Special Feature

World Bank Support for Developing Railways of the World

Louis S. Thompson

Introduction

The World Bank considers transport infrastructure and railways to be important drivers of economic development. In the 50 years since the establishment of the Bank, rail lending has amounted to about US$15 billion covering most countries of the developing world. As a result, the Bank's experience with, and perspective on, developing railways are unique.

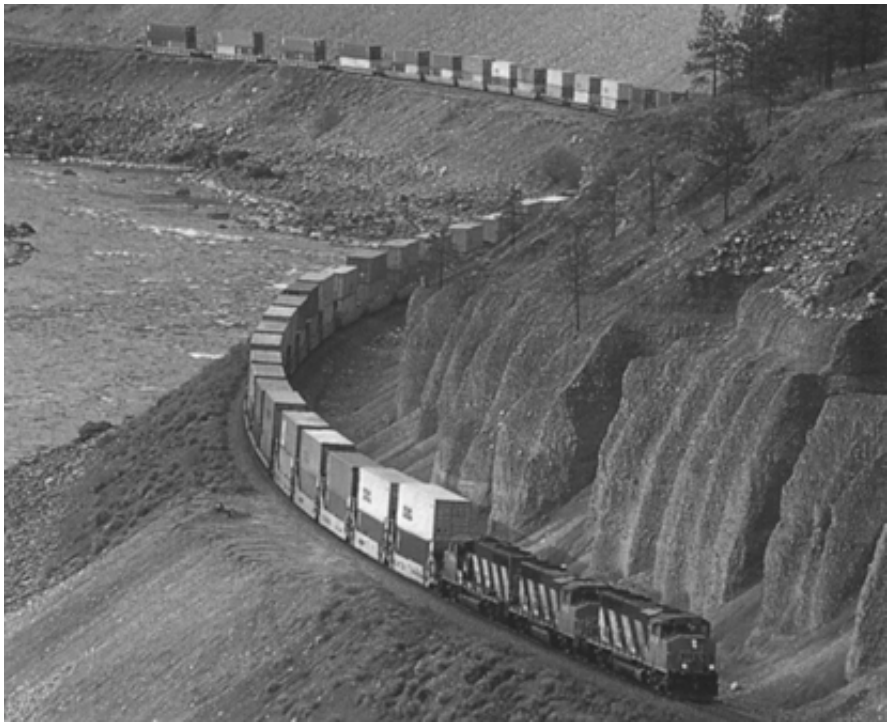
Lending to developing countries is inherently risky. Against this backdrop, the Bank's transport portfolio has been relatively successful. However, within the transport loans, railway lending has often been problematic and, in 1982, the Bank issued *The Railways Problem*[1], a report discussing the reasons for the lending problems.

The Report criticized the railways as conservative, production-driven organizations rooted in the past and reluctant to face the future. It also emphasized that the railways were only half the problem: their government owners also shared the blame for imposing politically-driven burdens and for refusing to allow an acceptable degree of managerial authority. The result of the railways' problem has been broadly documented[2]. During the 1970s and 1980s, many railways experienced financial and operational crises. In the USA, 25% of the rail system was bankrupt in the early 1970s. Resolution of the crisis required creation of Conrail (later privatized), creation of Amtrak (still in government hands at a total cost to date of US$25 billion) and thorough deregulation of the transport industry. In Japan, the government ultimately reorganized the Japanese National Railways (JNR), which was losing US$15 billion per year and had a debt of US$250 billion, into the current system of six passenger companies and one freight company. In Germany, the government faced a cumulative loss of DM500 billion by the end of the century if action was not taken. In response, the old Deutsche Bundesbahn (DB) was broken up into infrastructure and operating companies (combined with the old Deutsche Reichsbahn, together called DB AG), some of which are eventually to be privatized. In the UK, the government split the old British Railways (BR) into an infrastructure company (Railtrack), three equipment leasing companies (ROSCOs), four freight companies (all bought by one venture) and 27 passenger operating franchise companies. Similar change has occurred in many developing countries[3]. This article discusses the Bank's cooperative role in supporting change and the related costs of transition.

Need for Change

The Bank has long encouraged change. Some years after publishing the *Railways Problem*, the Bank revisited the issue and found some change was occurring and that a new set of tools was emerging for use in supporting change[4]. The primary engines of change are globalization and marketization. For transport, globalization means a country's inefficiencies can no longer be absorbed within its borders. If a country is to participate effectively in the world economy, it must be able to move goods rapidly and cheaply. If the country's transport network is inadequate, the export potential will be reduced, and the citizens will pay more for imports (or competing local goods) than necessary; either way, the nation's well-being is reduced. If local passenger travel is inefficient, citizens cannot participate effectively in the educational and commercial activity needed to promote their participation in the global economy.

Recently, the World Trade Organization has completed a framework for opening up the world's economies to trade and travel. However, within this framework, regional trade organizations may be even



Double-stacked container train of Canadian National Railways, privatized in 1995 (Canadian National)

more important in influencing economic development and trade flows. The European Union (EU) has created a borderless market in which transport competition will be transformed. Since most of the Central and Eastern European (CEE) countries have borders with the EU (and most hope to join the EU someday), they are directly affected by EU actions. Similarly, Mexico is now more directly linked to the American and Canadian economies through the North American Free Trade Agreement (NAFTA) to the point that the National Railway of Mexico had to be restructured and privatized along the American and Canadian models in order for Mexico to participate fully.

Marketization means the enormous transition from planned economies to market economies now underway in most of the former socialist countries. It is clear that market forces lead to a very different economic structure and that the market-driven structure has profound implications for the transport system. The Bank has followed this transition carefully[5]. In summary, it appears that planned economies produced and consumed far larger amounts of basic products (coal, steel, cement, electric power, etc.) per unit of economic activity than their market-oriented counterparts. Consequently, there was much larger demand for low-cost, bulk transport (i.e. rail) in planned economies. In addition, planned economies focused on transport cost, but never fully included total logistics costs in their transport decisions (again favouring rail over truck). Finally, low ownership rates for private automobiles meant that public transport played a different and larger role in planned economies.

The outcome of the transition in transport has been startling. Figures 1, 2 and 3 show that rail freight has fallen dramatically in the CEE countries, the Commonwealth of Independent States (CIS) and the Baltic countries, while remaining

Freight Trends (1988 Tonne-km = 100)

Figure 1a CEE and Turkey

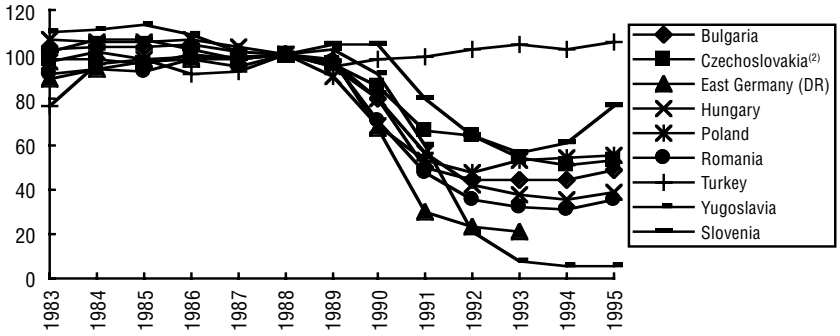


Figure 2a CIS and Baltic Countries

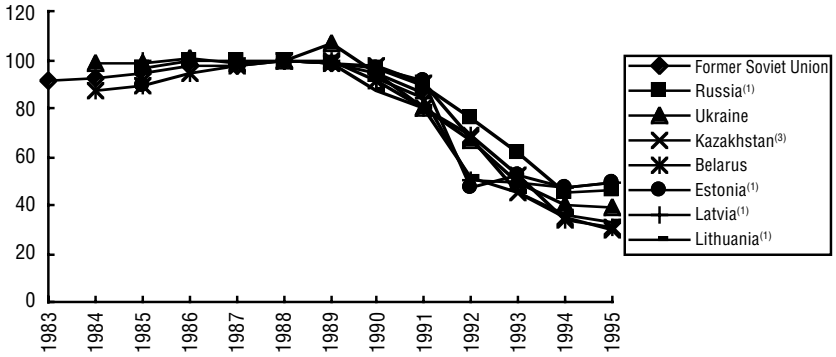
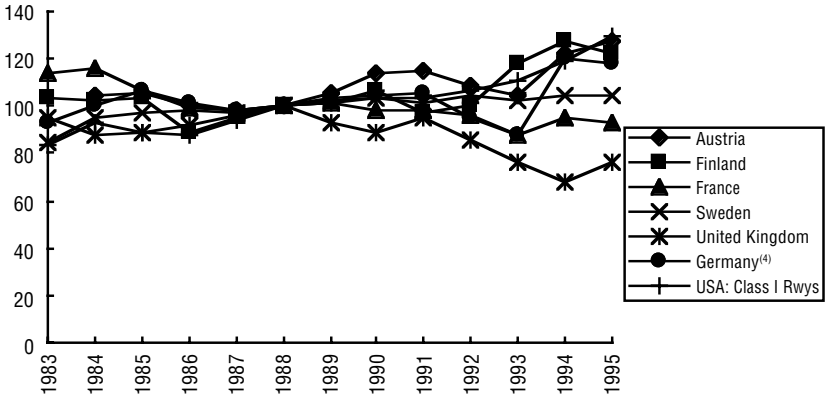


Figure 3a Western European Countries and USA



(1) 1988 baseline data estimated. Some data not available before 1991.
(2) 1993 data aggregate of Slovakia and Czech Republic as provided by UIC
(3) 1994 data as of 30 Sept. 1994
(4) Germany as W. Germany only before 1994

Passenger Trends (1988 Passenger-km = 100)

Figure 1b CEE and Turkey

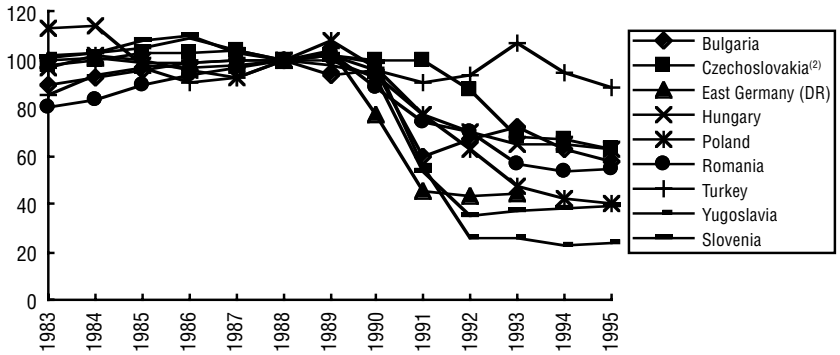
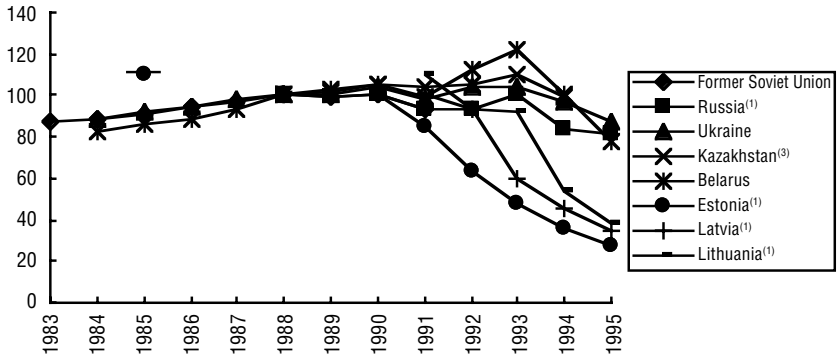


Figure 2b CIS and Baltic Countries



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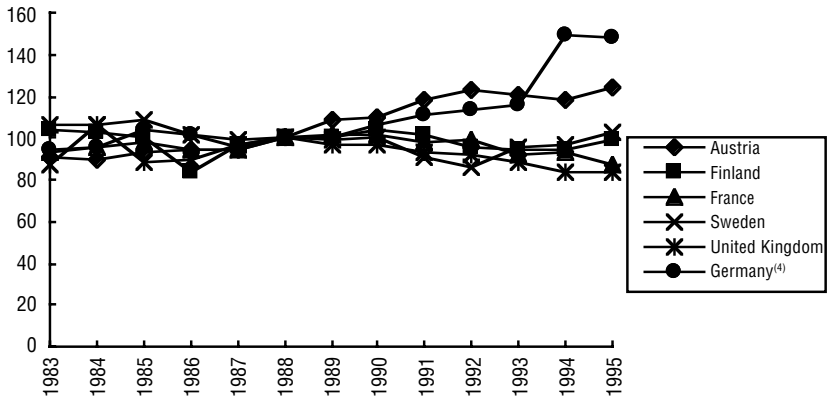

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(4) Germany as W. Germany only before 1994

relatively stable in the Western economies and Turkey. While part of the freight traffic loss is no doubt related to the reduction in general activity, much of the loss is the result of economic restructuring, and most of the lost traffic will return only slowly, if ever. Although passenger traffic has shown slightly different levels of change, the trend is the same and the eventual outcome may be as large or even larger. In particular, when automobile ownership rates increase, the shift from public to private transport that prevails in market economies is likely to occur with a corresponding reduction in rail passenger traffic.

The process of replacing government regulation with market forces has not been confined to the former planned economies. Deregulation has become a force in most of the market economies as well, which have discovered that government interference incurs a high price in the economic distortion that such intervention inevitably produces. For example, the American railway system was nearly destroyed by perverse government regulation and promotional programmes favouring trucks, automobiles and airlines; the problem was only corrected by the air, rail and trucking deregulation of the early 1980s. EU governments have gradually undertaken a similar deregulation of transport as the single market has evolved.

The process of change is not uniform in all countries. The starting point for each country differs and the composition of each economy is unique; there is no single recipe for how the transport sector, and the railways, must change. Bearing this in mind, all railways face a set of common issues and challenges. Although the weight and mixture of the issues may vary, most will need to be addressed as each country searches for the railway reforms that best suit its unique circumstances.

Railway Reforms

Railway reforms fall into three broad categories: Separating railway from government and adoption by each party of a revised set of roles and responsibilities; Restructuring the railway to increase its market focus while retaining the government's role in supply of public infrastructure and support of social services, and; Rethinking the boundary between public and private sectors in delivery of rail services.

Separating railway from government

The most important cause of the railways' problem has been the confusion of roles between government and railway. Government agencies are always slow moving, risk averse and concerned about accountability, not results; they cannot readily take rapid or risky decisions, nor can they rapidly change policies or resource allocation decisions. By contrast, market enterprises must respond rapidly to competitive forces, and they can take risks. As a result, government ministries (and their railways) are severely handicapped when they try to compete with private trucks, airlines and automobiles. Government control also means political interference. Politicians who allocate money for public railways expect that the railway will accommodate their political needs, whether this entails suppressed tariffs, bloated labour forces, distorted investment decisions or (occasionally) even corruption in procurement. No enterprise manager can be held fully accountable in this environment.

Railway and government must therefore be separated. Governments must set broad transport sector plans and policies for ensuring that the appropriate infrastructure is in place and effectively operated. Governments must also establish regulatory policies to ensure that the

Table 1 Railway Passenger Traffic and Income Ratios

Country	Passenger-km as percentage of total traffic units(1)	Ratio of average passenger tariff (2) to average freight rate(3)
Brazil: RFFSA	0	70
Jordan	0	n/a
Canada: CN	0	n/a
Canada: CP	0	n/a
USA: All Class I	0	n/a
Mexico	5	46
South Africa	9	182
Kazakhstan	11	47
Zimbabwe	13	48
Estonia	14	107
Saudi Arabia	15	128
Brazil: FEPASA	15	108
Latvia	16	56
Russia	16	38
Lithuania	16	64
Mongolia	17	270
Slovenia	19	61
China	23	87
Finland	24	171
Kenya	24	35
Sweden	24	419
Poland	25	68
Ukraine	26	140
Czech Republic	27	37
Morocco	29	83
Senegal	32	48
Tunisia	32	83
Syria	32	22
Zambia	34	7
Belarus	36	30
Mali	39	73
Bulgaria	39	35
Austria	40	103
Tanzania	42	24
Chile	42	49
Turkey	44	64
Sudan	44	39
Romania	46	25
Hungary	46	69
Germany	47	224
Belgium	48	119
Malaysia	48	92
Algeria	50	60
Congo: CFCO	51	n/a
Cote d'Ivoire	52	n/a
Nigeria	52	19
France	55	126
India	56	32
Spain	61	121
Ghana	65	18
Republic of Korea	66	112
Ireland	69	300
Italy	69	157
Portugal	72	82
Pakistan	73	25
Indonesia	78	55
Thailand	83	57
Netherlands	84	169
Greece	84	40
Bangladesh	88	13
Burma (Myanmar)	90	42
Japan	91	211
Egypt	92	23
Canada: Via Rail	100	426
USA: Amtrak	100	412

(1) Sum of passenger-km and tonne-km
(2) Average passenger tariff = Passenger revenue/passenger-km
(3) Average freight rate = Freight revenue/tonne-km

market can determine the services needed without undue monopoly power. Where there are truly social needs, such as affordable transport for students and the elderly, governments must identify the needs and pay explicitly to efficient providers. Table 1 shows that social services can be an important issue in some countries; the social burden is high and the need for explicit government support is great when railways carry mostly passengers and the passenger income is low compared to freight income.

Many governments are also re-examining the question of what level of government is best suited to make which transport decisions. The emerging consensus is that many of the traditionally national transport decisions (for example urban transport) can best be exercised at the local or regional level, which requires a corresponding transfer of power and resources. Finally, of course, governments must bear many of the transition costs for items such as excess debt, debilitated assets, surplus labour and environmental problems, which result from their past sins.

As the government role changes, railways are becoming commercial enterprises in which the state merely owns stock but does not attempt to exercise operating control or make day-to-day decisions. Although governments retain control over the use or disposition of infrastructure, the enterprise (at least in principle) functions like a privately-owned corporation, making all normal operating and asset management decisions. From this point, the enterprise evolves as market needs dictate.

This organizational change is a good starting point. However, in practice, it is not enough by itself, because the government can still exercise strong informal political and budgetary control. Separation helps in providing a clearer understanding of roles and responsibilities, but it is rarely enough.

SJ's X2000 express train ready for departure at Stockholm Central Station *(EJRCF)*

Restructuring the railway

There have been many government-owned railways that were explicitly commercial enterprises (for example the old DB and BR) but that continued to have severe problems in accommodating their evolving transport markets. Although the railways' organization charts had roughly the right boxes and titles, they continued to be production driven and nationally oriented. As customers gained more choices and became more sophisticated, and as competitors (especially trucks) became more capable and aggressive, the railways fell even further behind despite their nominal independence.

Examples of national responses to this issue can be found in the USA, Canada and Japan. These countries took their railways through deep restructuring, regulatory reform and refinancing, which worked. These railways are in better condition (and pose less of a burden on the national treasury) than ever before.

A more interesting multi-national case can be found in the EU which needed to deal with railways that were problems both within their national boundaries and even more so within the broader common market where all transport modes except railways had developed an inherently international perspective. The European Commission believed it was imperative to break down the railways' national fortress mentality so that the EU railways would eventually be as internationally competitive as trucks. The Commission also intended to clarify the confusion between social and economic railway functions in order to encourage better decisions in transport (and in order to prevent countries from continuing to subsidize railways in the commercial sphere in the guise of subsidizing their social functions)[6].

The Commission took three far-reaching steps. The first required accounting separation of infrastructure costs so that the public role of infrastructure planning and provision could be distinguished from the commercial operating functions. The second required that certain international operators be accorded non-discriminatory access to the infrastructure of the national railways. The third forbade payment of government subsidies to railways except for certain social services (local rail passenger services and certain infrastructure functions), requiring an organizational scheme ensuring that payments go only to the specified recipient.

The emerging European Model has had a major impact on the way developing railways, especially CEE and CIS railways, look at themselves—and on the way their governments view them. The idea of infrastructure separation is powerful because it furnishes a vehicle for

dealing with the question of unfair support for highways compared to railways. If trucks are subsidized by not paying the full costs of the highway infrastructure, the rail infrastructure should be subsidized as well—so long as it does not discriminate between national and international users. In addition, infrastructure separation provides a way to reflect the value of the perceived environmental friendliness of rail. If governments (as in Sweden) believe that use of rail confers environmental benefits that cannot be internalized in market decisions, they may subsidize rail infrastructure costs accordingly[7].

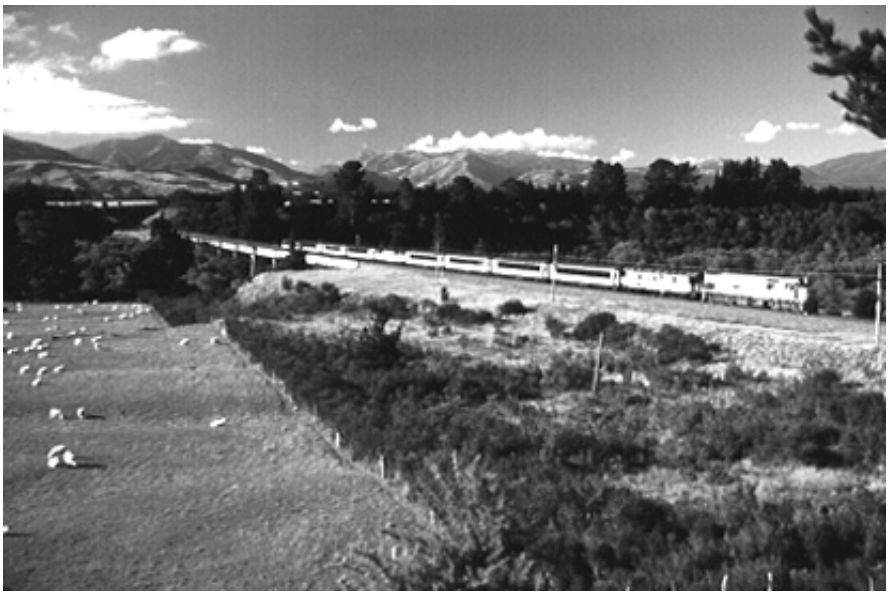
Infrastructure separation also leads to the realization that once infrastructure costs are separated and appropriately supported by the public sector, the approach to provision of operating services can be fundamentally altered. If external costs and subsidy policy are reflected in infrastructure costs, there remains only a limited rationale for a public role in providing rail freight or intercity passenger services. In fact, the decisions as to which services should be supported can be safely left to the market[8]. Put another way, if the public role is adequately expressed in the planning, provision and support of rail infrastructure, what else does the public sector have to do?

Rethinking the public and private boundaries

The answer is that when adequate infrastructure is properly supported by the public sector, much of the responsibility for delivering transport services can be shifted to the private sector. In fact, it is hard to argue that provision of transport services by the public sector has any advantage over the private sector.

Faced with this conclusion, governments are increasing the role of the private sector, beginning with transfer of non-rail activities (manufacturing) to it. This is usually accompanied by transfer of railway welfare activities (schools, hospitals, stores, etc.) to public authorities. In addition, the railways can source services like equipment and track maintenance from outside private enterprises.

Next, responsibility for some rail services can be transferred. In some cases, this has included outright sale of an operation to the private sector (UK rail freight services, and the entire New Zealand railway). In other cases, commercial rail services have been concessioned to the private sector with the infrastructure remaining in public hands (accompanied, in some cases, with retention of certain social services in public hands). In fact, provision of services on most non-profitable suburban, regional, and subway lines can be concessioned or franchised to the private sector if the public authorities are willing to pay the concessionaire or franchisee[9]. The net result can be a hybrid that has the best of both worlds—the public sector manages policy formulation and economy-wide planning, the private sector exercises its strength in delivering services to customers.



Tranz Rail's express passenger train running through scenic Canterbury Plains, New Zealand. Tranz Rail, a consortium headed by US railway Wisconsin Central, took over the former state-owned rail network.
(Tranz Scenic)

Financing the transition

Transitions are costly because governments have to pay to fix problems that earlier policies created. As discussed, the JNR had debts of over US$250 billion that clearly could not be repaid by the newly-formed JRs. Many developing railways have heavy debt burdens which must be resolved if new management is to be able to concentrate on rail issues. Conrail in the USA had infrastructure and operational problems so debilitating that the government spent US$8 billion to fix them although this far exceeded the sale price of US$2 billion. Commercial entities cannot afford to pay costs they did not generate and the only source of financing is government transitional assistance.

The most expensive problem can be redundant labour. Government railways typically have labour forces that have not adjusted adequately to advances in technology and changes in traffic. In general, this is because governments are sensitive to labour unions for political reasons, making railways unable to adjust to market pressures to reduce labour

costs. In the case of a railway with government-owned infrastructure and private-sector operated services, some surplus labour could be hidden in the infrastructure (and supported by the public sector—which fiscal restraints are making even harder). However, the private operators are unable and unwilling to pay for more labour than they need, so governments must help adjust the labour force size to the level that the market can support. The good news is that measures have been developed in the USA, Japan, Argentina and Brazil for changing labour force size—the bad news is that it is expensive. In general, labour redundancy schemes have required payment of at least one-month's wages for each year of service as well as reasonably generous provisions for retraining and/or early retirement.

Actual Experience

There is a natural tendency to look ahead and be discouraged at how far there is to go. While this is natural, it is also fair to assess what has been accomplished. In fact, the picture is radically different from the Bank's perspective when the *Railways Problem* was published. By any reasonable measure, there has been real progress.

Separating railway from government

Many railways are now separated, at least in legal form, from their governments, except in China, India and some of the CEE countries and CIS. For example, there are no remaining market economies in which the railway is a government ministry, and the railway's status has already changed, or is changing, in many of the former planned economies. (Hungary, for example, has now constituted its railway (MAV) as a joint stock company.) The Chinese Ministry of Railways is now examining how to carry out the separation although, to be fair, it will be difficult for the railway to take a radically different or faster course than the rest of the Chinese economy.

There remain many countries where government's informal interference is pervasive and railway independence is more real on paper than in practice. Many developing railways continue to deal with this problem and some, such as those in Poland, Morocco and Thailand, have secured agreements allowing them to function more-or-less commercially, but with government support for social (so-called Public Service Obligation, or PSO) services.

Railway restructuring

Where separation of railway from government has proceeded, there has been a great deal of ferment in structure. Most of the market oriented, developed railways have adopted one or other forms of business organization with separate profit centres. In some cases, as in BR before privatization, this took the form of several separate passenger businesses and a freight business. In others, such as Swedish State Railways, the current financial and institutional separation is between infrastructure (now called Banverket) and the railway operation (SJ). Polish National Railways (PKP) has announced a separation into infrastructure, passenger and freight businesses. DB AG is now implementing a separation involving an infrastructure company and separate freight and passenger companies. A number of other railways (Slovenia and many of the Scandinavian railways) have undertaken similar separations and others, such as MAV, are considering the approach.

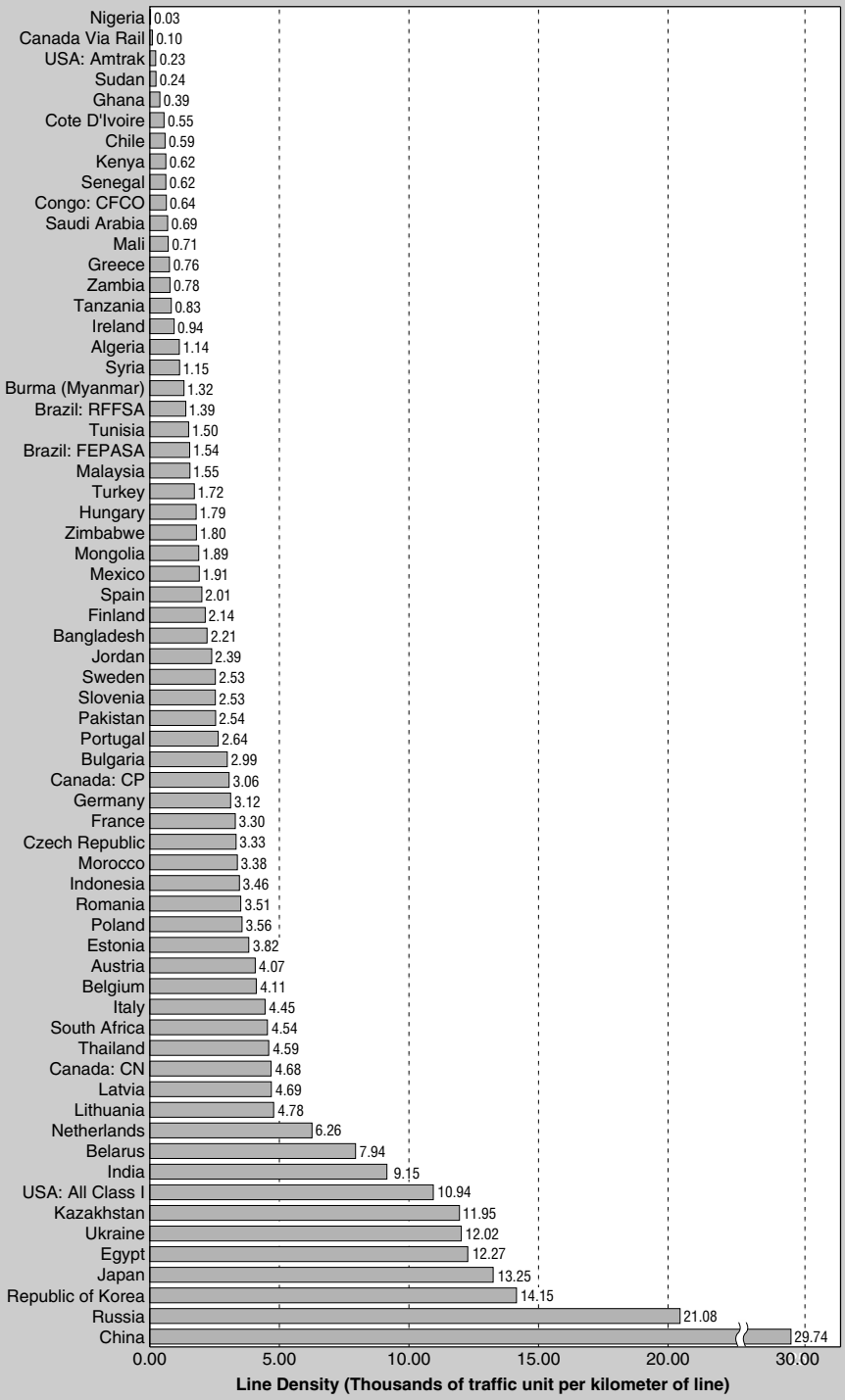
It is still too early to say with certainty how well infrastructure separation works, or where it is appropriate, especially when the question is to go beyond a mere financial separation (which is all that the European Directive 91/440/EEC requires) and adopt actual institutional separation. Clearly, separation does not offer a cost-free panacea for railway ills. For one thing, infrastructure separation imposes significant costs in institutional complexity. Where the infrastructure remains in public hands while the operator is commercialized (for example, Banverket and

Express passenger train running on Polish state railways' central trunk line linking Warsaw with Krakow/ Katowice areas. The line was built in the 1970s to ease north-south freight movement, but could be converted to a dedicated high-speed line in the future. *(EJRCF)*

SJ in Sweden), or even privatized (Chile freight rail concessionaire), there is a risk of a lack of understanding or coordination between infrastructure maintenance versus dispatching and operating priorities. In all cases, separation implies a much more precise set of infrastructure pricing and access rules than have existed in the past. The possibility certainly exists that the costs of such complexity and reduced integration of operation and infrastructure can be significant. On the other hand, there is no clearer example of failure than many of the old so-called "monolithic" railways, so the costs of actual separation may well be more than compensated for by clearer roles and increased market focus of the operating companies.

We can suggest at least a preliminary indicator of where infrastructure separation might be worthwhile. Where the railway is lightly used (Figure 4), just financial separation may be useful (but if it is a single-commodity railway, even that may be unnecessary). As traffic density increases, and especially as traffic types become more diverse, the potential benefits (and costs) of institutional separation begin to increase. Other factors that might tip the balance towards separation include a desire to create or increase competition between different rail operators (as in the EU policy), or a desire to facilitate private sector involvement in rail services (UK, Germany and Italy, and many developing countries now adopting rail concessioning).

Figure 4 Railway Usage Worldwide



Increased private sector involvement

Probably the most startling railway change in recent years is the rapid growth in transferring operation of railway services to the private sector—a change which no seasoned observer would have dared to predict at the beginning of the 1990s. Five of the six freight railways of Argentina have been operating as con-

cessions for several years (only the meter-gauge Belgrano Line remains in government hands and the government has announced intentions to concession it within the next year or so). The concessioned broad-gauge and Urquiza lines have seen a growth of traffic back towards levels of years ago (Figure 5). More startling, the suburban railways and the Metro of Buenos Aires have also been concessioned on the basis of minimum government payment (negative concession) with results in traffic growth and improved service that are even greater than in the freight area (Figure 6). In the process, the US$800 million losses per year of the old suburban services and Metro have been converted into a US$100 million capital outlay, a result which, in percentage terms, fully equals the JNR restructuring and privatization.

Five of the six Brazilian national freight railway concessions have been sold with the sixth scheduled for sale in late spring of this year. The total sale value was over US$1.4 billion whereas the old national railway (RFFSA) was losing about US$500 million per year, so the positive impact on the national budget is substantial. Only the railway of Sao Paulo State (FEPASA) remains in government hands and its concessioning is under discussion. The government of Rio de Janeiro State is now concessioning the Rio suburban services and the Metro as was done in Buenos Aires.

The Bolivian railway segments were concessioned in November 1995. The broad-gauge freight lines of the Chilean State Railway have been concessioned for over a year, and the meter-gauge railway (Ferronor) was recently concessioned as well. Chile is now in the process of concessioning its railway infrastructure as well as three passenger operating companies. Mexico recently completed the sale (for US$1.4 billion) of the first of its planned four rail concessions, and the others should follow in

Figure 5 Freight on Argentine Freight Railways

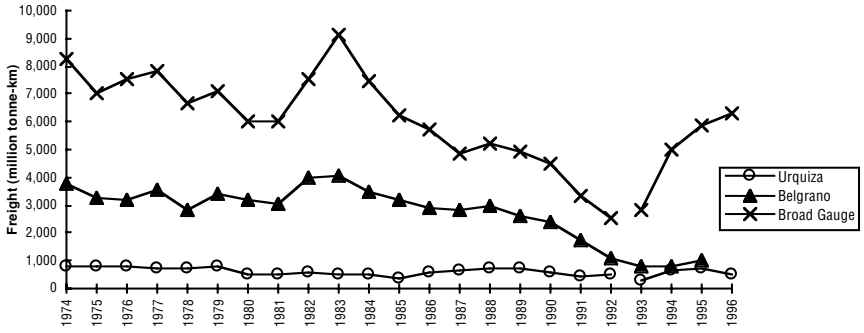


Figure 6 Buenos Aires Suburban Railways Passengers

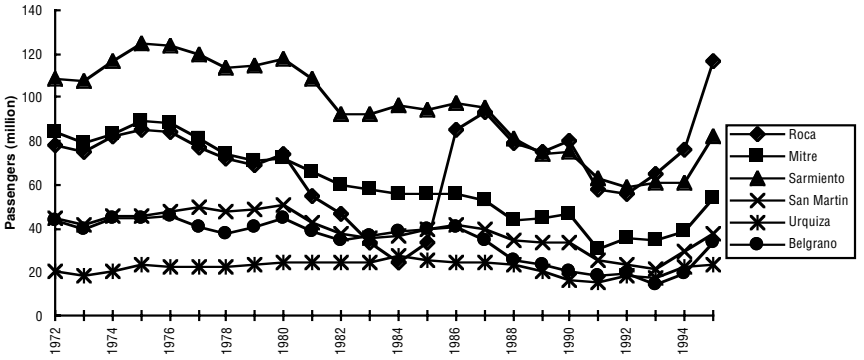
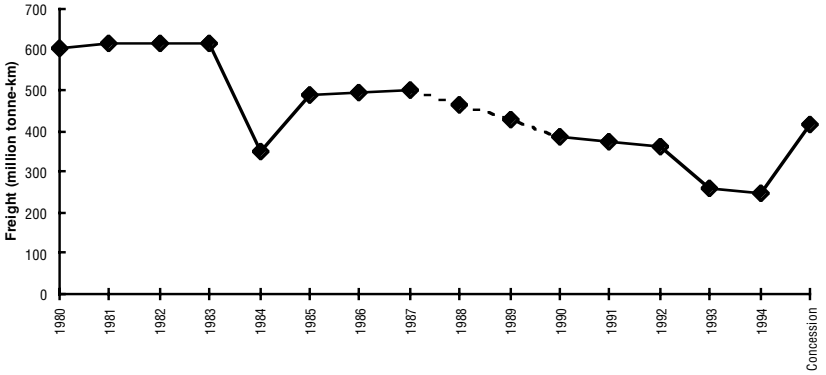


Figure 7 Freight on Abidjan-Ouagadougou Railway (Ivory Coast–Burkina Faso)



the coming months. Colombia, Guatemala and Peru have announced plans to concession their railways. In fact, within a few years, there may be no significant railways in Latin America (except Cuba) remaining in public operation, including freight and passenger operations.

The concessioning process is not confined to Latin America. The railways of Ivory Coast and Burkina Faso (Figure 7) have been in concessioned operation for 1.5 years, with traffic results similar to Argentina. The governments of Congo, Gabon, Cameroon, Zambia, Malawi, and Senegal/Mali (international operations only) have also agreed to concessioned operations. In addition, Jordan is in the process of concessioning the Aqaba Railway Corp. Table 2 compares actual and potential railway concessions for several measures of size and effectiveness. Based on the Argentine experience, many of the other potential concessions seem potentially successful.

Express passenger train leaving Shanghai Station, one of the busiest stations in China (EJRCF)

Bank's role and cooperation with other agencies

The Bank has consistently supported the need to separate railways from governments and has argued that all railways need to work with their governments to clarify the government's expectations[10]. Early attempts to develop Strategic Plans for railway restructuring (Poland, Argentina, Hungary, Morocco, Tanzania, Mexico, Thailand, to name a few) were all supported by Bank lending. More recently, the Bank has been working in China and India to encourage assessment of restructuring options.

These efforts have met with mixed success. While Strategic Plans and their related Performance Agreements (or Contract Plans) have helped railways and government to discuss common issues, the parties have often been threatened by the answers and, in many cases, action has been deferred or avoided. While such planning and role clarification is a necessary condition for change, it is evidently not a sufficient condition.

The Bank has also been active in financing plans for restructuring railways. The Polish initiative has some of its roots in Bank-financed studies and its implementation will probably be assisted by future lending. The Bank has also been involved in financing similar studies of restructuring in several CEE countries, notably Hungary, Romania and Bulgaria, although implementation of these programmes is not yet committed.

The success of restructuring appears directly related to a government's perception of the seriousness of its railway finances and the need for an efficient transport sector. Where the railway deficit is not seen as large, or where the importance of the railway in the transport sector is not great, restructuring can be difficult.

Bank support for concessioning has taken several forms, including financing of critical rehabilitation before concessioning, identification and clean-up of environmental problems, labour redundancy and retraining programmes, and consulting assistance needed to prepare concessioning plans and market the concessions. In addition, the Bank's private sector group, the International Finance Corporation (IFC) has taken a role in several of the concessions. The Bank has vigorously supported railway concessioning in the belief that, at least in many developing countries where scarce public skills and resources are needed elsewhere, commercial railway operations can best be provided by the private sector. This has not implied privatization in the American, Canadian, UK or New Zealand sense in which the ownership of rail infrastructure was actually transferred to the private sector; instead it implies a better division of public versus private roles. The results are encouraging so far.

Increasingly, World Bank assistance is being provided in cooperation with other agencies, public and private, a trend the Bank encourages. Many Strategic Plans have been financed with assistance from international aid agencies in the USA, Canada, France, Scandinavia, and Japan. Many of the projects would not have been possible without this assistance. Bank projects in the CEE and CIS countries are often coordinated or co-financed with loans from the European Bank for Reconstruction and Development, the European Investment Bank, and PHARE funding. The Bank works with the Asian Development Bank in Asia, and the Inter-American Development Bank in Latin America; the World Bank is always willing to be a member of a larger team when the task requires the resources of all.

In a broader sense, the Bank has received very valuable cooperation from the rail-

Table 2 Actual or Potential Freight Railway Concessions
(1994 or latest available year)

(Italics indicates railway already concessioned or privatized)

	Tonne-km (000,000)	Passenger-km (000,000)	Line km	Employees	Traffic units/km (000)	Traffic units /employee (000)
ARGENTINA [1]	6,485		29,118	5,151	223	1,259
NCA	1,189		4,520	865	263	1,375
FEPSA	982		5,163	575	190	1,708
Ferrosur Roca	854		4,791	808	178	1,057
Bs. As. al Pacifico	2,029		5,493	1,079	369	1,880
Mesopotamico	620		2,751	524	225	1,183
Belgrano (not yet concessioned)	811		6,400	1,300	127	624
CHILE FREIGHT *(FEPASA)* [2]	1,111		2,200	800	505	1,389
BRAZIL (RFFSA) [6]	39,193		21,715	40,581	1,805	966
RFFSA: Nordeste	926		4,260	4,402	217	210
RFFSA: Centro-Leste	6,886		7,092	8,608	971	800
RFFSA: Sudeste	20,370		1,770	9,982	11,508	2,041
RFFSA: Sul	9,019		6,814	10,208	1,324	884
RFFSA: Tubarao	96		168	351	571	274
RFFSA: Oeste (Bauru)	1,916		1,611	2,655	1,189	722
FEPASA	6,520	1,100	4,929	15,319	1,546	497
CVRD: EFVM (1994[7])	50,137		898	4,991	55,832	10,045
CVRD: Carajas (1994[7])	37,500		1,175	1,814	31,915	20,673
BOLIVIA (1993)	697		3,698	5,255	188	133
Andina	322	114	2,082	2,443	209	203
Oriental	370		1,383	1,431	268	380
MEXICO (FNM)	37,200		20,445	48,000	1,820	775
Northwest (estimate)	17,200		6,200	21,300	2,774	808
Northeast (estimate)	14,000		3,960	9,830	3,535	1,424
Southeast (estimate)	3,200		2,200	9,043	1,455	354
Chihuahua al Pacifico (estimate)	600	84	1,457	2,053	469	333
Short Lines	2,300		6,543	5,804	352	396
PERU (1994)	484	241	1,609	3,337	450	217
Southeastern	5	83	185		474	
Central	209	49	509		507	
Southern	269	110	915		414	
GUATEMALA (1994 estimate) [8]	28	240	640	430	420	624
COSTA RICA (estimate 1988 data) [8]	80	72	480	2,300	317	66
SUB-SAHARAN AFRICAN RAILWAYS						
Ivary Coast/Burkina Faso	417	163	1,155	1,823	502	318
Cameroon	592	450	1,006	3,853	1,036	270
Malawi	52	65	789	3,658	148	32
Gabon	295	98	683	1,893	575	208
Congo (Brazzaville)	339	421	510	4,989	1,490	152
Senegal/Mali (int'l only)	752	346	1,548	4,935	709	222
Zambia	1,025	241	1,273	8,544	995	148
Togo (mgt. contract)	19	9	532	800	53	35
RSA (Spoornet)	92,536	9,204	33,275	150,470	3,058	676
JORDAN	675		293	1,219	2,304	554
NEW ZEALAND [5]	2,455	525	4,000	4,500	745	662
US: CONRAIL [3]	128,627		19,082	24,728	6,741	5,202
CANADIAN NATIONAL [4]	159,540		29,700	27,979	5,372	5,702

1. Concessioned between 1993 and 1995 (suburban passenger concessions not shown)
2. Concessioned in June 1995
3. Privatized in 1987
4. Privatized in late 1995
5. Passenger traffic estimated
6. RFFSA concessioning to be complete in 1996 or early 1997, except Nordeste
7. CVRD (Parent company) to be privatized in 1997
8. Currently out of service

ways of the world, especially in Europe, including the UIC, and Japanese JRs. It has been remarked that there are very few really new ideas, but that it can be hard to sort the good ones from the bad. It has been the willingness of colleagues to share experiences that has made the difference. Nor should we forget the increasingly important contributions of the private sector companies that are advising and investing in the rapidly growing process of railway concessioning; we must look to them to accept more of the burden.

Conclusion

There is no more difficult area in public reform than getting state-owned railways to adapt to an environment in which public resources are increasingly restricted and in which the market, not the government, makes the most decisions. It is a problem with which the governments of the USA, the UK, France, Germany and Japan (to name a few) struggled for many years without notable success. Problems that were so difficult for the open, market economies were even harder for governments of developing country. It would have been easy to give up, and many parties did so.

However, in recent years, there is an increasing awareness that the cost of transport inefficiency can threaten the economy of a country, either through the macroeconomic burden of railway deficits or the imposed costs of uncompetitive transport. Since change is imperative, governments and the private sector have developed tools for railway reform and have applied them successfully. These tools are available to all, and they work under the right circumstances. The World Bank is ready to cooperate with both financial and technical assistance, and we count on the assistance of all the other agencies involved in solving the railways problem. ■

(1) *The Railways Problem*, World Bank, Washington, DC, 1982.

(2) Y. Tanahashi, *Reform of Railways in Japan*, Discussion Paper INU99, World Bank, Washington, DC, 1992.
See also, K. Fukui, *Japanese National Railways Privatization Study: The Experience of Japan and Lessons for Developing Countries*, World Bank, Washington, DC, 1992.
See also, *White Paper: A Strategy for Revitalizing the Community's Railways*, Commission of the European Communities, Brussels, 1996.

(3) A number of these cases are documented in Ron Kopicki and Louis S. Thompson, *Best Methods of Railway Restructuring and Privatization*, CFS Discussion Paper Series, 111, World Bank, 1995.

(4) Alice C. Galenson and Louis S. Thompson, *The Evolving of the World Bank's Railway Lending*, World Bank Discussion Papers, 172, 1994.

(5) Esra Bennathan, Julia Fraser and Louis S. Thompson, *What Determines demand for Freight Transport?* Policy, Research and External Affairs Working Paper Series 998, World Bank, Washington, DC, 1992.
See also, Philip W. Blackshaw and Louis S. Thompson, *Railway Reform in the Central and Eastern European Economies*, Policy, Research and External Affairs Working Paper, 1137, World Bank, Washington, DC, 1993.
See also, Louis S. Thompson and Julia M. Fraser, *Command legacy will take time to overcome*, Rail Business Report 1996, Railway Gazette International, London.

(6) European Directives 91/440, 95/18, and 95/19.
See also, *White Paper: A Strategy for Revitalizing the Community's Railways*, Commission of the European Communities, Brussels, 1996.

(7) Railway's environmental benefits are subject to definition and qualification. See, for example, *Green Paper: Towards Fair and Efficient Pricing in Transport*, Commission of the European Communities, 1995.

(8) Urban and regional transport remain exceptions to this conclusion. It is explicitly provided in Commission Decisions (and follows economic logic) that there can be external costs and benefits associated with urban and certain types of rural passenger travel that cannot be adequately included in infrastructure payments. This said, it is usually a good idea to ensure that urban or rural authorities value the external costs and benefits highly enough that they are willing to pay at least a share of the support needed.

(9) The terms concession, franchise, and management contract can be difficult to distinguish. In general, a rail concession is longer (at least 10 years, and normally 20 years or more) than a franchise (5 to 7 years) or a management contract (5 years or less). In addition, concessions tend to leave more commercial risk in the hands of the concessionaire, whereas governments take more risk in franchising arrangements. Governments take essentially all risks in management contracts, and they make most decisions. This said, these are imprecise terms and they are often used interchangeably. See, Nicola L. Shaw, Kenneth M. Gwilliam and Louis S. Thompson, *Concessions in Transport*, TWU Papers, 27, World Bank, Washington, DC, 1996.

(10) Lee W.Huff and Louis S. Thompson, *Techniques for Railway Restructuring*, Policy, Research and External Affairs Working Paper Series No. 380, World Bank, Washington, DC, 1990.

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