the Asian economies and the large extent to which railways are intertwined in the social fabric in Asian countries, it is important that the modality of private sector participation is given full consideration with the involvement of those affected – users and employees. In Asia, where large regions are underdeveloped and poor, the basic issues are access and providing the means for generating incomes for the poor through direct or indirect employment. These aspects can best be fostered by the public sector.

3.5.2 Considerations for Asian Countries

328. Privatization policies and implementation measures must be well thought out considering all possible impacts as well as the mitigation measures necessary. Given the vital role of railways in Asia, Asian economies are as yet not mature enough to absorb the shocks of privatization that are known to affect employment and the weaker sections of the society. It may be difficult to make changes rapidly without the risk of severe social disruption, particularly where this involves organizations divesting themselves of traditional social responsibilities that hamper their commercial potential and responsiveness to consumers.

329. Governments can also take action prior to the privatization to reduce retrenchment and soften the impact on workers. These measures include freezing new recruitment and hiring as long as possible before privatization, reducing the size of the workforce through attrition as much as possible before the enterprise is transferred to private ownership, and guaranteeing the membership of workers in social security schemes or pension plans (their continued viability should be ensured) even if they lose their jobs after privatization. The social costs of extensive job losses, while far from insignificant, can be lessened if carefully handled. Well designed concessions of simple and smaller size rail networks or individual railway lines are simpler to analyze for impacts, rather than whole networks.

3.5.3 Concessioning

330. One approach to increasing the role of the private sector is "concessioning". Concessions involve continuing public ownership and oversight of infrastructure, but the transfer of operating responsibility and the delivery of services to the private sector. The reasons for the preference for concessioning over divestiture appear to be that governments have been wary of what appears to be total loss of control over publicly-owned assets. In some countries sale of infrastructure such as track, stations, and other fixed assets require lengthy legislative action, even a constitutional amendment. Concessioning, on the other hand, can enable the Government to retain ultimate control over the infrastructure while allowing the private sector to operate the railways and compete for customers in the market. Concessions require continuing Government involvement in regulating safety and monopolistic behavior, and in ensuring adherence to the pricing and service requirements of the concession.

331. Private sector participation through the highly flexible instrument of concessioning, appears to offer a practical way of improving railway services with minimum financial burden on the state. The concession contract should be designed such that the government achieves the following objectives:

♦ To provide competitive, economical, high-quality service to support the economic development of the country.
♦ To reduce, and preferably eliminate, subsidies.
♦ To maximize revenue received from the concession.
♦ To operate in a competitive environment and not exploit railway customers.
♦ To downsize the labor force in an orderly fashion with a minimum of hardship and to provide the retrenched surplus staff fair severance compensation and maximum assistance for securing alternative employment.

♦ To effectively monitor and regulate safety and environmental aspects.

### 3.5.3.1 Feasibility for PSP Modality

332. It is not always possible to achieve all of these objectives. A feasibility study often helps to determine the extent to which the desired objectives can be achieved. It is generally possible, however, for the government to arrive at an optimal design for a concession through careful review of the possible financial and management options, thereby maximizing progress towards reaching the desired objectives. Establishing a regulatory authority before the completion of the concessioning process, with well-defined statutory powers, will go a long way towards ensuring that safety and environmental aspects are monitored adequately.

### 3.5.3.2 Financial Viability

333. The financial viability of private sector projects should be of concern to the government. If a project is found not to be financially viable, then its economic evaluation should be reviewed to determine whether the investment is justified in terms of its expected benefits to the economy as a whole. If such a project is not financially viable but found to be economically viable, various options may be considered for improving the project’s financial rate of return. The acceptable financial rate of return of a project is determined by taking into account three main factors: (i) the average cost of borrowing; (ii) the risk premium associated with the type and scale of the project; and (iii) the rate of return for similar projects in other countries competing for investor funds.

334. The governments may consider various possibilities to improve the rate of return to the private investor. These measures may inter alia include:

- **Tax incentives.** Projects with PSP may qualify for various tax incentives offered by governments.

- **Revenue guarantee.** Although it should be the intention of the government to identify financially robust projects, it is possible that some of the projects could have a level of risk that is unacceptable to the private sector. Greenfield projects often fall into this category. For high-risk projects, the government may provide revenue guarantees.

- **Government support.** Government support to a PPP project can be provided in various forms and serves primarily to facilitate its financing. The instruments and level of support provided depend on the risks involved for transfer to the private sector and the financing requirements of the project once a risk allocation structure has been established. These instruments do not, however, include structures whereby the public sector is 100 percent responsible for either funding or cost recovery. In the event the concessionaire is undertaking rail transportation of goods and people in support of public policy for the larger good of the country, which services it would not provide as a commercial for profit entity, the government or the proponent public agency should compensate the losses incurred by the operator.

### 3.5.3.3 Preparation of Concessions

335. It should be appreciated that a concession is a complex contract involving extensive preparatory work. Each concession is unique and must be tailored to fit specific, well-defined objectives, as well as to address perceived concerns of the government and other stakeholders. Experience has shown that considerable external skills and support are invariably required for requisite preparations, the bidding process, and implementation of the concession agreement. This assistance is necessary to provide additional skills not normally available in the railway or the government and to provide the additional capacity required to deal with bursts of specialized activities for short periods in different stages of the concessioning process. The costs of such external assistance are generally recovered through the economic benefits generated by
concession arrangements. Recent experience demonstrates that railway concessioning successfully reduces the financial burden on the state while significantly improving traffic levels and performance of the railway.

336. The concession period generally extends over a period of 25 to 50 years, reflecting the slow build-up of the traffic volume and revenue stream related to it. Financing of a concession project is secured by an appropriate equity/debt mix, defined in compliance with the assumed revenue stream generating characteristics (including the expected governmental contribution) of the project and the assessment of the risks associated with it. Under the usually applied scheme of private funding, the exclusive source for repayment of equity and debt is the net operating revenue.

337. Projects undertaken through PPP schemes share characteristics that differentiate them from traditional projects, including:

- A primary asset, a railway line for instance, which is not the property of the company (concessionaire), but rather of the State; hence, the real asset is not liable for use as collateral. Consequently, other assets are used as collateral.
- In general, the projects have no representative "history" to allow forecasting, with a certain degree of confidence, of net cash flows of the project.
- In cases of projects of the greenfield type traffic statistics do not exist, thus the evaluation of costs and cash flows requires a greater degree of sophistication.

3.5.4 Divestiture

338. Full divestiture in a fashion similar to U.K. and New Zealand is not a popular alternative for most if not all DMCs. In many countries sale of the railway infrastructure entails a Constitutional change since the public ownership of what was, and in many cases is still, considered a strategic industry has been confirmed in the Constitution. Furthermore, full divestiture without a thorough understanding and establishment of the Government’s regulatory oversight functions carries substantial risks of market failure with dire consequences as experienced in the U.K. In short, the process of creating the necessary legal and regulatory framework is tedious, time consuming, and prone to missteps that are costly.

339. Partial divestiture fashioned in a manner similar to Estonia where the Government maintained a minority share in the new railway company is more suitable in many nations, provided that an arms-length regulatory oversight for safety and monopolistic abuse at the minimum is established and objective monitoring of performance against predefined clear targets is implemented. An alternative to the Estonian experience where the sale was made to a strategic partner, is the PRC model of divestiture through listing of shares. For successful implementation of this strategy, the transaction should be large enough to bear the legal and underwriting costs for preparation of the Prospectus, marketing to potential investors, and other expenses.

3.5.5 Bankable Projects

340. The selection of bankable projects is essential if PPP projects involving financing are to become a success. Bankability depends largely on the constraints and opportunities of both the definition of the project and the environment in which the project is to be implemented. For example, if the private sector has to fund development, land acquisition, and construction costs on the basis that it has to take all the planning risks and can recover the investment only through tariffs even though tariffs are capped and all projections indicate that traffic would be low, there will probably be no project that is bankable. If, on the other hand, the public sector takes all the planning risks, pays cost overruns and agrees to repay the private sector through a cost plus fee system, virtually all projects may be considered bankable.

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38 The International Project Finance Association (IPFA) defines project finance as the financing of long-term infrastructure, industrial projects and public services based upon a non-recourse or limited recourse financial structure where project debt and equity used to finance the project are paid back from the cash flow generated by the project. Project finance involves the creation of a legally and economically independent project company financed with non-recourse debt (and equity from one or more corporate sponsors) for the purpose of financing a single purpose, capital asset usually with a limited life.
341. Bankability is therefore determined by how the project is defined (e.g. starts after land has been acquired by public sector following the completion of the planning process) and the constraints that are imposed, or the incentives that are provided. This means that many projects could be made bankable if they are well defined and provide sufficient incentives.

342. The process of selecting bankable projects, therefore, comprises selecting projects that can be given a serious chance of success by providing sufficient incentives through government support and regulations while keeping these incentives within acceptable limits and in line with risk transfer objectives.

3.5.6 Residual Public Risk

343. The private sector is often reluctant to bear some of the risks implied by the nature of infrastructure projects. Due to the prolonged construction periods entailed by these projects, investors in infrastructure generally confide their financial resources to host-countries over very long periods, even decades. Unlike portfolio investments, investors lack the option of promptly withdrawing their resources in the case of political instability or economic volatility.

344. Thus, infrastructure investors face not only business risks that are considered normal for any investment, such as commercial and financial risks, but also risks that might be under the direct control or influence of the governments of host-countries, and directly associated with policies undertaken over extended periods of time.

3.5.7 Enhanced Private Sector Capacity

345. Transferring tasks previously carried out by the public sector to the private sector supposes that it is capable of carrying them out correctly. If it is not, the question of how to organize the development of the PPP policy must be asked and how to accompany it to enable a fabric of companies and design offices to emerge, capable of taking on these new tasks without damaging the quality of the projects or that of service to the user. This will depend on whether very large projects are involved requiring a high level of technical skills and considerable financial capacity (e.g. very large bridges or tunnels) or more routine tasks (rehabilitation, maintenance, operation) which neither require heavy investment nor exceptional technical skills.

346. There is the greatest advantage to be had in ensuring that prior consultation takes place between the public authorities and professional representative organizations to examine how to develop a successful PPP policy. It would even be desirable to plan regular meetings to establish reports and together find ways of making improvements. These meetings could advantageously be based on jointly financed audits. Such practices give full significance to the notion of partnership and ensure projects their best chance of success.

347. The rate at which a PPP policy will be undertaken should be given full consideration. It is necessary to plan how to progress in the development of the programs so that the contractors can become familiar with and organize themselves to face new tasks. The first contracts could, for example, only concern a small part of the network, before gradually extending to cover the entire network. They may, at the beginning, be of the quantity-based type, and then become performance-based.

348. While PSP in transport infrastructure privatization and financing is growing in many developing countries, public investment in transport will continue to be significant in developing countries, where market size and risks are high and private financial markets are not well established. More importantly, public investment in the transport sector will contribute considerably, both directly and indirectly, to economic growth.

349. Many changes as a result of public sector restructuring brought about privatization. The increased role granted to the private sector does not mean that the public sector will disappear. In many ways its role is strengthened by the recognition of the importance of an independent regulator.

350. Many Asian countries, notably PRC and India, have initiated measures for fostering PSP in the development of railway infrastructure and services. These efforts are bearing results in the increase in private sector involvement in the railway sector. (May be expanded with materials from visits).
4 PROMOTING PSP IN THE RAILWAY SECTOR: POLICIES AND PLANNING, REGULATORY, AND LEGAL FRAMEWORKS

4.1 BACKGROUND

4.1.1 Transport and Development

351. Transport is important for the development process in general and for the promotion of national, regional and international trade in particular, which significantly contributes to the eradication of poverty. Weak infrastructure and inappropriate policy environments lead to inefficient transport services that result in high transport costs, which are a major impediment to trade expansion, competitiveness, and hence sustainable development in developing countries. The development of a coherent, national, regional and international transport network, combined with efficient transport services, are essential for stimulating economic activity, opening up productive areas and linking them to national, regional and international markets.

352. For these reasons governments accord high priority to the transport sector by formulating and strengthening their policies to attract investment in infrastructure and related services. In this context, private sector participation has an important role in improving the quality of transport services.

4.1.2 Transport Policies

353. One of the key issues is overall national transport policy towards the railway sector. In some countries the effective policy is focused on roads. Before any investment in railways is warranted, there needs to be a strategy for the rail sector that includes the need for investment to improve operations and service levels. There probably also needs to be a bias towards the railway in terms of developing a level playing field where user costs and benefits are competitive with other modes over the distances and type of traffic prevailing in the market.

354. To be effective, transport policies must satisfy three main requirements. First, they must ensure that a continuing capability exists to support an improved material standard of living -- the concept of economic and financial sustainability. Second, they must generate the greatest possible improvement in the quality of life, not merely an increase in trade of goods -- the concept of environmental and ecological sustainability. Third, the benefits that transport produces must be shared equitably by all sections of the community -- the concept of social sustainability. Economic, environmental and social sustainability are often mutually reinforcing. A policy for sustainable transport is one that both identifies and implements win-win policy instruments and explicitly confronts the trade-offs so that the balance is chosen rather than accidentally arrived at. It is a policy of informed, conscious choices.

355. Emerging transport policies across countries reflect a substantial change in the role of government, reducing its functions as supplier, but increasing its functions as regulator -- the enabler of competition and the custodian of environmental and social interests.

4.1.3 Public Sector Control of Infrastructure

356. After World War I, infrastructure was mainly designed, constructed and financed from public funds and prior to 1982 there was virtually no private financing of transport infrastructure in developing or transition countries. Traditionally, infrastructure was the exclusive province of the public sector, with large SOEs being responsible for investment and service delivery. Typically, the SOE was a costly and inefficient provider of infrastructure in most developing countries. The trend towards the liberalization and privatization of infrastructure operations that began in a few countries in the 1970s and 1980s turned into a wave in the 1990s. Developing countries have been on the crest of this wave, pioneering better approaches to providing infrastructure services. Market leaders among emerging economies such as Argentina, Chile, and Hungary have gone further in privatizing infrastructure than all but a few industrial countries. Simultaneously, initiatives aiming at outsourcing maintenance activities to private firms are being implemented in Africa, Asia and to a larger extent in Latin America.

39 Asian Development Bank; Energy, Transport and Water Division; Regional and Sustainable Development Department
4.1.4 Growth in Transport Demand

357. The growth in transport demand has outstripped governments’ capability to supply and maintain infrastructure in the traditional “tax and spend” formula of past years. Estimates of infrastructure investment requirements for East Asia alone were US$1,000 billion in the decade of the 1990s, US$1,500 billion for the decade 1996 to 2005 and more than US$1,800 billion for the next decade. The aggregation of government spending, international aid and official lending was insufficient to meet the scale of demand.

4.1.5 Role of International Organizations

358. Encouraged by international organizations such as the World Bank and ADB, privatization has been a major component of the economic reform programs pursued by many developing countries over the past two decades. Privatization was predicted to promote more efficient operations, increase investment and service coverage, and to reduce the financial burden on government budgets. Accordingly there is a shift towards PSP in the provision of transport infrastructure, but this has occurred at varying rates of penetration among various regions as well as countries. The growth in the globalization of private investment funds and the recognition that infrastructure is a worthwhile investment vehicle have enhanced PPP initiatives.

4.1.6 Development of Infrastructure

359. Transport infrastructure and particularly railway systems in most countries have evolved through various stages of development. The changes on any particular railway system are typical to that system and have to be viewed in the context of the national situation, covering various factors, including the stage of economic development; socioeconomic, cultural, and political conditions; state of development of alternative transport modes; competitive environment; and the regulatory environment. These are but some of the factors, and there may be many more specific to the railway system and the country.

4.2 RAILWAYS AND ECONOMIC DEVELOPMENT

4.2.1 Role of Railways

360. Rail remains unequalled in its ability to move large volumes of goods over long distances cost-effectively, and produce high passenger volumes in small spaces. It is difficult to imagine many large cities (Tokyo, New York, London, Shanghai, Mumbai, Moscow) being able to function without suburban rail systems and metros. Railways have a comparative advantage over other transport modes as far as environmental impact is concerned.

361. The rail mode is undergoing one of the most radical periods of change in recent decades. Technological progress and its application to speed, safety and traffic management have created new, highly efficient rail transport services. Rail operators are increasingly turning to information technology (IT) to improve services and better exploit the existing infrastructure. Railways have a highly regulated traffic process in which every movement is carefully planned and implemented. A key to greater efficiency is the integration of traffic control systems. In order to realize the benefits of new technologies large investments need to be made which cannot be fully afforded by public agencies.

362. Railways have had a crucial impact on economic development in most countries. The growth of road transport in the last few decades saw a diminishing role of the railways. However, new challenges related to transport needs, logistics costs, energy, and environmental impacts are creating conditions favorable for revival of rail. Rail transport will continue to play a very important role in many countries such as China, India, and some smaller countries with substantial bulk freight movements.

4.2.2 Characteristics of Rail Transport

363. Railway transportation like some other utilities (such as water supply, gas, electricity and telecommunications) includes natural monopoly characteristics arising from pervasive economies of scale and scope. These characteristics mean that competition is unlikely to develop, or if it develops it will be uneconomic because of the duplication of assets. Although technological advances and infrastructure access have reduced some of the natural monopoly characteristics,
permitting economic competition in service delivery, some natural monopoly features are still retained. As a consequence, privatization of railways, in whole or in part, risks the introduction of private-sector monopolies that will exploit their economic power in the market place, leading to abnormal profits (high ‘producer surplus’) and reduced consumer welfare (low ‘consumer surplus’). Under these conditions consumers suffer from no or a limited choice of goods and services and face monopoly prices.

364. To prevent this result, governments need to develop strong regulatory capabilities so that they can monitor the revenues and costs of production of the private entity and protect consumers from monopoly exploitation. It is argued that privatization leads to greater incentives for managers to pursue productive efficiency because of the superior principal-agent relationship in the private sector compared to government. But at the same time, in the absence of the threat of competition, managers could dissipate potential cost savings through padding their staffing, and raising their own salaries. The results of privatization where private sector monopolies are created are, therefore, uncertain and this is borne out by empirical studies that have demonstrated that the greatest cost savings from privatization occur in competitive industries.

4.3 KEY ISSUES AND WEAKNESSES IN RAILWAY SECTOR

365. Some of the key issues and limitations of the railway sector dominated by the public sector are identified below.

4.3.1 Clarity of Role

366. Government provision of railway transport services to the public has been found lacking in many countries primarily because of the duplicity of roles in a government trying to be policy maker, regulator and operator of services at the same time. There are numerous examples of publicly owned railway operating entities that experience rising costs and falling revenues. The consequent pressure on public finances often lead to insufficient investment as public funds are used for revenue support rather than capital expenditure resulting in deterioration in services as well as increasing burden on government budgets. This may be for a number of reasons:

♦ Lack of clarity in trying to act commercially while seeking social goals. In many developed countries a distinction is already being drawn between socially obligated services and commercial services. Similar initiatives are yet to be taken in many developing countries.

♦ Restrictions on management freedom caused by public service norms and procedures; for example, staffing levels and pay scales may be determined across sectors rather than by the market.

♦ Constraints on financial autonomy and investment due to government budgeting and annual appropriation processes.

♦ Competition for resources from the core government functions relevant to social welfare or other national priorities.

♦ Where the activity results in a financial surplus, cross subsidization of other government activities rather than reinvestment in the production of economic outputs.

367. Behind many of these issues is the reality that governments (particularly in developing countries) have many policy objectives in transport. These may include economic, financial, social, environmental, national defense, and others. These objectives often conflict, and their priority may alter in response to political events. Also it is the governments’ prerogative to pursue any one or more of these objectives. But these objectives can make it difficult for the government to achieve financial solvency in the business, thereby affecting its sustainability.

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41 Paul Amos, *Public and Private Sector Roles in the Supply of Transport Infrastructure and Services*; World Bank Transport Paper, May 2004
4.3.2 Reduced Technical and Allocative Efficiency

368. Direct government involvement in running rail transportation services may reduce both technical and allocative efficiency. The closer government is to management, the more that decisions which affect technical efficiency (for example, staffing or investment decisions) become influenced by political patronage. In such a situation, managers cannot be held commercially accountable and incentives for technical efficiency are further weakened. Allocative efficiency may be adversely affected because prices may be set to reflect political objectives rather than costs.

4.3.3 Financial Inefficiencies and Constraints

369. Soft budget constraints, poor or inadequate cost information, and unfocused management goals frequently lead to financial inefficiencies. Ineffectiveness in government spending is the result of institutional failures, the most important of which is that decision makers have little incentive to improve the efficiency of public service delivery. Despite the growing influence of the public sector quality improvement movement, most government departments do not conduct rigorous cost accounting or quality auditing.

370. The lack of accountability and efficiency leads to high public sector output costs. Government agencies routinely enjoy soft-budget restraints; that is, they often receive additional budget support. A vivid example of this is the case of Argentina Railways. Prior to reforms, Argentina Railway's total annual subsidy from the government equaled to 1 percent of the nation's gross domestic product.

371. Under present fiscal conditions most countries are unable to provide steady financing from government budget sources. It is imperative that new sources of financing are developed. In the face of continuing public budget constraints and inefficiencies, as well as a desire to involve all stakeholders that can assist in the development process, it is expected that private participation in the rail sector will be encouraged to meet the growing demand.

372. In many developing countries, railway monopolies are subject to a step-by-step erosion because governments can no longer carry the increasing financial burdens from non-profitable, state-owned activities. Restructuring including a role for the private sector is widely used to improve the railways' market orientation, performance, and financial condition.

4.3.4 Quality of Service

373. Because government agencies often operate as monopolies, they have little reason to worry about consumer demand or the quality of service. Without competition and choice, consumers have few options other than to stop consumption, provide the service themselves, or move to different jurisdictions.

374. The ongoing process of globalization has greatly expanded the scope for international trade in goods and services, with consequential unprecedented demand for transport infrastructure and services for the movement of goods and people both within and across national boundaries.

375. With economic development, customers’ expectations with regard to transportation services are also rising. Besides, services need to be expanded to provide wider access to remote regions that would help in the development of the poorest populations. The increasing level of urbanization is also creating additional transport demand.

4.3.5 Lack of Commercial Management Experience

376. Railways in most developing countries have traditionally been centrally managed, combining governmental functions (such as administration, management and planning) with production functions (design, construction, maintenance, and operation). However, more recently and as in other sectors of the economy, the paradigm shift towards a market economy has highlighted the need for commercialization so as to be able to perform sustainable operations in a market environment.

4.3.6 Lack of Competition

377. In thinking about how to improve the quality and cost-effectiveness of infrastructure, it is important to return to the role that competition plays in the allocation of resources. Whether it is
between two or more private firms or two public entities, competition creates incentives to provide services at the lowest possible cost and highest possible quality. Work on contestable markets shows that the near-term threat of entry creates powerful incentives for incumbent monopolists to be more efficient. Competitive pressures will propel incumbents to innovate and adopt new technologies. Competition can also reduce the need for regulation, because predatory pricing and poor service will create opportunities for new firms to enter the market.

378. Deregulation and privatization were anticipated to alleviate such problems, with competition and private ownership leading to lower costs and fares, higher productivity and service levels, service innovation and greater levels of investment. Whether such benefits have been delivered is a question fiercely contested by proponents and critics of deregulation.

379. Privatization is usually the most effective form of separation, with public interests protected by competition and/or independent regulatory oversight and intervention if necessary to curb monopolistic practices and preserve access and affordability of services to the poor. Where public subsidy is necessary to enable the poor to enjoy a basic level of service in line with poverty reduction policy, it is desirable for this to be explicit, rather than provided as generalized budget support to the service provider. Such support mechanisms should be targeted, transparent and preferably output based.

4.4 BENEFITS OF PRIVATE PARTICIPATION IN THE RAILWAY SECTOR

380. Potential benefits of private sector involvement in the provision and/or management of any public infrastructure are widely acknowledged and sought for. Implementation of sound commercial and accounting principles of market economy may lead in particular to more efficient design and construction, cost savings and efficiency gains in project management, maintenance and operation, and better evaluation and mitigation of all kinds of risks associated with the project. Part of expected benefits could be achieved under public sector funding as well, especially if implementation or operation is carried out under private sector management.

4.4.1 Sustainability

381. Barring a few exceptions, most countries today see private sector participation as the most appropriate way to provide sustained efficient performance and continued financial viability of railways. Privatization leads railways to fundamental rethinking of their business, which can lead to substantial improvements in their efficiency and effectiveness. Financial market discipline is enforced on the railways, which then act as monitoring agents with self-interest at stake. Privatization is often long-term and, therefore, its positive effects are more permanent, whereas any achievements under state ownership can be reversed quickly by policy makers.

4.4.2 Mobilizing Financial Resources

382. Private financing in infrastructure is often quoted as a "new" source of financing. There should be no confusion however between the financial source of investment that could come from the private sector in the form of debt or (to a lesser extent) equity and the source of revenue that will eventually pay back the investment and must come from the taxpayer or the beneficiaries of the railroad. However, private financing for railroad construction or rehabilitation and operation allows mobilizing the resources and executing the relevant investments more rapidly because of the incentive the private sector has to maximize the return on the investment. The risk of the public sector is also diversified with private participation.

4.4.3 Increasing Operational Efficiency

383. The involvement of the private sector might be extended in certain circumstances, finance provision and/or operation and management of some economically justified and financially viable public infrastructure which otherwise could not be financed from public budgets, because of severe and long lasting constraints, limiting the borrowing capacity of the public sector or because of other priorities for public expenditure.

384. Concessioning of Argentine railways reduced federal subsidies from US$1.3 billion a year to US$0.3 billion. Japanese Railways (JR) were losing US$5 billion every year before action was taken to privatize. Following privatization they now realize net gains on the order of US$6 billion a
year. All state-owned railways that have been privatized have dramatically improved financial performance immediately following privatization.

385. Improved performance was achieved through more efficient management and adoption of modern technology for JR’s core business and through significant improvements in the management of non-core assets. Reducing the crew from three people to one by electronic end-of-train detectors and reliable, continuous communication amongst train drivers and between train drivers and the central dispatch is one instance of use of modern technology by private operators to improve efficiency. Another is use of computer-assisted train dispatch systems. These systems were installed in Argentina immediately after the takeover by the concessionaire. Similar modernization was also applied in New Zealand and Brazil, and currently is being implemented in Guatemala and Mexico. Modernization in these cases was aimed at improving efficiency, cutting costs, and thereby generating positive financial returns.

4.4.4 Freeing Scarce Public Resources for Other Uses

386. Private participation in the financing of projects allows the spreading of the project cost for the public over a longer period of time, commensurate with the benefits. This helps to free up public funding for investments in other priority sectors such as expansion of social services for weaker sections of the society.

387. The funds provided by private investors or raised from the financial market, could either temporarily substitute or supplement budgetary financing. In the former case, the private capital will be repaid (with appropriate return) and the debt will be serviced entirely from the public budget. In the latter, the source of these payments is partially or exclusively the revenue generated by a given infrastructure. Rights and undertakings of the parties involved have to be regulated by appropriate agreements.

388. In circumstances in which private funding of infrastructure projects is sought, this is competing with financing opportunities offered by other sectors of the economy at the same time.

389. On public financed projects, an initial investment is made by the public sector and recovered by the community in form of the project benefits. On private financed projects the cost for the community is incurred through payments to the private sector over the entire project operation phase, either through regular payments from the government or through collection of tariff revenues from users.

390. PPP involving private financing can also ease fiscal problems by moving infrastructure projects off-budget during the years of construction. The potential for raising funds on both domestic and international capital markets can be enhanced by implementing policy reforms that create clear rules allowing investors to form reasonably firm expectations about the cash flow generated from infrastructure operations.

4.4.5 Enhancing Capacity and Efficiency of Project Implementation

391. Supply can be made more efficient by involving the private sector in the design and construction of infrastructure facilities even when they are owned and managed by the public sector. Private sector skills can then be used to put the initial project together, assemble the necessary partners to complete the scheme and manage procurement and operations. PPP is, therefore, particularly appropriate when skills for project implementation under market conditions are scarce in the public sector. The private sector usually has more flexible procurement rules than the public sector, and this can speed up implementation.

392. By giving more flexibility in the mobilization of resources both in nature and planning, contracting allows the delivery of more responsive services. In short, the advantages of private involvement are an increase in efficiency in the provision of services, avoidance of political interference in operations, and circumventing of public sector budget constraints.

393. Typical reasons for a greater efficiency of the private firms over public agencies are to be found in:
Flexibility. The private sector has greater flexibility in adjusting its resources (personnel, equipment, and materials) to a constantly changing situation.

Comprehensive approach. When entrusted with a long-term contract and a wider scope of work, private firms can balance expenditures over the project life and make effective trade-offs between investment, maintenance and operation costs subject to environmental, social and economic considerations.

Access to technology. Large firms are massively investing in research and development and constantly improving the quality and efficiency of construction techniques, processes and equipment.

394. It is not always possible to achieve all of the government’s objectives through PSP. A feasibility study often helps to determine the extent to which the desired objectives can be achieved. It is generally possible, however, for the government or the railway to arrive at an optimal design for PSP through careful review of the possible financial and management options, thereby maximizing progress towards reaching the desired objectives. Establishing a regulatory authority with well-defined statutory powers will go a long way towards ensuring that safety, environmental, and other public interest aspects are monitored adequately.

4.5 MAIN CONCERNS OF GOVERNMENTS

395. Experience has shown that it is advisable to assess government concerns about PSP and to incorporate appropriate measures to address them early in the process. It is difficult, if not impossible, to address such concerns after the conclusion of a PPP agreement. Following are some of the concerns and possible approaches for the avoidance of subsequent problems:

4.5.1 Loss of Control over a Strategic Institution

396. In most countries, with the development of road transport, the strategic importance of railways has diminished considerably. Specific conditions in the agreements that ensure priority to designated traffic in periods of emergency (e.g., food grains during a famine) and government permission for actions perceived to be against the national interest can address such concerns. Joint venture partnerships, in which the government has a minority share and one or more seats on the board of directors is another possible remedy.

4.5.2 Service Deterioration or Discontinuance

397. This problem is more likely to occur in services that are not remunerative (e.g., passenger services). Provisions that specify the minimum services that will be provided and penalties for failure to do so must be included in the contract with the private operator. For example, for passenger trains, conditions for minimum service frequency, minimum on-time arrival and maximum cancellation levels allowable might be specified. Payments to the private operator must be also specified based on actual cost of service provision.

4.5.3 Deterioration in the Quality of Infrastructure

398. The government is sometimes apprehensive that the private company might neglect the rehabilitation of infrastructure. A possible measure for avoiding such a possibility is the establishment of a dedicated depreciation fund to which the company contributes an agreed amount annually for the exclusive purpose of rehabilitation and overhaul of infrastructure. Any balance in the fund at the end of the contract period would revert back to the owner of the railway. A similar fund could also be established for maintenance of infrastructure. In addition, the agreement would stipulate the standards to which infrastructure is to be maintained throughout the contract period and the required condition of infrastructure at the time of transfer back to the government. Periodic inspection by an independent authority using an agreed method of evaluation of condition (e.g., track recording car, defect detection methods, etc) can provide adequate assurance that the quality of infrastructure will be maintained. Penalties for failure to adequately maintain infrastructure should also be specified.
4.5.4 High Cost of Transport and Monopoly Abuse

399. This concern applies where competition by another mode or route is absent. To guard against monopoly abuse by the private company, the contract should permit access to another operator, at predetermined fees for track use. Routes or commodities for which market competition is inadequate may be identified and periodic review undertaken to check excess profits. It should be emphasized, however, that incentives must be in place to reward improved efficiency and performance.

4.5.5 Subsidy for Public Service Obligations (PSO)

400. Two approaches are available when a government wants the private company to provide unremunerative services for social or political reasons:

- The government may want the private company to cross-subsidize unprofitable services by earnings generated from profitable operations. This method lacks transparency and is generally not desirable, but may be considered when appropriate safeguards are in place.

- The government can enter into a separate agreement for the provision of services suffering losses and PSO payments to the private company are clearly identified. The contract is normally quite clear on the subsidy payable by the government for public services at prices below cost and the private company is provided a means for seeking redress should the government fail to abide by the terms of the agreement. The World Bank’s partial-risk guarantee facility (MIGA), for example, might be invoked in the event that the government fails to pay the contracted subsidy.

4.5.6 Safety and Liability for Accidents

401. A regulatory authority or contractual obligations to monitor safety and environmental aspects must be in place before the private company proceeds to operations. The private operator’s liability for accidents must be clearly defined in the agreement and can be enforced through normal legal processes. Enforcement of agreed standards for safety (and maintenance) can be ensured through random checks by a regulatory authority and annual inspection by an independent expert. If operations begin under a regime of regulation by contract, then provisions for an orderly transition to an external regulatory body must be in place.

4.5.7 Traffic Growth beyond Projections and Windfall Profits

402. It is difficult, if not impossible, to project with any degree of accuracy the traffic volume that will be carried over a comparatively long period. The growth of traffic will depend essentially on economic development of the country and the region (market growth) and the competitiveness, quality of service, and capacity offered by the railway (market share). The guaranteed fee that would be payable irrespective of the traffic level actually carried could be fixed in relation to the anticipated traffic levels on the basis of managerial and operational improvements expected as a result of PSP. A provision for the payment of an additional fee, linked to traffic levels above the anticipated level is a satisfactory mechanism to ensure that the government receives part of the financial benefits from increased traffic on the railway.

4.5.8 Ability to Handle Staff Redundancy

403. Need for downsizing of staff is not unique to PSP and is dictated by the objective of attaining viability. It is useful to downsize staff before PSP since the responsibility to address social and equity issues related to layoffs should not be delegated to the private sector. The terms for redundancy payments for additional staff reductions by the private company, in case it decides to reduce staff even further, should be specified in the agreement to ensure that redundancy payments are comparable to those paid earlier by the government.

4.5.9 Low Priority to Transport Business

404. A problem of low business priority given by a private company to transport services can arise when the agreement permits the company to engage in activities other than rail transport on
leased land and facilities. For example, the company might engage in real estate development. Should the activity become more profitable than rail transport, a problem of inattention to transport services and market development could arise. Many concessions limit activities other than rail transport to encourage the company to focus on transport business. Minimum rail transport services that the company must provide should be specified in the agreement. Given its considerable potential value, real estate development should be treated by the government as an asset to be traded for the transport service required.

405. Alternatively, agreements could provide a vehicle for segregating management divisions and providing incentives for optimal efficiency in each division, while instituting acceptable levels of transparency in cross subsidy amongst the operations. Such arrangements could facilitate compliance with the PSO.

4.5.10 Insolvency/Bankruptcy of the Private Company

406. This concern is addressed by a careful screening of prospective bidders so that only those with good performance records, satisfactory financial resources, and credible business plans are allowed to bid. A PPP could also help if the agreement has a provision for the government to take over the management of the railway if the private partner is deemed to have not met specified criteria. A mechanism for the timely, unbiased resolution of disputes is also needed.

4.5.11 Failure of the Company to Return Assets in Agreed Condition

407. This outcome is related to service agreements or concessions. An appropriate remedy should be included in the agreement, along with a mechanism for quick resolution of disputes. The usual legal remedies will be available to the government in case the private company fails to abide by the terms of the agreement to return the assets in satisfactory condition at the termination of the agreement. If more assurance that assets will be returned in good condition is required, the agreement can stipulate that the company set up a facilities maintenance and replacement account. If money placed in the account is used for the specified purposes, then the assets are likely to be kept in satisfactory condition. If, however, the company fails to make full use of the funds and asset condition deteriorates, then the government receives the unexpended funds in the account at the termination date to pay for rehabilitation.

4.6 SOME CONDITIONS FOR EFFECTIVE PUBLIC-PRIVATE COOPERATION

4.6.1 Complexity of PPPs

408. Although public-private partnerships offer governments in developing countries important means of expanding services and infrastructure and the private sector commercial opportunities to expand their businesses, PPPs are complex arrangements and can create potential problems for both the public and the private sectors if they are not properly designed and administered.

4.6.2 Labor Issues

409. Privatization in any form displaces public workers, thereby generating political opposition among public officials, labor unions, and public employee associations. For example, following the concessioning of Argentine Railways, employment declined from 94,800 in 1989 to approximately 17,000 in 1997. In the 20 years to May 1995 the level of employment in the national railway company (RFFSA) in Brazil fell from 110,000 to 42,000, yet labor productivity remained low when compared with North American standards and those of other Latin American concessioned railways. Consequently, the Government decided on the concessioning of six exclusive regional systems. The target employment levels that were developed were a 40 per cent reduction on average from the levels immediately preceding concessioning. Chilean railway employment fell by 75 per cent between 1973 and 1990. It was more than halved again in 1990-95 as a result of the privatization of most of the system. In 1994, the Governments of Côte d'Ivoire and Burkina Faso jointly awarded a 15-year concession to SITARAIL to operate the Abidjan-Ouagadougou railway. During negotiations on the terms of the concession it was agreed that SITARAIL would engage 1,815 of the 3,470 employees, choosing those it wished to hire.

410. The list of staff reductions can go on and on. It is indeed important that the PPP modality is designed and implemented such that the labor issues are resolved with a human face, providing the
best possible terms for redundant employees. The government must show a genuine interest and be proactive in resolving surplus labor issues.

4.6.3 Proper Design and Supervision

411. If PPPs are not well designed and supervised, their services can become more expensive than those provided by government. Poorly designed and inadequately analyzed projects have failed in both rich and poor countries. Corruption can undermine public trust in PPP if the contracting process is not transparent and carefully supervised.

4.6.4 Competition

412. Lack of sufficient competition can turn PPP into private monopolies that operate no more efficiently than the state owned enterprises. Overly restricting concessions or creating too many can deprive PPP of economies of scale. If government regulation is too stringent it can lead to deficiencies in service provision and if it is too lax it may not hold private service providers sufficiently accountable.

4.6.5 Cost Comparisons

413. The cost of contract management under PPP arrangements can be substantial. In all cases, governments must compare carefully the costs of contracting out in its various forms with the costs of providing services directly. The involvement of the private sector in providing services that were formerly free or that were subsidized by the government can increase their price and place poor segments of the population at a significant disadvantage. Governments of jurisdictions with large numbers of poor people must make adequate provision to serve those who may not be able to afford them under private operation.

4.6.6 Legal and Regulatory Framework

414. Experience suggests that if PPP are to succeed, governments must: (i) enact adequate legal reforms to allow the private sector to operate efficiently and effectively; (ii) develop and enforce regulations that are clear and transparent to private investors; (iii) remove unnecessary restrictions on the ability of private enterprises to compete in the market; (iv) allow for liquidation or dissolution of existing state enterprises that cannot be commercialized or privatized; (v) expand opportunities for local private enterprises to develop management capabilities; (vi) create incentives and assurances to protect current state employees after the private operator takes over service provision; and (vii) redefine the role of government from producing and delivering services directly to facilitating and regulating private sector service provision.

415. From its extensive experience with PPP, the United Nations Development Programme (UNDP) concludes that strong public sector leadership and political commitment are essential to the success of PPP projects. PPP projects work best and are sustainable if they are mutually beneficial to both public and private sector partners and if each can overcome adversarial posturing to build mutual trust. It is important to develop a win-win situation for both the public and private partners.

4.6.7 Procurement Issues

416. The UNDP points out that the tendering, procurement and contracting procedures must be financially and operationally sound, open, transparent, and fair. And that any departure from the sealed-bid tender and contracting method will open the government to accusations of partiality or corruption.

417. In addition, the procurement process should (i) state the desired end goal or output targets of the agreement and minimize overly specific requirements, so that the private sector can innovate and manage flexibly; (ii) ensure that the potential private sector partners can be adequately compensated for or retain their intellectual property; (iii) include monitoring provisions of performance measures by a third party or autonomous government agency; and (iv) make provisions for renegotiating the terms of the agreement over time.

4.6.8 Developing Mutual Trust

418. Ultimately, the success of PPP depends not only on developing mutual trust between government officials and private sector executives, but on building and maintaining public
confidence in the integrity of the partnership. Trust and confidence can be undermined when the goals of the partners are ambiguous or when their objectives are unrealistic or in conflict. Incompatible organizational systems and management practices can also weaken PPP, as can reluctance on the part of governments or the public to allow private companies to obtain a fair return on investment.

4.7 PLANNING AND PREPARATION FOR PPP IN THE RAILWAY SECTOR

419. PPP offers important means of expanding railway services and infrastructure and the private sector commercial opportunities to expand their businesses. Unless the private partners see an assured rate of return on investment commensurate with the risk level, which is more favorable compared with other opportunities for investment, they will not be prepared to join in partnership. It is, therefore, important that projects proposed for PPP are properly screened to ensure that the project objectives and the expectations of the private partners are all satisfactorily achieved.

4.7.1 Laying the Ground Work for PPP

4.7.1.1 Performing a Diagnosis

420. Experience with PPP in the railway sector has shown that no ready-made solution exists and that the strict duplication of a project between countries has little chance of success. A PPP project can only produce efficiency gains and added value to the railway sector if it is designed in accordance with the constraints and bottlenecks faced by the railway system, the country framework and the capacity of the private sector. In other words, a PPP project should be carefully tailored to its environment.

421. This section introduces the steps of the diagnosis required, on the basis of which the railroad policy can be attuned to introduce PPP in a sound and efficient manner. The diagnosis would allow concluding with the options where PPP can have an advantage and the constraints that need to be removed to expand and implement those options.

4.7.1.2 Step 1: Conduct Strengths, Weaknesses, Opportunities, and Threats (SWOT) Analysis

422. Performance of the transport sector is shaped, more particularly by cost structure (fixed, variable and sunk costs), institutional arrangements (e.g., assignment of responsibilities, decision flow), market structure (e.g., competition, barriers to entry), geographical features (land value and land use), technology (know-how, economies of scale), and durability (of both infrastructure and services). A SWOT analysis should be performed as a first step to clearly identify the strengths and weaknesses of the country’s railway sector, and threats to its competitiveness and sustainability. Opportunities to improve its competitiveness and continued existence must also be delineated so that resources needed to support improvements in operation by the private sector are identified.

4.7.1.3 Step 2: Assess Capacity of the Private Sector

423. For private participation there has to be a private sector that is well developed and has the capacity to take on the responsibilities of infrastructure development in partnership with the public sector. The private sector can only bring added value to the railway system if it is sufficiently developed and entrusted with services in conformance with its competence.

424. Contracting of local or international firms or a combination of both is to be considered. Local contractors provide superior knowledge of the country and regional environment while international firms can bring added value by a better capacity to handle larger projects, experience in new forms of contractual arrangements, new technologies and stability for long term relationship. A suitable and attractive environment will be conducive to attracting qualified international firms.

425. The diagnosis on the private sector should include the local contracting industry. If the local industry does not have sufficient capacity to commit itself in a PPP, measures may be necessary to assist its stakeholders to develop this capacity.

426. The capacity of private actors to become involved in the rail sector investment for construction, rehabilitation, maintenance, operation and management must be associated with the type of activities for which they are required. The first assessment to be made concerns the
complexity of the works (or activities) to be carried out. Once relevant categories have been worked out, the availability of contractors with appropriate capacities in each of these categories can be investigated.

4.7.1.4 Step 3: Assess Country Framework and Attractiveness for the Private Sector⁴²

427. The private sector cannot be forced to join a PPP. They will enter into partnership with the public entities only if they consider that the project has a good chance of success and that their interests will be preserved throughout their participation.

428. Criteria used by private firms to evaluate the country framework as a sound environment to perform their services under a PPP scheme highly depend on the characteristics of the project and on the firm's individual perception and requirements. Some criteria however are general enough to apply to any private firm entering into partnership with the public sector in a given country.

4.7.1.5 Step 4: Delineate Political Room for Maneuver/Scope for Decision Making

429. If conducted in an efficient manner, the previous steps of the diagnosis should have allowed the identification of areas with most potential for improvement. The decision-maker has to make choices: there is scope for decision-making and feedback is necessary to confront the outcome of the previous investigations with the initial framework of the railway system. Some of the issues to be flagged include the following: (i) Political mandates are typically far shorter than the duration required to assess the outcome of institutional reform and the benefits for long term development programs; (ii) Introduction or restructuring of tariffs is sensitive. If not well designed and justified, it could result in loss of political support, complains or even legal challenges; (iii) PPP policy usually calls for restructuring of the existing railway that invariably implies reduction of the number of public employees and/or transfer of some to the private sector. If not carefully planned and conducted in conjunction with social measures, these programs can lead to opposition of railroad employees.

4.7.2 Removing Constraints with Long-Term Reform

430. Setting up a PPP policy requires redefining the role of government in the transport sector. The changing focus in transport policy reduces the government's functions as supplier, but increases its functions as regulator - the enabler of competition. This means that governments need to create the proper institutional framework for competition, set economically efficient charges for the use of publicly provided infrastructure, appraise the allocation of scarce public resources carefully and increase community participation in decision making.

431. Constraints limiting private sector involvement can only be removed through long-term and in-depth reforms. As an example, a contractual package comprising a long-term rehabilitation and maintenance program on a large part of the rail network would not work in countries with only a few private civil works companies characterized by low skill levels and limited financial liability. Long term reform aiming at developing and structuring the railway construction industry would then be required.

432. PPP options involving private financing are usually the most complex and the most demanding of an adequate country framework. Before deciding on a specific option, it must be borne in mind that a number of factors make transport infrastructure less amenable to private financing than other types of infrastructure. Some of these are:

- PPP may not be politically acceptable where there is a perception of large, uncompensated income transfers.
- Where there are substantial externalities that cannot easily be addressed by market-based instruments, there is greater likelihood of government intervention.
- When traffic flows are low, profitability from user charges is also likely to be low.

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⁴² This step is more applicable for foreign investment in a PPP transaction. However, even for indigenous firms, it is important to assess the country framework to decide on whether to invest in their country or elsewhere.
Some transport infrastructure is so intertwined with spatial planning that governments are not willing to leave it entirely to the private sector.

4.7.3 Screening of Railway Sector Proposals for PPP

Three levels of screening are suggested to determine if a project may be suitable for PPP with public sharing of cost and risk.43

- The first is in regard to basic objectives and these are necessary conditions for proceeding. Projects proposed for PPP should meet the same criteria as fully public ones. They should be economically justified; should improve transport access and affordability to the poor; and should meet environmental and other safeguards. Projects with wholly unrealistic aims, involving the private sector assuming high risks for low rewards may defeat the purpose of PPP. A PPP can never turn a poor investment into a good one. Private involvement should be properly structured to deliver risk transfer and efficiency benefits.

- The second level screening is a more practical one: if the proposed project fails to meet most of the “practicality” screening factors, the chances of successful implementation are low and of wasted effort high. For most major transport projects PPP financing requires a sophisticated legal enabling and enforcement environment. It also needs skilled legal and financial advisors and, therefore, often involves high transaction costs. Proponent government agencies must have the patience and perseverance to drive the process over what might be several years’ preparation, and need an ongoing capability to ensure the agreement is properly monitored. A PPP also requires a willing private partner. It is prudent to do some early market tests to establish whether there will be significant private sector interest by credible participants. Up-front market fears of a tainted selection process, or of weak regulation or of an inability to enforce concession agreements, are danger signals which suggest that the institutional environment needs strengthening before a PPP can be successful.

- The third level entails detailed financial due diligence by proponent agencies when PPP proposals can be pre-qualified at the first two levels of screening. PPP proposals should be expected to provide equivalent or better value for money than a public sector project approach. The incremental net benefits that may be obtained by the PPP should be assessed against an appropriate distribution of risks. If too little risk is transferred to the private sector, the likely costs to government will be correspondingly higher. At the other extreme, if inappropriate risks are transferred that the private sector cannot realistically manage or well quantify, the financing costs will escalate, again increasing the costs relative to the all public comparator. Value for money may be finally assessed only when priced proposals are actually available.

434. In general, successful PPP or outsourcing requires the following:

- top management involvement and commitment to reengineering,
- focus on staff concerns and issues,
- specific service requirements in terms of outputs or outcomes,
- monitoring performance and fostering cooperative relationships,
- ensuring valid comparisons between in-house and outside proposals,
- fostering competitive markets, and

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43 Ibid.
developing and maintaining the necessary skills for contracting out.

4.7.4 Key Considerations

4.7.4.1 Key Considerations for the Design of Public-Private Partnerships

435. Because PPP is always complex, experience is an important success factor. Most officials who have been involved in the development of these types of project would recommend a step-by-step approach, starting with less sophisticated options and progressing to more comprehensive PPP schemes.

4.7.4.2 Tailoring Appropriate PPP

436. Reforms of the public sector towards a more commercial management of the existing railway network or railway lines and the adjustment of the legal, economic and financial framework gradually result in an environment suitable for PPP projects. Policy makers should design a strategy that will identify which options will best respond to the policy objectives and the appropriate timing to implement them.

4.7.4.3 No Two Projects are Similar

437. The differences in project fundamentals, country constraints and government objectives prevent policy makers from opening a catalogue and choosing a ready-made solution to identify which function could be entrusted to the private sector and which types of solution could be implemented.

438. In fact, no two projects are identical and a solution, even with proven efficiency, cannot be replicated mechanically. For any given environment, there is no single solution but a range of possibilities from among which the decision-maker has to choose. Each PPP solution is too complex and too unique to be characterized in one standard category (such as BOT, BTO, and many others). To define clear-cut categories would always result in projects falling between two categories as their characteristics apply to several categories. In other words, there are a large number of solutions that may be possible rather than being described by specific categories.

4.7.5 Learning from Experience

439. Success stories of PPP may provide useful background for designing a PPP with the best chance of success. It may be reiterated that a PPP can only be successful if the public authorities play their role correctly. Inefficient organization in the management of the partnership can result in substantial costs for the government, developers, consumers and private partners.

440. Besides the many examples of successful PPPs, some cases where difficulties have been encountered should be kept in mind, as they illustrate the dangers to be avoided. A lot of responsibility devolves on the public authorities, because even in cases where the responsibility for any difficulty encountered is that of the operator, the public authorities will be held responsible by the public who will criticize them for incompetence in conducting the PPP process and for lacking vigilance in their choice of an operator or during contract negotiations.

4.7.6 Appraisal of PPP Projects

441. The factors suggested for due diligence of railway sector proposals for PPP are summarized in Table 4.1. Management in both the public and private sectors is responsible for strategic investment decision-making. It is vital that the project decision process is based upon rigorous methodology for both the proposal and appraisal stages. The proper consideration of inputs to the decision process is essential for a well-reasoned and knowledgeable decision framework, in particular, astute estimation of project risks, benefits and costs.

442. Similar to the requirements under public sector projects, projects with PPP must also satisfy the rigorous requirements of project appraisal. These include: (i) Optimizing the economic impact – it is imperative that the PPP projects are economically viable and contribute to the development of the region and country concerned; (ii) the impact of the investment on the poor; (iii) Protecting the environment: and preserving countries’ natural assets for future generations; (iv) Ensuring public participation: to ensure that the communities directly concerned by the project are properly informed and participate in the decision-making process; (v) Managing land use and resettlement: it is
usually necessary to acquire large areas of land to build railways. Property transfer and resettlement should be properly handled and managed by the public authorities; (vi) Ensuring the application of railway safety considerations by the private sector. These issues are discussed in the paragraphs below.

Table 4.1: Due Diligence Factors for PPP in Railway Infrastructure Proposals

<table>
<thead>
<tr>
<th>Major Concerns</th>
<th>Due Diligence Factors</th>
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| 1. Project Objectives | • Project meets overall tests of economic value  
• Government has clearly articulated aims for deploying private sector skills and capital  
• Planned risk allocation realistically reflects ability to bear risk  
• Access and affordability of services to the poor maintained or increased  
• Project meets the national (and multilateral financing agency) requirements for environmental and other safeguards |
| 2. Practicality | • Adequate enabling legal and compliance environment  
• Government willing to cede appropriate commercial controls to private sector to achieve project objectives  
• Credibility of cost recovery proposals through user fees/budget contributions  
• Strong administrative capacity by proponent government agencies  
• Government willingness to accept and recruit experienced advisors as necessary  
• Record of successful PPPs in the country in other sectors  
• Record of successful PPPs in the sector in other countries  
• Expectation of continuing commitment through changes of government  
• Record of fair and transparent procurement  
• Existence of credible plans for regulatory arrangements which will be adequate to protect the parties in their delivery of proposed objectives  
• Strong early private sector interest including likelihood of financing at acceptable risk premiums |
| 3. Value for Money | • Net benefit compared to public sector approach  
• Proposals are financially sustainable taking account of sensitivity to assumptions (and possibility of renegotiation where sensitivity to aggressive market or cost assumptions is high)  
• Impact on government capital expenditure and long-term operating expenditure is realistic and sustainable, allowing for contingent liabilities. |

4.7.6.1 Economic Impacts of PPP Projects

In a context of widespread scarcity of public resources, it is essential to direct existing resources towards projects with optimum impact in terms of economic development, improvement of social condition and poverty reduction. Efficient tools now exist for evaluating this impact and they should be used for any project to be developed in the railway sector.

A sustainable, well-functioning rail transport system is a crucial determinant of competitiveness in domestic and foreign markets. Economic and financial sustainability requires that resources be used efficiently and that assets be maintained properly. Social sustainability requires that the benefits of improved transport be distributed and shared by various sections of the community.
445. Economic and financial considerations have a pivotal role to play. Rigorous economic appraisal of investment in infrastructure, appropriate price incentives for its efficient use, and adequate financial and fiscal provisions for its maintenance remain crucial. The main purpose of project economic analysis is to help design and select projects that contribute to the welfare of a country.44

446. Private participation in infrastructure finance is, of course, of great current political interest. Many governments are still grossly over-optimistic about the extent to which they can obtain the infrastructure development that they would like off-budget simply by opening the sector to unsolicited private proposals. Initial experience has demonstrated the enormous difficulty of internalizing a sufficiently large proportion of the benefits of economically viable railway infrastructure facilities in order to make purely private developments commercially viable. Of course that does not make PSP undesirable. But it does raise a new set of questions about the identification and evaluation of the public sector contribution to PPP schemes, concentrating particularly on the need to evaluate the external or off-route benefits which cannot be appropriated by the private project investor, and relating the acceptable amount of public contribution to the magnitude of those benefits.45

4.7.6.2 Economic and Financial Evaluation

447. Economic Analysis. The economic analysis aims at identifying and comparing economic and social benefits accruing to the economy as a whole, setting aside for example monetary transfers between economic agents. The main purpose of project economic analysis is to help design and select projects that contribute to the welfare of a country.46

448. For economic analysis, various methods have been used to formulate the relation between costs and benefits, including classical cost/benefit ratios, incremental cost/benefit ratios, net present value and so on. Current practice among international financial institutions when making decisions on loans is to analyze costs and benefits in terms of the economic internal rate of return (EIRR) and Net Present Value (NPV).

449. The internal rate of return is a discount rate calculated so as to equalize the net present value of cost with that of benefit, the standard criterion followed by the World Bank and ADB for defining the level of EIRR that makes any given project viable. In practice, the minimum viable level of EIRR will depend on the circumstances of each country at each chronological stage. In developing countries generally, projects with an EIRR estimated in excess of 12 percent tend to carry a high priority for realization. In the criteria followed by the World Bank and ADB, a positive net present value would normally be required on the basis of a nationally accepted discount rate (usually 12 percent is adopted), and an internal rate of return of 12 percent or more would normally be required. The latter number tends to be focused on satisfying the “no white elephants” objective.

450. Financial Analysis. This consists of comparing revenue and expense streams (investment, maintenance and operation costs) recorded by the concerned economic agents in each project alternative (if relevant) and in working out the corresponding financial return ratios. Economic and financial analyses are used to verify the economic and financial sustainability of the projects likely to be implemented.

451. Traffic Forecasting. Traffic forecasting is a necessary step in any project appraisal, whatever the implementation or institutional scheme. But some issues are more specific to PPPs and will be developed below.

452. In an era of expanding PPP in the delivery of transport infrastructure and services the importance of traffic forecasting in preparing and monitoring these partnerships needs to be fully appreciated. Deficiencies in traffic forecasting often gives an opportunity to the private operators of transport services to complain, soon after taking over a business, about over or underestimations of traffic based on the initial information provided by governments. It tends to result in an excuse for the private operators to try to renegotiate the contract to improve its terms. This has been experienced in most concessions contracts awarded in Latin American countries in the 1990s. It is

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quite common for both regulators and concessionaires or bidders to devote much more money to the construction cost studies than to the traffic analysis.

453. Traffic volume forecasts are the most fundamental data in the analysis of railway projects from the planning stage onward. They will influence many fundamental decisions on project feasibility, design and management. The lack of focus on good traffic forecasting in the context of the increased role of private operators and investors in the transport sector may be somewhat counter-intuitive. Transport planners have a long tradition of concern for demand. The analysis of demand has been at the core of the assessment of national or sectoral policy options, including the introduction of new transport modes. But these concerns have generally been addressed through more “macro” oriented modeling.

454. In the context of privatization, it is not easy to achieve convergence on the views of what a good traffic forecast should be because both private sector and government have some interest in “playing” strategically with the traffic forecast. Once the government has decided to rely on private operators to provide transport services and infrastructures, mistakes in traffic forecasting will lead to tougher negotiation with the private operators and increase the incentive operators have in contesting regulatory decisions on the basis of the doubtful value of the supporting analysis. Even if management instruments exist that allow the correction of forecasting mistakes, these corrections are generally not challenge-free.

455. In most developing countries there is no or little tradition of payment of fair prices of tariffs that reflect costs. In the context of privatization one of the changes often made by the private operators is the introduction of cost-reflecting prices and a switch from taxpayers to users for the responsibility of paying for the service. The introduction of efficient cost-based pricing policies can result in significant trend changes. Since many planners rely on trends to forecast demand, this can lead to significant over-estimation of demand. These aspects need to be fully considered.

456. The importance of serious cost-benefit analysis in projects with detailed analysis of willingness to pay under various environments is emphasized. The problem with the pricing solution is a political one in the context of privatization. There are many episodes in which tariff increases have led to riots and regulators or politicians are thus reluctant to undertake pricing changes that are too politically sensitive

4.7.6.3 Distributional Analysis

457. Distributional analysis is an interesting component of economic analysis, in order to determine the respective share in the distribution of costs and benefits attributed to each of the agents involved. By and large, transportation projects are generally assessed in terms of reducing transport costs, improving efficiency, and promoting economic growth. The contribution of the transport sector to poverty alleviation is seen, in general, as indirect and stemming from broadly based economic development. Yet, most direct poverty-targeted interventions (schools, health clinics, nutrition programs, and social services, to name a few) heavily depend on transport as a vital and complementary input for their effective delivery.

458. With focus on poverty alleviation, the distributional impacts of projects are coming under increasing scrutiny. There have been some attempts to devise more systematic analyses of the distributional impacts of urban projects. For example, in an urban rail rehabilitation project in Fortaleza, Brazil, which included some restructuring of bus routes to act as feeders to the rail system and the introduction of multi-modal transferable ticketing arrangements, the impact of the project on travel times and trip costs has been disaggregated very finely by zones with different average income levels. As the zones are small and relatively homogeneous this allows the distributional effects of projects to be much more clearly observed.

4.7.6.4 Impacts of PPP on the Poor

459. Following the terminology of the World Development Report 2000, the effects of transport on the personal welfare of the poor can be examined in terms of three fundamental aspects: economic opportunity, security, and empowerment:
Economic opportunity: adequate physical access to jobs, markets, schools, and health clinics is an important determinant of an individual's ability to earn money, and keep a lengthy, satisfying and productive life.

Security: seasonal transport service interruptions, common in many poor rural areas regularly affected by severe weather conditions (such as monsoon), often isolate a large population for long periods. These interruptions affect the living standards of the affected population and their vulnerability to factors such as famine, violence, etc. For instance, the impact of famine can be substantially reduced if a country can move food easily from areas with surplus to those with a deficit.

Empowerment: geographic isolation can prevent poor people from participating in social and political processes, or enjoying a fair treatment of grievances or legal due processes.

460. The over-reaching concern with transport to address the needs of poor should be establishing the conditions to support the lowest-cost/most-affordable transport services that will provide adequate accessibility to an area. The private sector has a major role to play in meeting this objective.

461. Transport problems and the needs of the poor are essentially about accessibility, a central concept used in relating transport to the basic needs and well-being of the poor. Accessibility typically focuses on the transport cost, availability and service reliability to travel for work or social activities.

462. Indirect effects of infrastructure management schemes may help or harm different groups, including the poor. The overarching objective leads to the need to consider the following key dimensions/strategies:

- Poverty focus. In order to achieve a noticeable impact the requirements for the selection of the investment likely will require being part of a network connecting the poor areas to markets and other economic centers or social services. In addition, it is important to evaluate the effects of the arrangements for the interventions on local employment, as this is often a mechanism for the reduction of poverty.

- Participatory emphasis. To ensure responsiveness to community needs and the consideration of local solutions, a participatory approach must be usually applied to the selection and design of the project's investments. NGOs can also be involved in these activities and participate in project monitoring and evaluation. Other stakeholders involved are government agencies involved in development activities in the poor areas.

463. Beneficiary participation and a clear perception of the social impact of a project invigorate the sustainability of PPP interventions by incorporating local priorities in project design. Furthermore, the pro-poor design of those interventions, with low-cost investments and local micro-enterprise activities, can help communities take ownership of the project and support the various activities related to it.

464. It is increasingly recognized that people are the center of development, and that development is for all people. It is important that the relevant aspects of social dimensions be examined under the project to determine whether:

- economic growth is being achieved in the country with adequate attention to equitable distribution of benefits;
- enhanced opportunities are available to women and other targeted groups, if any, including equitable access to project and program benefits; and
- poverty-related issues are being addressed.
465. Based on the guidelines of the ADB for incorporation of social dimensions in railway projects, a check list is presented in Appendix 17.46

4.7.6.5 Environmental Impact of PPP Projects

466. Protecting the environment and taking sustainable development into account increasingly feature among the main concerns of public authorities, particularly when dealing with the development and management of transport infrastructure facilities.

467. In the case of PPP-type relationships, there are two reasons why the public authorities must clarify the rules to be respected in this matter:

♦ The private operator will bear part of the environmental responsibility, which is variable according to the specific characteristics of the PPP. It must therefore know precisely what this responsibility involves.

♦ Even in the case of a PPP, part of the responsibility remains within the public sector, which is mainly in charge of the preliminary studies. It is essential that these studies be carried out so that any subsequent difficulties may be avoided, as they may have serious consequences for the operator.

468. The main environmental aspects to be considered in railway projects are guided by each country’s legislative requirements, and in the case of assisted projects the guidelines of the multilateral financing institutions are also required to be satisfied. In all cases an environmental impact assessment (EIA) should be prepared. The EIA is the process of compiling, evaluating and presenting all the significant environmental effects of a proposed project and the associated development. The assessment is designed to help produce an environmentally sympathetic project so that detection of potentially significant adverse environmental impacts leads to the identification and incorporation of appropriate mitigation measures into the project’s design.

4.7.6.6 Public Participation

469. When designing a new infrastructure project, public participation is not only part of the environmental procedures, but in fact an integral part of a PPP process as a whole. In such a process, not only the project itself has to be accepted, as in a traditional procedure, but also the fact that part of the public responsibility is transferred to the private sector. The possible approaches to be used to involve the public can be broken down into the following levels of action:

♦ Information disclosure: Very early in the process, it is recommended to disclose information, in summary form, to stimulate the population’s curiosity.

♦ Consultation: Prior to every major decision, the public, NGOs and other interested parties should be able to ask questions to those in charge of the project and give their opinion on the different possible orientations.

♦ Participation: In participation, the public may be invited to give its opinion before a design decision. This includes considering alternative alignments and determining solutions aimed at limiting or compensating negative impacts.

♦ Negotiation: Negotiation is a form of participation that enables the proponent and the public to arrive, jointly, if possible, at a solution. It is often used to define compensation measures or for land acquisition purposes.

470. Depending on the type of project, the type of PPP and the stage of development, more or less public information and consultation are under the responsibility of the private operator. In many cases it is necessary for the operator to have strong support from the public authorities, because they alone are legitimate in the eyes of the public.

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4.7.6.7 Indigenous People

471. Indigenous people or traditional populations require special attention in transport infrastructure projects because they have limited ability to assert or defend their interests and rights to land and other productive resources.

472. These people are sometimes defined in national legislation, or are identified by a close attachment to ancestral territory, and often have a subsistence-oriented lifestyle. There is no clear definition that fits all countries and regions. The important issue is to identify groups which have no land property legislation and are particularly vulnerable to increased outside contact.

4.7.6.8 Resettlement

473. On account of the difficulties and pain caused by involuntary displacement of populations, it should first be underlined that the desire to minimize the need for resettlement should be taken into account during the examination of the various alternatives and that the cost of land acquisition and resettlement should be taken into account in the overall cost of the project. The private operator should be informed of the charges incumbent upon him. Another issue to be addressed in some countries in Asia is undocumented settlers on railway right-of-way (for example in the Philippines, Bangladesh, Cambodia). The private operator should not be expected to deal directly with these settlers since the responsibility to provide appropriate shelter to all citizens rests with the government.

4.7.6.9 Ensuring Railway Safety

474. When drawing up a PPP contract, the public authorities should determine how safety is to be taken into account in the design, construction and operation of the railway.

4.7.7 Contract Award

475. Private participation in ground transportation infrastructure has generally taken place by means of contracts with governments, with defined time periods, where the private sector has the obligation to build and/or operate and/or a determined infrastructure in exchange for the right to charge a tariff that remunerates the provision of such services and covers the investments allocated to that end. Such an association contract (PPP contract) establishes the risks to be assumed by the state and the private sector. The PPP is materialized through a policy of risks distribution to the agent best prepared to assume them.

476. PPP involves a complex arrangement between the participating private sector concessionaire (which is the most common form) and the proponent public agency. This relationship is guided by the terms and conditions of the contract. For the success of this partnership it is important that the contract is drawn up considering all relevant aspects as summarized in the paragraphs below.

4.7.7.1 Contracting Process

477. The UNDP points out that the tendering, procurement and contracting procedures must be financially and operationally sound, open, transparent, and fair. And that any departure from the sealed-bid tender and contracting method will open the government to accusations of partiality or corruption.

478. In addition, the procurement process should (i) state the desired end goal or output targets of the agreement and minimize overly specific requirements, so that the private sector can innovate and manage flexibly; (ii) ensure that the potential private sector partners can be adequately compensated for or retain their intellectual property; (iii) include monitoring provisions of performance measures by a third party or autonomous government agency; and (iv) make provisions for renegotiating the terms of the agreement over time.

4.7.7.2 Describing the Scope of Work

479. The first stage of bidding is to identify the works to be performed, describe them precisely and collect all information and data likely to be of use to the operator in performing his contract to the best of his ability.
4.7.7.3 Defining Expected Performance

PPP-type contracts give rise schematically to three types of requirements corresponding to the different project stages: quality requirements for the construction, reconstruction and rehabilitation phases; performance requirements throughout the maintenance and operation phase; and hand-back requirements which concern returning the conceded facility to the conceding authority on expiry of the concession contract. Measurable performance criteria for each phase must be clearly specified.

4.7.7.4 Stimulating Contract Performance

The design of the contract should stimulate the operator to perform well. The fact that it is to the operator's advantage to perform well is a powerful aid to respecting quality requirements (at the construction stage) and performance requirements at the operation and maintenance stage. Contracts that follow this objective can lead to major savings in supervision work. Their wording may be more concise: it is unnecessary to go into detail concerning requirements which, if they are not respected by the operator, will prove very costly. It is essential to take this principle into account right from the PPP design stage.

4.7.7.5 Performance Indicators for Operation

The requirements most frequently encountered in contracts include: quality of train services; quality of information to users, some of which may have to be in real time, information related to passenger fares and freight tariffs.

4.7.7.6 Contracts to be Equitable

By their nature, all contracts voluntarily entered into have to be perceived as mutually beneficial. However, government contracts tend to include an unduly heavy dose of safety clauses, which generally lead to bureaucratic delays and inefficiencies. Although such clauses may be relevant in, for example, a building contract in which the end product is a clear and limited entity, concessioning is an altogether different affair. The attempt here is to provide a challenge to the entrepreneur to increase traffic, improve service levels, and ensure profitability in a market in which many variables are outside the entrepreneur's control. The contract should be framed in such a manner that the concessionaire is encouraged to take reasonable risks in the hope of rewards, rather than being discouraged from taking risks so that penalties are avoided. In short, positive reinforcement techniques should be preferred and contracts should be equitable and not merely safe.

Every contract is unique by itself, reflecting the political situation in the country, sector situation, expectations of the service, financing and revenues including support from the government, and dispute resolution mechanism, which are a few of the contract provisions. The salient features of a railway concession contract are presented in Appendix 18, and the contents of a sample model railway passenger concession are given in Appendix 19.

4.8 THE REGULATORY FRAMEWORK

The institutional endowment of an economy is now recognized to be a critical factor in the economic success of the nation. The institutional endowment of a country includes formal constraints - such as constitutions, laws and rules - and informal constraints, such as conventions, customs and norms of behavior. Industrialized economies are composed of inter-related formal and informal constraints on human behavior that are generally conducive to market transactions. The efficiency and effectiveness of state regulation is an important part of this institutional structure.

Regulation is a broad term for institutional rules governing market economies, in which governments intervene to modify the market to achieve socially desirable ends. Two broad categories of regulation can be distinguished. First, economic regulation defines the market environment within which industries operate and often establishes government agencies that authorize particular business operations. Second, social regulation bounds the market, establishes limits to competition, and provides social accountability for economic externalities created by the forces of private competition. Privatization is often considered as a form of deregulation and it is sometimes difficult to draw the line where deregulation ends and privatization starts.
487. The legal background and regulatory framework allowing provision of public services by private companies and securing private finance of public infrastructure has to be created before private funding is sought.

488. Once the PPP contract is signed, giving the private sector the responsibility for financing and delivering the services, the public agency needs to make preparation for monitoring the following:

♦ legal barriers inherited from past regulatory regimes that need to be sorted out,
♦ privatized services are natural monopolies, which come with risks of abuse of dominant position such as abusive pricing,
♦ safety cutbacks are likely to be an easy way to reduce costs.

489. These responsibilities are to be included in the mandate of the economic regulators. This is not the only responsibility of these regulators. In addition, the government needs to monitor compliance and enforce the contractual commitments, quality and service obligations of the private operator.

4.8.1 Regulation Techniques

490. The most common regulation techniques to deter companies from charging elevated prices are:

♦ **Rate of Return Regulation** - under this technique, the authority sets a fixed rate of return on the assets so that the private company is able to charge a price that is consistent with the objectives of the regulators. Prices for services provided can be adjusted depending on the return on assets realized by the company. Prices can only be increased/decreased if the realized rate of return is lower/greater than the rate of return.

♦ **Price Cap Regulation** - this type of regulation has been increasingly applied in regulated industries under the belief that it provides strong incentives for the enterprise to be efficient. Under this technique, prices are yearly adjusted according to inflation plus or minus a fixed amount that is not related to the company returns. Price cap regulation does not indicate how prices should be set for the first year of operation; it only establishes an indicative rule of how these prices will change over time.

491. Price cap regulation has adopted as the preferred model in a growing number of developing countries. In the Latin America and Caribbean region, a recent study for the World Bank indicated that the price cap method for regulating prices and profits in the railway sector has been used in all Latin American countries.47

4.8.2 Regulatory Capacity and Governance in Developing Countries

492. Where the privatization in developing countries has been accompanied by the development of dedicated regulatory offices, these have been, to varying degrees, independent from government departments. However, experience in Western Europe, the U.S. and Australia indicates that these regulatory offices will face a number of on-going difficulties arising from the inherent information asymmetries that exist in a regulated environment. In practice, it is the firms not the regulators that have direct access to the data on costs, revenues and assets and know their true cost of capital. In effect, the job of the regulator is to provide the incentives for managers in regulated companies to maximize effort and reduce costs, while protecting consumers. The regulator may also retain powers to fine or in other ways penalize the firm for regulatory ‘cheating’. In Western Europe, the U.S. and Australia such powers are used and regulated firms have redress through appeal against regulatory decisions to the courts or to another body, such as the Competition Commission in the U.K.

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47 Railway tariff regulation by price cap has been used in PPP agreements in Argentina, Bolivia, Brazil, Chile, Columbia, Ecuador, Mexico, Peru, and Venezuela.
4.8.3 Technical Aspects of Regulation

493. Contracts may cover long periods during which, changes in the legislative and normative context may occur. Changes may occur in social requirements resulting in pressure to change the performance levels required by the contract. The two parties may finally agree that some of the requirements of the contract are inappropriate.

494. A fundamental principle of PPP is that if these developments mean that the contract has to be adapted and if this is prejudicial to the operator, such damage should be compensated for. The role of the regulator is thus to be attentive to these changes, to inform the operator of them, and if necessary, negotiate with him any modifications or adjustments to the contract.

495. The operator must report on his actions or make vital information available to the regulatory body. This obligation has two objectives:

♦ to enable the regulatory body to ensure that the contract is correctly performed and provide information for any adjustments which may prove necessary;

♦ the obligation to report back or make information available should apply both to works performed, the results of measures taken, accidents and the circumstances in which they occurred, traffic restrictions, users' claims, etc.

496. Whereas in traditional schemes, the government collects complaints and claims from users and decides what action to take, in PPP cases the operator should be directly confronted with users' reactions and decide as often as possible on the measures to be taken when these claims are justified. The role of the regulatory body is to ensure that the operator will make a reasonable decision between the requirements of the public authorities as determined in the contract, those of the users and the cost of corrective measures.

497. A long term financial relationship between public and private partners is a key parameter of the PPP and induces the following constraints that are the main justification for setting up an adequate regulation framework:

♦ When the private operator operates a natural monopoly, provisions should be made to ensure that it does not abuse this dominant position.

♦ Rules regulating the PPP should take account of the inevitable changes that will occur in the project environment.

498. In order to comply with their commitment to deliver services in the most efficient manner, monopolies must carry forward an investment plan that is often agreed with the regulatory authority. However, the implementation and financing of this investment plan is the sole responsibility of the regulated company.

499. In the case of public infrastructure monopolies, and specifically in the case of railroads, the primary real asset in general does not belong to the firm. This is the case under the PPP scheme, where financing takes place under three conditions:

♦ Cash flows from the project should offer a return sufficiently attractive to risk capital;

♦ The level of guarantees, collateral, and insurance should provide creditors with confidence regarding the commitments and debts contracted;

♦ The capital structure of the project should be capable of separating the risks of the project from the risk of the project promoters.

500. Private participation in infrastructure projects does not take place through a corporate finance structure, but rather by means of Special Purpose Vehicles in which corporate capital budgeting techniques are not directly applicable. In this case, project finance comes forth, and is applied as a financial structuring technique to projects where, given the magnitude of investments and the extension of capital recovery periods, promoters often cannot participate alone without assuming unreasonable risks.
501. Economic development is related to a stable political environment, low corruption and respect for law and order. When new regulatory offices are created they build on and complement this wider institutional structure. By contrast to the situation in developed economies, the institutional context of developing economies is often much less conducive to market transactions. Regulatory rules and conventions are often weak and under-developed. Many developing economies lack sound institutional structures to promote private entrepreneurship and competition, leading to disappointing economic results even when policies that have ‘worked’ elsewhere, such as privatization and market liberalization, are imported. Also, and on a more micro level, regulatory regimes in developing countries can suffer from considerable management deficiencies. The other main difficulties to be found in developing countries relate to expertise and governance problems.

502. If state regulation is to promote economic and social welfare, it needs to be both effective and efficient: Effective in the sense of achieving its planned goals, and efficient in the sense of achieving these goals at least cost, in terms of government administration costs and the costs imposed on the economy for compliance with regulations. There is, therefore, a compelling case for the systematic appraisal of the positive and negative impacts of any proposed regulatory change. This appraisal should encompass the likely economic, environmental, social and distributional consequences, thereby providing a comprehensive analysis of regulatory impacts on sustainable development.

4.9 LEGAL FRAMEWORK

4.9.1 Objectives of Legal Framework for PPP

503. Comprehensive laws should be enacted to present explicit and concrete government statements about pushing forward with PPP. These laws should include clear statements of principle that are to be regarded as political commitments. Each provision of related specific laws and regulations should be carefully examined in line with the principles and initial purposes of the comprehensive laws. Some Asian countries (Japan, Korea, and the Philippines) have been in the forefront of establishing an enabling legal and policy environment for private participation in infrastructure. Salient features of the legal frameworks in these countries are described in the paragraphs below.

4.9.1.1 Japan

504. In 1999, the Government of Japan enacted the Private Finance Initiative Promotion Act (PFIPA), (Law No.117 of 30 July 1999), which established a private finance initiative scheme. This scheme introduced formal arrangements whereby the application of private investment resources were available to facilitate efficient and effective accumulation of social capital by inviting private capital, management and technological know how to construct, maintain, administer and manage public facilities. PFIPA has been attracting a lot of attention because PFIPA projects not only provide public services more efficiently and effectively than can government and local public agencies, they also make it possible to reduce project costs and provide higher quality public services.

505. PFIPA projects are expected to fulfill the following criteria: (i) be public in nature; (ii) utilize the capital, management power and technological capabilities of the private sector; (iii) be conducted efficiently and effectively by respecting the independence and ingenuity of the private sector; (iv) maintain fairness in selecting specific projects and private enterprises to undertake them; (v) ensure transparency throughout the entire process, from the planning stage through to completion; (vi) be objective in the evaluations made at each stage; (vii) clearly specify the contract content, including the role and responsibility taken by those concerned, based on the agreement of the public facility managers and the enterprises selected; and (viii) ensure the legal independence of the enterprise or department involved in the project. The process flow of a PFIPA project that satisfies the above conditions is outlined in Figure 4.1.

48 Adapted from Fumiyo Harada Legal Framework for Private Participation in Infrastructure in the Selected East Asian Countries; Comparative Study on Japan, Korea, and the Philippines, Development Bank of Japan

49 www.usajapan.org/PDF/private_finance_initiative.pdf
4.9.1.2 Republic of Korea

In 1999, the Private Participation in Infrastructure (PPI) Act was enacted that launched a new PPI program in Korea. The principles in Korea’s PPI Act are quite similar to those of Japan’s PFIPA Law. Korea particularly targets foreign investor involvement in its basic infrastructure and has prepared incentives for it, whereas Japan’s law was designed to activate domestic investors. Korea has amended its institutional framework for PSP, including drastic measures that have greatly improved the investment climate for the implementation of large-scale projects. The PPI Act established two separate bodies for implementing the intentions of the Act. The first body is a policy making body called the Private Investment Project Committee led by the Minister for Planning and Budget. As well as formulating major policies and enforcing decrees related to private sector participation, the Committee also develops an annual plan that lists major projects targeted for private sector investment, and proposed projects and their designated concessionaires that have been approved according to defined criteria. The annual plan also details the investment, management and operational requirements of each project and the government assistance provided for the projects. The second body is the Private Infrastructure Investment Center of Korea (PICKO), charged with promoting private participation.

Under the new PPI law, the Government can offer a wide range of incentives and take various other measures in order to reduce the risks and uncertainties that may be associated with a project. The reference range for determining the rate of return for PSP projects is 11 to 14 percent. The rate of return for a particular project is determined through negotiations taking into account the type of project and the level of risk. The incentives are offered in a way that can significantly improve the financial viability of projects and reduce their implementation risks to make them attractive for the private sector.

4.9.1.3 The Philippines

The Philippines’ BOT Law also aims to attract foreign investors and instructs the government to provide “most appropriate incentives” to mobilize private resources for the purpose of financing the construction, operation, and maintenance of infrastructure and development projects normally financed and undertaken by the government. Fully utilizing foreign resources, the government has used the BOT Law for numerous projects to address immediate needs in infrastructure, especially in power generation.

Under the BOT Law, a private sector proponent is entitled to present an unsolicited proposal to the government for the right to study in detail the feasibility of a project typically for one year. At the end of the study period, the proponent would either offer the project under a BOT scheme with specific conditions or reject it. A competitive bidding process would allow the government to test the

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50 Transport and Communications Bulletin for Asia and the Pacific No. 72, 2003
attractiveness of the project to other investors which are willing to offer better terms. A number of railway projects were initially placed under Memoranda of Understanding (MOU) between the government and the private sector proponent under the BOT Law. After detailed study none of the projects moved to implementation mainly due to difficulties to secure financing because of relatively low traffic projections. The government recently determined that BOT schemes for railway financing would not be attractive for PSP due to high initial capital requirements to build the infrastructure. Bilateral loans were secured by the government for the Manila north and Manila south railway projects from PRC and Korea, respectively where the government is financing the infrastructure investment and in the case of the Manila south project, the private sector will be invited to participate under a concession contract to finance the rolling stock and operate the line. The Manila north project is being implemented by the Clark Base Development Commission.

4.9.2 Developing Legal Frameworks and Policies

510. Although some governments have provided policy and legal frameworks to promote private sector involvement in infrastructure development, there are a large number of countries that need to draft legal and policy frameworks. Based on the experience in some countries, some suggestions are offered in the paragraphs below for preparing legal and policy frameworks for PSP in infrastructure.

4.9.2.1 Integration of PSP with Existing Systems

511. The legal framework should clearly determine how to smoothly integrate PSP into the existing systems. The provision of certain public services is generally subject to a special regulatory regime that may consist of substantive rules, procedures, instruments, and institutions. For instance, Japan’s PFIPA Law declares that state and local governments shall commit themselves to removing or relaxing the regulations that prevent mobilization of the techniques and creativeness of the private sector. The fundamental principles prescribe that relevant sector-specific laws and laws for management of the public domain shall be removed or relaxed if such action is necessary to promote the PFIPA projects. Korea’s PPI Act is clearer since it has overriding priority over related laws: Korea’s PPI Act takes overriding precedence over other related laws with regard to private investment projects.

4.9.2.2 Clarity of Criteria and Procedures

512. The legal framework should make a clear statement of the criteria and procedures in each process. Japan’s PFIPA Law and the fundamental principles provide principles for the selection of projects and contractors but do not provide actual procedures and measures, such as those that could be used to determine the number and nature of projects or the rules for bidding for those projects or scheduling their processes. Korea’s PPI Act and the Philippines’ BOT Law provide the details of the processes and of the responsibility of each related authority in project selection and contract bidding. The PPI Act outlines the project implementation procedures and prescribes time limits on processes and instruction on how to submit proposals and modify them once they have been approved. The BOT Law covers the inclusion of designated projects (“priority projects” in the Act) in their development programs and how they are to be announced to the public.

4.9.2.3 Handling of Unsolicited Proposals

513. Governments should consider special procedures to handle unsolicited proposals that may result from a private sector’s identification of an infrastructure need it can satisfy. Unsolicited proposals may also facilitate innovative concepts in terms of technology, finance, and management. Korea’s success in infrastructure development in recent years are largely because its PPI Act includes provision for the acceptance of unsolicited projects and its Enforcement Decree of the PPI Law provides details for the implementation of such projects. The Philippines’ revised BOT Law of 1994 (including the accompanying Implementing Rules and Regulations) included provisions for unsolicited projects. In Japan, treatment of unsolicited proposals is only prescribed by the fundamental principles (whereas Japan’s PFIPA Law is silent on this subject) that the government shall endeavor to promote unsolicited proposals, and the projects of unsolicited proposals shall be provided with incentives similar to those of solicited projects. Implementing agencies in many countries lack experience in carrying out feasibility studies, and they often welcome unsolicited proposals in which private sector entities have already done substantial preparatory work for them.
4.9.2.4 Clarifying Government's Support for Projects

514. The general framework should clarify the government’s support for private participation in infrastructure, specifying the areas in which it is applicable and the method by which it is to be provided. The specific laws and regulations should list the available incentives with which the private sector can consider feasibility. The Japanese PFIPA Law and the Fundamental Principles indicate basic policies for measures on legal and regulatory regimes, taxation regime, and public financial support that the state and local governments should follow.

515. Korea’s PPI Act illustrates concrete and detailed incentive measures for private investors, including (i) acquisition of private land for the project by the government; (ii) revenue guarantee by the government up to 90 percent of the projected revenues for solicited projects and 80 percent of the projected revenues for unsolicited projects; (iii) bonus for early completion and lower construction cost; (iv) various tax incentives offered by the government; (v) part coverage of foreign exchange risk when foreign exchange rate fluctuations exceed 20 percent, through modifications of tariff rates, government subsidies, adjustment of the concession period or other provisions; and (vi) a buy-out option in the event of franchisee bankruptcy.

516. The Philippines’ BOT Law provides two major fiscal incentives—one under the Omnibus Investment Code (for projects which cost more than Philippine Pesos 1.0 billion) and the other regarding ODA funds and/or government appropriations (up to 50 percent for projects which would have difficulty in collecting funds). It also allows local governments to provide additional tax incentives, exemptions, or other relief. The incentives provided under the PPI Law also include simplified rules and procedures for project selection, evaluation and approval.

4.9.2.5 Establishing Organizations for Promotion and Coordination

517. The establishment of effective organizations for the promotion and coordination is important for the development of PSP markets and for the sharing of knowledge and techniques among related parties. To address a traditional lack of capability in the public sector's administration of private sector investment in infrastructure a growing number of governments in Europe have introduced PPP units responsible for supporting the process of planning and implementation of partnerships.

518. In Asia only a small number of countries created dedicated PPP units. These countries include Australia, Bangladesh, India (at the state or provincial level), Philippines and Republic of Korea where private sector participation in infrastructure development has concentrated. These units have been successful in playing a ‘catalytic’ role in promoting and implementing private projects.

519. The Private Infrastructure Investment Center of Korea (PICKO) was established as a special promotion organization. As a one-stop service center for PSP, PICKO benefits both the public and the private sectors by supporting all the administrative procedures, from investment consulting service to project proposal review, negotiation, and concession agreement conclusion. The functions of PICKO are summarized in Box 4.1.

520. In the Philippines, the BOT Center (reorganized and converted to the Coordinating Council for Private Sector Participation) was created in 1999 under the Coordinating Council for the Philippine Assistance Program. It is designed to promote the country’s BOT programs and provide training and expertise to implementing agencies, local governments, and the private sector.
Box 4.1: Functions of PICKO

The goal of Korea's PPI Law is to realize “value for money” by utilizing the private sector's resources in infrastructure, and accordingly, to reform the administrative structure, decrease the tax burden, and upgrade the standard of public services. PICKO has been established as a special promotion organization for PPI. The roles and functions of PICKO are as follows:

- Providing support in formulating policies and plans related to private investment projects—for example, the PPI Act and its Enforcement Decree, PPI Annual Plan, Mid- to Long-term Plan for Private Investment Projects.
- Developing new private investment projects, including conducting feasibility studies
- Providing support in formulating the instructions for private investment project proposals
- Reviewing and evaluating project proposals such as feasibility studies
- Providing administrative support in negotiations and concluding concession agreements
- Providing consulting services for domestic and international investors
- Sponsoring promotional activities such as PPI presentation meetings in Korea and abroad
- Operating educational programs for civil workers, financial institutions, related personnel from private sectors, etc.
- Conducting studies to improve various policies related to private investment skills of the private sector to promote construction, maintenance, and operation of public infrastructure for sound national economic development.

521. Organizations for promotion and coordination of PSP activities are of major benefit to foreign investors who are not familiar with local systems and languages. They also are useful for accumulating institutional knowledge and experiences in PSP and contributing to the capacity building of relevant authorities.

4.10 PROJECT RISKS

522. Under a traditional public sector scheme, the content, terms and conditions of the contracts related to the relatively short duration construction are well defined. However, a concession contract is drawn up with the aim of allocating many risks and defines each party’s relationship for a very long duration. The definition of these risks and their clear allocation between the concession awarding party and the concessionaire are in the heart of the partnership.

523. It is important to note that a concession is essentially a contractual vehicle through which risks are taken by those who are best suited to do so. An entrepreneur concessionaire will be the best suited to take commercial risks involved in satisfying today's fast changing transportation requirements. On the other hand, risks associated with government policy changes (e.g., currency devaluation) are best left to the government. Risk should be appropriately apportioned in contracts for concessions.

524. Table 4.2 provides a summary of the different types of risks associated with a railroad project and indicates a possible allocation of these risks between the parties. Each of these risks should be studied and analyzed. It is of fundamental importance for the success of the concession that each risk is assessed and, where possible, a range of values defined on each risk and on combinations of risks.

525. The construction (completion, quality and cost overrun) risk is generally assumed by the concessionaire. If substantial changes to the specification of the project are requested by the concession awarding party before or during construction it is appropriate that the latter bear these risks either as direct contribution to their cost or reduction in annual affermage to pay for the incremental cost.

526. For the allocation of financial risk, different approaches exist. In case the concession is considered as an ordinary private commercial operation, and the bulk of the financial risk stems from inflation, interest rate and/or exchange rate risk has to be borne by the concessionaire. Taking into consideration the long duration of the contract and the eventual impact of these unforeseeable factors on the revenue to be generated by the project, it is better to reach a binding agreement on certain reference points and forecasts and include price escalation and a fair profit-sharing formula in the contract.
### Table 4.2: Different Types of Risks in a Railway Project

<table>
<thead>
<tr>
<th>Type of Risk</th>
<th>Description of Risk</th>
<th>Government /Proponent Agency</th>
<th>Concessionaire</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Political Risk</td>
<td></td>
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<tr>
<td></td>
<td>Expropriation of the company assets/operations</td>
<td>X</td>
<td></td>
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<tr>
<td></td>
<td>General Modification of the laws and tax system</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Specific Modification of the laws and tax system</td>
<td></td>
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<tr>
<td></td>
<td>Political Events</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Termination of the concession at the convenience of the Government</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Limitation of Currency Convertibility</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Adverse Sovereign Action</td>
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<tr>
<td>2. Risks on Completion of Construction</td>
<td>Land Acquisition</td>
<td>X</td>
<td></td>
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<tr>
<td></td>
<td>Cost Overrun (excluding change of project by government)</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Costs Overrun (change of project by government)</td>
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<tr>
<td></td>
<td>Increase of the financial costs</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Schedule and Quality of Works</td>
<td>X</td>
<td>X</td>
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<tr>
<td></td>
<td>Administrative procedures delay time</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Damages incurred by the works</td>
<td></td>
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<tr>
<td></td>
<td>Bankruptcy of the concessionaire company</td>
<td>X</td>
<td>X</td>
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<tr>
<td></td>
<td>Force Majeure</td>
<td>X</td>
<td>X</td>
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<tr>
<td></td>
<td>Technology risk</td>
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<td>X</td>
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<tr>
<td></td>
<td>Costs overrun</td>
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<td></td>
<td>Changes in Specifications by government</td>
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<tr>
<td></td>
<td>Price control policy (tariffs)</td>
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<td></td>
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<tr>
<td></td>
<td>Other Revenues</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Construction of competing facilities</td>
<td></td>
<td></td>
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<tr>
<td>5. Financial Risk</td>
<td>Inflation</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Interest rate</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Exchange Rate</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>6. Legal Risk</td>
<td>Permits and Licenses</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Litigation</td>
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</table>

527. The legal and certain of the fiscal risks as well must be evaluated with particular care having regard to the fact that one of the parties to the contract retains a large discretionary power. Furthermore, in many countries the law is in transformation. For contractual purposes the existing legal framework should be adopted. It is important that both legal and fiscal risks should be identified and assessed with particular care.
5 ACTION PLAN CONSIDERATIONS

5.1 INTRODUCTION

528. This Section sets out a broad menu of options for the preparation of an Action Plan to improve PSP in the provision of railway infrastructure and services by public and private sectors. Implementing a particular approach successfully will often depend on supportive sector policies and regulatory processes. The challenges facing developing countries are many and various. What may be an acceptable policy in one country may be anathema in another for political, geographical or historical reasons. Also railway transport may be serving different freight and passenger transport needs and in different ways. Therefore, what may work in one institutional and market environment may not work in another.

529. The Action Plan does not prescribe fixed solutions. It offers guidance in thinking about the options available and the factors that are important in judging between them. It draws a basic distinction between:

♦ railway services that serve the public or commercial customers directly, and
♦ railway infrastructure that is used by the transport service providers.

530. This distinction is reflected, for example, in the difference between railway infrastructure provision and railway transportation services (including passengers and freight). In practice, some of the entities involved in transport infrastructure and services comprise one vertically integrated enterprise (Figure 5.1). Sometimes they are commonly owned but separately operated. Sometimes they are both separately owned and operated (vertical separation). In some passenger and freight operations are under one enterprise (horizontal integration) and in some they are separately owned and managed (horizontal separation). Part of the challenge is to sort out which of these models best suits the circumstances; then, what the roles of public and private sectors should be.

Figure 5.1: Four Structures for Railways

Source: Adapted by Consultant from the Australian Productivity Commission

531. The Action Plan should include:

♦ A comprehensive evaluation of justifications and risks for the proposed actions.
♦ A detailed schedule of activities and components to implement along with their implementation timetable.
♦ Proposals for developing and strengthening institutional capabilities.
♦ Precise description of any additional survey/study deemed necessary.
532. PPP projects work best and are sustainable if they are mutually beneficial to both public and private sector partners and if each can overcome adversarial posturing to build mutual trust. It is important to develop a win-win situation for both the public and private partners.

533. Government and/or transport sector organizations should develop an Action Plan identifying the steps to be taken to address the issues, indicating for each element of the plan:
   ♦ Who will be responsible for its implementation;
   ♦ The implementation timetable and method, as well as training needs; and
   ♦ The indicative cost estimate.

534. Every effort should be made to check the feasibility of the proposed actions with major public and private stakeholders, to identify potential stumbling blocks and propose an approach to deal with them. Participatory consultation with all stakeholders is necessary as early as possible. It will be appropriate if the Action Plan identify a few critical measures that could be readily implemented with a high impact.

535. Proposals to successfully implement recommended administrative and regulatory changes should be spelled out in practical terms; including if need be the identification of draft new legislation to be submitted for legislative approval. Action plans, budgets, timetables, implementation methods, and corresponding training needs must be determined. Individual objectives must be time-bound and linked to an agreed measurement process, with relevant performance indicators, so that progress can be monitored and assessed during and after implementation of recommended measures.

536. While designing the Action Plan advantage should be taken of experience gained in other sectors and countries, in order to succeed governments must find alternative mechanisms unique to their circumstances and be willing to accept PSP. They must choose appropriate projects that are conducive to private sector management, and properly package the projects in order to avoid disproportionate transaction costs. Strong public sector leadership and political commitment are essential to the success of PPP projects.

537. If PPPs are not well designed and supervised, their services can become more expensive than those provided by the government. Poorly designed and inadequately analyzed projects have failed in both rich and poor countries. Corruption can undermine public trust in PPPs if the contracting process is not transparent and carefully supervised.

5.2 IMPLEMENTATION STRATEGIES

538. Although PPPs offer the governments of developing countries important means of expanding services and infrastructure and the private sector enhanced commercial opportunities to expand their businesses, PPPs are complex arrangements and can create potential problems for both the public and the private sectors if they are not properly designed and administered. The following three considerations are important for successful implementation of PSP:

   ♦ **Promote PPP.** Given the budgetary constraints and the priority to increase spending in social sectors, the government should proactively support all necessary measures that foster PPP.
   
   ♦ **Foster Fair and Healthy Competition.** The private sector should be developed as an engine of growth in railway transport. Governments must ensure a level playing field among the players and stakeholders.
   
   ♦ **Establish an Integrated Transport System.** Because of scarcity of investment resources and the need to provide resources for other priority social services, it is imperative that governments encourage the players and other stakeholders in the railway and other land transport services to complement rather than compete with each other to ensure greater efficiency in their operations. Intermodal and intramodal complementarity should be promoted.
5.3  ACTION PROGRAMS

5.3.1  Legal Environment

539. In some countries legislation for enforcing private sector development existed for decades. In others, particularly in the centrally controlled and planned economies private sector legislation is yet to be enacted. Governments should forge partnerships with the private sector and other stakeholders in policy formulation, reform and implementation.

540. In order for the privatization program to be successful, a number of changes to existing laws may be required. Foremost is the need to create or improve the legal basis for independent regulatory bodies in the railway sector. A number of other legal changes may be required as well. These include laws pertaining to land acquisition and utilization, foreign investment and businesses, competition, taxation, intellectual property rights, disposition of government surplus assets, employment, environmental protection, private sector operations, company registration, commerce, registration and trade in securities, foreign exchange, and others.

5.3.2  Establishing Regulatory Framework

541. For the implementation of the various measures for private investment in railway infrastructures and railway transport services, an independent regulatory commission should be established. Where this is not feasible at the outset, at the minimum independence of the regulator from the service provider must be ensured.

542. Clear and transparent licensing and competition rules should be published. Judicial reforms should be enacted to facilitate implementation of an affordable, transparent and predictable legal system.

543. Currently, the roles of policy making, regulation and operation overlap in many sectors and many state enterprises. Clear separation of policy making, regulation and operation is an essential component of the reform program and a requirement for the development of transparent, competitive markets. A program of regulatory reform is necessary, which includes specification of individual regulatory bodies and definition of roles and responsibilities of these authorities. A detailed assessment of the organizational structure of regulatory bodies and their reporting, funding and staffing arrangements must be conducted. This will ensure that regulators operate on the basis of consumer protection, promotion of competition, safety, efficiency, and environmental protection.

5.3.3  Social, Labor, and Environmental Concerns

544. Governments must recognize the social and labor issues associated with privatization. As a result, all privatization proposals must include a discussion regarding treatment of social obligations after privatization, and a discussion of the employment impacts of privatization. The government must also evaluate the tariff and other social aspects of PSP and seek to balance these with the privatization program. Programs which benefit state employees in the transition to privatization and afterwards should be encouraged. These include early retirement packages and retraining programs. The government should pursue a plan that minimizes the overall impact on social, labor and environmental issues while still meeting the reform objectives of PPP.

5.3.4  Transport Security Program

545. The governments should adopt relevant land transport security measures being formulated by the ASEAN. These measures are designed to prevent, mitigate and contain transport security threats.

5.3.5  Public Information and Education

546. The privatization program should be accompanied by a dedicated public awareness campaign that addresses key audiences and stakeholders in the process and responds to their particular concerns. Key audiences include the SOE employees, investors, freight shippers, passengers, the media, and the public at large. Efforts may include the establishment of an interactive website, the publishing of a newsletter, and the holding of public seminars and forums. These channels will seek to disseminate both general information on privatization and sector-specific details to the identified audiences.