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RAILWAYS: STRUCTURE, REGULATION AND COMPETITION POLICY

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FOREWORD

This document comprises proceedings in the original languages of a Roundtable on the structure, regulation and competition policy in the Railways Sector which was held by the Working Party n°2 of the Committee on Competition Law and Policy in October 1997.

This compilation which is one of several published in a series named "Competition Policy Roundtables", is issued to bring information on this topic to the attention of a wider audience.

PRÉFACE

Ce document rassemble la documentation dans la langue d'origine dans laquelle elle a été soumise, relative à une table ronde sur la structure, la réglementation et la politique de la concurrence dans le secteur des chemins de fer qui s'est tenue en octobre 1997 dans le cadre du Groupe de travail n° 2 du Comité du droit et de la politique de la concurrence.

Cette compilation qui fait partie de la série intitulée "les tables rondes sur la politique de la concurrence" est diffusée pour porter à la connaissance d'un large public, les éléments d'information qui ont été réunis à cette occasion.

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BACKGROUND NOTE

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I. Introduction

Throughout the world, and almost throughout its history, the rail industry has been one of the most heavily regulated sectors of the economy. Earlier experience in Britain with unrestrained canal monopolies had led to a desire to intervene in transport markets somewhat out of keeping with the prevailing laissez faire attitudes. Concerns about the cost characteristics of the industry, with up to 80 per cent of infrastructure costs being fixed in the short run and the presence of indivisibilities and economies of scale in the longer run, together with the potential for exploitation of situational monopoly, led to government controls on entry, exit, prices, technology, operating practices, inter-company relationships and ownership on the grounds that fully competitive organisation of the industry was both undesirable and unfeasible. As a result of these economic characteristics, the railway industry has historically been thought of as a natural monopoly requiring unitary ownership at the network level and either public control or ownership. This is the way the industry has evolved in most countries of the world.

In recent years, there has been increasing dissatisfaction with the traditional public utility regulation of the industry, not least because of the declining market share and worsening financial performance of railways. There has thus been increasing interest in privatisation and deregulation as a potential solution to these problems. Privatisation and deregulation have been seen as promoting efficiency and innovation, by freeing railways from government control and by removing subsidies. At the same time, governments have been keen to reduce public expenditure by transferring the financing of rail investment to the private sector.

The purpose of this paper is to review progress in introducing competition to the railway industry. The next section considers possible alternative models of organisation of the industry. Section 3 describes the experiences in a number of countries which have substantially reformed their railway systems. In the light of this experience, section 4 considers the scope for introducing competition into rail operations and the barriers it faces. Section 5 discusses the need for regulation and the appropriate regulatory tools. Our concluding remarks are in section 6.

II. Alternative Models Of Ownership And Control

The vertically-integrated railway

This is the traditional model of railway operations, with one organisation controlling all infrastructure, operating and marketing functions. It has been characterised as “production-oriented, unresponsive to market demands for services, and hierarchical (if not bloated) in organisational architecture” (Kessides and Willig, 1995). Ownership can be either public or private, and there is the possibility of horizontal separation into area or regional monopolies. Throughout Europe, public ownership is the rule, but the

privatised New Zealand railway follows the same organisational pattern, as do the regionally separated companies in the US and Japan .

Depending on the geography of the country concerned, it is possible that area monopolies will be able to compete with each other in some markets; the most extreme case of this is the US, where it has been an aim of public policy to preserve competing railroads on major corridors. Such separation also admits the possibility of yardstick competition in the case where there remains a degree of regulation. A variant on this scheme would give companies the right of competitive access to the tracks of other companies; in some cases this exists in the US, whilst in Japan a separate freight company has the right of access to the tracks of the integrated passenger operators

The principal strengths of this organisation are that it:

-- permits integrated planning of operations
-- facilitates long-term investment planning
-- internalises (and reduces) transactions costs

Its main weaknesses are:

-- lack of responsiveness to market demands
-- lack of pressure to reduce x-inefficiency and allocative inefficiency
-- resulting poor financial performance
-- this organisation is a substantial barrier to introduction of competition

Tables 1 and 2 illustrate the performance of the (predominantly) vertically integrated railways of the European Union. It will be seen that they have steadily lost market share, despite an average level of subsidy of some 50 per cent of operating costs. Yet there is strong political pressure for an increasing market share for rail transport, given the concerns at the growing problems of congestion and environmental pollution from road and air transport. At the same time, governments have become alarmed at the financial implications of existing subsidy levels and investment requirements of rail systems. The result has been strong pressure for reform, with the European Commission very much in the lead.

The internal market approach

Under this model, railways are separated into different businesses for the purpose of offering products to the consumer and these businesses purchase service from an operating department organised on regional and functional lines. The businesses are generally defined in terms of market sector - freight, long distance passenger, regional passenger etc. - so any competition between them for traffic is minimal. This was the approach adopted in Britain from the early 1980s to 1994, where the five business sectors were given their own directors, separated accounts and clear targets to increase profitability/reduce the scale of losses. Since the businesses were accountable to top management for financial performance, they had the incentive to take decisions based on costs and market responses. Costs were allocated to the business sectors on the basis that each sector was responsible for the costs of assets (including infrastructure) and staff for which it was deemed to be the prime user, while other sectors using those assets paid the avoidable costs. By the early 1990s, this form of organisation had developed to the extent that management of maintenance and operation of the infrastructure as well as rolling stock was being disaggregated to the sectors.

Following the British experience, many European Railways, such as Spain, the Netherlands and Germany, have reorganised on a business sector basis.

Amongst the strengths of this form of organisation are that it:

-- provides greater commercial incentives
-- facilitates integration of services as they are still all part of one organisation
-- minimises number of inter-agency relationships
-- promotes greater transparency of costs and subsidies

Its weaknesses are:

-- difficult joint/common cost allocation between sectors giving scope for disputes
-- lack of competition in the operating function

Table 3 illustrates the performance of British Rail following sectorisation in 1982. Even though the state of the economy in the later 1980s was favourable, and this clearly accounts for part of the improvement in financial results, performance in that period was impressive. This was not sustained in the early 1990s, when economic recession, increased spending on safety and deflection of managerial attention towards further reorganisation were accompanied by a marked deterioration in performance.

The vertically separated railway

Separation of infrastructure ownership from the operation of services over the infrastructure has been advocated by economists for many network industries, such as telecommunications, electricity and gas distribution and, latterly, railways. The view has been that such an approach largely overcomes the problems generated by the fact that infrastructure costs are largely sunk and infrastructure provision exhibits natural monopoly characteristics. It is thought that sunk costs are much less important in the provision of services and conditions are much more conducive to allowing both potential and actual competition to provide the benefits which competition can bring in promoting efficiency and meeting market needs.

Under this option, the entire infrastructure, except for exclusive facilities, is the property and responsibility of one owner (either publicly or privately owned). Providers of train services are required to pay for access to the infrastructure. European legislation now requires separation, at least to the extent of separate accounting, so that there is the possibility for a degree of open access to the infrastructure for particular types of services. Currently this right is restricted to groups of railway operators to operate international passenger or freight services through a third country (so for instance German and Spanish Railways could operate a through service across France) and for any operator to provide international intermodal freight services (so, for instance Freightliner could in principle operate container services to anywhere in Europe). There are proposals to extend open access rights to all freight services and long distance passenger services, but this proposal is strongly opposed by most railways, and by many governments who fear the impact on the finances of the rail companies they own.

The main intention of separating infrastructure from operations is to permit competing operators to run trains over the same infrastructure. It is argued that if one operator had control of the infrastructure this would put them in an unduly favourable position. In most cases, infrastructure has so far simply been placed in a separate division of the national railway company; only in Sweden and Britain is it with a totally separate organisation. In Sweden an alternative objective - that of placing the provision and financing of rail infrastructure on a comparable basis to roads, whilst making the operator into a commercial organisation - was very influential.

The provision of services over the infrastructure can be achieved by franchising out operations, permitting open access for all operators, or some combination of the two. If the government wishes to control the level of, especially, passenger service operated, whether subsidised or not, then it is argued that competitive franchising offers the best way of using the forces of competition to ensure that operators are efficient. This has been the approach adopted for all passenger services in Britain and for some local and regional services in Sweden and Germany.

The strengths of this organisation are that it facilitates:

-- promotion of competition between a variety of operators (either on track or for franchises)
-- clarity of intra-industry relationships
-- specialisation

Its principal weaknesses are :

-- complication of timetabling and slot allocation
-- difficulties in planning investment
-- lack of integration of prices and services (e.g. through ticketing problems)

III. Experiences of Rail Reform

Introduction

This section examines experiences of reform in the rail sector from around the world, drawing heavily on Shires et al (1994) updated where necessary. In all, eight countries are examined, namely Argentina, Germany, Japan, the Netherlands, New Zealand, Sweden, United States and Great Britain. The examples cover a wide range of railway types, so in many cases we are not comparing like with like.

Argentina Railways

Until 1989, railways in Argentina operated as a nationalised industry (Ferrocariles Argentinos, FA) organised into six main divisions. This organisation was the result of a variety of government and business constructed railways, that in 1946/47 were nationalised by the Argentine government.

Despite large reductions in route-kms and staff, from 45,000 km to 29,000 km and 210,000 staff to 85,000 staff, as a result of major loss of traffic, by 1989 the railways were reaching a crisis. Market share was around eight per cent of the freight and inter-city passenger market and government subsidy was £212 million (revenue contributions) and £150 million (capital expenditure). Over half the locomotive fleet was unserviceable, with 50 per cent of the routes subject to speed and axle restrictions.

To arrest the decline in performance the government of President Carlos Menem, at the instigation of the World Bank, decided in 1989, to offer franchises for the operation of freight services over large areas of the rail network. The infrastructure and rolling stock were to remain in the ownership of the government, whilst a government regulatory authority and an independent safety authority were to be set up.

The key elements of the franchising are:

(a) The franchisee rents both the infrastructure and rolling stock from the government during the franchise period, at the end of which the government retains possession. The franchises are for 30 years with 10 year renewal options.

(b) The only operating obligation on the franchisee is one of maximum charge level (still a high level). Also included in the bid is a proposal for investment over the franchise period and an obligation to maintain infrastructure in operating condition.

(c) The franchisee will have to implement an investment plan negotiated during the bidding process, subject to negotiation after five years.

(d) If the franchisee breaches his contract he will lose a guaranteed amount, but will recover the current value of investment, minus a share of 40 per cent to 50 per cent, as unique indemnification.

(e) The franchisee must allow `open access', for which they will receive a payment. However, little open access operation has taken place, and the approach must be seen as basically a maintenance of the integrated railway concept.

The franchise is awarded using a points system, which awards points after considering the previous experience of the franchisee, the proposed investment, the number of railwaymen to be absorbed and the amount bid for the franchise.

There are no explicit subsidies being offered but low charges for both infrastructure and leasing mean an implicit subsidy is on offer, which according to Muller (1992) is,

"..equivalent to more than 40 per cent of annual revenue."

The overall franchise strategy was reached after consultation with the World Bank, who besides advice also gave US $300 million in loans towards restructuring the rail system. Apart from the franchising of freight services the other planks of the policy were:

(a) Separation of passenger services into commercial and socially necessary services, in order to target subsidies solely to the latter. They would only continue if supported by the state government. In fact, virtually no passenger services were commercially viable, and the very limited services which existed mainly ceased running as states refused to support them.

(b) Creation of a Buenos Aires Metropolitan Transport Authority to coordinate commuter services to the region.

(c) Reducing staff levels and reforming working practices.

(d) The setting up of a property unit for the sale of excess assets.

Of the six franchises on offer only one, the Belgrano line, initially received no bids. The other five were franchised out. The majority of the franchisees/bidders are consortia with only limited experience of large-scale rail operations, the exception to this rule being Canadian National and Conrail who form part of the consortium running the Roca system and the Urquiza line respectively.

As regards passenger services, only the Buenos Aires - Mar del Plata route is considered profitable, with four bids being considered. Routes outside of metropolitan areas were offered to provincial governments to run. If the provincial government declined the service was closed. The suburban services serving Buenos Aires have been franchised, with the key measure being the `lowest subsidy' bid.

As yet it is impossible conclusively to evaluate the structural changes that have taken place within Argentina's railways. Initial indications are that costs have been substantially reduced, productivity increased and traffic expanded (Thompson, 1997). However, difficulties have been experienced regarding the failure of franchisees to undertake the investment plans; it is not clear how the government can enforce these other than by deeming the operator to be in default on the franchise plan and thus refranchising, a course of action which it would not wish to have to pursue.

Germany

Before January 1 1994, German railways came under two national organisations, Deutsche Bundesbahn (DB-former West German railway) and Deutsche Reichsbahn (DR-former East German railway), both operating in their former territories. They now operate under the same banner, Deutsche Bahn AG (German Rail plc - DBAG), and have been split into an entrepreneurial area (responsible for train operations and infrastructure) and a public sector area (responsible for other tasks), with an ultimate aim of privatising the former, but probably not until well after the year 2000.

This reform process is rooted in the final report of the governmental railway commission presented in December 1991. The commission, set up in July 1989, was initially intended to examine the future of DB, but was extended to include DR with the fall of the Berlin wall later that year. The commission noted two main points,

1. DB's market share was six per cent of the passenger market and 23 per cent for the freight market. DR's market share was greater, but due to increased availability of lorry and car, was declining fast.
2. Low investment in DR, the result of a weak economy, means that DM100 bn may have to be spent to restore the DR network to reasonable condition.

It concluded that if change were not implemented then government subsidy would reach unbearable levels within 10 years.

On July 15, 1992, the government initiated a strategy that would eventually result in three commercial businesses, passenger, freight and infrastructure, all of which would be earmarked for privatisation. The restructuring process is described fully in the next section. Another organisation was created, a Federal Railway Office, to handle state tasks such as approving construction plans for a new railway line. The rest of the public area remained in the Federal Railway Property.

From the point of view of the introduction of competition, there are two key developments. The first is the regionalisation of local passenger services. This process transfers the power to determine local rail services and the responsibility to finance them from a national to a regional level (to state governments known as Lander). This is a key feature of the restructuring process, see Ridley and Terry (1992). Previously, the Lander were a powerful lobby for the retention and improvement of rail services, payment for which came from Federal funds. Now the Lander have to set a service level and enter into a contract with a railway operator. For this, they receive funding from the Federal government, which can be used to provide rail or road transport. They are entitled to franchise these out to operators other than DBAG, and already, some regional services have been franchised to private railways, or to consortia including DBAG

and private railways (Germany has always had a number of private local railways, often operating passenger services under contract to local authorities).

Paying for the Infrastructure

The second key feature is the introduction of open access. In principle this is available to all freight and passenger operations (though in the case of foreign operators only on a reciprocal basis). Charges are set by the infrastructure division of DBAG but regulated by the Federal Railway Office.. Charges for the use of the infrastructure are based on a tariff which varies with the nature of the rolling stock and of the route, and the length of the contract, and is designed to cover all costs other than those investment costs borne by the state. Initially, this tariff involved a high marginal cost for additional train kilometres and a large quantity discount which greatly favoured DBAG. Following protests from the states, a lower marginal charge for additional train kilometres has now been introduced (Link, 1997)

Whilst there is now in theory complete open access for third parties in Germany, the nature of the access charging regime (high charges, and a quantity discount favouring the existing large operator) has discouraged entry, and only a handful of private freight operators have taken advantage of this possibility. Mostly these have been existing short haul private railways.

Japanese Railways

Japanese railways were reorganised in 1949 with the creation of the state-owned corporation, Japanese National Railways (JNR) operating a nation-wide network of about 21 000 km. In addition to JNR there are 15 major private railways and 161 smaller railway operators in Japan. The private railways are to be found in the metropolitan areas where high densities of commuter traffic make them quite profitable and non-rail opportunities such as property development exist.

Railways have always played an important role in Japan, more so than in other first world countries. The main reasons for such a strong use of railways by passengers have been identified as high population densities, the issuing of “commuting passes” by Japanese firms, until recently a poor road network (due to the mountainous terrain) and low levels of car ownership. The development of the high speed Shinkansen network in the 1960’s has also contributed to JNR maintaining relatively high passenger market shares e.g. the Shinkansen carries over 90 per cent of passenger demand in the inter city urban market between Tokyo and Osaka (560 km).

In contrast JNR’s share of the freight market fell considerably from the 1960’s onwards. The main factor operating against rail in the freight market is the fact that being an island country, most raw materials are imported. The most efficient mode is therefore ship and as a result the majority of heavy industries are located on or near the coast.

Despite the favourable conditions for passenger traffic, by the 1980’s JNR was reaching a financial crisis point, the result of which was the complete restructuring of JNR in 1986.

The overall purpose of the reform was to remove the special position of Japanese railways in law and government. Instead of having an objective to ‘improve the welfare of the general public’ its new mission was to ‘respond to market needs and establish effective management’. As a direct result of this JNR was separated from the civil service; government responsibility for the construction of new railway lines was taken away; no specific legislative approval was required for fare rises within specified limits. JNR was divided into six vertically integrated regional passenger companies (the JRs) and a separate freight

operating company utilising their tracks on an avoidable cost basis. Sale of shares in the two most profitable of the JRs has now been undertaken.

A JNR Settlement Corporation (JNRSC) has been set up and is legally responsible for the repayment of most of JNR's long term debt and the relocation of redundant staff. Initially, the new high speed lines remained in the hands of a state owned Shinkansen Holding Company, although they were leased exclusively to a single operator, so no competition was introduced.

The results, presented in table 4, are impressive for both freight and passenger traffic but especially for passenger. Revenues for passenger traffic have risen 46.6 per cent from 1984 to 1991, whilst costs have fallen by 24.4 per cent during the same period. Another significant figure is the number of staff, falling by 45.2 per cent to 138 901. However, it is important to point out that strictly speaking we are not comparing like with like here. A change in the product mix and concentration on key corridors has resulted in some low profit lines being withdrawn and others opened up. When looking at the number of staff, it should be borne in mind that these reductions in staff numbers have been brought about partly by sending staff to subsidiaries and affiliated companies. This `making best use of redundancies' is common practice in Japan, and by no means is confined to the railway industry only.

The main elements in the turn around of JNR can be summarised into several points.

Removal of long term problems of debt and redundant labour

The repayment of long term debt and the redeployment of redundant labour was made the responsibility of JNRSC, whilst the shinkansen infrastructure was handed over to SHC. This ensured a smooth transfer and established a sound basis of operation even during the reconstruction of JNR.

Corporatisation and Privatisation

This brought a commercial attitude to both managers and staff.

Deregulation

The separation from government control brought new freedom to managers and increased their accountability and freedom to develop other businesses, such as retail and property, although there are still controls on fares, and on the ability to withdraw services.

Withdrawal of special local lines

A total of 3 160 kilometres of extremely unprofitable lines were withdrawn.

None of these elements relates primarily to the introduction of competition, except perhaps an element of yardstick competition between the new companies. Whilst there is competition between the JRs and other private railways over separate tracks in suburban corridors, this existed already. There are no cases of competitors operating over the same tracks, and no requirement on existing operators to provide such access. Thus the Japanese reforms really tell us little about the introduction of additional competition into the rail sector; rather they concern ownership and regulation of the sector.

Netherlands

For many years up to the early 1990s railways in the Netherlands were subject to a high degree of government intervention at every level. Netherlands Railways (NS) did not have the freedom to decide its own fares, levels of service or investment plans. This type of arrangement was as a result of the Dutch government's concern for a national strategic transport plan. However, several events led to reform in public transport administration, resulting in a more market oriented independent NS. These events included the report of the Wijffels Committee (1992), which urged the government to give NS more scope to operate as an independent business, and to create distinct organisational divisions within NS, as well as European policy measures.

In 1988, NS put forward the RAIL 21 plan, which aimed to double passenger traffic by the year 2005 with no increase in subsidy. The government in turn promised to introduce a number of measures to restrain car growth including inter-urban road pricing. However, despite NS increasing passenger kilometres by 40 per cent since then, the government has still to deliver its promises on car restraint.

The gist of the government's reforms is that NS will retain full responsibility for the operation of rail services, with the freedom to set levels of service, fares and investment necessary for operations. All other aspects of rail provision such as infrastructure management will be managed by the government or the government via a third party. Some of the main elements of the proposals are set out below.

Infrastructure

The Dutch government will have responsibility for the development, management and financing of the railway infrastructure. However, it will assign the management of the infrastructure in the short and medium term to an administrative unit of NS, known as NS Infrastructure (NSI). The terms and conditions will be laid down in contracts between the government and NSI, and will contain incentives to encourage efficient performance by NSI. NSI will also have to tender work out.

The Dutch government will retain a long-term role in infrastructure planning, to complement its integrated planning policy. That is to say rail infrastructure planning will be related to the planning of other transport modes, the environment and of land-use.

Capacity Management

The government recognises that capacity management is an integral part of NS's operations. As such it will leave it with NS but to ensure impartiality (to allow open access) has created a distinct organisation within NS to manage capacity; will set out allocation rules; create a regulatory body to ensure impartiality; and operate an appeals mechanism.

Currently there is open access to the infrastructure at zero charge, although it is proposed to introduce charges in the year 2000. New entry has nevertheless been limited to a small number of freight services, and a single passenger operator (Lovers Rail) which forms the only open access passenger operator of which we are aware anywhere in Western Europe.

Freight Services

At present NS Freight has complete commercial freedom, and is able to set freight rates as it chooses. The Dutch government eventually wants NS Freight to operate as an independent business unit on the open market, with its own legal status. One of the essential elements in freight's future is the ability to attract

and handle new traffic. The RAIL 21 CARGO plan was submitted in 1990 for just this purpose. This plan included a new freight route between Rotterdam and Germany (since approved) and the development of international inter-modal services.

Passenger Services

The Dutch government envisages a profitable and market oriented NS passenger division, responsible for its own fares, levels of service and investment plans. At the moment the government has a contract with NS, under which NS is promised a real level of support in return for a minimum level of service (maximum fares are also stipulated).

In future the government hopes to separate the commercial and the social aspect of NS rail operations through the contracting out of transport services which are not commercially viable for NS, but which nevertheless are socially desirable. This would then allow NS to concentrate on its commercial operations, aided and abetted by the government's Second Transport Structure Plan. The aim of this plan is to create favourable conditions for public passenger transport through urban planning, car-parking policy and pricing differentials between car and public transport.

To obtain a situation where government finances are only required for infrastructure investment and the contract sector, with passenger services being profitable, the government has identified a six year program from 1994-2000. The program has three main components, (1) An improvement in NS's efficiency, (2) NS will have to increase fares in real terms, (3) NS will have to consider cutting unprofitable services.

As it stands then the situation in the Netherlands is that despite open access on, for the moment very favourable terms take up has been limited. Of course availability of paths on this congested network is a problem. But the success of Lovers Rail - now owned by the French company CGEA which also operates two London suburban passenger franchises in Great Britain - in its expansion plans will be watched with great interest.

New Zealand Railways

Railways in New Zealand have undergone a radical transformation over the past 11 years. They have developed from a highly protected, overstaffed and loss making organisation into a privatised, commercial, profit making organisation, operating in a deregulated market. The evolution process resulted from, firstly, the establishment of New Zealand Railways as a Corporation, secondly, the transformation of this corporation into a Limited Company (independent of the government) and thirdly the sale to a private consortium led by Wisconsin Central in July 1993.

The New Zealand Railways Corporation (NZRC) came into being with the New Zealand Railways Corporation Act 1982. It was given a commercial remit, a board of directors taken from private industry and perhaps most significant of all a well defined objective:

> "To operate so that revenue exceeded costs, including interest and depreciation."
> Source: Small (1993)

At the same time the deregulation of the freight market, which made up the bulk of the railway's traffic, led to the abandonment of the 150 kilometre distance limit on road freight which had previously reserved all long distance traffic for the railways. Deregulation also gave extra incentive to both rail management and unions to embrace commercialisation and change. The realisation that the New Zealand government

were serious in cutting off subsidy payments again acted as a spur to improve productivity and financial performance.

The whole emphasis during the eighties was on "downsizing" and greater "market led" operations. Outside transport management specialists, Booz-Allen and Hamilton, were used to set the "strategic direction" for the corporation**.**

By 1990 the NZRC was achieving operating profit, but was still short of a net profit due to a substantial debt (the result of redundancy payments and the electrification of the North Island Main Trunk). In an attempt to ease the transition of NZRC to a limited company and then to a PLC, the government transferred the debt to itself. The operating side of NZRC was set up as a limited liability company called New Zealand Rail Limited (NZRL). NZRC was left with the ownership of the land, road passenger business, Speedlink parcel service and other general assets. Land necessary for rail operations was rented to NZRL for a nominal rent.

Organisation Structure

NZRL's structure is now centred around three business groups who operate as profit centres. These are Railfreight (the largest revenue earner), Passenger (complementary to Railfreight - uses the marginal network capacity to generate additional revenue), and Operations (provides line haul services to the other two groups.

Track Access

NZRL see it as vital that they have control of their infrastructure, track standards and so costs. NZRL has thus remained a vertically integrated business. Control of access to the track is defined by the terms of the lease with New Zealand Rail Corporation for use of the land under the track. Under these terms, other operators have rights to use the track on any section for which tonnage or passenger levels fall below a specified threshold.

Any operators granted access are restrained from causing `unreasonable interference' to NZRL's operations and have to pay for the use of infrastructure on a normal commercial basis, including a reasonable rate of return. In effect track access is minimalised and definitely not encouraged. In part, this is a reflection of the government's belief that real and effective competition already exists between road and rail, and ships and rail.

The results of these reforms have certainly been impressive, given the difficult geography and competition from road haulage following deregulation**.** Between 1982 and 1989, New Zealand Railways lost about 25 per cent of its freight tonnage, however, only 40 per cent of this decline was due to road substitution with 60 per cent of the fall due to the recessionary climate. The current freight market share of inter-regional traffic is estimated to be 30 per cent.

A look at performance indicators demonstrates that NZRL has improved its productive efficiency quite substantially from 1982. Staff productivity has increased by 200 per cent, average train size has increased by 21 per cent and the wagon fleet has fallen by 69 per cent. The emphasis has been on greater utilisation of rolling stock coupled with increases in staff productivity.

During the same period real rail freight rates have fallen by 50 per cent which indicates that the savings generated through this period have been passed on to consumers, improvements in allocative efficiency as well as in productive efficiency have therefore taken place. However once again these results have

stemmed from deregulation, privatisation and inter-modal competition rather than competition within the rail sector itself.

Swedish Railways

The state railway's original function was to connect private rail systems that served local regions, resulting in a national and regional network. Gradually, the state took over private networks as they ran into deficit. With road development and motorisation this trend increased until by 1965 privately-owned lines accounted for less than five per cent of route kms and by 1991 for none.

Until 1979 the national network operated without subsidy, and the whole rail system was one of the most efficient and cost effective in Western Europe (BRB and The University of Leeds, 1979). However, in the eighties a combination of falling market share and unclear management objectives led to spiralling deficit payments and falling investment. Public and political concern about the lack of investment and growing levels of congestion within cities led to the 1988 Transportation Act.

This act was based upon a "road model" under which:

(a) The rail network was divided into a trunk system of main arteries and county lines.

(b) Rail infrastructure became the responsibility of a new state agency Banverket (BV), who leased track access to train operators on a marginal social cost basis. BV has responsibility for new investment, maintenance and acts as regulator over safety and scheduling matters.

(c) Statens Jarnvagar (SJ) became a train operating and marketing organisation, for both passenger and freight operations. It retained ownership of terminals and rolling stock, also maintaining operating rights over trunk routes for passenger traffic, and trunk and county routes for freight traffic (excluding iron ore).

(d) The 24 county public transport authorities (CTA's) would set the level of passenger service to be operated on county lines and could choose contractors other than SJ to operate local and regional services.

(e) If SJ or the CTA's did not wish to exploit their transportation rights (not run a service) then the government (trunk lines) and BV (other lines) can award such rights to other operators.

(f) Infrastructure charges paid by train operators would be consistent with the pricing regime employed by the road authority, namely marginal social cost.

(g) The state would provide grants for new investment.

Although BV and SJ are two separate organisations the distinction set out in the Transportation Act 1988 is sometimes blurred. Timetabling is currently carried out by SJ, traffic control is operated by SJ using BV's infrastructure whilst telecommunications are used jointly by both operators. The first two points put at risk the potential for introducing serious competition for the provision of Swedish rail services. The latter has been resolved technically with assignment of exchange installations and interconnecting cables to BV, whilst cables and facilities to portable equipment for direct use were taken by the user (either BV or SJ).

As outlined earlier all train operators pay an access charge equal to the marginal social cost. The charge is in two parts *(i)* a fixed element, expressed as a rate per rail vehicle axle *(ii)* a variable element, related to vehicle tonne-km, differentiated by type of vehicle to reflect different amounts of wear and tear on the track structures. The charge is a marginal social cost charge, so the element also includes socio-economic costs e.g. diesel exhaust pollution.

Both SJ and BV still receive quite substantial subsidies from the government. In SJ's case these are for the operation of `socially necessary' passenger and freight services.

According to Ridley and Terry (1992):

> "Since the reforms under the 1988 Act, most CTA's have taken an active interest in the development of cost-effective rail services and have called tenders for the provision of railway services in accordance with a specification tailored to their view of local/regional needs."

So far two principal challenges have arisen to SJ's monopoly of provision, BK-Tag and Linjetag. Both already operate bus services under contract for CTAs in south and central Sweden and provide maintenance services for other bus companies. Although both firms bid for contracts, only BK-Tag was successful in winning contracts in (1) Smaland and Halland (1990) and (2) Borlange (1992).

SJ has responded to the competition by cutting its tender prices by an average of 30 per cent. It has since secured all contracts for CTA operations, and displaced BK-Tag in its two franchise contracts. However, the initial success of BK-Tag is proof that competition can exist via a franchise despite the existence of significant advantages to incumbancy such as learning economies and reputation effects.

BK-Tag combated these barriers through changing inflexible working practices, reducing maintenance costs and integrating their present road operations and maintenance facilities with those of rail. These policies resulted in BK-Tag's train crew of 43 operating the same services that previously used 250 employees of SJ; BK-Tag achieving higher vehicle utilisation than SJ did and an estimated labour productivity gain of 10 per cent via a renegotiated pay structure. BK-Tag's vehicle utilisation was 130 000 km p.a. per car compared to SJ's 90 000 km p.a. per car.

These results have encouraged the Swedish government to the extent that they are proposing to extend the franchise system to regional and longer distance services which at the moment are the sole preserve of SJ. Whether the CTA results can be replicated is a question that has to be asked. For the CTA operations, the bulk of the rolling stock was provided by CTA, thus helping to reduce the barriers of entry for BK-Tag. CTA operations are also small and less complex in nature, which allowed savings in training costs and overnight allowances. As yet no such proposals have been put forward for the provision of rolling stock on other routes and a further worry must be the strategic role that SJ has in timetabling.

United States

From 1970 onwards railroads in the USA have been undergoing a process of reorganisation and reform. The impetus for change was brought about by a financial crisis facing railroads in the north east of the USA. Between 1947 and 1970, freight train miles had dropped by 31 per cent, from 616 billion to 427 billion. During the same period Inter-city passenger miles fell 84 per cent, from 39.9 billion to 4.6 billion. This fall in traffic was the result of:

(1) Tight regulation by the Interstate Commerce Commission (ICC), that required all tariffs to be published and be made available to all shippers under the same terms and conditions.

Closure procedures under the ICC were also elaborate and time consuming, extending unnecessarily the lives of unprofitable lines.

(2) The federal programme of highway construction.

In response to the situation facing passenger railways, Congress passed the Rail Passenger Service Act 1970, which created the National Railroad Passenger Corporation that trades under the name Amtrak. The government also proceeded to deregulate freight in 1980 with the passing of the Staggers Act (see Grimm and Rodgers, 1991).

Amtrak is a passenger train operating company that owns locomotives, rolling stock, and a majority of station and terminal facilities. It now owns 450 miles of track in the north-east corridor (Washington-Philadelphia-New York-Boston), but makes track access payments to about 20 freight railroads for the use of another 24 000 miles of route.

Amtrak has operated as a commercial business since its formation, with the backing of federal subsidies. Its performance has been impressive, according to Ridley and Terry (1992),

> "... in 1991, it recovered 79 per cent of its costs from revenues of $1.4 billion (up from 65 per cent in 1987). The Corporation employs 25,000 people, operated 6.3 billion passenger miles in 1991 and achieved an average 77 per cent on-time arrival."

This represents a 37 per cent increase in passenger miles since 1970. However, continued funding uncertainties, and a desire by the government to phase out subsidies, have led to continued uncertainty about the future of the company.

The track access charges paid by Amtrak are based upon an `avoidable costs' formula based mainly upon gross tonnage and speed. To cut down on contract costs this formula has been converted to a flat mileage rate, updated for inflation. The charging system is clear and relatively simple, something the charges in many other countries are not. Added to this are incentive payments and penalties, to encourage the freight railways to provide track access of the appropriate quality.

New investments are paid for by the party who benefits from them. If both parties benefit then costs are shared. The access contracts between Amtrak and the freight companies cover other eventualities. The freight railroads are required to maintain tracks and structures to the same standard as existed when Amtrak commenced service. The freight railroads are obliged to provide emergency assistance in the form of rolling stock and maintenance, if Amtrak's operations face severe disruption. They also have to compensate Amtrak for delays to their schedule caused by track maintenance or poor quality track.

The real interest of the AMTRAK experience is not that it represents the introduction of competition or of privatisation, but rather that it forms probably the longest running experience in the world of a railway company running largely over tracks owned by other companies and with a fair degree of success. It is however a marginal operator not directly competing for traffic with the infrastructure owner.

In addition to Amtrak, there are 12 commuter railroads in operation serving major conurbations. They are typically under 300 miles and only recover 40 per cent to 60 per cent of costs from revenues. Such services are run as franchises and as such give useful insights into the problems of rail franchise agreements. A series of case studies by NERA (1992) examined two USA commuter franchises, the Massachusetts Bay Transit Authority (MBTA) and the Southern California Regional Railway Authority (SCRAA). These are thought generally to have been successful, although there have been problems at the

hand-over time from one franchisee to the next, since the unsuccessful franchisee has little incentive to maintain assets in good quality or to aid in the handover period.

Great Britain

As was seen above, after strong improvements in the later 1980s, the performance of British Rail began to deteriorate in the early 1990s. The then Conservative government saw its policy of privatisation as having been very successful and determined to extend this policy to rail. The process was virtually complete by the time it lost power to the Labour Party in May 1997.

A key feature of privatisation in Britain has been a degree of vertical separation unparalleled elsewhere. The intention is to create competitive markets for the supply of inputs into the production of rail servicers wherever possible, even when the services themselves remain a monopoly. Wherever monopoly is involved, continued public regulation takes place by an independent regulator. We comment further on the regulatory arrangements in Britain (see below).

The infrastructure has been placed in the hands of a new company (Railtrack) which was privatised in the form of the sale of shares in May 1996. Passenger rolling stock was placed in the hands of three companies, now privatised by outright sale, which lease it to the operators. Passenger train operations were placed in the hands of 25 train operating companies, and their management franchised out for periods of 7-15 years (the longer periods being applicable where major investment was required). Since they lease stations and rolling stock, and pay for access to the tracks owned by Railtrack, these companies generally own virtually no assets; this was of course a deliberate attempt to remove one substantial barrier to entry. Track renewal and maintenance work and rolling stock heavy maintenance was placed in the hands of a number of companies which were then sold outright, and now have to compete for the contracts to undertake this work. A recent update of experience so far is contained in Nash (1997).

Two new government bodies were created - the Office of Passenger Rail Franchising (OPRAF), which is responsible for franchising out passenger services, and the Office of the Rail Regulator (ORR) which has various duties the most important being the licencing of train operators and regulation of the prices and terms of track access agreements. OPRAF specifies minimum service levels and (for certain categories of fare) maximum fares and then invites bids in terms of the minimum subsidy required for each year of the franchise.

Currently, open access for passenger services is limited to routes with no through service or which account for a very small part of the franchisee's income. This was to protect franchisees and thus ease the franchising process. Some competition does exist, however, where two or more franchises serve the same pair of points, and price competition has broken out in a number of corridors. The Regulator is currently consulting on proposals to open up a greater proportion of routes to competition as from 1999, with the intention of reviewing the situation and considering further liberalisation as from 2002. There is complete open access in the freight sector, at negotiated access charges. These are subject to the approval of the Regulator, who has the power to reduce them if he regards them as unreasonable; he does this with reference to the 'stand-alone' costs of freight service.. After three years of open access, only two new freight operators have appeared, both hauling their own traffic over short distances on a single route; one has since sold out to the major operator.

The immediate effect of the reform was a large increase in subsidies resulting from the move to the train operating companies paying commercial rates for the use of infrastructure and rolling stock (Table 4). However, these charges both enabled the government to sell these businesses for several billion pounds and provided adequate income to fund replacement investment, which previous subsidies had failed fully

to do. The franchising process itself has been hailed as a major success, with franchises awarded to a number of new entrants to the railway industry (mainly but not exclusively from the bus industry)committing themselves to improved services with a halving of subsidies (Tables 5 and 6). These new entrants essentially take control of the existing operating company, including its staff, but are then free to negotiate changes in wages and conditions. On the other hand, there have been problems with some franchisees failing to achieve their required performance standards, and Railtrack failing to achieve the expected levels of investment. In the former case, the franchise agreement provides for penalty payments, but in the latter the Regulator has had to seek additional powers to force Railtrack to produce and to adhere to appropriate investment plans.

IV. Lessons From The Experience

We have examined the experience of those countries which have carried out the most significant rail reforms in recent years. One thing is striking. Few of the reforms have actually had the effect of introducing any major increase in competition within the rail sector. This applies particularly in the case of two of the countries widely regarded as having had the greatest success; Japan and New Zealand. Rather the reforms have concentrated on creating organisations in which rail management has the incentives and the independence of action to achieve success in a climate of competition with other modes. In most areas of rail traffic this competition is now intense, particularly from road haulage, car and air. Thus it may be that competition authorities should concentrate on the competitive conditions between rail and other modes, rather than on introducing competition within the rail mode.

Even this is not straightforward however. In Great Britain the majority of rail passenger franchises have been won by bus companies, in many cases those who run competing bus services. This may appear to be obviously anti-competitive and clearly against the public interest. Yet there have been benefits from this arrangement, in the form of improved connections, new feeder services, through ticketing and better information. In fact, the competition authorities have dealt with the situation by requiring behavioural undertakings (for instance not to reduce services or increase fares on the competitive services to a greater extent than elsewhere) rather than requiring the companies to divest themselves of either rail or bus services.

Attempts to stimulate open access operations must so far be deemed a failure. In large part this is no doubt to a lack of enthusiasm on the part of existing vertically integrated railways for generating competition with their own services. They are perceived as having been slow to respond to requests for paths and for price quotations, and deliberately obstructive in many cases. In Germany, the level of charges has been a major barrier to entry. In Britain, even with a separate infrastructure company, it is perceived that negotiations over paths and prices may be complex and time-consuming.

Congestion on the network, particularly at commercially attractive times, has been another important factor. So far there has been no attempt to force the incumbent to surrender paths to potential entrants, or to offer them for auction. However, the Freight Freeways initiative of the European Commission does appear to have prompted the railways into identifying commercially attractive paths that could be made available to new freight operators.

Yet it appears that there may be other substantial barriers to entry. Rail operation is rarely perceived as an area in which it is easy to make profits. Even if assets may be leased, satisfying safety legislation and obtaining trained staff with the necessary skills, experience and route knowledge may be time consuming and expensive. New entrants may consider themselves at a considerable disadvantage compared with incumbents. For freight operations, it may be easier for an entrant to confine itself to marketing the

service, whilst hiring an existing operator actually to run it. In the passenger sector, the British reform, which has created a host of new companies via the franchising process, may offer the best chance of attracting new entry into markets from competing operators, who are themselves franchisees on other routes. However, whether such new entry is necessarily desirable, concentrating as it may on duplicating existing services at profitable times of day, and thus reducing the degree of internal cross subsidisation in franchisees and raising the necessary subsidies to sustain the required level of service, remains controversial.

We are then left with the approach of franchising. Wherever this has been introduced to date, it appears that it has substantially reduced costs and increased productivity. This appears equally true of the short franchises in Sweden, the medium length ones in Great Britain and the long ones in South America. Similarly the overall impression is that as a result of franchising services have improved and traffic increased, although in Britain some aspects of the performance of the new train operators has fallen short of the stipulated standards. Franchising has its own particular problems, however, particularly in the area of investment. This will be discussed further in the next section from the point of view of regulation. But it does appear that franchising offers the greatest evidence of success for the introduction of competition into the provision of rail services. It has the major advantage that it can be employed whether rail services are profitable or unprofitable and whether governments wish to intervene in the levels of prices and services or not. It is thus consistent with aims of maintaining levels of service even on unprofitable lines, and achieving environmental benefits by diverting traffic from other modes and other non-commercial aims.

Whichever of the above approaches to introduction of competition into the provision of rail services is adopted, it may be combined with competitive tendering for the provision of inputs such as track maintenance, and provision and maintenance of rolling stock. Again it appears that, whilst some problems may arise in integrating the services of a host of suppliers, these measures will usually increase efficiency.

V. The Need For Residual Regulation

We have seen a large variety of approaches to the reform of the rail industry, but all retain certain elements of public control. These tend to be more extensive where passenger rather than freight services are involved, the latter being more widely seen as purely commercial. The principal areas in which continued control is seen as necessary are outlined below:

Pricing of and access to infrastructure

Whatever structure for the rail industry is chosen, rail infrastructure remains a natural monopoly. In general, anyone wishing to run rail services between a particular pair of points is faced with a single provider of infrastructure. Thus it is generally accepted that pricing of and access to infrastructure will need either to remain in the public sector or to be regulated. The only argument against this might be that all rail outputs are sold in markets so competitive that the infrastructure provider has no effective monopoly power. We will dispute this below, but in any case the strong political will to maintain rail service, if necessary by means of subsidy, provides monopoly power of its own. A major reason for regulating access charges may thus be to protect the state budget.

Thus it is generally accepted that access prices must be regulated and that access rights must be protected by appeal either to the judicial system or (as in Britain) to an independent regulator, with the power to enforce access on conditions he determines. However, it is well known that simply regulating prices in such circumstances is not enough, as the monopolist will then have an incentive to undersupply on quality.

Thus in Britain, all access agreements have carefully defined quality standards (principally in terms of permissible minutes of delay per period time) and the infrastructure provider must provide compensation for any failure to meet these standards. Even that is not considered by the Regulator to be sufficient, however, as he has become concerned as to whether Railtrack has sufficient incentive to undertake adequate long term investment, and is therefore taking additional powers to approve and enforce Railtrack's long term investment plans.

Having stated that prices must be regulated does not resolve the issue of the basis on which they should be set. There are broadly four approaches in use:

(1) Short run marginal cost, as in Sweden. Obviously this tends to require substantial subsidies, but it does encourage provision of a high level of train service, and is simple and transparent. It is the form of pricing most likely to promote economic efficiency.

(2) Fully commercial, as is almost the case in Germany. These recover total cost, but the result is very high charges which discourage entry, and discourage expansion of services.

(3) Two part tariff, as for passenger franchises in Britain. These appear to have the best of both worlds, in that they combine cost coverage with a low marginal charge encouraging a high level of service. The big difficulty here is determining the fixed component of the tariff in a way which is fair to incumbents but does not unduly discourage new entry. The theoretical answer to this lies in the efficient component pricing rule (Kessides and Willig, 1995) whereby the entrant would pay avoidable cost plus any loss of surplus of revenue over cost to the incumbent. However, the information requirements to implement this are severe, and of course the holder of the information - the existing operator - has an incentive to distort the true position.

(4) Ramsey Pricing; If marginal cost is below average cost but average cost has to be covered by average revenue, then Ramsey pricing (i.e. raising price above marginal cost in inverse proportion to the elasticity of demand for the service in question) may be recommended. Again however the information requirements are severe, not least because of the lack of evidence on the elasticity of demand for timetabled paths. It is therefore difficult for an independent regulator to judge the fairness of the outcome. In any event, it is generally argued that it is less distorting to meet budget constraints by taxing final goods rather than intermediate products; thus a two part tariff for infrastructure, with Ramsey pricing by the operator to recover the fixed element in the final market, may be preferable.

(5) Individually negotiated charges, as for freight and open access passenger services in Britain. This also applies to the changes in charges to franchisees who alter their requirements in terms of the quantity or quality of infrastructure. In principle, individually negotiated rates should also resolve the problem of the conflict between cost coverage and marginal cost pricing. The infrastructure company will have an incentive to allow operation of any services which can pay at least their avoidable cost, provided that this does not displace more profitable services. But the disadvantage is that the process of reaching agreement on the charge may be tortuous and discourage entry, particularly in the freight sector where rapid response to customer requirements is needed. Moreover, it is very difficult in these circumstances for the regulator to ensure that the infrastructure operator is not exploiting its monopoly position. In the British case, the regulator aims to ensure that the charge lies between the floor of avoidable cost and the ceiling of stand-alone cost.

Pricing and level of services

Where rail services are provided by a variety of operators on a competitive basis, or indeed where a variety of potential operators exist and the market is contestible, it may be argued that there is no reason for regulation, although we will dispute that below. But in any case such a situation is virtually unknown. There appear to be considerable barriers to entry and sunk costs involved in entering the rail industry even with leased assets (staff training and knowledge, meeting safety requirements etc), so that even where open access is permitted the number of entrants has been very low.

An alternative argument is that rail output is subject to such strong competition from other modes that regulation is not necessary. With the exception of certain products (commuting into large cities, transport of certain bulk commodities) this argument is more convincing. However, the presence of economies of scale in the provision of train services and of social and external benefits from them, suggest that even in these cases an optimal price and level of service will not result from purely commercial decision taking. The solution adopted for passenger services in Britain is to have a competitive franchising process in which all successful bidders must comply with minimum service levels and maximum fares. Where competition is strong, it is assumed that this is enough to enforce appropriate quality standards, but where competition is weak, or where revenues are low relative to costs, other aspects such as reliability, punctuality and overcrowding are also regulated as part of the franchise agreement. For freight services grants are available to cover part or all of access charges and investment in terminals and rolling stock where the external benefits are seen as sufficient to justify them. Apart from this, provided that other modes are appropriately priced, there may be little need for regulation of the majority of services.

Integration

Traditionally, rail passenger services have operated as a network with through ticketing, comprehensive information and planned connections. There is considerable doubt as to whether market forces will be strong enough to preserve such arrangements, even where they are socially desirable. For instance, Else & James (1995) show that in the case of complementary monopoly (e.g. a through journey involving two or more monopoly operators) through prices will be higher than socially optimal, and it seems that similar arguments are likely to apply to connections and information. Again the British approach involves extensive regulation of these matters. As a licence condition, all passenger operators have to participate in through ticketing and information schemes. The franchise agreements also provide for guaranteed connections in cases where this is seen as sufficiently important to offset the costs. These problems might have been eased if franchising had taken the form of a smaller number of larger franchises. However, there was concern that this might have reduced the degree of competition for franchises; as it was franchisees were able to spread their risks by bidding for a portfolio of franchises of different size, duration and types of traffic.

VI. Conclusions

We have seen that there is a wide variety of approaches to the introduction of competition into rail services. However, experience to date suggests that attempts to introduce on-track competition or to make rail markets contestable, will have limited success. There is a much better record of success with franchising arrangements which involve competition for the market rather than in the market. However, such an approach is likely to involve the continued need for extensive government regulation of the sector. Prices and condition of access to the infrastructure; prices, levels and quality of passenger service and the relations between passenger operators in terms of though ticketing, information and connections, are all likely to require continuing regulation. All these are features of the current British approach, which deserves continued careful observation as the most radical attempt to find an alternative approach to rail provision to the traditional vertically-integrated railway.

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Table 1: European Union Model Split (%)

	(Passenger km)			
	Car	**Bus**	**Rail**	**Air**
1970	75.1	12.5	10.3	2.1
1980	76.9	11.4	8.5	3.2
1990	79.0	9.0	6.9	5.1
1994	79.7	8.3	6.2	5.8

Source: Com (96) 421 FINAL

Table 2: European Union Model Split (%)

	(Freight tonne km)			
	Car	**Bus**	**Inland Waterways**	**Pipelines**
1970	48.6	31.7	12.3	7.4
1980	57.4	24.9	9.8	7.9
1990	67.5	18.9	8.3	5.3
1994	71.7	14.9	7.7	5.6

Source: Com (96) 421 FINAL

Table 3: BR Performance 1979 - 1992/3 (1991/92 prices)

	1979	**1983**	**1989/90**	**1991/92**	**1992/93**
Total Grant (£m)	1237	1430	705	1035	1243
Passenger routemiles	8955	8932	8897	8880	8896
Passenger miles (m)	19000	18350	20908	19920	19709
Fare per passenger mile (p)	9.14	9.69	10.81	10.51	10.43
Passenger stations	2365	2363	2483	2473	2482
Passenger train miles (m)	196	203	225	231	228
Train miles per member of staff	1421	1686	2043	1996	1975

Note: Total grant includes all payments from Central and Local Government to BR, including capital renewal provision, Transport Police, level crossings and exceptional items. Number of passenger stations affected by transfers to Tyne and Wear Metro (25) and Manchester Metrolink (16).

Source: British Railways Board, Annual Reports and Accounts

Table 4: Grants to British Railways Board (£m)

	1993/4	1994/5
Public Service Obligation	930	1645
City Authorities (PTEs)	105	259
Level crossings	32	35
Pensions	54	45
Total	1121	1984

Source: Transport Statistics Great Britain 1996. Table 1.17.

Table 5: Rail Franchises

Franchise	Owner	Length of Franchise (yrs)	Subsidy (£m Feb 1997 prices)	
			1996/7	2002/3
Great Western	MBO/Firstbus	10	61.9	36.9
South West Trains	Stagecoach	7	63.3	35.7
Great North Eastern	Sea Containers	7	67.3	.1
Midland Main Line	National Express Group	10	17.6	-4.4
Gatwick Express	National Express Group	15	-4.1	-12.0
LTS Rail	Prism	15	31.1	19.3
Connex South Central	Connex	7	92.8	35.9
Chiltern Railways	MBO/Laing	7	17.4	3.3
Connex South Eastern	Connex	15	136.1	32.6
South Wales & West	Prism	7½	84.6	44.0
Cardiff Railways	Prism	7½	22.5	14.3
Thames Trains	MBO/Go Ahead	7½	43.7	3.8
Island Line	Stagecoach	5	2.3	1.0*
North Western	Great Western Holdings	10	192.9	129.7
Regional Railways North East	MTL Trust	7	231.1	150.6
North London Railways	National Express Group	7½	55.0	20.0
Thameslink	Goahead/Via	7 yrs 1 mth	18.5	-27.0
West Coast Trains	Virgin	15	94.4	-3.9
Scotrail	National Express Group	7	297.1	209.3
Central Trains	National Express Group	7	204.4	136.6
Cross Country	Virgin	15	130.0	50.5
Anglia	GB Railways	7 yrs 3 mths	41.0	6.3
Great Eastern	First Bus	7 yrs 3 mths	29.0	-9.5
West Anglia Great Northern	Prism	7 yrs 3 mths	72.6	-14.6
Merseyrail Electrics	MTL Trust	7	87.6	61.8

Source: OPRAF Annual Report 1996-7

Note: Negative Subsidies indicate payment of a premium.
MBO stands for Management Buy Out.
* assumes constant subsidy after year 5

Table 6: Estimated Subsidy (£m)

	1996/7	2002/3	7 yr Subsidy Reduction
Total (25 franchisees)	2090.1	920.3	1169.8

Source: Table 1

NOTE DE REFERENCE

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I. Introduction

Dans le monde entier, et quasiment depuis sa création, le chemin de fer a été l'un des secteurs de l'économie les plus fortement réglementés. En Grande-Bretagne, l'expérience antérieure de monopoles sans restriction pour les canaux avait fait naître le désir d'intervenir sur les marchés du transport en renonçant quelque peu à l'attitude du "laissez-faire" en vogue. Les préoccupations liées aux caractéristiques de ce secteur, marqué par des coûts fixes d'infrastructure pouvant aller jusqu'à 80 pour cent à court terme et par l'existence d'indivisibilités et d'économies d'échelle à plus long terme, conjuguées au potentiel d'exploitation d'un monopole situationnel, ont conduit les pouvoirs publics à imposer des contrôles sur l'entrée et la sortie du marché, la technologie, les pratiques opérationnelles, les relations entre entreprises et la composition du capital au motif qu'une organisation totalement concurrentielle était tout à la fois indésirable et infaisable. Du fait de ces caractéristiques économiques, les chemins de fer ont été longtemps considérés comme un monopole naturel nécessitant une unicité de détention au niveau du réseau et, au niveau du capital, un contrôle public ou un régime de propriété publique. Telle a été l'évolution de ce secteur dans la plupart des pays du monde.

Ces dernières années, la réglementation traditionnelle de ce secteur en tant que service public a été source d'un mécontentement croissant, surtout à cause de la diminution de la part de marché et de la détérioration des performances financières des chemins de fer. On s'est alors intéressé de plus près à la privatisation et à la déréglementation comme solutions potentielles à ces problèmes. De fait, privatisation et déréglementation ont été considérées comme le moyen de promouvoir l'efficience et l'innovation en libérant les chemins de fer du contrôle des pouvoirs publics et en supprimant les subventions. Parallèlement, les gouvernements ont souhaité réduire les dépenses publiques en transférant au secteur privé le financement des investissements ferroviaires.

La présente étude a pour objectif d'examiner l'état d'avancement de l'introduction de la concurrence dans le secteur des chemins de fer. La section qui suit envisage différents modèles possibles d'organisation de ce secteur. La section 3 décrit les expériences d'un certain nombre de pays ayant réformé en profondeur leurs systèmes ferroviaires. A la lumière de ces expériences, la section 4 examine la marge de manoeuvre pour l'introduction de la concurrence dans les activités ferroviaires, ainsi que les obstacles auxquels elle se heurte. La section 5 aborde la question de la nécessité d'une réglementation et des outils réglementaires appropriés. Enfin, on trouvera les conclusions de cette étude à la section 6.

II. Différents modèles de détention du capital et de contrôle

L'intégration verticale des chemins de fer

Il s'agit du modèle traditionnel d'exploitation des chemins de fer, avec une seule organisation contrôlant la totalité de l'infrastructure et des activités d'exploitation et de commercialisation. Elle a été dépeinte

comme “axée sur la production, insensible aux exigences du marché en matière de services et hiérarchisée (lorsqu’elle n’est pas pléthorique) dans son architecture organisationnelle” (Kessides et Willig, 1995). Le capital peut être public ou privé, et il peut exister une séparation horizontale en monopoles sectoriels ou régionaux. Dans toute l’Europe, le capital est généralement détenu par l’Etat, mais les chemins de fer de Nouvelle-Zélande, qui ont été privatisés, sont organisés sur le même modèle, de même que les différentes compagnies régionales aux Etats-Unis et au Japon.

En fonction de la géographie du pays concerné, il arrive parfois que des monopoles sectoriels puissent se faire mutuellement concurrence sur certains marchés ; le cas le plus extrême concerne les Etats-Unis, où les pouvoirs publics ont toujours eu pour objectif de faire coexister des chemins de fer concurrents sur les principales lignes. Une telle séparation laisse également la porte ouverte à une concurrence par référence lorsqu’il subsiste un certain degré de réglementation. Une variante de ce modèle donne aux compagnies le droit d’accès concurrentiel aux voies d’autres compagnies ; cette situation existe dans certains cas aux Etats-Unis, tandis qu’au Japon, une compagnie de fret distincte a le droit d’accéder aux voies des opérateurs intégrés chargés du transport de voyageurs.

Principaux avantages de ce modèle :

- il permet une planification intégrée des activités
- il facilite la planification à long terme des investissements
- il permet d’internaliser (et de réduire) les coûts de transaction

Principaux inconvénients :

- manque de réactivité aux exigences du marché
- incitation insuffisante à réduire l’inefficience-X et l’inefficience allocative
- performances financières médiocres
- obstacle important à l’introduction de la concurrence.

Les tableaux 1 et 2 illustrent les performances des chemins de fer de l’Union européenne, où l’intégration verticale prévaut. On constate qu’ils ont régulièrement perdu des parts de marché en dépit d’un niveau moyen de subventions égal à quelque 50 pour cent des coûts d’exploitation. Pourtant, la pression politique en vue d’une expansion de la part de marché du transport ferroviaire est forte compte tenu des problèmes de plus en plus aigus d’encombrement et de pollution posés par les transports routier et aérien. Dans le même temps, les gouvernements se sont alarmés des implications financières des niveaux actuels des subventions et des besoins en investissements des systèmes ferroviaires. De ce fait, les pressions en vue d’une réforme ont été très fortes, en particulier sous l’impulsion de la Commission européenne.

L’approche du marché interne

Selon ce modèle, les chemins de fer sont scindés en différentes activités pour offrir des produits aux consommateurs et ces activités achètent des services à un département opérationnel organisé selon des axes régionaux ou fonctionnels. Les activités sont généralement définies en termes de secteurs du marché (fret, transports de voyageurs à longue distance, transport régional de voyageurs, etc.), si bien qu’entre eux la concurrence est minimale. C’est cette approche qui a été retenue en Grande-Bretagne entre le début des années 80 et 1994, avec cinq secteurs d’activité qui ont été dotés chacun de leurs propres administrateurs et de comptes séparés et qui se sont vu assigner des objectifs clairs d’augmentation de la rentabilité et de réduction de l’ampleur des pertes. Comme ces activités devaient rendre des comptes à la direction générale sur leurs performances financières, elles ont été incitées à prendre leurs décisions en fonction des coûts et des réponses du marché. Les coûts ont été répartis entre les différents secteurs opérationnels

comme suit : chaque secteur était responsable du coût des actifs (infrastructure comprise) et du personnel dont il était réputé être le principal utilisateur, tandis que les autres secteurs utilisant ces actifs payaient les coûts évitables. Au début des années 90, cette forme d'organisation s'était développée au point que la gestion de l'entretien et de l'exploitation des infrastructures ainsi que du matériel roulant était scindée entre les différents secteurs.

Suivant l'exemple britannique, de nombreux chemins de fer européens, notamment l'Espagne, les Pays-Bas et l'Allemagne, se sont restructurés en secteurs opérationnels.

Les avantages de ce modèle sont notamment les suivants :

- développement des incitations commerciales
- intégration facilitée des services, qui restent rattachés à une seule organisation
- réduction du nombre des relations entre organisations
- plus grande transparence des coûts et des subventions

Ses inconvénients :

- difficulté de la répartition des coûts communs entre secteurs, source de litiges
- manque de concurrence dans la fonction opérationnelle

Le tableau 3 illustre les résultats de British Rail à la suite de sa sectorisation en 1982. Même si la situation économique à la fin de la décennie 80 était favorable, ce qui explique en partie l'amélioration des résultats financiers, la performance de cette période reste impressionnante. Elle n'a pu toutefois se poursuivre au début des années 90, où la récession économique, conjuguée à l'augmentation des dépenses de sécurité et à la baisse de l'intérêt manifesté par la direction pour une poursuite de la réorganisation, se sont accompagnées d'une détérioration marquée des résultats.

La séparation verticale

Les économistes ont préconisé une séparation entre la détention des infrastructures d'une part et l'exploitation des services d'autre part pour un grand nombre de secteurs fonctionnant sur la base de réseaux, notamment les télécommunication, la distribution d'électricité et de gaz et, plus récemment, les chemins de fer. L'argument mis en avant est que les avantages d'une telle approche compensent largement les problèmes dus au fait que les coûts d'infrastructure sont pour l'essentiel irrécupérables et que la mise à disposition d'infrastructures présente certaines caractéristiques d'un monopole naturel. On estime en effet que les coûts irrécupérables sont bien moins importants dans la prestation des services et que, de ce fait, les conditions sont mieux à même de permettre à la concurrence tant potentielle que réelle de procurer les avantages que toute concurrence apporte traditionnellement en termes de promotion de l'efficience et de réponse aux besoins du marché

Selon ce schéma, l'infrastructure, installations exclusives exceptées, est tout entière la propriété et la responsabilité d'un détenteur unique (qu'il soit à capitaux publics ou privés). Les prestataires de services ferroviaires doivent acquitter un droit d'accès à l'infrastructure. La législation européenne impose désormais la séparation, au moins en ce qui concerne la comptabilité, afin de permettre un degré d'accès libre à l'infrastructure pour certains types de services particuliers. Actuellement, ce droit est limité aux groupes d'opérateurs ferroviaires exploitant des services internationaux de transport de voyageurs ou de marchandises en traversant un pays tiers (ainsi par exemple les chemins de fer allemands ou espagnols pourraient exploiter un service de transit par la France) et à tout opérateur fournissant des services internationaux de fret intermodal (ainsi Freightliner par exemple pourrait en principe exploiter des

services de transport par conteneurs à destination de n'importe quel pays européen). Des propositions ont été faites pour étendre les droits d'accès libre à tous les services fret et aux services voyageurs sur longue distance, mais elles se heurtent à une forte opposition de la plupart des chemins de fer et de nombreux gouvernements, qui craignent leur impact sur la situation financière des compagnies dont ils sont propriétaires.

Le principal objectif d'une séparation entre les infrastructure et l'exploitation est de permettre à des opérateurs concurrents de faire circuler des trains sur une même infrastructure, parce que si un seul opérateur avait le contrôle de l'infrastructure, il se trouverait placé dans une situation injustement favorable. A ce jour, l'infrastructure a été dans la plupart des cas simplement confiée à une division distincte de la compagnie ferroviaire nationale ; seules la Suède et la Grande-Bretagne ont adopté une organisation totalement séparée. En Suède, un autre objectif a joué en outre un rôle prépondérant : celui de placer l'offre et le financement de l'infrastructure ferroviaire sur un pied d'égalité avec le réseau routier, en transformant en même temps l'opérateur en une organisation commerciale.

La prestation de services par l'utilisation de l'infrastructure peut prendre plusieurs formes : octroi de concessions d'activités, accès libre autorisé pour tous les opérateurs, ou combinaison des deux. Si les pouvoirs publics souhaitent contrôler le niveau du service rendu, en particulier du service voyageurs, qu'il soit subventionné ou non, le système des concessions concurrentielles est alors le mieux à même de faire jouer la concurrence pour s'assurer de l'efficience des opérateurs. C'est cette approche qui a été retenue pour tous les services voyageurs en Grande-Bretagne et pour certains services locaux et régionaux en Suède et en Allemagne.

Avantages de ce modèle ; il facilite :

- la concurrence entre des opérateurs divers (que ce soit sur le réseau ou pour des concessions)
- des relations claires entre les secteurs d'activité
- la spécialisation

Inconvénients :

- complication au niveau de l'établissement des horaires et de l'affectation des sillons
- difficulté pour planifier les investissements
- manque d'intégration des prix et des services (par exemple, à cause des problèmes de billetterie)

III. Expériences de réforme des chemins de fer

Cette section examine plusieurs expériences de réforme du secteur ferroviaire dans le monde et s'inspire largement des travaux de Shire et al (1994), mis à jour lorsque cela était nécessaire. Au total, huit pays sont examinés : Argentine, Allemagne, Japon, Pays-Bas, Nouvelle-Zélande, Suède, Etats-Unis et Grande-Bretagne. Ces exemples recouvrent une large diversité de types de chemins de fer, si bien que dans de nombreux cas les expériences ne sont pas exactement comparables.

Les chemins de fer argentins

Jusqu'en 1989, les chemins de fer d'Argentine fonctionnaient sous la forme d'un service public nationalisé (Ferrocariles Argentinos, FA) organisé en six divisions principales. Cette organisation était le

fruit d'une succession de chemins de fer construits par les pouvoirs publics et par le secteur privé, puis nationalisés par le gouvernement argentin en 1946/47.

Malgré les fortes réductions du réseau (ramené de 45 000 à 29 000 km) et du personnel (revenu de 210 000 à 85 000 employés), à cause de la forte baisse du trafic, les chemins de fer étaient en crise en 1989. Ils détenaient une part d'environ 8 pour cent du marché du fret et du transport interurbain de voyageurs et les subventions du gouvernement représentaient £ 212 millions (contributions aux recettes) et £ 150 millions (dépenses d'investissement). Plus de la moitié de la flotte de locomotives était inutilisable et 50 pour cent des voies étaient soumises à des restrictions en matière de vitesse et d'essieux.

En 1989, sous la présidence de Carlos Menem, le gouvernement, soucieux de stopper le déclin des performances, a décidé sur l'instigation de la Banque Mondiale d'offrir des concessions pour la prestation de services de fret sur de larges portions du réseau ferroviaire. L'infrastructure et le matériel roulant devaient rester propriété de l'Etat, tandis qu'on créerait une instance réglementaire publique et une autorité indépendante chargée de la sécurité.

Les principales caractéristiques des concessions étaient les suivantes :

a) Le concessionnaire loue à l'Etat l'infrastructure et le matériel roulant pendant la durée de la concession, à l'expiration de laquelle ils restent propriété de l'Etat. Les concessions sont accordées pour 30 ans avec option de renouvellement pour 10 ans.

b) La seule contrainte opérationnelle du concessionnaire consiste en un niveau de tarif maximal (toutefois élevé). La soumission comporte également une proposition d'investissement sur la durée de la concession et l'obligation de maintenir l'infrastructure en bon état de fonctionnement.

c) Le concessionnaire doit mettre en oeuvre un plan d'investissement négocié durant le processus de soumission, qui peut être renégocié après cinq ans.

d) Si le concessionnaire rompt son contrat, il perd un montant garanti, mais récupère la valeur actuelle de son investissement, minoré de 40 à 50 pour cent, à titre d'indemnisation unique.

e) Le concessionnaire doit permettre un "libre accès" pour lequel il est rémunéré. Cependant, le nombre d'activités en libre accès a été très réduit, et cette condition apparaît essentiellement comme servant à maintenir le concept de chemin de fer intégré.

La concession est octroyée selon un système de barème où des points sont accordés en tenant compte de l'expérience antérieure du candidat, de l'investissement proposé, du nombre d'employés du chemin de fer conservés et du montant de l'offre.

Aucune subvention n'est explicitement offerte, mais la modicité des redevances prévues pour l'infrastructure et la location indique l'existence d'une subvention implicite qui, selon Muller (1992) est,

"..équivalente à plus de 40 pour cent des recettes annuelles."

La stratégie globale d'octroi des concessions a été arrêtée après consultation avec la Banque mondiale qui, outre des services de conseil, a également accordé des prêts d'un montant de US$ 300 millions pour la restructuration du système ferroviaire. En plus de la concession des services de fret, cette stratégie comportait d'autres volets :

a) Scission des services voyageurs entre services commerciaux et services à vocation sociale, afin de cibler les subventions sur les derniers uniquement. Ceux-ci ne pouvaient subsister qu'à condition d'être soutenus par les pouvoirs publics. En fait, quasiment aucun service voyageurs n'était commercialement viable, et les services très limités qui existaient ont pour la plupart cessé de fonctionner parce que les Etats ont refusé de les soutenir.

b) Création d'une autorité des transports métropolitains de Buenos Aires afin de coordonner les services de banlieue dans cette zone.

c) Réduction d'effectifs et réforme des pratiques de travail.

d) Constitution d'une unité immobilière chargée de la vente des actifs excédentaires.

Sur les six concessions offertes, une seule, la ligne de Belgrano, n'a fait au départ l'objet d'aucune offre. Les cinq autres lignes ont été concédées. La majorité des concessionnaires/soumissionnaires étaient des consortiums ne possédant qu'une expérience limitée des activités ferroviaires à grande échelle, à l'exception de Canadian National and Conrail, qui font partie du consortium exploitant le système Roca et la ligne d'Urquiza.

En ce qui concerne les services voyageurs, seul le tronçon Buenos Aires - Mar del Plata est considéré comme rentable et quatre offres ont été examinées. Les lignes situées hors des zones métropolitaines ont été offertes aux gouvernements des provinces. S'ils refusaient, les lignes étaient fermées. Les services de banlieue desservant Buenos Aires ont été concédés, la principale mesure ayant consisté à choisir l'offre entraînant les subventions les plus faibles.

A ce jour, il est impossible d'évaluer de manière concluante les modifications structurelles intervenues dans les chemins de fer argentins. Selon les premières indications, les coûts ont été fortement réduits, la productivité a augmenté et le trafic s'est développé (Thompson, 1997). Cela étant, des difficultés sont apparues parce que les concessionnaires n'ont pas mis en oeuvre les programmes d'investissement ; on voit mal comment le gouvernement pourrait les faire appliquer autrement qu'en établissant la défaillance du concessionnaire et en procédant à un nouvel octroi de concessions, mesure à laquelle il n'aimerait pas devoir recourir.

Allemagne

Avant le 1er janvier 1994, les chemins de fer allemands étaient constitués de deux organisations nationales distinctes, la Deutsche Bundesbahn (DB, compagnie de l'ex-Allemagne de l'ouest) et la Deutsche Reichsbahn (DR, compagnie de l'ex-Allemagne de l'est), opérant toutes deux sur leurs anciens territoires respectifs. Aujourd'hui regroupées sous la même bannière, Deutsche Bahn AG, elles ont été scindées en deux, avec une unité opérationnelle (chargée de l'exploitation des trains et de l'infrastructure) et une unité publique (chargée des autres tâches), l'objectif ultime étant de privatiser la première, mais probablement pas avant le début du siècle prochain.

Ce processus de réforme est inscrit dans le rapport définitif de la commission ferroviaire gouvernementale présenté en décembre 1991. Cette commission, constituée en juillet 1989, avait été chargée à l'origine de se pencher sur l'avenir de la DB, mais sa mission a été étendue à la DR après la chute du mur de Berlin cette même année La commission a noté deux points en particulier :

1. La DB détenait une part de six pour cent du marché des voyageurs et de 23 pour cent du marché du fret. Les parts de marché de la DR étaient plus importantes, mais en recul rapide du fait de la disponibilité plus grande de camions et de voitures.

2. Compte tenu de la faiblesse des investissements réalisés par la DR, du fait de la mauvaise situation économique, il aurait fallu dépenser quelque DM 100 milliards pour remettre son réseau en état.

La commission a donc conclu que faute de changements, les subventions gouvernementales atteindraient des niveaux insupportables dans les 10 ans.

Le 15 juillet 1992, le gouvernement a mis en place une stratégie devant finalement aboutir à trois activités commerciales : voyageurs, fret et infrastructure, toutes destinées à être privatisées. Le processus de restructuration est décrit de manière complète dans la section suivante. Une autre organisation, l'Office fédéral des chemins de fer, a été créée afin de remplir les tâches relevant des pouvoirs publics telles que l'approbation des projets de construction de nouvelles lignes ferroviaires. Le reste du domaine public est resté entre les mains des Propriétés fédérales des chemins de fer.

Du point de vue du développement de la concurrence, deux éléments essentiels sont intervenus. Le premier est la régionalisation des services voyageurs locaux. Ce processus a eu pour effet de transférer du niveau national au niveau régional (c'est-à-dire au niveau des Länder) le pouvoir de définir les services ferroviaires locaux et la responsabilité de leur financement. Il s'agit d'une caractéristique fondamentale du processus de restructuration (voir Ridely et Terry, 1992). Auparavant, les Länder constituaient un lobby puissant pour la conservation et l'amélioration des services ferroviaires financées par des fonds fédéraux. Désormais, les Länder doivent fixer un niveau de service et conclure un contrat avec un opérateur de chemins de fer. A cette fin, ils reçoivent du gouvernement fédéral des fonds qui peuvent être utilisés pour assurer des transports ferroviaires ou routiers. Ils sont habilités à octroyer des concessions à des opérateurs autres que DBAG et déjà, certains services régionaux ont été confiés sous licence à des compagnies privées, ou à des consortiums regroupant DBAG et des compagnies privées (l'Allemagne possède déjà un certain nombre de compagnies ferroviaires locales privées, qui exploitent souvent des services voyageurs sous contrat avec des collectivités locales).

Paiement pour les infrastructures

La seconde caractéristique est l'introduction du libre accès. En principe, celui-ci est ouvert pour les services fret et voyageurs (mais sur une base de réciprocité uniquement pour les opérateurs étrangers). Les redevances sont fixées par la division infrastructure de DBAG, mais réglementées par l'Office fédéral des chemins de fer. Les redevances relatives à l'utilisation de l'infrastructure sont calculées à partir d'un tarif qui varie selon la nature du matériel roulant et de l'itinéraire ainsi que de la durée du contrat, et qui est conçu de manière à couvrir tous les coûts autres que les coûts d'investissement supportés par l'Etat. Au départ, ce tarif comportait un coût marginal élevé au titre des trains-kilomètres supplémentaires et un rabais pour utilisation massive, qui favorisaient fortement la DBAG. A la suite des protestations émises par les Länder, une redevance marginale plus faible pour les trains-kilomètres supplémentaires a été introduite (Link, 1997).

Si, en théorie, l'accès est aujourd'hui totalement libre pour les tiers en Allemagne, la nature du régime de facturation de l'accès (redevances élevées et rabais quantitatif favorisant les gros opérateurs) a découragé l'entrée, et seule une poignée d'opérateurs privés de services de fret ont exploité cette possibilité. Dans la plupart des cas, il s'agit des compagnies privées existantes de transport sur courte distance.

Les chemins de fer japonais

Les chemins de fer japonais ont été réorganisés en 1949 avec la création d'une compagnie détenue par l'Etat, Japanese National Railways (JNR), exploitant un réseau de quelque 21 000 km sur tout le pays. En plus de JNR, le Japon compte 15 grandes compagnies ferroviaires privées et 161 opérateurs de plus petite taille. Les compagnies privées existent surtout dans les zones urbaines où la densité très forte du trafic de banlieue les rend très rentables et où il existe des possibilités de développement dans des domaines autres que ferroviaires, l'immobilier par exemple.

Les chemins de fer ont toujours joué un rôle important au Japon, plus que dans d'autres pays du monde industrialisé. Les principales raisons de l'utilisation massive des chemins de fer par les voyageurs tiennent à la forte densité démographique, à la distribution, par les entreprises japonaises, de cartes d'abonnement pour les trajets domicile-emploi, à la médiocrité, jusqu'à une époque récente, du réseau routier (du fait des reliefs montagneux) et au nombre peu élevé de voitures particulières. Le développement du réseau à grande vitesse Shinkansen dans les années 60 a également contribué au maintien, par JNR, de parts relativement élevées du marché des voyageurs : le Shinkansen assure plus de 90 pour cent de la demande de voyageurs sur le marché interurbain entre Tokyo et Osaka (560 km).

En revanche, la part du marché du fret détenue par JNR a commencé à chuter fortement dans les années 60. Le principal obstacle rencontré par le rail sur le marché du fret tient à l'insularité du pays, où la plupart des matières premières sont importées. Le mode de transport le plus commode reste donc le navire et de ce fait, la majorité des industries lourdes sont situées sur les côtes, ou à proximité.

Malgré les conditions favorables pour le trafic voyageurs, JNR était en pleine crise financière dans les années 80, et cette situation a abouti à sa restructuration complète en 1986.

La réforme avait pour objectif général de retirer aux chemins de fer japonais la position spéciale dont ils jouissaient aux yeux de la loi et des pouvoirs publics. Au lieu d'avoir pour objectif "d'améliorer le bien-être du public", sa nouvelle mission était de "répondre aux besoins du marché et de se doter d'une gestion efficace". Conséquence directe de cette réorientation : JNR est sortie du service public ; l'Etat a cessé d'être responsable de la construction de nouvelles voies ferrées ; enfin, aucune approbation législative spécifique n'était plus nécessaire pour relever les prix des billets, dans des limites spécifiées. JNR a été divisée en six compagnies régionales de transport de voyageurs verticalement intégrées (les JR) et en une société de fret distincte utilisant leurs voies sur la base des coûts évitables.

JNR Settlement Corporation, société de règlement, a été créée et c'est elle qui est juridiquement responsable du remboursement de la plupart des dettes à long terme de JNR et du reclassement des effectifs en surnombre. A l'origine, les nouvelles lignes à grande vitesse restaient entre les mains de Shinkansen Holding Company, détenue par l'Etat, mais elles étaient louées exclusivement à un opérateur unique, si bien qu'aucune concurrence n'a été introduite.

Les résultats, présentés au tableau 4, sont impressionnants, aussi bien pour le transport de marchandises que pour le trafic voyageurs, mais plus encore pour ce dernier. De fait, les recettes du trafic voyageurs ont augmenté de 46,6 pour cent entre 1984 et 1991, tandis que sur la même période, les coûts reculaient de 24,4 pour cent. Un autre chiffre remarquable est celui des effectifs, qui a diminué de 45,2 pour cent pour revenir à 138 901 personnes. Il est toutefois important de préciser qu'au sens strict, nous ne sommes pas en train d'examiner des éléments exactement comparables. En effet, l'évolution de l'offre des produits et la concentration sur certains trajets clés ont abouti à l'abandon de lignes peu rentables et à l'ouverture de lignes nouvelles. Si l'on examine les effectifs, il faut se souvenir que ces réductions ont été obtenues en partie par l'affectation de personnel dans des filiales et sociétés affiliées. Cette pratique consistant à

"utiliser au mieux les effectifs en surnombre" est très courante au Japon et n'est en aucun cas limitée au seul secteur ferroviaire.

Les principaux éléments du redressement de JNR peuvent être résumés comme suit :

Suppression des problèmes à long terme de dettes et de sureffectifs

Le remboursement des dettes à long termes et le redéploiement de la main-d'oeuvre en surnombre relève désormais de la responsabilité de JNRSC, tandis que l'infrastructure Shinkansen a été confiée à SHC. Ceci a permis d'assurer une transition en douceur et d'établir une base d'activité saine, même pendant la phase de reconstruction de JNR.

Transformation en société de capitaux et privatisation

La direction et le personnel ont adopté de ce fait une attitude commerciale.

Déréglementation

Le fait d'échapper au contrôle des pouvoirs publics a donné une nouvelle liberté aux dirigeants, plus responsables et plus libres de développer d'autres activités, par exemple commerciales ou immobilières, bien qu'il subsiste des contrôles sur les tarifs et sur la possibilité de supprimer des services.

Fermeture de certains lignes locales spécifiques

Au total 3 160 kilomètres de lignes extrêmement peu rentables ont été fermées.

Aucun de ces éléments n'a de lien fondamental avec l'introduction de la concurrence, à l'exception peut-être d'un élément de concurrence par référence entre les nouvelles compagnies. Si concurrence il y a entre les JR et les autres compagnies ferroviaires privées sur des voies distinctes dans des corridors de trafic banlieue, elle existait déjà auparavant. Il n'y a pas d'exemple de concurrents opérant sur les mêmes voies, et les opérateurs existants ne sont aucunement tenus de fournir un tel accès. Ainsi, en réalité, les réformes japonaises ne nous apprennent pas grand chose sur l'introduction d'une concurrence supplémentaire dans le secteur ferroviaire ; elles concernent davantage la structure de détention du capital et la réglementation de ce secteur.

Pays-Bas

Pendant de nombreuses années, jusqu'au début des années 90, les chemins de fer aux Pays-Bas ont été marqués par un degré très élevé d'intervention des pouvoirs publics à tous les niveaux. La compagnie néerlandaise NS n'était pas libre de fixer ses tarifs, de déterminer ses niveaux de service ou d'arrêter ses plans d'investissement. Cela reflétait les préoccupations du gouvernement néerlandais, soucieux de mettre en place un projet national stratégique en matière de transport. Toutefois, plusieurs événements ont abouti à une réforme dans l'administration des transports publics, laquelle a donné naissance à une NS plus indépendante et davantage axée sur le marché. Parmi ces événements, on peut citer le rapport de la Commission Wijffels (1992), qui recommandait au gouvernement de laisser à NS un plus grande marge de manoeuvre pour fonctionner comme une entreprise indépendante, et de créer des divisions structurelles distinctes au sein de la compagnie ; les mesures prises au niveau européen ont également joué.

En 1988, NS a présenté le plan RAIL 21, dont l'objectif était de doubler le trafic voyageurs d'ici 2005 sans augmentation des subventions. Le gouvernement a promis en contrepartie de prendre un certain

nombre de mesures destinées à freiner la croissance de l'automobile, notamment une tarification des routes interurbaines. Cependant, bien que NS ait depuis lors augmenté de 40 pour cent ses voyageurs-kilomètres, le gouvernement n'a toujours pas tenu ses promesses en matière de restriction du trafic automobile.

Le point essentiel de la réforme du gouvernement réside dans le fait que NS conserve la responsabilité totale de l'exploitation des services ferroviaires, en étant libre de fixer les niveaux de service, les tarifs et les investissements nécessaires à ses activités. Tous les autres aspects de la prestation ferroviaire, par exemple la gestion de l'infrastructure, sont pris en charge par les pouvoirs publics, ou par les pouvoirs publics par l'intermédiaire d'un tiers. Quelques-uns des principaux volets de ces propositions sont exposés ci-dessous.

Infrastructure

L'Etat néerlandais sera chargé du développement, de la gestion et du financement de l'infrastructure ferroviaire. Toutefois, il confiera la gestion de l'infrastructure à court et moyen terme à une unité administrative de NS appelée NS Infrastructure (NSI). Les conditions en seront définis par contrat entre le gouvernement et NSI et contiendront des éléments propres à favoriser l'efficience de la performance de NSI. NSI devra également lancer des appels d'offres pour certains travaux.

L'Etat conservera un rôle à long terme dans la planification de l'infrastructure à long terme, en complément de sa politique de planification intégrée. En d'autres termes, la planification de l'infrastructure ferroviaire sera liée à la planification concernant les autres modes de transport, l'environnement et l'aménagement du territoire.

Gestion des capacités

Le gouvernement reconnaît que la gestion des capacités fait partie intégrante des activités de NS. De ce fait, celle-ci sera du ressort de NS, mais pour garantir l'impartialité (pour permettre le libre accès), il a créé au sein de NS une organisation distincte chargée de gérer les capacités, il définira les règles d'affectation, créera un organisme réglementaire pour garantir l'impartialité et instituera un mécanisme de recours.

Actuellement, l'accès à l'infrastructure est libre et gratuit, mais il est proposé d'introduire des redevances en 2000. Les entrées nouvelles ont néanmoins été limitées à un petit nombre de services de fret et à un seul opérateur de services voyageurs (Lovers Rail), qui est à notre connaissance le seul opérateur de services voyageurs en libre accès dans l'Europe de l'ouest.

Services de fret

Pour l'instant, NS Fret jouit d'une liberté commerciale totale et peut fixer ses tarifs de fret comme elle l'entend. Le gouvernement néerlandais souhaite qu'en définitive NS Fret fonctionne comme une unité opérationnelle indépendante sur le marché libre, dotée de son propre statut juridique. L'un des éléments essentiels de l'avenir du fret réside dans la capacité à attirer et à exploiter un trafic supplémentaire. Le plan RAIL 21 CARGO présenté en 1990 vise précisément cet objectif. Ce plan prévoyait une nouvelle liaison de fret entre Rotterdam et l'Allemagne (approuvée depuis) et le développement de services intermodaux internationaux.

Services voyageurs

Le gouvernement néerlandais souhaite l'émergence d'une division NS voyageurs rentable et axée sur le marché, responsable de sa tarification, de ses niveaux de service et de ses programmes d'investissement. Pour le moment, le gouvernement est lié à NS par un contrat aux termes duquel NS bénéficiera d'un niveau réel de soutien en échange d'un niveau minimal de service (des tarifs plafonds sont également fixés).

A l'avenir, le gouvernement espère séparer les aspects commerciaux et sociaux des activités ferroviaires de NS en confiant sous concession les services de transport qui ne sont pas commercialement viables pour NS, mais qui sont tout de même souhaitables du point de vue social. Ceci permettrait à NS de se concentrer sur ses activités commerciales, aidée et soutenue en cela par le Second plan structurel pour les transports du gouvernement. Ce plan vise à créer des conditions favorables pour le transport public de voyageurs grâce à des mesures d'aménagement urbain, une politique en matière de stationnement automobile et des différences de tarification entre l'automobile et les transports publics.

Afin d'arriver à une situation dans laquelle les finances publiques ne seraient sollicitées que pour les investissements dans l'infrastructure et le secteur sous contrat, les services voyageurs étant rentables, le gouvernement a établi un programme en six ans sur la période 1994-2000. Ce programme est organisé en trois volets : (1) amélioration de l'efficience de NS ; (2) NS devra relever ses tarifs en termes réels ; enfin (3) NS devra envisager de fermer les services non rentables.

A l'heure actuelle, la situation aux Pays-Bas est telle qu'en dépit du libre accès, offert à des conditions pour le moment très favorables, bien peu d'opérateurs en ont profité. Certes, la disponibilité de voies sur ce réseau très encombré est un problème, mais la réussite des projets d'expansion de Lovers Rail, désormais détenue par la compagnie française CGEA, qui exploite également deux concessions pour le transport de voyageurs dans la banlieue de Londres, sera suivie avec grand intérêt.

Les chemins de fer de Nouvelle-Zélande

Les chemins de fer de Nouvelle-Zélande ont subi une transformation radicale au cours des 11 dernières années. Ils sont passés d'une organisation extrêmement protégée, en sureffectif et déficitaire à une entité privatisée, commerciale, bénéficiaire, opérant sur un marché déréglementé. Cette évolution s'est faite en trois étapes : création de New Zealand Railways, dotés de la personnalité morale, puis transformation en une société anonyme (indépendante de l'Etat), enfin vente à un consortium privé dirigé par Wisconsin Central en juillet 1993.

New Zealand Railways Corporation (NZRC) a été créée par le New Zealand Railways Corporation Act de 1982, qui l'a dotée de missions commerciales, d'un conseil d'administration dont les membres venaient du secteur privé et, peut-être plus important encore, d'un objectif clairement défini :

> "fonctionner de manière à ce que les recettes soient supérieures aux coûts, intérêts et amortissements compris."
> Source: Small (1993)

Parallèlement, la déréglementation du marché du fret, qui constituait l'essentiel du trafic ferroviaire, a conduit à l'abandon de la limite des 150 kilomètres imposée au fret routier qui avait eu jusque là pour effet de réserver l'intégralité du trafic longue distance au chemin de fer. La déréglementation a constitué par ailleurs une incitation supplémentaire pour que la direction aussi bien que les syndicats adhèrent à ce nouvel esprit plus commercial et partagent la volonté de changement. Le fait de prendre conscience que le

gouvernement néo-zélandais était sérieusement déterminé à “couper le robinet” des subventions a également conduit à une amélioration de la productivité et des performances financières.

Pendant toute la décennie 80, l’accent a été mis sur les réductions d’effectifs et sur une exploitation davantage axée sur le marché. Des spécialistes extérieurs en gestion des transports, Booz-Allen et Hamilton, ont été consultés afin de fixer une “orientation stratégique” pour l’entreprise.

En 1990, NZRC affichait un résultat d’exploitation positif, mais restait encore loin du bénéfice net à cause du montant substantiel de ses dettes (conséquence des indemnités de licenciement versées et de l’électrification du North Island Main Trunk). Afin de faciliter la transformation de NZRC en une société anonyme puis en une société anonyme cotée, le gouvernement a pris cet endettement à sa charge. Les activités opérationnelles de NZRC ont été regroupées au sein d’une société anonyme appelée New Zealand Rail Limited (NZRL) qui est restée propriétaire des terrains, de l’activité voyageurs, des services de messagerie Speedlink et d’autres actifs à caractère général. Les terrains nécessaires aux activités ferroviaires ont été louées à NZRL pour un loyer modique.

Structure

La structure de NZRL est désormais organisée autour de trois groupes opérationnels fonctionnant comme des centres de profit : fret (qui réalise le plus gros chiffre d’affaires), voyageurs (complémentaire du précédent et utilisant les capacités marginales du réseau pour dégager des recettes supplémentaires) et opérations (qui fournit des services de transport aux deux autres groupes).

Accès aux voies

NZRL estime qu’il est vital qu’elle puisse contrôler son infrastructure, les normes des voies et, en conséquence, ses coûts. NZRL est donc restée une activité verticalement intégrée. Le contrôle de l’accès aux voies est défini par les termes du bail conclu avec New Zealand Rail Corporation pour l’utilisation des terrains supportant les voies. Aux termes de ce contrat, d’autres opérateurs ont le droit d’utiliser les voies sur tout tronçon dont le tonnage ou le nombre de voyageurs tombe en deçà d’un seuil déterminé.

Tout opérateur obtenant un accès aux voies doit s’abstenir de causer des “interférences déraisonnables” dans les activités de NZRL et doit payer pour l’utilisation de l’infrastructure sur une base commerciale normale, comprenant un taux de rendement raisonnable. De fait, l’accès aux voies est minime et loin d’être encouragé. Ceci reflète en partie la conviction du gouvernement selon laquelle une concurrence réelle et efficace existe déjà entre la route et le rail d’une part et la navigation maritime et le rail d’autre part.

Ces réformes ont eu des résultats impressionnants compte tenu des difficultés découlant du contexte géographique et de la concurrence du transport routier à la suite de la déréglementation. Entre 1982 et 1989, New Zealand Railways a perdu quelque 25 pour cent de son fret en tonnage, mais seuls 40 pour cent de ce recul étaient dus au remplacement par la route, les 60 pour cent restants étant attribuables à la récession ambiante. La part actuelle du marché du trafic inter-régional de fret est estimée à 30 pour cent.

L’examen des indicateurs de performance montre que NZRL a très fortement amélioré son efficience productive depuis 1982. La productivité du personnel a progressé de 200 pour cent, la taille moyenne des trains a augmenté de 21 pour cent et la flotte de wagons a diminué de 69 pour cent. L’accent a été mis sur une plus forte utilisation du matériel roulant, conjuguée à une hausse de la productivité du personnel.

Pendant ce même laps de temps, les tarifs réels du fret ferroviaire ont reculé de 50 pour cent, ce qui montre que les économies réalisées au cours de la période ont été répercutées sur les consommateurs ; des améliorations de l'efficience allocative aussi bien que de l'efficience productive ont donc été réalisées. Toutefois, là encore, ces résultats sont à mettre au crédit de la déréglementation, de la privatisation et de la concurrence intermodale plutôt qu'à la concurrence au sein du secteur ferroviaire lui-même.

Les chemins de fer suédois

En Suède, les chemins de fer nationaux avaient à l'origine pour fonction de relier les systèmes ferroviaires privés desservant les différentes régions afin de constituer un réseau national et régional. L'Etat a absorbé progressivement les réseaux privés lorsqu'ils étaient déficitaires. Avec le développement de la route et la motorisation, cette tendance s'est développée au point qu'en 1965 les lignes privées représentaient moins de cinq pour cent des trajets en kilomètres ; ce pourcentage est tombé à zéro en 1991.

Jusqu'en 1979, le réseau national fonctionnait sans subvention et le système ferroviaire dans son intégralité était l'un des plus efficaces et des plus rationnels en termes de coûts de toute l'Europe de l'ouest (BRB et Université de Leeds, 1979). Cependant, dans les années 80, la conjugaison d'un recul des parts de marché et d'un manque de visibilité des objectifs de la direction ont abouti à une succession inexorable de déficits et à une chute des investissements. Les inquiétudes exprimées par les pouvoirs publics et les milieux politiques quant à l'absence d'investissements et l'encombrement croissant observé dans les villes ont conduit à l'adoption de la loi sur les transports de 1988.

Cette loi était basée sur un "modèle routier" selon lequel :

a) Le réseau ferroviaire a été organisé en un réseau comprenant des artères principales et des lignes régionales.

b) L'infrastructure ferroviaire a été confiée à une nouvelle entité publique, Banverket (BV), qui loue l'accès aux voies aux opérateurs ferroviaires sur la base d'un coût social marginal. BV est responsable des investissements nouveaux et de l'entretien et agit en qualité d'organe de réglementation pour les questions de sécurité et d'horaires.

c) Statens Jarnvagar (SJ) est devenue une organisation d'exploitation et de commercialisation ferroviaire, pour les activités voyageurs et fret. Elle est restée propriétaire des terminaux et du matériel roulant, conservant en outre des droits d'exploitation sur certains trajets principaux pour le trafic passagers et sur des trajets principaux et régionaux pour le trafic marchandises (à l'exclusion du minerai de fer).

d) Les 24 autorités régionales de transport public (CTA) fixent le niveau du service voyageurs devant être exploité sur les lignes régionales et peuvent choisir des entreprises contractantes autres que SJ pour assurer les services locaux et régionaux.

e) Si SJ ou les CTA ne souhaitent pas faire usage de leurs droits de transport (ne pas assurer un service), l'Etat (lignes principales) et BV (autres lignes) peuvent accorder ces droits à d'autres opérateurs.

f) Les redevances d'utilisation de l'infrastructure acquittées par les opérateurs ferroviaires sont comparables au régime de tarification mis en oeuvre par les autorités chargées du réseau routier, à savoir le coût social marginal.

g) Enfin, l'Etat accordera des subventions pour les investissements nouveaux.

Bien que BV et SJ soient deux entités distinctes, la ligne de partage établie par la loi sur les transports de 1988 est parfois floue. L'établissement des horaires est actuellement du ressort de SJ, le contrôle du trafic est effectué par SJ en utilisant l'infrastructure de BV, tandis que les télécommunications sont utilisées conjointement par les deux opérateurs. Les deux premiers éléments remettent en question les possibilités d'introduction d'une concurrence véritable pour la prestation de services ferroviaires en Suède. Le dernier a été techniquement résolu par l'affectation de standards et de câbles d'interconnexion à BV, tandis que des câbles et installations destinées à du matériel portable à usage direct ont été pris par l'utilisateur (soit BV, soit SJ).

Comme indiqué plus haut, tous les opérateurs de trains acquittent des redevances d'accès égales au coût social marginal. Ces redevances se décomposent en deux parties : *(i)* un élément fixe exprimé sous la forme d'un tarif par essieu et *(ii)* un élément variable, lié aux tonnes-kilomètres, différent selon les types de véhicules afin de refléter l'usure de l'infrastructure. La redevance étant fixée au coût social marginal, cet élément inclut également des coûts socio-économiques, par exemple la pollution due au carburant diesel.

SJ et BV continuent à recevoir des subventions très conséquentes des pouvoirs publics. Dans le cas de SJ, elles concernent l'exploitation de services voyageurs et fret "socialement nécessaires" :

Selon Ridley et Terry (1992)

> "Depuis les réformes engagées aux termes de la loi de 1998, la plupart des CTA s'intéressent de près au développement de services ferroviaires rationnels du point de vue des coûts et lancent des appels d'offres en vue de la prestation de services ferroviaires qui doivent répondre à des spécifications conçues sur mesure en fonction de leur appréciation des besoins locaux/régionaux."

A ce jour, le monopole de prestation de SJ n'a été remis en cause que par deux gros opérateurs, BK-Tag et Linjetag. Tous deux exploitent des services d'autocar et d'autobus sous contrat pour des CTA dans le sud et le centre de la Suède et offrent des services de maintenance à d'autres compagnies de transport par autocar et autobus. Bien que tous deux répondent à des appels d'offres, seul BK-Tag a réussi à emporter des marchés : (1) Smaland et Halland (en 1990) et (2) Borlange (en 1992).

SJ a réagi à la concurrence en abaissant de 30 pour cent en moyenne les prix de ses soumissions. Elle s'est depuis assuré tous les contrats des services des CTA et a pris la place de BK-Tag sur ses deux concessions. Toutefois, le succès initial de BK-Tag est la preuve que la concurrence peut exister par le biais d'une concession malgré les avantages significatifs dont jouit l'entreprise en place, par exemple les économies d'apprentissage ou les effets de notoriété.

BK-Tag s'est attaquée à ces obstacles de plusieurs manières : modification de pratiques de travail autrefois immuables, réduction des coûts de maintenance et intégration de ses activités routières et installations de maintenance avec celles du rail. Grâce à ces mesures, BK-Tag a réussi à faire exécuter par 43 personnes des services qui employaient auparavant 250 personnes ; l'utilisation des véhicules a dépassé celle de SJ et des gains de productivité de la main-d'oeuvre estimés à 10 pour cent ont été réalisés grâce à la renégociation de la grille des salaires. L'utilisation des véhicules par BK-Tag ressort à 130 000 km par an et par véhicule contre 90 000 km par an et par véhicule pour SJ.

Ces résultats ont encouragé le gouvernement suédois au point qu'il propose actuellement d'étendre le système de concessions aux services régionaux et longue distance qui, pour le moment, sont la chasse gardée de SJ. Il reste à savoir si les résultat obtenus avec les CTA pourraient être reproduits. En effet, dans ce cas, la plus grande partie du matériel roulant était fourni par les CTA, ce qui a permis de réduire les obstacles à l'entrée pour BK-Tag. Les services fournis par les CTA sont en outre restreints et intrinséquement moins complexes, ce qui a permis de réaliser des économies au niveau des coûts de formation et des indemnités pour travail de nuit. A ce jour, aucune proposition n'a encore été faite pour la mise à disposition de matériel roulant sur d'autres trajets et la question du rôle stratégique joué par SJ dans l'établissement des horaires n'est toujours pas résolue.

Etats-Unis

Depuis 1970, les chemins de fer aux Etats-Unis ont connu une série de réorganisations et de réformes. L'impulsion a été donnée par la crise financière que traversaient les chemins de fer dans le nord-est du pays. De fait, entre 1947 et 1970, les trains-miles de fret avaient chuté de 31 pour cent, revenant de 616 milliards à 427 milliards. Au cours de la même période, les voyageurs-miles sur le service Inter-city sont passés de 39,9 milliards à 4,6 milliards, soit un recul de 84 pour cent. Cette baisse du trafic a plusieurs explications :

(1) Une réglementation sévère de la part de l'Interstate Commerce Commission (ICC) qui imposait que tous les tarifs soient publiés et offerts à tous les chargeurs aux mêmes conditions. Les procédures de fermeture prévues par l'ICC étaient également compliquées et longues, ce qui avait pour effet de prolonger inutilement la vie des lignes non rentables.

(2) Le programme fédéral de construction d'autoroutes.

Pour remédier à la situation dans laquelle se trouvaient les compagnies de transport de voyageurs, le Congrès a adopté en 1970 une loi, le "Rail Passenger Service Act", créant la National Railroad Passenger Corporation, qui exerce ses activités sous le nom d'Amtrak. Le gouvernement a par ailleurs entrepris de déréglementer le transport de marchandises avec l'adoption de la loi Staggers (voir Grimm et Rodgers, 1991).

Amtrak est une compagnie de transport ferroviaire de voyageurs qui détient en propre des locomotives, du matériel roulant et une majorité des gares et installations de terminaux. Elle possède aujourd'hui 450 miles de voies sur le corridor nord-est (Washington-Philadelphie-New York-Boston), mais verse des redevances d'accès à une vingtaine de compagnies de fret pour pouvoir utiliser 24 000 miles de voies supplémentaires.

Depuis sa création, Amtrak fonctionne comme une entreprise commerciale, aidée par des subventions fédérales. Selon Ridley and Terry (1992), ses performances sont impressionnantes :

> "... en 1991, ses US$ 1,4 milliard de recettes lui permettaient de couvrir 79 pour cent de ses coûts (contre 65 pour cent seulement en 1987). La compagnie emploie 25 0000 personnes, a assuré 6.3 milliards de voyageurs-miles en 1991 et, en moyenne, 77 pour cent de ses arrivées ont eu lieu à l'heure prévue."

Ces résultats représentent une augmentation de 37 pour cent des voyageurs-miles depuis 1970. Toutefois, des doutes persistants relatifs aux questions de financement, conjugués au désir du gouvernement de mettre un terme à ses subventions, n'ont pas levé les incertitudes qui continuent à peser sur l'avenir de la compagnie.

Les redevances d'accès acquittées par Amtrak sont calculées à partir d'une formule de "coûts évitables" basée principalement sur le tonnage brut et la vitesse. Afin de faire baisser les coûts contractuels, cette formule a été convertie en un prix forfaitaire au mile, ajusté en fonction de l'inflation. Le système de facturation est clair et relativement simple, ce qui est loin d'être le cas dans beaucoup d'autres pays. Il faut y ajouter un système d'incitations et de pénalités afin d'encourager les compagnies de fret à fournir un accès de bonne qualité.

Les investissements sont à la charge de la partie à laquelle ils doivent profiter. Si les deux parties doivent en bénéficier, les coûts sont partagés. Les contrats d'accès entre Amtrak et les compagnies de fret prévoient encore d'autres conditions. Ainsi, les compagnies de fret doivent maintenir les voies et les infrastructures dans le même état que celui dans lequel elles se trouvaient lorsque Amtrack a commencé à les utiliser. Elles sont également tenues de fournir une assistance d'urgence sous la forme de matériel roulant et de maintenance au cas où les activités d'Amtrak connaîtraient de graves perturbations. Elles doivent en outre l'indemniser pour les retards dus à l'entretien des voies ou à leur mauvaise qualité.

L'intérêt réel de l'expérience Amtrak ne réside pas tant en ce qu'elle représenterait une introduction de concurrence ou une privatisation, mais plutôt en ce qu'il s'agit probablement de l'expérience la plus longue au monde d'une compagnie ferroviaire faisant un usage massif de voies appartenant à d'autres compagnies, et avec un succès relatif. On a affaire cependant à un opérateur marginal qui n'entre pas en concurrence directe pour le trafic avec le propriétaire de l'infrastructure.

En plus d'Amtrak, il existe 12 compagnies assurant le trafic banlieue pour les grandes conurbations. Elles sont généralement propriétaires de moins de 300 miles et leurs recettes ne leur permettent de couvrir que 40 à 60 pour cent de leurs coûts. Ces services fonctionnent dans le cadre de concessions et, de ce point de vue, ils donnent des indications utiles sur les problèmes inhérents aux concessions ferroviaires. Une série d'études de cas réalisées par NERA (1992) a examiné deux concessions américaines pour le trafic de banlieue, la "Massachusetts Bay Transit Authority" (MBTA) et la "Southern California Regional Railway Authority" (SCRAA). Ces deux expériences sont généralement considérées comme des réussites, même s'il y a eu des problèmes lors du passage de relais d'un concessionnaire à un autre, dans la mesure où le précédent concessionnaire n'était guère incité à maintenir les actifs en bonne qualité ou à fournir son aide au cours de la période de transition.

Grande-Bretagne

Comme on l'a vu plus haut, après s'être fortement redressée à la fin de la décennie 80, la performance de British Rail a commencé à se détériorer au début des années 90. Le gouvernement conservateur alors en place, considérant que sa politique de privatisation était un succès, a décidé de l'étendre au chemin de fer. Ce processus était quasiment achevé lorsque les conservateurs ont perdu le pouvoir au profit des travaillistes en mai 1997.

La privatisation en Grande-Bretagne se caractérise par un degré de séparation verticale qui n'a été observé nulle part ailleurs. L'objectif était de créer à chaque fois que cela était possible des marchés concurrentiels pour la fourniture d'intrants dans la production des prestataires de services ferroviaires, même lorsque les services eux-mêmes restaient un monopole. Chaque fois qu'il y a monopole, la réglementation reste assurée par une instance réglementaire indépendante. On trouvera ci-après à la section 5 d'autres commentaires sur le dispositif réglementaire en Grande-Bretagne.

L'infrastructure a été confiée à une nouvelle compagnie, Railtrack, privatisée en mai 1996 par vente d'actions. Le matériel roulant servant au transport des voyageurs a été réparti entre trois compagnies, aujourd'hui privatisées par vente directe, qui les louent aux opérateurs. Les services voyageurs ont été

confiés à 25 compagnies exploitant des trains et leur gestion confiée en concession pour une durée allant de 7 à 15 ans (les durées les plus longues concernant les cas où des investissements considérables étaient nécessaires). Dans la mesure où elles louent les gares et le matériel roulant et où elles acquittent des redevances d'accès aux voies appartenant à Railtrack, ces compagnies ne possèdent en général quasiment aucun actif ; cette mesure constitue à l'évidence une tentative délibérée pour supprimer un obstacle considérable à l'entrée. Le renouvellement et l'entretien des voies ainsi que la maintenance lourde du matériel roulant ont été confiés à un certain nombre de sociétés ensuite directement vendues et qui doivent désormais entrer en concurrence pour l'obtention des marchés relatifs à ces travaux. On trouvera dans Nash (1997) un bilan de cette expérience.

Deux nouveaux organismes publics ont été créés, l'Office of Passenger Rail Franchising (OPRAF), chargé d'attribuer les concessions pour les services voyageurs, et l'Office of the Rail Regulator (ORR) qui s'est vu confier plusieurs tâches, les plus importantes étant l'octroi des concessions aux opérateurs ferroviaires et la réglementation des tarifs et des conditions d'accès aux voies. L'OPRAF définit des niveaux de service minimaux et (pour certaines catégories de billets) des tarifs maximaux, puis il lance des appels d'offres en prenant en considération les subventions minimales requises pour chaque année de la concession.

Actuellement, l'accès libre aux services voyageurs est limité aux trajets sur lesquels il n'existe aucun service, ou qui représentent une fraction très minime des revenus du concessionnaire. Cette mesure était destinée à protéger les concessionnaires et donc à faciliter le processus de concession. Il existe tout de même une certaine concurrence, lorsque deux concessions (ou davantage) desservent deux mêmes points, et une concurrence au niveau des prix est apparue sur un certain nombre de corridors. L'organisme de réglementation procède actuellement à des consultations en vue de l'ouverture à la concurrence d'un plus grand nombre de lignes à partir de 1999 ; il se propose de revoir la situation et d'envisager de nouvelles mesures de libéralisation à partir de 2002. L'accès libre total existe dans le secteur du fret, moyennant des redevances d'accès négociées. Celles-ci sont soumises à l'approbation de l'organisme de réglementation, qui a le pouvoir de les réduire s'il les estime déraisonnables, en se référant aux coûts "indépendants" des services de fret. Après trois ans de libre accès, seuls deux nouveaux opérateurs de fret sont apparus ; tous deux opèrent sur de courtes distances et sur un trajet unique ; (l'un deux a été depuis vendu au principal opérateur de fret).

La réforme a eu pour effet immédiat une forte hausse des subventions, parce que les opérateurs de trains ont dû commencer à acquitter des tarifs commerciaux pour utiliser l'infrastructure et le matériel roulant (voir tableau 4). Toutefois, ces redevances ont à la fois permis au gouvernement de vendre ces entreprises pour plusieurs milliards de livres et constitué une source de revenus adéquate pour financer les investissements de remplacement, ce qui n'était absolument pas le cas des subventions précédentes. Le processus des concessions a été lui-même salué comme une grande réussite, avec des concessions accordées à un certain nombre de nouveaux entrants dans le secteur ferroviaire (venant en majorité, mais pas exclusivement, du secteur des autobus), qui se sont engagés à améliorer les services en divisant en deux les subventions sur une période de sept ans (voir tableaux 5 et 6). Pour l'essentiel, ces nouveaux arrivants prennent le contrôle de l'opérateur existant, y compris de son personnel, mais sont ensuite libres de négocier des modifications des salaires et des conditions de travail. En revanche, il y a eu certains problèmes, parce que certains concessionnaires ne sont pas parvenus à atteindre le niveau de performance requis, et parce que Railtrack n'a pas réussi à atteindre les niveaux d'investissement attendus. Dans le premier cas, la concession prévoyait le versement de pénalités ; dans le deuxième, l'organisme de réglementation a dû demander des pouvoirs supplémentaires pour contraindre Railtrack à concevoir des plans d'investissement appropriés et à s'y tenir.

IV. Les leçons à tirer de ces expériences

Nous avons examiné l'expérience des pays ayant procédé aux réformes ferroviaires les plus radicales de ces dernières années. Ce qui frappe, c'est que ces réformes sont très peu nombreuses à avoir eu finalement pour effet d'introduire une nette intensification de la concurrence dans le secteur du rail. Cette remarque vaut particulièrement pour deux des pays généralement considérés comme ayant enregistré les succès le plus grands, à savoir le Japon et la Nouvelle-Zélande. Au lieu de cela, les réformes ont essentiellement porté sur la création d'organisations dans lesquelles la direction des compagnies ferroviaires trouvait les motivations et l'indépendance d'action nécessaires pour réussir dans un climat de concurrence, avec les autres modes de transport. Dans la plupart des secteurs du trafic ferroviaire, cette concurrence est désormais intense, particulièrement de la part du transport routier, de l'automobile et du transport aérien. Ainsi, il faudrait peut-être que les autorités chargées de la concurrence se concentrent sur les conditions de la concurrence entre le chemin de fer et les autres modes de transport plutôt que de vouloir introduire la concurrence au sein même du secteur ferroviaire.

Mais ceci n'est pas non plus évident. En Grande-Bretagne, la majorité des concessions ferroviaires voyageurs ont été remportées par des compagnies d'autobus, et souvent par celles qui exploitent des services d'autobus concurrents. Ce résultat pourrait apparaître anticoncurrentiel et tout à fait contraire à l'intérêt du public. Pourtant, cette situation a eu des retombées positives, sous la forme d'une amélioration des correspondances, de l'apparition de nouveaux services affluents, de l'émission de billets uniques et d'une meilleure information. En fait, les autorités de la concurrence ont géré la situation en exigeant des engagements de comportement (par exemple l'engagement de réduire les services et de relever davantage les tarifs pour les services compétitifs) plutôt qu'en obligeant les compagnies à se défaire soit de leurs services ferroviaires, soit de leurs services d'autobus.

A ce jour, force est de constater que les tentatives visant à favoriser les activités en accès libre ont échoué. Cet échec est dû en grande partie à la réticence dont font preuve les chemins de fer verticalement intégrés à l'égard d'une concurrence avec leurs propres services. Il semble en effet qu'ils aient été lents à répondre aux demandes de sillons et d'offres de prix, et qu'ils aient fait délibérément obstruction dans certains cas. En Allemagne, le niveau des redevances a constitué un obstacle majeur à l'entrée. Cela étant, même en Grande-Bretagne où l'infrastructure a été confiée à une compagnie distincte, on constate que les négociations portant sur les sillons et les prix sont complexes et longues.

L'encombrement des réseaux, et tout particulièrement aux heures intéressantes du point de vue commercial, a joué également un rôle important. A ce jour, aucune tentative n'a été faite pour obliger les entreprises en place à libérer des sillons pour des entrants potentiels, ou à les offrir par voie d'adjudication. Cependant, l'initiative des "freeways de fret" de la Commission européenne semble avoir incité les chemins de fer à identifier les sillons commercialement intéressants qui pourraient être ouverts à de nouveaux opérateurs dans le trafic marchandises.

Il existe sans doute d'autres obstacles majeurs à l'entrée. De fait, l'activité ferroviaire est rarement perçue comme un secteur dans lequel il est facile de réaliser des bénéfices. Même si les actifs peuvent être loués, il faut beaucoup d'argent et de temps pour se conformer à la législation en matière de sécurité et trouver un personnel déjà formé possédant à la fois le savoir-faire, l'expérience et la connaissance des itinéraires nécessaires à cette activité. Les nouveaux entrants peuvent estimer qu'ils ont un handicap considérable par rapport aux entreprises en place. Lorsqu'il s'agit de trafic marchandises, il est peut-être plus facile à un entrant de se limiter à la commercialisation du service en faisant appel à un opérateur existant pour son exploitation effective. Dans le secteur voyageurs, la réforme britannique, qui a abouti à la création de nombreuses compagnies nouvelles par le biais des concessions, constitue peut-être le moyen le plus sûr d'attirer sur le marché des opérateurs concurrents qui sont eux-mêmes concessionnaires sur d'autres

trajets. Cela étant, la controverse reste ouverte quant à savoir si ces nouvelles entrées sont nécessairement souhaitables, car elles risquent d'aboutir à la duplication de services existants aux heures rentables de la journée , ce qui a pour effet de réduire le degré des subventions croisées internes parmi les concessionnaires et d'augmenter les subventions nécessaires pour assurer le niveau de service requis.

Il reste donc la méthode des concessions. Jusqu'à maintenant, chaque fois qu'un tel système a été introduit, il semble que les coûts aient sensiblement diminué et que la productivité ait fortement augmenté. Ceci est vrai qu'il s'agisse des concessions à court terme en Suède, des concessions de moyenne durée en Grande-Bretagne ou des concessions à long terme d'Amérique du sud. De même, l'impression générale est qu'avec les concessions les services se sont améliorés et le trafic a augmenté, même si, au Royaume-Uni, les nouveaux opérateurs n'ont pas atteint sur certains points les normes de performance prévues. Cela étant, le système des concessions a aussi ses inconvénients, particulièrement dans le domaine des investissements. Cet aspect sera examiné dans la section suivante, sous l'angle de la réglementation. Il apparaît toutefois que les concessions constituent le moyen qui s'est révélé le plus fructueux pour introduire une certaine concurrence dans la prestation de services ferroviaires. Elles présentent le grand avantage de pouvoir être utilisées que les services ferroviaires soient ou non rentables et que les pouvoirs publics souhaitent ou non intervenir quant au niveau des prix et des services. Elles sont donc compatibles avec les objectifs de maintien des niveaux de service même sur des lignes non rentables et avec les préoccupations écologiques au sens où elles permettent de détourner du trafic d'autres modes ou de réaliser d'autres objectifs non commerciaux.

Quelle que soit l'approche retenue pour introduire une concurrence dans la prestation de services ferroviaires, elle peut être associée à des appels d'offres en vue de la fourniture de facteurs tels que l'entretien des voies et la fourniture et l'entretien de matériel roulant. Il semble là aussi que ces mesures aient généralement pour effet d'augmenter l'efficience, même si des problèmes peuvent apparaître lorsqu'il s'agit d'intégrer les services d'un large éventail de fournisseurs.

V. La nécessité d'une réglementation résiduelle

Nous venons d'examiner des approches très diverses en matière de réforme des chemins de fer, mais toutes restent marquées par un certain de degré de contrôle des pouvoirs publics. Celui-ci est souvent plus marqué pour le trafic voyageurs que pour le trafic marchandises, ce dernier étant plus largement perçu comme un service purement commercial. Les principaux domaines dans lesquels le maintien d'un contrôle est jugé nécessaire sont abordés ci-dessous.

Tarification et accès à l'infrastructure

Quelle que soit la structure choisie pour le secteur des chemins de fer, l'infrastructure ferroviaire reste un monopole naturel. En général, tout intervenant souhaitant exploiter des services ferroviaires entre deux points donnés se trouve confronté à un seul fournisseur d'infrastructure. Il est donc généralement admis que les questions de tarification et d'accès à cette infrastructure doivent soit continuer à relever du secteur public, soit être réglementées. Le seul argument contraire que l'on pourrait peut-être avancer est que tous les produits ferroviaires sont vendus sur des marchés si concurrentiels que le fournisseur de l'infrastructure ne possède en réalité aucun pouvoir de monopole. Nous contesterons plus loin cet point de vue. Quoi qu'il en soit, la ferme volonté politique de maintenir les services ferroviaires, si nécessaire en les subventionnant, crée *ipso facto* un pouvoir de monopole. L'une des principales raisons d'une réglementation des redevances d'accès est donc sans doute le souci de protéger les finances publiques.

Ainsi, il est généralement admis que les prix d'accès doivent être réglementés et que les droits d'accès doivent être protégés au moyen de possibilités de recours soit auprès du système judiciaire, soit (comme en Grande-Bretagne) auprès d'une instance réglementaire indépendante, qui a le pouvoir de faire respecter l'accès dans les conditions qu'elle aura définies. Toutefois, on sait bien que, dans ces circonstances, la simple réglementation des prix ne suffit pas, parce que le fournisseur monopolistique peut être incité à baisser la qualité de sa prestation. Ainsi, en Grande-Bretagne, tous les accords conclus en matière d'accès définissent soigneusement des normes de qualité (exprimées le plus souvent en termes de minutes de retard admissibles par période) et le fournisseur d'infrastructure est tenu de verser des dédommagements en cas de non-respect de ces normes. Mais même cela n'est pas considéré comme suffisant par l'instance réglementaire qui s'est inquiétée de savoir si Railtrack était suffisamment incitée à entreprendre les investissements à long terme adéquats, et qui en conséquence se dote actuellement des pouvoirs supplémentaires pour approuver et faire appliquer les plans d'investissement à long terme de Railtrack.

Etablir que les prix doivent être réglementés ne résout pas le problème de la base sur laquelle ils doivent être fixés. Il existe en gros quatre approches possibles :

1) Le coût marginal à court terme, comme en Suède. A l'évidence, cette méthode nécessite souvent des subventions importantes, mais elle encourage la prestation d'un service ferroviaire de haut niveau, et elle a le mérite d'être simple et transparente. C'est la forme de tarification la plus susceptible de promouvoir l'efficience économique.

2) Une base totalement commerciale, comme c'est quasiment le cas en Allemagne. Ceci permet de récupérer le coût total, mais aboutit à des redevances très élevées qui découragent à la fois l'entrée et le développement des services.

3) Une redevance "binôme" comportant un élément fixe et un élément variable, comme pour les concessions du trafic voyageurs en Grande-Bretagne. Cette solution semble avantageuse sur les deux plans, puisqu'elle combine la couverture des coûts avec une redevance marginale faible permettant d'encourager un niveau de service élevé. La difficulté majeure consiste à déterminer la composante fixe de la redevance d'une manière qui soit juste pour les entreprises en place mais ne décourage pas indûment de nouveaux entrants. En théorie, la solution est d'adopter la règle de tarification efficiente par composante (Kessides et Willig, 1995), l'entrant payant les coûts évitables, majorés du profit éventuellement perdu par l'entreprise en place. Mais, il faut pour cela de très nombreuses informations, et le titulaire de ces informations -- le titulaire en place -- a tout intérêt à fausser la réalité.

4) La méthode Ramsey : Si le coût marginal est inférieur au coût moyen, mais que le coût moyen doit être couvert par la moyenne des recettes on peut recommander la méthode Ramsey (qui consiste à relever le prix au-dessus du coût marginal en proportion inverse de l'élasticité de la demande pour le service en question). (Kessides et Willig, 1995). Cette fois encore, les besoins en informations sont déterminants, surtout parce qu'on manque d'éléments quant à l'élasticité de la demande de sillons. Il est donc difficile, pour une instance réglementaire indépendante, de juger de l'équité du résultat. En tout cas, on fait généralement valoir que, pour faire face à la contrainte budgétaire, il vaut mieux taxer le bien final et non le produit intermédiaire car les distorsions sont alors moindres ; la solution préférable sera donc sans doute un tarif binôme pour l'infrastructure, l'opérateur appliquant une tarification selon la méthode de Ramsey pour récupérer l'élément fixe sur le marché final.

5) Redevances individuellement négociées, comme c'est le cas en Grande-Bretagne pour les services de fret et les services voyageurs en accès libre. Ceci s'applique également aux modifications des redevances pour les concessionnaires dont les besoins évoluent en termes de quantité ou de qualité de l'infrastructure. En principe, les tarifs individuellement négociés devraient également résoudre le problème du conflit entre la couverture des coûts et la tarification au coût marginal. L'entreprise possédant l'infrastructure sera incitée à permettre l'exploitation de tout service couvrant au moins ses coûts évitables, à condition de ne pas prendre la place de services plus rentables. L'inconvénient, c'est que le processus de fixation de la redevance d'un commun accord risque d'être complexe et de décourager l'entrée, particulièrement dans le secteur du fret où une réponse rapide aux besoins des clients s'impose. En outre, dans ces circonstances, il est très difficile à l'instance réglementaire de vérifier que l'opérateur de l'infrastructure n'exploite pas sa position monopolistique. Dans le cas de la Grande-Bretagne, l'instance réglementaire doit s'assurer que la redevance est supérieure au coût évitable mais inférieur au coût individuel.

Tarification et niveau des services

Lorsque les services ferroviaires sont fournis par divers opérateurs selon un mode concurrentiel, ou lorsqu'il existe une gamme d'opérateurs potentiels et que le marché est contestable, on pourrait soutenir qu'il n'y a aucune raison de réglementer, ce que nous contesterons plus loin. Toutefois, une telle situation est quasiment inexistante. Apparemment, l'entrée dans le secteur du rail, même avec des actifs loués, s'accompagne d'un nombre considérables d'obstacles et de coûts irrécupérables (formation et savoir-faire du personnel, respect des normes de sécurité, etc.), si bien que même en cas d'accès libre, le nombre des entrants a toujours été faible.

On peut faire valoir également que le transport ferroviaire est soumis à une telle concurrence de la part des autres modes de transport qu'une réglementation n'est pas nécessaire. Si l'on excepte certains produits (transports de banlieue, transport de certaines marchandises en vrac), cet argument est plus convaincant. Mais, la fourniture de services ferroviaires s'accompagnant d'économies d'échelle, d'avantages sociaux et d'externalités, on peut penser que même dans ces cas une prise de décision fondée sur des critères purement commerciaux n'aboutira pas à un prix optimal et à un niveau de service optimal.

La solution adoptée pour les services voyageurs en Grande-Bretagne consiste en un processus concurrentiel d'attribution de concessions dans lequel tous les soumissionnaires retenus doivent respecter certains niveaux de service minimum et des tarifs maximum. Lorsque la concurrence est forte, on suppose qu'elle suffit à assurer la mise en oeuvre de normes de qualité appropriées, mais lorsqu'elle est faible, ou lorsque les recettes sont faibles par rapport aux coûts, d'autres aspects tels que la fiabilité, la ponctualité et le taux de suroccupation sont également réglementés dans le cadre de l'accord de concession. Pour les services marchandises, des subventions peuvent être versées pour couvrir tout ou partie des redevances d'accès et des investissements dans les terminaux et le matériel roulant lorsqu'on estime que les avantages externes sont suffisants pour les justifier. En dehors de ces éléments, dès lors que les autres modes de transport sont correctement tarifés, une réglementation n'est sans doute guère nécessaire pour la majorité des services.

Intégration

Traditionnellement, les services ferroviaires de transport de voyageurs ont toujours fonctionné comme des réseaux avec émission de billets uniques, une grande quantité d'informations et des correspondances programmées. On peut fortement douter que les forces du marché seront assez puissantes pour préserver de tels dispositifs, même lorsqu'ils sont socialement souhaitables. Par exemple, Else & James (1995)

montrent que dans le cas d'un monopole complémentaire (par exemple un voyage de bout en bout supposant le recours à deux opérateurs monopolistiques (ou davantage)), les tarifs de bout en bout seront supérieurs au niveau socialement optimal, et il semble probable qu'un raisonnement similaire s'appliquerait aux correspondances et aux informations. Là encore, l'approche britannique comporte un large volet de réglementation de ces questions. Pour obtenir une concession, tous les opérateurs de trafic voyageurs doivent participer à des systèmes d'émission de tickets uniques de bout en bout et d'information. Les accords de concession prévoient également des correspondances garanties lorsque cela est considéré comme suffisamment important pour compenser les coûts occasionnés. Ces problèmes auraient pu être allégés si le système avait pris la forme de concessions plus importantes en moins grand nombre. Toutefois, on a craint de réduire ainsi le degré de concurrence pour les concessions ; dans le système tel qu'il a été conçu, les concessionnaires ont pu répartir leurs risques en soumissionnant pour un portefeuille de concessions diversifiées en termes de taille, de durée et de type de trafic.

VI. Conclusions

Nous avons vu qu'il existe un large éventail d'approches pour l'introduction de la concurrence dans les services ferroviaires. L'expérience à ce jour montre que les tentatives visant à introduire un concurrence sur les voies ou à rendre les marchés ferroviaires contestables sont condamnées à un succès limité.

Les exemples de réussite sont bien plus nombreux pour les régimes de concession, avec lesquels la concurrence s'exerce pour le marché plutôt que sur le marché. Mais cette approche continuera probablement à nécessiter une forte réglementation du secteur par les pouvoirs publics. De fait, les tarifs et conditions d'accès aux infrastructures, les prix, le niveaux et la qualité des services voyageurs et les relations entre les opérateurs de trafic voyageurs pour l'émission des billets, l'information et les correspondances nécessiteront encore une réglementation. Tous ces éléments sont pris en compte dans l'approche actuellement retenue en Grande-Bretagne, qu'il faut continuer à observer de près en ce qu'elle constitue la tentative la plus radicale pour trouver une solution de rechange aux traditionnels chemins de fer à intégration verticale pour la prestation de services ferroviaires.

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Tableau 1: Répartition modale dans l'Union européenne (en pourcentage)

	(voyageurs-kilomètres)			
	Automobile	**Bus**	**Chemin de fer**	**Avion**
1970	75.1	12.5	10.3	2.1
1980	76.9	11.4	8.5	3.2
1990	79.0	9.0	6.9	5.1
1994	79.7	8.3	6.2	5.8

Source: Com (96) 421 FINAL

Tableau 2: Répartition modale dans l'Union européenne (en pourcentage)

	(tonnes de fret-kilomètres)			
	Route	**Rail**	**Voies navigables**	**Conduites**
1970	48.6	31.7	12.3	7.4
1980	57.4	24.9	9.8	7.9
1990	67.5	18.9	8.3	5.3
1994	71.7	14.9	7.7	5.6

Source: Com (96) 421 FINAL

Tableau 3: Performances de BR sur la période 1979 - 1992/3 (tarifs de 1991/92)

	1979	**1983**	**1989/90**	**1991/92**	**1992/93**
Total des subventions (en £ millions)	1237	1430	705	1035	1243
Trajet ouvert au service passagers (en miles)	8955	8932	8897	8880	8896
Voyageurs-miles (millions)	19000	18350	20908	19920	19709
Tarif par voyageur-mile (en pence)	9.14	9.69	10.81	10.51	10.43
Gares de voyageurs	2365	2363	2483	2473	2482
Trains de voyageurs-miles (en millions)	196	203	225	231	228
Trains-miles par employé	1421	1686	2043	1996	1975

Note: Le total des subventions comprend tous les versements effectués par l'administration centrale et les collectivités locales à BR, notamment la provision pour renouvellement du capital, la police des transports, les passages à niveaux et les subventions exceptionnelles. Le nombre des gares de voyageurs tient compte des transferts à Tyne and Wear Metro (25) et Manchester Metrolink (16).

Source: British Railways Board, Rapport annuel

Tableau 4: Subventions accordées au British Railways Board (en millions de £)

	1993/4	1994/5
Obligations de service public	930	1645
Autorités responsables des transports publics urbains	105	259
Passages à niveaux	32	35
Retraites	54	45
Total	1121	1984

Source: Statistiques sur les transports en Grande -Bretagne, 1996. Tableau 1.17.

Tableau 5: Concessions ferroviaires en Grande-Bretagne

Concession	Concessionnaire	Durée de la concession (en années)	Subventions (en millions de £, tarifs de février 1997)	
			1996/7	2002/3
Great Western	REC/Firstbus	10	61.9	36.9
South West Trains	Stagecoach	7	63.3	35.7
Great North Eastern	Sea Containers	7	67.3	.1
Midland Main Line	National Express Group	10	17.6	-4.4
Gatwick Express	National Express Group	15	-4.1	-12.0
LTS Rail	Prism	15	31.1	19.3
Connex South Central	Connex	7	92.8	35.9
Chiltern Railways	REC/Laing	7	17.4	3.3
Connex South Eastern	Connex	15	136.1	32.6
South Wales & West	Prism	7½	84.6	44.0
Cardiff Railways	Prism	7½	22.5	14.3
Thames Trains	REC/Go Ahead	7½	43.7	3.8
Island Line	Stagecoach	5	2.3	1.0*
North Western	Great Western Holdings	10	192.9	129.7
Regional Railways North East	MTL Trust	7	231.1	150.6
North London Railways	National Express Group	7½	55.0	20.0
Thameslink	Goahead/Via	7 ans 1 mois	18.5	-27.0
West Coast Trains	Virgin	15	94.4	-3.9
Scotrail	National Express Group	7	297.1	209.3
Central Trains	National Express Group	7	204.4	136.6
Cross Country	Virgin	15	130.0	50.5
Anglia	GB Railways	7 ans 3 mois	41.0	6.3
Great Eastern	First Bus	7 ans 3 mois	29.0	-9.5
West Anglia Great Northern	Prism	7 ans 3 mois	72.6	-14.6
Merseyrail Electrics	MTL Trust	7	87.6	61.8

Source: Rapport annuel OPRAF 1996-97

Note: Les montants précédés du signe (-) indiquent le paiement d'une prime.
REC = Rachat de l'entreprise par ses cadres.
* hypothèse d'une subvention constante après la cinquième année

Tableau 6: Estimation (en millions de £) des subventions accordées aux concessionnaires de voies de chemin de fer en Grande-Bretagne

	1996/7	2002/3	Réduction des subventions sur 7 ans
Total (25 concessionnaires)	2090.1	920.3	1169.8

Source: Tableau 5

AUSTRALIA

Introduction

Impetus for Reform

As public monopolies, most rail transport organisations have been slow to adapt to new economic environments in which flexibility and the need to innovate and respond to changes are important requirements. However, extensive reform programs have now commenced. The examples of countries such as the United States, United Kingdom, Sweden and New Zealand, show that there is no one formula for improving the efficiency of railways and reducing their dependence on government support.

Australia's reform process has drawn from this range of experience. The combination of long distances and sparse population reduces potential competition in the provision of rail services and highlights the need for an innovative approach by State and Federal governments to achieve competition. Therefore, while there will continue to be a movement away from the type of regulation that guaranteed the position of monopoly suppliers, there is an increased role for Government in setting up the ground rules and conditions in which competition in the different parts of the rail system can be fostered.

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. Presently, there are seven bodies providing different mixes of rail transport services. Australia also has a large and efficient private rail system connected to mining interests.

In 1993-94, rail accounted for 31 per cent of Australia's total freight traffic on a net tonne km basis. Bulk freight accounts for approximately 84 per cent of total freight tonnage. Passenger traffic is of relatively limited significance on most lines outside of urban areas.

The Australian rail industry is characterised by poor financial and operating performance, despite significant increases in both freight and passenger rail traffic in the last twenty years. The Bureau of Industry Economics estimated in 1995 that Australia's rail freight rates were on average three times higher than overseas[1], yet governments at all levels have historically operated railways at a loss. Measured in real terms, the combined annual deficit for all government railway operations from 1982-83 to 1993-94 peaked at $2.7 billion in 1983-84 but fell to $1.4 billion in 1992-93 and 1993-94[2]. Average return on assets employed in the rail sector was negative in the five-year period to 1995-6, with an average return on assets employed of -3.6 per cent in 1995-96[3].

It is generally believed that the reasons for Australia's rail services being costly and inefficient include the following:

- a fragmented rail network with non-uniform safety and technical standards and comprising three different gauges;
- inefficiencies stemming from legislative restrictions on modal competition in the provision of rail freight services for bulk commodities;
- increased competition from other transport modes (roads in particular) for non-bulk freight services and considerably lower charges applying to users of roads than rail; and

- the provision of subsidised passenger services, especially in non-urban areas.

However, consistent with trends in other major public utilities, the provision of rail services in Australia is now subject to significant structural reforms at functional, operating and administrative levels. With the increasing exposure of the Australian economy to the international economy, an efficient transport sector is essential to Australian businesses competing in overseas markets.

A substantial impetus to reform was provided by the report of the Independent Committee of Inquiry on National Competition Policy (Hilmer Report, 1993) and the subsequent agreement by governments at all levels to improve the performance of public sector monopolies. Specifically, the Hilmer Committee concluded that existing laws were not adequate to deal with situations where a potential competitor in one market was unable to compete effectively because an incumbent firm had control of, and would not give access to, a facility that was essential for competition in that market.

Reform Progress to Date

Reforms have been undertaken in diverse ways in the various jurisdictions, reflecting the prominent role of the States in the development of Australia's railways. The following is an outline of this reform process.

Queensland

Queensland Rail (QR) is the largest Government rail operator and infrastructure owner in terms of its route network with 9 000 kms 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 corporatised.

Measures have been put in place to prevent QR from discriminating against new entrants in favour of its own in-house operations in gaining access to infrastructure. This includes accounting separation, to ensure separate reporting of above rail and below rail operating costs, and to promote transparency of costing and pricing decisions. A separate network access unit has been established. Queensland is also establishing an access regime to cover rail access.

New South Wales

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 corporatised entities are:

- Freight Rail Corporation;
- State Rail - commuter transport;
- Rail Access Corporation (RAC) - access and responsibility for infrastructure maintenance; and
- Railway Services Authority - the railway engineering and maintenance group.

With the exception of the track management function, which has natural monopoly characteristics, the other three segments are considered contestable. With greater transparency in costs and pricing, it was anticipated that separation would lead to more efficient consumption and investment decisions. In addition, it was hoped that separation would result in quantification of the full costs of providing urban and rural passenger services.

While some private operators have recently become involved in intrastate rail activity, they have criticised the difficulty of determining access under the access regime administered by RAC. As a result, some private operators have tried to use the national access provisions specified under Part IIIA of the Trade Practices Act (TPA). These issues are still being resolved. More recently, the New South Wales Government has applied to the National Competition Council (NCC) to have its regime certified as an effective regime. The national regime overrides other access regimes, including those established by State and Territory governments, unless such regimes are considered "effective" (a description of Australia's access regime is provided below).

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 numbers, 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. However, the level of subsidies to rail is still substantial.

Another key reform was the removal of regulations restricting the movement of certain bulk commodities to rail, which had the effect of sheltering rail from inter-modal competition.

The reform process continues with corporatisation plans to split the freight business unit, V/Line Freight, into two corporations: V/Line Freight Corporation, with responsibility for freight haulage functions, and Victorian Rail Track Corporation, whose function will be to own and manage the non-electrified rural rail infrastructure, including train control and maintenance. An access regime is being developed.

All transport services are to be privatised by the end of 1998. V/Line Freight Corporation could be privatised by the end of this year. The only exception is Victorian Rail Track Corporation which is expected to remain in public ownership.

Western Australia

In Western Australia, the railway network is operated by a non-corporatised statutory authority, Westrail, utilising a fully integrated structure. The freight business is the responsibility of two business units: Agriculture, Forestry and General, and Ores and Minerals. The urban network is operated by Westrail, while rural passenger services involve both trains and road coaches.

Westrail competes for freight and passenger rail business in a fully deregulated transport market. The process of deregulation commenced in the 1970s when legislative restrictions protecting Westrail from modal competition in relation to a large number of commodities were gradually removed. It has achieved rates of return above the industry average.

While Westrail is not corporatised, it operates on commercial terms and is financially independent from the State Government. It does not receive subsidies nor other competitive advantages which might flow from public ownership. Westrail is fully compensated by the West Australian Government for services provided below cost, operates on a tax equivalent basis and is expected to make dividend payments to the government. In 1995-96, Westrail recorded its first operating profit.

South Australia

The provision of freight and rural passenger services has been the responsibility of Australian National Railways Commission (AN) owned by the Federal Government (see comments below). Urban train services in Adelaide are provided by TransAdelaide.

Tasmania

The railway system in Tasmania largely consists of freight services. They have been provided by AN but have recently been sold.

Northern Territory

Railway services in the Northern Territory are provided by the Ghan service by AN from Adelaide to Alice Springs, and rail freight services provided by National Rail Corporation (NR) which is owned by the Commonwealth Government in conjunction with the NSW and Victorian governments (see comments below).

The Federal Government has recently given financial support for a long-standing rail initiative for a privately operated service between Alice Springs and Darwin. The aim of this project is to make Darwin a major gateway to the markets of South-East Asia. The commencement date of this project is not yet known.

Federal Government

Involvement in rail at the federal level may not continue beyond the next few years. In 1973, at the height of its centralisation push, the Federal Government offered to take over all State rail systems to form a single railway. Only two of the less prosperous States, South Australia and Tasmania, accepted and AN came to be formed.

Early performance improvements occurred and as part of the reform initiatives, the interstate freight component of AN's activities was separated with the idea of operating the identity in a commercial manner, in particular, reforming pricing policy. National Rail Corporation was established in an attempt to stem the persistent operating deficits from interstate rail freight. It began operations in 1993.

With the removal of their core operations, AN lost 65 per cent of its business. What remained of AN were rural freight rail services in South Australia and Tasmania and the interstate railway infrastructure linking Kalgoorlie (WA), Serviceton (Vic), Alice Springs (NT) and Broken Hill (NSW). AN also operates three long distance passenger services: the Indian Pacific (Sydney-Perth), the Ghan (Adelaide-Alice Springs) and the Overlander (Melbourne-Sydney). A Track Access unit has responsibility for management of the mainline interstate rail network owned by the Federal Government.

Despite measures taken to improve efficiency and its commercial orientation, operations continued to operate at a heavy loss. The Federal Government decided in 1996 to sell the business of AN (except for

the inter-state track). In August of 1997 the winning bidders were announced. AN was divided into three entities: the passenger trains were sold as a group to a British dominated rail consortium, while the South Australian and Tasmanian freight services were sold to American-led consortiums.

The Federal Government also plans to sell its equity in NR. However, access and infrastructure maintenance and repair issues need to be resolved (ideally before the sale). The current arrangements for interstate rail operations are inefficient and are not conducive to the promotion of competition in interstate services.

A number of private operators use the interstate track. However, individual access seekers must negotiate with multiple regimes (all with different approaches) to provide a single interstate service. In addition to issues related to access to particular services and the price for the service, there are also significant operational barriers to private interstate rail services, including differences in safety and technical procedures.

The Federal Government is currently attempting to accelerate reform to develop a single organisation that will provide access and manage the infrastructure. In September of this year the Government announced it had reached agreement with the mainland States on interstate rail reform. As a first step, the Commonwealth and Victoria will place their interstate track (from Wodonga and Broken Hill to Kalgoorlie) under single management by 1 July 1998. A plan will be considered in November 1997 for the extension of this network to Perth. Under the agreement, operators will be able to access the interstate network through a single point of entry providing seamless access and operations across the network.

The Commonwealth will make $250m available over four years from 1998-99 for investment in the interstate track. This funding is conditional on satisfactory access arrangements and plans for investment and harmonisation of regulatory and operational requirements being in place.

If the opportunity for change is missed, it is feared that private operators will leave the industry. While there are currently a number of private operators, none have invested heavily in rail, and could therefore leave quickly if conditions do not improve and costs are not lowered.

Impediments to Further Reform

The process of reform has been difficult to date and is likely to continue to be so. The following major impediments will continue to affect the pace of reform as well as the likely success of different reform initiatives.

Complexity of the Federal / State system and jurisdictional disputes

Most of Australia's railways have been run by State governments, who have resisted attempts to transfer control of railways to the Federal Government, except for Tasmania and South Australia which did so in the 1970s. There is always fiscal tension between the Federal and State governments, and rail reforms have been caught up with these conflicts. Historically, governments at all levels have regarded railways as important instruments of policy in the development of their local economies. Microeconomic reforms have been applied in a jurisdictional context when an integrated and coherent approach would have been more beneficial. Private sector interest in the supply of long distance rail services is currently inhibited by the existence of multiple operating systems, different track gauges, non-uniform technical, safety and operating standards, and diversity of access terms and conditions across the different rail networks.

The traditional "social" role of railways and the rail culture that it has supported

Governments have viewed rail transport as public services to be provided at subsidised cost. The social objectives underpinning the provision of some rail services, especially rural 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 might be responsible for a certain reluctance to either adopt some reforms or relinquish control of the reform process to non-jurisdictional interests.

The corollary of this lack of commercial focus, is that management of Australia's railways failed to develop an entrepreneurial culture in respect of 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 some players in the Australian rail industry to deal with the issues and uncertainties inherent in the reform process.

Summary

The Australian rail industry is changing with the various rail systems experiencing different economic fortunes. Cost recovery ratios vary significantly across rail systems. The West Australian and Queensland railways have achieved cost recovery. In contrast, New South Wales and Victoria, the States which operate the largest urban transport systems, recovered only 63 per cent and 56 per cent respectively of their operating costs. The Federal rail organisations have also made substantial losses.

More recently, there have been considerable attempts to reform state rail authorities operating on a non-commercial 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 organisations on a commercial footing and remove those regulations which guaranteed freight for rail.

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. In others, vertically integrated operations have been retained but with streamlined administrations designed to cope with a more competitive environment.

Australia's reform initiatives are still at an early stage. Australia's experience to-date with new entrants includes rural passenger services, freight rail services and contracting out of some support and maintenance functions. Evidence indicates that some private passenger services are profitable. More general conclusions about the economic effects of the reform process are difficult to draw. The structure and ownership of the rail industry in Australia should be radically different in the next few years, but it is too early to comment on how these changes will impact on performance and the competitiveness of the industry.

Structuring Railways For Greater Competition

Regulatory and Structural Reform

While the natural monopoly characteristics of rail infrastructure would suggest that separation of above and below rail services might encourage entry into the competitive segments of the industry, efficient pricing outcomes, and sound operational and financial management can be independent of organisation structures.

The main advantage of vertical separation lies in the fact that it results in the identification of the contestable segment of the market and is, therefore, more likely to support competition than the integrated model. Specifically, separation complements the more general objective of achieving clearly specified spheres of responsibility and accountability. These in turn facilitate the separation of cost and profit centres which are important requisites for efficient pricing and investment decisions in a competitive environment. Further, separation creates some degree of transparency about the access arrangements and especially the competitiveness of access to the infrastructure by the incumbent firm.

However, competitive access to infrastructure can be attained under both vertically and integrated structures. In Australia there are examples of separation of infrastructure ownership from rail services (NSW) as well as vertically integrated rail operations (QLD and WA). In the case of Victoria, separation is being used as a prelude to privatisation of above rail activities.

Australia's Access Regime

The decision to introduce the Part IIIA "access to services" regime into the TPA rested on the premise that the existing provisions of the Act were not adequate to deal with third party access issues. The relevant clause in the Act that covers cases of monopoly pricing is s.46 which prohibits the misuse of market power and provides that a firm with substantial market power cannot take advantage of that power to:

- eliminate or damage a competitor or a firm in that or any other market;
- prevent entry into any market; or
- inhibit competition in any market.

According to the 1993 report by the Hilmer Committee, s.46 was inadequate to guarantee right of access due to:

- uncertainty about whether the notion of essential services was embodied in s.46;
- the difficulty in establishing that refusal to provide access is for a proscribed purpose under s.46;
- the reluctance of the courts to determine reasonable access terms and conditions; and
- the costly and time consuming nature of litigation inherent in action taken under s.46.

Part IIIA was introduced in 1995 as part of the competition policy reforms adopted by the Council of Australian Governments. The purpose of Part IIIA is to provide a statutory basis for access on reasonable terms and conditions to services provided by a limited class of facility. Facilities covered by Part IIIA will exhibit the following features:

- natural monopoly characteristics;
- strategic position in an industry; and
- national significance in facilitating interstate or international trade [4].

The service defined in Part IIIA is a service provided by means of a facility, not the facility itself. Included in the definition are the following:

- the use of an infrastructure facility such as a road or railway line;
- handling or transporting things such as goods or people; and
- a communications, or similar, service.

Other examples include gas transmission and distribution pipelines, electricity transmission and distribution cables, airport systems, water pipelines and certain sea ports.

The access regime contained in Part IIIA is "light-handed" in as much as it defines a role for regulatory agencies only after a process of private negotiations between the parties fails to resolve an access dispute. Part IIIA contains three main avenues for dealing with access issues:

- *Declaration, arbitration and enforcement.* Applications for a service to be declared, that is to be made available for access, can be lodged with the National Competition Council (NCC) by any person. Once declared, if the facility owner and access seeker can not reach agreement on terms and conditions for access, either directly or through a private arbitrator, then the matter may be referred for arbitration to the Australian Competition and Consumer Commission (ACCC) or another arbitrator. Arbitration determinations by the ACCC are enforceable through the courts.

- *Undertakings*. These represent an alternative to the declaration process. The owner of a facility can offer an undertaking to the ACCC stipulating the terms and conditions upon which it is willing to provide access to third parties. Once an undertaking is accepted by the ACCC, the service in question can not be declared and the undertakings are enforceable through the courts. The purpose of the undertakings provisions of Part IIIA is to give the facility owner the opportunity to remove the uncertainty inherent in a declaration/arbitration process as to what access conditions may apply.

- *Effective regimes.* Part IIIA allows for States and Territories to have their own access regimes recognised as "effective" and thus exempted from the further provisions of Part IIIA. To clarify whether the National regime or a State regime governs access to a particular service, the TPA permits State and Territory governments to ask the NCC to recommend to the Federal Treasurer that their regimes are effective. If the Treasurer decides that a particular access regime is effective, the terms of access will be governed by that regime rather than a national access regime.

The NCC has received a number of applications for the declaration of rail services. Of the five cases before the NCC, one has resulted in a decision not to declare the relevant service. Another decision to recommend declaration was not taken up by the NSW Government. The other recommendations are yet to be made. In part, these cases reflect the frustration of private operators with the State access regimes. The NCC also has an application before it to certify the NSW access regime as effective.

Summary

On the basis of Australia's experience with reforms, it has become apparent that, as a first step to improving the competitiveness of outcomes, it is important to raise the commercial focus of public rail operators to increase their sensitivity to competitive forces in the industry. Regulatory and structural reform, with the simultaneous development of a national access regime for infrastructure, are the major reform initiatives to encourage competition in the Australian rail industry.

The main advantage of vertical separation lies in the fact that it results in the identification of the contestable segment of the market and is, therefore, more likely to support competition than the integrated model. However, in Australia there are examples of separation of infrastructure ownership from rail services as well as of vertically integrated rail operations. These reforms are recent and over time it will be possible to compare in practice the advantages and disadvantages of the different approaches.

Access provisions have encouraged entry by private operators into the industry and recent privatisation initiatives by the Federal Government will accelerate this trend. However, the access regime is still being understood by the rail and other industries. So far, it is the rail industry in Australia which has made the most concerted attempt to use the formal access provisions under Part IIIA of the TPA.

Market Definition And The Need For Regulation

Regulation for Competition

Regulation is sometimes necessary to approximate efficient economic outcomes where competition is not sufficiently strong to do so. There are cases, however, where regulation is actually helpful in stimulating competition. In the case of the Australian rail industry, there are factors which deter the development of effective intra-modal competition but which can be ameliorated through the application of regulatory measures.

There are a number of factors that can potentially inhibit competition in freight and passenger rail services: sunk costs; low traffic densities in the presence of increasing returns to density; unexploited economies of scope in the joint provision of passenger and freight rail services; and strategic advantages by the incumbent firm over potential entrants. In Australia's case, it is likely that the geographical size of the country and the low density of its population raise barriers to entry by contributing to the existence of unutilised economies of density which effectively result in declining costs as the volume of traffic rises. This provides incumbent rail service providers with the opportunity to charge monopoly prices to both users of its services and seekers of access to the infrastructure.

Also, reforms designed to increase competition could have limited benefits if the number of potential competitors is too small to produce economically desirable outcomes.

Nor does the introduction of private sector involvement guarantee competition in the provision of rail services. Reforms would be of limited value if they only resulted in replacement of public with private sector monopolies.

Regulation can sometimes be used where competition is not sufficiently strong. Some level of contestability in rail services might be achieved by ensuring that the provision of services by private operators is subject to regular reviews, that tenders are for limited term contracts, and that licensing arrangements are linked with productivity improvements. A range of these types of measures are being

considered by the Victorian government as it intends to privatise all its transport services over the next few years.

Private sector participation through contracting out and franchise arrangements are found in both vertically integrated and separated industries.

Inter-modal Competition in Australia

Inter-modal competition in Australia is considered to be highly problematic because of what is seen as the lack of competitive neutrality between road and rail. Historically, regulations restricted the movement of certain commodities to rail only. Indeed, some of these measures are still in place, although they are being gradually removed with the process of regulatory reform.

Proponents of the view that inter-modal competition is not effective in Australia argue that this is because of the lack of competitive neutrality between road and rail. Specifically, they argue that there is a substantial imbalance in favour of roads in terms of relative infrastructure investment and maintenance and user charges.

The productivity of long distance freight vehicles relative to freight trains has been improved over time because of the effects of greater government spending on roads compared with railways. Through the Federal Government's road upgrading programme, $12 560 million were spent on the National Highway System in the twenty years to 1994 (in 1994 dollars). On the other hand, net capital expenditure on rail over the same period was $820 million of which $580 million was for AN[5].

The road and rail industries have argued extensively about the lack of competitive neutrality between the two sectors (in relation to pricing, infrastructure investment and taxation). However, research is being undertaken on these issues and they are yet to be resolved. The Bureau of Transport and Communication Economics is about to publish a report on the full range of taxes and charges paid by operators in all transport modes.

Undoubtedly, inter-modal competition between road and rail has also been hindered by the lack of uniformity of rail systems across the jurisdictions and by the absence of a single national access entity.

Summary

Regulation has in the past limited inter-modal competition in Australia. The regulatory reform process is now well established. Other issues of competitive neutrality remain and there is a concern that the different tax treatment of rail compared to road is limiting rail's capacity to compete.

It will not always be possible to achieve head-to-head competition between different operators. This is a particular problem for Australia with large distances and a low population density. In these circumstances, different methods have to be used to achieve efficient outcomes and this often requires that government prescribe the conditions in which some level of contestability might be achieved. A range of these types of measures are being considered.

Cost And Demand Based Regulation

Role of Price Discrimination in Access Regimes

In Australia, most rail systems practice price discrimination when they set their prices for final services to customers. As a result some traffics are more profitable than others. Observed discriminatory pricing structures could be consistent with Ramsey pricing to achieve objectives such as net revenue targets and to fund community service obligations. With the move to fostering competition in those parts of the system where it is feasible, such as train operation, and to vertical separation, the question arises as to whether price discrimination at the access level is feasible and desirable. The following broad conclusions can be suggested:

Differential pricing at the access level is likely to be difficult to enforce

With the Ramsey solution applied at the final product stage, there is price discrimination in the sense that different products will face different price/marginal cost ratios. Price discrimination at the access level would have to be more overt, since different purchasers of the same track service would face different prices. Thus, users of the same piece of track would face different prices depending on what their cargo was. However, there are some pieces of track in Australia upon which a single product would be carried. In other cases, for price discrimination at the access level to be feasible, it would be necessary for the facility provider to be able to prevent resale. Generally, this is not likely to be difficult. However, in some cases, agreements with access seekers might be necessary to specify the cargo which is to be freighted.

When Ramsey pricing is used to price discriminate at the access level the regulator would require considerable information

In order to regulate access prices in detail, regulators would need information about cost functions, the cost of downstream operation, and information about the demand elasticities of different users of the facility. Most likely, it would be difficult to obtain this information, making efficient regulation difficult. Alternatively, the regulator could choose a broad approach to regulation, and set an access price cap across a range of users. Price caps lessen the information requirements, but there are still problems in terms of defining the product and the appropriate basket of prices to be regulated.

Price discrimination may be used at the facility level to avoid pressure to achieve more efficient outcomes

Vertical separation is used to promote competition and efficiency at the downstream level. Efficiency at the access level depends on how high access prices are set relative to the cost of an efficient operator. However, if access prices are set so as to enable replication of previous output prices operating prior to the introduction of access regimes, the facility provider will face no additional pressure. It will also be able to subsidise uneconomic traffics, by setting access prices below the marginal costs of provision. How well the facility provider performs in efficiency terms depends on how effectively the regulator regulates.

Price discrimination may create the opportunity for anti-competitive outcomes

A track company could negotiate different prices for two different users, even though these two were both intending to carry the same traffic. The operator with the lower access price could in fact be the higher

cost operator. By this means the high cost operator could be given an anti-competitive advantage over an otherwise more efficient rival.

Pricing in Australia's Access Regimes

Currently, there is a lack of consistency in approach to access pricing for interstate rail freight moving from one side of Australia to the other. Thus, for a private operator wanting to take freight from Sydney via Melbourne to Perth it would be necessary to negotiate an access price with NSW (Rail Access Corporation), the Victorian Government (Victorian Rail Track), the West Australian Government and the Federal Government (Australian National Track Access Unit).

These negotiations would be different in the different jurisdictions.

- In NSW, the access price is negotiated between the RAC and prospective rail operators. Essentially the relevant pricing principles involve determining a particular price between a floor and a ceiling with an overriding condition that total RAC revenues must not exceed the stand alone economic costs of the entire NSW rail network. Concern has been raised about the complexity of the system.

- The Victorian Government has not yet established a particular regime but has negotiated pricing arrangements on an individual basis.

- The AN approach is to present a schedule of rates based on a two-part tariff; a fixed or "flag-fall" component specific to the line segments of which the train operates and a variable component unique to each line segment and applied to the product of the gross tonnes of the train and the distance. This approach is transparent and considered simple to understand as potential operators can easily estimate their likely access charges before becoming involved in providing the service.

- West Australia is yet to develop an access pricing regime.

- The Federal Government is currently working with the States to develop a national approach and an agenda for reform is being established.

Summary

Achieving a national approach in access pricing for interstate freight is a priority for rail reform in Australia. There is a preference among freight operators for a transparent regime that is easily understood.

There are any number of ways that rail authorities can choose to price discriminate. Prices may vary between commodities or shippers. They may vary by distance or by route.

If Ramsey pricing is adopted (with the aim of maximising economic welfare) regulators will:

- face steep information requirement or have to use price caps to make information needs less onerous; and
- will have to set up regimes in such a way that resale, for example, is discouraged.

More generally, price discrimination can provide scope for anti-competitive outcomes. To the extent that other reforms are implemented that are important requisites for efficient pricing and investment decisions in a competitive environment then the scope for price discrimination to be used in such a way should be reduced.

Efficiency at the access level depends on how high access prices are set relative to the cost of an efficient operator. Therefore price discrimination needs to operate in the context where the regulator sets lower but nevertheless still feasible prices on access.

Notes

1 Bureau of Industry Economics, International Benchmarking - Waterfront 1995, p xviii.

2 Bureau of Transport and Communications Economics, Analysis of the Rail Deficit, October 1995, p 5.

3 Steering Committee on National Performance Monitoring of Government Trading Enterprises, Performance Indicators, 1991-92 to 1995-96, May 1997, Volume 1, p 111.

4 Assessment of applications for access to services of a facility must also take account of public interest considerations, including the public interest in having competitive markets.

5 PG Laird, “Rail track and the elusive level playing field”, paper presented at 11th International Rail Track Conference, 1996, p 8.

DANEMARK

Retrospect

Until 1 January 1997, railway services in Denmark were operated by the government-owned railway undertaking (“DSB”) and 13 private railways.

In the case of the government-owned rail network, both the actual transport task and the operation of the infrastructure were performed by the same undertaking.

A liberalization of railway services in Denmark is taking place in connection with the implementation of the EU's Directive on the development of the Community's railways (91/440). Denmark recognizes the necessity of creating a clear division of responsibilities between government and the railway undertaking in order to strengthen the railway's competitiveness (cf. the intentions of EU's White Paper on an efficient and modern rail system in the EU).

The various EU Directives and Regulations, (notably Directive 1893/91 on the conditions for imposing non-commercial obligations on railway undertakings, Directive 95/18 on the allocation of railway infrastructure capacity and the charging of infrastructure fees and Directive 95/19 on rules governing market access), have until this year constituted the regulatory framework for the railway sector. Starting from 1996/97 this framework was supplemented with national legislation regarding the administration of the government-owned railway infrastructure in Denmark. Before the end of 1997 another Bill (Railway Bill) will be passed, which covers all other regulatory aspects of the railway services.

The Danish National Railway Agency Act

In the autumn of 1996 a decision was made to divide DSB into an operator and an infrastructure undertaking. It was envisaged that the DSB operator undertaking should be divided further, by establishing (amongst other things) two sub-undertakings, “DSB Intercity” and “DSB S-train” as limited liability companies. The new companies are to finance their activities in the same way as other limited companies, i.e. without any government subsidies.

The infrastructure section of DSB was established under the name of the Danish National Railway Agency as an independent government undertaking by an Act of Parliament on 1 January 1997.

Under the Act, the Agency manages the government-owned railway infrastructure. The agency is required to manage the infrastructure in a cost-effective way with a high-quality, modern, level of service to the operators and the public. The management task includes operation and maintenance of the government rail network as well as extension and development of the network. In addition, the Agency is responsible for controlling the railway traffic, allocation of capacity and collection of payment for the operators' use of the network.

The Act empowers the Minister of Transport to establish a coordinating body in which the Agency and representatives of the railway operators are to participate. This has not yet been implemented.

The Agency is responsible for the development and operation of the rail network, but it also performs operational, forecasting and construction tasks.

The Danish National Railway Agency Act provides that, in principle, tenders must be invited for all projects relating to maintenance and extension of the rail network. Tenders should be invited immediately for new construction projects, whereas operational and maintenance work gradually will be included in the tender system.

The Agency's operational units will be able to submit tenders for projects, as will foreign companies.

Access to the rail network

Access to the Danish rail network is at present reserved for DSB. Other existing operators may be allocated capacity corresponding to their present use of the network. Further, operators responsible for international combined goods traffic may obtain access (cf. Directive 91/440, Article 10).

Railway fees

According to the existing provisions regarding payment by operators for use of the rail network, a total amount of DKK 84 million is to be paid for DSB's and other railway undertakings' passage of the Great Belt Link in 1997, with effect from 1 June of that year. The individual railway undertaking shall pay a proportion of that amount corresponding to the undertaking's share of the total number of train passages across the Great Belt in the second half of 1997.

The infrastructure fee to be paid for the other sections of the rail network is in 1997 fixed at DKK 0.

Interoperability

Differences between the EU member states' railway infrastructure constitute an obstacle to the full liberalization of railway traffic. The greatest difficulties concern the train safety systems, but driving power systems, clearance gauges, communication systems and languages of communication, safety and signal regulations - and in a few cases also differences in track gauge - also constitute obstacles to a full liberalization.

For that reason the Council adopted Directive 96/48/EC on the interoperability of the trans-European high-speed rail system in July 1996. The scope of the Directive is expected to be extended to include sections of the rail network which are of particular regional importance.

Full implementation of the Interoperability Directive will take many years and will require very considerable investments in infrastructure and equipment.

Division of the Danish rail system as from 1 January 1997

Although the Danish rail network in principle already has been opened to international combined goods traffic (Article 10), DSB will for a number of years continue to be the dominant operator. In connection with the establishment of the Agency, DSB was allotted various assets which provide a number of clear advantages over new operators. DSB has, for example, been granted ownership of stations, goods terminals, preparation units and engine sheds, etc. which creates a need for regulatory provisions regarding the access of other operators to these facilities.

The Agency owns main tracks, shunting tracks, certain depot tracks, platform units, information and telecommunications systems, etc.

Railway services Act

The new Act, which is expected to be placed on the Statute Book this year, will govern:

- Procedures for issuing licences and safety approval certificates
- Access to the infrastructure
- Prioritizing the use of capacity
- Operators' rights and obligations, including an obligation to place facilities at the disposal of other operators
- Procedures for filing complaints

At the time of writing it is not possible to provide further details about the contents of the Act.

FINLAND

Introduction

In many European countries, in particular, the railway sector has been under strict government control both due to its administrative position and for economic reasons. Railway companies are obliged, for regional, environmental and socio-political reasons, to carry traffic that is not profitable from a business perspective.

Railway services have also been considered a form of "universal service", which means they should be available to everyone at a reasonable price. This, in turn, leads to cross-subsidisation - the regional variations in prices faced by service users are evened out by subsidising the production of services that are not so profitable with the more substantial income obtained from other groups of users.

Since access to railway services has generally been considered essential for society and since the operations have usually been unprofitable, railway businesses have most often been arranged in the form of a public service organisation which is directly subsidised by the government to the extent that it cannot become bankrupt. The company may also have an extensive jurisdiction over business operations such as pricing, control of assets, purchases, loan taking and personnel administration. However, public authorities set the prices of services purchased by the government or the local authorities from the public company.

This form of organisation as a public company, usually a single operator, has lead to the absence of internal competition in the railway sector. The only competition faced by the railways has been competition from other modes of transport.

The tendency to replace economic regulation with competition that surfaced in the market economies in the 1980s has led to the abolition of needless regulation in several sectors (e.g., electricity, telecommunications, road and air traffic) and the introduction of competition into those fields where it has been possible to do so. This is due to a disenchantment in the results of regulation and the acknowledgement of the advantages of competition.

In those fields where there are natural monopoly characteristics, competition may be introduced into potentially competitive operations. This may be realised by separating the competitive and monopoly operations or by dividing a company that has been the sole operator in a market into competing parts. Competition may also be created by tendering entire operations (franchising). By these latter means, it is also possible to create competition in the monopoly sectors.

Structuring Railways for Greater Competition

Separation of ownership of infrastructure and service provision

In certain fields, which were, in the past, perceived as monopolies, it is possible to separate the operations which have the characteristics of a natural monopoly and those that are potentially competitive. Network industries are an example. The network is the part of the operations whose units costs are decreasing for

the total scale of the operations and are thus the main reason for the appearance of the natural monopoly. The telephony, electricity, gas and railway industries all have characteristics of network industries. To introduce competition, decisions must be made on the organisation of the natural monopoly components of these sectors.

Structure of railway traffic

Network

The railway network comprises the tracks, the electrification and the stations. The natural monopoly characteristics of the railway network derives from the ability to increase the intensity of its use without substantial increasing costs. For example, when a decision is made not to build a competing network, but to increase usage of an existing track, average unit costs on the existing track decline. On the other hand when a network nears its maximum capacity (i.e., when it is saturated), it is natural to build a new track, and, in principle, there is no obstacle to another company owning the track.

The majority of the existing railway tracks both in Finland and elsewhere in Europe are unsaturated. In many European countries, in fact, there has been an explicit objective to build track into the more sparsely populated regions where operating a service is not profitable. Due to this, there exist many sections of the network where capacity utilisation is inefficiently low. In the Finnish case, the only exceptions are the sections in the capital city area, because of the lively local traffic.

Regulating access to network

It is characteristic of network industries that the use of the network has to be co-ordinated. This means that somebody has to decide when each network user has access to a certain part of the network and on what kind of terms. In railway operations, the need for co-ordination arises from the rather strict restrictions on what time a particular network section may be used. Among the co-ordination tasks in railway traffic are the planning of schedules, and the monitoring and directing of traffic. The operations are typically such that the situation on the different network sections at any given time has to be fitted in with other network sections. This will not succeed unless it applies to all network users simultaneously.

Additionally, the fact that the co-ordination of the use of the network and the related maintenance and investment decisions are made within the same unit brings about economies of scope with respect to the flow of information. Co-ordination is facilitated by access to all network equipment and the related information; the decisions related to the development of the network also need, for backup, detailed information about traffic problems. For these reasons, it is not possible to have competition in these co-ordination operations, and they should be centralised, preferably within the same unit that owns the network.

Traffic

In the railway sector, railway traffic is potentially competitive. There are not such economies of scale in the provision of passenger and goods traffic services that would favour the assigning these operations to a single company to manage in the same manner as the track. The barriers to entry and exit from these fields are also lower as the operations do not contain such considerable sunk costs as the building of the actual infrastructure. The equipment needed for the managing of the traffic, i.e. engines, passenger cars and freight cars, are mobile between different markets.

The benefits of competition are that the allocative efficiency of monopoly are eliminated without incurring the efficiency losses resulting from regulation. As a result of competition and the actions of competitive service providers, consumers are able to choose a product which meets their needs better than before. The entry of several competitors into the network would mean more alternatives being offered to the consumers, both with respect to quality/price combinations and timetables and routes.

Maintenance operations

Also competitive by nature are the provision of construction, maintenance - also of technology - and customer service. Historically, railway companies have had their own staff to perform these duties but there is no obstacle to their tendering either. The perception that there is a natural monopoly in a railway network should not be allowed to confuse decisions as to what operations it is possible to produce by means of competition. The natural monopoly arises from the need to finance the maintenance of the fixed capital of the railway network and the rest of the network, not, by any means, by the need to provide maintenance and construction services itself.

Competitive access to the infrastructure

Every company that has entered the market at some point in time has suffered from entry barriers caused by imperfections of the markets. In certain operations, the first company that has entered the field may have a so-called first mover advantage, the existence of which may complicate the entry of other companies into the field. The situation between the company that has first entered the field and the potential followers is asymmetrical. A railway company operating as a monopoly has typically been founded, built and financed by the government, and the income it has gained for its operations have not depended on its sales. New companies anticipating entry into the field are thus faced with the following barriers which are not shared by a company already incumbent in the market:

1. Marketing costs. A company must make itself known, i.e. to invest e.g. on advertising. Potential customers - private as well as company customers - have to acquaint themselves with the route, price and qualitative characteristics of the service offered.
2. Learning effects. The company does not have the same knowledge of how to effectively operate in the field. It is at the initial stage of the learning curve and mistakes happen in production which an incumbent operator has learnt to avoid.
3. Exchange or switching costs. Business customers, in particular, suffer costs from switching service providers, as each freight service agreement is often unique. Switching involves a quality risk, as, at the time of the change, information on what the product is really like is lacking.

Entry barriers are also a problem in the sense that their effect varies with time. A stand cannot be taken on the viability of businesses and the efficiency of the competitive markets without paying attention to the dynamic nature of competition in the market. It may be that, at the anticipatory stage, a company perceives that it cannot compete in the field on its own, whereas, examined after the fact, this turns out to be possible.

Direct fiscal support of a company is the simplest way to promote its ability to compete[1]. However, the long-term incentive effects of the subsidy are questionable. First, it is hard to know when entry barriers have been overcome and when the subsidy should be terminated. There is a strong temptation to determine the need for the subsidy on the basis of the success of the company in the field. The system then begins to justify itself. The subsidised companies claim to be at the so-called infant stage and justify this by not being able to operate productively yet.

The long-term incentive effects of a subsidisation policy should also be considered from a wider perspective. If it becomes a general practice, companies begin to postpone entry into the field more than they would have done until they have found out the possibility of receiving possible subsidisation. The cost of this to the economy is a reduction in the allocative efficiency caused by a slower entry, and unnecessary negotiation and decision-making costs. It should be noted that since determining entry barriers involves guesswork about the future, it is possible to receive subsidisation for entry into a field without any real justification.

Franchising

The so-called franchising system represents a kind of intermediate form between wholly sectoral and completely parallel competition. In the former case, due to vertical separation, other companies may begin competing with a previous railway monopoly with respect to competitive operations such as operating a service, and building and maintenance. In the latter case, each competitor himself owns the facilities and operations needed for the conducting of a railway service. In the franchising system, a monopoly is sold to one company for operating a service on a particular section of the network. Competition takes place when the agreement on such a service is made.

The benefit of this is that such a monopoly may, in principle, own the entire network infrastructure needed for the providing of the service and control the use of the network itself. The economies of scope between the network and the services provided with it do not have to be lost. There are limitations in railway markets in this respect, however, not found in other network industries. Although the franchising system means the end of competition in certain markets (routes), the kind of situation cannot be achieved where the ownership of the infrastructure or the regulation of its use could be decentralised.

Two special features of franchising arrangements compared with continuous competition are: first that the consumer is represented by the public agency which negotiates the agreements; and second, that competition is waged at the time of the bids for a monopoly right that is exercised afterwards.

The agreement will inevitably turn out to be rather complex and it will be of a long duration. The public agency that negotiates the agreement wants a detailed agreement in order to ensure that the service meets with the expectations. The agreement has to be of a sufficiently long duration for the company to cover its fixed costs and for it to have incentives for making investments to improve its service. The agreement has to state the price of the service and the amounts offered. The long-term commitments of the agreement cause the system to reflect rather weakly the consumers' preferences and its questionable whether the purchasing public agency has, in any case, procured such services, to begin with, which the consumers would have wanted.

The more detailed an agreement is, the less room it leaves for the company to react to changes, e.g., to adjust services to changes in cost conditions. It may thus be justified to leave certain parts of the agreement to be re-negotiated ex post. However, in this case, the supervision of the agreement begins to resemble ordinary regulation - collecting information and determining the allowed operations on the basis of it. It is clear that an agreement can never be perfect. Due to its limitations, franchise competition does not promote productive and dynamic efficiency as well as parallel competition.

Franchising befits railway traffic in the sense that the quality of the service needed is not very hard to determine. Due to the rather large fixed costs of the field, however, new entrants are few, which facilitates collusion even more clearly than before. In principle, the problem of a franchise system in railways is that it does not produce sectoral markets.

This is due to the property of the railway network which differs from many other networks in that it is difficult to connect sectoral markets in series in order to create a long-distance market. In the telephone and electricity networks this is possible: a long distance call may be created from a local connection, a long-distance connection and a local connection. At the other end of the line, a long-distance call is just another local call, and the local phone company handles it like genuine local calls. No separate long-distance traffic network is necessary, running parallel to a local network.

In contrast, in a railway network, the parallelism of different markets will inevitably occur. E.g. a train connection from Helsinki to Oulu forms one market, but at the same time, contained within this section of the track are the local traffic markets. It would not be possible to think that long-distance traffic would be combined from regional traffic by making an exchange at the boundary of each market. In the railways, companies operating in different sectoral markets do not compete with each other as such, but they use the same scarce resource, the track, at the same part of the network. Interaction exists between the markets and the companies have a conflict of interest with respect to rights of access to the track. It has to be decided with respect to the use of the railway network how to allocate the network to competing uses.

Secondly, franchising befits goods traffic poorly since goods transport of companies is made according to order. Additionally, transport needs and, with it, transport agreements change continuously according to variations in market demand. Goods traffic cannot be limited to a certain part of the network only. This leads to the observation that passenger traffic routes, which would have been divided according to the franchising principle, should, in any case, be able to carry the goods traffic of another company.

Franchise competition does not eliminate the need for a separate allocation of the infrastructure. Vertical separation of the network infrastructure from the control operations is still necessary. This enables simultaneous parallel competition within a franchised service.

However, parallel competition is not completely different from the franchising system: in one-track sections, the monopoly right on certain servicing times has to be allotted in any case. The agency controlling the traffic may price the running of different times in a desired way or it may ask for offers from the companies. Contrary to the franchise system, however, a monopoly is not created because a competing offer may be accepted much faster (after the timetables are no longer valid) and since services run at different times are partial substitutes for each other.

On the other hand, enabling parallel competition provides the opportunity for making franchise agreements: e.g. in local traffic, this may be justified for computational reasons. Furthermore, in situations, where only one traffic contractor is entering the markets, the franchising procedure may be used. It is thus possible to set, as a condition for entry into the market, e.g. the concluding of an agreement limiting pricing power.

On balance, these considerations do not support limiting competition through franchise agreements. Decisions on the operations and ownership of the network should be made in such a way that parallel competition on the same sectoral markets remains possible. This requires vertical separation.

Market definition and the need for regulation

In a deregulated environment, competition legislation applies. However, competition is not likely to reduce or eliminate the need for regulation of rail infrastructure or rail services as far as safety rules and standards are concerned. Also the need for regulation concerning pollution, land use, construction effects and accidents, i.e. social regulation, has to be taken into account. With the introduction of competition

legislation and the deregulation of the rail infrastructure and rail services, the total amount of regulation may, ironically, even increase compared with a state-owned monopoly which is mostly organised according to government orders.

As far as intermodal competition is concerned, economic regulation should be neutral across all transport modes. This is because different transport modes are increasingly competing with each other. Competition authorities have nevertheless regarded road transport as only a partial substitute for rail transport. The substitutability varies according to each route.

In a case on an alleged abuse of a dominant position in the market of railway transport between Russia and Finland, the Competition Council regarded railway transport as a separate market from other transport modes with respect to companies importing bulk products from Russia. The decision was appealed to the Supreme Administrative court and is still pending.

Finland's railway sector

Finnish railway operations

Of Finland's total transport market, the share of railway traffic has been around one fifth. The role of railways in the transport market is, however, larger in the markets for long-distance and heavy industrial transport, international traffic, fast and long-term passenger traffic and mass transit around the capital city area.

The production of railway services in Finland has traditionally been the sole right of a state-owned establishment. In early 1990s, Finnish State Railways VR were reorganised as a public enterprise whose leadership shouldered the responsibility of its financial success. In the same context, the power over pricing with respect to goods traffic was also lifted from the State Council and given to the management of Finnish State Railways. The power over pricing with respect to passenger traffic was given to the management a year later. In the new organisation, Finnish State Railways managed the duties related to the operating of the network on an allowance from the state budget. A separate allowance was granted to the maintenance of the unprofitable part of the passenger traffic.

Finnish State Railways was incorporated on 1 July 1995 and made a limited liability company where the entire capital stock is owned by the state. The group has a parent company VR Yhtymä Oy for joint management and operations, and there are subsidiaries for transport operations and the contracting of track maintenance work. On 15 March 1995, before the incorporation, the Finnish Rail Administration Ratahallintokeskus was established under the Ministry of Transport and Communications. The Finnish Rail Administration owns the network, the equipment, buildings and the land. The Finnish Rail Administration is responsible for the maintenance of the tracks; orders any related maintenance work and is responsible for the safety of the railway traffic. The intention is that, in the future, the railway network can be used by other railway companies, in addition to the company set up to carry on the operations of the Finnish State Railways.

The Finnish Rail Administration collects the fee from the traffic contractor. The components of the fee determined by the Ministry of Transport and Communications are the use and quality of the track, the market situation, the costs involved in the maintenance of the track and the socio-economic (external) effects.

A licence to operate a railway company is granted by the Ministry of Transport and Communications. The right to operate a service in the railway network requires a right of access and this is granted by the authority maintaining the track in a given country in whose network the service will be conducted. The company is granted a right of access by the Finnish Rail Administration. Prior to the granting of the right, the company must agree with the Finnish Rail Administration about the necessary administrative, economic and technical arrangements. In the initial stage, VR Yhtymä Oy does not need a separately issued operating permit, as a state-owned company has been considered to have the necessary skills and knowledge for the conducting of railway traffic. It has a law-based right of operation until the more extensive licence fee legislation becomes effective by 1999. The practice has been justified by the lack of European experience on competition; the preparation on regulations on competition is still underway within the EU. A working group set up by the Ministry of Transport and Communications is currently examining the way in which permitting competition within railway traffic on the same section of the track would affect the operating conditions of the traffic; the position of consumers and users; and the effective use of resources.

Evaluation of competitive potential

The Finnish railway market is small. Traffic density is nowadays locally centralised. For the total amount of passenger and goods traffic, the section with the heaviest traffic is Helsinki-Tampere. With respect to goods traffic, high density routes are also situated in the vicinity of Eastern Finland's industrial cities, which are affected by railway traffic to Russia. The biggest concentration of passenger traffic is on the Helsinki-Riihimäki route, due to the capital city area local traffic.

Since profitable entry into the field is so severely limited due to demand conditions, it should be kept in mind that competition will be centred on specific sections of the track. The most obvious target is the local traffic of the capital city area. During the past summer, a Swedish-owned company operating local bus traffic in Finland announced that is willing to enter the local railway traffic market. With respect to capital costs, the new rail buses offer a rather inexpensive option for starting such traffic. According to present legislation, competition may begin on 1 January 1999, at the earliest.

The goods traffic is also a possible target for competition, but therein VR is even now in a tighter competitive situation in relation to road transport as it is to passenger transports. This has been shown in the reduced charges for goods transport. Some competition could be expected in the goods traffic of international operators. The Finnish rail gauge still differs from that in rest of the Europe but it is the same as in Russia. It is thus apparent that the focal point of international traffic will remain, for a long time to come, in traffic with Eastern Europe.

With respect to maintenance, it is easier to introduce competition into those tasks where the need for specialist skills is smaller. E.g. building and electric works account as such. Track works and the actual installation of the railway tracks will remain as the sole right of VR-Rata for a long time to come, since this requires heavy investment into expensive special equipment. Foreign track companies obviously own such capital, but it is difficult to estimate whether it is profitable for them due to transport and storage costs to establish themselves in Finland.

Tendering the building and maintenance of infrastructure requires that the infrastructure is clearly kept separate from the units conducting traffic. The basic infrastructure should be owned by the tendering unit and it could also contain part of the equipment which a new entrant could hire upon winning a bidding contest. It is important to note that one way of introducing competition even into the

unprofitable parts of the businesses is to tender the subsidies. Franchising unprofitable railway services could exert a downward pressure on the amount of subsidies needed and increase efficiency in providing the services.

Note

1 In Finland, subsidisation has been used to enhance competition between television channels. A new entrant TV channel, Ruutunelonen, received more inexpensive operating terms than the incumbent channel MTV3 in that it did not have to pay the so-called public service fee during its first operational year. The public service fee is compensation for the amount of time broadcast; its size is based on revenue from the sale of advertising time. Ruutunelonen's special treatment amounted to naked public subsidisation.

FRANCE

Le transport ferroviaire en France présente à l'heure actuelle trois caractéristiques importantes :

- Il a été profondément marqué par le monopole et la notion de service public.
- Il connaît une situation économique particulièrement difficile.
- Ses perspectives de libéralisation ne sont pas clairement dessinées.

Les chemins de fer en France ont été profondément marqués par le monopole et la notion de service public.

Le transport ferroviaire a toujours occupé une place spécifique au sein de la société française. Il a été un élément moteur de la révolution industrielle et un puissant facteur d'aménagement du territoire.

Ses principales particularités consistaient, jusqu'au 31 décembre 1996, en :

- une organisation monopolistique portant à la fois sur l'infrastructure et l'activité de transporteur ;

- une gestion intégrée à l'intérieur de la même entreprise publique des infrastructures et de l'activité de transporteur.

La nationalisation du transport ferroviaire résulte d'une convention du 31 août 1937, approuvée par un décret-loi du même jour. Les droits d'exploitation et de construction sous concession de cinq compagnies privées et deux réseaux d'Etat ont été transférés à la société nationale des chemins de fer français (SNCF) mise en place en 1937 pour une durée de 45 ans et dont l'Etat est progressivement devenu l'actionnaire unique.

Le 31 décembre 1982, la convention de 1937 est venue à échéance. La SNCF a été transformée au 1er janvier 1983 en établissement public industriel et commercial par la loi n° 82-1153 du 30 décembre 1982 (loi d'orientation des transports intérieurs dite LOTI). L'ensemble des actifs de la précédente société lui a été transféré.

La SNCF dispose d'un monopole de circulation sur le réseau ferroviaire. Elle en exploite la quasi-totalité, même si la propriété en est confiée depuis le 1er janvier 1997 à un établissement public dénommé Réseau Ferré de France. La loi lui garantit un «droit» au financement budgétaire à raison des avantages socio-économiques qu'est censé représenter le chemin de fer.

Actuellement, la SNCF est une entreprise employant 181000 personnes pour un chiffre d'affaires de 52 milliards de francs (73,6 Mds de F pour le groupe) et des pertes de 16,6 milliards de francs en 1995 (16,5 Mds de F pour le groupe), et 15,2 milliards de francs en 1996 (source : rapports d'activité de la SNCF). Elle exploite un réseau long de 32 000 kilomètres.

En 1996, elle a effectué 59,8 milliards de voyageurs kilomètres et 48,3 milliards de tonnes kilomètres. Ses parts de marché, mesurées dans les mêmes unités, s'élèvent à 7,5 pour cent pour les voyageurs et 19,5

pour cent pour le fret hors transit, ce qui représente environ 10 pour cent du chiffre d'affaires en transport de marchandises (source : Conseil National des Transports).

Une des caractéristiques de long terme de l'exploitation ferroviaire en France est la dégradation constante de ses parts de marché. Cette situation s'accompagne de la persistance de graves difficultés financières.

Une situation économique difficile

Face à une demande en déclin, la France comme la plupart des pays européens, a répondu par une offre en croissance. Cette croissance de l'offre s'est caractérisée par de très importants investissements d'infrastructure et de matériel roulant. De 1989 à 1994, la SNCF a effectué pour 100 milliards de francs d'investissement, dont 40 milliards de francs pour la grande vitesse. Cet effort d'investissement a été financé par l'emprunt, la SNCF ne dégageant aucune une capacité d'autofinancement et l'Etat ne prenant en charge qu'une partie de l'exploitation de l'infrastructure.

La poursuite d'un tel effort en période de diminution ou de stagnation du chiffre d'affaires ne pouvait mener qu'à une impasse.

(En milliards de FF)

	1989	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**
Chiffre d'affaires consolidé	67,3	70,6	73,0	77,2	74	76,5	73,6
Investissement	12,9	20,4	26,3	28,9	24,4	16,7	20,5
Dettes à plus d'un an	79,3	87,8	102,0	126,7	157,7	174,5	193,5
Frais financiers	11,4	12,6	9,3[1]	11,8	13,3	14	15,9
Résultat net	**0,3**	**0,3**	**- 0,7**	**- 3,2**	**- 7,7**	**- 8,4**	**- 16,5**

Le maintien d'un niveau élevé d'investissement financé par l'emprunt a accru l'endettement et les frais financiers malgré la baisse des taux d'intérêts. Comme l'exploitation ferroviaire ne dégage pas les résultats nécessaires, le résultat net de l'entreprise s'est considérablement dégradé. Depuis 1993, la SNCF est entrée dans une spirale d'endettement dont on voyait mal comment elle aurait pu sortir par ses propres moyens.

Par ailleurs, le montant annuel des concours publics à la SNCF atteignait un niveau considérable de plus de 50 milliards de francs (26 milliards de francs pour les concours à l'exploitation, 19 milliards de francs pour les charges de retraite, quatre milliards de francs au titre de la dette prise en charge par l'Etat et un milliard de francs d'investissement direct).

Il est apparu indispensable de sortir l'entreprise ferroviaire de sa situation économique et d'offrir aux cheminots une réelle perspective de redressement.

La réforme de la SNCF mise en place en 1997 est l'aboutissement d'un large débat sur l'avenir du transport ferroviaire. A l'issue de ce débat, il est apparu nécessaire d'alléger la dette de la SNCF afin de diminuer ses frais financiers. Il a également semblé nécessaire de clarifier les rôles respectifs de l'Etat et de l'entreprise, en particulier en matière d'infrastructure.

La loi n° 97-135 du 13 février 1997 a créé un établissement public industriel et commercial dénommé Réseau Ferré de France chargé des infrastructures ferroviaires. Cette loi a été complétée par trois décrets

d'application du 5 mai 1997. La pleine propriété des infrastructures affectées au transport ferroviaire lui a été transférée au 1er janvier 1997 (à l'exception notable des gares). Simultanément, Réseau Ferré de France a pris en charge 134,2 milliards de francs de dettes de la SNCF auxquels se sont ajoutés ultérieurement 20 milliards de francs supplémentaires.

La SNCF versera à Réseau Ferré de France une redevance pour l'utilisation du réseau ferré (5,85 et 6 milliards de francs en 1997 et 1998 respectivement). Le nouvel établissement est doté d'une structure légère. Il n'assurera pas lui même l'entretien et le développement du réseau qui seront effectués par la SNCF pour le compte de Réseau Ferré de France qui rémunérera l'entreprise ferroviaire à ce titre (environ 16,8 milliards de francs).

L'Etat est maintenant doté d'un établissement public spécialisé chargé de contrôler le développement et la gestion de l'infrastructure ferroviaire. La source principale du déficit de la SNCF est désormais transférée vers Réseau Ferré de France et l'on peut espérer à moyen terme que l'activité de la SNCF en tant que transporteur devienne équilibrée. Le président de la SNCF envisage pour l'année 1997 un résultat net négatif de 2 milliards de francs pour la SNCF, le résultat de RFF sera lui très négatif (plus de 10 milliards de francs).

Si les instruments institutionnels permettant à terme une meilleure gestion des chemins de fer sont en place, l'Etat devra en 1997 et pour quelques années encore consentir un effort supplémentaire en faveur des chemins de fer.

La réforme de 1997 n'a pas concerné le monopole du transport ferroviaire dont bénéficie la SNCF. Le mode de régulation de l'activité ferroviaire n'a pas été modifié : l'Etat avait la tutelle de la SNCF, il dispose maintenant d'un pouvoir de contrôle sur deux établissements mais la nature de ce contrôle et les règles de droit le régissant n'ont pas été modifiées. Par ailleurs, la libéralisation amorcée par la directive n° 91-440 du 29 juillet 1991 n'a pas réellement produit d'effet.

Des perspectives de libéralisation encore incertaines

Le chemin de fer a longtemps été considéré comme un monopole naturel, car il est économiquement absurde de construire ou d'exploiter des réseaux parallèles. Depuis quelques années, on a constaté que le monopole du réseau n'impliquait pas forcément celui de l'exploitation et on a voulu libéraliser le secteur sur le principe de l'accès des tiers au réseau. Cette libéralisation, instaurée en 1991, n'a pas donné, jusqu'à présent, les résultats escomptés. La Commission Européenne souhaite aller plus loin.

L'ouverture à la concurrence sur les réseaux ferroviaires des États membres de l'Union Européenne est fondée sur le respect des monopoles ferroviaires nationaux et l'ouverture des réseaux nationaux à des compagnies relevant d'autres États membres. Cette solution a été mise en oeuvre par la directive n° 91-440 du 29 juillet 1991.

Ce texte posait en outre le principe de l'indépendance des entreprises ferroviaires face à l'État (art. 4) et leur gestion selon des principes qui s'appliquent aux sociétés commerciales (art. 5-1). Il se prononçait en faveur de l'assainissement financier (art. 5-2) et imposait la séparation, au moins comptable, des activités de transporteur d'une part et de gestionnaire de l'infrastructure d'autre part (art. 6-1).

Un droit d'accès des tiers au réseau, avec tarification de l'usage de l'infrastructure, a été ouvert dans trois cas très strictement délimités (art. 10) :

- Les regroupements internationaux de compagnies ferroviaires relevant des États membres se voient reconnaître des droits d'accès et de transit dans les États membres où sont établies les compagnies ferroviaires composant le regroupement.

- Ces mêmes regroupements se voient reconnaître des droits de transit seulement dans les autres États membres pour les prestations de transport entre les États membres où sont établies les compagnies composant le regroupement.

- Les entreprises ferroviaires de la communauté se voient accorder un droit d'accès aux réseaux ferrés des autres États membres pour les transports combinés internationaux de marchandises.

Ainsi, par exemple un regroupement d'entreprises ferroviaires belges et italiennes aurait le droit de faire circuler des trains de voyageurs entre Bruxelles et Rome sans avoir celui de prendre des passagers à Paris et de les déposer à Marseille. Ce regroupement n'aurait pas le droit de mettre en place un Bruxelles-Marseille.

Cette ouverture à la concurrence mise en oeuvre par le texte de 1991 n'a pas donné les résultats attendus. Sa transposition a été lente et incomplète et les conditions mises à l'application du texte en ont limité considérablement la portée.

En juillet 1996, cinq ans après la publication de la directive, neuf États sur 15 avaient transposé la directive (Autriche, Danemark, Finlande, France, Allemagne, Irlande, Pays-Bas, Suède, Royaume Uni).

Quatre États n'avaient pas transposé en ce qui concerne le droit d'accès (Belgique, Italie, Luxembourg, Espagne), un en ce qui concerne la séparation comptable entre le gestionnaire d'infrastructure et le transporteur (Portugal). La Grèce n'avait rien notifié.

En France, la transposition de la directive 91-440 a bien été opérée par le décret n° 95-666 du 9 mai 1995. Pour être complète cette transposition devait être suivie d'une modification du cahier des charges de la SNCF qui n'a pas encore été effectuée. De plus, il reste à transposer d'ici le 19 juin deux directives d'application de la directive 91-440 (directives n° 95-18 et 95-19 du 19 juin 1995).

La réforme de la Société Nationale des Chemins de Fer Français (SNCF) mise en oeuvre par la loi n° 97-135 du 13 février 1997 a été effectuée en conformité avec le droit européen.

Aucune compagnie ferroviaire ou regroupement n'a, à ce jour, déposé de demande d'accès au réseau français.

Des trains circulent bien sur des réseaux qui leur sont étrangers mais cette circulation résulte d'accords bilatéraux (ou multilatéraux) ; par ailleurs, des regroupements de compagnies ferroviaires existent également (Eurostar par exemple). Mais ces modes de coopération ferroviaires ne constituent pas une application de la directive 91-440. En effet, dans ces deux cas, il y a échange ou mise en commun de capacités d'accès et donc une certaine réciprocité qui n'existe pas dans le principe d'un droit d'accès des tiers au réseau formulé par la directive 91-440.

Les raisons de l'échec de la libéralisation sont doubles :

- D'une part les trafics libéralisés sont trop limités pour avoir un effet positif. Pour reprendre l'exemple cité plus haut d'un Bruxelles Rome, il faut admettre que l'intérêt d'un tel train est très limité si l'on ne peut «caboter» - c'est-à-dire prendre des voyageurs entre Paris et Marseille - ou scinder à Avignon ce train en envoyant quelques voitures vers l'Espagne. La libéralisation du transport combiné de marchandises est plus complète mais ces trafics restent, malgré leur développement rapide, relativement limités.

- D'autre part, pour mettre en oeuvre le droit d'accès à un réseau, les compagnies ferroviaires intéressées doivent d'abord se constituer en regroupement. Cette condition les incitera à s'entendre avec la compagnie nationale du réseau auquel elles veulent avoir accès plutôt que de réclamer un droit d'accès qui pourra être vécu comme une agression et qui offre des possibilités plus restreintes que celles qui peuvent être obtenues dans le cadre d'accords bilatéraux.

Plusieurs Etats de l'Union Européenne ont procédé à d'importantes réformes structurelles de leurs entreprises de chemin de fer mais ces réformes n'ont pas conduit à une remise en cause des monopoles nationaux. Il est trop tôt pour en dresser un bilan mais la persistance, pour les entreprises ferroviaires, de difficultés financières ou de situations fragiles demeure une réalité.

Face à cette situation et à l'absence d'ouverture véritable, les instances européennes ont envisagé une libéralisation plus poussée. Des propositions en ce sens ont été faites dans un livre blanc pour «*une stratégie de revitalisation des chemins de fer communautaires*». Ce texte prend acte du déclin des chemins de fer et indique que seule une véritable libéralisation peut permettre une revitalisation des chemins de fer. Il précise également que sur certains segments du marché des transports, la disparition du ferroviaire est une hypothèse à envisager. Les forces du marché doivent faire leur entrée dans le domaine ferroviaire et sont présentées comme une ultime chance pour le chemin de fer.

Ce livre blanc reprend les principes posés par la directive 91-440 (équilibre financier par prise en charge de la dette et compensation des charges de service public, séparation comptable des activités de transporteur et de gestionnaire de l'infrastructure et droit d'accès des tiers au réseau) mais va plus loin en suggérant :

- de libéraliser le cabotage en transport international de voyageurs ;
- de libéraliser complètement le fret ;
- en attendant cette libéralisation complète, de mettre en place des «*corridors de fret*» où les trafics seraient immédiatement libéralisés.

Ce texte prend également acte des sureffectifs qui peuvent exister dans les compagnies ferroviaires européennes.

Les autorités françaises ont été, jusqu'à présent, réservées face à ce projet de libéralisation accrue. A l'heure actuelle, en France, le débat ne porte pas sur une libéralisation plus poussée mais sur les rapports entre Réseau Ferré de France et la SNCF notamment en matière de tarification de l'accès à l'infrastructure.

Il est de fait que le problème essentiel du chemin de fer semble être de s'adapter à un déclin continu, lié à la désaffection du public. Néanmoins, l'exemple du transport aérien, puis du téléphone, a montré que l'ouverture à la concurrence était le meilleur moyen de faire apparaître une clientèle nouvelle. La libéralisation des chemins de fer, techniquement difficile, pourrait se révéler financièrement utile.

Note

1 Création du service annexe d'amortissement de la dette, qui a mis à la charge de l'Etat les intérêts de 38 milliards de francs de dette à partir de 1991.

HUNGARY

The rail transport situation

In 1993 the Hungarian State Railways (Magyar Államvasutak, MÁV) were transformed into a state owned one person joint stock company. In 1995 MÁV carried 24 per cent of all the passengers in the long-distance passenger transportation market, and 28 per cent of the total amount of freight in the freight market. These proportions are above twice as high as their European counterparts. On the other hand they are considerably lower than the corresponding figures before the changes to the regime, due to a significant decrease in the production of raw material-intensive industries, the modernisation of the structure of production and non-negligible changes in flow direction of transported goods.

As a result of shortcomings in the railway infrastructure and deterioration in the financial results of MÁV an agreement between the state and MÁV was reached in 1995 setting out the responsibilities and obligations of both parties. In particular this agreement specified the role of the state, responsibility for financing a basic level of service as well as responsibility for improving the efficiency of the operation.

The regulation of railways

Act No. XCV of 1993 on railways defines the public railways as

- track railway and
- train operating railway.

Although separation of the accounts of these two activities is compulsory, the Act does not require separation into two distinct undertakings. In 1996 the Ministers of Transport and Finance issued a joint decree separating the activities of the track railway and the train-operating railway. At the same time professional administrations for the separate activities were established. During the streamlining process, a range of activities not directly belonging to the basic activities were separated, formed into companies and the process of selling their shares initiated.

The objectives of the accounting separation were to limit the financial responsibility of the state and the local authorities; to enable the creation of competitive conditions for transport activities on the track railway; and also to enable the liberalisation of market entry for other rail operators.

Article 2(6) of the Act states that the track railway is obliged to grant access to the track and its accessories to all domestic train operating railways. In the case of train operating railways domiciled abroad, a similar obligation arises from international agreements or from reciprocal treatment. In this way access to the railway infrastructure is legally ensured for all railway undertakings performing transport activities.

The Act defines the running of the networks of the national railways and the local railways as the responsibility of the state and of the local authorities, respectively.

Concession tenders may be invited for operating the railway or performing transportation tasks if the incumbent company is not able to perform these tasks. The railway itself may also initiate tenders for concession. (So far the minister has not yet taken advantage of this possibility.)

Scheduled local and long-distance passenger transport services are defined by the Act as public utility activities and the railway is required to conclude contracts in order to perform these services. Accordingly, the tariffs of rail passenger transport are officially regulated through the fixing of maximum prices. The tariffs for rail freight transportation will be liberalised from 1st January 1998.

ITALY

Introduction

The Italian railway transport system, as those of most European countries, is still characterized by the presence of a single company - Ferrovie dello Stato S.p.A. (hereinafter FS) - running the network infrastructure and at the same time providing transport services throughout the country.

In 1995 the extent of the rail network run by FS was about 16,000 Km, while the network run by other (both private and state-owned) firms was only 3 527 km. At that time FS accounted for 97 per cent of the national passenger and freight rail transport. The share of rail transport provided by the 27 companies who operate by government concession is of secondary importance. These operators serve mostly the commuter traffic around the largest cities (e.g. Ferrovie Nord Milano for Milan, A.CO.TRA.L. for Rome and Circumvesuviana for Naples).

In 1995, rail transport accounted for only 11.5 per cent of total passenger traffic, due, in part, to the importance of private transport by car which accounts for over 70 per cent of total passenger traffic. As far as public transportation is concerned, rail transport accounts for about 40 per cent and bus transport about 51 per cent. As far as freight transportation is concerned, the breakdown shows that in 1995 trucking still accounted for over 61 per cent of internal freight traffic, while maritime cabotage reached 18 per cent and rail transport only 13 per cent.

The distinguishing feature of passenger rail and bus public transport is that the institutional framework prevents competition in relevant markets. This means that on the same line the provider of rail services faces only the competition of bus services.

This market situation does not lead to a healthy profitable industry. FS is still characterized by heavy losses (roughly 5.7 trillion lire in 1997). In 1995 its total revenues covered less than 30 per cent of its costs.

The legal and regulatory framework

Historically, the Italian railway industry has been extensively regulated. The provision of rail transport has long been a State monopoly[1]. The Italian railway industry was nationalized in 1905. Rail transport services can be provided also by private companies by concession of the State or of local authorities[2].

FS was created in 1905[3] as a State-owned company, named *Azienda Autonoma Ferrovie dello Stato*, put in charge of rail transportation and, to some extent, of road and maritime transport.

In 1992, the State-owned company became a public economic agency and then a public stock company, controlled by the government. FS was entrusted with the management of all the operations of the former public economic agency in accordance with the provisions of a concession[4] that is to last seventy years. In particular, FS was put in charge of: *i)* the public supplementary (*i.e.* services which are complementary to those already provided on the rail network) and substitutive (*i.e.* services which substitute, temporary or permanently, those already provided on the rail network) transport services, over routes already served by

FS or by supplementary bus lines. The Ministry of Transport will have to give prior approval for new substitutive and/or supplementary services, excluding emergencies; *ii)* of public maritime transportation connecting rail terminals; *iii)* the planning and construction of new lines and of the upgrading and renovation of exsting lines.

The institutional framework has been completed by two regulatory devices, the program and the services contracts, which regulate the Italian government's contribution to the financing of planned investments and maintenance of the FS's network and set the criteria concerning tariffs, standard of services, frequencies and schedules.

Although both the above regulatory instruments still seem to be inadequate to sufficiently strengthen the financial responsibility of the company, to some extent they were conceived along the principles introduced by the European Union Directive 91/440 in order to promote a more transparent regime of subsidies to railway companies.

European Union Directive 91/440 sets out two main guidelines for European railway policy. The first is a separation between public administration and railways. The second is the promotion of competition through the separation of the control over rail network (which would be public) from the provision of services (which would be private and competitive).

In 1994 the Italian government was delegated by the Parliament to fully implement the Directive 91/440[5], but the necessary legal and regulatory provisions are not expected to come into force before end of 1998.

In order to implement, at least in part, the guidelines of the European Union Directive 91/440, it was recently decided to introduce an accounting separation between the network infrastructure management and the provision of transport services (as well as between passenger traffic, freight traffic and local transport). FS estimates that this will become operational by the end of 1998.

The Italian rail industry: efficiency issues

In 1995, the transfer of funds by the Italian government to the transport sector exceeded 45.4 trillion lire. About 16 trillion lire went to rail transport (FS and rail lines in concession), while the local transport sector absorbed more than seven trillion lire. The level of the Italian government expenditure for public transport is particularly high as compared with other sectors. In 1995, it reached 26.4 per cent of total expenditure, whilst health care reached 3.1 per cent and scientific research was about 5.3 per cent. In spite of the high level of government funds transferred to FS (on average 20 000 billions lire per year), the company still showed losses of 1.56 trillion lire in 1995, 2 800 trillion lire in 1996 and estimated 5 700 trillion lire in 1997.

The role of public expenditure in this sector can be shown by comparing the subsidies granted to FS with those of other railway companies across the European Union. FS's heavy losses are reflected in the low ratio between fares and costs, as compared with other countries. Fares are the lowest among the European countries considered, but the lack of discipline on the cost side bears some responsibility as well (Table 1).

FS adopts a uniform pricing policy - tariffs are determined as a function of distance, not differentiating among high and low density routes. Some discrimination is introduced by having differentiated tariffs according to comfort (first and second class) and to speed (intercity or ETR trains). A further distinguishing feature is that FS does not use price discrimination to reach commercial goals, *i.e.*

"frequent travelers", "week-end", "pex", "superpex" and "family" discounts are not granted. The only exception to this lack of tariff flexibility is the possibility of monthly subscriptions constrained to given routes.

FS price policy is more articulated for cargo transport. FS charges non-uniform pricing, granting quantity discounts. Price discrimination according to the density of the route is also carried out. In intermodal transport some discounts may be granted reflecting benefits from scope economies.

Regarding costs, labour costs are the highest among the European countries considered. In 1990, FS's labour cost was about 9.9 trillion lire for 200 000 workers. In 1996 labour cost was still about 10.7 trillion lire, even though the labour force had been reduced by 70 000 units. And FS currently estimates a further reduction in its labour force of about 30 000 units.

A second explanatory factor is FS's low labour productivity. In part, labour productivity is low because of particularly low load factors on low density routes. It must be stressed that about 82 per cent of the traffic takes place on less than 30 per cent of the network. On the other hand, one third of the network accounts for less than two per cent of total traffic. This shows that there could be room for cost reduction through a partial re-organization of the sector based on the substitution of bus services for some rail services.

Table 1. A Comparison between Main European Railways, 1995

	FS	BR	DBAG	RENFE	SNCF
Fares / Costs %	29.6	77.3	52.9	39.6	46.3
Average Revenue pax-km*	67.6	188.2	104.2	85.1	103.8
Labour Cost / Operating Expenses %	60.4	63.3	54.3	45.2	51.4
Labour Cost/Total Traffic*	138.0	130.0	98.0	88.0	102.0
Labour Cost per Worker**	76.7	53.7	43.0	57.4	58.1
Productivity of labour:					
drivers***	15.5	-	26.0	25.7	23.4
traveling staff***	25.6	-	57.4	77.0	43.1
rolling stock maintenance****	9.7	-	-	5.7	5.5
traffic staff***	7.1	-	7.6	13.8	9.1
network maintenance*****	0.8	-	0.7	2.0	1.0

Source: *"Analisi di benchmarking sulle principali imprese europee"* FS Strategy Department, Rome February 1997 and CER Report n.2/1997.

* In lire at standard purchasing power.

** In millions lire at standard purchasing power.

*** Thousands of trains-kilometres per worker.

**** Number of rolling stock per worker.

***** Network kilometres per worker.

In the absence of any strong competitive pressure, the FS's low performance is certainly a consequence of the inadequacies of the regulatory framework coupled with the shortage of reliable control mechanisms. Even more, however, it seems to result from the lack of any effective budget constraint on the company's behaviour, since the company's inefficient choices and low performances are not actually penalized and its losses are usually balanced through additional government funds. In such a situation there are no significant incentives for the company to efficiently allocate internal resources in order to reduce the costs of providing services at the required quality standards.

These features also favour a particularly slack relationship between FS and its suppliers[6]. Here FS is in a monopsonistic position, but it does not use its market power to reduce purchasing costs, being obliged by government policies to pursue other goals (on the basis of some general public interest objectives which not always are consistently selected and clearly specified).

As a result, in the Italian rail industry a significant share of the monopolistic rent appears to be split among a large number of different players, including managers, employees, suppliers as well as final consumers, whose vested interests are at present the strongest obstacle to any structural reform aimed at introducing competition and promoting economic efficiency.

FS and the Italian Antitrust Authority

The Italian Antitrust Authority interventions in the railway sector have addressed FS's conduct both on the supply and on the demand side.

The widespread presence of FS in vertically and horizontally related markets has given rise to the concerns regarding the lessening of competition in these markets. Attempts to monopolize, vertical restraints and discriminatory behaviour were the main concerns in three proceedings and in an opinion relating to the supply of transport services.

On the other hand, the relationship between FS and its suppliers has given rise to competition concerns and has been made the subject of four proceedings (Table 2).

Table 2. Italian Antitrust Authority intervention in railway transport

Competitive concern	Cases
Extensions and strengthening of dominant position	Proceeding : FS/SOGIN, 1993 Opinion to the Ministry of Transport: Finmare Group
Vertical restrains and discriminatory conduct favoured by contemporary presence on network and service	Proceedings: FREMURA/FS, 1993 ITALCONTAINER/TCF 1995
Entry obstruction in the Italian markets and distribution of monopolistic rents to suppliers	Proceedings: Consortium Capri, 1993 Consortium Trevi, 1993 TAV, 1994 FERCOMIT, 1996

The risk of monopolization led to a proceeding against the proposed acquisition of SOGIN (a regional bus company) by FS. As in Italy the right to operate bus services in inter-regional and local markets are assigned by concession to a single operator, FS holds a dominant position in both rail and, to some extent, bus transport markets[7]. The integration between bus and rail systems could, potentially, be used as a tool for achieving greater internal efficiency by substituting bus for rail when load factors are particularly low. On the other hand, in terms of allocative efficiency, integration implies the risk of extending the dominant position held by FS in railways, when markets are geographically contiguous, and of strengthening its dominant position where bus and rail routes overlap. Furthermore, the presence of FS, directly or through agreements with other operators, could be extended to the entire logistic and freight sector[8]. Here the advantages of integration, such as the savings realized by coordinating services, must be weighed against the risks deriving from the extension to contiguous sectors of the FS's dominant position in railways.

Vertical restraints and discriminatory behaviour were the main concerns in two proceedings relating to freight transport, FREMURA/FS and ITALCONTAINER/TCF. In both cases, FS could exploit its dominant position on railway markets (determined by its control over the network) to privilege its operations on vertically related markets[9].

The proceedings against CAPRI CONSORTIUM, TREVI CONSORTIUM, TAV and FERCOMIT show the relevant impact on FS's purchasing practices and costs resulting from the above mentioned lack of effective checks and constraints on the company's behaviour. A rough idea of the distortion associated to the distribution of FS's monopolistic rent to suppliers can be drawn from the case of coaches for high speed trains. The antitrust proceeding against CAPRI CONSORTIUM and the compliance with the European regulations on public tenders led to a reduction in price of 30 per cent and to an estimated increase in consumer surplus of about 225 billion lire.

Concluding remarks

Although some undeniable improvements in the quality of railway services have been achieved in the last few years (in particular the introduction of high speed connections between the largest cities and a significant strengthening of the network, which will be accomplished by the end of the decade), the Italian rail industry still seems to suffer from the absence of both a competitive environment and effective budget and regulatory constraints on the dominant firm's behaviour. To some extent the enforcement of competition rules has made up for the lack of sufficient incentives for the railway company to reduce costs and improve performances, but more fundamental changes in the current legal and economic structure of the sector will have to be introduced in order to sufficiently increase efficiency and quality in the provision of railway transport services to the ultimate benefit of both taxpayers' and final consumers.

Notes

1 Italian Law n. 137, April 22, 1905.

2 Italian Law n.5, January 14, 1972.

3 In 1985 the legal nature of this entity changed in *"Ente pubblico economico"*, a public economic agency. Italian Law n. 210, May 17, 1985.

4 Ministry of Transportation Regulation n.225-T, November 26 1993.

5 Italian Law n.146, February 22, 1994.

6 See *"Autorità Garante della Concorrenza e del Mercato"* decision n.1663 of December 22 1993, Consorzio Capri; decision n.1796 of February 22 1994, Consorzio Trevi; decision n.1795 of February 21 1994, TAV; decision n.1986 of May 26 1996, Fercomit.

7 See *"Autorità Garante della Concorrenza e del Mercato"* decision n.1667, December 20 1993, FS/SOGIN.

8 See *"Autorità Garante della Concorrenza e del Mercato"* opinion to the Ministry of Transport on the reorganization of Finmare Group, January 1996.

9 See *"Autorità Garante della Concorrenza e del Mercato"* decision n.1312 July 23 1993, Fremura/FS; decision n.3428, November 30 1995, Italcontainer /TCF.

JAPAN

In Japan, eight laws concerning reform of the Japan National Railways were approved and enacted by the Diet on November 28, 1986. Accordingly, from April 1, 1987, the Japan National Railways (hereinafter "JNR"), which had been a public corporation, was divided and privatised into six passenger railway companies, one freight railway company, and other related companies. This paper describes in brief the background, methods and results of the division and privatisation of the JNR.[1]

Background of the reform of the JNR

Although it received annual subsidies from the national government totalling approximately 600 billion yen, JNR at the same time witnessed annual deficits of nearly 2 trillion yen. This phenomenon transpired because significant changes had occurred with respect to the industrial structure of the transportation sector in Japan, formerly dominated by the JNR. The JNR was simply unable to properly respond to these changes in the operating environment, resulting in business failure.

The two primary reasons why the JNR was unable to properly respond to the structural changes in the transportation sector are as follows:

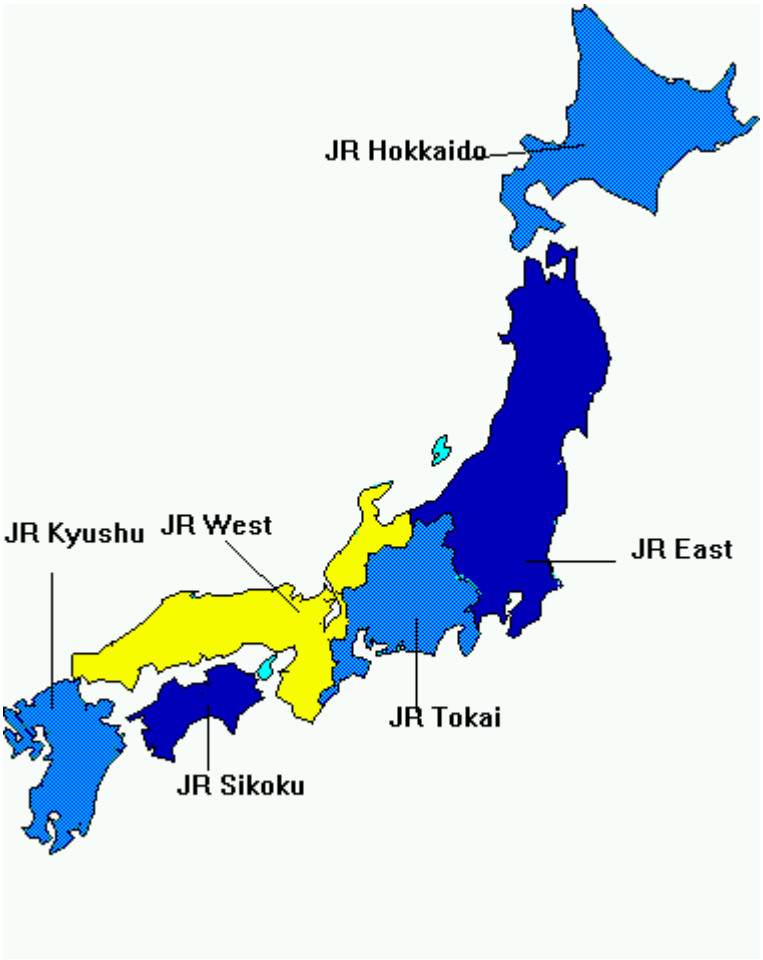
Business was in the form of a public corporation without its own managerial discretion

Important managerial issues which affect the viability of a company (such as the construction of new lines, the setting of fares, wage levels, and so on) were decided by the Administration and the Diet. There was an insufficient granting of authority and responsibility given to the JNR itself, as a party to its own management. This provoked a loss of morale among JNR employees, leading to the outbreak of unlawful strikes and other unruly behaviour. Meanwhile, the construction of new but unprofitable lines was carried out under political pressure.

The scale of the nation-wide business simply exceeded the manageable size

The JNR was a single national organisation so it was subject to uniform management. It was not possible to provide customised services in order to meet the needs of individual customers, which accelerating the loss of these customers. Moreover, internal subsidisation was easily carried out, exemplified by the belief that "It is OK to use surplus from the Yamanote line and the Tokaido Shinkansen[2] to supplement deficits on unprofitable lines." Thus, operations were not conducted on a basis suitable to each region.

Areas served by the six passenger railway companies



Even though there was a business failure within the JNR, large areas remained open for further development, based on the characteristics of the railway business, such as short-distance transportation to and from work and school in large metropolitan areas, and middle-distance transportation between cities. Thus, the JNR was reformed in order to revive the railway business and to contribute to economic activities and the lives of the citizens.

Methods of reform of the JNR

As stated above, reform of the JNR was conducted for the purpose of reviving the railway business. Accordingly, a framework was constructed to correct the causes of the business failure and to dispose of the “inherited debt” from the JNR.

Division and privatisation of the JNR into six passenger railway companies and one freight railway company

For the purpose of curing the two causes of the JNR's business failure, i.e., its status both as a public corporation and as a single national organisation, the JNR was divided into six passenger railway companies and one freight railway company. This ensured that the business would be more appropriate to the characteristics of each region, and under transparent operational responsibility.

Employment policies with respect to surplus personnel

At the time of the establishment of the new companies, the ideal number of personnel was computed to be 183 000 persons. Therefore, if all of the 277 000 employees of the JNR had been transferred to the new companies, there would have been much more personnel than required. Forecasts indicated that this would have undermined the foundation of a healthy business. Accordingly, the new companies decided to hire the employable limit of 200 000 persons through efforts such as the development of related businesses. The remaining employees of the JNR were transferred to the national government, municipal corporations, and other private companies. Moreover, the JNR Liquidation Corporation implemented re-employment measures, such as occupational training and job-seeking assistance.

Clearly-separated responsibility between the national government and the new companies with respect to the disposition of long-term debt

In April 1987, at the time the JNR was divided and privatised the total amount of long-term debt held by the JNR amounted to 37.1 trillion yen. Each of the new companies was made to bear the *maximum* possible amount of debt. The three Honshu companies[3] and the freight company undertook 14.5 trillion yen, approximately 40 per cent of the long-term debt. The remaining amount of 22.7 trillion yen was disposed of by the JNR Liquidation Corporation. The JNR Liquidation Corporation was supposed to redeem debt by selling land taken over from the JNR and by selling stock in each of the new companies. Debt remaining thereafter was to be disposed of by the national government, which, in essence, was borne by the citizens.

Results of reform of the JNR

Representatives of the new companies believe that the division and privatisation of the JNR has led to sound results for each of the JR companies and has been favourably evaluated from many perspectives.[4]

Positive results exceeding government forecasts have been achieved and fare increases suppressed

The earnings forecasted by the government prior to the reform of the JNR were premised upon yearly fare increases. However, privatisation enhanced management responsibility. Following efforts to cut costs and raise productivity, no fare increases have been made at JR East, one of the six newly created passenger railway companies, except for adjustments in connection with the introduction of consumption taxes. Performance has surpassed the earnings forecasts.

Safety levels and services have been improved

The provision of safety equipment and facilities, along with extensive staff education have resulted in a decline in the number of railway accidents compared to the number which occurred at the time when the companies were newly established. Moreover, under the motto of "customers first". Train travel increased by 20 per cent in the Tokyo metropolitan area. Services have improved relative to the era of the JNR.

Debt has been reduced

At the time of establishment, each of the new companies was saddled with large amounts of long-term debt. However, these companies have so far settled a combined total of 2.8 trillion yen of this debt.

Rapid decision-making and creative morale of the staff have been achieved

Compared to the JNR, the organisational structure of the new companies was simplified, providing the ability for rapid decision-making and response to change in the broader environment. Moreover, through privatisation, the long-lasting perception that "the effort of each individual employee will not be closely examined when affiliated with a large organisation" has been swept away. This has given rise to greater autonomy and morale on behalf of labourers, who in turn have become more positive and forward-looking.

Labour conditions have been markedly improved

This conferring of transparent management responsibility led to great improvements in labour conditions such as the workplace environment and salary levels, as a means to respond to the efforts of labour. For example, annual stipulated work hours were decreased from 2 101 hours at the time of inception to 1 863 hours (a total decrease of 234 hours), whereas salary levels increased approximately 45 per cent compared to those at the time of the inception.

Consistent with the above, JR East believes: "Reform of the JNR was conducted in order to revive the railway business to contribute to the economy and lives of the citizens, and it has actually yielded significant results."

The White Paper on Transportation for fiscal 1996 provides a summary of the assessments of the reform of the JNR over a ten years period.[5]

A section in the White Paper entitled: "Assessments of the Reform of the JNR and Remaining Policy Issues (Part 1, Section 5)," cited, as the primary advantages of the reform, the maintenance of fare levels, improvements in transportation services, reductions in staff, and taxpayer relief.

However, whereas there are many aspects of the reform of the JNR which should be praised, there are also many policy issues which remain. Among these issues, the most important are those concerning the settlement of long-term debt. From the perspective of promoting complete privatisation, a policy issue requiring urgent attention is the strengthening of the operating base of JR Hokkaido and the like, in addition to JR Freight, which have a precarious business outlook.

With regard to the division and privatisation of the JNR, several Japanese economists came to the following assessment[6]:

Compared to the era of the JNR, the new companies which have resulted from its division and privatisation are evaluated, overall, in a favourable light. First of all, the attainment of a surplus deserves special mention. Moreover, there have also been many favourable comments due to the improvement of services. The new companies were probably in a relatively advantageous position on account of the severe criticisms of the JNR, particularly during its final stage, but comments were particularly favourable with respect to the increased number of trains and improvements in speed on the metropolitan area routes.

It can also be ascertained from data that the productivity of the new companies improved after privatisation and is now approaching the productivity of large private railway companies. For example, during the period following the privatisation, from 1987 to 1991, there was a rise in labour productivity by 37 per cent measured by the number of persons multiplied by distance transported. Moreover, compared to ten years ago (1981), there was an increase in productivity by over three times! Conversely, the large private railways' productivity increased by only eight per cent (1987-1991) and 19.3 per cent (1981-1991). The labour productivity per employee which ten years ago was at only one-third the level of the labour productivity of the large private railway companies, improved to 77 per cent of this said level. The labour productivity measured by the distance travelled by train cars per employee is 94 per cent, which is almost at the same level as in the large private railway companies.

There is no disputing that the division and privatisation of the JNR are an example of deregulation policy if compared with the era of the JNR, but there are some who raise doubts.[7] Their arguments are as follows: There has been vigorous debate in the context of both regulatory reform in general, and on the specific reform of the JNR concerning the need to eliminate internal subsidisation which is mandatorily imposed from the outside rather than as a result of corporate decisions. This debate led to the conclusion that the new passenger railway companies should not take over specific regional traffic lines which have been viewed as deficit lines (namely, lines believed to be internally subsidised) and that freight transportation should be substantially downsized and transferred to a newly-established company. However, it cannot be said that subsequent debate regarding the new companies has always proceeded in this direction.

For example, the new companies are not given freedom to withdraw. Also, there has been no setting up of an external subsidy system for the maintenance of unprofitable operations. Moreover, although the business is divided into six regions, each region is extremely large, and significant differences exist with regard to the density of transportation in the various regions. As a result, doubts remain as to whether internal subsidisation between lines will continue. Furthermore, it is necessary to carefully monitor whether or not the Ministry of Transportation will approve the introduction of independent fare schedules for separate lines aimed at eliminating this practice.

In light of the objectives of the reform of the JNR, an administrative review[8] was conducted from July to December 1990, from the perspective of facilitating stronger management to bolster the operating bases, implementing thorough policies to improve safety and customer services and promoting flexible and efficient railway business operations at the six passenger railway companies. They surveyed business operations in the new companies, railway business operations, and the status of guidance and supervision by the Ministry of Transportation. An outline thereof is provided as follows[9]:

Following the division and privatisation of the JNR, the six new passenger railway companies have made efforts to improve transportation and to secure a higher volume of passengers by stepping-up the operation of trains based on successive route amendments, and by promoting increased comfort and speed through

investment in new train cars. While developing related business, the companies have promoted improvements in the efficiency of all aspects of their operations, such as the consolidation of existing business organs and the combining of work. In regard to operating results, all of the companies have, since 1989, achieved ordinary profits. The total amount of ordinary profits of all of the companies for fiscal 1990 reached 380.5 billion yen, thereby exceeding the government forecasts, and is generally viewed as smoothly progressive.

However, the majority of the revenues from these companies are derived from passenger transportation, so the balance of revenues and expenditures are significantly influenced by the state of the economy, progress in the development of airports and highway networks, and other transportation sector occurrences. The operating losses in railway businesses and related businesses of the three companies located in Hokkaido, Shikoku, and Kyushu are supplemented by the Railway Management Stability Fund. Also, three profiting companies - JR East, JR Tokai and JR West - are confronting many operating issues such as the huge amount of long-term debt inherited from the JNR which must henceforth be redeemed over a long period of time.

This presentation focused particularly on experiences involving the division and privatisation of the JNR based on various analyses in Japan. From the viewpoint of competition policy, the division and privatisation of the JNR can be evaluated for two reasons; *(i)* although it is often said that a division of a nation-wide monopoly company into several new ones only results in the creation of several local monopoly companies, competition among these companies, which was naturally non-existent before the division, now prevails. *(ii)* privatisation itself led the new companies to enter into new business fields related to railway transportation service.

It is our hope that these experiences in Japan will serve as a reference for any future examination of the direction of competition in the railway transportation industry, and its impact on vigorous competition effecting costs, fares and quality of service.

Notes

1 Primary source of information, Vol. 11, No. 4 of the *JR Higashi* published by the Japan Railways East Passenger Co., Ltd.

2 The Yamanote line and the Tokaido Shinkansen are both representative of profitable lines.

3 JR East, JR Tokai and JR West. These three companies operate on the Honshu Island (the mainland).

4 *Supra* note 1.

5 White Paper on Transportation for fiscal 1996 (December 1996), edited by the Ministry of Transportation.

6 Kenichi Shoji, *Railway Transportation* (1995), ("Lecture: Public Regulations and Industry (4): Traffic" edited by Yoshitsugu Kanamoto and Hirotaka Yamauchi).

7 *Supra* note 5.

8 The business operations of the JR passenger companies, railway business operations, and the status of guidance and supervision by the Ministry of Transportation were investigated by a separate administrative organ(General Affairs Agency) which made recommendations to the Ministry of Transportation.

9 *The Current Status and Issues Concerning the JR Passenger Companies* (1996), Administrative Surveillance Bureau, General Affairs Agency.

KOREA

Introduction

Since the 1970s, Korea has experienced rapid economic growth, supported by the government's export-driven policy, which has increased the demand for transportation. During this period, investment in infrastructure was focused on the road and the aviation sectors. While the total length of road, the handling capacity of ports and the handling capacity of airports were increased by 1.1 per cent, 13.2 per cent and 27.2 per cent respectively, the total length of railroad increased by only 0.3 per cent between 1983 and 1993. As a result, th Korean railroad industry was not able to meet the increasing demand for railroad transportation.

Ironically, although the demand for the railroad has increased, the Korean railroad industry is suffering not only from an accumulated deficit but also a deterioration in service quality. This can be attributed to factors outside the railroad industry, resulting in poor financial figures and operational inefficiency.

The Korean government has endeavored to rationalize the railroad industry, considering privatization as an option. However, as the current poor performance of the railroad industry does not stem from one simple reason, it is difficult to find a single formula that will enhance the efficiency of the railroad industry. With this in mind, the Korean government intends to find the most appropriate alternative for rationalizing the railroad industry.

Current Status of Korean Railroad

The Structure of the Railroad Industry

In Korea, a government agency (KNR : The Korean National Railway) has full responsibility for the ownership, operation, and management of the railroads and therefore has a monopoly of the railroad industry.

Established and operated under the National Government Organization Act, the KNR's administrative structure is based on the rigid rules of the central government. Thus, it was often the case that important decisions relating to investment were made by the central government.

The Regulations on the Railroad Industry

Under the "PSO (Public Service Obligation) principle", all the fares set by the KNR were regulated by the relevant government departments in consideration of the general price level. This lead to conservative tendencies in fares which resulted in chronic shortages of investment funds needed for expanding railroad services to meet increasing demand. Generally, revenues from ticket sales covered only 70 to 80 per cent of operating cost. As a result, the KNR debt has accumulated.

Railway Service and Management Performance

The current situation of the Korean railroad industry can be summarized as follows: a shortage of supply relative to increasing service demand, deterioration of service quality due to superannuated rolling stock and equipment, and the poor performance and inefficiency of management. Due to poor management and inefficiency, the productivity and profitability of KNR dropped below the average of all the transportation sectors combined. In fact, the ROI (return on investment) and the ROE(return of equity) of the KNR were 1.3 per cent and -1.46 per cent respectively in 1995. Also, the value-added per employee is much lower than the average level of the transportation industry.

Efforts to Rationalize the Industry

Being aware of these problems, the government sought to rationalize the railroad industry. It unvelied its plan to corporatize the KNR in 1993, aiming at improving profitability, operating efficiency and service quality through the introduction of private sector management methods.

However, two major problems hampered this government initiative to corporatize the KNR: first, the need for funds to liquidate the long-term debts accumulated over the years and to pay the huge amounts of early-retirement compensation to the employees to be laid off following corporatization (which was estimated to be U$775 million); and, second, the railroad trade union's hostility towards the idea of corporatization and the inherent possibility of nationwide industrial action threatening national security.

Under these circumstances, the government steered away from the corporatization initiative and, instead, enacted the "Special Act for Railway Management Improvement" in 1995 with a view to improving KNR's management within the existing state-ownership framework.

The purpose of the "Special Act" was to ease the numerous regulations applied to KNR's business activities so that it could compete with the private companies in other transportation industries on relatively fair conditions.

The Act grants the KNR the authority to:

- adopt a flexible fare system based on seasonal daily traffic demands to maximize its operating revenue;

- develop new businesses related to railway operation such as hotels, shopping centers, and parking lots around stations; and

- adjust its organizational structure to improve organizational efficiency without interference from the conventional regulations concerning government organizations, etc.

Under the umbrella of the Special Act, the State-Owned Railroad Management Improvement Basic Plan was implemented in 1997. It is comprised of a personnel restructuring (with aims to decrease personnel expenditure from 62.8 per cent of the budget in 1997 to 38.2 per cent in 2001), adoption of a private sector management system separating the operation of the railroad from its construction, concessions for a number of businesses and promotion of private sector participation in railroad construction, removal of high cost elements and specialization of cars by function, and participation in such complementary businesses such as service station businesses in order to increase revenues.

The Approach of Institutional Reforms for Greater Competition

Impetus for reform

In the past, the monopoly of the railroad industry was justified by economies of scale and the need for economies of scope encompassing horizontal and vertical integration. Furthermore, the railroad is considered a public good *par excellence*. Accordingly, it is generally understand that any deficit should be subsidized by the government to fulfill the PSO (public service obligation).

There are several arguments which we can make against this position. First, the benefits of cost minimizing behavior from actual and potential competition are much higher than the benefits from integrated and monopolistic production and supply. Second, the public goods characteristic of railroad has been reduced because of traffic congestion. As the basis for the national monopoly of the railroad industry has been not only weakened due to the arguments listed above but also the current status of the railroad has been deteriorated, there is a need to introduce competition in the railroad industry.

The Approach of Institutional Reforms

A concrete and serious study is required on the issues to be addressed in introducing competition to infrastructure markets, including the railroad industry. One of the major issues is whether to include the subway industry in the various deliberations on the railroad industry. The scope and criteria of the introduction of competition could also constitute a significant issue. Moreover the possibility of 'unbundling' the railroad services could be a significant issue. For example, security and technology could be considered one of the criteria which distinguishes the scope of government-ownership from private sector ownership. The proper degree of PSO could also be regarded as one of the criteria. Furthermore, a study needs to be made on the economic structure of the railroad industry as well as the size of potential entrants to determine which type of unbundling is most appropriate for the KNR.

Unbundling services can promote new entry by reducing sunk costs in entry and by promoting competition between the unbundled units. This competition can reduce operating costs. There are two types of unbundling services. One is vertical unbundling, which is to separate track management from railway operations; the other is horizontal unbundling, which is to separate activities by markets-either geographically or by service categories.

The two main approaches for introducing competition may be called "competition in the market" and "competition for the market". Competition in the market is a situation in which multiple providers compete directly with each other. Competition for the market is a situation in which governments create competitive conditions leasing or ownership concessions, and firms compete not for individual consumers in the market but for the right to supply the entire market. A prerequisite for the latter would be that the financing market, including the stock market, is well developed.

In the case of the KNR, one way to introduce some of the aforementioned methods could be to separate the railroad operation from track management, further separating the operating authority by markets, either by geography or by service categories. As for the reform of the ownership and management structure, steady expansion investment is needed to meet the rapidly increasing demand for Korean railroad. However it is difficult to raise the fare high enough to make funds to finance the continuous expansion, because the public would resist the high railway fare. Therefore it would be better for the public sector to have the ownership of the railroad and make constant capacity expansion investments. In order to get the efficiency gain from competition, however, the operating right should be given to private companies for a certain period of time through competition.

Even if competition and market forces are introduced into the railroad industry and ownership and management are handed over, a minimum level of regulation for public interest, such as the PSO, will be necessary. Furthermore, some form of regulatory mechanism will be necessary, even after the introduction of competition. One possibility would be to provide incentive regulation mechanisms, including price cap regulations and yardstick competition regulations.

Concluding Remarks

As previously stated, the Korean Railroad sector has had several problems including a shortage of facilities, deteriorating service quality, continual operating deficits. These problems are due to the monopolistic market structure, government ownership and management, and inefficient regulation mechanisms.

In the future, when KNR achieves a sufficient improvement in profitability and efficiency through the current management improvement efforts, the Korean Government will assess the situation once again and, if deemed feasible, will then consider introducing competition in the railroad industry after a through study is made of the issues mentioned earlier.

MEXICO

Privatisation process

The Mexican Railroads privatisation scheme involves the regional separation of assets and operations, in setting up a number of route-based companies. Under this scheme, vertical integration of the different functions or services (infrastructure construction and maintenance, traffic control and operation) that make railroad transportation possible is preserved, although functions may be unbundled whenever it is deemed to be necessary.

Compared to an alternative model in which infrastructure management is separated from traffic control and transport management, this scheme proved to offer more benefits in the case of Mexico in the light of the characteristics of the network and railway transport. In particular, the privatisation scheme based upon regional fragmentation is expected to promote more investment in infrastructure and is also compatible with the models applied by Mexico's main commercial partners (e.g. the United States). Additionally, non-integrated management of the Mexican railroad would have been difficult to implement as the critical mass needed to guarantee financial and economic feasibility for more than one operator in each region is not achieved. Furthermore, unbundled management and the simultaneous coexistence of several operators requires more and better infrastructure (such as signalling, freightyards, switching equipment and others) which the Mexican railroad system is lacking.

The privatisation scheme recognises that in Mexico the main demand for rail services comes from freight carriers. So, for privatisation purposes, the Mexican railway network has been split up into four main cargo route-based companies. Moreover, various "short lines" will be granted in concession. The short lines serve local markets and most of them are connected to the main lines. The companies are the following:

1. The North-eastern railroad, which connects, among others, the border crossroad in Laredo with Mexico City (50 per cent of the US-Mexican international trade, carried by train crosses through this pass). This region also has access to the ports of Tampico and Veracruz, and to the city of Monterrey.

2. The North-Pacific railroad which serves five cities in the northern border in addition to cities like Guadalajara, Monterrey and Mexico City (this train moved almost 47 per cent of the total volume transported in 1994).

3. The Gulf railroad connecting Mexico City with the Mexican Gulf coast, with access to the ports of Coatzacoalcos and Veracruz.

4. The Multimodal Trans-Isthmian company that will control the strategic Trans-Isthmian railroad and both multimodal ports at the Pacific and Atlantic coasts. Though this railroad will be open to private sector participation, the government will keep the control.

5. Several short local railroads.

Mexico City's terminal will be formed into a separate company, which will be held by the three main railroads, as all of them have access to the City. Each company will own 25 per cent of the shares. The Mexican government will keep the remaining 25 per cent, which might be transferred in the future to a metropolitan railroad.

Apart from the case of the Multimodal Trans-Isthmian company, the Government shall only keep those routes which are essential, when no alternative transportation mode is available and when they have not been acquired by a private party. Companies will be licensed for a specific period of time, up to 50 years in some cases, with the possibility of renewing for a similar period.

As regards passenger transport, several lines will be privatised through an inverse auction process, which will assign the concessions to companies bidding for the lowest subsidy. This process will only be applied to routes that lack an alternative transportation mode. Hence passenger service may disappear on some routes. Cargo concessionaires are required to grant trackage rights to passenger companies.

Auctioning process

Based upon the Law of the Railroad Service (Ley Reglamentaria del Servicio Ferroviario), the concessions to build and operate railways will be granted through an auctioning mechanism, in which the interested parties compete both from the technical and the economic point of view. The interested parties need to have a favourable opinion from the Federal Competition Commission regarding their participation in the auction in question.

Concessions may only be granted to Mexican legal persons. Foreign investment may participate up to a 49 per cent of the licensing railroad's capital. When previously authorised by the Comisión Nacional de Inversión Extranjera (National Commission of Foreign Investment) companies may attract a stronger foreign participation.

Currently, two out of the three main-route companies -- the Northeastern Railroad and the North Pacific -- have been auctioned and some short-line companies are under auction process. The Northeastern Railroad has been acquired by the TFN consortium, formed by the association of Servia, a Mexican transportation company (better known as TMM) and the American railroad Kansas City Southern Industries. TFN acquired by a transaction of $1 400 million US dollars, 80 per cent of the shares of the company and the corresponding participation in Mexico City's terminal. The remaining 20 per cent of the shares will be sold in the stockmarket two years after the date the transaction was concluded.

The North-Pacific railroad was acquired last June by Grupo Ferroviario Mexicano, group integrated by two Mexican companies -- a transport Agency Grupo México and the construction company, ICA -- and the US railroad, Union Pacific. This consortium paid $524 million dollars in a transaction similar to the one described in the case before.

Competition Issues in the privatisation of the railroads

The Mexican privatisation model incorporates several factors that promote competition among railroads or that enhance competition with road or water carriers.

a. First of all, it enhances competition with road transport by removing the possibility of cross subsidies between railroad routes and by stimulating the efficiency of the network.

b. The three main routes are designed so as to promote a "source competition" that may protect shippers in the absence of end-to-end railroad competition. In other words, though there's no competition for example in the route Laredo-Monterrey covered by the North-eastern railroad, freight coming from the USA may be transported to that city also through Pierdras Negras using the track of the North-Pacific railroad. In the same way, shipments arriving from the Far East may be delivered at different ports at the Pacific cost and transported alternative by the Northeast or North Pacific railroads to Mexico City.

c. Source competition is enhanced through the imposition of trackage and haulage rights, which are discussed in further detail in the following section.

d. Furthermore, the concessions do not hinder other companies from operating the same routes, whenever they are willing to invest in parallel tracks.

e. Different regional railroad concessions may not be granted to the same company.

f. Railway tariffs shall be freely set up and must be registered at the Secretaría de Comunicaciones y Transportes (further on, SCT, the Mexican Ministry of Communications and Transports). However, when the SCT or any of the affected parties presume that there is no effective competition, the FCC will be asked for its opinion and, when necessary, tariffs shall be regulated by the SCT. Regulation provides additional protection against the abuse of monopoly power.

Trackage and haulage rights

Trackage and haulage rights are included by law, in order to grant a railway concessionaire access to other railway's licensed tracks, upon payment of a fixed fee. Although the privatisation scheme allows the original concessionaire the exclusive use of the existing railway network in a region, compulsory trackage and haulage rights in specific stretches where access to other concessionaires is necessary for efficiency purposes are stipulated from the beginning in the concession titles. It should be pointed out that the Law provides the possibility that concessionaires voluntarily and at their own convenience negotiate additional trackage and haulage rights with other concessionaires of the railroad system. In this case, the authorities would intervene only to review the agreements entered into.

The concessions to construct and operate a railway cover a long period of time over which the transportation circumstances and economy in general may vary significantly. Thus, the transported cargo volume may in the future permit the coexistence of more than one carrier. Therefore, a more flexible mechanism for the assignment of trackage and haulage rights was sought. Such mechanism should not discourage investment but rather allow the imposition of trackage and haulage rights whenever necessary and in the absence of effective competition. Hence, the SCT may grant concessions to third parties, in order to provide transportation services (cargo or passengers) in a licensed track, after a specific exclusivity period, which is specified in the concession's title, and whenever monopolistic practices have been engaged into by the concessionaire. Previous opinion from the Federal Competition Commission is required. In this case, the trackage or haulage rights which can be imposed do not include the right to serve intermediate points at the route subject to those rights and shall apply only for the transportation of a product or products for which feasible alternative transportation does not exist and for which the petition

was made. Compulsory rights imposed by the authority shall enter into force a year after the corresponding resolution.

Furthermore, revision of the concessions after a period of thirty years and, if appropriate, the establishment of additional rights of way is foreseen. At that moment the SCT may impose additional trackage and haulage rights based upon economic and technical feasibility, international regulation trends and reciprocity, especially in those cases where international agreements are concerned. If so, additional rights shall be entered into force five years after the resolution has been issued.

Summarising, the trackage and haulage rights foreseen in the Mexican regulation framework may be classified as:

-- Voluntary or negotiated. Concessionaires can agree on a voluntary basis on the haulage and trackage rights that suit them. These rights are not subject to the reciprocity principle.

-- Compulsory. The SCT can impose compulsory trackage or haulage rights in specific stretches that will be designated when the corresponding titles are granted.

-- Additional compulsory rights. Thirty years after the concession was granted and whenever there is no effective competition, the authorities will be empowered to impose additional compulsory trackage or haulage rights to another applicant concessionaire in stretches that have not been previously specified.

NORWAY

A new economic management system for the railway sector was introduced in 1990, which required the Norwegian State Railway (NSB) to separate the budget/accounts of respectively its infrastructure and transportation activities. From 1994 Norway is a contracting party to the European Economic Agreement. Of particular relevance is Council Directive 91/440/EEC of 29 July 1991. On the development of the Community's railways. In late 1996 Norway undertook a major restructuring of the sector. The former NSB was split into two parts: an infrastructure part and a public railway undertaking with its main business as providing transport services. A new public body under the responsibility of the Ministry of Transport and Communication was established to control and oversee the sector. Since these changes are fairly new, the Norwegian railway sector is still in transition.

On 1 December 1996 NSB BA was established as an independent railway undertaking through a special Act. NSB BA is owned by the Norwegian State and is itself the sole owner of several undertakings. These subsidiaries operate bus transport services, travel agency services and Gardermobanen, a railway to the new Oslo airport. At the same time a new public body, Jernbaneverket, was established. The ownership of most tracks was transferred to Jernbaneverket whose main responsibility is the management of tracks and other railway infrastructure.

At present, the traffic, control and safety systems are the responsibility of NSB BA, but will be transferred to Jernbaneverket from 1998. With the exception of the tracks, the other infrastructure facilities are owned by NSB BA and are rented to Jernbaneverket on a cost basis. However, Jernbaneverket establishes the conditions of use of this infrastructure, in order that different undertakings may achieve equivalent access on non-discriminatory terms. NSB BA and Jernbaneverket have the same administration and board.

In October 1996 an administrative public body, Jernbanetilsynet, was established to oversee undertakings involved in the provision of transport services as well as private and public infrastructure managers. Jernbanetilsynet will be financed through public funds. It is under the responsibility of the Ministry of Transport and Communication and will also handle applications to the Ministry concerning railway concessions. Due to practical and economic reasons Jernbanetilsynet in this first phase shares offices with Jernbaneverket and benefits from the administrative services of Jernbaneverket.

In October 1998 the new Oslo Airport will be opened at Gardermoen outside of Oslo and a new high-speed (200 km/hour) railway is being set up by the company NSB Gardermobanen AS. NSB Gardermobanen AS is wholly owned by NSB BA and will serve both as the infrastructure manager and a transport operator on this high-speed railway. Any licenced railway undertaking is, however, to be given access to the tracks for a fee.

In northern Norway and Sweden an international grouping was formed in 1996 with the purpose of transporting cargo from the pits of Kiruna to the port of Narvik, i.e. on the railway Ofotbanen. NSB BA holds shares in the Swedish mothercompany of this international grouping.

There has so far been no payment for the use of the publicly-owned railway infrastructure apart from a fee related to the transport of cargo. The fee is calculated per gross-ton-kilometer and has decreased over the past seven years. Some guiding principles for determining user-fees for the railway infrastructure were set out in the new economic management system of 1990. Those principles specified that the fee should primarily serve two functions: 1) signal that producing the service incurs a cost which is related to the

activity level on the tracks and 2) raise incomes to cover costs of maintaining and expanding the tracks. In practice, however, the size of the fee has been determined with reference to ensuring competitive neutrality between railway and road transport.

The Ministry of Transport and Communication is at the moment preparing for the Parliament a green paper on the Norwegian railway sector for the next plan period of 1998-2007.

POLAND

Introduction

Over the period 1990-1996 the Polish railway lost market share. As an example, the following table shows the decline in passengers and goods transported. Over the same period road transport has growing dramatically, especially private car ownership and the international traffic of heavy lorries. The number of passenger cars in Poland has been increasing each year by five per cent since 1991. The number of heavy trucks has also been systematically increasing. Almost 1.3 million lorries were registered in 1995, three per cent more than in the preceding year.

railway passengers (million)

1985	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**
1.005	790	652	549	541	495	466	434

railway freight (million tons)

1985	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**
419	282	228	202	214	215	225	223

This drop in railway traffic was caused not only by the increase in the number of personal cars and lorries, but also by the fall in importance of heavy industry, better quality of services provided by road transport (especially by heavy trucks) which are almost entirely privatised, and the low quality of services offered by railways (due to antiquated technologies, overemployment, surplus assets and the resulting high costs).

The railway network in Poland has a density similar to other European countries - 7.2 km of standard gauge lines per 100 sq. km of the country area. Half of the existing railway network has been electrified and around 93 per cent of all rail passengers are now carried by electric traction.

The Polish Government would like railways to maintain a sizeable share of the transport market, especially:

- in urban and suburban passenger traffic,

- fast intercity connections between the biggest cities in Poland,

- bulky freight transport (coal, ores, minerals etc.),

- fast container services between major terminals and in international traffic,

- fast connections between distribution centres - traditional cargo trains and combined transport.

In Poland, besides the Polish State Railways PKP, there are six private railway enterprises operating locally (e.g. in the Silesian region). Some of these own their own infrastructure providing access to the coal mines and several power stations. As a result of their lower costs and better quality service, those companies took over coal transportation to some power stations in this region.

PKP, one of the biggest companies in Poland, has its own legal act. In 1995 Parliament enacted an entirely new version of this law. It came into force at the end of November 1995. It defines PKP as a commercial company with the objectives of transporting of passengers and freight commodities; construction, modernisation and maintenance of railway infrastructure; carrying out forwarding services, delivering of telecommunication services; and taking on any other activities which do not restrain the core railway business. In January 1996 the Minister of Transport appointed the Supervisory Board consisting of nine members: three trade unions nominees and six selected by the Minister (representatives of the banking sector, Ministry of Finance and the Ministry of Labour). The first Supervisory Board has a two-year term. The main duties of this Board are:

- appointment of the President of the PKP Management Board,
- approval of the Management Board orders of debates,
- approval of the annual budget of PKP,
- providing opinion on long-term PKP plans.

Since February 1996 PKP has a Management Board consisting of six members:

- President,
- Vice President - Infrastructure,
- Members of the board:
  - Finance,
  - Human Resources,
  - Freight & Passenger Services,
  - Traction and depots.

All the important decisions concerning PKP need Management Board approval. The PKP Act promotes a new kind of relationship between Government and PKP, on the basis of an arms-length contract which specifies the financial contribution of the state to the railway transport and the obligations of PKP to provide passenger services in local and suburban traffic. In 1996 PKP received 350 million zl (1 US Dollar = 2,7 zl at that time) for several projects related to the modernisation of trunk railway lines, being part of the Crete Corridors, AGC and AGTC agreements. In 1996 PKP also received 570 million zl to subsidise the operation of a 170 million train-km of passenger trains.

According to new PKP Act, the Minister of Transport has the right to take a decision to split off from PKP any part of this enterprise in order to establish a separate entity or to form a joint-venture. This regulation will be in force until the end of 1998.

On the other hand, PKP has the freedom to make any partnership or joint-venture using its property or capital as a share. PKP can hand over unprofitable assets free of charge to local communities under their consent.

On 7 May 1996, the Management Board resolved to reorganise the enterprise into business units. In the first stage, a pilot project was completed on 1 January 1997 in the Eastern Region of PKP. The results are now the subject of discussion among the Board and Management members. From 1996 some divisions dealing with non-core activities were separated from the core business units (sectors) with the requirement

that these activities break-even. There will be no further cross-subsidy to health care, housing and social divisions. The real estate division is responsible for managing all the non-core and non-social assets of PKP. This division also disposes of surplus assets that have been transferred to it by the core business units.

The traction and maintenance division forecasts a reduction of the existing 109 depots to about 33 within a few years in its plans for reorganisation of the rolling stock operations and maintenance.

Recently Parliament approved the Law on railway transport, which will come into force 14 November 1997. The Law, regulations, and associated administrative provisions will comply with the EU directives 91/440, 95/18, 95/19. The basic principles of the Law are:

- organizational separation of the infrastructure from the railway operation,
- obligation for railway undertakings and infrastructure managers to apply for a license,
- licenses for transporting passengers and goods and managing infrastructure,
- non-discriminatory charges for the access to the infrastructure,
- the right of appeal and claim from the decisions to the commercial court,
- new Governmental Agency responsible for the safety issues.

Market definition and need for regulation

The Law requires PKP to separate the infrastructure unit from its organisational structure before 31 December 1998.

For the time being there will be no separate Allocation Body to allocate railway infrastructure capacity. This function will be designated to the infrastructure unit of the Polish State Railways. During the debate on the new railway transport law the Polish Government and Parliamentary Commission did not see the need to establish a new governmental body financed from the state budget.

If the railway infrastructure is not allocated on non-discriminatory basis and if allocation procedures do not guarantee optimum use of the infrastructure, in 1999 the Polish State Railways will be divided into several separate corporations with the possibility of privatisation of the operational sectors (i.e., passenger and freight transport).

Cost and demand based regulation

The Polish Government is obliged to issue:

- regulations and laws setting out the rules governing access to the railway infrastructure,
- regulations establishing fees for the access to the railway infrastructure.

SPAIN
(Tribunal for the Defence of Competition)

Introduction

The rail transport sector in Spain has historically been subject to strong state intervention, in both the rail infrastructure and the provision of railway transport services.

The present report deals with the process of liberalisation and opening-up to competition now under way in the sector and, in particular, changes to the management and operation systems of the rail transport services currently run by: *Red Nacional de los Ferrocarriles Españoles* (henceforth *Renfe)*, with a share of over 80 per cent; the likewise publicly owned company *Ferrocarriles de Vía Estrecha* (henceforth *Feve*); other public-sector companies set up by respective regional governments to manage their own rail systems; and, finally, private railway operators, who are restricted by law to running services under specific circumstances only. Underground railways and trams are, as such, excluded from our considerations.

The Liberalisation Of Rail Transport Services In Spain

The Rail and Road Transport Act of 24 January 1941 established a public railway monopoly in Spain under the management of the state-owned company *Renfe*. The more recent Law 16/1987, of 30 July, on Overland Transport (henceforth Overland Transport Law, OTL), assigned *Renfe* exclusive rights on the operation of rail transport services throughout the *Red National Integrada de Transporte Ferroviario* (Spain's special 1.67m-gauge tracks, differing from the European standard gauge of 1.44m), and all services using the preceding network to *Renfe*, *Feve*, or the company awarded the corresponding administrative concession.

However factors arising subsequent to the enactment of the OTL have favoured the progressive modification of the sector's regulatory framework. Firstly, the publication of the Tribunal for the Defence of Competition's 1995 Report entitled *"Competition in Spain: an appraisal of progress to date and some new recommendations"*, which submitted to the government a series of recommendations to free up the sector and, secondly, the introduction of new rail transport rules at community level (Directives 91/440, 95/18 and 95/19). Both these events have spurred the adoption of new measures, currently under study and debate, aimed at opening the market to competition.

Community Directives

EEC Directive 91/440, of 29 July 1990, on the development of community railways, lays down the obligation for all member states to allow use of their respective infrastructures by international companies or groups of companies running combined international goods transport services, with the sole proviso that such companies or groups of companies should be legally incorporated in a member state.

In furtherance of this objective, Spain is currently regulating not only the existence *per se* of the access and transit rights enshrined in the Directive, but also the rules guaranteeing their effectiveness, and the body or entity which will administer rail network use.

Directives EEC 95/18, on the authorisation of railway operators, and EEC 95/19, on the assignation of rail infrastructure management and fixing of the corresponding access fees, both of 19 June 1995, have mapped out the terms and criteria by which railway companies may gain access to the use of infrastructures, as well as managers' right to charge fees for such usage in compensation for the costs of network maintenance.

The preliminary draft of the Law of Fiscal, Administrative and Social Measures of 1998 envisages the incorporation to Spanish legislation of the norms enshrined in the above community directives.

Tribunal for the Defence of Competition 1995 Report

In its 1995 Report, the Tribunal for the Defence of Competition, after remarking on the progress made following the implementation of the Community Directives referred to in 2.1. and the approval of the new *Renf*e Statute, put forward a set of recommendations to hasten the spread of competition in the Spanish railways sector.

Separation of rail infrastructure and transport services management

Renfe's new Statute and the Contract-Programme signed with the government for the years 1994-98 provides for this separation and lays down that infrastructure financing will henceforth be drawn from the General State Budget, while management of rail traffic, broken down into separate business divisions, will be such that the corresponding fares cover the costs of service provision. This coverage will be scaled up gradually to 100 per cent in the years 1998, in the case of freight transport, and 2000 for long-distance passenger services.

As regards the Tribunal's recommendation to separate regulator and regulated, this was deemed to be an inescapable priority in view of *Renfe's* past and present importance and the monopolistic behaviour entrenched in the sector. In this sense, the creation of the management entity *Gestor de Infraestructuras Ferroviarias* (henceforth *Gif*), under the Infrastructures Ministry, represents one of the most significant advances within the liberalisation process: one which serves the twin purpose of separating infrastructure from traffic, and *Renfe* from the rail infrastructure administration sphere.

Incorporated in 1996 under articles approved by Royal Decree 613/1997 of 25 April, *Gif* has the stated purpose of constructing and managing new state railways infrastructure, as well as managing all existing infrastructure under state control. It will therefore be responsible for administering access and transit throughout the wide-gauge network and charging the fees set in respect of track usage. Under the terms of clause 17.2 of its articles, *Gif* must facilitate the exercise of infrastructure access and transit rights fairly and without discrimination to all those entitled thereto under community or national law.

Liberalisation of infrastructure access (traffic liberalisation).

This recommendation is already provided for in the new *Renfe* Statute and *Gif* articles. For liberalisation to be effective, however, the conditions and usage fee to be met by private operators must first be established.

Concession of a long-distance rail corridor and suburban passenger route to private operators.

These measures met with opposition from the Infrastructures Ministry, which alleged difficulties in integrating different kinds of traffic. Recently, however, *Renfe* has signed agreements with private- sector manufacturers of railway equipment to jointly undertake the renovation of rolling stock. The deal will involve these manufacturers in the management of rail services, participating in both risk and profits, and covers two suburban, one regional and two long-distance lines. A number of regional governments moreover have announced that they will shortly commence projects for the construction and operation of rail transport lines by private initiative.

Liberalisation of traction

Likewise envisaged in the *Renfe* Statute, although problems of engine driver overstaffing have obliged the government to delay its implementation.

In any event, any analysis of the impact of sector liberalisation measures in general and the creation of *Gif* in particular must wait until events are more advanced.

SWEDEN

This paper briefly describes the background and current situation of the deregulation of railways in Sweden.

Before 1988 the infrastructure and the railway traffic were operated by one public service enterprise, the Swedish State Railways. In 1988 the Swedish Parliament decided on a new transport policy. The Parliament decided to separate responsibility for the railway infrastructure from that for rail traffic as the first step towards opening the railway network to a larger number of operators. A further step was taken in 1995 when freight rail traffic was opened to competition as from July 1, 1996. In March 1997 a Committee, assigned by the Government, presented proposals for a national transport policy including the Swedish rail traffic sector. The Swedish Government assigned ten complementary commissions to make detailed analyses concerning various aspects of the rail traffic sector. Their reports are to form basis for a Government Bill to Parliament. The reports are to be presented in October 1997.

The 1988 parliamentary resolution

The national railway was split into a public service enterprise responsible for railway transport, the Swedish State Railways, and a rail administration responsible for the infrastructure, the Swedish National Rail Administration. The Swedish State Railways was required to operate the railway traffic on commercial terms.

The State took on full responsibility for maintenance and upgrading of the rail infrastructure while the train operator was required to pay fees to the State for using the infrastructure. The fees are based on a two part tariff structure, a variable charge related to track use based on marginal wear and tear on the infrastructure, and a fixed annual charge per vehicle. The State allocates grants to the National Rail Administration.

The State railway lines were divided into a trunk system, made up of the existing main lines and county lines which usually carried only local or regional traffic. Deregulation of passenger services on the county lines was introduced. The County Public Transport Authorities were given the operating rights for the passenger services on the county railways. The county operators were free to purchase the train operations from any suitable contractor. The State would purchase some services on the trunk network directly from the Swedish State Railway for regional policy reasons.

The Swedish State Railway was given the exclusive operating rights for passenger traffic on the trunk network as well as for rail freight traffic on the railway network as a whole.

In the resolution of 1988 further deregulation was envisaged.

The 1995 parliamentary resolution

In December 1995 the Swedish Parliament decided to further deregulate railway traffic in Sweden. The new rules provide that, as from July 1996, the County Public Transport Authorities are allowed to run passenger traffic on the main trunk network within their counties. They can also provide local or regional

rail traffic across county boundaries. The Swedish State Railways retains its exclusive rights concerning interregional passenger traffic.

All traffic operators meeting the requirements specified by the State have the right to operate freight services on the State railway network as from 1 July, 1996. However, already established freight traffic on a defined railway network is given priority in track allocation.

A special, independent entity within the National Rail Administration has been given the responsibility for track allocation and traffic control.

There are a number of facilities in the rail traffic sector that the Government considered should be regarded as common facilities (essential facilities), e.g. stations and terminals, land for railway purposes and maintenance facilities. The concerned facilities are now essentially administered by the Swedish State Railways. Even though it was acknowledged that all operators should be able to gain access to these facilities on competitively neutral grounds and on the same terms as the Swedish State Railways' train traffic operations, the Swedish Government did not consider it justified to withdraw the common facilities from the Swedish State Railways without further evaluation.

Rolling stock was not considered a common facility.

Within the European Union a Council Directive on the licensing of railway undertakings (96/18/EC) has been adopted. In accordance with this directive, the Swedish Railway Inspectorate has been appointed the responsible authority for issuing permits for operating traffic on the railway network as from 1 July, 1996.

Procurement of passenger train services

The market for railway transport is dominated by the Swedish State Railways. In addition, there are a few smaller companies, BK Tåg , Sydtåg and Linjebuss, which to varying degrees take part in tenders concerning regional transport as well as in the State's procurement of public services, e.g. non-commercial transport.

Inter-regional services that the Swedish State Railways cannot operate on a commercially reasonable profit basis are reported to a Government Purchasing Committee, which in turn invites tenders for the services. This business has attracted up to four bidders, but until now all contracts have been won by the Swedish State Railways. Through competitive tendering (introduced in 1992) the State's costs have, however, been reduced by 20-30 per cent with roughly the same volume of traffic.

Investment in rolling stock is one of the major issues on the deregulated rail market. The Government Purchasing Committee tried different approaches and in some cases, instead of just covering the operator's losses, the Committee made it possible to introduce new trains by covering the rolling stock capital costs and thereafter letting the Swedish State Railways operate the service with no further support. There is also a sell-back clause - if the Committee chooses another operator after the five-year period, the stock becomes the property of the Government Purchasing Committee.

New proposals

In 1995 a Committee was established by the Government with the task of conducting a comprehensive analysis of the transport sector in order to propose a national plan for transport in Sweden. It was considered particularly important to analyse to what extent application of the principle of traffic sector cost coverage and the environmental responsibilities on each traffic sector have in fact led to increased efficiency and a more environmentally-adjusted transport system.

The Committee's proposals concerning the rail traffic sector

According to the Committee's report (SOU 1997:35) the railways have made progress in some respects and lost ground in others since the 1988 transport policy resolution. Regional rail traffic and High Speed Trains HST (X2000) have expanded, while rail freight services, starting from a high level by international standards, have lost market share to other traffic modes.

The Committee proposed in particular the following measures with a view to strengthening the competitive capacity of rail traffic:

- Continued segregation of track maintenance and transport operations in the rail sector.

- Goods traffic and passenger traffic within the Swedish State Railways should be clearly segregated. Means to this end should be investigated.

- The Swedish State Railways passenger services will have priority on lines for interregional rail traffic which can be operated at a commercial profit. The commercially profitable lines will be supplemented by a national basic network procured by the State in collaboration with the County Public Transport Authorities. These authorities will procure regional rail transport and will be able to take part in the procurement of the national basic network. The national basic network can also include non-rail traffic.

- A National Traffic Agent will be appointed to design the national basic network together with the county transport providers, the National Rail Administration and the Swedish State Railways. The National Traffic Agent will also be responsible for State procurement of transport.

- Rail freight traffic will be completely deregulated.

- The present division of the rail network into main lines and county lines will be abolished. The National Rail Administration will be made responsible for the whole of the State-owned rail network.

Pending Reports

As initially indicated ten complementary commissions are presently analysing various aspects of the rail transport sector. All are due to report by 1 October 1997. These additional assignments concern e.g.

- A new system for fees for use of infrastructure.

- A strategy and a structure for co-ordination of information technics within public transportation.

- Organisation and co-ordination of interregional passenger traffic. The report is to present the consequences of introducing a new authority, responsible for co-ordination and purchasing traffic on the national basic network or other alternative solutions.

- Organisation of national authorities within the rail traffic sector.

- The capillary network.

- Deregulation of the market for long-distance bus services.

- Evaluation of new prerequisites for rail traffic. This committee shall study the deregulation effective from 1 July 1996 and analyse, in particular, the market, the economic development of the main operator, use of common facilities (essential facilities), possibilities for new entrants, train traffic management and other matters.

One of the complementary commissions has presented its report. The commission with the task of studying the organisation and co-ordination of interregional passenger traffic recently proposed the establishment of a national basic network for interregional public transport. A National Traffic Agent is proposed to be appointed for planning and procuring traffic on the national basic network. The proposal covers all interregional rail traffic and other public transportation that cannot be maintained on commercial terms. The traffic services on the national basic network should be procured through public tendering. No priority is to be given to the Swedish State Railway concerning commercial passenger rail traffic. In order to establish competition the common facilities controlled by the Swedish State Railway must be made accessible to the rail market operators on equal conditions of competition. In particular, the facilities concerned are stations/terminals, ticketing/reservation systems and rolling stock.

Experience of the Swedish Competition Authority

Regarding the State's procurement of non-commercial passenger transport on the national network, the requirements for public procurement - involving short agreement periods and insufficient access to railway wagons not owned by the Swedish State Railways - have led to the Swedish State Railways being accepted as the provider. Potential competition has, however, according to a government commission, led to a reduction in public spending for this transport, even though the frequency of services has increased and standard has been raised through new rolling stock.

From a legal point of view interest in competition issues concerning the market for railway transport has essentially focused on one case, namely the alleged abuse on the part of the Swedish State Railways in using its dominant position to pursue predatory pricing. An invitation to tender for the transportation of passengers by rail was made jointly by three County Public Transport Authorities in 1989. For the first time a private company, BK-Tåg, submitted a tender in competition with the Swedish State Railways. The tender of BK-Tåg was chosen and the subsequent contract covered the transportation of passengers for four years. The wagons are owned by the County Public Transport Authorities and the track is owned and managed by the Swedish National Rail Administration.

At the end of this four-year contract period in 1993, a new procurement was announced by the same three transportation authorities. Following a complaint by BK-Tåg, that the tender submitted by the Swedish

State Railways in 1993 implied predatory pricing infringing Article 19 of the Swedish Competition Act, the Swedish Competition Authority found in its investigation that the Swedish State Railways has a dominant position on the market for carriage of passengers by railway.

Furthermore, it considered that the Swedish State Railways had abused its dominant position on the market by applying predatory pricing in its tender. The Authority took account of the judgement by the European Court of Justice in the AKZO-case (AKZO Chemise BV v. Commission (C-62/86), July 3, 1991; [1991] E.C.R.I-3359), according to which predatory intent can be assumed if prices were below average variable costs. Since it could not be demonstrated conclusively that all costs involved were variable costs and that pricing therefore could be below average variable costs, the Authority found that the Swedish State Railway's pricing was at least below the total cost of the undertaking and that the Swedish State Railways had also applied this pricing with the intent of eliminating competitors.

The Authority concluded that the Swedish State Railways - due to its dominant position on the market with greater financial resources including the possibility of cross-subsidisation and its previous legal monopoly - has a strong responsibility not to behave in a way detrimental to the competition on the market and thereby preventing potential competitors from entering this market.

The investigation resulted in an injunction on the Swedish State Railways with a damages claim amounting to 30 million SEK for abuse of a dominant position by applying predatory pricing. The decision has been appealed by the Swedish State Railways and is now the subject of legal proceedings in court.

Final remarks

Experience with competition in railway markets is limited. From a competition-oriented viewpoint, however, the following could be emphasised.

The Swedish State Railways is a public operating utility with commercial goals requiring a return on equity. The Swedish State Railways is in no way prevented from meeting competition from other transport service providers as long as it observes the rules in the competition legislation, in particular with regard to the market behaviour of dominant companies.

The Swedish State Railways has a dominant position in the Swedish railway market. By virtue of its strong position in financial terms, an operator such as the Swedish State Railway is able to set a very low price in local markets where there are competition and thus deter actual and potential competitors with the aim of enjoying higher profits in the long-term than if it had not acted in such a way. From the perspective of the Swedish State Railway group, limited losses could on good grounds be regarded as "self-financed" if the effect is that competitors withdraw from taking part in current and future public procurement processes. The possibility of acting in this way (further strengthened by the specific competition conditions on the railway market) exists since certain segments of the market are or have been protected from competition for some time. The Swedish State Railway still has a legal monopoly for passenger transport on the national network. Under such circumstances, it is very important that abuse of this market power is counteracted.

Apart from consistent application of the Competition Act, structural measures may need to be imposed on the Swedish State Railways' activities in order to ensure the requirement for competition neutrality. The Swedish State Railway has, in fact, not just a dominant position on the market as a whole, but also has control over different strategic resources, such as workshops and stations, which means that players considering competing with the Swedish State Railway in public procurement must be able to resolve

issues concerning the use of these resources by reaching an agreement with their competitor the Swedish State Railway. As a result the Swedish State Railway achieves insight into the activities of its competitors. The need for corresponding agreements for access to certain facilities exists equally in the deregulated freight transport market.

The Swedish State Railways remains the dominant operator in the passenger field. The Transport Act of 1988 has never foreseen a sell-off or split-up of the Swedish State Railways as a means of encouraging competition. Barriers to entry in the rail business remain a crucial matter for new entrants. Many County Public Transport Authorities own the vehicles, seeing this as a way of choosing the operator they wish. This, however, is not the case for non-regional traffic.

UNITED KINGDOM
(the Office of the Rail Regulator)

Introduction

The drive to restructure and privatise

The current drive to introduce commercial incentives to the railway industry has emerged in response to three primary needs:

(a) the need to reduce the subsidy requirements of rail services at a time when the cost of investing in modern rail facilities is testing the ability of national governments to fund such investment;

(b) the need to make railways more receptive to the needs of customers, both passenger and freight, and

(c) the need to improve the attractiveness of public transport relative to private transport (in particular the private car), as the need to reduce road congestion and environmentally damaging vehicle emissions becomes more urgent.

Obstructions to Commercialisation

If the railway industry is to make a significant contribution towards reducing the bill for taxpayers and minimising the environmental damage caused by transport it needs to be structured and regulated in a manner that generates confidence among stakeholders while also creating competitive markets at all levels of the industry. Where such markets cannot be generated, a regulatory regime that both prevents the abuse of monopoly power and generates other incentives that replicate the pressures of actual competition is required. On the other hand, commercialisation is always likely to create a degree of uncertainty, and it is this uncertainty that will affect the attitudes of stakeholders. In particular, it is necessary to overcome:

(a) the potential for passengers to be deterred from using railways because of an increasing level of perceived complexity. Such changes may be actual, ie the need to understand a growing range of rail products with characteristics that are difficult to compare, or simply perceived, such as not realising that the opportunity to purchase cheap tickets with limited availability has been introduced;

(b) the threat of the rail equivalent of 'bus wars', which have been a consequence of the deregulation of the bus industry in the United Kingdom in the 1980s, where individual operators are so obsessed with competing with each other that the passenger benefits that derive from maintenance (and enhancement) of network benefit (eg through ticketing, national timetables etc) are lost;

(c) the resistance of railway employees, and their representatives, who perceive a threat to the security of employment, and their pay and conditions; and

(d) the attitudes of investors who may seek above average returns before committing themselves to new markets which involve an unspecified degree of uncertainty. In particular, it is worth bearing in mind the attitude of banks who potentially play a significant role in funding the building of new rolling stock. In the United Kingdom, banks have expressed some concerns regarding the long term use of the new trains beyond the expiry of the first round franchises and that such uncertainty could lead to investments requiring a higher rate of return than might otherwise be the case.

Mechanisms for introducing more competition

The commercialisation of railways in the United Kingdom has seen the separation of ownership of the infrastructure from ownership of the train operating companies. At this time train operators are all franchisees, but, provision has been made for open access operators to enter the market. The franchising of passenger services has generated substantial benefits to the taxpayer over the life of first round franchises. In addition it has also led to franchise winners being committed to a number of passenger benefits, including new services, improved service frequencies, new rolling stock and limitations on price increases for a number of fares including Savers and Season tickets. It is, as yet, too early to be certain of the delivery of the passenger benefits but the initial signs are quite promising.

The structure of the franchise map in the United Kingdom has created a number of opportunities for on-rail competition, and recent experience suggests that an aggressive approach to on-rail competition between franchisees could lead to significant passenger benefits in terms of reduced price - the most significant example being where one operator has introduced a dedicated season ticket which undercuts the existing product by 25 per cent, a saving of over £1 000 on an annual season ticket. Such a benefit for passengers is unlikely ever to be delivered by means of franchising without the additional incentive of on-rail competition. However, it is still too early to draw many conclusions from commercialisation in the United Kingdom, and the reaction of both users and the industry suggests that any increase in the level of on-rail competition should be gradual if the detriments associated with 'bus wars' are to be avoided.

There is as yet insufficient evidence on which to base any effective analysis as to the impact of commercialisation on publicly supported services within outlying areas. Within the framework of franchising the longer term effect will only be fully understood during the first franchising round that occurs after a significant period of on-rail competition. After a year in the private sector train operators are claiming an average seven-eight per cent growth in passenger revenues. This kind of growth will not have any significant impact on rail's overall share of the United Kingdom travel market which remains in single figures. Therefore, it is unlikely that there has been impact on the environment. Indeed, the limited availability of infrastructure in the approaches to most major conurbations is likely to inhibit the growth in passenger volumes well before any significant impact on the use of the private car emerges. Significant impact on the environment is likely to require at minimum, integration of all public and private transport modes and sufficient investment in rail infrastructure to provide a step change in capacity.

Structure

Structure of United Kingdom railways

The restructuring of railways in the United Kingdom was specifically designed to allow for competition at all levels of the industry, except in the provision of infrastructure capacity. It incorporated,

separate ownership of the infrastructure by a company (Railtrack) which requires the prior consent of the Regulator before operating passenger or freight services (other than for its own use), franchising of the existing passenger rail services with a provision for Open Access services, and the trade sale of the freight services (originally as six separate entities but, in order to achieve best value for money, the majority were all sold to the same buyer). In addition, the various in-house supply services have also been sold to the private sector, including Rolling Stock Leasing Companies (ROSCOs), heavy maintenance facilities, and engineering design specialists. In each case the objective has been to create a competitive supply of those services. (A more detailed description of privatisation and the functions and duties of the Rail Regulator is given in the Annex.) A key deliverable of restructuring has been the development of contracts between the parties which include performance regimes. The inclusion of such regimes within vertically integrated companies would not have been possible, other than as an internal arrangement, and there is evidence to suggest that the existence of these regimes has concentrated the attention of the parties, particularly train operators and Railtrack, to ensure the delivery of the specified performance.

"Competition in" versus "competition for" the market

The developments in the United Kingdom have led to considerable debate as to the desirability of on-rail competition (competition in the market) as opposed to franchising (competition for the market).

The original Government White Paper *Gaining Access to the Railway Network* envisaged new entrants being given the opportunity to introduce new services wherever they believed commercial opportunities existed. Subsequent development and implementation of the Railways Act 1993 led to a franchising-based approach with more limited opportunities for new competitors. It was believed that open competition for passenger services would undermine the value of franchises, perhaps to the point where they could become unsaleable. Franchising has the advantage of retaining aspects of service specification within the public sector while utilising the benefits of private sector management for provision. The process is generally considered to have delivered good benefits for the United Kingdom taxpayer.

However, the shape of the current franchise map has generated a number of short term monopolies. The franchisees have limited incentives to offer real reductions in fares, particularly in the commuter markets where rail has significant market power. A degree of on-rail competition, or at least the threat of it, is likely to generate additional passenger benefits if it can be introduced in a manner that avoids 'rail wars', does not unduly confuse passengers and does not undermine the franchising regime. The most likely benefits of on-rail competition will be pressures to reduce prices, higher frequency of service on popular routes and the emergence of new direct journey opportunities which are commercially viable if introduced in conjunction with new competitive services on core routes.

Moderation of competition

The balance between franchising and on-rail competition is being developed in the United Kingdom by means of the 'Moderation of Competition' (MoC) arrangements. The arrangements provide for contractual limitations that prevent the sale of access rights to new entrants. Incumbent franchisees have been allowed to nominate markets for protection up to a certain threshold, by revenue. The degree of new entry on these protected markets can be reduced over time as the franchisees become more familiar with the commercial aspects of their businesses. Markets are determined on a basis of flows between individual stations. The arrangements allow the Regulator to test the effect of allowing gradual increases in new competition while limiting the scale of the potential impact upon franchisees.

The Regulator is currently consulting interested parties on the desirability of moving to the second stage of MoC which envisages a controlled increase in the level of new competition. The experience so far suggests that it is too early to draw any significant conclusions regarding the most appropriate balance between franchising and on-rail competition. However, the reaction of consumers indicates that they place a high value on the network benefits that are inherent in a unified railway. Any increase in competition needs to reflect this. The correct balance between co-operation and competition will only emerge over time and will need to take account relevant competition law. In view of the significant level of uncertainty and the damage to passenger interests that could result from destructive on-rail competition, any change will be gradual, with close monitoring of the effects of new competition. The Regulator will carry out a competition review towards the end of the century.

Creating competitive franchises

An alternative to a regime that includes both franchises and a degree of open access would be to design the franchise map such that all markets were served by two operators. In effect this would require the majority of the United Kingdom franchises to be split in two before being refranchised. This would provide for a degree of potential competition if the downsides of duopoly could be minimised. In markets where the operators already claim that inter-modal competition provides sufficient incentives and where the constraints of the infrastructure limit the degree to which new competition can emerge, this may be a worthwhile compromise. Redesigning the franchises in this way could lead to a loss of franchise value, but the high price secured for the Thameslink franchise (one of the few in the United Kingdom which has significant geographic overlap with other franchises), suggests that this is not necessarily the case.

Market definition and the need for regulation

Competition and regulation

The need for regulation of Railtrack primarily reflects its position as a monopoly supplier of infrastructure capacity. There are no proposals currently under review in the United Kingdom that would create competition in the provision of infrastructure capacity. There is therefore, little prospect of eliminating the need to regulate Railtrack. Regulation of train operators is achieved by two separate means. The franchising process involves an ongoing monitoring programme to ensure delivery of the franchise commitments. As the franchises will continue either to require subsidy from Government or, in some cases, to generate payments to Government, it is unlikely that any changes to the competition regime will reduce the need for such regulation. Other regulation of train operators is primarily concerned with licensing. Because of the nature of railways, in particular the desirability of preserving network benefits, the limited capacity of the infrastructure to cope with new entrants, and the long time horizons associated with investment projects, there is little prospect that development of on-rail competition will reduce the need to regulate.

In addition, there is some evidence to suggest that passengers are best served by a degree of co-operation between operators. The lack of regulation in the United Kingdom bus industry shows that, left to their own initiative, the short term approach of individual operators can easily lead to competition which is not in the passengers' best interests, such as the bunching of services at popular times and a loss of through-ticketing. To some degree the ability of train operators to exploit passengers may be constrained by the existence of inter-modal competition, particularly in markets served by airlines. While the competition posed by the private car limits some of the more excessive abuses, there is little evidence to suggest that a commercially aware BR was constrained in its activities by competition from private

cars, as evidenced by the relatively high average rail fares in the United Kingdom. Furthermore, if the level of deterrent to use of the private car is increased, (for example by the introduction of road pricing) then the influence of car competition will be further reduced.

Changes in regulation

To date there has been no significant reduction in the level of regulation in the United Kingdom; arguably, any change has been in the other direction. Changes to competition law in the United Kingdom may lead to regulation relying more on prohibition as opposed to approval of arrangements and agreements, but it is not possible at this time to ascertain the degree to which this will benefit the consumer.

Railtrack's periodic review: opportunities and challenges

For the Regulator, the 'periodic review' of Railtrack's access charges, which he has to complete by 31 July 2000, will represent an important opportunity to influence the development of the railway industry into the 21st century.

Although Railtrack's access charges are in regulated access agreements rather than its licence (as with other utilities), many of the components of the review - cost of capital, regulatory asset base, future investment needs, operating cost efficiency, dealing with out-performance or under-performance in the first period - are common to all utilities. The Rail Regulator will reflect the emerging regulatory consensus in reaching decisions on these issues.

There are, however, a number of matters unique to railways that will form part of the overall review programme. These include, for example:

- the subsidy which underpins the commercial profitability of the privatised railway industry;
- the mismatch between the length of franchises and the investment horizons for the infrastructure and rolling stock enhancements which operators may be seeking in order to realise their business plans;
- uncertainty about the nature of the process to be adopted for the next round of franchising, and about the level of subsidy that will then be available; and
- the involvement of the Regulator in approving all access agreements.

As in all regulated utilities, monitoring delivery of the capital programmes underpinning decisions on charges is an important, but difficult, challenge for the Regulator. For example, it is easy to monitor inputs; but effective incentive regulation depends on an ability to monitor outputs in terms of appropriate performance measures. Even if shortfalls in performance can be identified, there is a need to decide whether to take immediate action, or 'log up' the shortfall until the next periodic review. Railways will be no different from other utilities in posing these challenges for the Regulator, although the fact that a considerable amount of taxpayers' money is provided to maintain levels of service for the small minority of people who use railways perhaps makes the public interest issues even more important. The current discussions with Railtrack about licence modifications are intended to give the Regulator appropriate enforcement powers, similar to those that already exist for other industries.

One important policy issue to be addressed as part of the review is whether the existing structure of access charges - a large fixed charge, representing some 90 per cent of the total charge, with low variable charges for track usage and, where relevant, traction electricity - should be maintained or changed. Already, questions are arising about whether decisions about the use of capacity at the margin are being taken on an appropriate basis: are train operators being misled about the costs of seeking additional rights because charges do not, for example, directly reflect additional congestion costs? do freight and passenger services compete on a fair basis for additional capacity? do low additional access charges give Railtrack the right commercial incentive to enhance capacity?

It is easy to see, on paper, how development of a charging structure which is more cost reflective will help to deal with these issues. The arguments are very similar, for example, to those being considered by the Director General of Water Services in the water industry. What is less clear is the extent to which a practicable access charging system could be developed which avoids the need for individual negotiation and for case by case scrutiny by the Regulator. One obvious difficulty arises from the distinction between access rights and timetable slots. It is generally only when timetable bids are made, on the basis of access rights granted, that issues about the competitive impact of a new service on an incumbent, or about the congestion costs imposed, can be properly determined.

What may be a sensible objective, therefore, is to develop a charging system which provides better initial signals to both operators and to Railtrack, but which still requires some further negotiation and regulatory scrutiny in individual cases. Certainly, the Regulator would support measures which reduced his involvement on a routine basis. The key question is how far the system can be developed to give commercial incentives to the different operators which work in the public interest. Would, for example, the development of secondary trading for access rights help to achieve this?

The Government's 1993 publication *Gaining access to the railway network* envisaged that, once the initial franchises were awarded, the system of gaining access would develop along the following lines:

- more service provided on an open access basis, with less provided under franchise agreements;

- operators seeking subsidy for individual loss-making services rather than packages of services; and

- Railtrack, rather than the Franchising Director, taking the lead in 'marketing' access rights and identifying packages of rights to be offered to potential operators.

It is too early to say whether developments in the Regulator's policies on charging and competition will help the industry to move in this direction - or indeed to be certain whether such moves would necessarily be in the public interest. But the need for a more commercial charging structure clearly underpins any moves in this direction.

Conclusion: prospects for the future

Phase II which, for the Regulator, essentially started from January 1997, is all about three main concepts. The first is commitment by the industry, the second is improvement and the third, where commitment and improvement is lacking, is enforcement. The Regulator has a duty to keep developments in the railway industry under review. He will be looking for, and expecting, Phase II to achieve the principal purposes of railway restructuring of improving public transport services for rail passengers, improving the opportunities for using rail for the carriage of goods and getting better value for money for the taxpayer.

ANNEX

THE RESTRUCTURED RAILWAY IN GREAT BRITAIN

Extracts from a paper prepared by Chris Bolt, Chief Economic Adviser and Director, Economic Regulation Group, Office of the Rail Regulator

Restructuring and privatisation of British Rail

Before 1994, all railway activities were undertaken by British Rail (BR). It was a vertically integrated, state-owned monopoly, receiving significant financial support from Government. These activities have now been restructured into around 100 separate companies. In particular, following the requirements of EC Directive 91/440, operation of the railway infrastructure has been separated from the operation of trains. But this has not simply been an accounting separation as required by the Directive; it has also involved separate management and ownership.

Some of the companies created out of BR, principally Railtrack Group PLC (the owner and operator of the network, and freeholder of all stations and light maintenance depots), and the rolling stock companies (owners of all the passenger rolling stock previously owned by BR) became initially Government owned companies, and were subsequently sold. Other companies remained subsidiaries of BR, and have been (or are to be) either sold through trade sales or, in the case of the 25 passenger train operating companies, transferred to private sector companies following award of a franchise by the Franchising Director.

Functions and duties of the Rail Regulator

John Swift QC was appointed as Rail Regulator on 1 December 1993, although most of his powers were only given to him from 2 April 1994. His functions under the Railways Act fall into four main categories:

- the approval of agreements for access to track, stations and light maintenance depots between owners of those facilities (as defined by the Railways Act) and other operators[1];

- the issue, modification and enforcement of licences to operate trains, networks, stations and light maintenance depots;

- concurrently with the Director General of Fair Trading (DGFT), the enforcement of domestic competition law on matters relating to the supply of railway services; and

- various consumer protection functions, in particular the approval of closures.

Licences were issued by the Secretary of State to Railtrack and the British Railways Board, and initial access contracts entered into, on 1 April 1994, the day before the Regulator's Railways Act powers came into force. Those initial access contracts did not therefore require his approval. However, he has been responsible for issuing all subsequent licences, including all the subsidiaries of the BRB subsequently privatised, and for monitoring and enforcing all licences. The majority of access agreements have also been replaced by regulated agreements, subject to the Regulator's approval.

The first function, that of approving access agreements, has no direct parallel in other regulated industries. The Regulator has approved well over a thousand agreements since 2 April 1994, although the 24[2] track access agreements between Railtrack and the franchised train operators are by far the most significant in terms of revenue (some £1.8 billion out of total Railtrack revenue of £2.4 billion).

Approval of individual access agreements potentially involves a greater degree of regulatory oversight of individual contracts between a company and its customers than is the case in other regulated industries. For example, charges form part of the access agreements, and the Regulator consequently determines not simply the total of Railtrack's access charge income, but also its structure. However, once an access agreement is approved, the Regulator has no powers to modify it (unless such provisions are written into the agreement itself). The agreement is a contract enforced by the parties, and the Regulator also has no role in enforcement, although some disputes are, under the terms of the agreements, referred to him for resolution. There is no provision in the Railways Act for appeal against the Regulator's decisions on access matters, although such decisions are of course subject to judicial review. In particular, there is no appeal to the Monopolies and Mergers Commission on the Regulator's periodic review of Railtrack's access charges, as is the case with other regulated network operators.

The Rail Regulator's other functions have more direct parallels in other regulated industries. It is, however, worth pointing out that while the Regulator licenses train operators, and has a direct responsibility for some aspects of customer protection (such as the preservation of 'network benefits'), decisions on maximum fare levels and minimum service levels for franchised passenger services are matters for the Franchising Director (specified in the franchise agreement between him and the franchisee). The Rail Regulator therefore has no direct role in respect of fares paid by passengers, except in the case of 'open access' services which are not provided under a franchise agreement.

On some matters, the Franchising Director and the Rail Regulator have shared responsibility. The two Offices liaise regularly to ensure that any differences of approach can be identified and resolved without creating confusion for train operators.

In exercising his functions, the Railways Act places the Rail Regulator under a number of duties. These include:

- protecting the interest of users of railway services, including the disabled;
- promoting the use and development of the national railway network for freight and passengers, to the greatest extent the Regulator considers economically practicable;
- promoting economy and efficiency; and
- promoting competition.

The Regulator also has a duty not to make it unduly difficult for Railtrack to finance its activities.

These duties are similar to those which appear in other privatisation statutes. There are also some duties specific to railways, such as having regard to the Franchising Director's financial position, and maintaining through ticketing. Three more general duties are unique to railways, and were designed to reinforce the need for 'due process' in regulatory decision-making and to restrict the extent of 'regulatory risk' on the railway industry, following the experience in other regulated industries. One of these

additional duties, to take account of guidance from the Secretary of State, has now expired. The other two are:

- to impose the minimum restrictions consistent with the performance of my functions; and
- to enable providers of railway services to plan the future of their businesses with a reasonable degree of assurance.

The outcome of privatisation

From the first sale in March 1994, the pace of privatisation and restructuring of the railway industry increased during 1995, with approval of the initial access agreements and the start of the franchising process. 1996 opened with the first major sales, the three Rolling Stock Companies, and also saw the award of most of the franchises and the flotation of Railtrack. By the time the ScotRail franchise started operation under National Express ownership at the end of March 1997, the process of restructuring and privatisation was virtually complete.

The terms of the 25 passenger franchises range from five years to 15 years. The majority are for seven years, therefore falling due for re-letting in 2003 or 2004. In some case, longer franchises were awarded where franchisees have committed to major rolling stock replacement programmes. In the case of the West Coast franchise, this commitment to new rolling stock is associated with an upgrade of the infrastructure to allow faster journey speeds.

Most of the franchises have been awarded on the basis of a subsidy payment by the Franchising Director. However, by 2002-03, which is the last full year for many of the initial franchises, six companies will be paying premia to the Franchising Director. One company, Gatwick Express, will be paying a premium in every year of its franchise. In total, subsidy payments will reduce from £1.8 billion in 1997-98 to £0.9 billion in 2002-03 (at constant prices). For the five franchises which extend for 15 years, the combined premium (ie contribution to the Exchequer) by 2010-11 is over £220 million, with only one of the five still requiring subsidy.

The overall decline in subsidy reflects both reductions in costs and growth in revenue. The cost reductions reflect both reductions in input costs (such as the effect of the RPI - 2 control on Railtrack's track access charges) and direct costs. Growth in revenue is expected both in respect of existing services (often on the basis of developments in fare structure designed to attract passengers from other modes), and through the provision of new or enhanced services. Many of these plans for service developments are incorporated into the franchise agreement, and their provision is therefore a term of contract. Where contractual service levels are not achieved, the Franchising Director can take enforcement action (as he proposed earlier in 1997, when South West Trains failed to operate the contractual minimum number of trains, following a shortage of drivers).

Notes

1 The Regulator is also able to exempt the provision of services from the access (and/or licensing) provisions of the Railways Act.

2 One of the 25 train operators, Island Line Ltd, leases its track from Railtrack, and does not require an access agreement. Leases are unregulated.

EUROPEAN COMMISSION

Changes in the regulatory framework applicable to rail transport at EC level

The railway's share of the transport market has substantially declined. This is due to several factors both inherent and external to the sector, as well as to the administered regime where railway activities have taken place.

Railway activities have traditionally been conceived and operated with a national perspective by domestic companies enjoying exclusive rights or dominant market power in their respective national territory for a large proportion of their businesses. Given its special characteristics, Governments have been hesitant towards liberalizing the sector. Furthermore, they have not allowed sufficient managerial independence and have imposed certain service obligations upon railway companies without compensating fully for the costs involved. On the other hand, unlike other transport modes, railways have been confronted with the full costs of their activities. The absence of intra-modal competition has prevented railway activities from benefiting from the positive effects that free-market conditions produce in terms of cost reduction, improvement of services, and development of new products and markets.

Against this background, the European Commission has urged Member States to take appropriate action to revitalize the railway sector. In its White Paper of July 1996, the Commission set out its ideas and proposals:

> "To overcome these weaknesses and to exploit future opportunities, the Community needs a new kind of railway. It should be first and foremost a business. It should have the independence and resources to compete. It should be free of the burdens of the past. Market forces should be further introduced in an appropriate way. The division of responsibilities between the State and the railways should be clarified, particularly for public services. National railway systems should be brought together. It is clear that this requires major efforts from all stakeholders: management, workers Member States and the supply industry. As part of this partnership for change, the Community should provide a modernised regulatory framework, as well as measures for integrating national systems at European level. Consequently, the Community itself should act in five main areas: finances, introduction of market forces, public services, the integration of national systems and social policy".

Over the last five years, the European Council has adopted, upon proposal of the Commission, a series of Directives which constitute the first legislative package towards the full liberalization of railway services.

The first package is formed by Directive 91/440 on the development of the EC railways, adopted in 1991, and the two complementary Directives 95/18 and 95/19, adopted in 1995.

The objective of Directive 91/440 is to help EC railways adapt to single market conditions, and to increase their efficiency. For this purpose, Member States were required to:

- ensure the independence of management of railway undertakings;

- separate the management of railway infrastructure from the provision of railway transport services, by making separate accounting compulsory (although organizational separation remains optional); and

- improve the financial situation of the companies in such a way that they are freed from debts which relate to past loss-making activities .

In addition, based on the conviction that the introduction of market forces is the most effective way of creating a railway that can compete with other modes of transport, this Directive has created access rights to railway infrastructure for international services offered by:

- international groupings of railway undertakings (passengers and goods); and

- railway undertakings engaged in international combined transport of goods throughout the EC.

The two complementary Directives adopted in 1995 are intended to generate the conditions necessary to ensure an effective enforcement of the access rights created. For this purpose, they clarify the conditions of access on such relevant aspects as: licensing, capacity allocation and charging.

Some Member States have adopted or are currently studying additional measures which go beyond the requirements of the above mentioned Council Directives. In the case of the UK these measures have included the privatization of its railway sector.

It should however be noted that EC law is neutral as regards the system of ownership decided by Member States for a particular economic activity. This principle of neutrality of EC law towards private or public ownership of undertakings is embodied in Article 222 EC. Member States are thus free to carry on a given economic activity themselves, to franchise it to publicly or privately owned firms or to leave it entirely to private firms without any State influence. Such choice can however not be used to circumvent EC rules, where applicable.

Role to be played by EC competition policy in the new regulatory framework

Competition policy has an important role to play as railways restructure and seize opportunities offered by the regulatory liberalization. However, an effective enforcement of EC competition rules in the railway transport sector requires that Member States carry out complete transposition of the relevant Council Directives and put into place the necessary means to implement them.

Article 85 EC

The in-depth assessment under Article 85 EC of co-operation in the transport sector requires a market definition. Such a definition naturally means that the different modes of transport are taken into consideration to establish their substitutability for the provision of the relevant transport service. The Commission recognises that competition is particularly strong between rail and road and will therefore take this into account when determining whether competition is appreciably restricted or eliminated in a substantial part of the market for the service in question. However, the existence of strong inter-modal competition cannot justify all type of co-operation in the rail mode of transport. Any assessment on the

exemptibility of individual provisions of co-operation can only be carried out on a case-by-case basis. There are no principles of general value that may be applied across the board.

Due to the access rights created by Directive 91/440, railway undertakings are no longer forced to co-operate with all the other transit railways on the international routes they operate. They can now establish joint-ventures involving co-operation frameworks with a more limited number of partners than before the adoption of the Directive.

General co-operative frameworks between all existing railway undertakings appear to be less indispensable (except for technical aspects) and should therefore become the exception and not the rule, as currently.

In particular, competition policy must be especially vigilant when monitoring co-operation and practices in international combined transport of goods, where Directive 91/440 has enforced the greatest degree of liberalization. In this market, services may be operated by railway undertakings on an individual basis without being required to enter into co-operation agreements with other railway undertakings. This clearly outlines the wish of the Commission and the Council to encourage competition in the first instance in this market, in comparison with the international transport of passengers or classical freight where the forming of international groupings is a prerequisite for getting access rights.

For instance, in 1995, with a view to allowing railway undertakings a limited period of adaptation after the creation of the access rights of Directive 91/440, the Commission exempted for three years until end April 1998 certain agreements on technical and commercial co-operation between railway undertakings. The result of this co-operation are certain standardised forms (UIC forms) used by all railway undertakings in their deals with other railway undertakings or rail operators in international combined transport on such questions as: the supply of traction, the fixing of common commercial conditions, and the structure of the tariffs. Any potential request for a prolongation of the exemption for this general co-operative framework beyond April 1998 deserves an initial unfavourable opinion.

Article 86 EC

The enforcement of Article 86 EC is also essential in this initial phase of liberalization in rail transport currently under way. Either statutorily or de facto, national railway undertakings still enjoy monopoly power for the provision of traction. In these circumstances, they enjoy a dominant position within the meaning of Article 86 EC and must therefore be prevented from putting into place abusive practices such as discrimination or refusal to supply traction.

If all transport operators are to enjoy access to infrastructure on fair terms, sole and final responsibility for allocating paths and access terms cannot be left to a body that operates transport services itself. The conflict of interest is obvious. An undertaking cannot be at the same time both a competitor and the judge determining access to any relevant market. Article 86 EC would prevent a railway company in a dominant position from determining what other parties are their competitors.

Article 92 EC

Member States must notify aid to the Commission and obtain authorization before they implement it. EC rules on State aid do not allow them to relieve or guarantee debts, inject capital or meet operating deficits of railway undertakings indefinitely and without conditions. Such operating aid may only be authorized if conditioned on the implementation of an acceptable restructuring programme

capable of restoring the viability of the beneficiary within a reasonable period. When monitoring State aid in the railway sector, particular attention must be paid that aid does not cross-subsidize activities unrelated to the express object of the aid.

Public service

Under Council Regulation 1191/69, as amended by Regulation 1893/91, Member States have the right to obtain rail transport services in the public interest, as long as they compensate transport operators for the financial burden involved. However, these Regulations may be disapplied to urban, suburban and regional services. Consequently, railways may be compelled to provide public services under non-transparent conditions and frequently not fairly remunerated. Moreover, no open tenders are in principle required for the allocation of these services. The Commission considers that the current situation is not transparent nor efficient. It therefore envisages to propose appropriate legislation to generalize the use of contracts to all types of public service, including the urban, suburban and regional, agreed by the State and transport operators selected through a transparent and non-discriminatory procedure.

Application of competition rules to certain major rail transport initiatives

Freightways

In its White Paper of July 1996 the Commission identified as a priority action in the railway transport sector the promotion of Trans-European Rail Freeways for Freight ("TERFFs"). In May 1997 the Commission has adopted a Communication on the creation of the TERFFs where it has explained the framework-regulation and technical specifications that Member States, railway undertakings and infrastructure managers should in principle respect if they intend to set up a TERFF.

The concept of a TERFF basically involves the selection by Member States of a number of routes on which access will be opened on equal and non-discriminatory terms to licensed railway undertakings, and the voluntary co-operation between the infrastructure managers located along these routes with a view to the creation of One-Stop-Shops ("OSSs). OSSs will be co-operative ventures established by the relevant infrastructure managers. OSSs will market the freeway to licensed railway undertakings. OSSs' basic functions will include: identification and allocation of capacity, monitoring and control performance on the relevant TERFF, and charging on behalf of the individual infrastructure managers.

The TERFFs' Communication has addressed how EC competition rules will be applied to the co-operation required for the creation of a TERFF. In order to provide initial guidance, the Commission has set out that pure co-operation between infrastructure managers (which excludes co-operation between railway undertakings for the provision of services) is likely to fall outside Article 85 (1) EC. However, co-operation which goes beyond the above mentioned functions proper for infrastructure management to also cover areas of train operation will be liable to restrict competition within the meaning of Article 85 (1) EC. Any decision on the potential exemptibility of particular agreements will be taken on a case-by-case basis.

Public-Private Partnership ("PPP") financing of Trans-European Network projects

Following the recommendations of the High-Level Group on PPP financing of TENs, the Commission has adopted in September 1997 a Communication to clarify how EC competition rules apply to the to these projects in which the integration of railway infrastructure plays an important role.

In essence, when assessing TEN railway projects under EC competition rules, the Commission will apply the following basic principles:

- Where the infrastructure manager wishes to allow transport undertakings to reserve capacity as from the launch of the project, all EC undertakings that might be interested should be given the chance of doing so;

- The capacity reserved to an undertaking should be in proportion to the direct or indirect financial commitments entered into by it and should be in line with planned operational requirements over a reasonable period;

- As new infrastructure is not generally congested right from the start of operation, an undertaking or a grouping of undertakings within the meaning of Directive 91/440 should not be able to reserve all of the capacity available. Some of the capacity should remain available so as to allow competing services to be operated by other undertakings;

- Undertakings holding user rights may not oppose the reallocation of such rights if they are not used; and

- The period covered by capacity reservation agreements must not exceed a reasonable period, to be determined on a case-by-case basis.

These principles intend to reconcile the need to maximize the financial viability of rail infrastructure projects with the provision of free and non-discriminatory access to infrastructure.

RESTRUCTURING REGULATION OF THE RAIL INDUSTRY FOR THE PUBLIC INTEREST

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Introduction

Throughout the world, the rail industry historically has been one of the most extensively regulated sectors in the economy.[1] Price, entry, exit, financial structure, accounting methods, vertical relations and operating rules have all been subject to some form of governmental control. The application of the public utility paradigm of governmental regulation has been expressly premised on the assumption that the economic characteristics of the rail industry preclude competitive organization and any need for market responsiveness.

Over the past three decades, however, economists and policy makers have become increasingly critical of the traditional public utility regulation of the rail industry.[2] It is generally understood that in the relevant economic markets in which rail carriers seek to meet demand, there is often (but surely not always) effective competition. It is generally agreed that governmental restrictions upon the structure and conduct of firms in this industry impose considerable costs upon society. Misallocation of freight traffic among competing transport modes, excess capacity, excessive operating costs, and poor investment decisions are often the result of misguided regulatory policies. Regulatory controls have, therefore, been held responsible in large part for the poor financial condition of the railroads, for the deterioration of the rail plant, for the suppression and delay of cost-reducing innovations, and for the mediocre quality of rail service.

The purpose of this paper is to suggest a set of principles for restructuring railroad regulation, and indeed for restructuring the orientation of railroad entities, for the sake of the public interest. Our methodology is to first focus on the economic characteristics of the rail industry and their implications for the design of efficient regulatory policy. Then, we apply powerful sets of analytic tools, in the context of the industry characteristics, to clarify the relevant principles for reform. One of the main points that emerges from the application of industrial organization analysis is that much can be learned about actual and potential industry structure and performance, and about policies designed to promote the public interest, from pertinent understanding of market demands for the industry's products and the nature of the productive techniques available to the industry's firms. Indeed, before we can fully assess the implications of policies aimed at rate regulation or infrastructure investments, it is essential to have a full understanding of the nature of technology, costs, and demand facing the rail industry. The role of the government in relation to market behavior should, therefore, be explicitly based on the underlying economic characteristics of the industry and the technological conditions of its production.

We hope to impart the following message in the course of this chapter: recent developments in industrial organization analysis as well as in regulatory practice call for a major reorientation of public policy towards railroads, one that follows a set of principles we shall articulate.

Current Issues of Public Policy in The Rail Industry[3]

The economic characteristics of the rail industry make it a natural target for government intervention, yet also render it particularly difficult to regulate in the public interest. The old regulatory systems failed to handle the central regulatory problem arising in railroads and certain other major industries (e.g., telecommunications, electric power, and postal services): the mixture of competition and monopoly elements in supply. Indeed, in these industries, just as in the railroad industry over the years, regulation has stifled competition in the provision of services, restricted the benefits of economies of scope, retarded innovation, fostered inefficient service, and thereby harmed the public interest, while at the same time protecting it from the exploitation of monopoly power. The first-best lesson of the perfect competition model, calling for prices to be set equal to marginal costs, has no doubt contributed to the common regulatory ethos which seeks to equate price to some measure of cost. This doctrine has been used frequently where it is completely inappropriate and without logical foundation, that is, in cases where prices should be based on demand as well as cost considerations.

This section focuses on the central pricing issues involved in partial deregulation of railroad rates. It articulates principles to guide regulatory oversight of the rate setting of unsubsidized railroads--principles that are consistent with economic analysis and that are essential for protection of the public interest. Public interest regulatory oversight of railroad pricing involves two basic issues. The first of these is the adequacy of revenues, the determination of the criteria by which this can be judged, and the means by which it can be achieved. The second issue is the choice of rates that are consistent with adequate revenues and that are best for the public interest.

In a regime of deregulation, one of the key elements in protecting the public interest is the avoidance of any residual regulation which effectively prevents the achievement of financial viability by the rail network. The public will hardly be well served by a set of regulatory rules which condemn the railroads to an inability to compete in the financial marketplace and which, consequently, will result in a rail network which is increasingly obsolete, is characterized by deterioration, and in which cumulative abandonment of service becomes the guiding principle.

In determining prices for the outputs of multiproduct railroad firms, regulators have long faced a number of difficult issues that flow inexorably from the basic economic characteristics of the industry that we discussed above. The endemic economies of scale and scope imply that straightforward measures of costs cannot be used to dictate pricing. Economies of scale imply that marginal cost pricing, absent subsidy to the firm or multipart tariffs, will not allow the firm to break even. Further, the shared costs that are a concomitant of economies of scope cannot be unambiguously identified with individual products, so that any rule selected to associate shared costs with individual services will be arbitrary. Such arbitrary measures as fully distributed (or "fully allocated") costs, therefore, cannot substitute for marginal cost measures as decision rules for proper pricing, and the search for any purely cost-based substitute rule is a remnant of inappropriate reliance on the model of perfect competition for guidance on regulation.

A system of rate regulation based upon fully distributed costs, where costs are apportioned on any basis other than demand, is inappropriate because prices set by that method are highly unlikely to permit railroads to achieve an adequate rate of return. Moreover, such a method leads to serious inefficiency by discouraging innovation and by generating prices that are too high to attract competitive traffic, which severely restrict the amount of services delivered by railroads, and which thus produce still higher rates for the remaining traffic.[4]

By contrast, there are sound pricing principles which promote economic efficiency while simultaneously removing impediments to adequate returns for carriers. These principles can be applied in practically useful fashions to assess the reasonableness of those rates which are judged to require continued regulatory oversight.[5] The principles lead to demand differentiated prices, sometimes referred to as Ramsey prices, which apportion all unattributable fixed and common costs of the railroad among its services on the basis of the values of those services to consumers, mathematically expressed as their elasticities of demand. By providing that each service is priced at a markup over marginal costs which is inversely related to the elasticity of demand for that service, economically efficient differential pricing combines cost and demand factors in an optimal manner. These principles result in lower prices for shippers generally by establishing a set of rates which encourages the purchase of more rail transportation services by more shippers than artificial fully distributed cost based pricing, thereby creating a larger traffic base over which unattributable costs can be apportioned. Ramsey pricing maximizes the opportunity for rail carriers to earn an adequate rate of return on capital, and they foster innovation and efficiency in the provision of rail transportation services by rewarding carriers who achieve cost reductions.

Economically efficient differential pricing is entirely consistent with the hallmark of deregulation: that market forces, rather than regulation, should control rates for transportation services. Thus, when a particular type of traffic is subject to competition, direct or indirect, regulatory intervention is unjustified because that competition will produce efficient prices without regulatory guidance. Furthermore, so long as a railroad's earnings fall short of its cost of capital, the need for regulatory constraints upon any of that carrier's rates is minimal and, to the extent such a constraint prevents the carrier from earning an adequate return in the future, it is contrary to the public interest. By definition, there is no danger that such a carrier is receiving excessive overall profits derived from market power or any other cause. In addition, if the rate for any service supplied by a railroad not yet earning adequate revenues overall is held down by regulation below that level which consumers of that service are prepared to pay rather than do without the service, then, in the long run, even those consumers will be harmed--the carrier will find it unprofitable to invest the necessary replacement and maintenance capital, causing a deterioration in, and ultimate withdrawal of, the service.

The Proper Criterion for Adequacy of Revenues

Since avoiding impairment of financial viability plays so crucial a role in any rational program of rate regulation, it is important to describe the criterion by which financial viability can be judged. Just what information is required to determine when a firm's revenues are adequate to cover its pertinent costs? While the answer would appear to be obvious, the past history of regulation demonstrates rather forcefully that it is in fact widely misunderstood. The basic issue is that among the costs which must always be included in these calculations is the cost of the firm's capital, including any capital it has generated internally.

The logic of this criterion is straightforward. Revenues are defined to be adequate when they are just sufficient to enable the firm to attract the capital needed for maintenance, replacement, modernization and whatever expansion demand conditions justify. If revenues are lower than this, the deterioration and eventual disappearance of the service in question are a foregone conclusion.

Adequate revenues are those which provide a rate of return on net investment equal to the current cost of capital (i.e., the level of return available on alternative investments). This is the revenue level necessary for a railroad to compete equally with other firms for available financing in order to maintain, replace, modernize, and, where appropriate, expand its facilities and services. If railroads cannot earn the fair market rate of return, their ability both to retain existing investments and obtain new capital will be impaired, because both the existing and prospective funds could be invested elsewhere at a more attractive rate of

return. Indeed, the market for funds is one of the most competitive in the economy. It simply offers no room to those who cannot meet the competition for funds by others who come there to seek capital. Thus, there is no escaping the following principles that determine the adequacy of revenues:

(a) The firm's overall rate of return must be equal to the returns currently earned by the typical firm with similar risks elsewhere in the economy. Otherwise the required funds will be denied to it.

(b) This means that adequacy of revenues can only be judged by comparison with earnings outside the regulated industry, not by comparing the regulated industry's earnings with the market value of its equity. For the market prices of those securities will automatically adjust themselves downward to match any act by the regulator which restricts the earnings of a firm below a compensatory rate of return, and so such a comparison will appear to justify any earnings restrictions, no matter how inappropriate.

(c) In determining the revenue requirements for financial viability, the rate of return obtained by comparison with other industries must be applied to a rate base which covers the economic replacement cost (under regulation) of all facilities. (Suitably updated historic costs may be utilized instead of replacement costs if the allowed rate is expressed in nominal terms).

(d) With the rate base determined in this way and the rate of return on that rate base equal to the cost of capital, as given by earnings prevailing elsewhere in the economy, one will have determined the figure for total net earnings by the railroad that can appropriately be considered to be adequate for it to compete successfully in the capital market.

(e) This earning figure must not be applied as a rigid ceiling. Otherwise railroads will not have the ability to earn this figure over the long run, since they will be precluded from making up for the revenue shortfalls which may occur as the result of temporary downward fluctuations in demand for their services.

For prices to make sense economically they must be never be incompatible with this earnings level. Of course, no prices can guarantee that a railroad will earn adequate returns overall. For if demands for its services are insufficient or the railroads' operations are conducted wastefully or its services are poor, even appropriate prices cannot be expected to lead to profitable operation. But once the railroads are permitted to charge appropriate prices in a competitive environment, the regulatory impediments to financial viability will have been cleared away. It is then up to the railroads to take advantage of the opportunity by means of economy of operation, quality of service and effective marketing effort.

The Regulatory Problem

Indivisibilities, pervasive economies of scale and scope, high costs of entry, and small-numbers competition in the railroad industry are all consistent with the likely persistence of prices in excess of marginal cost. However, while scale economies go hand-in-hand with natural monopoly, a railroad may or may not have the price-setting discretion that characterizes the textbook monopolist. It all depends on whether the activities characterized by economies of scale and scope are shielded from other sources of competition in the relevant market, and whether there are protective barriers to entry.

In the railroad industry, extensive capital sums must be sunk in way and structures and in a variety of ancillary facilities in order to create new rail lines. The sunk cost and longevity of railroad capital may suggest that the railroad industry is one in which contestability analysis cannot conceivably apply--these sunk

costs generally suffice to deter entry by new rail lines. However, railroad services are far more contestable than these impediments to rail entry would suggest, because there are often strong competitive pressures from other modes of transportation--such as trucking and water carriage--on the rates charged for shipment of a wide variety of commodities.[6]

The basic patterns of railroad regulation, established many decades ago in wholly different market conditions, are simply obsolete. Their premise was that railroads had a collective monopoly, or near-monopoly, in land transport. This condition has disappeared long ago, if indeed it ever existed. Nearly every sphere of rail freight service now faces intense competition. Rival products and rival sources of supply (including trucks, barges, and alternative rail routes) are likely to impose effective competitive constraints upon many, if not most, rail activities. In those activities where there is no evidence that it holds a position of market dominance the railroad should be offered freedom in pricing. Still, there remain instances in which the competitive checks of intramodal, intermodal, geographic, and product competition are weak or nonexistent. There is an understandable apprehension that in such cases market forces may not be relied upon to prevent excessive pricing. The resulting monopoly power is the basic justification for regulation of rail rates and earnings, and defines the basic task with which regulation must grapple.

However, it must be emphasized before discussing the appropriate means to deal with this issue that, in practice, effective competition can assume a variety of subtle forms. Therefore, one must never proceed in haste to undermine the workings of the market through special intervention. Railroads do not face only the competition of trucks and barges. For example, oil and natural gas shipped by pipeline competes with coal shipped by rail and since coal shipment is profitable to the railroads, the competition of petroleum products limit the price they can charge for carrying coal. Also, the market served by one railroad may compete for the coal with a market served by another and this too can keep rates in line.

The Cost Allocation Problem

The presence of substantial economies of scale and scope in the railroad industry creates a number of problems for government regulation. Perhaps the most troubling is the fact that it is impossible to allocate, in any nonarbitrary way, a share of fixed and common costs to any one of a railroad's many activities. There is simply no way to subdivide those costs in a mechanical fashion that is unique and has any foundation in economic logic.

In practice, regulatory authorities historically have determined tariffs based on so-called fully distributed (or allocated) costs. Under this method regulators do (somehow) allocate shared production costs to individual services. Each service is then required to generate revenues which will cover all the costs associated with that service. Although it is often argued that there is no sound economic rationale for fully distributed cost (FDC) pricing, this practice obviously does have economic consequences.

Traditionally, regulatory proceedings have focused on three types of FDC rules. The first of these is the distribution of shared costs on the basis of a common measure of utilization, such as gross ton-miles. Under this FDC approach, which is termed the relative output method, shared costs are allocated in proportion to the number of units of output of each service. A second approach sometimes used is the allocation of shared costs in proportion to the costs that can be directly attributed to the various services. This attributable cost method has also been traditionally used by many unregulated firms in their allocation of overhead costs. A third scheme requires allocation of shared costs in proportion to the gross revenues generated by each service. This gross revenue approach, has been frequently used to allocate overhead costs between freight and passenger services.

In addition to costs that are directly attributable, a service may also be assigned a portion of those costs which cannot be clearly associated with any one service. Some administrative costs are shared by several services. Railroad track is used in the transport of many kinds of freight. Shared costs may, therefore, comprise a large portion of total costs. Thus, the method of allocating shared costs may significantly influence the rate which may be required for any particular service.

No System of Fully Allocated Costs Can Yield Economically Efficient Prices

FDC pricing rules suffer from several disabilities: (i) since fully distributed costs bear no direct relationship to marginal costs, there is no basis in economic efficiency for FDC pricing; (ii) on grounds of economic efficiency, it may sometimes be desirable to set a price for some service so that the revenues it generates do not cover its fully distributed costs; (iii) because the determination of fully distributed costs is arbitrary, there is no economic basis for concluding that a service is being subsidized by other services if its revenues are less than its fully distributed costs; and (iv) FDC pricing is anticompetitive since it prevents a supplier from offering a service at a proposed tariff less than an FDC price, particularly if the proposed tariff exceeds the marginal cost of providing the service. In addition, there is circular reasoning behind the FDC practice. Tariffs which are determined to be "appropriate" at a given time may depend on the existing levels of output or revenues, and these, in turn, depend on previous tariffs. Thus, fully distributed costs may depend on the acceptance of a prior tariff structure.

The most serious defect of fully distributed costs as a basis for rate determination is that they do not necessarily measure marginal cost responsibility in a causal sense. They do not measure by what amount costs would be increased if additional quantities of any particular service were taken, or by what amount costs would be reduced if the service were correspondingly curtailed--they are costs that are averaged by an arbitrary method. Also, being apportionments of historical costs, even when they do accurately reflect historical responsibility for the incurrence of these costs among the respective users, they do not provide a reliable measure of what will happen to costs in the future if particular portions of the business are expanded or dropped.

Another defect of the fully allocated cost criterion is its complete neglect of any demand data. Even if it is based on "relative use" as measured in tons or ton-miles, it cannot capture the role of demand, which economic analysis has shown to be vital in the choice of optimal prices. Even the best intentioned of fully allocated cost standards must employ some rigid criterion to allocate the portion of a railroad's total costs which are not directly attributable to any one of its services in particular. But no such fixed allocation criterion can possibly reflect the subtleties, fine structure and changes in patterns of demand for the railroads' services that are induced by external developments and clearly call for adjustments in its prices. This, of course, is true not only of a standard fully allocated cost approach, but of any rigid formula which bases future prices on cost data of the past, because it too can not take account of changes in demand.

It may seem paradoxical that fully allocated cost criteria, that are apparently designed to assure that all costs are covered by revenues, can in fact preclude rail carriers from achieving financial viability. The reason is that ceilings based on fully allocated costs are set so that unattributable costs are divided in an arbitrary manner among all types of traffic. Then, for the these costs to be recovered, all types of traffic must actually move at the rates that include the arbitrary cost allocations. But traffic with transport value that is below average for its tons, ton-miles, or other allocator will not move by rail at those rates. That is, any service whose demand is insufficient to cover its allocated share of total cost at the fully allocated cost determined price will have a revenue shortfall which fully allocated cost ceilings will prevent other services from making up. Consequently, if the unattributable costs are substantial, and if the values of rail services vary substantially, then fully allocated cost rate ceilings will preclude attainment of adequate revenues.

The effects of fully allocated cost pricing on the efficiency of the utilization of transport resources are equally pernicious. In doing their best to earn adequate revenues despite the handicap imposed by fully allocated cost rate ceilings, rail carriers will be unable to preserve traffic whose value to the shipper exceeds its attributable cost, but which falls sufficiently far below fully allocated cost. True, in the absence of fully allocated cost regulation, any such traffic could contribute revenues that exceed the costs that it causes, and would provide social benefits greater than social costs. But with fully allocated cost rate ceilings, this traffic will reduce the net revenues of the rail carrier and will thus not be compensatory. The reason is that this traffic will be assigned its portion of unattributable costs on the basis of its tons and ton-miles or some other arbitrary allocator, thereby reducing the share of those costs allocated to other traffic with higher value, and consequently reducing the ceiling and the rates on that traffic.

Fully allocated cost rate ceilings may also stifle the incentives of railroads to innovate and compete. A rail carrier cannot be expected to invest in new facilities, in research and development, and in marketing activities designed to elicit new traffic if the financial gains from the new traffic are counterbalanced by induced decreases in the ceilings on the rates charged to pre-existing traffic. Similarly, a rail carrier could not be expected to compete for freight by offering low rates if the necessary markups were much below the arbitrary allocations of unattributable costs; if it did so, it would never earn adequate revenues because its gain from the low-rated traffic would be outweighed by the induced decrease in the ceilings applied to more highly rated traffic.

Long-Run Marginal Cost and Pricing Efficiency

The indivisibilities, economies of joint production, and high fixed costs which make small numbers competition in the railroad industry an inevitable consequence also render the traditional measure of static deadweight loss incomplete as a welfare indicator. A regime of marginal cost pricing would eliminate the deadweight loss. But marginal cost pricing is a questionable regulatory objective, since the railroads would incur substantial losses. If the regulator attempts to force rates to equal marginal costs, overall revenues will fall short of overall costs. Without subsidy, reduction of the short-run welfare loss to zero would cause the long-run deterioration of the industry's capital stock. For rail systems that are characterized by scale economies, rates must generally lie above the costs economically attributable to individual services if revenues are to cover total costs.

It should also be noted that the use of long-run marginal cost to measure pricing efficiency frequently leads to misguided rules which could force the railroad into a pattern of behavior that is in conflict with the dictates of the market. Indeed, the rigid requirement that each rate always cover the long-run marginal cost of service is tantamount to a prescription of pricing inefficiency for railroads. Moreover, such a misguided decision would be likely to impose a heavy penalty upon the public because it would sometimes deprive the public of a valuable service at a price it is willing to pay--a price which also best serves the interests of the company--namely a price that lies between long-run and short-run marginal cost.

The role of a cost floor as a measure of efficiency is to determine whether the railroad would be better off without the traffic in question. There are two basic reasons why it will often be appropriate for a price to lie below the corresponding long-run marginal cost. First, investment decisions which were entirely rational and appropriate at the time they were made will in many cases subsequently be affected by unexpected developments. Such eventualities may cast a shadow over the future of the service which utilizes the investment. A railroad is always better off carrying any and all traffic that can cover its short-run avoidable costs and make some contribution to its fixed and common costs--the supplier earns more by providing the service than by abandoning it. The test of efficient pricing above short-run avoidable costs is

whether the railroad is pricing in accordance with market demand. So long as the revenue inadequate railroad is charging profit-maximizing rates, it is necessarily pricing efficiently; if the price maximizes the service's contribution to company profits, clearly no other price conceivably can bring that service closer to being compensatory in the long run.

The second reason why efficient prices will often fall short of long-run marginal cost affects even services whose financial viability is absolutely clear. Whether a railroad will be able in the long-run to earn revenues that are sufficient to cover the replacement cost of a particular service or a group of services depends on the level of demand over time. The rail industry is strongly affected by business fluctuations in the economy, and demand for individual rail services and groups of services can and does vary widely over time. Even services whose financial viability is absolutely clear, will certainly encounter years in which business is good and other years in which business conditions are poor. In the less prosperous years, the firm's earnings will often fall short of long-run marginal cost because market conditions permit no alternative. Of course, the shortfall will then be made up during the prosperous periods. In this manner then, the firm will in the long-run meet its revenue requirements. But to insist that prices always cover long-run marginal costs is effectively to undermine the market pricing process, and, very likely, even the viability of the service--it would clearly distort the intertemporal pattern of usage of the service and so reduce economic efficiency. In addition, innovation and improvements in operating efficiency over time could potentially reduce costs and enhance contribution. A rule that assumed assets would not be replaced simply because current revenues from a particular service were depressed, would remove any incentive or ability to respond to upswings in demand or improvements in efficiency which would otherwise permit the service to continue.

The long-run marginal cost should never be used mechanically as a rigid minimum cost floor in the pricing of a railroad that is already extant. At the same time, it should be emphasized that the long-run marginal cost cannot serve legitimately to establish the level of efficient pricing above short-run costs at any point in time. Instead, efficient rates will always have to be consistent with demand. This is true whether or not a railroad has market dominance over a particular service and whether or not it has achieved adequacy of revenues. The demand for each service always helps to determine the contribution that service should make to the railroad's overall costs, and that it should make if its behavior is to comport with the requirements of economic efficiency.

Economically Efficient Pricing

If there were no need for enterprises to be financially self-supporting, an ideally efficient allocation of society's resources would be brought about if the price of each good or service were equal to its marginal cost. At such prices, consumers elect to purchase all units of goods and services that yield them benefits larger than the costs of providing them. And, in response to such prices, consumers avoid purchasing units that yield them benefits smaller than the costs of providing them. As a result, the economy misses no opportunity to allocate resources to uses where they yield benefits greater than costs, and no resources are allocated to uses with benefits lower than costs.

In industries without substantial fixed costs, competition tends to result in prices which approximate marginal or incremental costs. However, in the railroad industry, the prevalence of large fixed and common costs make it impossible for the supply of rail services to become financially self-supporting with marginal cost pricing. The financial infeasibility of marginal cost pricing rules out any sensible mechanical or formula-based procedure for regulatory determination of rates. In particular, compensatory rates cannot be determined by the regulator on the basis of cost data alone since the financial viability of any price depends also on the quantity of rail services customers are willing to buy at that price. This is true because there is no correlation between demand considerations and any cost accounting convention.

Allocation of fixed and common costs in accord with any non-demand based apportionment rule will almost invariably produce inconsistencies with the patterns of shipper demands. Some rates will be too low, and consequently the railroad will receive less than the optimal contribution from those services. Other rates will be too high, so that the railroad will either earn less than the optimal contribution or no contribution at all. In short, in a multiproduct industry with uncongested fixed and common costs, the pricing of individual services on the basis of any cost allocation is contrary to the interests of both the operating entities and the shipping public. Rational determination of prices must be based on both cost and demand conditions--demand considerations as well as cost data must enter into decision making, in order to permit adequacy of revenues and achieve efficiency.

Demand-Based Differential Pricing

Non-demand based cost apportionment methods do not necessarily reflect the railroad's ability (or inability) to impose the assigned allocations and cover its costs. Thus, they frequently "over-assign" or "under-assign" the carrier's unattributable costs to particular services. If a carrier sought to apply FDC pricing to all its traffic, it would lose that portion of the traffic for which demand could not support the price assigned. In that event, the remaining shippers would be saddled with a larger portion of the carrier's unattributable costs since they would no longer share those costs with the lost traffic.

Ramsey prices apportion all unattributable fixed and common costs of the railroad among its services on the basis of their demand characteristics. Each service is priced at a mark-up over marginal cost which is inversely related to the elasticity of demand for that service--services whose demands are highly elastic are assigned prices that are very close to their marginal costs, while services whose demands are very inelastic are priced well above those costs. The magnitude of these mark-ups among all services must be sufficiently high to earn net revenues that cover fixed and common costs and, hence, achieve revenue adequacy.

The logic of this inverse elasticity rule and its implied allocation of unattributable costs is quite simple. The elasticity of demand provides a quantitative interpretation of the traditional concept, value of service, which has played an important role in public utility pricing. Consumers who place relatively high value on a service will have demands for it that are relatively inelastic, and vice-versa. For if a rise in price would lead to no significant reduction in quantity demanded (that is, if demand is inelastic), then the service must be worth at least the higher price to its consumers, that is, the value of the service must be high. Conversely, if a rise in the price of a service would lead consumers to curtail their demand substantially (that is, if demand is quite elastic), then the service must be worth little or no more to its consumers than the original price, so that the value of the service must be low.

In view of this correspondence between value of service and demand elasticity, the inverse elasticity rule of Ramsey pricing can be restated in terms of a familiar and long-used principle in railroad pricing. Services with relatively high values to their consumers should contribute relatively large net revenues to the coverage of unattributable, fixed and common costs. Thus, the implicit allocation of unattributable costs should be based on value of service, rather than any *pro rata* sharing or other arbitrary method. All factors that influence a rail carrier's elasticities of demand are relevant for the carrier's Ramsey prices. These factors may include the value of the commodity shipped, intermodal competition, intramodal competition, interport competition, and the substitutability of other commodities for the one shipped at its destination. Value of service is therefore properly construed as a market concept--it refers to the value of the rail carrier's service with all demand factors considered, and generally cannot be evaluated by such measures as the ratio of a commodity's price to its weight alone.

Ramsey Pricing--Efficiency and Equity

Under Ramsey pricing, it is the "non-marginal" portion of total costs (i.e., the total cost less the marginal cost of each service multiplied by the quantity of the service provided) that is apportioned on the basis of demand. Equivalently, it is the shortfall between total costs and the revenues that would accrue from pricing each service at the level of its marginal cost. In the presence of economies of scale, this shortfall is positive. Ramsey prices, therefore, deviate from marginal costs only to the extent necessary to provide adequate revenues--they permit the railroad to achieve the goal of revenue adequacy with the least sacrifice of economic welfare compared with marginal cost pricing.

Increases above marginal cost in the price of an elastic service causes much traffic to be lost--traffic that would generate net benefits because it is valued above the cost it causes. However, less traffic is lost when the price of an inelastic service is raised, and the traffic that is curtailed is the least valued portion. Consequently, when prices must be elevated above marginal costs to cover unattributable costs, it is economically efficient to increase prices of inelastic services more than prices of elastic ones. Such Ramsey prices are, on average, the lowest consistent with financial viability. As long as the price charged to the price-elastic service exceeds its incremental cost, then the service is contributing to the carrier's overhead costs. Thus, Ramsey pricing principles benefit all shippers by establishing a set of rates which encourage the purchase of more transportation services by more shippers than artificial prices based on fully distributed cost. Therefore, by creating a larger traffic base over which unattributable costs can be apportioned, Ramsey pricing also benefits the so called captive shippers. The expansion of rail traffic represents an increase in the flow of commodities to their markets at lower transportation costs. As a result, social productivity is enhanced, and more consumers can obtain more of the goods they desire at lower costs of supply.

Since Ramsey prices are based on the relative values of the different services, they may seem to approximate the solution of the profit-maximizing monopolist, sometimes loosely described as charging what the market will bear. However, it is only the firm's necessary costs, including the cost of capital, that are covered by Ramsey prices. Monopoly prices, on the other hand, are controlled by no such constraint. Ramsey prices, therefore, are very different both qualitatively and quantitatively from monopoly prices.

It should also be emphasized that Ramsey prices are equitable. First, they are non-discriminatory in the sense that services with similar economic characteristics have similar prices, whatever the commodities shipped, whatever the route and whatever the identity of the shipper. That is, two different services with the same elasticities of demand will be priced at the same percentage mark-ups above marginal costs. And, two different services with the same marginal costs and demand elasticities will bear identical Ramsey prices. Second, while the Ramsey prices of different services are different proportions of the services' marginal costs, the burdens from these necessary mark-ups that are borne by the consumers have roughly the same proportion to their respective values of service.

The Stand-Alone Cost Constraint

Ramsey pricing requires that both the marginal cost and the elasticity of demand be quantified for every movement in the carrier's system. That is all but impossible to do with any degree of accuracy. Thus, while the Ramsey formula is useful as a theoretical guideline for rate determination, its application would be administratively difficult and burdensome--the amount of data and the analysis required are overwhelming. The Ramsey pricing rule has also been criticized because it does not constrain the railroad's pricing of traffic over which it possesses market dominance and its consequent failure to protect captive shippers. In addition, although Ramsey pricing minimizes the static welfare cost of the revenue adequacy constraint, still output

levels are less than they would be if rates were set at marginal costs. This results in economic inefficiency because the value of the lost output to the shipper is greater than the value of the resources saved by reducing output. Under these conditions, it may be feasible for the parties to negotiate a contract with incentive clauses, volume-sensitive pricing, or two-part pricing that will leave both parties better off than at the flat Ramsey price, and consequently be yet more desirable for the public interest.

The critical issue from the standpoint of efficiency is the criterion used to set the ceiling on rates where there is market dominance. As we have noted above, rate ceilings derived from fully distributed costs are inimical to the public interest. Economically rational ceilings are obtainable from the *stand-alone cost* (SAC). The stand-alone cost to any captive shipper or group of shippers who benefit from sharing joint and common costs, is the cost of serving that shipper or group of shippers alone, as if the shipper or its group were isolated from the railroads' other customers. A rate calculated by the SAC methodology represents the theoretically maximum rate that a railroad could levy on shippers without substantial diversion of traffic to a hypothetical competing service. Thus, the SAC criterion serves as a surrogate for competition and leads to a simulated competitive price. The competing service could be a shipper providing service for itself or a third party competing with the incumbent railroad for the traffic. In either case, the SAC represents the minimum cost of a possibly hypothetical alternative to the service provided by the incumbent railroad.

Stand-Alone Costs Provide Appropriate Protection Against Excessive Rates

The stand-alone cost test rules out the possibility of abuse of monopoly power by enforcing a competitive standard upon railroad rates. The hallmark of monopoly power is the elevation of the price of a service above the costs at which competitors could provide that service. The stand-alone cost test makes that impossible and imposes the same ceilings on rates for any traffic over which the railroad is dominant that the market would impose if it were subject to either active or potential competition. In the long run, in contestable markets, no group of shippers would agree to pay more to a carrier for their transportation services than it would cost them to produce these services for themselves, or than it would cost a competitor to supply it to them. In the short run, a rail carrier facing either active or potential effective competition could not obtain revenues from a group of shippers that exceeded their stand-alone costs, because those shippers could then be profitably served by a competitor charging lower rates. Thus, the stand-alone cost test affords shippers the same protection that effective competition would provide.

Clearly, the stand-alone cost is unnecessary and inappropriate where there is competition -- the price set by competitors (reflecting current costs of service) will set a market ceiling. If only potential competition exists, the regulatory test is still unnecessary because if the rates charged by the existing carrier exceeded stand-alone costs, that fact would constitute an invitation to entry by the potential competitors. However, for any shippers who are truly captive, in that the rail carrier faces no effective direct, indirect or potential competition for their freight, the stand-alone cost does provide an economically rational ceiling.

No regulatory ceiling is needed to act as a surrogate for active or potential competition from a mode that can operate through the market. In the presence of such a competing mode market pressures will enforce the stand -- alone cost ceiling -- since no one will be able to sell at any higher price. There is yet another consideration which reduces further the likelihood that it will be necessary for regulators to intervene, except on the rarest occasions, in order to enforce observance of stand-alone cost ceilings upon rates. This consideration stems logically from the very concept of stand-alone cost. For if the rates for any service exceed those necessary to cover stand-alone cost, that fact by itself constitutes an invitation to entry, that is, it invites the sort of competition which automatically prevents the continuation of such excessive rates.

The stand-alone cost test does not apply, and cannot be made to apply without disastrous consequences, if railroads are denied the freedom to abandon unremunerative facilities or services. Where that is prevented, a railroad cannot earn adequate revenues if it is constrained by stand-alone cost ceilings on rates in the potentially remunerative portions of its activities. For this reason, it is unwise for public policy to limit the freedom of railroads to curtail unremunerative services without simultaneous provision of public funds to help defray the costs of those services.

The stand-alone cost ensures the equitable treatment of all of a railroad's shippers. By requiring each service or group of services supplied by a rail carrier to contribute revenues less than stand-alone costs, the test assures each shipper and each group of shippers a share in the benefits derived from simultaneity of production--from economies of scope which imply that the total cost to a carrier of supplying many services simultaneously is less than the sum of the costs of supplying them each in isolation from one another. Thus, each shipper is guaranteed some benefit from the revenue collected by the carrier from others. The stand-alone cost offers assurance to each shipper that it will be better off with the existing rates than it would be if it had to fend for itself, as would be the case in the long run if the rail carrier were denied adequate rates.

If the price paid by a shipper is no greater than the stand-alone cost of serving him, then that price cannot possibly contribute to the cost of any facility from which he derives no benefit. This must be true because the stand-alone cost of any facility used by a shipper includes only the (replacement) cost of those facilities after subtraction of any contributions made by any other railroad customers toward the cost of these services. Thus, together, all the customers who share the use of some facilities will provide revenue contributions which do not exceed the costs of the facilities which they use--there will simply be no excess that can be used to defray the cost of facilities unused by any member of this group. The stand-alone cost test, therefore, precludes cross-subsidies among the railroad's different customer groups.

The absence of cross-subsidy under the stand-alone cost test is an appropriate and accepted criterion of equity in the treatment of shippers. Cross-subsidies are properly of public policy concern because they generally lead to a misallocation of resources by encouraging inefficient investment. For the shippers, they may be of concern because they are perceived as unfair. Two groups of shippers may be taken to be treated inequitably if the payments of one of these groups helps to make up for shortfalls in payments by the other. Yet, while shippers who pay more for their service may feel that they are being forced to "cross-subsidize" the other shippers, mere payment of a relatively higher rate is not evidence of a cross-subsidy where fixed and common costs must be covered. Rather, a cross-subsidy can only occur in an economic sense where a shipper (or a group of shippers) pays more than the total cost of serving it alone. Where no shipper pays more than that amount, differences in their rates simply reflect differing contributions to the common costs of the system, and not cross-subsidies.

Imposing stand-alone cost as a rate ceiling is a form of incentive regulation that avoids introducing distortionary incentives to the railroad with respect to its operations and costing decisions. Since the stand-alone cost is the cost of service by a hypothetical entrant who offers alternatives to the shippers at issue, it is not determined by any of the costs actually incurred by the actual regulated railroad.[7] Consequently, under the system of stand-alone cost rate ceilings, a railroad has no incentive to pad or otherwise increase its expenditures for the purpose of relaxing a regulatory constraint. Further, since the ceilings apply only to services over which the railroad has monopoly power, they do not interfere with the railroad's incentives aggressively to pursue additional traffic and other new business opportunities. Finally, while stand-alone costs may be calculated on the basis of detailed engineering studies and judgements, it is significant to note that they are consistent with the "price-caps" that are becoming so popular today inasmuch as they can be periodically updated on the basis of net measures of inflation and changes in productivity.

Efficient Pricing Does Not Require Regulatory Control Over the Entire Rate Structure

For prices to be efficient, they must reflect implicitly all of the interdependencies which characterize a rail network. This could be taken to imply that to institute efficient prices for one segment of a railroad's activities (which requires regulatory oversight), it would be necessary to simultaneously regulate the prices for all of the railroad's services. Convincing evidence that such a conclusion is unfounded is provided by the workings of the free market in unregulated industries. In such industries, there exists no authority which coordinates pricing decisions, and yet compatible and efficient prices emerge, their consistency assured by the forces of competition. This is precisely why free and unplanned markets perform so effectively in comparison with those operated by central planners, despite the latter's alleged ability to take interdependencies into account.

It is for this reason that no regulatory control need be exercised over rates of competitive services. Here efficient prices are automatically imposed by the market, and regulatory intervention can only impede the efficiency of the process of rate determination and resource allocation. Also, relatively little control need be exercised over rates set by a carrier whose revenues are still short of adequacy. If total revenue is not yet adequate, the best rates in terms of the public interest in the long run are those that maximize the railroads' net revenues, i.e., Ramsey prices. Any railroad with inadequate revenues has powerful incentives to select such rates. In such a case, the railroad as a whole possesses no monopoly power which offers it excessive profits, and for individual services for which competition is inadequate, the stand-alone test cost provides the requisite protection to shippers. Under these conditions, there is no possibility of unfair competition through cross-subsidy, with noncompetitive rates increased in order to permit noncompensatory prices in competitive markets. For where the railroad's overall revenues are inadequate, any internally subsidized service must be self-destructive--a drain on the railroad's already insufficient revenues. Thus, where overall revenues are inadequate, only the stand-alone cost test need ever be employed in the regulatory oversight of rate setting.

The only case in which more than this minimal regulatory scrutiny may conceivably be required is that in which a railroad is in a position to earn revenues which are more than adequate. Here, there is at least the hypothetical possibility that high prices for one service will be traded off for price reductions in another. Consequently, it may be desirable to devote regulatory attention to prices for services sold on markets from which competition, direct or indirect, actual or potential, is absent. Yet, even here, there are incentives for the railroads to select the efficient Ramsey prices. That is, the interests of the railroads are still likely to be served best by the prices which best serve the public interest--though it must be admitted that the incentives for it to do so are apt to be somewhat less powerful than those in the prevailing case of inadequacy of revenues.

There is one principal source of incentives for a carrier capable of earning adequate revenues to adopt efficient pricing, even though its net revenues are constrained by regulation just to cover its capital costs and no more. Such a rail carrier is motivated, perhaps more than other firms in similar circumstances, to maintain its traffic base and to guard against substantial diversion of its traffic to suppliers already in operation or to potential competitors. This is because a large portion of a rail carrier's capital stock is nonfungible, or sunk, so that significant losses of traffic would cause losses of revenue far greater than the costs that would thereby be saved. Consequently, a rail carrier with adequate revenues has a particularly compelling incentive to set rates in a manner that will discourage defections of shippers and market erosion to competing suppliers of transportation services, both in the short and in the long run. It may be clear intuitively that among the pricing policies that generate adequate revenues, it is Ramsey pricing that most effectively discourages such defections and market erosion. This is simply because at any one time the Ramsey prices yield shippers the greatest total net benefits possible from prices which yield adequate revenues, and therefore offer shippers the smallest feasible inducement to divert their traffic.

In sum, regulation need not take on the overwhelming task of control of all of a railroad's rates, simply to assure an appropriate choice of prices in those circumscribed arenas requiring regulatory attention. Elsewhere, the forces of competition and the self interest of railroads constitute powerful mechanisms which can do the job efficiently and automatically, using the crucial demand information possessed by the railroads, which is certain to be more complete and more accurate than any demand data a regulatory agency can hope to assemble.

Contestability and the Scope and Structure of Regulation

Contestability is an apt benchmark for the railroad industry, while the familiar perfect competition benchmark is neither attainable nor desirable for the railroad industry where economies of scale and scope are substantial. In this industry, attempts to approximate perfect competition may in fact be highly inefficient and contrary to the public interest. In any case, the theory of contestable markets demonstrates quite clearly that neither large size nor fewness of firms necessarily means that markets need function unsatisfactorily. Indeed, a variety of market forms far removed from perfect competition may perform well for the public interest so long as such markets are structurally contestable. If an industry is contestable, then it is best left on its own devices with no government interference, even if it is composed of a very small number of large firms. Impediments to entry and exit, not concentration or scale of operations alone, are a primary source of interference with the public-interest workings of the invisible hand.

Contestability focuses increased attention upon entry barriers and their defining characteristics. High fixed costs and the consequent economies of scale, for example, have traditionally been considered as impediments to entry; contestability analysis shows, however, that they need not permit excessive profits or prices or any of the other manifestations usually associated with market power. It is the presence of sunk costs rather than economies of scale that is of vital importance for market performance.

The theory of contestability offers an improved set of guidelines for appropriate government intervention in the structure and conduct of firms and industries, that is, of the rules to be followed by the regulators in those cases in which their intervention is called for. In addition, it provides economically sound criteria distinguishing between those cases in which intervention by the public sector is warranted and those in which it is not. The theory of contestability is the framework from which was derived the following precepts for railroad regulation already discussed above:

(i) Permit a private sector railroad to have freedom of pricing and operations on services that face effective competition in the relevant market, whether from other railroads, other transportation modes, other origins, other destinations, or other commodities.

(ii) Permit a railroad to set prices that are responsive to differences in demands, as well as to differences in marginal costs, and further to enter into voluntary contracts with shippers that have individualized terms, conditions, commitments and/or compensation mechanisms.

(iii) Constrain the prices that a railroad sets to "captive shippers," over whom the railroad has monopoly power, by the stand-alone costs of the shipper's service (or by a comparison of revenues and stand-alone costs associated with any larger group of shippers' services), and by the stipulation that the railroad's prices do not generate earnings that persistently exceed the railroad's replacement costs, including a competitive return on capital.

In addition, contestability is a fruitful framework for analysis of issues pertaining to the vertical structure of an industry. For one thing, in a perfectly contestable market, survival against potential competition requires that a firm undertake efficient vertical relationships and structure itself efficiently along vertical as well as horizontal and conglomerate dimensions. For another thing, contestability theory suggests consideration of the idea of separating firms vertically in order to segregate portions that need regulation from those that do not because of their degrees of competition or contestability.[8]

This idea emerges from the application of contestability theory to regulatory policy where sunk costs are not pervasive in an industry, but rather are centered in a particular sector of its operations, such as the track, way and structures in railroading. By isolating the activities with which the heavy sunk costs are associated, their need for regulation can be quarantined. By placing relations with the remainder of the industry at arm's length, to the extent that is permitted by economies of scope, it may be possible to leave the operations of the bulk of the industry safely to the free market, drawing a regulatory net over only the segment of the activities of the industry that are inextricably associated with heavy sunk costs. Thus, contestability suggests a flexible case-by-case regulatory approach, whereby activities subject to effective competitive pressures from the active or potential supply of substitute services and markets in which efficient technology does not require significant sunk costs are freed from traditional regulatory constraints and are permitted open entry and more flexible pricing.

The Vertical Structure of the Railroad Industry

The historical model of railway operations is the monolithic organization, whereby a single entity controls all facilities, operating and administrative functions, and determines what services to provide to significantly captive markets. The conditions that generated this model no longer exist in most countries, and governments have had to consider fundamental restructuring of the railway entity itself, and the relationship between the railway and the State. The objectives for such restructuring have properly included injection of more innovative and efficient management, reduction of railway deficits and burdens of public subsidies, increased competition with other transport modes, and more responsiveness to the needs of emergent capitalist enterprises. Five generic options can be identified for the vertical structuring of railways, addressing the set of relationships between the railway entity and other transportation entities (both rail and otherwise), the markets served and the functions performed. These functions include ownership; improvement and maintenance of the fixed facilities; control of operations such as dispatching and freight classification; train movement; equipment provision and maintenance; marketing; and financial control and accountability.

The Generic Options For Vertical Railway Structuring[9]

Option 1: The Monolithic Railway. The frequent status quo is the traditional monolithic approach, under which the railway is an integrated entity owning and operating its own facilities and vehicles. Typically, the monolithic entity lacks financial incentives and desegregated information on profitability, is (at best) production-oriented, is unresponsive to market demands for services, and is hierarchical (if not bloated) in organizational architecture.

Option 2: Lines of Business Organization. Railway entities may be reorganized and accorded financial responsibility for lines of business to foster comprehensive business planning, market-sensitive and cost-sensitive decisions, and greater responsiveness to demand for various services. British Rail, for example, has divided itself into five lines of business that are financially accountable to top management and that "purchase" service by contract from an operating department that is organized along a matrix of regional

and functional lines. By so doing, British Rail hopes to give commercial sectors a profitability objective, and to give noncommercial lines of business incentives to reduce their losses.

Option 3: Competitive Access. Competing railway companies would have exclusive control over some trackage, but would also have (and give) the right of competitive access over the trackage of (to) other companies. Some forms of competitive access include joint terminal agreements and/or conferrals of trackage rights, whereby one railway obtains the right to use freight handling facilities and/or the line haul tracks of another railway at a particular location or along a particular route. A further characteristic of this option would be arrangements for interlining traffic that is handed off between distinct railroad entities, in their preference sometimes to utilization of trackage rights. In the U.S., railroads do a great deal of interlining, under terms that are largely unregulated, perform reciprocal switching under terms that are subject to regulation, and exercise trackage rights that are sometimes freely negotiated and sometimes result from regulatory mandates (that were mostly put into place in the context of settlements of disputes over rail mergers).

Option 4: The "Wholesaler". Under this option, the railway entity could own and operate the fixed facility and perform all operations on behalf of marketing entities which would be the "retailers". This would mean that the railway itself would only haul trains, but would do no marketing to shippers. In Australia, for example, freight forwarders function as retailers using the state railways' "wholesale" services. These forwarders provide multimodal transport, and conduct a deregulated trucking business. They control their own rail terminal and yard operations and negotiate on the open market with the railways to charter unit trains with agreed-upon service specifications. This permits competition among efficient intermodal "retailers" to flourish, despite a state or private monopoly on railway ownership.

Option 5: The "Toll Rail" Enterprise. Under this option, the entire fixed facility, except for exclusive facilities, would be the property and responsibility of one owner. There could be one or more authorized user(s), which would pay tolls for use of the facility. This approach differs from "competitive access" in the following respects: under the "toll rail" approach, separate entities provide the fixed facility and conduct operations, whereas under "competitive access", more than one entity operates in a given market over a particular fixed facility. Since 1988, Sweden has implemented a separation of fixed facility from operating functions. The U.K. has recently moved in this direction by establishing a separate entity to hold and manage the rail system's assets associated with the track and road bed. And the European Union has articulated the policy principle that its members move in the direction of separating rail operations from the fixed facilities.

Analysis of Monolithic Railway Option

The monolithic railway option is largely a strawman from today's perspective--i.e. no one would deliberately choose it for the public interest. Nevertheless, it is an option that has in fact been chosen all too often, either for private interests in monopoly control, or more often, for the political benefits that could be collected and disbursed through a state-owned monolithic railway. It is predictable that a state-owned railway enterprise would fail to be beneficially responsive to the needs of shippers, and would instead be politically responsive, at the expense of efficiency of operations and of stimulus to the economy.[10] It is equally predictable that a privately owned railway that were exposed to excessively controlling and economically arbitrary regulation would also be without incentives for efficiency and for market responsiveness. Either way, financial deficits would be a natural consequence, as the railway entity failed to succeed in attracting traffic from alternative modes and geography, as it expended inefficiently on costs, and as it allowed its facilities to suffer from deferred maintenance and replacement.

The Need for Restructuring

There is no doubt but that sustained economic growth and prosperity require transportation that is responsive to shipper needs and demands, as well as to marketplace opportunities for innovation. It is clear today, too, that a railroad organized and controlled according to the monolithic model must be restructured in order to contribute best to the economy and to avoid being a significant impediment to growth and prosperity.

One key element of restructuring is to develop internal organization of rail entities that provide managerial incentives, information, and decision-making decentralization that conduce to efficiency, market responsiveness, and fiscal responsibility. Thus, Option 2 is certainly crucial for restructuring, whatever else is also entailed. It should be recognized that an internally restructured railroad enterprise may show lower technical operating efficiency by some traditional measures (e.g., coach-kilometers per locomotive-kilometer), but may achieve greater responsiveness of each service to customers' needs and willingness to pay. Economic productivity and the customer's interests are best promoted by minimum total logistics costs, not just the lowest railway rates accompanied by minimum service quality.

Another key element of restructuring is to unleash market forces of competition, to the fullest extent that is consistent with opportunities and other elements of efficiency. It is difficult to predict what are efficient and market responsive vertical relationships and combinations of logistical roles among various rail entities, truckers, barge operators, port operators, warehouses, forwarders, etc. The U.S. experience confirms what theory predicts: decentralized market-oriented decision-making that is freed from excessive regulatory control and that is energized by market incentives is the surest means of finding and implementing efficient and innovative solutions to problems posed by transportation needs.[11]

Options 3, 4, and 5, as defined above, are approaches to restructuring that have the potential for bringing more competition and more market decision-making into the domain of railroading and its vertical relations. Which of these options is the best choice is a complex policy decision with many important dimensions to consider. Below we offer analyses of the options that may help to clarify some of the important considerations.

Analysis of Structural Separation -- Options 4 and 5

The options that separate ownership of facilities from other rail functions such as train operations and marketing have generated much attention of late, and deserve serious analysis. These options have considerable appeal because they seem to mitigate the difficult problems blocking comprehensive rail deregulation that are associated with the roadbed costs that are largely sunk. Fixed costs are large because of the infrastructure (track, stations, etc.) that must be provided before any trains can run on a route. Duplication of infrastructure would generally be inefficient, and natural monopoly cost conditions therefore characterize physical network provision. These fixed infrastructure costs are largely sunk because the assets are of minimal value for other purposes. For example, embankments and cuttings, the rail formation and the platforms are fixed *in situ*--they are sunk, committed irreversibly to a specified market. The sunk nature of infrastructure costs creates significant entry barriers, especially where there are natural monopoly conditions as well.

The cost conditions relating to the operation of services on the physical network, on the other hand, may be more consistent with active and potential competition. To operate a service it is necessary (at least) to have trains, staff, support, and rights of way. Although there are inevitably some sunk costs in hiring staff and buying or leasing rolling stock, they are small in relation to the massive sunk costs of establishing

network infrastructure. Locomotives and freight cars constitute capital on wheels, and most of their cost might be easily and quickly recovered by rolling them to other markets.

Thus, it is possible that if ownership of track and trains were separated, with the track assets held by the government, by a consortium of the operators, or by a regulated private entity, then there could be vigorous active and potential competition over railway services provided by operators with equal access to the utilization of the roadbed. Consequently, these operators need not be subject to regulation, and they would have all the powerful incentives that accompany competition to be efficient and responsive to the needs of shippers and a growing entrepreneurial economy.

However, there are several links in this chain of policy reasoning that may be inapplicable or wrong in a given set of realistic circumstances.

(i) The provision of many innovative and market-responsive rail services may require specific investment in infrastructure, such as maintenance or upgrading of way and structure facilities, construction of loading and transhipment facilities and building spurs of track to reach a shipper's location. It may be difficult and inefficient for any operator (or retailer) to coordinate, as necessary, with the infrastructure monopoly (or wholesaler) entity, especially if their incentives with respect to investment behavior are not in harmony. The investment incentives of the infrastructure monopolist (or wholesaler) will, of course, depend critically on whether it is a state owned entity, or, if it is in the private sector, on the character of its regulation.

(ii) Efficient, safe, and delay-minimizing utilization of track and yard facilities by trains, cars, and shipments requires close coordination in accordance with priorities that are driven by considerations of both operations and shipper sensitivities. Competing operators (or retailers) will compete vigorously and acrimoniously over scarce or congested infrastructure facilities (or wholesaler services), and constantly sorting out their claims will be important for the overall efficient and responsive operation of the rail system. This would be difficult for an unintegrated system with a monopoly infrastructure entity, but it seems virtually impossible to accomplish efficiently under conditions of rules against discrimination and infrastructure (or wholesale service) pricing that is either tightly regulated and/or, for a state enterprise, politicized.

(iii) It is plausible that the freight hauling operations on all or part of the rail system in question comprise a natural monopoly, even disintegrated from the infrastructure. The economies of scale and scope that arise from running long trains, from blocking many different shippers' freight in classification yards, and from efficient utilization of yard facilities, crew, and rolling stock, all are associated with operations, rather than with infrastructure. Consequently, a separated operations firm may be a monopoly, and it may have considerable market power unless potential competition is a powerful force.

(iv) For potential competition to be powerful, an entering operator must perceive that significant sunk investments in rolling stock and in specialized facilities can be avoided. Locomotives and freight cars may indeed be an example of "capital on wheels" so long as they can be transported to alternative points of gainful utilization without substantial costs. While this is likely to be the case for services provided in the middle of a landmass with a rich rail network ready to accommodate the cars, it may not be the case for more specialized cars or for a more isolated market. Also, the entering operator may not have yard, loading, car maintenance, or spur facilities available unless new and significant sunk investments are made. For these to be

available on equal terms with the incumbent operator, it must be the case that the infrastructure entity made the needed investment as part of its role in the system. But the more of the entrepreneurship and risk-taking investment that must be accomplished by the infrastructure entity (or the wholesaler, under that option), the less it is that is gained by the separation, since the infrastructure (or wholesaler) entity is either a state-owned or a tightly-regulated private sector monopoly.

(v) Efficient pricing to cover replacement costs is made more difficult by separation. Where economies of scale are important, efficient pricing to cover replacement costs requires that shipments of different commodities on different origin-destination routes bear prices with different relationships to marginal costs. If it is the case that the operator (or retailer) firms can readily evade price discrimination on the part of the infrastructure entity (or wholesaler), so that different prices cannot be collected by the infrastructure entity (or wholesaler) for facility utilization (or for wholesale service utilization) by different shippers of different commodities, then it will be difficult if not impossible for the costs of the infrastructure to be defrayed by Ramsey prices. At the extreme, a regulated infrastructure (or wholesaler) entity charging competitive operators (or retailers) an equal price for each ton or each ton-mile of freight that utilizes each of its facilities is, in essence, recreating a system where prices are set according to fully allocated costs. As discussed above, such pricing can be a prescription for inefficiency and financial disaster.

Thus, it is clear that separation of operations from infrastructure in a railroad system is no panacea for regulatory problems. Instead, as a policy direction, it must be compared with the leading alternative.

Analysis of the Competitive Access Option

This option is most clearly distinguished from the separation option just discussed by the allowing of integrated operations by the rail entity. It is superficially easy, albeit mistaken, to identify an integrated carrier with the case of the monolithic carrier, because it is tempting to jump to the conclusion that an integrated carrier would make it very difficult for other entities to participate in its business. This option contemplates a requirement that the integrated carrier make its facilities available to other entities on a "fair and equal basis." However, if the integrated carrier has strong incentives to keep other entities out, it is unclear how effective such "equal access" mandates are likely to be. The rail industry in the U.S., like other regulated industries in the U.S. as well (e.g. gas pipelines, telecommunications, and electric power), has seen many disputes with claims of "unfair" and "unreasonable" exclusion from a carrier's facilities, despite rules of "equal access."

Thus, it is key to an assessment of this option to analyze the incentives of the integrated carrier to accommodate others wishing to participate, and able to participate efficiently, in the provision of service.

It is clear that if the integrated carrier is regulated in a fashion that permits higher prices to be charged to captive shippers if the carrier does more of the business, than the carrier would have incentives to exclude other participants.[12] Likewise, if the integrated carrier is constrained by regulation in the amount it can earn from the portion of service it provides, when it does cooperate with another entity, then it has incentives to undermine or avoid efficient cooperation in order to enlarge the portion of service it provides.[13] In addition, the integrated carrier would be motivated to exclude an efficient participant if by so doing the carrier would weaken, in a predatory manner, the competitive impact of that entity in another market. Under classic rate-of-return regulation, or under a system of regulated "divisions" which specifies what an

integrated carrier can earn from a cooperative movement, both features of U.S. rail regulation at one time, an integrated carrier does have incentives to undermine efficient cooperation.

In sharp contrast, under the regulatory system that has been described above as well-serving the public interest, an integrated carrier would generally have a real profit motive to cooperate with an efficient participant in its business. Here, it is not "divisions" that are specified by regulation, even on service provided to a captive shipper. Instead, the described stand-alone cost rate ceiling applies to the price charged to the shipper, and cooperation with an efficient entity enlarges the pot of returns available from the service, enabling more money rather than less to be earned by the integrated carrier. Consequently, except for the rare possibility of predation, an integrated carrier would have ordinary business incentives to find and to cooperate with efficient participants in its business, and to negotiate with them terms that would be mutually beneficial. This is just a railroad version of business "make-or-buy" decisions in other industries.

Despite the prevalence of efficient incentives on the part of integrated carriers under the form of regulation described here, it is useful and wise to augment the system of regulation with a fallback set of standards to apply should disputes about predation through competitive access arise. In short, an integrated carrier that possesses a "bottleneck," i.e. a facility without which the complainant cannot reasonably offer its services to the shipper, should not exclude the complainant by refusing an agreement that would be fully compensatory of all its costs, including opportunity costs.[14] For example, if another carrier, or an operator, sought to participate in a freight movement that represented new business for the integrated carrier, then it is to be expected that the latter would negotiate in good faith and not exclude the other entity if an agreement could be found that would at least cover the incremental costs of the integrated carrier. If another carrier sought to handle some freight part of the way that the integrated carrier would otherwise handle itself, then it is to be expected that the integrated carrier would accept an agreement that earned it a larger net contribution of revenues above incremental costs than it would earn if it handled the freight without the other participant. Here, the contribution that the integrated carrier would earn on its own is part of the opportunity costs it faces from cooperating with the other participant. These same principles apply to interlining, trackage rights, car hire, or any other form of cooperation or participation through the employment of a bottleneck.

"Efficient component pricing," or "parity pricing," is the name that has been given to the principle that an integrated carrier should offer the services of its bottleneck at a price that yields it the same contribution that it would earn from performing the end-user's service itself.[15] Behavior consistent with this pricing of bottleneck services, or more generally with the anti-predation rule just articulated, leads to efficient vertical relations, and is thereby consistent with non-predatory incentives under the regulatory system we have described. Such pricing of bottleneck facilities does not place additional competitive pressure on pricing to shippers, since it is based on the contribution that could be earned from the shipper's service at the extant shipper's price. However, it does generate incentives for efficient combinations of transport services to make it to the market, it does provide quality and cost competition among potential and actual participants for the role of being part of the efficient combination, and it does help to assure that those with efficient innovations in logistics or in marketing of transport services will be able to work with carriers to implement their ideas.

Comparing Separation with Competitive Access

The primary virtue of separation as a policy option is that it may permit active or potential competition to reign among rail operators or retailers--with corresponding assurance of efficient selection among them for provision of their services at efficient prices. At best, separation will accomplish this end, but leave unresolved the difficulties with regulation of the provision of the services of the infrastructure, or bottleneck, assets of the railroad network. Prices charged to shippers will be at least the sum of the

competitive prices for the services of the operators (or retailers) and the regulated prices for the services of the infrastructure entity (or wholesaler). They are unlikely to be fully Ramsey efficient prices for the coverage of replacement costs, because of difficulties of reflecting shippers' differences in demands in the prices charged for infrastructure services. At the same time, separation may create serious coordination problems, loss of economies of scope, and otherwise unnecessary transactions costs. In addition, rail operators may not face effective active and potential competition, undermining the potential for realizing the primary benefit of the option.

In comparison, the competitive access option could also be fraught with problems, when incentives of bottleneck holders are adverse to efficiency and competition. A variety of solutions to competitive access problems have arisen in industries seeking to replace regulation with competition. Typical examples include: mandatory interconnections with competitors and line-of-business restrictions in the telecommunications industry; "unbundling" of the transportation and energy components of price in natural gas markets; and equal access to marketing channels (e.g., computer reservations systems) in the airline industry. In designing rules that govern vertical relationships among competitors formerly subject to economic controls, regulators need to address a common basic problem--how to assure that pricing and terms of access by "nonintegrated competitors" to the restricted portions of the network will be implemented so that competition on the merits will work to assure that the efficient alternatives do successfully participate in the provision of end-users' services. The compensation for and terms of access should not distort the process by which prices are adapted to consumer preferences and demands for transportation service. Prices should be sufficiently high to be compensatory to the "landlord" railroad, yet not so high as to preclude efficient operations by the "tenant" railroad. Where incentives are significantly adverse to these goals, experience teaches that rules are too easily evaded, and disputes seemingly never-ending.

It is thus fortunate that under rail regulation that focuses on the levels of rates charged to shippers, rather than on other prices, such as those charged for access to bottleneck services, incentives are generally for the promotion of efficient vertical relationships. As a result, if integration is permitted under this system of price regulation, then the outcomes are predictably consistent with efficient participation by the integrated carrier and with other nonintegrated carriers as well, on terms that permit compensatory support for the efficient participants. Further, prices to shippers can be selected in accordance with Ramsey efficiency, even as they are constrained by regulation where the carrier has monopoly power. Moreover, unlike the virtues of separation, the efficiency of the outcomes of competitive access does not depend on the absence of economies of scope, on the absence of coordination problems without integration, and on the competitiveness or contestability of rail operations.

On the other hand, separation of track assets from operations is likely to be a particularly attractive option where a dense and extensive rail network permits many operators to function, and to provide both active and potential competition to each other. Another favorable factor is a mature and well-developed set of fixed facilities, so that there is relatively little extent to the domain of new infrastructure investments where incentive problems are more likely to arise. Where this factor does not apply, it will be important for regulation of the infrastructure entity to permit it to enter into medium or long term contracts with shippers or with operators that themselves have contracts with shippers, so that the risks and rewards from investments can be efficiently shared by shippers, operators, and the infrastructure entity. The impediments to Ramsey pricing that separation might cause would be rendered insignificant to the extent that the infrastructure entity does not attempt to recover its sunk capital costs from "tolls" levied on traffic. If the infrastructure entity is expected to seek recovery of its replacement costs, then it should be permitted and even encouraged to implement forms of price discrimination that help to bring shippers' prices in line with principles of Ramsey efficiency. Finally, there may well be circumstances where a monolithic railway system cannot be converted to one with functioning competitive access because of imbedded business culture and entrenched

management. Here, the act of separation is so revolutionary that it may unsettle the business culture in a productive fashion, and force reassignments of management that permit implementation of the necessary internal reorganizations of responsibilities, roles, incentives, and information flows.

Concluding Remarks

We have outlined a set of principles that together add up to a program for restructuring the relationships between government and railroad entities. These principles point towards a great deal of reliance on market forces to shape prices and logistics of services. At the same time, the principles include economically appropriate protections for any captive shippers and for any carriers that may be excluded or foreclosed from participation for anticompetitive reasons. On the subject of restructuring, we have pointed out that internal managerial reforms are necessary, as are policies that address railway vertical relationships. The two leading candidates, separation of track from operations in different business entities, and incentives and fallback rules for competitive access, were compared on several dimensions, and their relative levels of appeal were found to depend on a variety of characteristics of the business environment.

It can be expected that restructuring along the lines we have suggested here, providing a greater emphasis on marketing effectiveness, will result in a more profitable railway that can better hope to cover its costs, in the case of commercial services. Needed noncommercial services should be carried out on the basis of an explicit agreement between the railway and government that views public service obligations as a business relationship between a customer (government) and the contract supplier (railway). This would help to ensure that noncommercial services are more effective in fulfilling public policy objectives, while eliminating an insuperable drain on revenues that would condemn the railroad to insufficient investment, and eliminating cross-subsidies that make it difficult for the railroad to maintain its efficient competitiveness against other modes.

APPENDIX A

TECHNOLOGY AND THE STRUCTURE OF RAILROAD COSTS

The output of the rail industry is multidimensional by its very nature. Railroad firms produce different types of transportation services for different users at different origins and destinations at different times and at different levels of quality. Consequently, the mix of output and shipment characteristics can have a major impact upon the costs of any given firm. For example, railroads specializing in coal traffic have very different cost characteristics than those specializing in movements of general manufactured commodities.

The most striking feature of the railroads' cost structure is the high incidence of costs that cannot properly be attributed to any particular service at a particular point in time. That is, a significant portion of costs are incurred on behalf of several activities and do not vary with the amount provided of the service in question. These unattributable expenditures reflect both joint and common costs. "Common costs" are costs shared by two or more services in variable proportion. For example, a terminal represents a common cost; it is used by different services in varying proportions. More generally, the outlay on track and way and structures between points A and B is a common cost for all movements of whatever commodities are shipped between A and B over that route. "Joint costs", on the other hand, are costs shared by two (or more) services in fixed proportions. A backhaul movement is the classic railroad example.

The structure of railroad costs has important implications for the competitive structure of rail markets. It is sometimes mistakenly inferred from statistical evidence of constant returns to firm size that a competitive equilibrium with marginal cost prices covering total costs would be sustainable in the rail industry. Such reasoning neglects the critical fact that indivisibilities in rail technology make increasing returns to scale in total costs endemic, and small numbers competition inevitable. A rail link between two points requires lumpy investment in way and structures with associated highly significant economies of traffic density--unit costs fall with output, letting all factors of production vary on a given route or route structure.

A.1 Fixed and Variable Costs

A fixed cost is one that is necessary to provide a service or group of services, but whose magnitude does not vary with changes in the quantity of a service that is planned to be or that is in fact provided. For example, if a railroad is to run between A and B, there is a minimum outlay on track and roadbed that must be incurred, even if the trains run virtually empty. The service can be discontinued altogether; but even in the longest of long runs, its roadbed cost cannot be reduced to a negligible level if the amount of the service is to be positive. Also, a loading facility may be necessary to transport coal efficiently between points A and B, but its cost may be unchanged if the amount of coal transported is doubled or halved. Common costs are often fixed (e.g., the basic portion of the outlays on track and way and structures between A and B may be both fixed and common costs).

Fixed and common costs are quite different from variable costs. Economists employ two fundamental cost concepts in defining variable costs--marginal cost and incremental cost.

The marginal cost of a service is the additional cost that would be incurred in order to supply an additional unit, or the saving in total cost that would be made possible by supplying one less unit. As such, the marginal cost of a rail service is the per-unit opportunity cost to the rail carrier of the level of a service's volume. The term "opportunity cost" refers to the value a resource can contribute if it is used in some alternative occupation instead of the one to which it is currently assigned by the railroad. Thus, marginal cost is similar in meaning to unit incremental cost and to the true economic variable cost. However, the definition of marginal cost makes it clear that it should include the traffic-sensitive costs of capital facilities that are fungible and economically attributable to the service, as well as the more obvious cost components such as fuel, labor, and traffic-sensitive maintenance and replacement costs.

For example, locomotives and other rolling stock employed for some period of time to provide a given rail service have a significant opportunity cost for a rail carrier. If not utilized to supply the service in question, they could instead be gainfully utilized elsewhere in the rail network, by the rail carrier at issue, or by some other carrier. Assuming that at least some carriers do not have excess supplies of the equipment in question, or their functional equivalents, a decrease in the quantity supplied of the service would release equipment that could decrease or delay the need of some carrier to lease or purchase stock for replacement or expansion. Consequently, it follows that the opportunity cost of the rolling stock is its replacement cost, at the current cost of capital. Thus, the marginal cost of a given service includes the costs of fungible capital goods that are utilized, such as locomotives and other rolling stock, at the current cost of capital for the period of time during which they were so employed. Of course, the marginal cost of a service also includes the wear-and-tear on capital assets and the required maintenance expenses that the supply of the service causes.[16] However, the costs of facilities that are fixed or common are not included in the service's marginal costs.

The incremental cost of a service is the cost per unit of service necessary to provide the entire service, or the cost avoided by not providing the service, given all the other services supplied. The term "avoidable cost" is also used to describe the cost per unit of service that could be avoided by not providing a particular service.

The important conceptual point here is that a railroad's total costs are composed of some costs which vary with the amount of a particular service provided and others that do not. This is obvious enough, but considerable confusion is often engendered when the additional point is made that in the long run virtually all fixed and common costs can be varied. The reason is simply that in the long run virtually all assets must be renewed or replaced. At the date when the decision regarding renewal or replacement of the fixed factors of production required to supply a service or group of services is under consideration, the costs involved are incremental to that service or group of services. If it were decided no longer to provide those services, the costs would not be incurred.

This obviously does not mean that there is no economic distinction between variable costs and fixed and common costs. What it does mean is that the perspective of the decision maker is very important. When a railroad is making decisions regarding the incremental costs of adding a particular service (or the avoidable costs of eliminating a service) given existing capacity, the short-run variable costs of service will include only the additional costs of production imposed by that service. Rarely will this include the full measure of long-run fixed costs. In contrast, when a railroad is making the long-term decision whether it is in its economic interest to replace a portion of its rail network (or to make an entirely new addition to its network), the "long-run variable costs" of the service or services the railroad plans to offer will include all the fixed costs which will become sunk (i.e., irreversible for a significant period of time) once they are incurred.

A.2 Sunk Costs

Long-run fixed costs are those costs that are not reduced, even in the long run, by decreases in output so long as production is not discontinued altogether.[17] But they can be eliminated in the long run by total cessation of production. Sunk costs, on the other hand, are costs that (in some short or intermediate run) cannot be eliminated, even by total cessation of production. As such, once committed, sunk costs are no longer a portion of the opportunity cost of production.

Sunk costs need not be fixed and, even more important, fixed costs need not be sunk. To operate with current production techniques, a railroad requires at least a locomotive and one car, the costs of which must be included among its fixed costs. Yet, because they constitute capital on wheels, most of their cost can easily and quickly be recovered by rolling them to another market, should the railroad's management decide (and be permitted) to close down the line in question. Thus, little or none of this portion of fixed cost is sunk, in contradistinction to the roadbed cost, which typically is sunk. While bridges, ballast, rails, and ties can also be moved from one route to another, they can be moved only at considerable expense.

The distinction between sunk and fixed cost is not a mere technological quibble. It makes a substantial difference for the design of appropriate public policy if the costs of the firms in an industry include the one rather than the other. Sunk costs contribute to entry barriers which, as is well known, can give rise to monopoly profits, resource misallocation, and inefficiencies. On the other hand, fixed costs do not constitute barriers to entry and do not entail the misallocation problems to which entry barriers lead. Fixed costs are not, and do not raise, entry barriers unless they also happen to be sunk.

A.3 Economies of Scale and Scope

The issue of whether a firm's total costs will be recovered from prices that are equal to the firm's marginal costs of supply is logically equivalent to the question of whether the firm's operations are characterized by economies of scale, or, in alternative terminology, increasing returns to scale.

For multiproduct railroad firms, economies of production could exist due to the level of supply of all the firm's outputs (economies of scale), as well as due to the breadth of the set of services supplied (economies of scope). Economies of scale are exhibited where equiproportionate changes in the levels of all services provided would require a less than proportionate change in the level of efficient costs. In addition to economies deriving from the size or scale of a firm's operations, there is also the possibility that cost savings may result from simultaneous production of several different outputs in a single enterprise, as contrasted with their production in isolation, each by its own specialized firm. That is, there may exist economies resulting from the *scope* of the firm's operations.

There are substantial economies of scale in the provision of some rail services, whether focused on particular routes or types of freight, which result from the heavy fixed costs associated with rail operations. To transport even small amounts of freight, a railroad must generally incur the costs of track, right-of-way, locomotive power, crew, and certain facilities. These costs do not rise proportionately with traffic volume. As more traffic uses a section of a roadway, very few additional fixed costs are incurred, and the extant costs are spread over more traffic. A single track line can handle large amounts of traffic before a full second track must be added or advanced signalling systems installed. Scheduled trains can be made longer to accommodate more cars on the same origin-to-destination route without proportional increases in the costs of locomotive power and crew. The more freight that is scheduled to traverse the same route, the larger can be the preblocked movements, with correspondingly less reclassification yard activities and time needed, and with more opportunities to run efficient through-train service In short, additions to the levels of rail services

supplied do not entail proportionate additions to the levels of expenditure required for fixed plant, for equipment investment, and for operating expenses. This is precisely the hallmark of economies of scale. Fixed costs, of both the sunk and fungible varieties, per ton of freight fall as traffic volume increases, and so cost efficiencies may be associated with single carrier provision of rail services.

Another advantage of firm integration in the rail industry arises from potential economies of length of haul. With fixed terminal expenses, longer hauls normally imply lower costs per mile. In the presence of such economies, a railroad with an integrated nationwide system will sometimes have a cost advantage over competitors that make and accept interline shipments to and from other railroads.

Increased firm size may convey cost advantages because of specialization and massed-reserves economies. A large firm may employ a more richly specialized array of accounting, finance, marketing, engineering, research, and legal talent than a smaller competitor. This may be reflected in lower administrative costs and/or higher productivity. It can mass its cash balance reserves and spread production, market, and financial risks over a larger volume of activity--the diversification of the portfolio of transportation services offered by a large railroad creates an overall system risk factor that could be substantially less than the risk associated with investment in just one of those services. A large railroad firm with an integrated network may also realize economies in equipment investment. In general, railroads attempt to minimize the need for new equipment purchases by using equipment interchangeably throughout the system. When cars and locomotives are needed at some shipping point, the railroad can immediately send them out of the most convenient distribution center. Operations with assigned equipment require more switching than those which draw their equipment from common pools. In addition, the ability to use locomotives interchangeably reduces the number of reserve locomotives needed to protect against equipment failures, repairs and inspection. A larger railroad firm may, therefore, obtain the same degree of protection at lower cost relative to total capacity carrying costs.

Another pertinent feature of the railroad industry is that there are substantial economies of scope which result from the common costs of rail operations. Outlays on rails, ties, rights-of-way, yard facilities, locomotion, and train crews are among the many common costs of rail operations incurred in carrying a variety of types of freight between a variety of origins and destinations. These shared costs confer economies of scope on carriers offering a multiplicity of transportation services: a carrier that provides an array of services can do so at a lower total cost than a set of carriers producing each service separately.

A.4 Economies of Size vs. Economies of Scale and Density

The overall size of a railroad is likely to be quite independent of the amount of traffic that travels on any of its routes--that is, a large firm may have short or long hauls and high or low traffic densities between different points. There has been a serious confusion between economies of scale, economies of size, and economies of density, and a concomitant failure to specify clearly which is being measured.[18] Economies of scale are carefully defined to refer to a long-run average cost curve that declines as the quantity of the firm's output of a given collection of services increases.

Comparing the average costs of railroads that have different sizes of route networks does not provide information directly relevant to economies of scale, because such railroads do not supply different amounts of a given collection of services. Instead, they likely offer quite different collections of services as a result of their different route mileages and architectures. To emphasize the point that the correct and relevant measure in railroading is the degree of scale economies that relates to traffic volume on each particular route, rather than to the extent of the traffic on an overall and possible growing system, these economies have come to be termed economies of density. Thus, the critical determinant in pricing and (dis)investment policies is

whether or not there are economies of density. It is therefore important to assess the extent to which unit costs decline as output increases holding the route system, or miles of rail line constant. A small firm with high traffic density could potentially have lower average costs than a large firm with low density.

Economies of density are normally attributed to declining average capital costs. However, the provision of rail service entails more than simply installed capacity; it includes minimal (and often indivisible) amounts of crew, engines, maintenance, etc. Indeed, recent empirical studies indicate that the maintenance of way and structure and transportation expense (mainly fuel and crew wages) account for a significant portion of the estimated economies of density--approximately two-thirds of these economies are due to variations in unit operating costs per route-mile.

Under significant economies of density, the cost-minimizing market structure for a given route might call for a single firm, i.e., the route would be a natural monopoly. In the absence of any other scale economies, the national railway system could be made up of a large number of small firms, each with a local monopoly. Alternatively, if there were substantial economies of firm size without economies of traffic density, it would be economic to have a number of integrated nationwide railroads that competed on all their routes. However, with economies of density, and with economies of scope, and with some economies of end-to-end long hauls, the cost effective structure of the rail industry is likely to be characterized by very few firms.

A.5 Empirical Evidence on Scale Economies

There are at least two approaches to measuring cost-scale relationships in the rail industry. The first way is to employ the expertise of those who have intimate knowledge of railroad operations in ascertaining whether the costly inputs required to supply rail services must be expanded in proportion to accommodate expansions in the quantities of services provided. This is known as the *engineering approach*. The second approach is statistical cost analysis--econometrically estimating the relationship between railroad costs and the levels of rail services provided. In the railroad industry, there is no conflict between the conclusions reached from these two different approaches. Both indicate quite clearly that railroad operations are characterized by increasing returns to scale, and that consequently the recovery of railroad costs requires that prices exceed marginal costs.

The first approach has been followed by a long succession of industry observers who provided a knowledgeable overview of the details of how economies of scale arise in rail operations. First, economies are created for the system as a whole by operations which are directly common to all traffic. Prominent among these are economies in network planning and management. If network management and control (e.g., billing, payroll, system-wide insurance, and other housekeeping functions) involves a fixed cost regardless of network size (above a certain threshold), these costs will be spread over a larger user base in a larger integrated rail system. Similar integration economies arise in communications and dispatching activities, and from increases in work force specialization within the repair facilities of larger systems. Finally, large railroads benefit from capital raising and other pecuniary economies (e.g., price concessions from suppliers). Indeed, this appears to be one of the most persistent advantages of firm size, with small incremental capital cost savings enjoyed out to very large scales. However, the capital-raising economies of scale are also associated with real resource savings. Negotiating a loan or new stock issue or obtaining necessary regulatory clearances entails transaction costs, some portions of which are nearly fixed. Clearly, the larger the issue is, the lower those costs are per unit of capital raised.

Second, the integration of the railroad system permits economies which directly benefit some traffic and indirectly benefit other system activities. Most ancillary plant (e.g., storage and marshalling

yards, sidings, switches, and fueling and repair stations) can be utilized by more and more shippers without causing a corresponding increase in the amount of investment required. A coal shipper might need a storage and marshalling yard to hold its cars until a trainload volume is accumulated. If a mine produces only 20 carloads a day and holds them until 100 cars are available, a yard that could store and switch 100 cars would be required. However, on an independent operation basis, only 20 per cent of the yard would be utilized in the first day, 40 per cent in the second, 60 per cent on the third, etc. Yet, a railroad that connected with more mines might receive 20 cars a day from five mines and send a trainload every day. It would still only need the 100-car yard, but would have five times as many cars to share in the coverage of the investment and operating costs of the yard.

Similarly, a full siding is necessary if one train a day will meet one other train coming in the opposite direction--but the same size siding would be necessary if four trains were meeting four trains at the same place. Crossing protection must be built and maintained in a densely populated area whether the railroad sends one train a day or three trains a day over the track at the crossing. The same is true for switches, fueling stations, and all other fixed plant investment. Once the plant is installed, a railroad can utilize it far more heavily with very little additional fixed investment cost. Also, a train of 40 cars, needs a crew of the same size as one of 60 cars. The ability to marshall cars of different shippers into a larger train also cuts other operating expenses. The engine power necessary for a longer and heavier train is not commensurate with the additional cars which have been added.

The statistical or econometric approach to analyzing railroad economies of scale has also had a long history. This history is rife with academic controversy and with steadily improving research methods. For example, some econometric studies found no evidence of rail economies of scale because they were founded on arbitrary allocations of costs between freight and passenger services. Other investigators failed to distinguish economies of scale from possible economies stemming from the geographic extent of a railroad's operations. Such studies incorrectly conclude that increasing returns to scale are absent from a finding that railroads covering more territory do not necessarily enjoy lower costs per ton-mile of freight.

Recent econometric studies in the United States have avoided these pitfalls and warrant several important conclusions. First, most of the rail system operates subject to increasing returns to scale and has elements of natural monopoly, whether considered in a single-product or a multiproduct setting. Second, as Fig. A.1 indicates, unit costs decline sharply with density, but at some point between 25 and 40 million annual gross ton-miles per route-mile, depending on the commodity mix, the cost curve flattens out and a large part of the traffic in the system flows over this flat part. This represents the level of minimum efficient density, and one can think of this as the capacity of a single track between two points, the fundamental indivisibility in the rail cost structure. Higher traffic density can be served at approximately constant cost by adding segments of parallel track and signalling devices. Third, for very short-haul, terminal-oriented railroads, the long-run cost curve seems to flatten out much sooner (at under 2 million net ton-miles per route-mile). Fourth, there are considerable economies of longer hauls.

Overall, these studies establish the presence of substantial economies of scale in the freight operations of railroads. They indicate that pricing at short- and long-run marginal costs would recover less than 80 per cent of total long-run costs. Also, high density traffic seems to exhaust the economies of scale experienced at lower densities, but significant diseconomies of scale do not occur as densities grow larger. Consequently, since all railroads have relatively low density traffic on many segments, and since most traffic flows on low density track while it is gathered and distributed, rail services exhibit substantial economics of scale overall. As a result, prices set at marginal costs would leave uncovered a substantial portion of total efficient railroad
costs.

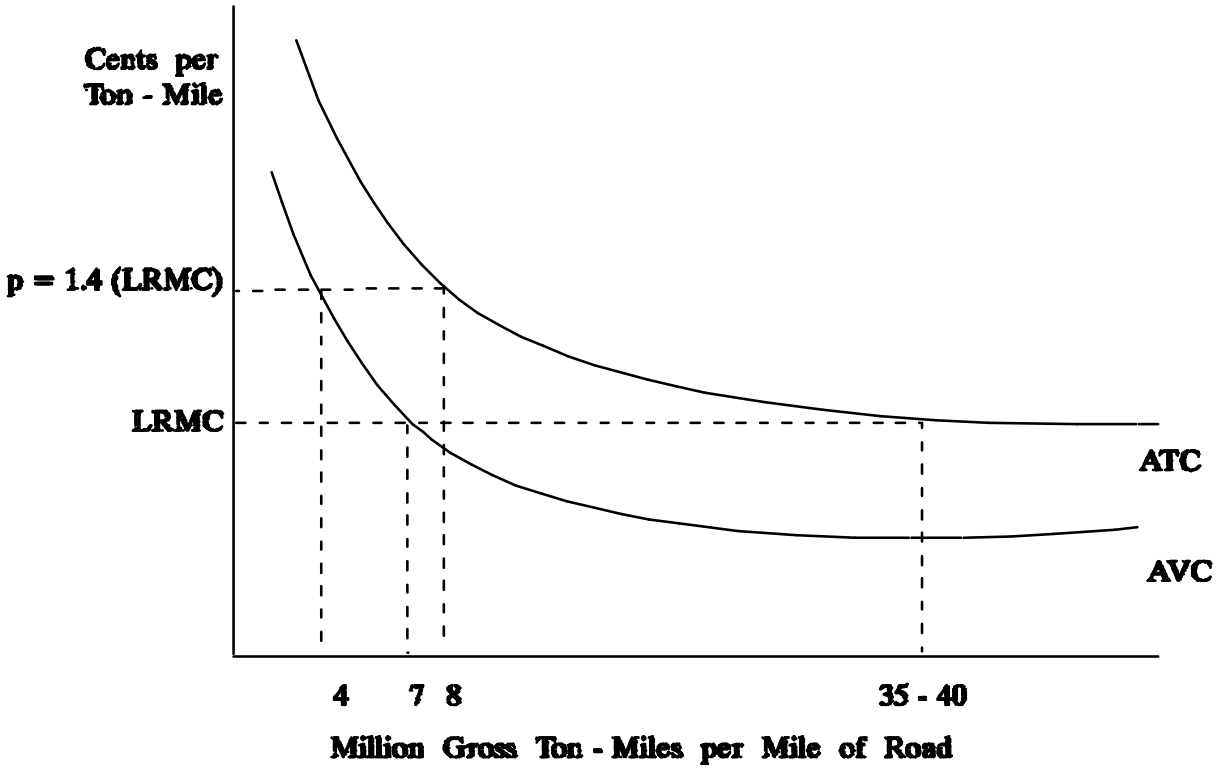

Figure A.1 **Unit Total Cost, Operating Costs, and Traffic Density. Source: Levin (1981).**

APPENDIX B

RAIL COSTS, PROFITABILITY, AND INFRASTRUCTURE CHANGES

Most of the statistical and econometric studies estimating rail costs and production functions suffer from two fundamental weaknesses. First, they generally fail to differentiate between way-and-structures capital, which is a measure of the quantity and quality of the capital utilized in the roadbed, and track, which in addition to being a proxy for the roadbed capital is also a measure of common carrier obligations to haul commodities. Second, they generally fail to take into account the effect upon costs of the route network and differentiate between high-density, fully utilized track and light-density, underutilized track.[19]

Way-and-structures (WS) capital is a measure of the capital utilized in the roadbed and as such should be treated as a conventional factor of production. An increase in the fixed factor, WS capital, should lead to a reduction in other factors and hence reduction in variable costs. In contrast, track and low-density track should be treated as technological variables that affect the costs of the railroad firm in a way that is not necessarily associated with conventional production theory. An increase in low-density route-miles or total track represents an increase in common carrier obligations and should therefore be associated with increases in expenditures on other factors of production.

A ceteris paribus reduction in WS capital will reduce the quality of the existing track and hence lead to cost increases by requiring increased amounts of variable factors--more money must be spent on equipment maintenance and train crews as the quality of the roadbed deteriorates and speeds are reduced. Similarly, a ceteris paribus reduction in track will not only be correlated with reduction in common carrier obligations and improvements in the quality of the existing track, but also with increases in its utilization. The first two considerations will tend to reduce costs, while the latter will tend to increase them, making the impact of reduced track somewhat ambiguous. Reduction in low-density track, on the other hand, will reduce common carrier obligations and their associated costs and will therefore tend to generate cost savings.

B.1 Railroad Costs and Infrastructure Variables

To assess the possible savings that would accrue from policies aimed at changing the railroad infrastructure, it is important to quantify the impact of changing the three main infrastructure variables--the amount of WS capital, general track, and low-density track--upon rail costs.

Ceteris paribus increases in WS capital will raise the amount of capital embodied in each mile of track and thus lead to reductions in variable costs. Indeed, econometric estimates (from the United States) reveal that a 10-per cent increase in WS capital leads to over four per cent decrease in variable costs consisting of approximately 11-per cent savings in equipment usage, a three per cent decrease in general labor, a three per cent decrease in yard and switching labor, a two per cent decrease in on-train labor, and a 0.6 per cent savings in fuel and materials.[20] These estimates, therefore, seem to indicate that the main effect of an increase in WS capital is to decrease equipment requirements with somewhat lesser savings in the labor categories. This confirms the intuition that the savings in variable costs that result from an increase in WS capital have increased train speeds as their source.

Ceteris paribus reductions in light-density track are correlated with increases in the amount of capital embodied per mile of track and reductions in the proportion of low-density mileage; both of these

factors should be associated with cost reductions. Econometric estimates indicate that a 10-per cent reduction of low-density route-mileage would reduce total variable costs by approximately three percent. This comes about by reducing yard and switching labor costs by somewhat over four percent, reducing general labor and equipment expenditures by somewhat over three percent, and by reducing fuel and materials expenditures by less than one percent. Thus the primary savings arising from abandonment of low-density line are concentrated in transportation and switching categories associated with moving trains over lightly utilized track.

Finally, ceteris paribus reductions in general track are not only correlated with increases in capital embodied per mile of track, but are also correlated with increases in the proportion of low-density track. While the first factor should tend to reduce costs, the second should increase them. Econometric estimates reveal that a 10 per cent reduction in general track or route-miles only leads to a reduction of total costs of less than one percent. In terms of factor utilization, reductions in general route-miles lead to sizeable reductions in equipment and materials expenditures, but increases in labor expenditures. Thus as the same volume of traffic is moved over a smaller network, increased expenditures on labor and switching are required, while savings on fuel and equipment are achieved.

B.2 Low Density Lines and Profitability

Rail costs are quite sensitive to changes in WS capital and light-density route-miles, but not to changes in general route-miles. A change in general track or route-miles without a concomitant change in low-density route-miles has a small impact on variable costs, but a significant effect on factor intensities. What distinguishes the provision of low-density service from that of general network expansion is the greater labor intensity of the former. Thus, efforts to adjust amounts of WS capital through roadbed maintenance or efforts to abandon light-density lines are likely to have a rather large impact on costs, while the abandonment of general track per se will lead to relatively few economies.

Econometric estimates from the United States reveal quite clearly that the low-density lines are a significant drain on railroad profitability, and constitute a serious impediment to the attainment of static and dynamic efficiency in the industry. The avoidable losses recoverable by abandonment appear to be quite significant. In addition, the burden of excess capacity seems to have a dynamic impact on efficiency. The abandonment of low-density lines stimulates the formation of new capital on the high-density portions of the rail network. First, since abandonment reduces the need for cross-subsidization, rates on the high-density lines are permitted to fall toward marginal cost. The lower rates attract additional traffic, and thus raise the level of desired capital. Second, abandonment of low-density lines lowers the cost of capital to rail firms by improving their long-run profitability and reducing the risk of bankruptcy.

Notes

1 See Friedlaender (1969) and Keeler (1983).

2 See among others: Friedlaender (1971); Levin (1978, 1981); and Beyer (1987).

3 It is a pleasure and an honor for the authors to acknowledge their debt to the thinking and written testimony of William J. Baumol on many of the subjects covered in this portion of the paper. A partial summary of this material can be found in Willig and Baumol (1987).

4 See Braeutigam (1977), Kahn (1988).

5 See Braeutigam (1979, 1984).

6 It should be noted that in many instances the relevant competition is not just on the route involved in the rail movement, but also on alternative routes that offer economic substitute services for the shipper. For example, a manufacturer may find it equally desirable to ship output to two very different places for the purposes of sale, and will choose the option with the least expensive transportation.

7 This important property of stand-alone cost is not significantly undermined by the practice of determining stand-alone cost in a fashion that is informed by the operations of the actual railroad. While these operations may provide guidance or even a model for the operations of the stand-alone railroad, the stand-alone cost need not reflect the same decisions as those made by the incumbent, especially if they lead to unnecessarily high costs.

8 See Bailey (1981) for the first expression of this idea.

9 For an illuminating analysis of the options for restructuring railroads see Moyer and Thompson (1992).

10 See Willig (1994).

11 For example, see Willig and Baumol, op. cit.

12 One example of this effect arises under rate-base rate of return regulation, as was understood by Averch and Johnson in their seminal paper.

13 For a more complete discussion of these cases, see Ordover, Sykes, and Willig (1985).

14 This standard was first developed in Ordover and Willig (1981).

15 See Baumol and Sidak (1994).

16 For example, it is clear that the passage of rail traffic causes wear and tear on track, ties, and ballast, and that this in turn shortens the lives of the assets. Consequently, one element of the marginal cost of rail traffic arises from the hastening of the time that the assets it utilizes must be replaced--to wit the present discounted value of the capital cost of the assets' value, over the time period that their needed replacements are advanced.

17 See Baumol and Willig (1981), and Baumol, Panzar, and Willig (1988).

18 See Harris (1977).

19 See Friedlaender and Spady (1980).

20 See Friedlaender and Spady, op. cit.

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THE RAILROAD INDUSTRY IN THE UNITED STATES OF AMERICA

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U.S. Department of Transportation

Overview

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 around the world - gasoline prices and air travel simply remain too cheap - it does move more freight by rail than any other country, a staggering 1.3 trillion ton/km and $31.5 billion in revenues in 1996!

Since their creation in the 1800's, railroads in the United States (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, which was built for national defense purposes in the 1940's. However, when it became a profitable railroad in the 1980's by moving large quantities of coal to Alaskan ports for export to Asia from the interior of Alaska, it was sold to the State in 1985 for $25 million.

Amtrak

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., transporting some 20.3 million revenue passengers a year. Amtrak is funded by Congress in the form of a subsidy, which is gradually being eliminated by the year 2002. The U.S. Department of Transportation is the holder of its common stock. Amtrak owns trackage in the Northeast Corridor between Washington, DC and Boston, Massachusetts, but pays user fees to operate over much of the United States on trackage owned by the freight railroads.

Amtrak has ordered high speed train-sets for its Northeast Corridor, taking delivery of its first unit for testing in 1999 from a consortium made up of Bombardier (Canada) and GEC-Alsthom. These specially designed train-sets initially will travel the corridor at speeds of 200 kmh. Over $2 billion currently is being spent on electrification, elimination of grade crossings and reduction of track curvatures between New York and Boston.

Amtrak's future as an entity and/or the degree of future public subsidization is currently being debated in the United States Congress, with a definitive answer dependent upon re-authorization of surface transportation programs currently under review.

The remainder of this paper will discuss the freight side of railroading in the United States.

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1 The views in the paper do not necessarily represent those of the United States Government.

The U.S. Rail Freight Industry

There are approximately 500 freight railroads in the U.S. Seven of these railroads move almost 80 per cent of the nation's rail freight, over one trillion ton/km per year! These seven railroads are categorized as Class I railroads, with annual revenues exceeding $250 million per year for each of these railroads. Other statistics include:

- track/km owned and operated by Class I railroads
- locomotives (exclusively diesel)
- million freight cars
- workers, mostly unionized
- million carloads annually
- billion annual revenue

The remaining railroads are categorized as regional- and so-called short line-railroads. There currently are no trans-continental railroads, although some industry analysts speculate that with a merger between three railroads in the eastern/southeastern United States under review, a trans- continental railroad is the next logical next step.

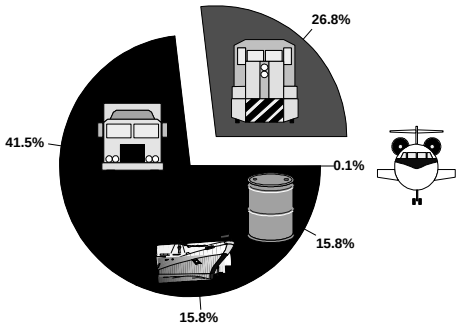
The U.S. rail freight industry is in its seventh distinct phase of existence:

- In the 1800's, land was granted by the government to establish a transcontinental railroad system;
- the age of the "robber barons" allowed the railroads monopolistic powers throughout the United States as the population migration to the West gains momentum;
- to counter monopolistic practices, railroads began to be regulated in the 1880's with the creation of a government regulatory body, later called the Interstate Commerce Commission;
- over-regulation, shifting economic and social emphasis became acute in the mid-1900's and cause the near collapse of a portion of the rail freight industry;
- almost 95 per cent of the industry was de-regulated in 1980 and the elimination of the Interstate Commerce Commission was called for (and it was eliminated, but not until 1995);
- with de-regulation, the U.S. rail freight industry regained its competitive position in the transport sector; and,
- to maintain economic momentum, the larger railroads started merging in the late 1980's.

De-Regulation

The key to economic health of the U.S. railroad industry lies with its legislatively determined de-regulation. The industry aggressively adopted its provisions to nurture itself back to profitability. By 1996, the industry's rate of return on investment climbed past seven per cent and its transportation sector market share had climbed from under 20 per cent in 1980 to almost 27 per cent in 1996.

It has done what many critics said could not be done, certainly not in an industry that had been more regulated than any industry in the United States before or since:



Sources: Association of American Railroads & Federal Railroad Administration, 1996

- Decline in tariff rates
  - all tariff rates down almost 30 per cent
  - farm product tariffs down over 40 per cent
  - coal tariffs down 20 per cent

A key aspect of de-regulation has been the phenomenal increase in the industry's productivity. The norm for rail productivity is measured in passenger/km and ton/km and data for 1991 and 1995 is shown at the left.

As part of these remarkable productivity increases, de-regulation has allowed the industry to focus on selling off portions of loss making lines to short-line railroads; reducing staffing; making technology improvements; re-defining its role as a service provider; and, operating an extremely safe network.

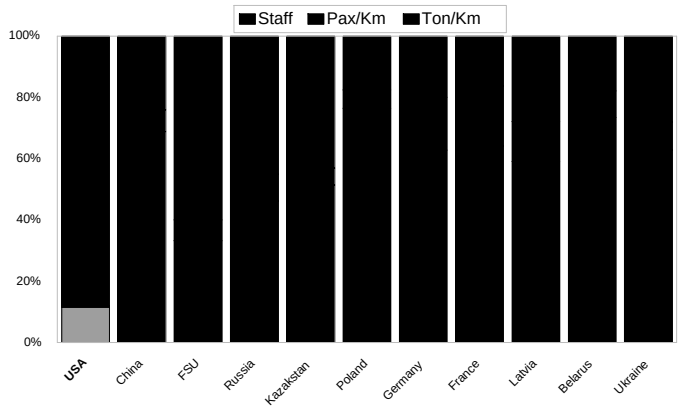
Short-Line Railroads

The selling of unprofitable lines - in the United States the break-even point for operations by a Class I carrier is approximately 700 km - worked positively for everyone involved. Most often, the community or shipper continued to be served by short-line railroads, of which there are almost 500, ranging in size from a company owning one or two locomotives, a handful of freight cars and a staff of five to seven, to short-lines that are as large or larger than the national railroad systems of some countries. In fact, 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, Peru, Chile, Mexico, New Zealand, and Great Britain.

These short-lines most often carry specialized cargo or commodities from a shipper or community for transfer on to a Class I line, often at much slower speed - and thereby subject to less stringent Federal safety regulations as Class I carriers; using older equipment - oftentimes bought at reasonable prices from Class I railroads; and, non-unionized labor, and innovative budgeting and financing procedures.

Employee Staffing

With de-regulation, the rail freight industry was able to not only divest itself of unprofitable lines, but also rationalize their respective systems. Downsizing staff was an important goal, with staffing dropping from over 458 000 in 1980 to approximately 187 000 at the end of 1996. It should be pointed out that the unemployment rate in the U.S. has been very steady, in fact, it has declined in recent years, therefore it can be assumed with confidence that gainful employment has been found for those people released by the rail freight industry.



It appears that rationalization of employees has bottomed out. Since late 1995, rail freight growth has caused the rail freight industry to hire additional personnel and my estimate is that we will continue to see a modest growth in this area in the years to come.

Technology Improvements

Phenomenal rationalization and improvements of motive power, rolling stock, infrastructure and management systems have been made by the rail freight industry in the United States. Improvements and advances such as 6 000 horsepower locomotives using extremely fuel- efficient and environmentally-friendly motive power; aluminum-bodied hopper cars that can carry up to 25 per cent more commodities such as coal; double-stack container carriers; advances in traction control; electronic braking; and, progression towards satellite-based tracking and control, when taken together, provide the industry with substantially lower operating cost and the ability to successfully compete with other modes of transportation, such as trucks. With de- regulation having allowed rationalization of the rail freight system, the industry could and has invested heavily in technology and system improvements. Alone in 1995, the industry was able to invest over $63 billion in research and development.

Customer Service

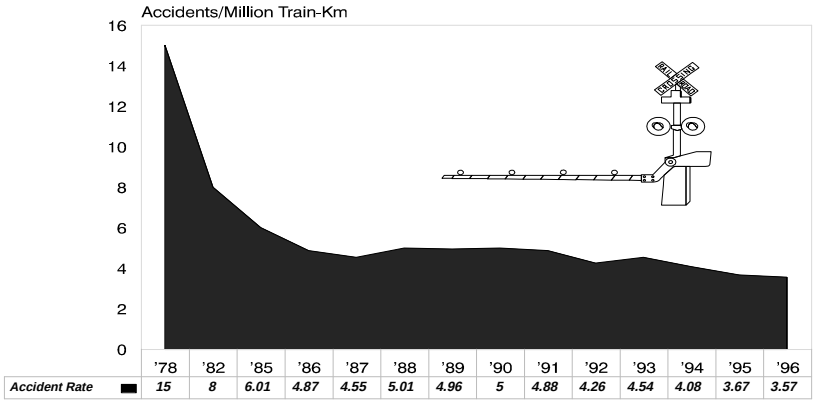
The industry has also very successfully addressed what it is there to actually do. It has recognized that it is not so much a railroad to whom a customer must come, instead it is in the business to provide the customer with a service. This turnaround in attitude can be graphically demonstrated by the fact that the U.S. rail freight industry's largest customer is a trucking company - United Parcel Service, also known by its acronym UPS. During the recent nation-wide UPS strike, rail revenue dropped a full 3.5 per cent. UPS realized that it is more profitable to ship parcels long distances by rail, by putting its truck trailers on rail flat cars, and the rail industry realized that it could provide a profitable service for an important client.

Rail Safety

Rail accidents often make for spectacular helicopter footage on the evening television news, showing smoking rail cars littering the countryside. In fact, the U.S. rail industry is extremely safe. Shown at left is a chart reflecting accidents per million train km of operation.

Two reasons become apparent when looking at this statistic.

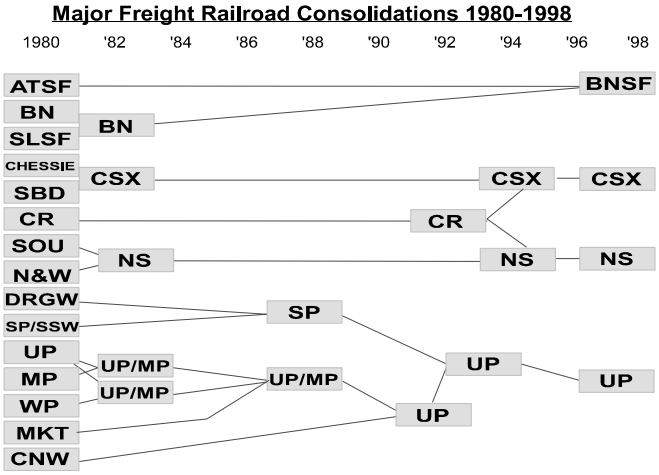
First, an almost completely de-regulated and totally privatized environment, a railroad's financial viability depends on providing the customer with on time delivery at the lowest possible cost to the carrier. The profit margins can be razor thin and the competition is only a step behind. Therefore, it is of vital interest for the railroad to tolerate no accidents on its system - it just makes no economic sense to do otherwise.



Second, the Federal Railroad Administration (FRA), one of eight modal administrations in the U.S. Department of Transportation, has as its primary responsibility a mission for zero tolerance of accidents in the industry. This is accomplished in several ways: FRA has statutory authority to inspect and monitor for safe operations on the nation's railways. Safety inspection teams are located at over 50 locations throughout the country. FRA works with industry, labor unions, manufacturers and suppliers in a partnership to propose - when necessary - new rules or do determine needed changes to insure a continued safe rail system.

Mergers

Rationalization of the rail freight system in the U.S. over the past 17 years (since de-regulation) has been enormously successful by anyone's standards. However, industry observers feel that additional productivity improvements, though not only possible but also probable, will be of a smaller magnitude than before. Therefore, the return on investment - the financial bottom line - will not appreciably increase for the investor. This fact, plus ever increasing competition from other transportation modes; shifts in production theories, for example, just-in-time deliveries of automobile parts; and, shifts in population centers, have resulted in establishing alliances within the industry.



Note: Assumes STB Approval of Proposed Merger!

These alliances are, of course, called mergers. In the U.S. rail freight industry, specifically within the Class I carriers, 15 major railroads have undergone mergers during the past 16 years. If we assume the Surface Transportation Board - a small independent government agency overseeing the remaining five per cent of regulatory framework the industry operates under - will approve by Summer of 1998 the assimilation by two railroads (CSX and Norfolk Southern) of another Class I railroad (Conrail), only four Class I railroads with annual revenues over $250 million, will remain! That constitutes a major rationalization of a country's rail freight system!

Will mergers end here? Will there eventually be a trans-continental freight railroad in the United States? Some industry experts believe it is inevitable. Will the industry - and transportation as a whole - benefit from such a mega-merger? For differing and various reasons, not all are sanguine about the outcome of such a possibility.

Some short line railroad operators are concerned about the CSX-Norfolk Southern-Conrail proposal. Some short lines that have been providing services in the area for shippers and suppliers, are fearful they will be squeezed out of the market once CSX or Norfolk Southern take over Conrail's trackage. Where a short-line provided a necessary linkage before, the Class I may now regard that short-line as a nuisance, or one that is taking away business. On the other hand, some short-line operators see new opportunities on the horizon, particularly as CSX and Norfolk Southern begin to rationalize their newly acquired trackage.

The Federal government also watches the aftermath of mergers very closely. After the merger of the Union Pacific and the Southern Pacific (UP-SP) in 1996, rationalization of management was undertaken. Unfortunately, reductions of middle management and supervisors was not followed by systematic and/or procedural changes of operations. As a consequence, a series of serious accidents have occurred in less than a year. Therefore, the Federal Railroad Administration is focusing intensely on safety procedures in place at UP-SP and/or that might be needed to improve accident statistics with this carrier.

But does this mean mergers - possibly even mega-mergers - are bad? Not at all! The U.S. rail industry found itself close to bankruptcy in the 1960's. It rose from the ashes and created an extremely productive and profitable system. It found ways to overcome virtually all obstacles. Important lessons are being learned from the mergers of the past decade. Short line railroads were "born," grew to close to 500 railroads, most of which have flourished. With adjustments arrived at between Class I railroads and the short line community, accommodations will be found.

Also, with innovative ideas and planning, closer coordination between all parties concerned - railroads, unions, regulators, customers - rail safety will not be compromised at any time before or after a merger.

Service to the customer demands no less!

AIDE MEMOIRE OF THE DISCUSSION

I. Why Regulate Railways?

I.1 Public Service Obligations In The Rail Sector

In many countries public policy towards rail services is guided, in part, by non-economic policy goals such as environmental protection, guaranteeing service to outlying areas, and providing well-paid, secure employment. What is the best way to handle these non-economic policy goals so they impinge as little as possible on economic efficiency?[1]

The Chairman introduced this discussion by making the following observation: In many countries, especially in Europe, railways make significant losses. That is, revenues cover a very small percentage of costs. The revenue-to-cost ratio is as low as 20-25 per cent in some countries and reaches 80-85 per cent in other countries. Regulation (at least price regulation) is usually imposed on firms which are in a monopoly position in order to control their monopoly profits and prevent them from exploiting any market power. However, in the case of railways, rents may not show up in the form of monopoly profits - rents can also be shared with other participants to the production process, e.g., with employees or suppliers – in the form of high salaries, in the form of employment levels in excess of what is necessary to perform the companies' operations or in a slack relationship with the suppliers of these companies. To make matters worse, railway companies are also subject to other non-economic objectives, such as environmental objectives, that provide a handy justification for the huge losses.

The Italian Delegate emphasised the relationship between public service obligations, a soft budget constraint and increasing costs in the Italian railway industry. In the absence of any strong competitive pressure, the Italian railway company's low performance is a consequence of the inadequacies of the regulatory framework coupled with the shortage of reliable control mechanisms. Even more, however, it seems to result from the lack of any effective budget constraint on the company's behaviour and from strict government constraints on tariff-setting. In such a situation, there are no significant incentives for the company to efficiently allocate internal resources in order to reduce the costs of providing services while maintaining quality standards.

These features also give rise to a particularly slack relationship between the Italian railway company and its suppliers. *FS* is in a monopolistic position with respect to its suppliers but it does not use its market power to reduce purchasing costs. As a result, in the Italian railway industry a significant share of the monopoly rents appears to be split among a large number of different players, including managers, employees, suppliers, and final consumers, whose vested interests are at present the strongest obstacle to any structural reform aimed at introducing competition and promoting economic efficiency.

The European Commission (EC) was invited to explain why Article 92 does not seem to apply effectively to railways. Article 92 envisages that aid will be granted to a company if there is a reasonable prospect for the company to become financially viable. However, European railway companies seem to continue, year after year, to run very heavy losses which are then effectively subsidised by the state.

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1 The paragraphs in italics reflect the questions on the agenda that the delegates were asked to address.

The EC delegate commenced by explaining the background to Article 92. Article 92 forms part of the competition rules of the European Community Treaty. The competition rules of this Treaty deal with several aspects of the promotion of competition. In particular, Article 85 deals with the principles that the Commission applies when assessing agreements between undertakings. Article 86 deals with the principles that the Commission applies when dealing with potential abuses of a dominant position. Finally, Article 92 deals with questions related to state aid.

The principles and the rationale underlying Article 92 are as follows: Article 92 provides that, except as otherwise provided in the Treaty, any aid granted by member states or by means of state resources is incompatible with the treaty. However, this provision, which is stated in paragraph 1 of this article, is qualified in the remaining paragraphs of the Article. Paragraph 2 of Article 92 sets out certain types of aid which are compatible *de jure* -- i.e., aid that the Council and the Commission considers is compatible without considering its effect. This "compatible aid" is also set out in Article 77, which applies to the transport sector. Article 77 of the Treaty provides that aid granted by member states is compatible if it meets the needs of co-ordination of transport or if it represents the reimbursement of public service charges or financial disadvantages related to the imposition by member states of certain obligations. The Commission and the Council have developed the principles of application of Article 77 by means of the Council regulations 1191/69 and 1192/69.

Finally, paragraph 3 of Article 92 also provides that the Commission may, on the basis of individual decisions declare certain aid compatible. The principles which govern the assessment of individual granting of aid by the Commission in the railway sector are laid down in regulation 1107/70. In connection with Article 92, Article 93 of the Treaty provides certain procedural rules for the handling of the state aid assessment. Under Article 93 of the Treaty, member states are required to notify to the Commission in advance, their intention to grant aid. That means that a member state cannot pay or authorise aid before obtaining the authorisation of the Commission.

The EC delegate was asked to explain whether in the light of the heavy losses of the railways in Europe (the ratio of revenue to costs being around 30 per cent in Italy, 46 per cent in France and so on) whether these losses, when financed by Governments, are treated as aid governed by Article 92 of the Treaty by the Commission.

The delegate from the EC explained that regulation 1191/69 lays down two basic principles: on the one hand, member states are required to terminate public service obligations that they have imposed upon the undertakings providing public services in inland transport. However, on the other hand, member states who want to maintain such obligations are allowed under these regulations to do so, but they are obliged, at the same time, to pay for the economic disadvantages related to these public service obligations in compensation. This regulation establishes certain principles for the calculation and the payment of this compensation.

The EC delegate then went on to explain a complementary regulation which was also adopted by the council in 1969 - regulation 1192/69. This regulation complements the principles of regulation 1191 but unlike this regulation is just applicable to railways. This regulation was adopted in recognition of the fact that railways have some distinctive characteristics when compared to other modes of transport. Sometimes, member countries impose upon railway undertakings certain conditions related to the placing, for example, of orders relating to works or equipment which in principle are non-economic. Under regulation 1192/69, member states are obliged to pay compensation for the economic disadvantages related to the placing of orders relating to works for equipment on railway undertakings. The EC delegate added that these two regulations dis-apply the normal state-aid principles, and in particular, the rules on

previous notification to the Commission (although subsequent amendments re-established the obligation to notify, in advance, such payments of compensation).

In 1991 the Council, on the recommendation of the Commission, adopted an amendment to regulation 1191 which has three features: First, member states were allowed to exclude from the scope of regulation 1191 services related to urban, suburban and regional commuter services. Second, the amendment introduced the idea of a public service contract (which although introduced was not imposed as an obligation upon the member states). Finally, the third key feature of this amendment was the requirement to separate accounts - member states were now required, when paying compensation for public services, to keep separate accounts for these services.

The Chairman underlined the fact that, in the US, routes that were thought to be not economic were closed down, in complete contrast to the experience in Europe where railways continue with the same structure of supply, without any consideration of demand for the service. It is important in this industry (and in other public utility industries) to identify the costs of universal service obligations. How can we do this? One possibility is to set up a commission and to study very carefully all the accounts of the railway company and to come up with a proposal. This has been done many times before. Commissions are very ineffective in this task because all the information on costs are within the railway companies and they are not willing to share it. In many cases they do not even know what the costs are themselves. Another possible approach is for the railway companies to choose themselves the routes that are loss making and put them in a separate company. The railway company could then be divided up into two companies. The first, a profitable company that operates on a normal commercial basis and the second a company which loses money and provides the universal service obligations. These companies could then be privatised. On many occasions, the universal service company would not be as loss-making as first thought. In some cases the universal service obligations would disappear altogether. This has never been tried anywhere, but it has been discussed in other industries (e.g., telecommunications) in the US and other countries.

The representative from the Union Internationale des Chemins de fer (UIC) said that the focus on public service obligations is an interesting one, but it is yesterday's debate. Time has moved on, transport policy has moved on and certainly, at least within the European Union, the focus has substantially moved away from this issue. There is now a fairly reasonable appreciation of where losses are incurred by railways and a number of member states have taken steps to tackle them. Most railways in the European Union know quite well which services are operating at the loss. Public service obligations are no longer a problem area in that sense. Member states can pay for the services they want. That is a decision for them.

The representative also took exception with the position that there is a need to discipline the railways. On the contrary the problem is that they have been disciplined far too much - meaning, that they have had to comply with competing requirements by states, endorsed, in turn, by the electorate. In this respect, there is a need to counter the view that there is a major issue with subsidies for railways. This is now a side issue. This is a question of the country asking for something from the railway system, which it is not economic for the railway to produce, but is something that the country is willing and prepared to pay, something the state wants. This latter issue is relatively easy to resolve. The real issue is how to release the energy that lies within the railways by removing restraints from them.

The representative asked: is it possible, that rather than focusing on producing new and more complicated structural arrangements, by giving the railways real management independence (as provided for in European Directive 91/440), exposing the railways to market forces as they stand, and allowing the state and regional authorities to continue to finance non-economic services, would this not, on its own, introduce greater efficiency?

The Chairman responded by repeating the figures for 1995 for the relationship between revenues in costs in Europe. In Italy revenue from fares covers just 30 per cent of the total costs. The French railway recovers only 46 per cent of costs. The German railway recovers a little more than 50 per cent. The Spanish railway recovers around 40 per cent. The problem of losses is not solved. The only country where it is in the process of being solved is Britain. British Rail recovers with revenue around 80 per cent of the total costs, which is quite an impressive difference, compared with the other European rail companies. Public service obligations might not be the real reasons for these losses, but are often used as their official justification.

The delegate from Germany reported that he also was sceptical about cost transparency imposed by regulatory interventions. It is very hard, for instance, to separate, precisely, between structures and services. What belongs to the infrastructure? It is difficult, not only theoretically, but also practically to allocate assets to infrastructure and infrastructure provision. If nobody knows which parts belong to which you cannot allocate the costs. In any case even if the costs are known by the company, they won't tell the authorities or the regulator. We often have to deal with the question of what is an adequate price or not. It is then up to the regulator or the antitrust authority to evaluate whether the costs are correct or not. Very often it was not possible to ensure that the costs that were presented by the companies are accurate.

The delegate went on to discuss universal services. In Germany, and elsewhere, one of the major sources of loss is rural transport. A commercial operator would close down about two-thirds of the German network on the grounds of unprofitability. This is considered unacceptable from a political point of view. For whatever reason the voters say we need rail service. So, in the privatisation and restructuring in Germany the federal rail company was sectionalised. It was divided into four sectors - one dealing with freight, the second dealing with long distance passenger services and the third dealing with local and regional passenger service and the last dealing with the tracks. These are still under one common ownership. In the future it is intended that they will be split up into independent corporations, and possibly privatised (with the exception of the track company). The problem is in regional traffic. Here the solution was as follows: the level of service in rural areas is not a decision of the local railway company but of the local government. The local government has to decide whether or not it wants passenger traffic in its rural areas, or not. If they want it, they must negotiate with the federal railway (or some other company) to provide these services and they have to pay for them. This makes sure that the rural areas are served, not at the expense of the railway, but at the expense of the normal taxpayer.

However, a problem arises due to unallocated costs. Which costs should be allocated to the regional traffic? Overall cost coverage in Germany is about 50 percent. But if you differentiate between the four sectors, the coverage in the rural areas (which are paid by the local government) is 100 per cent, whereas in the long distance and freight traffic it is less than 20 per cent. It is clear that the full "overhead" costs are being allocated to regional traffic, which is paid for by the government. In comparison, in those areas where there is competition (intermodal competition for instance) the cost coverage is very low. Incidentally, the federal railway reported a profit last year - the first time since the end of the second world war.

Mr Kessides (The World Bank) emphasised the need for flexibility and transparency in handling public service obligations. Railroads should be able to exit from any routes or services that are not compensatory. There should be a decision by the government on social grounds which services should be continued. There should be competitive bidding for the subsidy for those services, and hopefully the bidding will lead to the minimum level of cross-subsidy. There is absolutely no rationale for tampering with cost-based pricing in order to provide universal service objectives. These solutions have been applied in other sectors and other countries. For example, in the US, in the airline industry when the industry was regulated,

service to small communities was based precisely on this type of competitive bidding for the lowest subsidy. There is a danger that, especially with separation of track assets from services in Europe, there would be a temptation by policymakers to use the access charges to finance universal service obligations. That would be a mistake. This should be the centre of the debate: What is the least distorting mechanism for raising funds for universal service obligations?

The Netherlands then reported that it believes that the issue of universal service obligations is an essential issue when dealing with railway matters. Incumbents and state monopolists often identify themselves with the public interest because they have a duty to make sure that everyone has access to a certain service. To falsify this argument, it is necessary to identify the costs of the universal service obligation and also to specify what specific services are essential. For example, in the Netherlands, the government has contracted with the Dutch railway, to provide a subsidy for 30 specific lines. For the remaining lines, the railway has the liberty to determine their own policy on fares and services.

The Korean Delegate observed that the discussion has focused on finding the true cost of universal service given that the service mode will be railroad. One could ask what is the most efficient way of providing such services. For example, buses might be more efficient then railroads. We can therefore link this discussion to the discussion on intermodal competition. We could open the auction for the universal service subsidy to all modes of transportation.

The ECMT representative stated that universal service obligations should be financed through government funds. Last year's policy paper by the EC brought up the problem of how to identify the different loss-making parts of the system, through a kind of geographical separation between loss-making mainline track services and commuter services. However, geographical separation is always going to be difficult simply because the tracks are shared with freight traffic. There are cases of course where certain lines are dedicated to commuter services. In this case the distinction is easy. There is possibly a case for separating these lines completely out of the railway system. Where the two (freight and passenger services) are mixed its seems that maybe the simplest way is to ensure that all the public money for some kind of service obligation flows to an operating company who decides how to spend that money in purchasing track access services.

I.2 The Effects of Public Ownership On Performance and Competition

Neither state ownership nor regulation of railways has been sufficient by itself to reduce railway costs to the point where subsidies are no longer needed. Why might introducing greater competition be expected to make an important contribution to bringing costs down? How might continued state ownership, subsidisation or regulation of rail service prices tend to block the introduction of greater competition, and what can be done about such problems?

The Chairman then asked how can we credibly commit the government to not subsidise this industry indefinitely? In other words, how can we enhance the separation between the railway companies and the government? One way is corporatization, another is privatisation. However, there remains the problem of the public service obligations.

Professor Nash (Institute for Transport Studies, University of Leeds) was asked to explain the importance of corporatization as a first step in the process of reform, and as a first step in the process of introducing competition, taking into consideration the problem of public service obligations. Prof. Nash explained that for many decades, in Europe and much of the world, railways were run along the following lines: *(a)* they were owned by the state, *(b)* fares and services, and often wages and employment levels were all

determined by the state, *(c)* they were protected from competition, not just within the rail sector (by having a monopoly there) but also by regulation of other modes and *(d)* when they ended up with a deficit at the end of the day, they were deficit financed - the government simply met the bill. Under this situation (which certainly did exist in many countries) although railway management has little power to do anything to improve the situation they also very little *incentive* to do anything to improve the situation.

The key features of the process of corporatization are *(a)* achieving independent management of the railways with a realistic financial set-up (often railways have been given tasks which were simply not realistic given their inherited debts); *(b)* clear objectives, which may be purely financial, but may also involve service levels, traffic levels and so on; *(c)* with non-commercial operations being the subject of a contractual relationship such that both sides agree in advance what services are to be delivered, to what quality and at what price; and *(d)* very often, the process of corporatization has also involved sectorisation. Sectorisation has typically taken the form of sectors aimed at particular market segments, such as freight, long distance passenger, suburban passenger. It has not been a case of getting sectors to compete with each other, rather, getting clear focused management for the markets in which railways have always operated.

Professor Nash pointed out that in their background paper they comment on the experience of Britain in the latter half of the 1980's (where, with this sort of process, subsidies were halved, and passenger traffic increased, although admittedly in a favourable economic environment) and the experiences of particularly, New Zealand and Japan, where a large part of the improvement of the position of the railways in those countries was associated with this sort of reform. In each of these cases, an enormous amount was achieved, but without introducing a substantial amount of new competition within the rail sector. Indeed, initially, at least, much was achieved without privatisation, without actual change of ownership systems, although, in all three of these countries, some or all of the railways had changed hands into the private sector.

So it is clear that a lot of can be achieved simply by corporatization within the public sector. The big questions are: how do we achieve this independence of management? Should this process be seen as an intermediate step along the road to either privatisation and/or the actual introduction of competition within the rail sector, either by franchising or by open access? Is this process of corporatization simply a step along the way, or can it actually achieve what we want without further measures?

The Chairman noted that he agreed with the comment of Professor Nash that corporatization cannot be an end in itself and that something more has to be introduced into the industry. The Chairman observed that in Italy the national railway has operated as a joint-stock company since 1992 and its performance (even though it has improved) is still amongst the worst in Europe.

Hungary was asked to describe the effect of the corporatization, in 1993, of the Hungarian national railway. The Hungarian delegate explained that the Act on Railways of 1993 created the basic regulatory framework and separately defined the public railway as a track railway, on the one hand, and a train-operating railway, on the other. A first step was the separation of the management within the same state-owned company but not a full organisational separation. The subsequent joint decree of 1996 (a decree of the Minister of Transport, Communications and Water Management and the Minister of Finance) ordered the separation of accounts of these activities. At the same time, some professional activities were separated from the basic activities such as maintenance of the network. State-owned limited liability companies were formed for these activities. There are plans for the privatisation of these companies, but this hasn't happened so far. These first steps established the regulatory background, but the regime is not favourable for the development of competition, for the following reasons:

First, during the past decade, the technical development of the network has not been a focus of the Transport Ministry. The technical condition of the network, especially off the main-trunk system requires substantial renewal. Some of the county lines are subject to speed limitations, which acts as a barrier to entry. There are no potential domestic entrants and foreign entrants are subject to international agreements. There has been a great fall in transportation demand in the last few years so the incumbent company is able to fulfil its basic transportation tasks. Otherwise, the Act provides that if the incumbent company is not able to fulfil its transportation tasks a concession tender may be invited. There is also very strong intermodal competition, especially from road transport. The basic problem is improving the financial situation of the company in order to free the company from debts which relate to past loss making activities. This task remains for the future.

I.3 The Role Of Intermodal Competition

Under what circumstances is intermodal competition likely to be sufficiently powerful that railways need not be regulated at all?

The Chairman introduced the session on intermodal competition by noting that railway transport is in competition in long distance with air transport and, over short distances, with buses and other types of transportation. The Chairman pointed out that where there is strong inter-modal competition, it is really questionable whether there is a need for regulation at all.

Australia was invited to share its experience with intermodal competition and regulation with intermodal competition instruments. The Australian delegate began by noting that the structure of the railways in Australia is significantly determined by the fact that *(a)* Australia is a Federation and consists of a series of regional state governments which have traditionally been responsible for railways and also *(b)* the very large geographic spread in Australia which has had some important influences on the structure of railways. At the moment, Australia is focusing on trying to encourage intermodal competition in railways in the long distance freight area, where rail, for long-distance bulk cargo, should have a natural advantage. Australia is trying to encourage competition between rail, road and coastal sea transport. At present much of the long distance bulk freight is being carried by road, which has its own costs, both economic and environmental. Australia would very much like to see greater competition in long distance freight haulage between road on the one hand, and rail, and coastal sea transport on the other. In order to achieve that, Australia is in the process of the following:

(a) First, Australia is restructuring its long-haul rail system by separating the so-called "below rail", which is the maintenance and the building of the track and associated infrastructure, from the "above rail", which is the operation of trains. There are already some private sector transport companies competing with the traditional, government-owned rail companies in running trains on what is still, largely, government-owned track. But, that government-owned track is subject to an access regime so that private sector operators, wishing to operate their own trains can pay an access fee and use the rail.

(b) The second thing Australia is addressing is regulatory restrictions. Some areas of freight have traditionally been reserved to rail, at least in some states. These were basically a revenue-raising measure. Commodities such as coal and wheat in particular, in a couple of states, were, by regulation, restricted to be carried by rail only. In order to enhance competition in those areas of freight, these regulatory restrictions are having to be removed.

(c) The third thing that is being addressed, in order to enhance intermodal competition, is the level of investment, particularly between road and rail. Traditionally, in Australia, there has been more investment in road than in rail, which has meant that rail, including long distance freight, has been a relatively poor alternative to road. One of the challenges that Australia is confronting in seeking to enhance inter-modal competition is having to invest significant amounts of money in the rail network to get it up to standard.

(d) The final issue is the question of user charges. Traditionally, in Australia, the use of roads has either been free or, subject to a relatively low charge, whereas the access regimes that we are putting in place for rail transport to seek to recover at least the marginal cost of maintaining the rail system. So we have instituted a system of user charges for heavy road vehicles in Australia, which consists of a fixed charge (paid through the registration fee) and a variable charge (which is a component of the government excise levied on diesel fuel). The combination of these probably still under-recovers, in cost terms, on road, but at least it moves closer to some degree of competitive neutrality between road and rail.

The Australian delegate concluded by summarising that in seeking greater intermodal competition in Australia, the four issues that are being addressed are: the restructuring of rail itself, to make it more competitive; the removal of regulatory restrictions, which reserve certain freight to rail only; the equalising, or near-equalising of investment in road and rail, so that the infrastructure in both is of a comparable standard; and the imposition of user charges in both road and rail, so that there is a degree of competitive neutrality between the two.

Sweden was also invited to provide an assessment of the experience with intermodal competition in Sweden. The Swedish delegate responded that he would limit his discussion to the markets for services of over 100 kilometres. He added that anyone meeting certain requirements specified by the government has the right to operate freight services on the state railway network, as from 1 July 1996. However, already-established freight traffic on certain parts of the network is given priority in track allocation. Rail freight market share is approximately 25 per cent on distances over 100 kilometres. The total volume of rail transport services has remained constant over the last 25 years, at around 18 million ton-kilometres. Over the same period, road transport has experienced significant increases in volumes. As in many other countries, they have grown from a volume in 1980 of 25 million ton-kilometres to a volume of 30 million ton-kilometres in 1995. Sweden also has some domestic shipping which is slowly diminishing - total volume in 1995 was around seven million ton-kilometres. Lorries tend to carry higher-valued goods than either railways or shipping. Therefore, rail and shipping are in more direct competition than lorries and rail. In some segments, rail has made some impact, even on the higher valued goods. The revenue earned by the railways per ton-kilometre is, on average, very low in Sweden - about five times lower than in Germany, and on the same level as in the United States. On the other hand, lorries in Sweden are very large, the largest in Europe - weighing up to 60 tons and having a length of up to 25 meters. In order to meet that competition from road transport, there is programme underway which intends to enlarge the railways - raising the loading gauge and axle loads to 25 tons, and allowing longer trains, up to 1500 meters (from 750 meters, at present).

A problem in Sweden is that there is a lack of competitive neutrality between the various modes of transport. Earlier this spring, a Parliamentary Committee suggested that the charges paid by the lorries be increased significantly. This may not be politically possible.

Turning to passenger traffic, (and also restricting the discussion to distances over 100 kilometres) the delegate noted that rail's market share was around 10 per cent compared with air five per cent and coach seven per cent. The private car, of course, dominates this market with a market share of 78 per cent. On

certain segments, rail is very competitive and very successful. For example, between Sweden's two largest cities, (the capital Stockholm and Gothenburg) rail now has a larger market share than the airlines (the airline industry is completely deregulated in Sweden). In this market rail has a market share of 55 per cent and air 45 per cent, despite the number of airline operators and the fact that there is only one operator providing rail services. There are also restrictions in the long-distance coach system. This industry has not been deregulated yet, but there is a proposal to do so. Despite these restrictions, there are some competitors in the coach market. This has brought incentives to the rail to make their services more viable. They have introduced new rolling stock, a new pricing system and a new distribution system. There are also occasional price wars between the public transport modes in Sweden.

The Chairman asked whether the Swedish state railways make heavy losses, or whether such losses have been reduced because of this reform.

In order to answer this question, the Swedish delegate returned to the situation in 1988, when the last transport policy decisions were taken in Sweden. The background to those decisions was the heavy losses incurred by the Swedish state railways. At that time they ran a deficit of around 500 million Kronas per year. In order to improve the situation and turn a profit (the target was a surplus of 500 million Kronas per year) a decision was taken to divide the state railways into two parts the traffic operating part, the Swedish State Railways and the National Rail Administration, which is the track authority in Sweden.

In fact, the Swedish State Railways met the profitability targets. They went into the black, and reached profit of around 500 million Kronas per year. But, unfortunately, last year they went back into the red with a loss of around 500 million Kronas. At this time, the government is preparing a new transport policy, again seeking to turn the railways into the black. It remains to be seen whether that will succeed or not.

Poland was also invited to discuss intermodal competition. The Polish delegate began by relating something of the history of the rail sector in Poland in the last few years. In 1989, the year of the introduction of the market economy in Poland, there was a total deregulation of the transport market and fierce competition started between different transport modes. There has been a big shift in the patterns of trade. Whereas formerly 70 per cent of Polish foreign trade was with Eastern-bloc countries, 70 per cent is now with European Union countries. In addition there has been a big increase in the mobility of Polish citizens. The Polish delegate reported that a one per cent growth in domestic product has historically corresponded with a two per cent growth of air traffic, a 1.5 per cent growth in automobile ownership, one per cent growth in road haulage, a zero per cent growth in rail freight, and a loss of passenger rail traffic at a rate of less than one per cent. This has meant uncontrolled growth in road transport, and the saturation of the road network, causing congestion and accidents.

Railway transport is currently provided by six small, almost private, companies and one big national company, PKP, which dominates the market. Its revenues are shrinking. In addition, the financial resources available for development and modernisation of the network and social objectives are decreasing. As a result we have observed a deterioration in the quality of service and a deterioration of the technical condition of the network.

The Polish government has tried to address this situation. During the last year, Poland has passed significant new legislation that should benefit the railways. A vehicle tax was introduced into the fuel tax, raising costs for road traffic. A uniform charging system was introduced for international road haulage, proportional to the weight of the vehicles. Domestic carriage of passengers will be licensed (at present anybody can carry passengers). New railroad acts have also been introduced. The national company has its own PKP Act, which changed this company from a state-owned company into a kind of commercial

company and introduced the concept of public service contracts with the government. In November a new railway Act will come into force, giving free access to the network to all railway operators. Of course they will need to be licensed so that this law is in compliance with European regulations. There is still much to do. The national railway company is under structural reform. The new Polish government will probably undertake a devolution of local transport financing to the newly created territorial organisations. At present the national railway is oriented, not towards its customers, but towards Parliament and politicians, to obtain as large a subsidy as possible.

The EC delegate, when invited to speak on intermodal competition, started from a market-definition perspective: When we are asked, as competition authorities, whether or not agreements between undertakings restrict competition or whether a particular undertakings enjoys a dominant position, it is necessary to define the relevant market, where the restriction on competition or the potential abuse by the dominant company takes place. The Commission, in its decisions, has traditionally considered that road and railways in both passenger and freight transport compete strongly. But, there are also other modes of transport that can compete with railways. For instance, since the opening of the Channel Tunnel, it is clear (and the Commission has also established) that a combination of road and ferry transport can successfully compete for cross-channel traffic with railways. Finally, in Europe, we have a network of high-speed trains connecting not only the big capitals of central Europe but also London. In this respect, it is clear that the provision of passenger rail transport between these continental towns and cross-channels services connecting London compete (and compete successfully) with air transport.

In any case, the assessment of a restriction on competition or abuse of a dominant position under competition rules can only be carried out on a case-by-case basis. It is necessary to establish the particular substitutability between different modes of transport for the provision of particular services. It is very difficult to establish general guidelines which could be a applied to all cases across the board.

According to the representative from the UIC the analysis of the market has until now been superficial. It would be more productive if further work is done on trying to define just what is the market. There is also a subsidiary question: what is a monopoly, and what is a dominant position? If railways are substantially like roads - that railways are simply roads with steel instead of tarmac - then railways would not enjoy a dominant position. On the other hand, if there are significant differences between road and rail, then the assessment of a dominant position would be quite different.

Mexico was invited to speak on the privatisation process in Mexico and the intra-modal competition that Mexico is trying to achieve in railways. The Mexican delegate noted that the Mexican railroad privatisation scheme, which has recently been implemented, features regional separation of assets and operations and has established a number of route-based companies. The Mexican railway network has been split up into four main regional companies and several short-lines serving local markets. Under this scheme, vertical integration of the different functions and services that make rail transportation possible is preserved, although functions may be unbundled whenever it is deemed to be necessary. Under this model, there is only one operator on each route. However, the “Mexican model” incorporates several features designed to promote inter- and intra-modal competition. Whenever there is the possibility that competition might replace regulation, these possibilities have been explored. The delegate suggested that one might go as far as saying that under-regulation was preferred to over-regulation. In practice, this means that sometimes incumbents are freely and directly negotiating with new entrants over terms and conditions of access to the essential facilities controlled by the incumbent. The regulator has first taken a step back, to give the private parties a chance to come to an agreement, and has only intervened when those preliminary negotiations have failed.

Regarding intra-modal competition, there are two different forms. First, it can be what Mexico has called "source" competition. This occurs, for example, when cargo can be transported from its place of origin to two different ports over two alternative tracks operated by two competing companies, to be finally transported on by water carriage to its final destination. Second, there may be intra-modal competition at the stage of train operations. Such competition may occur when infrastructure is functionally separated from train operations, which is not the case in Mexico. It can also happens when separate train operators have trackage rights with the company owning the tracks. The latter situation occurs in Mexico. It is recognised that intra-modal competition in the Mexican case may not be sufficient to replace regulation, and this is why the law provides that whenever the regulator (or any affected party) determines that there is not effective competition, tariffs can be regulated.

It should be recognised too, that even in the case of functional competition at the train operations stage, the owner of the track may abuse its market power derived from its control of the essential facility and the intervention of the regulator may be necessary to set the access conditions. Overall, the scope for intra-modal competition seems to be limited. Probably inter-modal competition is a much more powerful tool to prevent abuse of market power by incumbents, particularly for the transportation of passengers and cargo other than bulk cargo.

II. Fostering Greater Competition In Railways

II.1 Vertical Integration with Regulated Access vs Structural Separation

Focus on facilitating competition through providing open, regulated access to the infrastructure - Can one trust that regulation of rail access terms alone will lead to sufficient competition developing in rail services so that regulation of service prices, etc. will not be required? For the open access approach to produce satisfactory results, how advisable is it to separate track ownership from the provision of rail services? Would accounting separation be sufficient?

The Chairman introduced the next topic (how to introduce greater competition into railways) by asking Mr Kessides to address the merits of open access vs. structural separation – whether vertical separation in this industry is necessary for competition or whether it is better to maintain structural integration in order to gain economies of scope or other types of economies that are important in this industry.

Mr Kessides replied that there is no single answer to this question, but the answer depends on the characteristics of the country, market size, market density and so on. Nevertheless, most industry observers agree that the conditions that gave rise to the monolithic vertically-integrated railroad organisation no longer exist in most countries. Indeed, throughout the world, governments have initiated restructuring programs. In recent years, the two primary models that have emerged for this restructuring are vertical separation and competitive access. Under vertical separation, the ownership of facilities is separated from such other functions as train operations, marketing and so on. The primary virtue of this approach is that it mitigates and segregates the difficult regulatory problems associated with the largely sunk roadbed costs. If trains and track are separate, with track assets being held by the government, or by a consortium of operators, or by a regulated private entity, then one could (in principle) have very vigorous actual or potential competition for rail services, by operators with equal access to those facilities. However, there are several problems associated with this line of reasoning:

(a) First of all, in most instances, the recovery of the roadbed costs will require price discrimination, i.e., it will require some type of Ramsey efficient pricing. The separation of

track from services will make the application of the Ramsey efficient pricing very difficult, if not actually impossible.

(b) Second, in many instances, the provision of many innovative and market-responsive services will require specific investment in infrastructure and, again, under a variety of circumstances, the train operator might find it difficult to co-ordinate with the owner of the infrastructure facilities, especially if their respective incentives are not in harmony.

(c) Finally, in many countries, many markets are thin and separation might not actually lead to actual and potential competition in rail services. The primary benefits might not be obtained, because the size of the market is small.

The second leading option is that of competitive access. Under this option the railroad is permitted to continued integrated operations. However, the integrated operator is mandated to make those facilities available to other operators on a fair and equal basis. However, what appears to be fair to one party is totally unfair to another and so on. Indeed, under a variety circumstances, the integrated operator might not have incentives to permit efficient access. Therefore this equal access mandate will not be very powerful. The integrated operator will always find ways of precluding the operation of its rivals if it has an incentive to do so. The competitive access option has the advantage that it would permit prices to shippers to be selected in accordance with Ramsey efficient principles, and, in addition, the competitive access option will mitigate the incentive problems associated with new infrastructure investment. However, the problem with the competitive access option is that, in many circumstances, the integrated operator may not provide access to other operators on a fair and equal basis. Nevertheless, it would be wrong to conclude that in every circumstance the integrated operator would preclude efficient operation. Indeed, under a set of regulatory policies that focus on the prices charged to shippers, rather than the prices for other services such as access, then, under those circumstances the integrated operator might have an incentive to permit efficient co-operation.

Mr. Kessides also emphasised that fully distributed cost allocations that are based upon some arbitrary basis of utilisation (such as gross ton-miles) are unlikely to permit the owner of the track infrastructure to be financially viable and to be revenue adequate. Therefore there will be a requirement for some form of Ramsey pricing. Mr Kessides went on to explain that to the extent to which separation brings competition in services, any notion of cross subsidy will not be relevant, as any price structure that entails cross subsidy will collapse under this system. Therefore, to a very great extent, separation necessitates the provision of complete and total freedom to the railroads to eliminate non-economic services and routes and so on. Price ceilings cannot be imposed unless the railroad is permitted to eliminate non-performing services, or, even more importantly, to eliminate non-performing routes.

Professor Toner (Institute for Transport Studies, University of Leeds) was requested to comment on the merits of access regulation compared with the alternatives such as separation of the rail infrastructure or franchising. Professor Toner began by noting that, for him, the big question is whether any possible fair access pricing regime that we can come up with will be able remove the market power which incumbent train service operators have. Clearly, it is a central in any competitive environment to make sure that we have the right price for access, which suggests the need for something like the Efficient Component Pricing Rule when we have multiple operators using the same shared infrastructure. Indeed, it is also important if there is any separation of operations from infrastructure that we have the rights charges even if we have a franchise monopoly which does not face on-the-track competition. Even if those prices are right, that does not, in itself, mean that we have a competitive market. A fair access pricing regime is a necessary condition for competition, but it is not a sufficient condition. An incumbent has many other

advantages over a potential entrant: the set-up costs, which an entrant faces, e.g., marketing their service; economies of reputation; the learning curve, which any new operator has to undergo to develop experience; consumer inertia (where the consumer is often quite happy to stick with what they have, because the costs and risks of changing are just too great); and arguably, a real cost disadvantage as the entrant is not operating at the same scale as the incumbent. An access charging regime cannot overcome those problems.

On infrastructure ownership and access, there is a history in the UK of competing private railway companies, having to offer each other running powers over their lines. When it was mutually beneficial for such arrangements to take place, there was no difficulty. But, if a company wanted to operate over another company's stretch of track, in order to provide a competing service, the history of such arrangements is that this leads to trouble – not just in determining prices, but also in any other tricks that the owner of the infrastructure can get up to, to disadvantage a potential competitor. If we want on-track competition, separation of infrastructure from operations is a prerequisite.

The question then remains whether on-track competition is achievable or desirable. One potential difficulty with on-track competition is that if we have an efficient Ramsey pricing operator who breaks even, we can't expect anything more. In most cases, because the operator is serving many markets, the cost conditions will mean that the incumbent operator will be vulnerable to cream-skimming. In such a case, an Efficient Component Pricing world can determine what is the efficient price to charge by compensating the incumbent for the lost profit, but even then, any potential entrant which is cream-skimming will affect the incumbent's optimal complex of services that is offered. In those cases, we will still need service standards to be controlled - it is not possible to rely on the market to do that.

In conclusion, it may well be that on-track competition is better than the current monolithic railway. In Professor Toner's opinion, if we can avoid wasteful competition and make sure that the economies of scale and scope which do exist are properly exploited, that would be a better solution than totally free on-track competition. The basic problem is that in many market segments, markets are thin, entry barriers will remain (whether they have been legislated away or not). In those circumstances it is essential that there be some form of regulation of these services which the operators provide.

The representative from the ECMT was invited to report on their research on the merits of separation and also to report on the particular pricing rules that should be adopted in a vertically separated environment. The ECMT representative pointed out that the pricing of track access is, of course, a vital element in determining whether access can actually work. The representative noted that, in the case of France, they introduced separation ahead of having detailed regulation because such regulation is very difficult to prepare. They have a Commission working very hard on this issue at the moment, to come up with an effective infrastructure access regime.

Returning to the question of separation of infrastructure from operations, the representative noted that in 15 of the European railways, the decision to date has been to keep a vertically-integrated railway (although with separation of accounts and, increasingly separation into business units). In addition, 15 countries have either opted for an organisational separation of operations from infrastructure or are examining how to move to that situation in the future.

The key to all the rail reforms is transparency, especially in financial flows. We have heard earlier that this can be used to identify what public service obligations are needed and what they cost. Such transparency can be used to take the debt related to past political decisions out of the commercial decisions of the railways, so that railway manages concentrate on business and not politics. The fundamental characteristic of this disaggregation or separation in rail industries is transparency and it

should provide the leverage through which efficiency gains can be realised. Institutional separation, as opposed to simple accounting separation, can result in more transparency at a finer level of detail. It can also avoid the risk of regulatory capture, inherent when you have a single integrated rail company.

Looking at the other side of the coin, when there is separation there are a number of key structures which have to be right, when setting up the rail system. Customer service is of course paramount if the railways are to maximise profitability and to compete. Separation of infrastructure from operations distances infrastructure managers from the end-use customer. Furthermore, the density of rail traffic that maximises the returns for infrastructure investment is likely to be much greater then the levels seen as optimal from the viewpoint of the train operators. At high densities, operators are likely to suffer from congestion, so, no matter whether this separation is institutional or only financial, there must be mechanisms to compensate the infrastructure units for running at below optimal capacities, defined on their own terms. This must be defined in contracts to maximise customer performance for the network as a whole.

Another important issue is the difference in the planning horizon of the infrastructure and the rolling-stock investments. To some extent, they are interdependent, due to synergies in their productivity and in relation to safety. However, in practice, the infrastructure is characterised by much longer planning horizons and payback periods so co-ordination is required where there is the separation. This can be done through government intervention, but experience in the UK suggests that private companies are capable of getting together to co-ordinate themselves. It is not certain as to how much regulation is required on that side. Governments main role in an institutionally separated system is in regulating the main elements of the natural monopoly, the track infrastructure - the access, pricing and long-term investments. Regulation will need to include a minimum investment requirement, to counter-balance the natural short termism which occurs when infrastructure is privatized to ensure that key investments are not sacrificed in the interest of augmenting annual dividends or defending hostile take-over bids. Safety is also a concern, and, in particular, there have to be rules to ensure that the safety authorities have access to enough information to do their job.

In summary, there are three elements to maximise the benefits that dis-aggregation can yield. One must focus on getting the investment planning, timetabling and dispatch regulations right. The prices charged for access to the infrastructure have got to be transparent and understandable, no matter what formulas are used for calculating them. Finally, government intervention should focus on the use, rather than the provision of infrastructure, funnelling subsidies through the users. This is to reduce the tendency for accumulation of deficits flowing from political pressures for infrastructure investment. Separation increases transparency and makes competition easier to regulate as a result of that transparency, whether the competition is to be introduced through competition on-the-tracks or through competition for passenger franchises.

Sweden was then invited to give a brief summary of the rationale behind the Swedish decision to separate infrastructure and operations and to comment on the problems of pricing track access. The Swedish delegate started with comments on track access charges and noted that full cost recovery has never been an issue in the Swedish rail system. What has been at issue is the recovery of the marginal maintenance costs. An investigation has been carried out with the objective of improving the track access charging system and a paper has just been prepared. Sweden is in the process of analysing what has been suggested. The outcome will form part of the expected Transport Policy Bill which will be put before Parliament in February 1998.

Returning to why operations were separated from infrastructure, the delegate went on to say that the driving force behind the 1988 Transport Policy Act was the observation that the rail system was not competitive and was at risk of losing market share in the future. On the other hand, it was considered that

rail had the opportunity to be competitive if the rail system was upgraded and there was more focus put on environmental issues, energy-saving, safety and so on. Also, as mentioned earlier, there was the problem of the losses of *SJ* which amounted to 500 million Kronas per year. In order to turn that around, the Swedish state railways took the initiative itself to suggest that the infrastructure be taken over by the government. Another factor which was very important was transparency - the desire to clarify the division of roles between the government and the Swedish state railways. There was an overall call to develop the Swedish state railways into a modern, cost-efficient rail operating company which could survive on its own. Thanks to the separation, infrastructure spending increased dramatically, in order to make up for 40-50 years of neglect. A program started in 1994 to invest 38 billion Swedish Kronas into the rail network over 10 years. Naturally, since that money was provided by the taxpayers, the politicians wanted full control over the spending. Another reason for full separation was that it was felt that the accounts of the firm would be more transparent if the entire system was separated. Nobody wanted to put any more money into the black hole of the Swedish state railways.

Transport investments in Sweden are based on socio-economic calculations. The same kind of calculations are used for the roads. Thus what is called the "Swedish model" is known in Sweden as the "road model" because all the input figures are roughly the same for the rail as for the road. Rail has an obligation to live up to the overall transport policy goals in Sweden. Those goals are to lessen the environmental impact of traffic, develop infrastructure for the needs of the 21st century, increase efficiency, increase safety and to make sure that all parts of the country have an adequate infrastructure.

The Chairman underlined the observation that a primary reason for separation was to enhance transparency, because nobody wanted to sink more money into a big integrated loss-making company.

The Norwegian delegate commented on the prospects for competition with the recent split of tracks and transportation into two separate companies. The only serious competitive alternative to the Norwegian State Railway occurred in 1996, when a large Swedish mining company established a railway company which took over iron-ore transportation from the state railway. Big buyers of rail transport services might be the most likely prospect for effective competition in the future, for instances, by entering the transport market downstream themselves, or by buying transport services from foreign railway companies.

The EC delegate then sought to comment on certain aspects of separation which had not been addressed by the delegates. At the Community level a clear distinction is made between separation of accounts and separation which relates to the decision-making functions. Under Directive 91/440 the Community has created certain open-access possibilities, notably in the domain of freight transport. That means that in the situation where national rail companies are still integrated, it is necessary to separate accounts, in order to have a clear picture of the revenues and costs of both the infrastructure management activities and the operation of services. However, as the delegate from the ECMT has said, many member states have decided to keep, under the same structure, the infrastructure management and the operation of services. That is the reason why the Council, on the recommendation of the Commission, has introduced the distinction between infrastructure management and allocation of capacity. Directive 19 of 1995 identified the allocation body as the body which, in cases where there is vertical integration, has to be placed at arms-length from the operation of services in such a way that there is a fair allocation of capacity to competitors.

II.2 Franchising Arrangements

Focus on exclusive territorial franchising - Why might exclusive territorial franchises yield better or poorer results than traditional regulation of rail services? What are the relative merits

of seeking the benefits of competition through an open access regime compared with offering exclusive territorial franchises for the provision of rail services?

Professor Toner was asked to discuss the merits of franchising. Professor Toner explained that the whole issue of franchising arises out of the question what do we want to do in the case where optimality will dictate that we have either monopoly or few producers? In order to take advantage of economies of scope, entry to a particular market must be restricted. How, in those circumstances, do we determine who should operate? The usual indicator for economists would be who can produce the output the most efficiently? For accountants and politicians, perhaps, who can produce the output the most cheaply, (which is not necessarily the same thing).

The idea of the franchise, i.e., asking firms to bid for an exclusive right to supply and then accepting either the lowest price (in the case of a subsidy requirement), or, in the case of profit making, the highest payment to the regulator, and holding the supplier to that price, is quite common. It is the way that many people will have jobs done around the house. If you want a new roof, you ask for multiple quotes and then accept the cheapest. In its simplest form, this is quite easy to do. Such an approach assumes no quality dimension, except that the person who does the job is capable. In transport, of course, we're much more concerned with deciding on the best price and quality package.

In theory, franchise bidding is going to make a market much more contestable than it would otherwise be, by separating out, from the competition, at least some of the sunk costs, thus lessening any potential entrant's need for a prior commitment, pushing the market thereby closer to perfect contestability. It means that an entrant does not have to take the risk of actually getting involved and getting their fingers burned. They can just try to win the franchise competition and then take over from the incumbent if need be. Additionally, bidding schemes can make the rules of the game between incumbents and entrants fairer, as an efficient new entrant can take on the whole market immediately, rather then try to win market share gradually in a battle with the incumbent operator. Furthermore, with a franchising scheme, there is no scope for predatory retaliation by an incumbent who feels threatened by an entrant. These efficiency advantages of franchising should also serve to moderate the behaviour of incumbents. The degree to which any potential monopoly exploitation by incumbents is attenuated by a franchising scheme depends, of course, on the frequency with which franchises are offered. Franchising also removes the power of the monopoly of information. Under traditional forms of regulation firms have the information, regulators do not. Under franchising scheme that monopoly of information is removed. Franchises require bidders, at least some degree, to be transparent about their costs and incentives.

A number of writers have pointed out a number of difficulties with bidding processes, such as: *(a)* the possibility that there will be un-competitive bidding, where there are not sufficient bidders to make the bidding market perfectly competitive; *(b)* the difficulty of choosing between bids that offer different packages of price and quality; and *(c)* particularly in the rail sector, the difficulty of specification and administration of contracts, i.e., how to make sure that a franchiser will comply with the terms of the contract. There have been some problems in Britain already with franchise winners not supplying the service quality which they had contracted to do. And, *(d)* (which has not been a problem in Britain yet) the problem of asset hand over at the end of a franchise, if an incumbent loses a franchise when it is renewed.

The challenge then, is to make sure that there is sufficient competition in the market to ensure that there is efficiency without there being wasteful competition. Open access is not likely to be appropriate where there is an unsustainable natural monopoly, that is, one that is vulnerable to cream-skimming. And yet, franchising itself is only clearly appropriate for a once-off purchase, or, in the rail sector, where future demand and costs can be forecast accurately. If that is not the case, if nobody knows what is going to

happen for the life of the franchise, in the 5th, 7th or 30th year, it may be that franchising is not appropriate. But, where franchising has problems, price regulation can have a role to play in ensuring that market power is not exploited.

As to what has actually happened, we have already heard how in Japan (although not strictly franchising) breaking down the national rail network into separate parts, has improved productivity. Similarly, in Argentina, which has chosen a vertically-integrated franchise, costs have come down, productivity has risen and traffic has risen. But there have also been noted problems of non-compliance with investment plans. In Sweden franchising of county services has lead to *SJ* cutting its tender prices by 30 per cent. In the UK there is the promise of reducing subsidy requirements over the life of the franchise. It remains to be seen, though, whether the franchise process will have produced the new products and innovative services and price competition which it is hoped will be seen. In conclusion, it is not yet clear whether it is preferable to have short, operations-only franchises or long, vertically-integrated franchises. In an ideal world, maybe one would choose short vertically-integrated franchises, but this isn't practical because the investment time scale in short franchises do not go hand-in-hand with large-scale infrastructure investments.

The Chairman then raised two problems with franchising. First there is the problem that the incentives of the franchisee change in the middle and towards the end of the period - the franchisee loses the incentive for improving the network, improving the quality of service or making investments. Second, there is the problem of strategic behaviour. What assurance do you have that bid of a franchisee is a real bid and that tomorrow, the same company will not come back and say that I cannot make it on this small subsidy, you must give me more, because otherwise I will have to interrupt services?

Professor Toner responded that the answer is that we cross our fingers and hope that everything works out in the end. If, in the long run, a franchise holder has made the wrong decision and should not have entered, he will withdraw from the market and will not have an incentive to maintain the business during the last couple of years of the franchise. But as long as he wants to remain committed to the franchise, in order to maintain a profit stream in the future, he has every incentive to behave in an appropriate manner, even if he is going to lose a particular franchise, because he might want win a different franchise, somewhere else on the network. In relation to the second point, on the administration of contracts, making sure that the franchise holder complies with the terms of the contract, is a very difficult question indeed. If the incumbent wishes to re-negotiate on the contract, it is normally cheaper to re-negotiate with them, than try to get somebody else to replace them. In the British example, there will be four or five large rail operators. There will be a good chance that if one franchise goes under somebody else will be able to step in, relatively easily, with the experience that they have gained operating franchises elsewhere.

The delegate from Finland reported that Finland carried out vertical separation of track and operations in 1995. But, however, there is not yet any competition in railways. One month ago a working group was set up by the Ministry Of Transport and this working group is now contemplating whether and in which form Finland should introduce competition into railways.

The Finnish delegate went on to set out the background to franchising. In a franchising system a monopoly is sold to one company for operating a service on a particular route. Competition takes place at the time when the agreement on such services made. The benefit of this is that such a monopoly may, in principle, own the entire network infrastructure needed for providing the service. In this case, the economies of scope between the network and the service provider can be maintained.

The franchise agreement will inevitably turn out to be rather complex and it will be of long duration. The agreement has to be of a sufficiently long duration for the rail company to cover its fixed costs and for it

to have an incentive to make investments to improve service. The more detailed the franchise agreement is, the less room it leaves for the rail company to react to changes, for example to adjust the services if changes in costs give rise to the need to do so. It may be justified to leave certain parts of the agreement to be re-negotiated ex post. In this case the supervision of the agreement may begin to resemble ordinary regulation, i.e., the collection of information and the determining of allowed operations on the basis of the collected information. It is clear that such a franchise agreement can never be perfect. Franchising suits railway traffic in the sense that the quality of the service needed is not very difficult to determine.

In response to an invitation to describe the experience of franchising in the UK, the UK delegate explained that in the UK there are 25 passenger franchises, lasting between seven and 15 years, the length of the term being determined, partly by the need to replace the rolling stock. When franchises were let, the government laid down minimum service levels and the price caps that would apply. The companies bid for those services. In terms of the allocation of those bids, while quality criteria were considered, in practice, these were secondary to cost considerations. The franchises were bought by a variety of operators - mainly bus companies in the UK, who took on most of them. The others were purchased by Virgin (which is an airline and a branding mechanism), Sea Containers (which is a conglomerate running the East Coast line), a French utility company (running large parts of the commuter network) and the occasional management buyout.

Overall it is still too early to tell what the results of franchising have been. Many franchises are less than seven months old. None have been operating for more than 19 months. It was predicted by many that the results would be disastrous. That has certainly not been the case.

The UK delegate went on to look briefly at three impacts: on government finances, on the infrastructure provider Railtrack and also on the customer, in terms of the impact of franchising. As was mentioned earlier, franchise payments declined quite sharply over the period. In 1996/7, about two billion pounds was paid in subsidy, whereas, if all goes to plan, by 2002 that will be down to 926 million. There are some very dramatic turnarounds. Virgin West Coast was scheduled for a subsidy of 76.8 million in 97-98, but will be paying a premium of 220 million in 2011 to the franchise director, as well as replacing the fleet and paying higher access charges to the rail operator for the West Coast route. Having said that, the amount of subsidy required to keep the system going was increased in 95-96, so it is not wholly one-way. There was also the capital received from selling Railtrack and the ROSCOs (rolling stock companies) amounting to four billion pounds. Clearly it is difficult to determine what would have happened under BR.

The franchising system has provided a great deal of security for the infrastructure provider, in a way that it didn't have before. It also made the government commit to a long-term spending program on the railways, albeit a declining one. This is the great advantage of taking Railtrack out of the annual spending round. Railtrack should now be able to plan investment in a more sensible and coherent way. It also has to produce a network management statement which specifies its maintenance program over the coming decade.

In terms of the impact on the customer, it is too early to say, but there are some promising signs. The most obvious sign has been the rather garish livery of the new trains. However, the franchising process has also induced significant investment in new rolling stock. The structure of the franchise regime has also included a performance regime which seems to have improved punctuality. There has been a 50 per cent reduction in minutes delay in 96/7, compared with 95/6. There have been some limited service improvements, although these are mainly covered by the franchise system and also some innovation in fares. One of the main differences came out as a result of a failure - Southwest trains, when it had made too many drivers redundant wasn't able to provide services to the level required. Although this was a

failure, it is also revealed that the industry is now more accountable. In the old days of British rail, if you couldn't provide the service then that was tough. Now there is someone to complain to.

Overall, the problems in the UK are problems of too much success. There has been seven to eight per cent growth in passenger numbers, but fares are capped. If that sort of growth had occurred under British Rail, fares would have risen dramatically. That is no longer an option. Extra infrastructure may need to be provided if this continues.

In response to a question, the UK delegate explained that the passenger franchises cover the whole of the UK. There are no rail services at all provided by the state. The franchises vary in size. The West Coast lines runs from say London to Glasgow, almost the length for the UK. The smallest franchise is on the Isle of Wight, with a length of about 12 miles. In terms of revenue, the main London passenger franchises are equivalent to the inter-city franchises, of which there are two.

In response to a question from Germany, the UK delegate reported that the franchises divide into three separate types, which reflect the old British Rail system: inter-city, regional railways and commuter services in the London area. Before the franchise process occurred, separate operating companies were set up under British Rail for each of the franchises. Bids were obtained for all of the franchises. Under the guidance given by the Minister, bids from British Rail were not allowed at all. The expectation was that British Rail would form a backup if there was insufficient bidding interest. That did not occur. While there were only a few bids for the first franchises, as the process went on, there was more and more interest.

The Chairman then asked whether, when the franchises were set up, was there any reduction in services? Were any uneconomic routes closed down?

The UK Delegate explained that before the franchises were offered, the franchising director laid down minimum service requirements for each franchise. If it was felt that certain routes were loss making, the minimum requirements replicated the existing British Rail system. It was it be decided that the services were profitable, there was more flexibility in the franchise agreements for the company to take on those services and run additional services. Under the system there is nothing to stop the franchisees bidding for services in excess of the minimum service requirements and securing extra track access requirements from Railtrack.

The Chairman summarised this by saying that the minimum service levels were what British Rail had previously supplied. The franchisees could only enlarge on these services but could not reduce those services, because those services were considered as minimum. The UK delegate responded by noting that there is a degree of flexibility, but, fundamentally, existing services were protected in the franchising process. It was recognised that politically it would be difficult to do anything else.

The UK was also invited to discuss how the desire to avoid cream-skimming activities lead the UK to restrict competition in passenger services. The UK delegate replied that he would explore, in slightly broader terms, why the UK didn't adopt a system of open access. In the original legislation, the view was that the UK would have a restricted form of franchising together with open access. In fact, what they have ended up with is 25 franchises with a great deal of protection from competition until 1999.

The Rail Regulator gave two reasons for not adopting open access in December 1994:

(a) First, the franchise process itself created the potential for competition both through geographic overlap and through alternative routes. There are, for instance, a number of

alternative routes from London to Birmingham. About four different companies can operate this route, as a result of the way the franchise map has been set up. There is also potential competition on some routes between the inter-city fast services and the normal suburban stopping services. The UK has, in fact, seen a limited amount of competition, on price grounds, between inter-city trains and stopping trains.

(b) Second, the industry was at an early stage of development and it was difficult to predict the effects of unrestrained or uncontrolled competition. At the time, there was a great deal of public hostility towards rail privatisation and debate about whether it would work. There was a need to be cautious in proceeding.

If the UK had moved to a full system of open access, what might the effects have been? First, there might have been pressure on national ticketing, through-ticketing, railcards and the inter-availability of fares on different routes. Second, there was the problem of cherry-picking and, potentially, the increased cost to the government from the removal of the implicit cross-subsidy. Although, initially there was only one profitable franchise, over the next few years a number will become profitable. There was also uncertainty arising from public hostility - open access is a further uncertainty which may well have frightened off franchise bidders. The present system gives security to the infrastructure provider Railtrack. There might have been increased uncertainty over the revenue stream under open access which might have made Railtrack difficult to privatise. Lastly, there was also concern about the impact on new investment. A number of franchises had old and dilapidated rolling-stock which needed replacing and it was felt that a system of open access, without any degree of protection, over the period over which that rolling stock was improved might undermine the investment that was desired.

Instead, therefore, a two stage process was introduced whereby, in 1999, subject to consultation, (which is underway at present) franchises can be subject to a degree of competition on their routes of up to 20 per cent of their revenues, subject to full review in 2001 with a view to moving to a system of full competition and open access.

The UK was also invited to provide a brief discussion of the problem of “bus wars” that occurred in the UK after competition was introduced in that sector, and to indicate whether they feared a similar development in rail. The UK delegate noted that there are, in practice, very few examples of open access for the provision of passenger services, in rail. The bus industry in the UK was wholly deregulated in the mid 1980’s. In effect, any bus operator could provide any service that it wished over any particular route (with the exception of London which was not deregulated in this way). On the plus side, As a result of this process, there was a very sharp decline in operator costs, of around 30 per cent in the first few years following the introduction of competition. On the negative side, passenger numbers continued to decline, according to the long-term trend of around 3 per cent per annum.

A number of problems arose as a result of the actual operation of the services under competition. Most significant of these was predatory service timetabling, whereby buses would tend to bunch at particular times, at key points. Buses would run ahead and wait at the bus stop until the competitor was seen in the rear-view mirror and then disappear, with the bus capturing all the passenger that were around. There were also problems with through-ticketing. Whereas before deregulation, there were agreements between bus operators, after deregulation this largely broke down, forcing the passengers to buy a ticket each time they boarded a bus. There was also biased retailing and discriminatory practices in provision of depots and access to them. Additionally, there was loss of non-peak services, as operators concentrated on the core routes at peak times. Finally, as the process developed and groups started to grow there was increased predatory pricing as the stronger groups tried to take the weaker groups off the system.

In London, the situation was different. Here, operations were franchised out under a strategic authority which remained under London Transport. It was observed that ridership was maintained and that, because of the nature of the tendering system, the operators had to maintain the overall ticketing system, i.e. the Travelcard (which allowed travel between different operators and also between different modes, i.e. the underground and overground rail service). In London, there was observed an increase in ridership of one per cent per annum since the mid-1980s. A similar reduction in costs was observed in the tendering process of around 30 per cent over the last decade.

What are the lessons for railways? There are obvious differences with railways, particularly the constraints of the infrastructure - whereas you can run a bus anywhere, inevitably, in railways you are constrained to particular strategic depots, timetabling requirements and so on. There are also different criteria for rolling-stock and how you can run it over different routes. There are also higher costs of entry to the rail system. However, what the experience of bus deregulation showed was that in the move to a system of greater competition, there was a need for protection from these negative factors. It is clear that there is an inherent overall value to the network itself, quite beyond the individual franchise. Being part of the network is a benefit. Another lesson was that one will not necessarily observe greater cost reductions from a system of open access than under the current system of competitive franchising. Another lesson is the need for the regulator to remain involved, approving access contracts to the network (for passenger services) to ensure, particularly, that these manifestations of predatory service timetabling do not become common.

The United States delegate reported on a recent World Bank conference on privatisation and concessioning. Participating in this conference were concessionaires who had successfully bid in Argentina and other countries. One of the findings emerging from this conference was the belief that concessions should be for no less than 15 years, with most concessionaires looking for a 20-25 year time period. It was also noted that a concessionaire is not inclined to invest during the last three to five years of a concession because of uncertainty over whether it would receive the follow-on concession. These concepts appear to apply generally to concessions, regardless of infrastructure condition.

III. Improving Regulation and Competition Policy for Railways

III.1 Efficient Regulation Of Railroad Pricing

What does experience suggest concerning the feasibility and utility of price-cap and yardstick regulation in the rail sector? Should regulators take demand conditions into account when determining regulated prices for track access or rail services?

Mr Kessides was invited to give an assessment of the regulatory problems in the rail industry, both price regulation and elimination of losses. Mr Kessides responded by noting that when railroads are not revenue adequate we should think twice about imposing any regulatory oversight. In general for prices to make sense economically they must never be incompatible with this requirement of revenue adequacy. The substantial economies of scale and scope in the rail industry create several challenges for the regulatory framework. Perhaps the most vexing issue is the cost allocation problem - the fact that it is impossible to allocate in any non-arbitrary way, a share of fixed and common costs to any one of the railroads several activities. There is no way of allocating those shared production costs in a mechanical fashion that is unique and that has a foundation in economic logic.

Unfortunately regulators have historically allocated costs on the basis of so-called fully distributed cost methods. Under the fully distributed cost allocation methods, regulators allocate shared production costs in terms of some common basis of utilisation such as gross ton-miles and so on. The main problem with fully distributed costs is that it frequently over-assigns or under-assigns a share of the fixed and common costs to particular services. The problem is that if a railroad is forced to apply fully distributed cost pricing to its traffic then it would lose that portion of the traffic for which demand could not support the price assigned. The unfortunate result, of course, is that the remaining customers are worse off because they are saddled with a higher portion of the unattributable costs to which the lost traffic was making a contribution.

Fortunately, there is a solution to that problem, provided by Ramsey pricing. Ramsey pricing allocates the shared production costs of the railroad among its many services on the basis of demand characteristics. Now, it is important to fully recognise that railroads face sufficient intermodal competition for perhaps most of their activities. As before, for those activities there is no need for regulatory oversight. The remaining question is what type of price ceilings or what types of regulatory oversight should be exercised for those activities over which the railroad possess market dominance?.

One of the more promising frameworks for protecting captive shippers is provided by "constrained market pricing". Basically the railroad is permitted by constrained market pricing to engage in Ramsey pricing, but those Ramsey prices are constrained to lie between a ceiling that is provided either by the requirement of revenue adequacy or the so-called stand-alone cost test, whichever of the two is lower. The stand-alone cost is the cost of serving any captive shipper or a group of shippers, that benefit from sharing joint and common costs, as if the shipper or group of shippers were isolated from the railroad's other customers. The railroad should be free to set prices that have an upper ceiling that is provided by the stand-alone cost and by a floor that is provided by the incremental cost test. Between the ceiling and the floor the railroad should be free to Ramsey discriminate among the captive customers. One additional thing to note is that the application of the stand-alone costs ceiling also precludes cross-subsidisation.

III.2 Competition Issues In The Railway Sector

What is the role of antitrust authorities in the railway sector, and what special problems do they encounter there as regards mergers, abuse of dominant positions, and policing collusive agreements?

Sweden was asked to describe some of the interventions of the Swedish competition authority. The Swedish delegate began by emphasising that when we are talking about competition in rail, we are talking about regulated competition. It is not possible, for example, to envisage in the near future a liberalisation such as has occurred in telecommunications. The role of the competition authority therefore is rather more complex. Even if the competition law applies fully to the railway transport sector, which is the case in Sweden, the application is, at the same time, restrained by the sector-specific regulations that are prevailing in this sector. In this regard the Swedish delegate underlined a very important role for the competition authority - the advocacy role. If these sector specific regulations restrict or distort competition there might be a call for intervention by the competition authority, for at least surveillance or monitoring by the competition authority and also for dialogue with the regulators or the responsible ministry. Sweden has, for instance, restrictions on competition in long distance buses. To establish a new route on long-distance buses you must have the prior approval of the Ministry. In making this decision one thing that is considered is the effect on competition with the railways. A proposal has been put forward to abolish this requirement. The competition authority has advocated for such a solution.

In Sweden, mergers have not been an issue as they have not liberalised to such an extent. Nor has collusion been at issue. however, the delegate noted that they would look rather favourably on joint bidding to counter-balance the incumbent dominant state railways.

Another problem is abuse of dominant position. This is no surprise as it is a problem in all infrastructure markets that have been recently deregulated. The problem here is that the dominant company, the state railway, nearly always wins the bidding because they have the railway wagons necessary for all the operations and they also can survive with rather short agreement periods. One or two years will not be sufficient incentive for new entrants to make the rather heavy investments necessary, even a four-year period might be too short. One specific competition case Sweden has been dealing with relates to abuse of a dominant position. This case relates to predatory pricing in the bidding process. The state railway was accused of presenting a bid which was too low. A competitor alleged predatory pricing.

The delegate went on to point out a problem relating to the availability of information. The requirement for separate accounting between the traffic operators and rail infrastructure has been discussed. We also need a requirement on the incumbent to be able to allocate costs according to the lines or to the operations that they are bidding on. The Swedish Competition Authority has had difficulty in obtaining the data and evidence needed to make the assessment in this particular case. The state railways do not have an internal accounting system which permits this type of allocation of costs. One wonders what was the basis of the bids they presented.

The Italian Delegate explained that Italian Antitrust Authority interventions in the railway sector have addressed *FS* conduct on both the supply and demand side. The widespread presence of *FS* in vertically and horizontally related markets have given a rise to concerns of a lessening of competition. Attempts to monopolise, vertical restraints and discriminatory behaviour were the main concerns in three proceedings and in an opinion relating to the supply of transport services. More important, the relationship between *FS* and its suppliers has also given rise to competition concerns and has been made the subject of four proceedings. The proceedings against Capri Consortium, Trevi Consortium, TAV and Fercomit (a horizontal cartel between the main national suppliers) showed the impact of *FS* purchasing practices on costs, resulting from the lack of effective checks and constraints on the company's behaviour. We may form a rough idea of the distortion associated with the distribution of *FS* monopoly rents to suppliers from the case of coaches for high-speed trains. The antitrust proceeding against Capri Consortium and the subsequent compliance with the European regulations on public tenders led to a reduction in price of about 30 per cent and an estimated increase in consumers' surplus of about 225 billion lira.

To some extent, the enforcement of competition rules has made up for the lack of sufficient incentives for the railway company to reduce costs and improve performance. But more fundamental changes in the current legal and economic structure of the sector will have to be introduced in order to sufficiently increase efficiency and quality in the provision of railway transport services to the ultimate benefit of both taxpayers and final consumers.

Two other types of interventions of the Italian competition authority concerned: first, the extension and strengthening of a dominant position and secondly, the vertical restraint and discriminatory conduct favoured by contemporary presence on both the infrastructure and service side. The risk of monopolisation lead to a proceeding against the proposed acquisition of a regional bus company by *FS*. In Italy the right to operate bus services in the regional and local bus markets is assigned by concession to a single operator. If *FS* held a dominant position in both rail and bus transport markets, the integration between bus and rail systems could be used as a tool for achieving greater internal efficiency by substituting bus for rail when load factors are low. On the other hand the integration brought a risk of

extending the dominant position of *FS* in railways when markets are geographically contiguous and of strengthening its dominant position when bus and rail routes overlap.

Vertical restraints and discriminatory behaviour were the main concerns in two proceedings relating to freight transport. In both cases, *FS* could exploit its dominant position in railway markets given by its control over the infrastructure to privilege its operations on vertically related markets. In particular, a tailor-made tariff system was set up by *FS* in order to discriminate in favour of a company controlled by *FS* and operating as a freight carrier. These last two cases were interesting examples of possible distortions deriving from vertical relationships.

The United States delegate contributed further comments on the application of the US competition laws in this sector. In the deregulatory process in the US, a relatively small independent government agency was created called the Surface Transportation Board. Its purpose is to "apply grease to a squeaky wheel". One of the things that the STB does is handle mergers. Railroad mergers in the US come under the jurisdiction of the STB and not the Department of Justice nor the Department of Transportation. They are decided under procedures and standards somewhat different than those of the general antitrust laws. Rail mergers must have advance approval from the STB and its decision must be based on the evidence filed during the proceedings. There are various time periods during which these proceedings must be filed and hearings held. The Board has 90 days to render a decision.

In determining whether to approve a merger the Board must consider *(a)* the effect of the proposed transaction on the adequacy of transportation to the public; *(b)* the effect on the public interest of including or failing to include other rail carriers; *(c)* the total fixed charges resulting from transaction; *(d)* the interests of the rail carrier and employees that might be affected; *(e)* whether the proposed transaction would have an adverse effect on rail carriers in the region or in the national rail system; and *(f)* whether the merger would have an adverse effect on competition. The STB must approve a merger if it is consistent with the public interest. However, the Board may impose conditions on a merger in order to alleviate adverse effects. The Board did this in a recent merger with two very large railroads. The Board's approval supersedes other laws that might otherwise be used to challenge a merger, such as antitrust actions, labour laws, environmental regulations etc. Parties may challenge a carrier's implementation of the terms of approval but not the merger itself.

In the rail mergers decided since 1980 the STB and its predecessor the ICC have generally focused their reviews on the effect of the merger on shippers. They have imposed competitive conditions such as line sales and trackage rights only when the number of independent railroads serving a particular shipper would otherwise drop from two to one. The Board has held that two carriers is sufficient to provide competition for shippers with no other transportation alternative, and as long as there is competition, the prediction of cost savings from a merger makes it in the public interest. Employees who lose their jobs as a result of the merger are entitled to compensation under law. If the STB approves a plan for a merger the merger may go ahead but the carrier and the unions must negotiate implementation agreements covering issues such as seniority rosters when crew districts are merged. In the merger between the Union Pacific and the Southern Pacific railroads which was approved last year, although most of the trackage rights went to Union Pacific's only major competitor in the western U.S., trackage rights were given to some short lines and other rail carriers that otherwise would have been shut out of the market.

Another United States delegate followed up by commenting on the merger of Union Pacific and Southern Pacific, which was approved last July. The Department of Justice (DoJ) intervened in that proceeding and urged that the board did not approved that alliance, and that, at a minimum, they order many divestitures. This was a merger that involved parallel tracks between the two companies and, in many cases, shippers previously served by two or three companies would now be served by only one or two. The solution

which the STB adopted was one involving trackage rights over 6 000 kilometres. It was the position of the DoJ that the formula used for the calculation of those particular trackage rights was a poor one. In effect, some of the fixed costs of the merged companies became variable costs for the third company which would be receiving the trackage rights. In addition, the DoJ was concerned about vertical issues, as the new railroad to be introduced as a remedy would be subject to its competitor's control of the operation of its tracks, making it difficult to replicate competition between two independent firms.

IV. Chairman's Conclusions

The Chairman presented his conclusions arising from the discussion: What came out quite clearly in the discussion is that public policy towards rail services is guided by non-economic goals, such as guaranteeing service to outlying areas or tariffs far below costs. What also came out quite clearly is that somehow the environment has changed. Different countries are reconsidering the way in which to finance these universal service obligations, and the way in which the rail industry should be organised.

However, the debate did not lead us to a conclusion which can be applied without any further analysis. We have heard from the EC that separation between infrastructure and transport services is the right institutional setting. This discussion does not lead us very far if we do not also discuss pricing. Whenever we discuss developments in the telecommunications industry, for instance, the first thing that arises in regulators minds and in the policy agenda is pricing. Here, we have just discussed institutional issues, separation, but we have not considered pricing. It is amazing that the Directive that has obliged member countries to introduce this kind of separation, did not discuss pricing. If we do not provide for proper cost recovery, as Mr. Kessides has said, for the infrastructure services, these services will be provided at a heavy loss. It seems to be that there is a desire to separate to merely put the debts somewhere else and let the government intervene and take care of the losses. Matters are not so easy. After this separation has occurred some solution to the problem of pricing has to be found, whether or not we want to go to some form of demand-oriented pricing.

It is clear that there is intermodal competition in transport services. We have seen that there are bus services, planes, cars, taxis, lorries, maritime transport and so on. Because we have allowed tariffs to be so far away from costs, they distort intermodal competition. It is difficult for other companies to compete with rail transport in providing services to consumers. Most of these other industries are not subsidised.

What we want is a system of pricing in rail (both freight and passenger) that is the least restrictive of competition as possible. It in this respect, what Mr Kessides has said regarding having flexibility between stand-alone cost and incremental cost, and leaving the railways free to choose which one is most appropriate tariff for the particular markets in which they operate, is one of the solutions which is the least restrictive of competition as possible.

The experience that we have had within the Italian Antitrust Authority is that the railway does not seem to have cost minimisation as an objective. The reason is that many other non-economic objectives that are given to it - both in relation with their employees and in the relationship with their suppliers. This is the experience of many other countries as well, perhaps not to the same extent. This is one of the main challenges that we face.

Another important challenge is how to introduce competition. We do not yet know whether the best way of organising the system is through franchising, or through geographic or through vertical separation. There are pros and cons for these different institutional arrangements. There are different experiences that

we can share in this respect. The Japanese experience on the one hand, for geographic separation, the UK experience for franchising.

Still the starting point for introducing competition is to eliminate losses. One way is through corporatization, which many have said is the first step in introducing a competitive system. Through corporatization we can make it more likely that these companies follow a cost minimisation objective. We need a situation in which the costs of universal service obligations are well-defined and well understood and there is bidding for the supply of these services at the lowest cost. In addition, we need greater freedom for railway companies in setting their tariffs. This kind of regulation can bring the right incentives to these companies to promote efficiency and better quality services.

Another thing that also came out of this roundtable was the observation that, with the exception of the US, in none of the other countries was there a reduction in services in the deregulation process. When companies were privatized or when competition was introduced these companies were not allowed to reduce services. Non-economic services were not abandoned. As the UK delegate has said, the services that were provided by the previous state-owned company were set as minimum service levels for the new franchisees. We seem to assume that service levels cannot change because of technological innovation, changes in demand or changes in habits. We feel that service levels are fixed or can only be increased. This is quite awkward. In all other sectors of the economy, we see increases in supply when demand is increased and reductions in supply when demand is not willing to support the supply. Here, we are constrained. Supply increases when demand increases and when demand diminishes, we continue to supply services with fewer and fewer passengers. This we should address carefully and take into careful account when establishing a more efficient system.

AIDE MÉMOIRE DE LA DISCUSSION

I. Pourquoi réglementer les chemins de fer ?

I. 1 Les obligations de service public dans le secteur des chemins de fer

Dans de nombreux pays, l'action des pouvoirs publics vis-à-vis des services ferroviaires est guidée, en partie, par des objectifs non économiques, comme la protection de l'environnement, la garantie de desserte des zones éloignées et la fourniture d'emplois sûrs et bien rémunérés. Quelle est la meilleure façon de traiter ces objectifs non économiques pour qu'ils pèsent le moins possible sur l'efficience économique ?[1]

Le Président introduit la discussion en faisant les observations suivantes : dans de nombreux pays, notamment en Europe, les chemins de fer subissent des pertes considérables. En d'autres termes, les recettes ne couvrent qu'un très faible pourcentage des coûts. Le ratio recettes/coûts ne dépasse pas 20-25 pour cent dans certains pays, tandis qu'il atteint 80 à 85 pour cent dans d'autres. La réglementation (à tout le moins la réglementation des prix) est généralement imposée aux entreprises qui sont en situation de monopole afin de contrôler leurs bénéfices de monopole et de les empêcher d'exploiter une éventuelle puissance sur le marché. Toutefois, dans le cas des chemins de fer, les rentes ne se manifestent pas sous forme de bénéfices de monopole - elles peuvent aussi être partagées avec d'autres participants au processus de production, par exemple avec les salariés ou les fournisseurs - sous forme de salaires élevés, sous forme de niveaux d'emplois supérieurs à ce qui est nécessaire pour assurer l'exploitation des sociétés, ou encore à travers une relation lâche avec les fournisseurs de ces sociétés. Pis, les sociétés de chemins de fer sont aussi assujetties à d'autres objectifs non économiques, comme des objectifs environnementaux qui donnent une justification commode de l'énormité des pertes subies.

Le délégué de l'Italie met l'accent sur la relation entre obligations de service public, légèreté des contraintes budgétaires et gonflement des coûts dans le secteur italien des chemins de fer. En l'absence de fortes pressions de la concurrence, les résultats médiocres de la société italienne des chemins de fer sont la conséquence de l'inadaptation du régime réglementaire associé au manque de mécanismes de contrôle fiables. Mais surtout, ils semblent découler de l'absence de toute contrainte budgétaire efficace sur le comportement de la société et de contrainte rigoureuse exercée par les pouvoirs publics sur la fixation des tarifs. Dans une telle situation, la société n'a pas de véritable incitation à affecter de façon efficiente ses ressources internes pour réduire les coûts de prestation de services tout en maintenant des normes de qualité.

Ces caractéristiques suscitent en outre une relation particulièrement lâche entre la société italienne des chemins de fer et ses fournisseurs. La société *FS* se trouve en position de monopole vis-à-vis de ses fournisseurs, mais elle n'utilise pas sa puissance sur le marché pour réduire ses coûts d'achat. En conséquence, dans le secteur italien des chemins de fer, il semble qu'une part significative des bénéfices de monopole soit répartie entre un grand nombre d'intervenants, notamment les dirigeants, les salariés, les fournisseurs et les consommateurs finaux dont les intérêts particuliers constituent actuellement l'obstacle

1 Les paragraphes en italiques correspondent aux questions de l'ordre du jour que les délégués étaient invités à traiter.

le plus considérable à toute réforme structurelle visant à introduire la concurrence et à promouvoir l'efficience économique.

La Commission européenne (CE) a été invitée à expliquer pourquoi l'article 92 semble ne pas s'appliquer efficacement aux chemins de fer. L'article 92 envisage d'accorder une aide à une société si elle a des perspectives raisonnables de devenir financièrement viable. Toutefois, les sociétés européennes de chemins de fer semblent continuer, d'année en année, à subir de très lourdes pertes qui sont en suite, de fait, subventionnées par l'Etat.

Le délégué de la CE commence par expliquer les origines de l'article 92. Cet article fait partie des règles prévues par le Traité de Rome en matière de concurrence. Ces règles traitent de plusieurs aspects de la promotion de la concurrence. Plus précisément, l'article 85 traite des principes que la Commission applique lorsqu'elle évalue des accords entre entreprises. L'article 86 traite des principes que la Commission applique dans le cas d'abus potentiel de position dominante. Enfin, l'article 92 traite des questions relatives aux aides publiques.

Les principes et la logique sur lesquels repose l'article 92 sont les suivants : cet article stipule que, sauf disposition contraire du Traité, toute aide accordée par les Etats membres ou au moyen de ressources d'Etat est incompatible avec le Traité. Toutefois, cette disposition qui figure au paragraphe 1 de cet article est précisée dans les autres paragraphes du même article. Le paragraphe 2 de l'article 92 énonce certains types d'aides qui sont compatibles *de jure* -- à savoir les aides que le Conseil et la Commission considèrent compatibles indépendamment de leurs effets. Cette "aide compatible" est aussi évoquée dans l'article 77, qui s'applique au secteur des transports. L'article 77 du Traité stipule que les aides accordées par les Etats membres sont compatibles avec le Traité si elles répondent aux besoins de coordination des transports ou si elles correspondent au remboursement de certaines servitudes inhérentes à la notion de service public. La Commission et le Conseil ont défini les principes d'application de l'article 77 par le biais des règlements du Conseil n° 1191/69 et 1192/69.

Enfin, le paragraphe 3 de l'article 92 stipule aussi que la Commission peut ponctuellement déclarer que certaines aides sont compatibles. Les principes régissant l'évaluation des conditions d'octroi ponctuel d'une aide par la Commission dans le secteur des chemins de fer sont énoncés dans le règlement 1107/70. En lien avec l'article 92, l'article 93 du Traité prévoit certaines règles procédurales pour l'analyse des aides publiques. Selon l'article 93 du Traité, les Etats membres sont tenus de notifier par avance à la Commission, leur intention d'accorder une aide. En d'autres termes, un Etat membre ne peut pas verser ou autoriser une aide avant d'avoir obtenu l'accord de la Commission.

Le délégué de la CE a été invité à expliquer si, compte tenu de leur ampleur, les lourdes pertes des chemins de fer en Europe (le ratio recettes/coûts étant de l'ordre de 30 pour cent en Italie, 46 pour cent en France etc.), lorsqu'elles sont financées par les pouvoirs publics, sont traitées par la Commission comme des aides régies par l'article 92 du Traité.

Le délégué de la CE explique que le règlement 1191/69 énonce deux principes fondamentaux : d'une part, les Etats membres sont tenus de mettre fin aux obligations de service public qu'elles ont imposées aux entreprises assurant des services publics de transport terrestre. Toutefois, d'autre part, les Etats membres qui souhaitent maintenir ces obligations sont autorisés aux termes de ce règlement, à le faire, à condition d'assumer en même temps à titre de compensation le prix des inconvénients économiques liés à ces obligations de service public. Ce règlement définit les principes de calcul et le paiement de cette compensation.

Le délégué de la CE poursuit en donnant des précisions sur un règlement complémentaire adopté par le Conseil en 1969 - règlement 1192/69. Ce règlement complète les principes du règlement 1191, mais contrairement à ce dernier, il est uniquement applicable aux chemins de fer. Ce règlement a été adopté pour prendre en compte le fait que les chemins de fer présentaient certains traits distinctifs par rapport aux autres modes de transport. Parfois, les pays membres imposent aux entreprises de chemins de fer certaines conditions relatives à l'attribution de commandes portant sur des travaux ou des équipements qui obéissent normalement à des critères non économiques. Aux termes du règlement 1192/69, les Etats membres sont tenus de payer une compensation pour les inconvénients économiques liés à l'attribution de commandes portant sur des travaux ou des équipements qui pèsent sur les entreprises de chemins de fer. Le délégué de la CE ajoute que ces deux règlements dérogent à l'application des principes normaux d'attribution d'aides publiques et plus précisément aux règles de notification préalable auprès de la Commission (bien que les amendements ultérieurs aient rétabli l'obligation de notification à l'avance ces versements compensatoires).

En 1991, le Conseil, sur recommandation de la Commission, a adopté un amendement au règlement 1191 qui présente trois caractéristiques : premièrement, les Etats membres sont autorisés à exclure du champ d'application du règlement 1191 les services de transports urbains, suburbains et les services régionaux desservant les grandes villes ; deuxièmement, l'amendement introduit l'idée de contrat de service public (sans que cela soit obligatoire pour les Etats membres) ; enfin, cet amendement impose la tenue de comptes distincts : les Etats membres sont tenus, lorsqu'ils versent une indemnisation au titre des services publics d'établir des comptes séparés pour ces services.

Le président souligne le fait qu'aux Etats-Unis, les lignes qui n'étaient pas considérées comme économiquement rentables ont été supprimées, ce qui est contraire à l'expérience en Europe où les chemins de fer ont gardé leurs structures d'offre, sans tenir compte de la demande de services. Il est important dans ce secteur (et dans d'autres secteurs des services publics) de déterminer le coût des obligations de service universel. Comment y parvenir ? Une possibilité consiste à mettre en place une commission et à étudier très attentivement tous les comptes de la société des chemins de fer avant de formuler une proposition. Cela a déjà été fait à de nombreuses reprises. Ces commission sont très inefficaces à cet effet parce que tous les renseignements sur les coûts se trouvent auprès des sociétés de chemins de fer qui ne sont pas disposées à les communiquer. Dans bien des cas, elles ne savent même pas ce que représentent ces coûts. Une autre solution consiste à ce que les sociétés de chemins de fer choisissent elles-mêmes les lignes déficitaires et qu'elles les affectent à une société distincte. La société de chemins de fer serait ainsi divisée en deux sociétés. La première serait une société rentable opérant selon des critères commerciaux normaux et la seconde une société qui perd de l'argent et satisfait aux obligations de service universel. Ces sociétés pourraient ensuite être privatisées. Dans bien des cas, il se peut que la société de service universelle ne soit pas aussi déficitaire qu'on pouvait le penser de prime abord. Dans certains cas, les obligations de service universel disparaîtraient complètement. Cela n'a jamais été essayé, mais on a évoqué cette hypothèse dans d'autres secteurs (par exemple, les télécommunications) aux Etats-Unis et dans d'autres pays.

Le représentant de l'Union Internationale des Chemins de fer (UIC) indique qu'il est, certes, intéressant de s'attacher à la question des obligations de service public, mais que c'est un débat dépassé. Avec le temps, la politique des transports a évolué et de toute évidence, au moins dans l'Union européenne, l'accent s'est sensiblement déplacé. On dispose désormais d'une évaluation assez raisonnable des domaines déficitaires et un certain nombre d'Etats membres ont pris des mesures pour résoudre ces problèmes. La plupart des chemins de fer de l'Union européenne savent très bien quels sont les services qui fonctionnent à perte. Les obligations de service public ne constituent donc plus en ce sens un problème. Les Etats membres peuvent financer les services qu'ils souhaitent voir fonctionner. La décision leur appartient.

Le représentant de l'UIC ne partage pas l'idée qu'il faut discipliner les chemins de fer. Au contraire, le problème est qu'on les a soumis à un régime beaucoup trop discipliné - en d'autres termes, ils ont eu à respecter des obligations contradictoires imposées par les Etats, eux-mêmes relayés par l'électorat. De ce point de vue, il faut combattre l'idée que les chemins de fer sont en proie à un grave problème de subventions. Ce n'est qu'une question secondaire. La question, c'est qu'un pays demande au système de chemins de fer quelque chose qui n'est pas rentable, mais aussi quelque chose que le pays souhaite et qu'il est prêt à financer, quelque chose que l'Etat veut. Or, cette dernière question est relativement facile à résoudre. Le vrai problème, c'est de libérer le gisement d'énergie des chemins de fer en levant les contraintes qui pèsent sur eux.

Le représentant de l'UIC s'interroge : est-il possible, plutôt que de s'attacher à la mise en place de structures nouvelles et plus complexes, d'accorder aux chemins de fer une réelle indépendance de gestion (comme le prévoit la Directive européenne 91/440), de les soumettre au jeu du marché en l'état, et de permettre à l'Etat et aux autorités régionales de continuer de financer les services non rentables ; une telle approche ne serait-elle pas en soi un facteur de plus grande efficience ?

Le président répond en répétant les chiffres de 1995 sur la relation entre recettes et charges en Europe. En Italie, les recettes de la vente de billets ne couvrent que 30 pour cent du total des coûts. Les chemins de fer français ne couvrent que 46 pour cent de leurs coûts, les chemins de fer allemand un peu plus de 50 pour cent, les chemins de fer espagnols environ 40 pour cent. Le problème des pertes n'est pas résolu. Le seul pays où ce problème est en passe d'être résolu est la Grande-Bretagne. British Rail couvre par ses recettes quelque 80 pour cent du total des coûts, ce qui fait apparaître une différence assez impressionnante par rapport aux autres sociétés de chemins de fer européennes. Les obligations de service public ne sont peut-être pas la véritable raison de ces pertes, mais elles servent souvent à les justifier officiellement.

Le délégué de l'Allemagne se déclare également sceptique quant à la transparence des coûts imposées par les interventions des autorités de tutelle. Il est par exemple très difficile de distinguer précisément ce qui relève des structures et ce qui relève des services. Qu'est-ce qui appartient à l'infrastructure ? Il est difficile, non seulement en théorie, mais aussi sur le plan pratique d'attribuer des actifs à l'infrastructure et à la fourniture d'infrastructures. Si personne ne sait quelles composantes relèvent de tel ou tel domaine, on ne peut pas procéder à une affectation des charges. En tout état de cause, même si la société connaît ses charges, elle ne le dira pas aux autorités ou à sa tutelle. On se heurte souvent à la question de savoir ce qui fait qu'un prix est convenable ou pas. Il appartient dès lors à l'autorité de tutelle ou à l'autorité de la concurrence d'apprécier si les charges sont correctes ou non. Très souvent, il n'a pas été possible de s'assurer que les coûts présentés par les sociétés étaient exacts.

Le délégué en vient à la question des services universels. En Allemagne, comme ailleurs, l'une des principales sources de perte réside dans le transport en zone rurale. Un exploitant commercial fermerait près des deux tiers du réseau allemand pour manque de rentabilité. Cela apparaît inacceptable du point de vue politique. Quelles que soient leurs raisons, les électeurs affirment qu'ils ont besoin d'un service de chemins de fer. En conséquence, au cours de la privatisation et de la restructuration en Allemagne, la société fédérale des chemins de fer a été sectorisée. Elle a été divisée en quatre secteurs - l'un s'occupant du fret, le deuxième des services de transport de passagers à longue distance, le troisième des dessertes locales et régionales pour les passagers et le quatrième étant chargé des voies. Ces secteurs appartiennent tous au même propriétaire. A l'avenir, ils seront séparés en sociétés indépendantes et éventuellement privatisés (sauf la société s'occupant des voies). Le problème réside dans le trafic régional. La solution retenue à cet égard est la suivante : l'importance des services en zone rurale ne relève pas d'une décision de la société locale de chemins de fer, mais des autorités locales. Ces dernières doivent décider si elles veulent ou non disposer d'un service de transport de passagers en zone rurale. Si elles en veulent, elles doivent négocier avec les chemins de fer fédéraux (ou une autre société) pour la prestation de ces services

et ce sont elles qui doivent les financer. Ainsi, on est certain que les zones rurales sont desservies, non pas aux frais des chemins de fer, mais aux frais du contribuable ordinaire.

Reste cependant le problème des coûts non attribués. Quelles sont les charges qui doivent être attribuées au service régional ? La couverture globale des coûts en Allemagne est de l'ordre de 50 pour cent. Mais si on distingue quatre secteurs, la couverture dans les zones rurales (à la charge des autorités locales) est de 100 pour cent, alors que pour les transports à longue distance et pour le fret, elle est de moins de 20 pour cent. De toute évidence, la totalité des "frais généraux" est attribuée au trafic régional, qui est financé par les autorités. A titre de comparaison, dans les domaines où il y a concurrence (la concurrence inter-modale par exemple) la couverture des coûts est très faible. Incidemment, les chemins de fer ont fait état de bénéfices l'an dernier - pour la première fois depuis la fin de la seconde guerre mondiale.

M. Kessides (la Banque Mondiale) souligne la nécessité d'un traitement souple et transparent des obligations de service public. Les chemins de fer doivent pouvoir se défaire de toute ligne ou de tout service non rémunérateur. C'est aux pouvoirs publics qu'il incombe de décider, en fonction de motivations sociales, quels services doivent être maintenus. Il doit y avoir un appel d'offres concurrentes pour la subvention de ces services et on peut espérer que cet appel d'offre permette de minimiser l'ampleur des subventions croisées. Rien ne justifie de fausser la tarification fondée sur les coûts pour respecter des objectifs de service public. Ces solutions ont été appliquées dans d'autres secteurs et d'autres pays. Par exemple, aux Etats-Unis, dans le secteur des compagnies aériennes lorsqu'il était réglementé, les services aux petites collectivités reposaient précisément sur ce type d'appel d'offres concurrentes en fonction de la plus faible subvention sollicitée. On court le danger, notamment avec la séparation des voies et des services en Europe, que les pouvoirs publics soient tentés d'utiliser les frais d'accès au réseau pour financer les obligations de service universel. Ce serait une erreur. C'est sur cette question que doit porter le débat : quel est le mécanisme de collecte de moyens de financement des obligations de service universel qui introduit le moins de distorsions ?

Les Pays-Bas indiquent ensuite que, selon eux, la question des obligations de service universel est essentielle lorsque l'on aborde le domaine ferroviaire. Les sociétés en place et les monopoles d'Etat s'identifient eux-mêmes souvent à l'intérêt général parce qu'ils ont l'obligation de veiller à ce que chacun ait accès à un service donné. Pour contrer cet argument, il faut déterminer le coût des obligations de service universel et aussi préciser quels sont les services qui sont essentiels. Par exemple, au Pays-Bas, le gouvernement a conclu un contrat avec les chemins de fer en vue de la subvention de 30 lignes spécifiques. Pour les autres, les chemins de fer ont carte blanche pour définir leur politique de tarifs et de services.

Le délégué de la Corée observe que la discussion s'est attachée à la mise en évidence du véritable coût du service universel dans le cas du chemin de fer. On pourrait se demander quel est le moyen le plus efficient d'assurer ces services. Par exemple, les bus peuvent être plus efficients que les chemins de fer. On pourrait donc lier ce débat à la concurrence inter-modale. On pourrait donc ouvrir l'appel d'offres portant sur la subvention du service universel à tous les modes de transport.

Le représentant de la CEMT affirme que les obligations de service public doivent être financées sur fonds publics. Le document d'orientation générale diffusé l'an dernier par la CE soulevait le problème de l'identification des différentes composantes déficitaires du système, à travers une sorte de séparation géographique entre services de grandes lignes et services de desserte des banlieues déficitaires. Toutefois, cette séparation géographique risque d'être toujours difficile parce que les voies sont partagées avec le transport de fret. Il y a bien entendu des cas où certaines voies sont réservées aux services de desserte des banlieues. Dans ce cas, la distinction est facile. Il y a éventuellement lieu de sortir complètement ses lignes du système des chemins de fer. Lorsque les deux types de services (fret et passagers) se recoupent,

il semble que la meilleure solution consiste à veiller à ce que tous les fonds publics au titre d'une quelconque obligation de service reviennent à la société exploitante qui décide de la façon dont cet argent doit être dépensé pour l'achat de services d'accès au réseau.

I. 2 Les effets de la participation de l'Etat sur les résultats et la concurrence

Ni la participation de l'Etat ni la réglementation de chemins de fer n'ont suffi en soi à réduire les charges des chemins de fer au point de ne plus avoir besoin de les subventionner. Pourquoi attend-on de l'introduction d'une plus grande concurrence qu'elle contribue de façon importante à la réduction des coûts ? Comment le maintien de la participation de l'Etat, des subventions ou de la réglementation des prix des services ferroviaires a-t-il tendance à bloquer l'introduction d'une plus grande concurrence et que peut-on faire face à ces problèmes ?

Le président demande ensuite comment obliger de façon crédible l'Etat à ne plus subventionner indéfiniment ce secteur. En d'autres termes, comment peut on renforcer la séparation entre les sociétés de chemins de fer et l'Etat. Une solution réside dans la transformation en société, l'autre dans la privatisation. Toutefois, il reste à régler le problème des obligations de service public.

Le professeur Nash est invité à expliquer l'importance de la transformation en société à titre de première étape du processus d'introduction de la concurrence, en tenant compte du problèmes des obligations de service public. Le professeur Nash explique que depuis des décennies, en Europe et dans la plupart des pays du monde, les chemins de fer ont été exploités selon les principes suivants : *(a)* ils appartenaient à l'Etat, *(b)* les tarifs et les services, et souvent les salaires et l'emploi étaient tous déterminés par l'Etat, *(c)* ils étaient à l'abri de la concurrence, non seulement dans le secteur ferroviaire (par l'existence de leur monopole dans ce domaine, mais aussi par la tutelle sur d'autres modes de transport, enfin, *(d)* en cas de déficit, ils recevaient des financements - en d'autres termes, l'Etat payait la facture. Dans cette situation (qui existe certainement dans de nombreux pays) même si les dirigeants des chemins de fer ne disposaient que de peu de pouvoir pour améliorer la situation, ils n'avaient guère d'intérêts à faire quoi que ce soit pour l'améliorer.

Les principales caractéristiques du processus de transformation en société sont les suivantes : *(a)* mise en place d'une gestion indépendante des chemins de fer dans un cadre financier réaliste (souvent, les chemins de fer ont reçu des missions qui n'étaient tout simplement pas réalistes compte tenu des dettes dont ils avaient hérité) ; *(b)* définition d'objectifs clairs, qui peuvent être purement financiers, mais qui peuvent aussi porter sur le niveau des services, le niveau du trafic, etc. ; *(c)* la partie non commerciale de l'exploitation faisant l'objet d'une relation contractuelle dans laquelle les deux parties conviennent d'avance des services à assurer, de leur qualité et de leur prix ; enfin *(d)* très souvent, le processus de transformation en société passe par une sectorisation. La sectorisation passe souvent par la définition de secteurs correspondant à des compartiments particuliers du marché, comme le fret, le transport de passagers à longue distance, les transports suburbains de passagers. Il ne s'agit pas que les secteurs se livrent à une concurrence entre eux, mais plutôt d'obtenir une gestion ayant des objectifs précis sur les marchés dans lesquels les chemins de fer sont toujours intervenus.

Le professeur Nash souligne que dans le document de référence, on commente l'expérience de la Grande-Bretagne dans la seconde moitié des années 1980 (où, grâce à un processus de ce type, les subventions ont été réduites de moitié et où le transport de passagers a augmenté, même s'il faut convenir que le contexte économique était favorable) et les expériences en particulier de la Nouvelle-Zélande et du Japon, où l'amélioration de la situation des chemins de fer a été pour une large part associée à ce type de réforme. Dans tous ces cas de figures, un pas immense a été accompli, sans pour autant introduire d'éléments

substantiels de concurrence dans le secteur ferroviaire. En effet, dans un premier temps au moins, une bonne partie des progrès ont été accomplis sans modification du régime de propriété, bien que dans ces trois pays, tout ou partie des chemins de fer ait ensuite été transféré au secteur privé.

Il est donc manifeste que l'on peut faire beaucoup par une simple transformation en société dans le cadre du secteur public. Les grandes questions sont alors : comment parvenir à l'indépendance de la gestion ? Le processus doit-il être conçu comme une étape intermédiaire vers la privatisation et/ou l'introduction effective de la concurrence dans le secteur ferroviaire, soit par un régime de concession soit par le libre accès. Ce processus de transformation en société est-il une simple étape ou permet-il d'atteindre les objectifs affichés sans autres mesures ?

Le président note qu'il partage le point de vue du professeur Nash selon lequel la transformation en société ne peut pas être une fin en soi et qu'il faut introduire quelque chose de plus dans ce secteur. Le président observe qu'en Italie, les chemins de fer nationaux fonctionnent sous forme de société anonyme depuis 1992 et que leurs résultats (même s'ils se sont améliorés) comptent parmi les plus mauvais d'Europe.

La Hongrie est invitée à décrire les effets de la transformation en société des chemins de fer nationaux hongrois entreprise en 1993. Le délégué de la Hongrie explique que la loi de 1993 sur les chemins de fer a tracé le cadre réglementaire et défini séparément au sein des chemins de fer publics, le réseau ferroviaire, d'une part, et l'entreprise d'exploitation des trains d'autre part. La première étape a consisté à séparer la gestion dans le cadre de la même société publique, sans procéder à une séparation organisationnelle complète. Le décret conjoint de 1996 (du ministère des Transports, des Communications et de la Gestion de l'eau et du ministère des Finances) a ordonné la séparation des comptes de ces deux secteurs d'activité. Parallèlement, certaines activités spécialisées ont été séparées des activités essentielles, comme l'entretien du réseau. Des sociétés publiques à responsabilité limitée ont été constituées pour prendre en charge ces activités. Il y a des projets de privatisation, mais ils n'ont pas encore été appliqués. Ces premières mesures tracent l'arrière-plan réglementaire, mais le régime n'est pas favorable au développement de la concurrence pour les raisons suivantes.

Premièrement, ces dix dernières années, le développement technique du réseau n'a pas été au centre des préoccupations du ministère des Transports. L'état technique du réseau, notamment dès que l'on sort des grandes lignes, nécessite une rénovation importante. Certaines lignes provinciales sont soumises à des limitations de vitesse qui constituent un obstacle à l'entrée sur ce marché. Il n'y a pas de candidats nationaux à l'entrée et les candidatures étrangères sont soumises à des conventions internationales. On a assisté à une forte chute de la demande de transport ces dernières années de sorte que la société en place est à même de remplir ses missions essentielles de transport. Par ailleurs, la loi stipule que si la société en place est dans l'incapacité de remplir ses missions de transport, une procédure d'adjudication de la concession pourrait être lancée. On observe également une forte concurrence inter-modale, notamment de la part du transport routier. Le problème essentiel consiste à améliorer la situation financière de la société afin de libérer la société des dettes héritées de ses activités déficitaires du passé. C'est un problème qu'il faudra régler à l'avenir.

I. 3 Le rôle de la concurrence inter-modale

Dans quelles circonstances, la concurrence inter-modale peut-elle être suffisamment puissante pour qu'il ne soit plus nécessaire de réglementer les chemins de fer ?

Le président introduit cette session sur la concurrence inter-modale en notant que le transport ferroviaire est en concurrence avec le transport aérien pour les longues distances et avec les autocars et d'autres types de transport sur les courtes distances. Le président souligne que là où s'exerce une forte concurrence inter-modale, on peut vraiment se demander s'il y a lieu d'imposer une quelconque réglementation.

L'Australie est invitée à faire part de son expérience de la concurrence inter-modale et de la réglementation faisant appel à des instruments de la concurrence inter-modale. Le délégué australien commence par indiquer que la structure des chemins de fer en Australie est déterminée pour une part importante par le fait que *(a)* l'Australie est une fédération et se compose d'une série d'administrations d'Etats régionaux qui ont toujours été responsables des chemins de fer et que *(b)* la très grande dispersion géographique en Australie a exercé des influences considérables sur la structure des chemins de fer. Pour l'heure, l'Australie s'efforce d'encourager la concurrence inter-modale dans les chemins de fer dans le transport de fret à longue distance, domaine dans lequel le rail, pour les marchandises en vrac transportées à longue distance, devrait avoir un avantage naturel. L'Australie tente d'encourager la concurrence entre le rail, la route et le transport maritime côtier. Actuellement, une bonne part du fret transporté en vrac sur de longues distance est acheminé par la route, qui a ses propres coûts, aussi bien économiques qu'environnementaux. L'Australie aimerait parvenir à une plus grande concurrence dans le transport de fret à longue distance entre la route d'une part et le rail et le transport maritime côtier de l'autre. Pour ce faire, l'Australie procède de la façon suivante :

(a) Premièrement, l'Australie restructure son système ferroviaire à longue distance en distinguant ce que l'on appelle le "below rail" (sous-rail), qui consiste à entretenir et construire les voies et l'infrastructure correspondante, de l'"above rail", qui consiste à exploiter les trains. Il y a déjà certaines sociétés de transport du secteur privé qui concurrencent les sociétés publiques traditionnelles de chemins de fer dans l'exploitation des trains sur des voies qui appartiennent encore dans une large mesure à l'Etat. Toutefois, ces voies publiques sont soumises à un régime d'accès par lequel les exploitants du secteur privé qui souhaitent exploiter les propres trains peuvent verser un droit d'accès pour l'utilisation des voies.

(b) Deuxième problème, les restrictions réglementaires. Certains domaines du transport de fret ont toujours été réservés au rail, au moins dans certains Etats. Il s'agissait pour l'essentiel de mesures destinées à accroître les recettes. Le transport de matières premières comme le charbon et le blé notamment était dans quelques Etats réglementairement réservé au rail. Pour accroître la concurrence dans ces domaines, ces restrictions doivent être supprimées.

(c) Troisième chantier, pour renforcer la concurrence inter-modale, il faut traiter le problème de l'ampleur des investissements, notamment entre la route et le rail. Traditionnellement, en Australie, on a plus investi dans les routes que dans le rail, ce qui fait que le transport ferroviaire, notamment pour le fret sur de longues distances, constituait une solution de rechange relativement médiocre à la route. L'un des problèmes auquel se heurte l'Australie dans ses efforts de développement de la concurrence inter-modale, c'est l'obligation d'investir des sommes considérables dans le réseau ferré pour le remettre aux normes.

(d) La dernière question est celle du prix facturé aux utilisateurs. Traditionnellement, en Australie, l'utilisation des routes était gratuite, ou soumise à un péage relativement faible, contrairement aux régimes d'accès mis en place pour le transport ferroviaire qui visent à recouvrer au moins le coût marginal d'entretien du réseau. L'Australie a donc mis en place un système de facturation pour les poids lourds routiers qui se compose de frais fixes (acquittés par le biais des frais d'immatriculation) et de frais variables (qui sont une composante des accises perçues par l'Etat sur le diesel). L'association de ces frais ne permet certes pas de couvrir complètement les coûts induits par la route, mais se rapproche au moins un peu plus d'une neutralité vis-à-vis de la concurrence entre la route et le rail.

Le délégué australien conclut en résumant les quatre axes de la politique d'intensification de la concurrence inter-modale : restructuration du rail lui-même pour le rendre plus concurrentiel ; levée des restrictions réglementaires qui réservent le transport de certains types de fret aux seuls chemins de fer ; égalisation ou quasi-égalisation des investissements dans la route et le rail, de façon à porter les infrastructures dans ces deux domaines à un niveau comparable ; enfin, imposition d'une tarification pour les utilisateurs de la route comme du rail, de façon à assurer une neutralité de la concurrence entre les deux secteurs.

La Suède est aussi invitée à donner son évaluation de l'expérience de la concurrence inter-modale. Le délégué suédois répond qu'il entend limiter son intervention aux marchés des services de transport à plus de 100 km. Il ajoute que toute personne respectant certains critères définis par le gouvernement est habilitée à exploiter des services de fret sur le réseau ferré de l'Etat, depuis le 1er juillet 1996. Toutefois, le transport de fret déjà établi sur certaines parties du réseau se voit accorder une priorité dans l'attribution des voies. La part de marché du fret ferroviaire est de l'ordre de 25 pour cent sur des distances de plus de 100 km. Le volume total des services de transport ferroviaire est resté constant ces 25 dernières années, aux alentours de 18 millions de tonnes-kilomètres. Durant la même période, le transport routier a connu des progressions considérables des volumes transportés. Comme dans de nombreux autres pays, le fret routier est passé de 25 millions de tonnes-kilomètres en 1980 à 30 millions de tonnes-kilomètres en 1995. La Suède enregistre aussi une certaine activité de cabotage maritime qui diminue lentement - le volume total a atteint en 1995 environ sept millions de tonnes-kilomètres. Les camions ont tendance à transporter des marchandises de plus forte valeur que les chemins de fer ou les navires. En conséquence, le rail et les navires sont en concurrence plus directe que les camions et le rail. Dans certains segments, le rail exerce une certaine influence, même pour les marchandises de plus forte valeur. Les recettes générées par tonne-kilomètre de transport ferroviaire sont, en moyenne, très faibles en Suède - à peu près cinq fois moins qu'en Allemagne, et à peu près au niveau des Etats-Unis. Cela étant, les camions en Suède sont très gros, ce sont les plus gros d'Europe - avec plus de 60 tonnes pour une longueur pouvant atteindre 25 mètres. Pour faire face à cette concurrence du transport routier, un programme est en cours qui vise à élargir les voies - en portant le gabarit de chargement et les charges par essieu à 25 tonnes, et à autoriser des convois plus longs, jusqu'à 1500 mètres (contre 750 mètres actuellement).

L'un des problèmes de la Suède réside dans le manque de neutralité dans la concurrence entre les divers modes de transport. Au début du printemps, une commission parlementaire a proposé de relever sensiblement les charges imposées aux camions. Ce n'est sans doute pas politiquement possible.

Pour ce qui est du transport de passagers (là encore en limitant le champ de l'étude aux distances supérieures à 100 km) le délégué note que la part de marché du rail représente 10 pour cent environ, contre cinq pour cent pour l'avion et sept pour cent pour les autocars. La voiture particulière domine bien entendu ce marché avec une part de 78 pour cent. Sur certains segments, le rail est très compétitif et connaît un grand succès. Par exemple, entre les deux grandes villes de Suède, (la capitale Stockholm et Göteborg), le rail détient désormais une part du marché plus importante que le transport aérien (secteur

entièrement déréglementé en Suède). Sur ce marché, le rail détient 55 pour cent du marché et l'avion 45 pour cent, malgré le nombre de compagnies aériennes et le fait qu'il n'y a qu'un exploitant fournissant des services de transport ferroviaire. Quant au système de transport sur longues distances par autocar, il est également soumis à des restrictions. Ce secteur n'a pas encore été déréglementé, mais il existe une proposition en ce sens. Malgré ces restrictions, le marché des autocars compte un certain nombre d'intervenants. C'est ce qui a amené les chemins de fer à rendre leurs services plus commodes. Du nouveau matériel roulant a été mis en service et un nouveau système de tarification et de distribution a été introduit. De temps à autre, des guerres des prix se déclenchent entre les différents modes de transport public en Suède.

Le président demande si les chemins de fer d'Etat suédois subissent de lourdes pertes ou si ces pertes ont été réduites par suite de cette réforme.

Pour répondre à cette question, le délégué suédois revient sur la situation en 1988, date à laquelle ont été prises les dernières décisions en matière de politique de transport en Suède. L'origine de ces décisions remonte aux lourdes pertes subies par les chemins de fer d'Etat suédois. A l'époque, leur déficit était de l'ordre de 500 millions de couronnes par an. Pour améliorer la situation et renouer avec les bénéfices (l'objectif étant un excédent de 500 millions de couronnes par an) il a été décidé de séparer les chemins de fer d'Etat en deux composantes, l'une chargée de l'exploitation, les Chemins de fer publics suédois, l'autre chargée des voies ferrées, l'Administration ferroviaire nationale.

De fait, les Chemins de fer publics suédois ont atteint leur objectif de rentabilité. Ils ont renoué avec les bénéfices qui ont atteint quelque 500 millions de couronnes par an. Malheureusement, l'an dernier, ils ont été de nouveau déficitaires à hauteur d'environ 500 millions de couronnes. Actuellement, le gouvernement élabore une nouvelle politique des transports visant à retrouver des bénéfices. Il reste à voir s'il y parviendra ou non.

La Pologne est également invitée à évoquer la concurrence inter-modale. Le délégué polonais commence par un rappel sur l'histoire des chemins de fer polonais des dernières années. En 1989, année de l'introduction de l'économie de marché en Pologne, il y a eu déréglementation totale du marché des transports et une concurrence intense a commencé entre les différents modes de transport. On a assisté à un déplacement sensible des structures d'échange. Alors qu'auparavant, 70 pour cent du commerce extérieur polonais se déroulait avec les pays du bloc de l'Est, 70 pour cent des échanges s'effectuent désormais avec les pays de l'Union européenne. En outre, on a assisté à une forte augmentation de la mobilité des citoyens polonais. Le délégué de la Pologne indique qu'un pour cent de croissance du produit intérieur correspond traditionnellement à deux pour cent de croissance du trafic aérien, 1.5 pour cent de croissance du parc automobile, un pour cent de croissance du transport routier, zéro pour cent de croissance du fret ferroviaire, et une perte du transport ferroviaire de passagers de moins un pour cent. Bref, cela s'est traduit par une croissance incontrôlée du transport routier et la saturation du réseau routier accompagnée d'embouteillages et d'accidents.

Le transport ferroviaire est actuellement assuré par six petites sociétés, pratiquement privées et une grande société nationale, la PKP, qui domine le marché. Ses recettes vont diminuant. En outre, les ressources financières disponibles pour le développement et la modernisation du réseau ainsi que pour satisfaire des objectifs sociaux baissent. En conséquence, on a observé une détérioration de la qualité du service et de l'état technique du réseau.

Le gouvernement polonais a tenté de remédier à cette situation. L'an dernier, la Pologne a adopté une nouvelle loi importante qui devrait être profitable aux chemins de fer. Une taxe sur les véhicules a été intégrée dans la taxe sur les carburants, ce qui renchérit le trafic routier. Un système de tarification

uniforme a été introduit pour le transport routier international, en fonction du poids des véhicules. Le transport intérieur de passagers sera soumis à un permis (actuellement tout le monde peut assurer du transport de passagers). De nouveaux textes relatifs aux chemins de fer ont également été introduits. La société nationale est désormais régie par la loi sur la PKP qui a fait passer la société du statut de société publique à un type de société commerciale et qui a introduit la notion de contrats de service public avec le gouvernement. En novembre, une nouvelle loi sur les chemins de fer va entrer en vigueur et donnera la libre accès au réseau à tous les exploitants de chemins de fer. Bien entendu, il faudra, conformément à la réglementation européenne, obtenir une autorisation. Il reste encore beaucoup à faire. La société nationale des chemins de fer connaît actuellement une réforme structurelle. Le nouveau gouvernement polonais va sans doute entreprendre une décentralisation du financement des transports locaux vers les nouvelles collectivités territoriales. Actuellement, les chemins de fer nationaux ne sont pas au service de la clientèle, mais cherchent à solliciter le parlement et les milieux politiques pour obtenir les plus fortes subventions possibles.

Le délégué de la CE, invité à s'exprimer sur la concurrence inter-modale, commence en se plaçant sous l'angle de la définition du marché : lorsque l'on demande aux autorités de la concurrence si des accords entre entreprises limitent ou non la concurrence ou si une entreprise donnée bénéficie d'une position dominante, il faut définir le marché pertinent sur lequel intervient la limitation de la concurrence ou l'abus éventuel de position dominante. Dans ses décisions, la Commission a toujours considéré que la route et le rail, aussi bien pour le transport de passagers que le fret, se livrent une concurrence intense. Toutefois, il existe d'autres modes de transport qui peuvent concurrencer les chemins de fer. Par exemple, depuis l'ouverture du tunnel sous la Manche, il est évident (ce que la Commission a aussi constaté) qu'une association du transport routier et du ferry peut concurrencer avec succès le trafic ferroviaire transmanche. Enfin, l'Europe est dotée d'un réseau de trains à grande vitesse ralliant non seulement les grandes capitales d'Europe centrale, mais aussi Londres. A cet égard, il est évident que la prestation de services de transport ferroviaire de passagers entre ces capitales et le service transmanche à destination ou en provenance de Londres concurrencent (avec succès) le transport aérien.

Quoi qu'il en soit, l'évaluation d'une limitation de la concurrence ou d'un abus de position dominante dans le cadre des règles de la concurrence ne peut s'effectuer qu'au cas par cas. Il convient de définir les possibilités particulières de substitution entre les différents modes de transport pour la fourniture de services particuliers. Il est très difficile de définir des principes généraux applicables à tous les cas.

Selon le représentant de l'UIC, l'analyse du marché est jusqu'ici restée superficielle. Il serait plus utile d'approfondir les travaux afin d'essayer de définir ce qu'est précisément le marché. Cela amène une question subsidiaire : qu'est-ce qu'un monopole et en quoi consiste une position dominante ? Si les chemins de fer sont au fond comparables aux routes - de simples routes avec de l'acier à la place du goudron - les chemins de fer ne bénéficient pas d'une position dominante. Cela étant, s'il existe des différences sensibles entre la route et le rail, l'analyse de la position dominante risque d'être très différente.

Le Mexique est invité à s'exprimer sur le processus de privatisation en cours dans ce pays et sur la concurrence inter-modale que les autorités cherchent à mettre en place vis-à-vis des chemins de fer. Le délégué mexicain note que le plan de privatisation des chemins de fer mexicains, qui vient d'être appliqué, se caractérise par une séparation régionale des actifs et de l'exploitation et a mis en place un certain nombre de sociétés constituées autour de lignes. Le réseau mexicain des chemins de fer a été éclaté entre quatre grandes sociétés régionales et plusieurs petites lignes desservant des marchés locaux. Dans ce dispositif, l'intégration verticale des différentes fonctions et des services qui permettent le transport par rail est préservée, même si la séparation des fonctions reste possible en cas de nécessité. Dans ce modèle, il n'y a qu'un exploitant par ligne. Toutefois, le "modèle mexicain" intègre différentes caractéristiques

destinées à promouvoir la concurrence inter-modale et au sein d'un même mode de transport. Chaque fois que la concurrence peut se substituer à la réglementation, on étudie ces possibilités. Selon le délégué, on peut même dire que l'on a préféré la sous-réglementation à la sur-réglementation. Dans la pratique, cela signifie parfois que les sociétés en place négocient librement et directement avec les nouveaux venus sur les conditions d'accès aux installations essentielles contrôlées par les sociétés en place. L'autorité de tutelle a entamé un mouvement de retrait, afin de donner aux intervenants privés la possibilité de parvenir à un accord et n'est intervenue qu'en cas d'échec de ces négociations préliminaires.

En ce qui concerne la concurrence inter-modale, on en connaît deux formes différentes. Premièrement, il peut y avoir ce que le Mexique appelle la concurrence à la "source". Cette concurrence se manifeste par exemple lorsqu'une cargaison peut être transportée de son lieu d'origine vers deux ports différents, par deux voies différentes exploitées par deux sociétés concurrentes, afin d'être acheminée par voie navigable jusqu'à sa destination finale. Deuxièmement, il peut y avoir concurrence intra-modale au stade de l'exploitation des trains. Cette concurrence intervient lorsque l'infrastructure fait l'objet d'une séparation fonctionnelle vis-à-vis de l'exploitation des trains, ce qui n'est pas le cas au Mexique. Il peut aussi arriver que des exploitants de trains différents aient des droits d'accès au réseau de la société propriétaire des voies. Cette dernière situation peut se présenter au Mexique. On admet que la concurrence intra-modale, dans le cas mexicain, ne suffira pas à se substituer à la réglementation, et c'est la raison pour laquelle la loi stipule que chaque fois que l'autorité de tutelle (ou toute partie affectée) estime qu'il n'y a pas de véritable concurrence, il peut y avoir réglementation des tarifs.

Il faut aussi admettre que même en cas de concurrence fonctionnelle au stade de l'exploitation des trains, le propriétaire des voies peut abuser de la puissance sur le marché qu'il détient en raison du contrôle qu'il exerce sur les installations essentielles et dans ce cas, l'intervention de l'autorité de tutelle peut être nécessaire pour définir les conditions d'accès au réseau. Dans l'ensemble, les perspectives de concurrence intra-modale semblent limitées. Sans doute la concurrence inter-modale constitue-t-elle un levier beaucoup plus puissant pour prévenir les abus de position dominante de la part des sociétés déjà en place, notamment pour le transport de passagers et celui des marchandises qui ne sont pas transportées en vrac.

II. Favoriser la concurrence dans les chemins de fer

II. 1 Intégration verticale avec réglementation de l'accès ou séparation structurelle

Il s'agit de faciliter la concurrence en ouvrant l'accès à l'infrastructure dans le cadre d'une réglementation - peut-on penser que la réglementation des conditions d'accès aux chemins de fer permettra d'induire une concurrence suffisante des services ferroviaires pour ne pas avoir à recourir à une réglementation des prix des services, etc. Pour que l'approche de l'ouverture de l'accès donne des résultats satisfaisants, faut-il séparer la propriété des voies de la prestation de services ferroviaires ? Suffirait-il d'établir une séparation comptable ?

Le président présente le thème suivant (comment introduire plus de concurrence dans les chemins de fer) en demandant à M. Kessides de traiter des avantages de l'ouverture de l'accès par rapport à la séparation structurelle – qu'une séparation verticale du secteur soit nécessaire à la concurrence ou qu'il soit préférable de maintenir l'intégration structurelle pour dégager des économies d'envergure ou d'autres types d'économies importantes dans ce secteur.

M. Kessides indique qu'il n'y a pas de réponse unique à cette question, la réponse dépendant des caractéristiques du pays, de la taille du marché, de sa densité, etc. Néanmoins, la plupart des experts

conviennent que les conditions qui ont donné naissance à cette organisation monolithique verticalement intégrée des chemins de fer n'existent plus dans la plupart des pays. En effet, dans le monde entier, les pouvoirs publics ont engagé des plans de restructuration. Ces dernières années, deux grands modèles sont ressortis de ce mouvement de restructuration, à savoir la séparation verticale et l'accès au réseau pour la concurrence. Dans le cadre de la séparation verticale, la propriété des installations est séparée d'autres fonctions comme l'exploitation des trains, la commercialisation, etc. La vertu première de cette démarche, c'est qu'elle atténue et isole les problèmes de réglementation délicats liés à des coûts de réalisation des voies dans une large mesure irrécupérables. Si les trains et les voies sont séparés, les voies appartenant à l'Etat ou à un consortium d'exploitants, ou encore à une entité privée réglementée, on peut avoir (en principe) une très vigoureuse concurrence des services ferroviaires, de la part d'exploitants disposant du même droit d'accès à ces installations. Toutefois, ce mode de raisonnement présente plusieurs problèmes :

(a) En premier lieu, dans la plupart des cas, la récupération des coûts de construction des voies nécessite une discrimination en matière de prix. En d'autres termes, elle impose le recours à une forme de tarification efficiente de type Ramsey. Or, la séparation des voies et des services rend très difficile, voire impossible, le recours à une tarification efficiente de type Ramsey.

(b) Deuxièmement, dans bien des cas, la prestation de nombreux services innovants et répondant au marché va nécessiter des investissements spécifiques sous forme d'infrastructures et, là encore, dans diverses situations, l'exploitant de trains risque d'éprouver des difficultés à se coordonner avec le propriétaire des infrastructures, notamment si leurs intérêts respectifs ne concordent pas.

(c) Enfin, dans de nombreux pays, les marchés sont souvent étroits et la séparation risque de ne pas aboutir à une concurrence effective ou potentielle dans les services ferroviaires. On risque de ne pas profiter des principaux avantages de la concurrence en raison de la petite taille du marché.

La seconde grande option consiste en un accès au réseau pour la concurrence. Dans cette option, les chemins de fer peuvent conserver leur exploitation intégrée. Toutefois, l'exploitant intégré est tenu de mettre ses installations à la disposition d'autres exploitants dans des conditions justes et équitables. Cela étant, ce qui semble juste à un intervenant peut s'avérer totalement injuste pour un autre, etc. En effet, dans diverses situations, l'exploitant intégré risque de ne pas avoir intérêt à permettre un accès efficient à ses installations. En conséquence, l'obligation d'accorder une égalité d'accès ne sera pas très efficace. L'exploitant intégré trouvera toujours un moyen d'entraver l'exploitation de ses concurrents s'il y a intérêt. La solution de l'accès au réseau pour la concurrence présente l'avantage de permettre de choisir des prix facturés aux chargeurs conformément à la tarification efficiente de Ramsey, et, en outre, cette solution atténuerait les problèmes d'incitation posés par la réalisation d'infrastructures nouvelles. Toutefois, l'inconvénient que présente cette solution tient au fait que dans de nombreuses situations, l'exploitant intégré risque de ne pas accorder l'accès aux autres exploitants dans des conditions justes et égalitaires. Néanmoins, il ne faudrait pas en conclure qu'en toutes circonstances, l'exploitant intégré empêcherait une exploitation efficiente des infrastructures. En effet, dans le cadre d'un ensemble de mesures réglementaires axées sur les prix facturés aux transporteurs, et non pas sur les prix d'autres services comme l'accès, l'exploitant intégré pourrait avoir intérêt à permettre une coopération efficiente.

M. Kessides souligne aussi que les répartitions de coûts entièrement distribués qui reposent sur une quelconque base d'utilisation arbitraire (comme les tonnes-miles brutes) ont peu de chances de permettre au propriétaire de l'infrastructure des voies de se trouver dans une situation financièrement viable et

convenable en termes de recettes. En conséquence, il va falloir recourir à une forme quelconque de tarification de type Ramsey. M. Kessides poursuit en expliquant que dans la mesure où la séparation entraîne une concurrence sur les services, toute notion de subvention croisée n'est plus pertinente, étant donné qu'une éventuelle structure de prix qui comporte des subventions croisées s'effondre dans un tel régime. Dans une très large mesure, la séparation nécessite donc d'accorder aux chemins de fer une liberté totale et complète de supprimer les services et les liaisons non économiques, etc. Quant aux plafonds de prix, ils ne peuvent pas être imposés sauf à autoriser les chemins de fer à supprimer les services non performants, voire à éliminer surtout les liaisons non performantes.

Le professeur Toner (Institute for Transport Studies, Université de Leeds) est invité à s'exprimer sur les avantages de la réglementation de l'accès par rapport à des solutions comme la séparation de l'infrastructure ferroviaire ou le régime de franchise. Le professeur Toner commence par noter que, selon lui, la grande question est de savoir si un éventuel régime équitable de tarification de l'accès peut permettre de supprimer la puissance sur le marché que détiennent les exploitants de services ferroviaires déjà en place. De toute évidence, il est essentiel dans tout environnement concurrentiel de s'assurer que le prix de l'accès est juste, ce qui pointe vers la nécessité de disposer de quelque chose comme la règle de tarification efficiente des composants dès lors que plusieurs exploitants utilisent la même infrastructure partagée. En fait, c'est aussi important s'il y a une séparation quelconque de l'exploitation et de l'infrastructure d'avoir une facturation des droits d'accès, même si on se trouve dans le cas d'une concession en monopole qui n'a pas à faire face à une concurrence sur les voies. Même si ces prix sont justes, cela ne veut pas dire en soi que l'on est en présence d'un marché concurrentiel. L'existence d'un régime équitable de tarification de l'accès est une condition nécessaire, mais non suffisante à la concurrence. Une société en place dispose de bien d'autres avantages par rapport à un candidat à l'entrée sur le marché : les frais d'installation que doit supporter le nouveau venu, par exemple, pour la commercialisation de ses services, les économies de réputation, la courbe d'apprentissage que doit suivre tout nouvel exploitant pour acquérir de l'expérience, l'inertie des consommateurs (le consommateur étant souvent très content de garder ce qu'il a, parce que les coûts et les risques du changement sont trop grands) ; enfin, certainement un véritable handicap en matière de coût, dans la mesure où le nouveau venu n'opère pas à la même échelle que la société en place. Or, un régime de tarification de l'accès ne peut pas régler ces problèmes.

En ce qui concerne la propriété des infrastructures et l'accès à ces infrastructures, on dispose de l'expérience de la concurrence des sociétés privées de chemins de fer au Royaume-Uni, qui ont dû s'accorder mutuellement des droits d'utilisation de leurs lignes. Lorsque ces sociétés ont trouvé un avantage mutuel à conclure de tels accords, il n'y a eu aucune difficulté. Mais si une société veut opérer en passant par les voies d'une autre société, afin de fournir un service concurrent, l'expérience montre que l'on se heurte à des problèmes – non pas uniquement pour déterminer les prix, mais aussi à travers toutes les astuces que le propriétaire de l'infrastructure peut trouver pour désavantager un concurrent potentiel. Si l'on veut instaurer la concurrence sur les voies, il est indispensable de séparer l'infrastructure de l'exploitation.

Reste dès lors à savoir si la concurrence sur les voies est réalisable ou souhaitable. Un problème que peut poser la concurrence sur les voies, c'est que si on est en présence d'un opérateur qui applique une tarification efficiente de Ramsey et qui atteint son point d'équilibre, on ne peut plus rien attendre de plus. Dans la plupart des cas, comme l'exploitant dessert de nombreux marchés, les conditions de coût feront que l'exploitant en place sera vulnérable à un écrémage. En pareil cas, un régime de tarification efficiente des composants peut déterminer en quoi consiste le prix efficient que doit facturer la société en place pour son manque à gagner, mais même en ce cas, tout candidat à l'entrée qui pratique l'écrémage va affecter l'éventail optimum des services proposés par la société en place. Dans ce cas, il faudra maintenir un contrôle des normes de services – responsabilité que l'on ne peut pas confier au marché.

En conclusion, il est fort possible que la concurrence sur les voies soit meilleure que le monolithisme actuel des chemins de fer. De l'avis du professeur Toner, si c'est possible, éviter une concurrence dévastatrice et veiller à l'exploitation convenable du gisement existant d'économies d'échelle et d'envergure serait une meilleure solution qu'une liberté totale de la concurrence sur les voies. Le problème essentiel tient au fait que sur de nombreux segments, le marché est étroit et les obstacles à l'entrée subsisteront (que la législation les supprime ou non). Dans ces conditions, il est essentiel qu'il y ait une certaine forme de réglementation des services assurés par les exploitants.

Le représentant de la CEMT est invité à rendre compte des recherches de son organisation sur les avantages de la séparation ainsi que des règles particulières de tarification qu'il conviendrait d'adopter dans des conditions de séparation verticale. Il souligne que la tarification de l'accès aux voies constitue bien entendu un élément essentiel pour déterminer si le régime d'accès peut effectivement fonctionner. Il note que, dans le cas de la France, on a introduit la séparation avant de mettre en place une réglementation précise, parce que cette réglementation est très difficile à élaborer. Une commission a été mise en place dans ce pays et elle travaille très activement sur cette question, afin de définir un régime efficace d'accès aux infrastructures.

Pour revenir à la question de la séparation des infrastructures et de l'exploitation, le représentant de la CEMT note que dans 15 organisations des chemins de fer en Europe, la décision prise à ce jour a consisté à maintenir une organisation verticalement intégrée des chemins de fer (avec cependant une séparation des comptes et de plus en plus une séparation en unités commerciales). En outre, les 15 pays ont opté soit pour une séparation organisationnelle de l'exploitation et des infrastructures, soit envisagent de s'orienter à l'avenir vers cette formule.

La clé de toutes les réformes des chemins de fer réside dans la transparence, en particulier des flux de financement. On a dit précédemment que cela peut servir à définir les obligations de service public nécessaires et leur coût. Cette transparence peut aussi servir à exclure la dette liée à des décisions politiques antérieures des décisions commerciales des chemins de fer, de façon à ce que les dirigeants des chemins de fer s'attachent à la gestion commerciale et non à des considérations politiques. La caractéristique fondamentale de cette désagrégation ou de cette séparation au sein des secteurs ferroviaires est la transparence et elle doit constituer le levier grâce auquel on pourra réaliser des gains d'efficience. La séparation institutionnelle, par opposition à la simple séparation comptable, peut aboutir à une plus grande transparence à un niveau plus fin de précision. Elle peut éviter aussi le risque de confiscation par la réglementation, inhérent à un système reposant sur une seule société ferroviaire intégrée.

Si l'on étudie le revers de la médaille, en cas de séparation, il faut qu'un certain nombre de structures essentielles soient bien en place lors de l'organisation du système ferroviaire. Le service à la clientèle revêt bien entendu une importance déterminante si les chemins de fer veulent maximiser leur rentabilité et faire face à la concurrence. La séparation des infrastructures et de l'exploitation introduit une distance entre les administrateurs des infrastructures et le client final. De plus, la densité du trafic ferroviaire de nature à maximiser le retour sur investissement sous forme d'infrastructures risque d'être beaucoup plus grande que la densité optimale du trafic du point de vue des exploitants de trains. Lorsque la densité du trafic devient élevée, les exploitant risquent de souffrir de phénomènes de congestion, de sorte qu'il doit y avoir, que la séparation soit institutionnelle ou uniquement financière, des mécanismes destinés à dédommager les unités administrant les infrastructures de tourner en-deçà de leurs capacités optimales telles qu'elles les définissent elles-mêmes. Ces questions doivent être réglées par contrats de façon à maximiser les résultats du point de vue du client pour l'ensemble du réseau.

Une autre question importante a trait à la différence d'horizon de planification des investissements d'infrastructure et de matériel roulant. Dans une certaine mesure, ces investissements sont interdépendants

en raison des synergies de leur productivité et en ce qui concerne la sécurité. Toutefois, dans la pratique, les infrastructures se caractérisent par des horizons de planification et des délais de rentabilisation beaucoup plus éloignés, de sorte qu'il faut prévoir une certaine coordination en cas de séparation. Cela peut se faire par intervention des pouvoirs publics, mais l'expérience du Royaume-Uni tend à montrer que les sociétés privées sont capables de se réunir pour se coordonner. On ne sait pas très bien quelle importance doit prendre la réglementation dans ce domaine. Le rôle principal des pouvoirs publics dans un système de séparation institutionnelle consiste à réglementer les principaux éléments du monopole naturel, l'infrastructure des voies - l'accès, les tarifs et les investissements à long terme. La réglementation va devoir prévoir des normes minimales d'investissement, afin de contrebalancer la propension à privilégier le court terme que l'on observe lorsque les infrastructures sont privatisées, et ce, afin de veiller à ce que des investissements essentiels ne soient pas sacrifiés au nom de l'augmentation des dividendes annuels ou d'une parade anti-OPA. La sécurité est aussi préoccupante et, plus précisément, il doit y avoir des règles permettant aux autorités compétentes d'avoir accès à suffisamment d'informations pour assurer leur mission.

En somme, la désagrégation peut favoriser trois éléments de maximisation des avantages. On doit viser à réglementer convenablement la planification de l'investissement, l'établissement des horaires et la régulation du trafic. Les prix facturés pour l'accès aux infrastructures doivent être transparents et compréhensibles, quelle que soit la formule de calcul. Enfin, les interventions des pouvoirs publics doivent s'attacher à l'utilisation, plus qu'à la fourniture des infrastructures, de façon acheminer les subventions par l'intermédiaire des utilisateurs. Cela doit réduire la tendance à l'accumulation des déficits résultant de pressions politiques en faveur de dépenses d'infrastructure. La séparation renforce la transparence et facilite la réglementation de la concurrence, que la concurrence soit introduite pour l'accès aux voies ou pour la clientèle de passagers.

La Suède est ensuite invitée à présenter brièvement la logique ayant présidé la décision de séparer les infrastructures et l'exploitation et à s'exprimer sur les problèmes de tarification de l'accès aux voies. Le délégué suédois commence par la facturation de l'accès aux voies. Elle note qu'il n'a jamais été question d'une récupération totale des coûts dans le système ferroviaire suédois. Le problème résidait dans la récupération du coût marginal d'entretien. Une enquête a été menée en vue d'améliorer le régime de tarification de l'accès aux voies et un document vient d'être élaboré à ce sujet. La Suède est en train d'analyser les propositions. Les résultats de ces travaux devraient entrer dans le cadre du projet de Loi sur la politique des transports qui devrait être présenté au parlement en février 1998.

Revenant aux raisons de la séparation de l'exploitation et des infrastructures, le délégué poursuit en indiquant que l'élément moteur de la future Loi de 1998 sur les transports aura été le constat que les chemins de fer n'étaient pas compétitifs et risquaient de perdre des parts de marché à l'avenir. Cela étant, on a considéré que le rail avait la possibilité de devenir compétitif à condition d'être remis en état et de mettre l'accent sur les aspects environnementaux, les économies d'énergie, la sécurité, etc. De même, comme on l'a indiqué précédemment, il y avait le problème des pertes de *SJ* qui s'élevaient à 500 millions de couronnes par an. Pour inverser la tendance, les chemins de fer publics suédois ont eux-mêmes eu l'initiative de proposer que l'Etat reprenne les infrastructures. Autre facteur très important, la transparence - le désir de clarifier la répartition des rôles entre l'Etat et les chemins de fer publics suédois. Il y a eu un appel général à faire évoluer les chemins de fer publics suédois vers une société d'exploitation ferroviaire moderne et économiquement efficiente, capable d'assurer sa propre survie. Grâce à la séparation, les dépenses d'infrastructures ont augmenté de façon spectaculaire, afin de rattraper 40-50 ans d'abandon. Un programme a été lancé en 1994 pour investir 38 milliards de couronnes suédoises dans le réseau ferré sur 10 ans. Naturellement, comme ces fonds provenaient des contribuables, les milieux politiques ont voulu avoir le contrôle total des dépenses. Autre raison de la séparation complète, on a estimé que les comptes

de l'entreprise seraient plus transparents si tout le système était séparé. Personne ne voulait mettre un sou de plus dans le trou sans fond des chemins de fer publics suédois.

Les investissements dans le transport en Suède reposent sur des calculs socio-économiques. C'est le même type de calcul que pour les routes. Ce que l'on appelle le modèle suédois est donc connu dans le pays comme le "modèle routier" parce que tous les chiffres de référence sont à peu près les mêmes pour la route et le rail. Le rail a l'obligation de s'inscrire dans le cadre des objectifs généraux de la politique des transports du pays. Ces objectifs consistent à atténuer l'impact du trafic sur l'environnement, faire évoluer les infrastructures en fonction des besoins du 21e siècle, accroître l'efficience, renforcer la sécurité et veiller à ce que toutes les parties du pays soient dotées des infrastructures convenables.

Le président souligne le fait que la raison première de la séparation résidait dans la volonté de renforcer la transparence parce que plus personne ne voulait engloutir plus d'argent dans une grande société intégrée et déficitaire.

Le délégué de la Norvège donne des éléments sur les perspectives offertes à la concurrence à la suite de la séparation en deux sociétés distinctes des voies et du transport. La seule concurrence sérieuse aux chemins de fer publics norvégiens est venue en 1996 de la création par une société minière suédoise d'une société de chemins de fer qui a repris le transport de minerai de fer assuré précédemment par les chemins de fer publics. Les perspectives les plus probables de concurrence effective à l'avenir pourraient provenir de gros acquéreurs de services de transport ferroviaire, par exemple, à travers leur propre entrée sur le marché du transport en aval, ou du rachat de services de transport par des sociétés étrangères de chemins de fer.

Le délégué de la CE souhaite revenir sur certains aspects de la séparation qui n'ont pas été traités par les délégués. Au niveau communautaire, on établit une distinction nette entre la séparation comptable et une séparation qui porte sur les fonctions décisionnelles. Conformément à la Directive 91/440, la Communauté a ouvert certaines possibilités de libre accès, notamment dans le domaine du transport de fret. En d'autres termes, dans une situation où des sociétés nationales des chemins de fer restent intégrées, il convient de séparer les comptes afin d'avoir une image précise des recettes et des coûts des activités de gestion des infrastructures et de l'exploitation des services. Toutefois, comme l'a indiqué le délégué de la CEMT, de nombreux Etats membres ont décidé de maintenir au sein de la même structure la gestion des infrastructures et l'exploitation des services. C'est la raison pour laquelle, le Conseil, sur recommandation de la Commission, a introduit la distinction entre la gestion de l'infrastructure et la répartition des capacités. La Directive 19 de 1995 a défini l'organisme de répartition comme l'organisme qui, en cas d'intégration verticale, doit être indépendant de l'exploitation des services de façon à assurer une répartition équitable des capacités d'infrastructures entre les concurrents.

II. 2 Les régimes de concession

L'accent est mis sur les concessions territoriales exclusives - Pourquoi les concessions territoriales exclusives obtiennent de meilleurs ou moins bons résultats que la réglementation traditionnelle des services ferroviaires ? Quels sont les avantages relatifs d'une stratégie de concurrence faisant appel à un régime de libre accès par rapport à un régime de concessions territoriales exclusives pour la prestation de services ferroviaires ?

Le Professeur Toner est invité à évoquer les avantages du régime de concessions. Il explique que toute la question des concessions découle de celle de savoir ce que l'on veut faire lorsque la recherche de la meilleure solution impose d'avoir soit un monopole, soit quelques producteurs. Pour tirer parti des économies d'envergure, il convient de restreindre l'entrée sur un marché donné. Comment, dans ces conditions, décide-t-on qui est autorisé à opérer ? L'indicateur habituel pour les économistes consiste à savoir qui peut produire de la façon la plus efficiente. Pour les comptables et les politiques, c'est peut-être qui peut produire au meilleur coût (ce qui n'est pas nécessairement la même chose).

L'idée des concessions, c'est-à-dire de demander à des entreprises de soumissionner pour le droit à devenir le fournisseur exclusif et d'accepter ensuite soit le prix le plus faible (en cas de critère de subvention) ou, en cas de recherche d'un profit, le paiement le plus élevé à l'autorité de tutelle et de faire respecter ce prix au fournisseur est tout à fait courante. C'est la façon dont on fait couramment faire des travaux pour sa maison. Si l'on veut une nouvelle toiture, on demande différents devis et on accepte le moins cher. Sous sa forme la plus simple, c'est une procédure très facile à suivre. Une telle démarche ne prend pas en compte la dimension de la qualité, si ce n'est que la personne qui effectue le travail est compétente. Dans le domaine du transport, on se préoccupe beaucoup plus de retenir le meilleur rapport qualité-prix.

En théorie, les appels d'offres de concession rendent un marché beaucoup plus contestable qu'il ne le serait normalement, en sortant du cadre de la concurrence au moins une partie des coûts irrécupérables, ce qui réduit la nécessité pour les candidats de prendre des engagements préalables et ce qui rapproche le marché d'une situation de contestabilité parfaite. En d'autres termes, un candidat n'a pas à prendre le risque de s'engager et de se brûler les doigts. Les candidats peuvent se contenter d'essayer de remporter l'appel d'offres et de prendre si nécessaire la suite de la société en place. En outre, les mécanismes de soumission peuvent rendre les règles du jeu entre sociétés en place et sociétés candidates plus équitables, dans la mesure où un candidat efficient peut remporter l'ensemble du marché immédiatement, plutôt que d'essayer ensuite de gagner progressivement des parts de marché dans une bataille avec l'opérateur en place. Qui plus est, dans un mécanisme de concession, il n'y a pas de possibilité de mesures d'éviction à titre de représailles de la part d'un opérateur en place se sentant menacé par un nouveau venu. Ces avantages des concessions en termes d'efficience sont aussi de nature à modérer le comportement des opérateurs en place. La possibilité d'atténuer l'éventuelle exploitation d'une position de monopole de la part d'un opérateur en place dépend bien entendu de la fréquence de renouvellement des appels d'offres. Le régime des concessions supprime aussi le pouvoir de monopole de l'information. Dans le cadre des formes traditionnelles de réglementation, ce sont les entreprises qui détiennent l'information, pas les autorités de tutelle. Dans les mécanismes de concession, ce monopole d'information disparaît. Les concessions imposent aux soumissionnaires, au moins jusqu'à un certain point, d'être transparents en ce qui concerne leurs charges et leurs incitations.

Un certain nombre d'auteurs ont soulevé diverses difficultés posées par les procédures d'appel d'offres : *(a)* la possibilité qu'il y ait des appels d'offres non concurrentielles, lorsqu'il n'y a pas assez de soumissionnaires pour que le marché à attribuer soit parfaitement concurrentiel ; *(b)* la difficulté de choisir entre des offres correspondant à différentes combinaison de prix et de qualité ; et *(c)* notamment

dans le secteur ferroviaire, la difficulté de définir le cahier des charges et d'administrer les contrats, c'est-à-dire de s'assurer qu'un concessionnaire respecte les conditions du contrat. On a déjà rencontré certains problèmes en Grande-Bretagne avec des opérateurs ayant emporté une concession, mais n'offrant pas la qualité de services qu'il se sont engagés par contrat à assurer. Enfin, *(d)* (problème qui ne s'est pas encore posé en Grande-Bretagne), la rétrocession des actifs en fin de concession, si un opérateur en place perd la concession lors du renouvellement.

Le problème consiste dès lors à veiller à ce que la concurrence soit suffisante sur le marché pour garantir l'efficience en évitant une concurrence infructueuse. La liberté d'accès risque de ne pas convenir lorsqu'il y a un monopole naturel non viable, c'est-à-dire un monopole vulnérable à l'écrémage**.** Pourtant, les concessions en soi ne sont manifestement adaptées que pour un achat ponctuel, ou, dans le secteur ferroviaire, lorsque la demande et les coûts futurs peuvent être prévus de façon précise. Si ce n'est pas le cas, si personne ne sait ce qui va se passer pendant la durée de la concession, en année 5, 7 ou 30, il se peut que la concession ne soit pas la bonne solution. Mais lorsque le régime de concessions connaît des difficultés, la réglementation des prix peut jouer un rôle utile en empêchant une exploitation de la puissance sur le marché.

Pour ce qui se passe sur le terrain, on a déjà vu comment au Japon (même s'il ne s'agissait pas de concessions au sens strict) la redistribution du réseau ferroviaire national entre différentes composantes a amélioré la productivité. De même, en Argentine, pays qui a choisi un régime de concessions verticalement intégrées, la productivité et le trafic ont augmenté. Mais on a aussi observé des problèmes de non-respect des plans d'investissement. En Suède, la concession des services régionaux a amené SJ à réduire ses prix d'adjudication de 30 pour cent. Au Royaume-Uni, il y a l'engagement de réduire les besoins de subvention sur toute la durée de vie de la concession. Il reste cependant à voir si le processus de concession apportera les produits nouveaux, les services innovants ainsi que la concurrence sur les prix que l'on espérait. En conclusion, on ne sait pas encore s'il est préférable d'opter pour des concessions brèves sur la seule exploitation, ou pour des concessions longues verticalement intégrées. Dans l'idéal, on choisirait peut-être des concessions brèves en intégration verticale, mais ce n'est pas réaliste parce que le calendrier d'investissement dans des concessions de brève durée ne correspond pas aux investissements d'infrastructure à grande échelle.

Le président soulève alors deux problèmes posés par les concessions. Premièrement, il y a le problème de l'évolution des intérêts du concessionnaire au milieu et en fin de concession - le concessionnaire n'a plus intérêt à améliorer le réseau, à améliorer la qualité du service ou à faire des investissements. Deuxièmement, il y a le problème du comportement stratégique. Qu'est-ce qui garantit que l'offre d'un concessionnaire est une offre véritable et que demain, la même société ne va pas revenir frapper à la porte des autorités et dire qu'elle ne peut rien faire avec une subvention aussi faible et qu'il faut lui donner plus sinon elle arrêtera les services.

Le Professeur Toner répond qu'en fait on espère que tout finira par bien marcher. Si, à long terme, le détenteur d'une concession n'a pas pris la bonne décision et constate qu'il n'aurait pas dû venir sur ce marché, il s'en retirera et n'aura pas intérêt à maintenir son activité durant les dernières années de la concession. Mais tant qu'il reste attaché à la concession, pour maintenir à l'avenir un flux de bénéfices, il a tout intérêt à se comporter convenablement, même s'il va perdre une concession donnée, parce qu'il voudra peut-être en obtenir une autre, ailleurs sur le réseau. Pour ce qui est du second aspect, à savoir l'administration des contrats, ou s'assurer que le concessionnaire respecte les conditions du contrat, c'est une question effectivement très difficile. Si l'entreprise en place souhaite renégocier le contrat, il est normalement moins coûteux de renégocier avec elle, plutôt que d'essayer de la remplacer. Dans l'exemple britannique, il y aura quatre ou cinq grands opérateurs des chemins de fer. Il y a de bonnes chances pour

que si une concession marche mal, quelqu'un d'autre prenne le relais, relativement facilement, grâce à l'expérience acquise à l'occasion de l'exploitation de concessions ailleurs.

Le délégué de la Finlande indique que son pays a procédé à la séparation verticale entre les voies et l'exploitation en 1995. Cela étant, il n'y a pas encore de concurrence dans les chemins de fer. Il y a un mois, un groupe de travail a été mis en place par le ministère des Transport et ce groupe de travail étudie actuellement si la Finlande doit introduire la concurrence dans les chemins de fer et sous quelle forme.

Le délégué finlandais revient sur les conditions d'octroi de concessions. Dans un régime de concession, un monopole est cédé à une société pour exploiter un service sur une ligne donnée. La concurrence intervient au moment où se conclut l'accord sur le service. L'avantage est que ce monopole peut, en principe, détenir l'ensemble de l'infrastructure du réseau nécessaire à la prestation de ce service. Dans ce cas, les économies d'envergure entre le réseau et le prestataire de service peuvent être préservées.

L'accord de concession s'avère inévitablement complexe et doit courir sur une longue période. Cette période doit être suffisamment longue pour que la société de chemins de fer récupère ses frais fixes et pour qu'elle ait intérêt à investir pour améliorer le service. Plus l'accord est détaillé, moins la société a de marge de manœuvre pour réagir aux changements, par exemple pour ajuster les services si des modifications de coûts le nécessitent. Il peut être justifié de s'en remettre pour certaines parties de l'accord à une renégociation ultérieure. En ce cas, la surveillance de l'accord peut commencer à ressembler à une régulation ordinaire, à savoir la collecte de renseignements et la détermination des activités autorisées en fonction des renseignements collectés. De toute évidence, un tel accord de concession ne peut jamais être parfait. Le système des concessions convient au trafic ferroviaire au sens où la qualité de service nécessaire n'est pas très difficile à déterminer.

Répondant à une invitation à décrire l'expérience des concessions au Royaume-Uni, le délégué du Royaume-Uni explique que dans son pays, on compte 25 concessions de transport de passagers, de sept à 15 ans, la durée de la concession étant déterminée en partie par la nécessité de remplacer le matériel roulant. Lors de l'octroi des concessions, le gouvernement avait fixé le niveau minimum des services et les plafonds de prix à appliquer. Les sociétés ont soumissionné pour ces services. Lors de l'attribution des concessions, les critères de qualité ont certes été pris en considération, mais en pratique ils ont eu une importance secondaire par rapport aux facteurs de coûts. Les concessions ont été acquises par diverses catégories d'opérateurs - principalement des sociétés de transport par autocar du Royaume-Uni, qui ont obtenu la plupart des concessions. Les autres ont été acquises par Virgin (compagnies aériennes et services de commercialisation de produits sous l'enseigne Virgin), Sea Containers (conglomérat administrant la ligne de la Côte Est), une société française de services publics (administrant une grande partie du réseau de banlieue) auquel il faut ajouter un cas de rachat par les salariés.

Dans l'ensemble, il est encore trop tôt pour évoquer les résultats des concessions. Nombre d'entre elles ont moins de sept mois. Aucune n'est exploitée depuis plus de 19 mois. On avait souvent prédit que les résultats seraient désastreux. Ce n'est certainement pas le cas.

Le délégué du Royaume-Uni poursuit brièvement en s'attachant à trois impacts du régime de concessions : sur les finances publiques, sur le fournisseur d'infrastructures Railtrack ainsi que sur le client. Comme on l'a indiqué, les versements aux concessions ont baissé fortement au fil du temps. In 1996/7, environ deux milliards de livres ont été versés sous forme de subventions, alors que, si les plans sont respectés, cette somme sera ramenée en 2002 à 926 millions. On a assisté à certains retournements spectaculaires. Virgin West Coast devait encaisser une subvention de 76. 8 millions en 1997-98, mais versera en fait une prime de 220 millions en 2011 au responsable des concessions, tout en remplaçant le matériel roulant et en acquittant des frais d'accès plus élevés à l'opérateur exploitant les voies de la Côte Ouest. Cela étant, le

montant de la subvention nécessaire pour maintenir le fonctionnement du système avait été augmenté en 1995-96, de sorte que l'évolution n'est pas à sens unique. Il y a aussi eu les capitaux perçus à l'occasion de la cession de Railtrack et des ROSCO (sociétés de matériel roulant) qui ont représenté quatre milliards de livres. De toute évidence, il est difficile de dire ce qui se serait passé avec le maintien de British Rail.

Le régime de concessions a apporté une sécurité sans précédent au fournisseur d'infrastructures. Il a aussi amené les pouvoirs publics à s'engager dans un programme de dépenses à long terme dans le secteur des chemins de fer, même si sa participation va décroissant. C'est le grand avantage de la sortie de Railtrack des comptes publics. Railtrack devrait désormais pouvoir prévoir ses investissements de façon plus raisonnable et cohérente. Cette société doit également publier un rapport de gestion du réseau qui précise son programme d'entretien dans les dix ans à venir.

Pour ce qui est de l'impact sur la clientèle, il est encore trop tôt pour se prononcer, mais il y a des signes prometteurs. La manifestation la plus évidente des changements a été la couleur assez criarde des nouveaux trains. Cela étant, le processus de concession a aussi entraîné des investissements considérables sous forme de nouveau matériel roulant. La structure du régime de concessions prévoit aussi un suivi des résultats qui a permis d'améliorer la ponctualité. On a assisté à une réduction de 50 pour cent des retards en minutes en 199-97, par rapport à 1995-96. On a aussi constaté des améliorations limitées des services, bien que ces services soient maintenant principalement couverts par les concessions, ainsi que certaines innovations dans les tarifs. L'une des principales différences observées a été le fruit d'un échec - les trains du Sud-Ouest, qui avaient licencié trop de conducteurs, n'ont pas pu assurer les services au niveau exigé. Il s'agissait certes d'un échec, mais cela a aussi montré que ce secteur est désormais plus responsable. Du temps de British rail, ne pas pouvoir assurer le service était bien dommage. Maintenant, on peut se plaindre à quelqu'un.

Dans l'ensemble, les problèmes rencontrés au Royaume-Uni sont ceux d'une trop grande réussite. L'augmentation du nombre de passagers a été de sept à huit pour cent, mais les tarifs sont plafonnés. Si cet type d'expansion avait eu lieu du temps de British Rail, les tarifs auraient augmenté de façon spectaculaire. Ce n'est plus possible. Il faudra prévoir des infrastructures supplémentaires si ça continue ainsi.

Répondant à une question, le délégué du Royaume-Uni explique que les concessions pour le transport de passagers couvrent l'ensemble du pays. Il n'y a plus aucun service ferroviaire public. Les concessions varient en taille. Les lignes de la côte Ouest vont environ de Londres à Glasgow, soit presque toute la longueur du Royaume-Uni. La plus petite est celle de l'Ile de Wight, d'une longueur d'environ 12 miles. En termes de recettes, les principales concessions de transport de passagers de Londres sont équivalentes aux concessions des grandes lignes, au nombre de deux.

Répondant à une question de l'Allemagne, le délégué du Royaume-Uni indique que les concessions sont de trois catégories, ce qui correspond à l'ancien système de British Rail : les grandes lignes, les réseaux régionaux et les dessertes de banlieue dans la région de Londres. Avant les concessions, différentes sociétés d'exploitation avaient été mises en place sous le régime de British Rail pour chacune des zones de concession. Des soumissions ont été faites pour toutes les concessions. Conformément aux instructions du ministre, British Rail n'a pas été admis à soumissionner. L'idée était que British Rail constitue une solution de repli en cas d'intérêt insuffisant pour l'appel d'offres. Cela n'a pas été le cas. Même s'il n'y a eu que peu d'offres pour les premières concessions, l'intérêt s'est progressivement renforcé.

Le président demande ensuite si on a assisté, après la mise en place des concessions, à des réductions de services. Des lignes non rentables ont-elles été fermées ?

Le délégué du Royaume-Uni explique qu'avant l'appel d'offres, le responsable des concessions avait défini les conditions minimales de service pour chaque concession. Si l'on estimait que certaines lignes étaient déficitaires, ces conditions minimales reprenaient le système existant de British Rail. Si l'on décidait que les services étaient rentables, les accords de concession laissaient plus de marge de manœuvre à la société pour reprendre ces services et administrer des services supplémentaires. Dans ce système, rien n'interdit au concessionnaire de soumissionner pour des services allant au-delà des conditions minimales et de formuler des demandes supplémentaires d'accès aux voies auprès de Railtrack.

Le président résume la procédure en indiquant que les niveaux de service minimum correspondaient à ceux que British Rail assurait auparavant. Les concessionnaires ne pouvaient qu'aller au-delà de ces services, et non les réduire, puisque ces services étaient considérés comme des minima. Le délégué du Royaume-Uni répond en notant que le système ménageait une certaine souplesse, mais que pour l'essentiel, les services existants ont été protégés au cours de la procédure de concession. Les pouvoirs publics savaient qu'il était politiquement difficile de faire autrement.

Le Royaume-Uni est aussi invité à évoquer la façon dont le souci d'éviter l'écrémage a conduit ce pays à limiter la concurrence dans les services de transport de passagers. Le délégué du Royaume-Uni répond qu'il va évoquer, en termes un peu plus généraux, les raisons pour lesquelles le Royaume-Uni n'a pas adopté le système de la liberté d'accès. Dans le projet de loi initial, l'idée était d'adopter une forme limitée de régime de concession parallèlement à la liberté d'accès. En fait, on a abouti à 25 concessions avec toute une série de mécanismes de protection contre la concurrence jusqu'en 1999.

L'autorité de tutelle a donné deux raisons pour ne pas adopter la liberté d'accès en décembre 1994 :

(a) Premièrement, le processus de concession a ouvert en soi la possibilité d'une concurrence à la fois par le chevauchement géographique des concessions et par les lignes alternatives. Par exemple, il y a plusieurs lignes pouvant relier Londres et Birmingham. Environ quatre sociétés différents peuvent exploiter cette liaison, en raison des modalités de définition de la carte des concessions. Il y a aussi une concurrence potentielle sur certaines lignes entre les services express grandes lignes et les services omnibus régionaux normaux. Le Royaume-Uni connaît en fait une concurrence limitée, pour des raisons de prix, entre les trains grandes lignes et les omnibus.

(b) Deuxièmement, le secteur en était à un stade de développement précoce et il était difficile de prévoir les effets d'une concurrence sans limite ou sans contrôle. A l'époque, il y avait une forte hostilité de l'opinion à l'égard de la privatisation des chemins de fer et un grand débat pour savoir si le système pourrait fonctionner. Il fallait avancer avec prudence.

Si le Royaume-Uni était passé entièrement à un régime de liberté d'accès, que serait-il arrivé ? Premièrement, on aurait pu assister à des tensions sur la billetterie nationale, les billets de correspondance, les cartes d'abonnements et l'intercommunication des tarifs sur les différentes lignes. Deuxièmement, il y avait le problème de la stratégie consistant à garder les meilleurs morceaux et, éventuellement, le surcoût de la suppression de la subvention croisée implicite. Bien qu'à l'origine, il n'y ait eu qu'une concession rentable, au fil des ans, un certain nombre de concessions vont devenir rentables. Il y avait aussi les incertitudes découlant de l'hostilité de l'opinion - de ce point de vue, la liberté d'accès aurait créé une incertitude de nature à effrayer les soumissionnaires. Le système actuel donne des garanties au fournisseur d'infrastructures, Railtrack. Les incertitudes risquaient d'être plus grandes quant aux flux de recettes en régime de liberté d'accès, ce qui aurait rendu Railtrack plus difficile à privatiser. Enfin, on craignait aussi l'impact sur les nouveaux investissements. Un certain nombre de concessions étaient dotées de matériel roulant ancien et en mauvais état qu'il fallait remplacer ; or, on a estimé qu'un système de liberté d'accès,

sans aucune protection, dans la période au cours de laquelle on a amélioré le matériel roulant, risquait de porter préjudice aux investissements souhaités.

On a donc préféré introduire un processus en deux étapes, par lequel en 1999, après consultations (ce qui est le cas en ce moment), les concessions pourraient être ouvertes à une certaine concurrence sur leurs lignes à concurrence de 20 pour cent de leurs recettes et ce, sous réserve d'un réexamen complet en 2001 en vue de passer à un régime de pleine concurrence et de liberté d'accès.

Le Royaume-Uni est aussi invité à évoquer brièvement le problème de la "guerre des bus" qui est intervenue au Royaume-Uni après l'introduction de la concurrence dans ce secteur et à indiquer si l'on craint une évolution analogue dans le secteur ferroviaire. Le délégué du Royaume-Uni note qu'il n'y a en fait que très peu d'exemples de liberté d'accès pour la prestation de services de transport de passagers dans le secteur des chemins de fer. Le secteur des autobus au Royaume-Uni a été entièrement déréglementé vers 1985. De fait, tout exploitant d'autobus a pu fournir les services qu'il souhaitait sur n'importe quelle ligne (à l'exception de Londres où la déréglementation s'est déroulée autrement). Du côté positif, ce processus a permis une très forte chute, de l'ordre de 30 pour cent, des charges d'exploitation, dans les premières années qui ont suivi l'introduction de la concurrence. Du côté négatif, le nombre de passagers a continué de baisser suivant un recul tendanciel de près de trois pour cent par an.

Un certain nombre de problèmes ont surgi sous l'effet du fonctionnement concret des services dans le cadre de la concurrence. Le plus grave aura été la guerre des horaires, au cours de laquelle les bus avaient tendance à s'agglutiner à certaines heures aux points stratégiques. Des bus arrivaient en avance et attendaient à l'arrêt jusqu'à ce qu'un concurrent soit en vue dans les rétroviseurs, pour disparaître aussitôt en emmenant tous les passagers alentour. Il y a aussi eu des problèmes de billets de correspondance. Alors qu'avant la déréglementation, il y avait des accords entre opérateurs, ces accords ont été largement rompus après, contraignant ainsi les passagers à acheter un ticket chaque fois qu'ils montaient dans un bus. Il y a eu des distorsions à la vente et des pratiques discriminatoires dans la fourniture des dépôts et l'accès à ces dépôts. En outre, en dehors des heures de pointe, les services ont diminué, les opérateurs se concentrant sur les principales lignes aux heures de pointe. En fin de compte, à mesure que ce processus se développait et que des groupes commençaient à prendre de l'importance, on a assisté de plus en plus au recours à des prix d'éviction, les groupes les plus puissants essayant d'exclure les plus faibles du système.

A Londres, la situation était différente. L'exploitation a fait l'objet de concessions sous la responsabilité d'une autorité stratégique restée entre les mains de London Transport. On a observé que la fréquentation a été maintenue et qu'en raison du système d'attribution des concessions, les opérateurs devaient préserver le système de billetterie générale, la Travelcard (qui permettait de passer d'un opérateur à l'autre et d'un mode de transport à l'autre, à savoir le métro et les services ferroviaires de surface). A Londres, on a observé une progression de la fréquentation de un pour cent par an depuis 1985. On a pu constater une réduction analogue des coûts dans le processus d'attribution des concessions de l'ordre de 30 pour cent ces dix dernières années.

Quelles leçons en tirer pour les chemins de fer ? La situation présente des différences manifestes avec celles des chemins de fer, en particulier pour les contraintes des infrastructures - alors que l'on peut exploiter un bus n'importe où, dans les chemins de fer on subit inéluctablement la contrainte de disposer de certains dépôts stratégiques, de respecter des horaires, etc. Il y a aussi des critères différents en ce qui concerne le matériel roulant et la façon dont on peut l'utiliser sur différentes lignes. Les coûts d'entrée dans le système ferroviaire sont également plus élevés. Toutefois, ce que l'expérience de la déréglementation des bus a montré, c'est que lors du passage à un régime de plus grande concurrence, il faut se protéger de ces facteurs négatifs. De toute évidence, il y a une valeur globale inhérente au réseau lui-même, qui va bien au-delà de chaque concession. Faire partie du réseau est un avantage. L'autre leçon,

c'est qu'on ne constate pas nécessairement plus de réductions de coûts dans un système de liberté d'accès que dans le système actuel de concessions concurrentes. Autre leçon, l'autorité de tutelle doit conserver un rôle actif, en donnant son feu vert aux contrats d'accès au réseau (pour le transport de passagers) de façon notamment à éviter que ces manifestations de guerre des horaires ne deviennent monnaie courante.

Le délégué des Etats-Unis rend compte d'une récente conférence de la Banque mondiale sur les privatisations et les concessions. A cette conférence participaient des concessionnaires qui avaient remporté des appels d'offres en Argentine et dans d'autres pays. L'une des conclusions de cette conférence aura été la conviction que les concessions ne devaient pas porter sur moins de 15 ans, les concessionnaires recherchant des accords de 20-25 ans. On a par ailleurs constaté qu'un concessionnaire n'est plus enclins à investir des les trois à cinq dernières années d'une concession en raison de l'incertitude quant à la reconduction de la concession. Ces observations semblent s'appliquer de façon générale aux concessions, indépendamment de l'état des infrastructures.

III. Améliorer la réglementation et la politique de la concurrence dans les chemins de fer

III. 1 Réglementer de façon efficiente la tarification des chemins de fer

Que peut-on tirer de l'expérience en ce qui concerne la faisabilité et l'utilité de plafonds de prix et d'une réglementation de référence dans le secteur ferroviaire ? Les autorités de tutelle doivent-elles tenir compte de l'état de la demande lorsqu'elles déterminent les prix réglementés de l'accès au réseau ou des services ferroviaires ?

M. Kessides est invité à donner une appréciation des problèmes de réglementation dans le secteur des chemins de fer, aussi bien pour ce qui est des prix que de l'élimination des pertes. M. Kessides répond en notant que lorsque les chemins de fer ne génèrent pas des recettes convenables, il faut y réfléchir à deux fois avant d'imposer une quelconque surveillance par les autorités de tutelle. En général, pour que des prix soient économiquement raisonnables, ils ne doivent jamais être incompatibles avec ce critère d'adéquation des recettes. Les économies considérables d'échelle et d'envergure dans le secteur des chemins de fer posent plusieurs problèmes pour la réglementation. Sans doute la question la plus irritante est celle de l'attribution des coûts - le fait qu'il est impossible d'attribuer, de façon non arbitraire, une part des charges fixes et courantes à l'une ou l'autre des différentes activités des chemins de fer. Il n'y a aucun moyen d'attribuer ces coûts partagés de production d'une façon mécanique qui soit unique et qui obéisse à la logique économique.

Malheureusement, les autorités de tutelle ont toujours attribué les coûts en s'appuyant sur des méthodes dites d'affectation intégrale des coûts. Dans le cadre de ces méthodes, les autorités de tutelle attribuent les coûts partagés de production en fonction d'une quelconque base commune d'utilisation, comme les tonnes-miles brutes, etc. Le principal problème de l'affectation intégrale des coûts, c'est qu'elle sur ou sous-attribue une part des charges fixes ou courantes à certains services. Or, si des chemins de fer sont contraints d'appliquer une tarification en fonction d'une affectation intégrale des coûts à leur trafic, ils perdent alors la part du trafic pour laquelle la demande ne peut pas supporter le prix affecté. Le malheur, c'est bien entendu que les clients restants sont encore moins bien traités puisqu'ils subissent une augmentation de la part des charges non attribuables à la couverture de laquelle contribuait le trafic ainsi perdu.

Heureusement, ce problème a une solution apportée par la méthode de tarification de Ramsey. Cette méthode répartit les frais de production partagés des chemins de fer entre ses nombreux services en

fonction des caractéristiques de la demande. Cela étant, il faut admettre que les chemins de fer soient soumis à une concurrence inter-modale suffisante dans sans doute la majeure partie de leurs activités. Comme précédemment, pour ces activités, il n'y a pas besoin de contrôle de la réglementation. Reste la question du type de plafonnement des prix ou des types de contrôle il faut appliquer aux activités dans lesquelles le chemin de fer exerce une domination sur le marché.

L'un des régimes les plus prometteurs pour protéger les chargeurs captifs réside dans la "tarification de marché sous contrainte" (la formule est de M. Kessides). Pour l'essentiel, les chemins de fer sont habilités par la tarification de marché sous contrainte à adopter la tarification de Ramsey, mais ces prix de Ramsey sont soumis à la contrainte de respecter un plafond qui est déterminé au plus faible des deux, soit par le critère d'adéquation des recettes, soit par le critère du coût dit isolé. Le coût isolé est le coût de service d'un chargeur captif ou d'un groupe de chargeurs qui bénéficie du partage des charges conjointes et courantes, comme si ce chargeur ou ce groupe de chargeurs était isolé des autres clients des chemins de fer. Les chemins de fer doivent être libres de fixer des prix ayant un plafond constitué par le coût isolé et un plancher déterminé par le critère du coût différentiel. Entre le plafond et le plancher, les chemins de fer doivent pouvoir appliquer des discriminations de tarifs de Ramsey entre leurs clients captifs. Il convient en outre de noter que l'application du plafond par les coûts isolés interdit aussi les subventions croisées.

III. 2 Les problèmes de concurrence dans le secteur des chemins de fer

Quel est le rôle des autorités de la concurrence dans le secteur des chemins de fer et quels sont les problèmes spécifiques qu'elles y rencontrent en ce qui concerne les fusions, les abus de position dominante et la lutte contre les collusions ?

La Suède est invitée à décrire quelques interventions des autorités suédoises de la concurrence. Le délégué suédois commence par souligner que lorsque l'on parle de concurrence dans les chemins de fer, c'est d'une concurrence réglementée. Il n'est pas possible par exemple, d'envisager dans l'immédiat une libéralisation comme celle qui est intervenue dans les télécommunications. Le rôle des autorités de la concurrence est donc assez complexe. Même si le droit de la concurrence est entièrement applicable au secteur des transports ferroviaires, ce qui est le cas en Suède, cette application est en même temps limité par la réglementation spécifique du secteur qui y prévaut. A cet égard, le délégué suédois souligne un rôle très important des autorités de tutelle - celui du plaidoyer pour la concurrence. Si la réglementation propre au secteur limite ou fausse la concurrence, il peut y avoir un appel à l'intervention des autorités de la concurrence, à tout le moins en vue d'une surveillance ou d'un suivi, mais aussi pour un dialogue avec les autorités de tutelle ou le ministère responsable. La Suède a par exemple des limitations de la concurrence pour les transports à longue distance par autocars. Pour ouvrir une nouvelle ligne dans ce secteur, il faut avoir une autorisation préalable du ministère. A l'occasion de cette décision, un élément pris en considération est l'effet sur la concurrence avec les chemins de fer. Une proposition a été formulée en vue de supprimer cette obligation. Les autorités de la concurrence ont plaidé pour cette solution.

En Suède, les fusions ne posent pas de problème dans la mesure où elles n'ont pas été tellement libéralisées. Il en va de même des collusions. Toutefois, le délégué note que les autorités de la concurrence verraient d'un œil assez favorable les soumissions conjointes pour contrebalancer la domination des chemins de fer publics suédois, actuellement en place.

Autre problème, l'abus de position dominante. Ce n'est pas surprenant, puisque c'est le problème de tous les marchés d'infrastructures ayant connu une déréglementation récente. En l'occurrence, le problème tient au fait que la société dominante, les chemins de fer publics, remporte quasiment toujours les appels d'offres parce qu'elle a les wagons de chemins de fer nécessaires à pratiquement toutes les activités et

qu'elle peut en outre survivre avec des périodes contractuelles relativement brèves. Un contrat d'un ou deux ans n'est pas suffisant pour inciter de nouveaux venus à consentir les investissements assez lourds nécessaires et même quatre ans est sans doute encore trop peu. Une affaire spécifique de concurrence qu'a connue la Suède porte sur un abus de position dominante. Elle a trait à des prix d'éviction au cours d'une procédure d'appel d'offres. Les chemins de fer publics ont été accusés de présenter une offre trop bon marché, un concurrent leur reprochant de pratiquer des prix d'éviction.

Le délégué poursuit en mettant en relief un problème lié à la disponibilité de l'information. L'obligation de séparer la comptabilité entre les opérateurs et l'infrastructure a été évoquée. Il faudrait aussi une obligation pour la société en place de savoir répartir les charges en fonction des lignes ou des activités pour lesquelles elle soumissionne. L'autorité suédoise de la concurrence a eu des difficultés pour obtenir des données et les éléments nécessaires pour analyser cette affaire particulière. En effet, les chemins de fer publics ne disposent pas d'un système interne de comptabilité permettant ce type de répartition des charges. On peut donc se demander sur quoi reposent les offres que les chemins de fer publics ont présentées.

Le délégué italien explique que les interventions des autorités italiennes de la concurrence dans le secteur des chemins de fer ont porté sur le comportement des *FS* aussi bien du côté de l'offre que de la demande. La forte présence de *FS* sur des marchés liés verticalement et horizontalement a suscité des craintes d'une atténuation de la concurrence. Les tentatives de monopolisation, de restrictions verticales et de discrimination ont constitué les principales préoccupations de trois procédures et d'un avis relatif à la fourniture de services de transport. Mais surtout, la relation entre *FS* et ses fournisseurs a aussi suscité des problèmes de concurrence et a donné lieu à quatre procédures. La procédure à l'encontre de Capri Consortium, Trevi Consortium, TAV et Fercomit (entente horizontale entre les principaux fournisseurs nationaux) témoigne de l'impact des pratiques d'achat de *FS* sur les coûts, du fait de l'absence de vérifications et de contraintes efficaces sur le comportement de la société. On peut se faire une idée approximative des distorsions liées à la distribution des rentes de monopole de *FS* à ses fournisseurs avec l'affaire des voitures des trains à grande vitesse. La procédure antitrust contre Capri Consortium et la mise en conformité qui a suivie avec la réglementation européenne sur les marchés publics a entraîné une réduction des prix de 30 pour cent environ et une augmentation estimée à quelque 225 milliards de lires de l'excédent des consommateurs.

Dans une certaine mesure, l'application des règles de la concurrence a compensé le manque d'incitations pour la société de chemins de fer a réduire ses coûts et à améliorer ses résultats. Toutefois, des modifications plus profondes de la structure juridique et économique actuelle du secteur devront être introduites pour améliorer suffisamment l'efficience et la qualité des prestations de services de transport au profit, en dernière analyse, du contribuable comme du consommateur final.

Il y a eu deux autres types d'interventions des autorités italiennes de la concurrence : premièrement, des interventions sur l'extension et le renforcement d'une position dominante et des interventions concernant la restriction verticale et le comportement discriminatoire favorisé par une présence simultanée sur le front des infrastructures et sur celui des services. Le risque de monopolisation a conduit à une procédure contre le projet d'acquisition d'une société régionale d'autocars par *FS*. En Italie, le droit d'exploiter des services d'autocars sur des marchés régionaux et locaux est attribué par concession à un opérateur unique. Si *FS* détient une position dominante à la fois sur les marchés des chemins de fer et des autocars, l'intégration entre les systèmes d'autocars et de chemins de fer peut servir d'instrument pour parvenir à une plus grande efficience interne en remplaçant le rail par l'autocar lorsque les taux d'occupation sont faibles. Cela étant, cette intégration faisait courir le risque d'étendre la position dominante de *FS* dans les

chemins de fer lorsque les marchés sont géographiquement contigus et de renforcer sa position dominante en cas de chevauchement des lignes d'autocars et de chemins de fer.

Les restrictions verticales et les discriminations ont été au centre de deux procédures relatives au transport de fret. Dans ces deux affaires, *FS* pouvait profiter de sa position dominante sur les marchés ferroviaires compte tenu du contrôle que la société exerce sur l'infrastructure pour privilégier ses activités sur des marchés verticalement liés. C'est ainsi que *FS* a mis sur pied un système de tarification taillé sur mesures pour introduire des discrimination en faveur d'une société qu'elle contrôlait et qui intervenant comme transporteur de fret. Ces deux dernières affaires constituaient des illustrations intéressantes des distorsions pouvant découler de relations verticales.

Le délégué des Etats-Unis donne des précisions sur l'application du droit américain de la concurrence dans ce secteur. Lors de la déréglementation aux Etats-Unis, un organisme public indépendant et relativement petit a été créé : le Surface Transportation Board. Sa mission consiste à "mettre de l'huile dans les rouages". Il s'occupe notamment des fusions. Aux Etats-Unis, les fusions dans le secteur ferroviaire relèvent du STB et non du ministère de la Justice ou du ministère des Transports. Les décisions y sont prises dans le cadre de procédures et de normes légèrement différentes de celles de la législation antitrust générale. Les fusions dans les chemins de fer doivent recevoir l'autorisation préalable du STB et ses décisions doivent reposer sur les éléments fournis au cours de la procédure. Il y a divers délais de constitution des dossiers et d'organisation des auditions. Le STB dispose de 90 jours pour rendre ses avis.

Lorsqu'il s'agit de prendre position sur une fusion, cet organisme doit tenir compte *(a)* des effets de l'opération proposée sur l'adéquation des transports pour le public ; *(b)* des effets sur l'intérêt général de la participation ou de la non-participation d'autres sociétés de chemins de fer ; *(c)* du total des frais fixes résultant de l'opération ; *(d)* des intérêts de la société de chemins de fer et de ses salariés susceptibles d'être affectés ; *(e)* de la question de savoir si l'opération proposée aura des effets négatifs sur les sociétés de chemins de fer de la région ou sur le système national des chemins de fer ; enfin, *(f)* de celle de savoir si la fusion aura des effets négatifs sur la concurrence. Le STB doit approuver une fusion si elle est conforme à l'intérêt général. Toutefois, le STB peut imposer des conditions à une fusion afin d'en atténuer les effets négatifs. C'est ce que le STB a fait lors d'une récente fusion entre deux très grandes compagnies. L'approbation du STB prime sur d'autres textes susceptibles d'être invoqués pour contester la fusion, comme des recours antitrust, le droit du travail, la réglementation environnementale, etc. Les parties peuvent contester l'application par une société de chemins de fer des termes de l'autorisation, mais non la fusion elle-même.

Lors des fusions dans les chemins de fer décidées depuis 1980, le STB et son prédécesseur l'ICC ont en général mis l'accent sur les effets de la fusion sur les chargeurs. Ils n'ont imposé des conditions de concurrence comme la cession de lignes ou l'octroi de droits de circulation que lorsque le nombre de sociétés indépendantes de chemins de fer servant un chargeur donné serait revenu de deux à un. Le STB a estimé que la présence de deux sociétés est suffisante pour assurer une concurrence pour des chargeurs sans autre solution de rechange en matière de transport et, dès lors qu'il y a concurrence, la promesse d'économies de coûts résultant d'une fusion en fait une opération d'intérêt général. Les salariés qui perdent leur emploi à la suite de la fusion sont habilités à recevoir une indemnité aux termes de la loi. Si le STB approuve un projet de fusion, cette dernière peut se dérouler, mais la société de chemins de fer et les syndicats sont tenus de négocier des conventions d'application couvrant des problèmes comme les listes d'ancienneté en cas de fusion de personnel. Lors de la fusion entre l'Union Pacific et la Southern Pacific qui a été autorisée l'an dernier, bien que la plupart des droits de circulation aient été attribués au seul grand concurrent de l'Union Pacific dans l'Ouest des Etats-Unis, d'autres droits de circulation ont été accordés à certains réseaux secondaires et à d'autres sociétés de chemins de fer qui auraient été sinon exclus du marché.

Un autre délégué des Etats-Unis évoque ensuite cette fusion entre l'Union Pacific et la Southern Pacific, approuvée en juillet dernier. Le ministère de la Justice est intervenu dans cette procédure et a demandé au STB de ne pas autoriser cette alliance, et au minimum, d'imposer de nombreux désinvestissements. Il s'agissait d'une fusion qui concernant des voies parallèles des deux sociétés et, dans bien des cas, les chargeurs, auparavant servis par deux ou trois sociétés ne le seraient désormais que par une ou deux sociétés. La solution retenue par le STB a consisté à accorder des droits de circulation sur 6 000 kilomètres. Le ministère a estimé que la formule de calcul de ces droits était mauvaise. En outre, le ministère de la Justice craignait des problèmes d'organisation verticale du marché, la nouvelle société de chemins de fer à créer pour assurer la concurrence étant soumise à un contrôle de l'exploitation de ses voies par son concurrent, ce qui rend difficile d'instaurer une situation correspondant à une concurrence entre deux sociétés indépendantes.

IV. Conclusion du président

Le président présente ses conclusions à l'issue de la discussion. Ce qui est très clairement ressorti de la discussion, c'est que l'action des pouvoirs publics vis-à-vis des services ferroviaires est guidée par des objectifs non économiques, comme la garantie du service de zones éloignées ou la fixation de tarifs inférieurs aux coûts. Ce qui est aussi manifeste, c'est que d'une façon ou d'une autre, les conditions ont changé. Différents pays reconsidèrent la façon dont ils entendent financer ces obligations de service universel et la façon dont le secteur des chemins de fer doit être organisé.

Toutefois, le débat ne permet pas pour autant de conclure à une solution à appliquer sans approfondir la question. Selon la CE, la séparation entre infrastructures et services de transport correspond à la bonne configuration institutionnelle. Cette discussion ne conduit pas très loin si l'on n'aborde pas aussi la question de la tarification. Lorsque l'on débat de l'évolution dans le secteur des télécommunications par exemple, la première chose qui vient à l'esprit des autorités de tutelle et dans l'ordre du jour des pouvoirs publics, c'est la tarification. Cette fois, ont été uniquement débattues les questions institutionnelles, la séparation, mais n'a pas été abordé la tarification. Il est étonnant de constater que la Directive qui a obligé les Etats membres à introduire ce type de séparation, n'évoque pas la tarification. Si nous ne prévoyons pas une récupération convenable des coûts, comme l'a indiqué M. Kessides, pour les services d'infrastructure, ces services seront fournis moyennant de lourdes pertes. Il semble qu'il y ait une volonté de séparation motivée par le souci de mettre les dettes ailleurs et de laisser les pouvoirs publics intervenir et s'occuper des pertes. Les choses ne sont pas si faciles. Après cette séparation, il faudra trouver une solution au problème des tarifs, que nous voulions ou non nous orienter vers une forme de tarification régie par la demande.

De toute évidence, il y a une concurrence inter-modale dans les services de transport. Nous avons vu qu'il y avait des services d'autobus, des avions, des voitures, des taxis, des camions, des transports maritimes, etc. Comme on a permis aux tarifs d'être très éloignés des coûts, ils faussent la concurrence inter-modale. C'est difficile pour d'autres sociétés de concurrencer le transport ferroviaire en ce qui concerne les services aux consommateurs. La plupart des autres secteurs ne sont pas subventionnés.

Ce que nous souhaitons, c'est un régime tarifaire dans les chemins de fer (aussi bien pour le fret que pour les passagers) qui ait le moins possible d'effets restrictifs sur la concurrence. A cet égard, ce que M. Kessides a dit sur la nécessité d'une souplesse entre le coût isolé et le coût différentiel et de laisser les sociétés de chemins de fer choisir quel est le tarif le plus adapté aux marchés sur lesquels ils opèrent, est une des solutions qui produit le moins d'effets restrictifs sur la concurrence.

L'expérience des autorités antitrust italiennes montre que les chemins de fer ne semblent pas avoir pour objectif de minimiser les coûts. Cela s'explique par les nombreux objectifs non économiques qu'on leur assigne - aussi bien vis-à-vis des salariés que des fournisseurs. C'est d'ailleurs aussi l'expérience de nombreux autres pays, peut-être pas au même point. C'est en tout cas l'un des principaux problèmes auxquels nous nous heurtons.

Un autre problème important consiste à savoir comment introduire la concurrence. Nous ne savons pas encore si la meilleur solution pour organiser le système consiste à recourir aux concessions ou à une séparation géographique ou verticale. Ces deux structures institutionnelles ont des avantages et des inconvénients. Nous pouvons tirer parti de plusieurs expériences à cet égard : L'expérience japonaise d'une part, pour la séparation géographique et l'expérience du Royaume-Uni, pour les concessions.

Néanmoins, le point de départ de l'introduction de la concurrence consiste à éliminer les pertes. Une voie dans ce sens réside dans la transformation en société, qui, nombre d'intervenants l'ont dit, est la première étape de l'introduction d'un régime de concurrence. Par la transformation en société, on peut se donner plus de chances que ces sociétés s'assignent un objectif de minimisation des coûts. Il faut instaurer une situation dans laquelle les coûts des obligations de service universel sont bien définis et bien compris et on lance ensuite un appel d'offre pour la prestation de ces services au moindre coût. En outre, il faut donner plus de liberté aux sociétés de chemins de fer pour la fixation de leurs tarifs. Avec ce type de régulation, les sociétés peuvent avoir de bonnes raisons de promouvoir l'efficience et d'améliorer la qualité des services.

Autre leçon de cette table ronde, on a pu observer que, hormis aux Etats-Unis, aucun pays n'a connu de réduction des services à l'occasion du processus de déréglementation. Lorsque les sociétés ont été privatisées ou lorsque la concurrence a été introduite, ces sociétés n'ont pas été autorisées à réduire les services. Les services non rentables n'ont pas été abandonnés. Comme l'a indiqué le délégué du Royaume-Uni, les services qui étaient auparavant assurés par la société publique sont devenus le service minimum pour les nouveaux concessionnaires. On semble considérer que le niveau des services ne peut pas changer en raison d'innovations technologiques, d'évolutions de la demande ou de changements d'habitudes. On pense que le niveau des services est fixe ou qu'il ne peut qu'augmenter. C'est assez curieux. Dans tous les autres secteurs de l'économie, on voit l'offre augmenter quand la demande augmente et l'offre se réduire quand la demande n'est pas prête à absorber l'offre. Ici, on est soumis à une contrainte. L'offre augmente quand la demande augmente et quand la demande diminue, on doit continuer de fournir des services malgré la décrue du nombre de passagers. C'est un problème qu'il faudra analyser avec soin lorsque l'on voudra mettre en place un système plus efficient.

EXECUTIVE SUMMARY

Note by the Secretariat

Looking back over the discussion, the background papers and the 16 country submissions, the following key points emerge:

- *The Performance Of The Rail Sector In Many OECD Countries Has Been Poor*

  In many OECD countries, the rail sector suffers from low productivity and large deficits (despite sizeable government subsidies). As an illustration, the average revenue per employee of freight transport services by railways of Britain, France, Italy and Germany in 1994 was between $43 000 for France and $19 500 for Italy, compared with $155 000 in the US. More generally, in France, Italy and Spain, revenue collected by railways amounts to only half of the operating costs. In Italy, revenues do not even cover one third of costs.[1] In 1994 the total debt of the Italian national railway alone amounted to 4.9 per cent of Italy's national GDP.[2]

  Around the world, the share of the railway sector in the total transport market has declined substantially over the past 50 years. In part, this is due to the rise of other, more flexible and less expensive modes of transport that offer attractive alternatives in both the freight and passenger sectors of the market (e.g., buses, trucks, aircraft, private car) and in part, this is due to the failure of the rail sector to respond to the competitive challenge. In turn, this failure to respond can be attributed to problems in the ownership and incentive arrangements facing railways.

- *The Poor Performance Of Railways Can, In Many Countries, Be Attributed To A "Soft Budget Constraint"*

  A firm faces a "soft budget constraint" when it is partially or fully insured against the impact of bankruptcy. Under such circumstances, the firm's incentives to minimise costs, shed excess labour, improve services or develop new and innovative products, are dulled. The Italian experience was vividly described in the Italian submission:

  > "... FS's low performance ... seems to result from the existence of a weak budget constraint on the company's behaviour. In such a situation there are no significant incentives for the company to efficiently allocate internal resources in order to reduce the costs of providing services at the required quality standards. Such features also favour a particularly slack relationship between FS and its suppliers. ... [I]n the Italian rail industry a significant share of the monopolistic rent appears to be split among a large number of different players, including managers, employees, suppliers and final consumers, whose vested interests are at present the strongest obstacle to any structural reform aimed at introducing competition and promoting economic efficiency."[3]

  Importantly, the presence of a "soft budget constraint" on one firm in an industry will act as a significant deterrent to new entry from competitors who face a "hard budget constraint" and must earn a competitive rate of return on the capital they employ.

With a few important exceptions, virtually all of the major railway firms in OECD countries remain state-owned. Depending on the institutional arrangements, the degree of independence of the firm and the relationship with the state, state-ownership alone can soften a firm's budget constraint. Whenever the state indicates to the firm that it wishes the firm to place at least some weight on objectives other than profit-maximisation (e.g., to retain labour) and where the costs of those actions are not explicitly identified in advance, then the firm has an excuse for no longer earning a competitive rate of return and, as a result, faces a softer budget constraint.

- *The "Soft Budget Constraint" Is Partly A Result Of A Lack of Transparency In The Costs Of "Public Service" Obligations*

  Unfortunately, in many countries, railways have historically been asked to pursue a number of objectives other than profit-maximisation. The costs of these "public service" obligations have seldom been objectively verified. As a result railway companies have had a secure justification for poor performance and large losses.[4]

- *Action To Improve The Performance Of Railways And To Introduce Competition, Therefore, Should Seek To (a) Improve the Commercial Incentives On Railways (b) Address the Public Service Obligations*

  In the light of the above, it can be seen that that action to improve the performance of railways requires addressing the commercial incentives on railways[5] (i.e., hardening the budget constraint) and the transparency of public service obligations.[6]

  The commercial incentives on railways can be improved by distancing the firm from the Government. Preferably, the railway should be owned and operated by a private-sector firm. Where this is not possible the railway should be corporatised (i.e., formally established as a joint-stock company) with an explicit mandate to operate in a commercial manner.

  In many countries, however, (especially those without some mechanism for ensuring that the arms-length separation of the firm from the state is maintained) this will not be sufficient. In these cases inducing full commercial incentives will not be possible unless the railway is wholly or partly privatised[7].

  Furthermore, it will not be possible to instil normal commercial incentives where the level of debt carried by the firm is so large as to make bankruptcy inevitable. The reform process should therefore involve establishing the rail firm with appropriate debt levels.

  Lastly, management should be granted the normal discretion of managers to operate the firm in a normal commercial manner. In particular, the managers should be permitted (and, indeed, encouraged) to use price-discrimination (i.e., charging for services on the basis of the elasticity of demand).

- *Action to Address Public Service Obligations Should (a) Subject Them To A Careful Review With A View to Their Elimination Wherever Possible and (b) Increase the Transparency Of The Costs Of Such Obligations*

  As highlighted above, public service obligations have been a justification for implicit subsidies and a cause of softening of the budget constraint.

Determining the costs of public service obligations is not easy. Such information cannot be found by examining the accounts of the incumbent firm. The true cost of providing public service obligations is the long run cost of an efficient firm using the most efficient technology and the efficient level of capital. Even if it were possibly to force the incumbent railway to reveal how much it costs to provide a particular service, it is possible that the incumbent railway is not using the efficient mix of inputs or not clear whether, in the long run, it is efficient for the service to be provided by a railway at all (and not, say, replaced by a bus service). To make matters worse, the incumbent firm has an incentive to mis-represent the true costs. Even if separate accounting systems are maintained, costs and revenues can be shifted from one division of a firm to another through internal transfer pricing practices that are not easily detected. In practice, the only reliable method of determining the cost of providing a public service obligation is to make the funding for that service contestable, through a tender, auction or franchising process.

In any case, "public service" obligations should be subject to careful scrutiny as their public policy foundation is often weak. For example, it is usually inappropriate to subsidise rail transport simply because it produces less pollution than road transport (and road users do not pay the pollution costs) - doing so merely *(a)* increases the overall demand for transport, possibly increasing total pollution levels and *(b)* distorts competition with other transport modes (who can legitimately demand their own subsidy). If road users do not pay currently pay for their resultant pollution costs, they should, as far as possible, be made to do so.

The one possible exception to this principle is when current technological developments make charging for the externalities caused by other transport modes infeasible. An example is charging for the congestion costs imposed by private vehicles in large cities. Until it is technologically feasible to charge for travelling in a private vehicle at peak times, it may be socially efficient to subsidise other transport modes.

- *With A Few Exceptions, The Rail Industry Faces Significant Inter-Modal Competition*

  At the broadest level, it is clear that rail competes as one element of a wider market for transport services, of which rail comprises a small (and declining) share. However, as with all competition analysis, it is very important to define the specific markets within which rail operates. We can distinguish markets within which rail operates on many different dimensions — we may distinguish between freight and passenger markets and between markets for transport services between pairs of geographic locations . In addition, markets may be distinguished by quality of the service (speed, time of day, refrigerated, etc.). Importantly, there will be different markets for the freight transport of different goods - the market for the transport of cut flowers, for example, having different demands than the market for the transport of coal.

  However, although there is the possibility of exceptions in individual cases, it is clear that within most (perhaps all) of these markets rail faces significant inter-modal competition. On the passenger side, there is competition from buses, planes, bicycles, ferries and the private car. On the freight side, rail faces competition from lorries, barges, shipping, aircraft and pipelines. In specific cases (such as the transport of newspapers), rail also competes with electronic means of distribution.[8]

  In summary, although the details will vary from country to country (due to, say, population density and geographic conditions), it is difficult to specify, at the general level, any particular product or service for which rail could be said to have a dominant position. On the contrary, the evidence available suggests that rail's share of the total transport market is too small to be of regulatory concern.

- *As A Result, Regulatory Intervention Should Be Light-handed and Focused On Those Markets In Which The Dominance of Rail is the Most Important*

  Wherever rail faces adequate intermodal competition sector-specific or heavy-handed regulatory intervention is unnecessary. Rail should be left to compete in the market on its merits. [9]

  Regulatory intervention, where it can be justified, should be focused only on those markets in which rail could be said to have a dominant position.

  In those countries without an effective charging system for road-users, it is true that road transport may face a competitive advantage. However, as argued earlier, this should be addressed through road policy and not rail policy. The alleged competitive advantage of roads strengthens rather than weakens the case for deregulation of rail transport.

- *In Some Circumstances There May Be Opportunities for Facilities-Based Intra-Modal Competition. These Opportunities Could Be Enhanced Through Attention to Industry Structure In The Reform Process*

  Often, especially over longer distances and especially when multiple transport modes are considered, there is more than one viable route between two points. Where there is more than one viable route between two points there is at least the potential for facilities-based competition in rail. For example, a shipment from Japan could be landed at one of several ports on the West coast of the USA and transported over a number of different rail routes to New York. Where these alternative routes are operated by independent carriers they will offer a degree of inter-modal competition to each other.[10]

  Therefore, in the reform process, some consideration should be given to horizontal separation of the incumbent national carrier, so that where viable alternative routes between major markets exist (whether multi-modal or entirely within the rail mode), these are served by at least two independent carriers. In many cases no further sector-specific regulatory interventions will be required. Such horizontal separation (with corresponding intra-modal competition) has occurred in Mexico and the UK.

  We note, however, there are at least some economic disadvantages from such separation. In particular, there may be some consumer benefits from the operation of an integrated network (simplified ticketing and timetabling, for example). In addition, despite competition between networks over longer routes, each network may retain a degree of market power over destinations that fall completely within its network. As a result, prices for routes that cross two or more networks may exceed the monopoly price - due to the familiar problem of "double marginalisation".[11] Lastly, it may be necessary to address issues of access to shared facilities. [12]

- *On-Track Competition in Rail Services May Be Achieved By Regulating To Ensure Access to the Rail Infrastructure*

  As was noted earlier, where there is adequate inter-modal competition, it will not be appropriate to introduce further regulatory interventions. However in those limited markets where inter-modal or intra-modal competition is limited, it may sometimes be possible to introduce a degree of on-track competition by regulating to ensure access of competitors to the rail infrastructure.

As has been noted several times, investment in rail infrastructure is a highly substantial sunk cost that accounts for a substantial part of the sunk costs of entering the rail industry. These sunk costs, combined with the significant economies of scale in rail, represent a significant barrier to entry. If competitors can have access to existing rail infrastructure, a substantial barrier to entry is removed.

Such "access rights" have proved important tools for competition in rail and other sectors. As they do not involve structural intervention in the industry, the access rights can be flexible and evolve over time as demand and technology conditions alter the extent and location of the "natural monopoly". However, it is important to recognise that this form of regulatory intervention is not without significant problems. In particular, there are likely to be problems relating to:

(a) the determination of the price charged for access to the rail infrastructure of the competitor;

There is a very wide range of prices which are consistent with economic efficiency in such circumstances. Experience shows that railways are able, in some circumstances, to negotiate reciprocal "trackage rights" allowing access to each others networks. In such circumstances economic theory shows that the access price can be used as an instrument of collusion to keep final prices high.

In the case when the entrant is providing a service which partially duplicates a service provided by the incumbent, the incumbent has strong incentives to charge an access price sufficiently large to exclude the entrant. We know from the growing economic literature in this field that, in this case, the access price should not be greater than the retail price that the incumbent charges for the service less the incumbent's incremental cost - i.e., no more than the price given by the "Efficient Component Pricing Rule".

In any case, the price for access should depend upon the demand for the services provided by the entrant - i.e., the incumbent should be able to freely price discriminate, at least within certain limits. The incumbent should not be able to charge less then the incremental cost of providing the access service and should not be allowed to charge more than the stand-alone cost of providing that service.

Even where the pricing formula is agreed, it may be difficult to obtain the necessary information about incremental costs and joint costs from the incumbent, especially as such information is not available in the companies accounts, and the incumbent has strong incentives to misrepresent the results.

(b) controlling the incentives for the incumbent to delay, obstruct or lower the quality of the service provided;

Even where the pricing formula is agreed, the incumbent will typically find it in his or her interests to use every means at his or her disposal to obstruct the development of competition, including delays in negotiation and litigation. In order to reduce the opportunities for ex post opportunism, the contractual arrangements between the firms will, of necessity, need to specify in detail the terms and conditions under which access is provided and mechanisms for resolving disputes that arise during the term of the contract. Disputes are virtually inevitable, both *ex ante* (before the contract is signed) and *ex post*. These disputes may be protracted and costly.

(c) losses in economies of scope.

Inevitably, there are economies of scope in the joint operation of rail infrastructure and train services (these are discussed further below). The introduction of an access regime will inevitably result in the partial loss of these economies of scope.

To an extent, the problems addressed above can be ameliorated by putting in place mechanisms for yielding information on the incumbent railroads costs (i.e., information disclosure mechanisms - the EC requirement for accounting separation of the rail infrastructure operation can be seen in this light) and mechanisms for swift and effective dispute resolution (without compromising the quality of decisions).

- *A Primary Decision of Rail Policy Makers Is Whether To Go Further And To Separate The Ownership Of The Rail Infrastructure From The Rolling Stock.*

The willingness of the infrastructure operator to deny access can be reduced by separating the ownership of the infrastructure from the operation of rail services. Indeed, a rail infrastructure operator has an incentive to actively promote the use of its infrastructure.[13] Vertical separation of this kind has been adopted, or is being considered, in several countries. However, there are several real disadvantages that should be noted:

(a) The loss of economies of scope;

This was ably described by Kessides and Willig:

"The provision of many innovative and market-responsive rail services may require specific investment in infrastructure, such as maintenance or upgrading of way and structure facilities, construction of loading and transhipment facilities and building spurs of track to reach a shipper's location. It may be difficult for any operator (or retailer) to co-ordinate, as necessary, with the infrastructure monopoly (or wholesaler) entity, especially if their incentives with respect to investment behaviour are not in harmony. ...

Efficient, safe, and delay-minimising utilisation of track and yard facilities by trains cars, and shipments requires close co-ordination in accordance with priorities that are driven by considerations of both operations and shipper sensitivities. Competing operators (or retailers) will compete vigorously and acrimoniously over scarce or congested infrastructure facilities (or wholesaler services), and constantly sorting out their claims will be important for the overall efficient and responsive operation of the rail system."[14]

(b) Reduced ability to price discriminate;

The infrastructure operator may not be able to discriminate as efficiently in its charges to its customers, as it inevitably has less information about the demand for the services of the train operators. One consequence is that some services will become unprofitable even though they would be profitable if charged at incremental cost. This is particularly important in the provision of marginally profitable services (which may include some "public services").

If it is true that rail faces significant inter-modal competition, the opportunities for profitable competitive entry will be relatively limited. Viewed in this light, the policy option of vertical separation is a relatively significant regulatory intervention for relatively little gain. Although there

are both advantages and disadvantages associated with vertical separation, on balance, the advantages do not yet clearly outweigh the disadvantages.

It is possible that, in some countries, vertical separation is viewed as a politically-expedient mechanism for introducing competition into rail services without the need to actively address the issues of public-service obligations (the public service obligations could be folded into the infrastructure operator and subsidised, indirectly, by the state). Although this approach may, in some circumstances, be preferable to no reform at all, it is not without costs. In particular, the problems identified above with vertical separation will be significantly greater in the context of an infrastructure operator with limited commercial incentives for new investment and explicit or implicit controls on pricing.

As mentioned below, vertical separation can also be a tool for ameliorating the disadvantages of other regulatory approaches. In particular, separation of the infrastructure can overcome the problems associated with the reduced incentives of a franchisee to maintain the infrastructure towards the end of the franchise period.

- *Where Sector-Specific Regulation Must Be Retained (e.g., Due to Public Service Obligations) Price-Caps On A Basket of Services Are Preferred Over Traditional Price Controls.*

  In some circumstances (such as the need to control the prices of commuter services into a large city) sector-specific regulation may need to be retained. In these circumstances, it is preferable to establish a ceiling on a basket of prices, and allow the rail firm flexibility within that basket rather than controlling individual prices. The rail firm can exploit the flexibility to price discriminate in an efficient manner.

  Some countries have chosen to periodically tender for the right to provide services subject to these caps (i.e., to tender for the franchise). This approach is consistent with the conclusions set out above. The tendering process both reveals the true costs of meeting the public service obligations and selects the most efficient provider. In addition, the successful bidder faces the full normal commercial incentives for cost minimisation. A further benefit is that the franchising contract, in effect, binds the state, allowing the state to commit to make specific investments in infrastructure or to not, say, alter the terms of the price cap in order to capture some of the benefits of the franchisee's cost efficiency.[15]

  However, franchising is not without its problems. In particular, if the franchise period is short, (or in any case, as the end of the franchise approaches) and if the franchisee considers there is a non-negligible probability that the franchise will not be renewed, then the franchisee's incentives to make investments which extend beyond the life of the franchise are significantly diminished. Such investments might include the purchase of new rolling stock or maintenance/improvements to the rail infrastructure.

  These problems can be overcome through an outright sale of the right to provide the service. This approach therefore seems preferable to franchising. Other solutions are possible, such as placing the infrastructure under separate ownership. It is notable that both the UK and Argentina have adopted vertical separation as a component of their franchising regimes.

Notes

1 Source: Submission of Italy.

2 Source: “Europe Lags The Rail-Freight Revolution”, International Herald Tribune, 21 Feb 1997.

3 Italian Submission, paragraphs 20-22.

4 The EC notes: “States have usually denied railway enterprises the freedom of a commercial business. As well as political interference for immediate ends, the authorities have tended to require the maintenance of very uneconomic services... Governments have compensated with large subsidies that met losses without being directed to a particular objective ... financial objectives were often confused.”, WP , paragraph 19.

5 The EC notes “The Community needs a new kind of railway. It should be first and foremost a business”.

6 OUM and YU, “Economic Efficiency of Railways and Implications For Public Policy”, *Journal of Transport Economics and Policy*, 1994

7 Franchising is one means of privatising.

8 Profs. NASH and TONER comment that rail faces important inter-modal competition in all except the transport of bulk products and in commuter services into large cities.

9 New Zealand provides an example of where such an approach is operating successfully.

10 Indeed, preserving competition on major rail corridors has been an aim of public policy in the US.

11 The problem of “double marginalisation” can, in part, be overcome through contractual arrangements between competing firms. However, such contractual arrangements may also restrict competition.

12 In Mexico, joint access to the station in Mexico City was ensured by allocating a share in the ownership of the station to the main competing railroads. Such arrangements have long been common in the US as well.

13 Vertical separation may have other advantages in particular contexts. For example, vertical separation helps to overcome the incentive problems that arise in franchising (as discussed below).

14 KESSIDES and WILLIG, page 19. See also ORDOVER and PITTMAN, “Restructuring the Policy Railway For Competition”.

15 Although it is true that, in practice, in the UK the price-cap has (in other sectors) been subject to *ex post* renegotiation when the enterprises earned profits too high to be publicly acceptable.

SYNTHÈSE

Note du Secrétariat

A la lumière des documents de référence et des contributions des 16 pays, il ressort les points suivants :

- *Les résultats du secteur des chemins de fer de nombreux pays de l'OCDE ont été médiocres.*

  Dans de nombreux pays de l'OCDE, le secteur des chemins de fer souffre d'une faible productivité et de déficits considérables (malgré des subventions importantes des pouvoirs publics). A titre d'illustration, les recettes moyennes par salarié des services de transport de fret du Royaume-Uni, de France, d'Italie et d'Allemagne en 1994 allaient de $43 000 pour la France à $19 500 pour l'Italie, contre $155 000 aux Etats-Unis. Plus généralement, en France, en Italie et en Espagne, les recettes collectées par les chemins de fer représentent la moitié seulement de leurs charges d'exploitation. En Italie, ces recettes ne couvrent pas même un tiers des charges.[1] En 1994, la dette totale des seuls chemins de fer italiens correspondait à 4.9 pour cent du PIB de ce pays.[2]

  Dans le monde, la part du secteur des chemins de fer dans le marché total des transports a sensiblement baissé ces cinquante dernières années. Cela est en partie dû la progression d'autres modes de transports plus flexibles et moins onéreux qui proposent des solutions de rechange intéressantes dans le secteur du fret comme dans celui des passagers (par exemple, les autocars, les camions, les avions, la voiture individuelle) et en partie à l'incapacité du secteur des chemins de fer à faire face au défi de la concurrence. Cette incapacité peut elle-même être attribuée aux problèmes posés par le régime de propriété et aux mécanismes d'incitation que connaissent les chemins de fer.

- *Les mauvais résultats des chemins de fer peuvent dans bien des pays être attribués à des "contraintes budgétaires trop légères".*

  Une entreprise se trouve face à des "contraintes budgétaires trop légères" lorsqu'elle est partiellement ou totalement à l'abri des effets d'une faillite. Dans ces conditions, l'entreprise n'a guère intérêt à minimiser ses coûts, se défaire de ses sureffectifs, améliorer les services ou développer des produits nouveaux ou innovants. L'expérience italienne, telle qu'elle est décrite dans la contribution de ce pays, en donne une illustration éclatante :

  > "...les résultats médiocres de *FS*... semblent dus à l'absence de toute contrainte budgétaire efficace sur le comportement de la société. Dans une telle situation, la société n'a pas de véritable incitation à affecter de façon efficiente ses ressources internes pour réduire les coûts de prestation de services tout en maintenant des normes de qualité. Ces caractéristiques suscitent en outre une relation particulièrement lâche entre la société italienne des chemins de fer et ses fournisseurs. ... [D]ans le secteur italien des chemins de fer, il semble qu'une part significative des bénéfices de monopole soit répartie entre un grand nombre d'intervenants, notamment les dirigeants, les salariés, les fournisseurs et les consommateurs finaux dont les intérêts particuliers constituent actuellement l'obstacle le plus considérable à toute réforme structurelle visant à introduire la concurrence et à promouvoir l'efficience économique."[3]

  L'important, c'est que l'existence de "contraintes budgétaires trop légères" sur une entreprise d'un secteur constitue un élément notable de dissuasion à l'entrée de nouveaux concurrents qui sont

soumis à des “contraintes budgétaires rigoureuses” et qui doivent dégager une rentabilité concurrentielle sur les capitaux employés.

A quelques exceptions notables près, pratiquement toutes les grandes entreprises de chemins de fer des pays de l’OCDE restent publiques. Selon les structures institutionnelles, l’indépendance de l’entreprise et sa relation avec l’Etat, la propriété de l’Etat peut être un facteur d’atténuation des contraintes budgétaires. Dès lors que l’Etat indique à l’entreprise qu’il souhaite la voir accorder au moins un certain poids à d’autres objectifs que la maximisation des bénéfices (par exemple, conserver de la main-d’œuvre) et lorsque le coût de ces initiatives n’est pas explicitement défini par avance, l’entreprise a une bonne excuse pour ne plus générer une rentabilité compétitive et se retrouve donc soumise à des contraintes budgétaires plus légères.

- *Les “contraintes budgétaires trop légères” résultent en partie du manque de transparence du coût des “obligations de service public”.*

  Malheureusement, dans de nombreux pays, on a toujours demandé aux chemins de fer de se conformer à un certain nombre d’autres objectifs que la maximisation des bénéfices. Le coût de ces obligations de service public a rarement été objectivement vérifié. En conséquence, les sociétés de chemins de fer ont pu justifier leurs mauvais résultats et l’ampleur de leurs pertes. [4]

- *Les mesures visant à redresser les résultats des chemins de fer et à introduire la concurrence doivent donc tendre à : (a) améliorer les incitations commerciales des chemins de fer (b) traiter la question des obligations de service public.*

  Compte tenu de ce qui précède, on peut voir que les mesures visant à redresser les résultats des chemins de fer exigent de traiter les questions des incitations commerciales des chemins de fer[5] (à savoir, durcir les contraintes budgétaires) et de la transparence des obligations de service public. [6]

  On peut améliorer les incitations commerciales des chemins de fer en mettant de la distance entre l’entreprise et les pouvoirs publics. De préférence, les chemins de fer doivent appartenir à une entreprise du secteur privé qui en assure l’exploitation. Lorsque ce n’est pas possible, les chemins de fer doivent être transformés en société (c’est-à-dire formellement constitués en société par actions) avec pour mandat explicite d’opérer selon des critères commerciaux.

  Dans de nombreux pays cependant, (notamment ceux privés de mécanisme assurant la séparation effective de l’entreprise par rapport à l’Etat) cela ne suffit pas. Dans de tels cas, vouloir introduire de véritables intérêts commerciaux ne sera pas possible, sauf privatisation totale ou partielle. [7]

  De plus, il ne sera pas possible d’introduire des intérêts commerciaux normaux lorsque le niveau d’endettement est tel que la faillite est inévitable. Le processus de réforme doit donc corriger le niveau d’endettement de l’entreprise de chemins de fer.

  Enfin, la direction doit bénéficier du pouvoir discrétionnaire normal d’exploiter l’entreprise selon des critères commerciaux normaux. En particulier, les dirigeants doivent être autorisés (et même encouragés) à pratiquer des discriminations de prix (c’est-à-dire facturer les services en fonction de l’élasticité de la demande).

- *Les mesures visant à traiter la question des obligations de service public doivent (a) soumettre ces obligations à un examen attentif en vue de leur élimination chaque fois que possible et (b) accroître la transparence du coût de ces obligations.*

  Comme on l'a vu, les obligations de service public ont servi à justifier les subventions implicites et ont été la cause de l'atténuation des contraintes budgétaires.

  Déterminer le coût des obligations de service public n'est pas facile. On ne peut pas trouver ces renseignements à l'examen des comptes des entreprises en place. Le véritable coût des obligations de service public est le coût à long terme d'une entreprise efficiente faisant appel à la technologie la plus efficiente et dotée d'un niveau efficient de capital. Même s'il était possible de contraindre l'entreprise de chemins de fer en place à révéler combien coûte la prestation d'un service donné, il se peut que cette entreprise n'ait pas recours à la combinaison efficiente d'intrants ou que l'on ne sache pas vraiment si, à long terme, la prestation de ce service par une entreprise de chemins de fer est en soi efficiente (et si l'on peut le remplacer par un service d'autocars). Pis, l'entreprise en place a intérêt à fausser la représentation des véritables charges. Même si des comptabilités séparées sont tenues, les charges et les recettes peuvent être transférées d'une division d'une entreprise à une autre par des pratiques internes de prix de transfert qui sont difficiles à détecter. En pratique, la seule méthode fiable pour déterminer le coût d'une obligation de service public consiste à rendre contestable le financement de ce service, par voie d'appel d'offres, d'adjudication ou d'attribution de concessions.

  En tout état de cause, les obligations de "service public" doivent être soumises à un examen attentif car leurs fondements dans l'action des pouvoirs publics sont souvent mal assurés. Par exemple, il est généralement vain de subventionner les transports ferroviaires simplement parce qu'ils polluent moins que les transports routiers (et que les usagers de la route ne paient pas les frais de pollution) - agir ainsi revient simplement à *(a)* accroître la demande globale de transports, voire à accroître le niveau total de la pollution et *(b)* fausser la concurrence avec d'autres modes de transport (qui peuvent légitimement prétendre eux-mêmes à des subventions). Si les usagers de la route ne paient pas actuellement pour les coûts de pollution qu'ils génèrent, il faut les amener à le faire dans toute la mesure du possible.

  La seule exception envisageable à ce principe intervient quand les évolutions technologiques en cours rendent impraticable la facturation des externalités dues à d'autres modes de transport, par exemple, facturer les coûts d'embouteillage imposés par les véhicules individuels dans les grandes villes. Tant qu'il n'est pas technologiquement réalisable de facturer les déplacements dans des voitures particulières aux heures de pointe, il peut être socialement efficient de subventionner d'autres modes de transport.

- *A quelques exceptions près, le secteur ferroviaire est soumis à une importante concurrence inter-modale.*

  Au sens le plus large, le rail connaît manifestement une concurrence puisqu'il est un élément d'un marché plus vaste des services de transport, dont il détient une part faible (et déclinante). Cela étant, comme dans toute analyse de la concurrence, il est très important de définir les marchés spécifiques sur lesquels le rail intervient. On peut distinguer des marchés sur lesquels le rail intervient sous des angles très différents — on peut distinguer les marchés du fret et des passagers ou les marchés des services de transport entre couples de lieux géographiques. En outre, les marchés peuvent être distingués en fonction de la qualité du service (rapidité, horaire, transport réfrigéré, etc.). Surtout, il va y avoir différents marchés du transport de fret pour des marchandises différentes – le marché du

transport de fleurs coupées, par exemple, est régi par une demande différente du marché du transport de charbon.

Cela étant, même si l'on peut faire des exceptions dans certains cas, il est manifeste que sur la plupart de ces marchés (voire tous), le rail est soumis à une importante concurrence inter-modale. Pour les passagers, il y a la concurrence des autocars, des avions, des ferries et de la voiture particulière. Pour le fret, il y a la concurrence des camions, péniches, du transport maritime, de l'avion et des oléoducs. Dans certains cas (comme le transport de journaux), le rail est aussi en concurrence avec des moyens électroniques de distribution.[8]

Bref, même si la situation varie dans le détail d'un pays à l'autre (en raison, par exemple, de la densité de la population et des conditions géographiques), il est difficile d'indiquer, de façon générale, un produit ou un service quelconque pour lequel on peut dire que le rail occupe une position dominante. Au contraire, les éléments dont on dispose tendent à montrer que la part du rail dans le total du marché des transports est trop faible pour retenir l'attention de la réglementation.

- *En conséquence, l'intervention de la réglementation doit être légère et ciblée sur les marchés où l'importance du rail est la plus marquée.*

  Chaque fois que le rail affronte une concurrence inter-modale convenable, l'intervention d'une réglementation sectorielle ou lourde est inutile. On doit laisser le rail faire face à la concurrence sur le marché en s'appuyant sur ses propres qualités.[9]

  L'intervention de la réglementation, lorsqu'elle peut être justifiée, doit être uniquement centrée sur les marchés sur lesquels on peut dire que la rail détient une position dominante.

  Dans les pays qui ne sont pas dotés d'un mécanisme efficace de facturation des coûts aux usagers de la route, il est vrai que le transport routier peut disposer d'un avantage concurrentiel. Toutefois, comme on l'a affirmé précédemment, la question doit être réglée par la politique routière et non par la politique ferroviaire. L'avantage concurrentiel attribué à la route renforce plutôt qu'il n'affaiblit le dossier en faveur de la déréglementation du transport ferroviaire.

- *Dans certains cas, on peut introduire une concurrence interne aux chemins de fer fondée sur les installations. On peut développer ces possibilités en s'attachant aux structures du secteur au cours du processus de réforme.*

  Souvent, en particulier sur les longues distances et lorsque l'on envisage plusieurs modes de transport, il y a plus d'un itinéraire viable pour aller d'un point à un autre. Lorsqu'il y a plus d'un itinéraire viable, il y a au moins la possibilité d'introduire une concurrence fondée sur les installations au sein des chemins de fer. Par exemple, une cargaison venant du Japon peut être débarquée dans l'un des différents ports de la côte ouest des Etats-Unis pour être transportée par un certain nombre de lignes ferroviaires jusqu'à New York. Lorsque ces lignes concurrentes sont exploitées par des sociétés indépendantes de chemins de fer, il y a une certaine concurrence intrasectorielle.[10]

  Au cours du processus de réforme, il convient donc d'envisager une séparation horizontale de la société de chemins de fer en place, de sorte que là où l'on peut choisir entre des itinéraires différents entre des grands marchés (que ce soit en transport multi-modal ou par le rail uniquement), ces itinéraires doivent être desservis par au moins deux sociétés indépendantes de chemins de fer. Dans bien des cas, il n'y a aura pas besoin d'autre intervention sectorielle de la réglementation.

Cette séparation horizontale (avec la concurrence intra-modale correspondante) a été effectuée au Mexique et au Royaume-Uni.

On notera cependant que cette séparation présente au moins certains inconvénients économiques. Plus précisément, les consommateurs peuvent tirer certains avantages de l'exploitation d'un réseau intégré (simplification de la billetterie et des horaires, par exemple). En outre, malgré la concurrence entre réseaux sur les lignes les plus longues, chaque réseau conserve une certaine puissance sur le marché en ce qui concerne les destinations qui relèvent entièrement de son territoire. En conséquence, les prix des liaisons qui empruntent deux réseaux ou plus risquent de dépasser les prix du monopole – en raison du problème connu de la "double marginalisation".[11] Enfin, il peut être nécessaire de régler des problèmes d'accès aux installations partagées.[12]

- *La concurrence sur les voies entre services ferroviaires peut être mise en place par la réglementation en assurant l'accès aux infrastructures ferroviaires.*

  Comme on l'a vu, lorsqu'il y a une concurrence inter-modale convenable, il n'est pas utile de prévoir d'autres interventions de la réglementation. Toutefois, sur les marchés restreints où la concurrence inter-modale ou intra-modale est limitée, on peut parfois mettre en place une certaine concurrence sur les voies par la réglementation en assurant l'accès aux infrastructures ferroviaires.

  Comme on l'a noté à plusieurs reprises, les investissements sous forme d'infrastructures ferroviaires représentent des coûts irrécupérables sensiblement élevés qui constituent une part substantielle des coûts irrécupérables d'entrée dans le secteur des chemins de fer. Ces coûts irrécupérables, auxquels il faut ajouter les importantes économies d'échelle dans le secteur ferroviaire, constituent un obstacle considérable à l'entrée. Si les concurrents peuvent avoir accès aux infrastructures ferroviaires existantes, c'est cet obstacle important qui est levé.

  Ces "droits d'accès" se sont avérés constituer un outil important de concurrence dans les chemins de fer et dans d'autres secteurs. Comme ils n'impliquent pas d'intervention structurelle dans le secteur, ils peuvent être d'une utilisation souple et évoluer dans le temps à mesure que l'état de la demande et de la technologie modifient l'importance et le lieu d'exercice du "monopole naturel". Toutefois, il convient d'admettre que cette forme d'intervention de la réglementation ne va pas sans des problèmes notables. En particulier, on risque de se heurter à des problèmes concernant :

  (a) la détermination du prix facturé pour l'accès aux infrastructures ferroviaires du concurrent ;

  Il y a un très large éventail de prix compatibles avec l'efficience économique en pareille situation. L'expérience montre que les sociétés de chemins de fer sont capables, dans certaines situations, de négocier des "droits de circulation réciproques" permettant un accès réciproque aux réseaux concurrents. Dans de telles situations, la théorie économique montre que le prix d'accès peut servir d'instrument de collusion visant à maintenir les prix finaux à un niveau élevé.

  Dans le cas où le nouveau venu assure un service qui fait partiellement double emploi avec celui qu'assure la société en place, cette dernière a fortement intérêt à facturer un prix d'accès suffisamment élevé pour exclure le nouveau venu. La documentation économique qui se développe dans ce domaine montre que, dans ce cas, le prix d'accès ne doit pas être plus élevé que le prix de détail facturé par la société en place pour le service diminué du coût

différentiel de la société en place – c'est-à-dire pas supérieur au prix donné par la "règle de tarification efficiente des composants".

En tout état de cause, le prix d'accès doit dépendre de la demande à l'adresse des services assurés par le nouveau venu – en d'autres termes, la société en place doit pouvoir introduire librement des discriminations de prix, à tout le moins dans certaines limites. La société en place ne doit pas pouvoir facturer moins que le coût différentiel de prestation du service d'accès et ne doit pas être autorisée à facturer plus que le coût isolé de prestation de ce service.

Même lorsque l'on s'est entendu sur la formule de tarification, il peut s'avérer difficile d'obtenir les renseignements nécessaires sur les coûts différentiels et les coûts conjoints de la société en place, notamment parce que ces renseignements ne figurent pas dans les comptes des sociétés et parce que la société en place à tout intérêt à ne pas donner une image authentique des résultats.

(b) le contrôle de l'intérêt pour la société en place à retarder, entraver ou abaisser la qualité des services assurés ;

Même lorsque l'on s'est entendu sur la formule de tarification, la société en place juge généralement de son intérêt d'utiliser tous les moyens à sa disposition pour entraver le développement de la concurrence, notamment en retardant les négociations et en multipliant les conflits. Pour réduire ces cas d'opportunisme *a posteriori*, les mécanismes contractuels entre les entreprises devront nécessairement préciser dans le détail les conditions dans lesquelles l'accès est accordé et les mécanismes de règlement des différends en cours de validité du contrat. Ces différends sont pratiquement inévitables, aussi bien *ex ante* (avant la signature) qu'*ex post*. Or, ces différends peuvent être longs et coûteux.

(c) les pertes d'économies d'envergure

Inéluctablement, il y a des économies d'envergure dans l'exploitation conjointe des infrastructures ferroviaires et des services de trains (on y reviendra plus loin). Or, l'introduction d'un régime d'accès va immanquablement aboutir à la perte d'une partie de ces économies d'envergure.

Dans une certaine mesure, on peut atténuer les problèmes évoqués précédemment en mettant en place des mécanismes pour obtenir des renseignements sur les charges des sociétés de chemins de fer en place (à savoir des mécanismes de divulgation des informations – l'obligation prévue par la CE de tenir une comptabilité séparée de l'exploitation des infrastructures peut entrer dans ce cadre) et des mécanismes de règlement rapide et efficace des différends (sans compromettre la qualité des décisions).

- *L'une des premières décisions des responsables de la politique ferroviaire est de savoir s'il faut aller plus loin et séparer la propriété des infrastructures ferroviaires de celle du matériel roulant.*

  La volonté de l'exploitant des infrastructures de refuser l'accès peut être combattue en séparant la propriété des infrastructures de celles de l'exploitation des services ferroviaires. En effet, un exploitant d'infrastructures ferroviaires a intérêt à faire une promotion active de l'utilisation de ses infrastructures.[13] Une séparation verticale de ce type a d'ailleurs été adoptée ou est envisagée dans

plusieurs pays. Toutefois, cette solution présente plusieurs inconvénients réels qu'il convient de noter :

(a) la perte d'économies d'envergure ;

Ce problème a été fort bien décrit par Kessides et Willig :

"La prestation de nombreux services ferroviaires novateurs et attentifs aux besoins du marché peut aller de pair avec des investissements spécifiques sous forme d'infrastructures, comme des travaux d'entretien ou d'amélioration des voies et des structures, la construction d'installations de chargement et de transbordement et la construction de voies pour relier les installations du chargeur. Il peut être difficile pour un exploitant (ou un détaillant) quelconque d'assurer toute la coordination nécessaire avec le monopole détenteur des infrastructures (ou le grossiste), d'autant que leurs intérêts respectifs en matière d'investissement ne concordent pas...

Une utilisation des voies et des installations de triage par les wagons et pour le fret qui soit à la fois efficiente, sûre et de nature à minimiser les retards suppose une coordination étroite en fonction de priorités régies par la prise en compte à la fois des logiques de l'exploitation et des chargeurs. Les exploitants (détaillants) en course vont se livrer une concurrence âpre et vigoureuse pour se servir d'infrastructures (ou obtenir des prestations du grossiste) rares ou encombrées, de sorte qu'effectuer le tri de leurs prétentions va être important pour assurer une exploitation générale efficiente et sans inertie du système des chemins de fer."[14]

(b) la moindre capacité d'introduire des discriminations de prix ;

L'exploitant des infrastructures risque de ne plus pouvoir appliquer une facturation différenciée aussi efficiente de ses coûts à ses clients, puisqu'il dispose inévitablement de moins d'informations sur la demande à l'adresse des services des exploitants de trains. Cela a notamment pour conséquence que certains services vont devenir non rentables alors même qu'ils le seraient s'ils étaient facturés au coût différentiel. C'est particulièrement important dans la prestation de services marginalement rentables (qui peuvent comprendre certains "services publics").

S'il est vrai que le rail affronte une concurrence inter-modale significative, les chances pour les concurrents d'entrer sur ce marché dans des conditions rentables seront relativement limitées. Vu sous cet angle, l'option pour les pouvoirs publics de la séparation verticale correspond à une intervention relativement importante de la réglementation pour un gain relativement réduit. Même si la séparation verticale présente des avantages comme des inconvénients, dans l'ensemble, les avantages ne compensent pas de façon évidente les inconvénients.

Il se peut que, dans certains pays, la séparation verticale apparaisse comme un mécanisme politiquement commode pour introduire la concurrence dans les services ferroviaires sans traiter de façon approfondie le problème des obligations de service public (on peut ainsi attribuer les obligations de service public à l'exploitant des infrastructures et les faire subventionner indirectement par l'Etat). Bien que cette approche puisse, dans certains cas, être préférable à l'absence de toute réforme, elle ne va pas sans coûts. En particulier, les problèmes mis en évidence précédemment concernant la séparation verticale vont être sensiblement plus graves pour un

exploitant d'infrastructures ayant peu d'intérêts commerciaux à consentir de nouveaux investissements et sans grande maîtrise explicite ou implicite de la tarification.

Comme on le verra, la séparation verticale peut aussi être un instrument pour palier les inconvénients d'autres approches de la réglementation. Plus précisément, la séparation des infrastructures peut résoudre les problèmes liés à la réduction de l'intérêt pour le concessionnaire d'entretenir les infrastructures en fin de période de concession.

- *Lorsqu'il faut conserver une réglementation sectorielle (par exemple, en raison d'obligations de service public) on préférera le plafonnement des prix d'un panier de services à l'encadrement traditionnel des prix.*

  Dans certaines conditions (comme la nécessité de contrôler les prix des services de banlieue dans une grande ville) il peut être nécessaire de conserver une réglementation sectorielle. Dans ces conditions, il est préférable de définir un plafond pour un panier de prix et de donner à l'entreprise de transport ferroviaire une certaine souplesse dans ce cadre, au lieu de contrôler les prix individuellement. L'entreprise ferroviaire peut exploiter cette souplesse pour introduire des discriminations de prix efficientes.

  Certains pays ont choisi de lancer des appels d'offres périodiques pour le droit de fournir des services soumis à de tels plafonds (c'est-à-dire de soumissionner pour l'obtention de la concession). Cette démarche est cohérente avec les conclusions énoncées précédemment. Le processus d'appel d'offres permet à la fois de mettre en lumière les véritables coûts de respect des obligations de service public et de choisir le prestataire le plus efficient. En outre, le soumissionnaire retenu a, comme tout commerçant normal, pleinement intérêt à minimiser les coûts. Autre avantage, le contrat de concession lie en fait l'Etat, ce qui lui permet de s'engager à effectuer des investissements spécifiques en matière d'infrastructures au lieu, par exemple, de modifier les conditions de plafonnement des prix pour tirer une partie des avantages de l'efficience économique du concessionnaire.[15]

  Toutefois, les concessions ne vont pas sans problèmes. Plus précisément, si la période de concession est brève, (ou en tout état de cause, si la fin de la période de concession approche) et si le concessionnaire estime qu'il y a une probabilité non négligeable que la concession ne soit pas renouvelée, il a beaucoup moins intérêt à effectuer des investissements qui se poursuivront au-delà de la fin de la concession. Ces investissements peuvent notamment passer par l'achat de nouveau matériel roulant ou des opérations d'entretien/amélioration de l'infrastructure des voies.

  Ces problèmes peuvent être surmontés par une cession directe du droit d'assurer le service. Cette approche semble donc préférable au régime des concessions. D'autres solutions sont possibles, comme le placement des infrastructures sous un régime de propriété distinct. On notera que le Royaume-Uni comme l'Argentine ont adopté la séparation verticale en tant que composante de leurs régimes de concession.

Notes

1 Source : Contribution de l'Italie.

2 Source : "Europe Lags The Rail-Freight Revolution", International Herald Tribune, 21 février 1997.

3 Contribution italienne, paragraphes 20-22.

4 Le CE note : "Les États ont généralement refusé aux compagnies de chemins de fer la liberté dont jouissent les entreprises commerciales. Outre des interférences politiques à des fins immédiates, les autorités ont eu tendance à exiger le maintien de services largement en dessous du seuil de rentabilité... Les gouvernements ont compensé les pertes par d'importantes subventions dénuées d'objectifs précis... Par ailleurs, les objectifs financiers étaient souvent imprécis.", Livre blanc de juillet 1996, paragraphe 19.

5 La CE note "la Communauté a besoin de chemins de fer d'un type nouveau. Ces chemins de fer doivent être avant tout gérés comme une entreprise".

6 OUM et YU, "Economic Efficiency of Railways and Implications For Public Policy", *Journal of Transport Economics and Policy*, 1994

7 Le régime de concession est l'un des instruments de privatisation.

8 Les professeurs NASH et TONER indiquent que le rail connaît une importante concurrence inter-modale dans tous les domaines à l'exception du transport en vrac de produits et dans la desserte des banlieues des grandes villes.

9 Le Nouvelle-Zélande est un exemple d'application réussie de cette approche.

10 De fait, la préservation de la concurrence sur les principaux couloirs ferroviaires a constitué un objectif de l'action des pouvoirs publics aux Etats-Unis.

11 Le problème de la "double marginalisation" peut, en partie, être surmonté par des accords contractuels entre entreprises concurrentes. Toutefois, de tels accords peuvent aussi restreindre la concurrence.

12 Au Mexique, l'accès conjoint à la gare de Mexico a été assuré en attribuant une partie de la propriété de la gare aux principales entreprises de chemins de fer concurrentes. De tels mécanismes sont également courants aux Etats-Unis depuis longtemps.

13 La séparation verticale peut avoir d'autres avantages dans certaines situations. Par exemple, elle peut contribuer à régler les problèmes d'incitations qui se posent dans les concessions (voir plus loin).

14 KESSIDES et WILLIG, page 19. Voir aussi ORDOVER et PITTMAN, "Restructuring the Policy Railway for Competition".

15 Bien qu'il soit vrai, dans la pratique, qu'au Royaume-Uni, le plafonnement des prix a (dans d'autres secteurs) fait l'objet d'une renégociation *a posteriori* lorsque les entreprises ont dégagé des bénéfices trop élevés pour être acceptables par l'opinion publique.