

Competition in Rail Transport: A New Opportunity for Railways?

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1. Introduction

In July 1992, the British government published a White Paper (Cm2012, 1992) outlining its proposals for the privatization of, and introduction of competition into, British Rail. Since then, a string of consultation documents on specific aspects of the proposals have been produced by the Department of Transport (commencing in October 1992), and draft legislation ('the Railway Bill') was presented in January 1993. Ministerial statements have also made the intentions a great deal clearer, whilst a detailed report by the House of Commons' Transport Committee (HC246, 1993) has provided a wealth of background information. This paper aims to provide a critique of these proposals. The next section provides some background on the situation of rail transport in Western Europe before the proposals themselves are explained. The following five sections consider in turn issues surrounding the separation of infrastructure from operations, competition versus integration in the planning of rail services, whether the incentive to invest will be adequate, the problem of institutional complexity and transaction costs, and lack of competitive bidding before we reach our conclusions. This paper updates earlier work we have presented to the European Conference of Ministers of Transport (ECMT, 1993). It is intended to complement the more quantitative work we have presented in a companion paper (Preston and Nash, 1993). For a critique from a different perspective see Glaister and Travers (1993).

2. Background

In Europe, as elsewhere, railways have suffered a continued loss of market share in a buoyant transport market in recent decades (Tables 1 and 2). Whilst this may be partly explained by external circumstances (increased car ownership and changing industrial structure from heavy industry towards high value manufactured goods and services), the failure of rail companies even to perform well in those sectors in which they have a comparative advantage, such as long distance international passenger and freight traffic, and the perpetual complaints about the price, quality of service and inflexibility of rail transport, leads to doubts as to whether railways are running efficiently. For instance, the rail share of international intra-community freight fell from 14 percent in 1975 to less than 10 percent in 1987 (COM(89) 564 FINAL paragraph b).

Although rail carries less than 10 percent of passenger and 20 percent of freight within the Community as a whole, it remains very important in certain markets. For commuting in large congested urban areas, there is no realistic alternative (for instance, over 70 percent of the million daily commuters into Central London arrive by rail). For intercity business trips over distances of 200-300 km, rail remains dominant. And, with higher speeds, the ability to compete with air over longer distances is growing. Rail is also important in the long distance leisure travel market. For freight, its ability to carry large volumes of traffic quickly and economically between the private sidings of major customers gives it a major role in bulk traffics except where cheaper water transport (sea or canal) is available. For traffic in unit loads, the traditional approach of handling these in individual wagons requiring marshalling en route is looking less and less able to provide the cost or quality of service available from road haulage. However, growth of intermodal systems able to reduce the cost and delay problems of transferring goods between modes is making rail more able to compete for general merchandise over longer distances.

With growing concern about congestion and the environment, rail is widely seen as having an increasingly

Table 1: Rail Passenger Traffic Share (percent of pass km) (excluding metros)

	1980	1990
Great Britain	6.4	5.0
Belgium	9.0 ¹	7.1 ¹
Denmark	8.6	7.3
FR Germany	7.1	6.4
France	10.0	9.2
Italy	8.9	7.3
Netherlands	7.4	7.0
Spain	8.5	7.6
¹ excludes taxis Source: Transport Statistics Great Britain (1992)		

Table 2: Rail Freight Traffic Share (percent of tonne km by rail, road, water and pipeline)

	1980	1990
Great Britain	10.6	7.1
Belgium	23.5	18.1
Denmark	9.5	12.1
FR Germany	27.3	27.7
France	30.6 ²	26.1 ²
Italy	10.2	9.5
Netherlands*	5.9	4.7
Spain	7.8	6.3
¹ excludes pipeline ² excludes sea-going freight Source: Transport Statistics Great Britain (1992)		

important role in the future in these sectors. Indeed, rail investment is now running at enormous levels. A recent study concluded that the railways of Western Europe plan to spend a total of some £120-150 billion including £20 billion on urban rapid transit by the turn of the century (Table 3). For Britain, it has been estimated that an investment of £1 billion per annum is required through the 1990s even without major new projects such as a high speed line to the Channel Tunnel or new tunnels under London. Given both the opportunities and the level of investment now taking place in rail transport, it has become more important than ever to ensure that the arrangements for regulation and control of the sector are conducive to efficient marketing and operation.

Throughout Europe, rail has generally been seen as a natural monopoly, requiring both regulation and subsidy. Monopoly power was deemed to require regulation of prices charged for rail services and 'common carrier' obligations to carry whatever traffic was offered at that price. Withdrawal of passenger services required government approval, which was frequently withheld, requiring cross-subsidy of loss making services by profitable ones. Competition was also regulated, with protection of rail traffic being a major factor in the regulation of the bus and road haulage industries. Nevertheless, railways throughout the Community fell into deficit during the 1960s and 1970s. At the same time, railways typically had

Table 3: Investment Prospects to 2000 (£m, 1989)

	National Rail Total 1989-2000	Rapid Transport Total 1989-2000
Austria	3430-4410	340-440
Belgium	4350	660-990
Denmark	1530-1650	180-270
Finland	2025	
France	18390	4090-5100
Germany	20700	3450
Greece	330+	44+
Ireland	46-230	
Italy	34400-49150	4950-7370
Luxembourg	140	
Netherlands	2600	150-460
Norway	1140-1615	170
Portugal	1460	90-130
Spain	9730	830-1110
Sweden	2730-2940	100-200
Switzerland	6260-6650	780-1180
UK	8250-11000	3850-4950
TOTAL	118000-137000	19700-25900
Source: Kennedy Henderson (1990)		

social obligations towards staff in the form of pension rights inherited from the days of a much greater railway workforce, no redundancy agreements and so forth. To the extent that in some countries they were required to fund the deficit by borrowing, this simply led to the further accumulation of financial difficulties until in some cases (notably Germany), the accounts of the railway company lost all contact with reality. (For details see CER, 1993.)

Reactions to this emerging crisis varied. In some cases, protection from other modes of transport continued and subsidy were increased. In Britain, the mechanism of regulation of both rail and road transport has been largely dismantled. Rail is free to practice price discrimination and charge what the market will bear in both passenger and freight markets. Subsidy is given as a lump sum, the amount of which is strictly controlled, and management has been reformed to put commercial considerations foremost.

In 1982, five sectors (covering Inter City, London Commuter, Regional passenger services, freight, and parcels) were established with responsibility for the costs and revenues of their own services. The sectors were defined to be relatively homogeneous both in the types of traffic they carry (and the objectives with respect to which they carry it) and in the equipment they used. As far as possible without wasteful duplication, staff and assets were made specific to a particular sector (or subsector), which had control over how they were used. However, the sectors themselves did not operate the railway. This was done under contract to them by the operating department, which still had a traditional organization into regions and areas.

The main advantages of sector management have been twofold. Firstly, it has been possible to develop

Table 4: BR Performance 1979-1992/1993 (1991/1992 prices)

	1979	1983	1989/90	1991/92	1991/92
Total Grant (£m)	1237	1430	705	1035	1243
Passenger route-miles	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	2075
Source: British Railways Board, Annual Reports and Accounts					
Note: Total grant includes exceptional items and excludes capital renewal provision made in 1991/1992.					
Number of passenger stations affected by transfers to Tyne and Wear Metro (25) and Manchester Metrolink (16).					

clearer lines of managerial control with identified sector and subsector managers responsible for each passenger service or flow of freight traffic regardless of regional boundaries. Secondly, these managers have had much tighter control over assets as a result of increased specificity of assets to sectors and subsectors and of the development of systems of costing and budgeting that make managers directly accountable for the costs they incur and the revenue they earn. The marketing advantages of being able to put a single manager in charge of an entire flow of traffic has been particularly pronounced in the case of freight traffic, which tended to flow across regional boundaries as the latter were set up with the more important flows of passenger traffic in mind.

Operation of the railway was governed by a host of contractual arrangements made between subsector managers and operating areas as to the required level and quality of service and the price to be paid. In these relationships, the operator was an internal monopoly supplier who accounted for the majority of the business manager's costs. Such an arrangement now appears to be becoming the norm within European Railways. For instance, in the Netherlands, business managers buy services from supply sectors under a form of contract similar to the RPI-x form of regulation widely used in Britain; unit prices are stipulated, for instance, for supplying a train kilometer or maintaining a passenger car, and these prices reduce by two percent per annum in real terms. However, in Britain, discontent with the extent to which the business manager was able to control the costs and quality of the operations led to a decision to internalize these relationships by fully disaggregating the operating departments to the sectors. Thus, each sector became an integrated marketing and operating organization for a particular market segment.

The need for complicated internal contracts did not go away however. With the disaggregation of operations to the sectors, there were numerous cases where it was obviously sensible for one sector to provide services for another. This applied particularly in the case of infrastructure, where, for instance, the East Coast Main Line might 'belong' to Inter City, but Regional Railways, Freight, and Network Southeast would all want to use stretches of it. They would want some form of contract specifying what they were to receive in terms of services at what price, and given the monopoly power enjoyed by the owner of the track, this contract would be subject to regulation by the Board.

The operations of British Rail are now clearly divided into Commercial (Freight, Parcels and InterCity

Passenger - European Passenger traffic will also form a commercial business) and subsidized (Network SouthEast, which operates commuter, interurban, and local services throughout the South East, and Regional Railways, which provides local and cross country services throughout the rest of the country). One reason for sectorization was to create a transparent distinction between these sectors in which it was more difficult for subsidy to leak from subsidized to commercial sectors. Prior to the current recession, it had been intended that Network SouthEast would operate without subsidy by 1992/1993 and move progressively to full commercial viability. This aim has now been abandoned, whilst it has always been accepted that Regional Railways will need ongoing subsidies. In the case of the commercial sectors, the aim has been to earn a fully commercial rate of return (now defined as 8 percent in real terms) on all assets employed in the business including property, although less demanding interim targets have been set. In the case of the subsidized sectors, the aim in recent years has been to reduce the amount of subsidy necessary, whilst broadly maintaining the quality of service. Again, demanding targets have been set, whilst quality of service standards have been more clearly defined. Fare increases in real terms have been permitted, although the rate of increase in the case of commuter services into London has clearly been a politically sensitive issue. Thus, there has been a move towards a contractual relationship between British Rail and Central Government for a given set of services, although subsidy has been given as a global sum since 1974.

How successful has this approach been? Table 4 gives some key indicators to help answer this question. Figures are shown for five years. The first is 1979, which is both the start of the recession that reduced the volume of rail traffic and severely hit BR's financial performance and the year in which the Conservative Party took office. 1983 was the worst year in terms of financial performance (other than those affected by strikes in the railway industry or its customers) and also the first year in which clear targets for the reduction in subsidy were set by the Minister. We also show 1989/1990, the final year before recession again really began to bite, and the two most recent years 1991/1992 and 1992/1993. Firstly, it will be seen that from their peak, total grants paid to the railway were reduced by some 50 percent before starting to grow again in the current recession. They are now at the same level in real terms as they were in 1979 but still below the levels of the early 1980s. This was accompanied by a very small pruning of the passenger network but a substantial increase in both the volume of traffic and the amount of passenger train miles provided, although there has been some retrenchment in recent years. There has also been an increase in the number of railway stations, mainly due to local authority initiatives to open new local rail stations. Fares have risen in real terms, but the other main factor leading to improved performance is clearly the rapid rise in labor productivity, measured here as train miles per member of staff, although there was a small decrease in labor productivity in the late 1980s and early 1990s.

Tables 5 and 6 shows the financial performance of the sectors in 1991/1992 and 1992/1993. Costs are measured on a prime user basis under which all the joint costs associated with any particular asset - such as a stretch of track or a station - are borne by the sector for which it is considered to be primarily provided. Other sectors only pay for any additional facilities they need and for additional maintenance or renewal expenses on facilities they share. Freight and parcels are never deemed to be prime users of facilities they share with a passenger sector. In the case of revenue from through journeys involving more than one sector, revenue is allocated pro rata to the individual fares for the different segments of the journey. In addition, it should be noted that we have some difficulties in determining the amount of grant that has gone to each business. This has been exacerbated by capital renewal provisions made in 1991/1992 and the adoption of a new accounting system in 1992/1993, which distinguished between revenue grants and capital grants and moved from an expenditure to a balance sheet depreciation treatment of infrastructure investment and track renewal costs. The figures for 1992/1993 only include revenue grant. Capital grant for this year is likely to be £553.9 million (with the bulk, £473.9 million, going to Network SouthEast) and grant for exceptional items £96.4 million. These figures still have to be agreed with Government.

Table 5: British Rail - Operating Businesses - Financial Results - 1991/1992 (£m)

	Revenue	Surplus
Inter City	896.7	2.0
Network South East	1044.3	(181.9)
Regional	312.9	(583.6)
Trainload Freight	505.3	67.5
Railfreight Distribution	174.9	(118.7)
Parcels	101.5	(34.7)
TOTAL	3035.6	(849.4)
Grant	766.9	(82.5)
Source: BRB Annual Report and Accounts 1991/1992		

Table 6: British Rail - Operating Businesses - Financial Results - 1992/1993 (£m)

	Revenue	Surplus	
		1992/93	1991/92 Restated
Inter City	889.0	65.1	90.6
Network South East	1069.4	(46.1)	(7.0)
Regional	349.2	(503.2)	(483.2)
Trainload Freight	490.4	103.1	102.8
Railfreight Distribution	172.3	(90.1)	(107.5)
Parcels	88.7	(22.9)	(32.3)
TOTAL	3115.7	(494.1)	(436.6)
Grant	555.0	60.9	55.0
Source: BRB Annual Report and Accounts 1992/1993			
Note: Grant in 1991/1992 includes PSO grant to Regional Railways and Network SouthEast only. It includes a capital renewal provision but excludes exceptional items. Grant in 1992/1993 (and restated for 1991/1992) includes PSO revenue grant and Section 20 grant only.			

It will be seen that InterCity and Trainload Freight are both in surplus. Although neither is yet earning a fully commercial rate of return, the change in accounting procedures has helped improve their finances. Despite restructuring, both Railfreight and Parcels have suffered substantial losses due to road competition and recession in recent years. Network SouthEast requires a modest degree of operating subsidy and, given the relative inelasticity of much of its traffic, could undoubtedly return to profitability quickly by means of fares increases if this were seen as a desirable policy. However, it is doubtful whether major investment in infrastructure could be provided commercially. Only Regional Railways is in a position in which making it profitable on network of services and cost allocation conventions is clearly unthinkable, although, even here, a further reduction in subsidy (to £411 million in 1993/1994) is intended.

Overall, the performance of British Rail in the 1980s was commendable even if achieved under favorable external circumstances. However, the re-emergence of increasing deficits, the recent slow down in labor productivity improvements, and concerns about future investment may have contributed to a determination by Government to find another way to increase competition in the rail market.

3. Privatization Proposals

Several European countries are now looking at proposals for rail privatization as are a number of countries in the rest of the world (most notably Argentina, Japan, and New Zealand). In Europe, these proposals involve three elements:

- separation of infrastructure from operations, as proposed in Britain, Germany, the Netherlands, and as has already taken place in Sweden.
- privatization of rail operators and, (possibly) eventually, infrastructure. This is being discussed in many European countries, but only Britain has concrete proposals and a timetable to achieve it.
- 'open access' arrangements for other private operators to enter the market and compete with the existing operator. This is the intention in both Britain and Sweden. Furthermore, in a policy statement issued in 1989, the EEC outlined details of a Community rail policy that includes proposals to separate infrastructure from operations and to allow access to the infrastructure to competing operators (Nash, 1991). The latter issue is now the subject of an EC Directive (91/440). Legal rights of access to railway infrastructure in EC countries have already been established for:
 - international groupings of railway undertakings - defined as two or more operations from different countries wishing to run international services between the Member States where the undertakings are based
 - any railway undertaking wishing to run international combined transport good services between any Member States.

When alternatives for privatization in Britain were considered, there was - as is commonly the case - a major conflict between minimizing disruption through structural change and maximizing the degree of competition (see, for example, Redwood, 1988). Any approach that maintained integration of infrastructure and operations - whether on a regional or a sectoral basis - would lead to little competition, because the infrastructure itself represents a natural monopoly. Whilst it would be possible to promote competition by granting rights of access to the infrastructure to competing operators, it is always difficult to police such arrangements to ensure that the integrated operator is not using its monopoly power in the infrastructure market to gain advantage in operations.

Thus, the government has decided to adopt an arrangement that replaces BR by an infrastructure company (Railtrack) and a set of operating companies. However, passenger operations will be franchised to private companies in 25 groups of services, basically at the profit center or subsector level, so that the franchise will cover a group of services such as the East Coast Main Line, the South Western services of Network SouthEast, or the ScotRail services of Regional Railways. In the case of some InterCity services, franchisees will be expected to pay for the right to run the services, whereas, in most other cases, they will be bidding on the basis of the subsidy they require. Minimum standards may be set in terms of frequencies, reliability and overcrowding, and maximum fares. A new Franchising Authority will be set up to undertake the process; franchisees will be able to lease existing BR rolling stock and take over BR staff. Where no acceptable offer is made, BR will operate the service but will not be allowed to bid for

franchises or to continue to operate on a route that has been franchised out. It is stated that the government wants to maintain the maximum flexibility to respond to whatever arrangements the private sector proposes in terms of the details of the franchises, but the expectation is that the typical length of franchises will be around seven years.

Regarding the infrastructure, Railtrack will undertake the timetabling of all services across the network; it will allocate paths and levy charges to cover costs and make a normal rate of return on its assets, although it will be eligible for grant-aid where projects show external benefits. A new regulatory authority will be set up to ensure that Railtrack provides open access to all operators on fair terms and conditions. Railtrack will be required to subcontract activities such as track maintenance to the private sector wherever it is economic to do so. Stations may be sold to private sector developers, who would not necessarily be rail operators. It should be noted that this is a more extreme separation than that in Sweden, where the state owned operator owns the stations and most maintenance depots and also control timetabling, signal operation and real time control.

The Freight and Parcels sectors are expected to be sold in their entirety as a number of separate companies. Trainload Freight and the contract services of Railfreight Distribution have been combined and will be sold as three regional companies. The remaining business of Railfreight Distribution will remain in public ownership for the foreseeable future, but ways of increasing private sector involvement, for example through joint venture companies, will be explored. The parcels business will be split: Red Star (parcels services) and Rail Express Systems (postal services). Again, access to the network will be available for other operators who wish to enter the market. These sectors are not discussed in much of what follows, which concentrates on the passenger business.

It must be said at the outset that the proposals are ingenious. They separate out the aspect of rail operations — the infrastructure, which is clearly a natural monopoly with heavy sunk costs — to achieve competition in operations. Here economies of scale are not as great and sunk costs are less severe even if operations by a single company turn out to be the norm, so there may at least be a reasonable degree of contestability (a proposition usually associated with Starkie, 1984). Where subsidies are to continue, they achieve competition for the franchise. By making it possible for a new operator to lease existing rolling stock and - in the case of the franchisee - take over existing staff, they greatly reduce the barriers to entry posed by heavy capital requirements and the need for specialized staff. They offer the prospect of competing management teams that try new ways of operating and marketing services to reduce costs and increase revenue and of private sector investment to meet at least some of the enormous investment needs outlined in the previous section.

However, there remain great concerns at many aspects of the proposals. We shall consider these concerns under five headings:

- the relationship between infrastructure and operations
- competition versus integration in rail operations
- investment
- institutional complexity and transactions costs
- lack of competitive bidding

This list is not intended to be exhaustive. We have more general concerns about the lack of a transport policy framework within which the proposals fit whilst we have more specific concerns regarding a range of matters such as safety, research and development and the impact on the rail manufacturing industry. Nonetheless, we believe that in the next five sections we shall address the main economic issues that emerge from these proposals.

4. The Relationship between Infrastructure and Operations

As stated above, the proposal is to create a new company called Railtrack, which will own, maintain, and operate the infrastructure. It will be responsible for planning the working timetable, for signalling, and for real time control. It will essentially sell paths under a variety of contracts of different lengths to open access passenger and freight operators for the highest price it can achieve, subject to their at least covering avoidable cost. It will also enter into a contract with passenger franchisees for the provision of paths. One may assume that something like the existing 'prime user' cost conventions will remain, with the passenger franchisee being required to cover any prime user costs that cannot be covered by surpluses on other contracts. The reason for not adopting a simple published tariff as in Sweden (Table 7) is that, whereas in Sweden the infrastructure company is heavily subsidized so charges can be based on marginal social cost, in Britain, it is intended that Railtrack will be largely unsubsidised and required to make a commercial return on its assets (although the possibility of grants towards the costs of socially desirable but unprofitable projects has already been mentioned, and in some cases freight customers will have their track costs paid by a new government grant, where this offers sufficient environmental advantages by diverting traffic from road). Without the ability to price discriminate, and in the presence of strong economies of scale, a single published tariff would be very inefficient, although in its absence the task of the regulator in making sure that Railtrack behaves fairly to all operators appears a difficult one.

The first objection to this organization is that Railtrack is in a position of negotiating at one remove from the market, be it the commercial market or the Government in the form of the franchising authority. It appears to have relatively little incentive to act efficiently since it can always pass on any cost increases to the franchisee; the only limit on this is the size of the franchising authorities' budget and the consequent threat of service closures. No doubt, the contracts will stipulate performance criteria to be achieved by railtrack in terms of delays due to work on the infrastructure; nevertheless, this has been a source of concern in Sweden, where the chairman of Swedish Railways believes the problem has become far more acute since the separation of infrastructure from operations (Larsson, 1993). Also, Railtrack will be a very small organization, contracting out most of the actual construction and maintenance work to the private sector through competitive tendering. Nevertheless, as a consequence of this organization, many potential franchisees have stated that they would be unwilling to bid on the basis of the current proposals; the prospect of Railtrack controlling some 50 percent of their costs and heavily determining the quality of service they could provide (for example by being responsible for up to two-thirds of all delays) does not appeal to them.

A second objection concerns longer term planning. Many of the advances in speed and cost effectiveness in rail transport in recent years come from a careful matching of rolling stock and infrastructure. For instance, track speeds, maintenance schedules, and capacity requirements are intimately linked to the number of trains, schedules, and types of rolling stock passing over it. It will be absolutely essential that a close planning relationship exists between Railtrack and the principal train service operators using any particular piece of infrastructure.

It has been widely suggested that the best solution to these problems would be for the principal operator, the franchisee, to lease the infrastructure. Railtrack would remain responsible for ownership and would oversee investment decisions. But the day-to-day operations and maintenance would be under the management of the franchisee. Obviously, the big disadvantage of this approach would be that open access operators would have to deal with a variety of franchisees if they wished to run passenger or freight services that crossed franchise boundaries. And, in the case of passenger services, these might include outright competitors. We return to this issue in the light of what we say about open access in the next section.

Table 7: Structure of Charges for Use of Rail Infrastructure in Sweden
Variable fees for infrastructure use, ore/gross ton kilometre

	Track Standard*	
	I	II
Locomotive trains		
Locomotives, train speed <105 km/h	0.47	1.20
Locomotives, train speed 105-135 km/h	0.57	1.42
	0.66	
Locomotives, train speed >135 km/h	0.68	-
Freight wagons on "Malmbanan" (iron ore)		
Loaded	0.29	-
Empty	0.03	-
Other freight wagons		
Loaded	0.20	0.48
Empty	0.04	0.13
Passenger cars		
With radial steered bogies	0.19	0.32
Without radial steered bogies	0.27	0.68
Rail cars		
<10 ton/axle	0.06	0.16
>10 ton/axle	0.21	0.52
High speed trains (>160 km/h)	0.31	-
Addendum for vehicle in electrically powered trains	0.02	0.02
* Track standard I is better than track standard II Source: L. Hansson and J.E. Nilsson (1989) A New Swedish Railroad Policy: Separation of Infrastructure and Traffic Production (Fifth World Conference on Transport Research, Yokohama)		

5. Competition versus Integration in Rail Operations

The government has been concerned throughout to maintain the possibility of new entry by competing passenger operators. This is most likely to occur in the case of profitable intercity operations, but may happen in almost any subsector, since most will have some services which could be commercially attractive, particularly if track only had to be paid for on an avoidable cost basis. In the first round of franchises, the franchising authority will be guaranteed the paths necessary to run the existing service, and this will greatly limit the scope for competitive entry on busy parts of the network. However, in subsequent rounds, Railtrack is required to sell these paths to competing operators if they put in a higher bid than the franchisee, thus permitting a gradual switch of operations away from franchisees towards open access operators. This could have two outcomes.

In the first, the franchisee would develop an entry deterrence strategy whereby it would attempt to purchase a set of paths from Railtrack as an open access operator in such a way that it would be ideally placed to win the remaining paths through the franchise process. This strategy may also lead to greater net subsidy than in the first round and illustrates the danger of regulatory capture, particularly if there is political pressure to maintain services. Bus operators have often designed their commercial networks to

exploit the tendering process (Preston, 1991).

In the second outcome, entry deterrence fails, and on-the-track competition of some form occurs. This raises two further issues. The first is whether it is economically efficient to split the operation of a particular set of rail passenger services between a variety of operators. There are two arguments here. One that there is a potential loss of economies of scale and scope. For instance splitting services between a number of operators could mean poorer utilization of staff and assets as the likelihood of their being able to move from one working to the next without idle time reduces. Each operator would need to make arrangements for access to facilities for cleaning, fuelling, and maintenance of rolling stock. Secondly, there is an argument that the service will be less attractive to the customer than an integrated planned system (for instance because of the failure to achieve even headways, because of a lack of interchangeable ticketing or of through tickets, and because of the lack of an information and seat reservation system covering all operators). It might be argued that these issues could be settled by sensible commercial arrangements between the companies, or if this failed (as it has in the deregulated bus and coach sector in Britain by and large - see Tyson, 1989), by a requirement to cooperate in such matters imposed by the Regulator.

The second issue is in some ways a more fundamental objection. Many potential franchisees have indicated that they would not be interested in bidding unless they received exclusive rights to run the service. It is easy to see why this is. When a franchisee bids, they undertake to provide certain services for a period of many years in return for receiving (or paying) a fixed sum of money. If they do not know what competition may arise during this period and are greatly limited by the terms of the franchise regarding how they can react to such competition, that greatly raises the degree of risk in their bid. Thus open access is bound to raise the cost to the franchising authority of securing the train services it wishes, and may even make it difficult to secure any bids for some subsectors.

In response to this situation, the government has indicated its willingness to make many franchises exclusive, at least for the first round of franchising. It may be sensible to continue this practice. This would make the objections to the franchisee leasing the infrastructure far less significant.

6. Investment

We indicated earlier in the paper that there are enormous requirements for investment to keep the British Rail system operating at its current level, even without undertaking the many investments thought necessary for it to play its full part in meeting the severe transport problems facing the country. One key measure of the success of the governments proposals, then, will be the extent to which they succeed in attracting private investment into rail transport. On the infrastructure side, Railtrack will remain a publicly owned company for the foreseeable future, although it will be able to enter into joint arrangements with the private sector for the provision of new infrastructure. The new arrangements offer more potential for private investment for rolling stock.

As Jones et al. (1993) have pointed out contract length is likely to be a critical issue. If the typical length of a franchise is seven years and railway rolling stock has a life of at least 30, it does not provide much incentive for an operator to purchase new rolling stock or for third parties to build it and lease it to the operator unless there is some guarantee that the rolling stock will find a further use at the end of the franchise. There appear to be two ways of dealing with this problem. One is to greatly lengthen the typical franchise to 15 years or more or to provide for automatic renewal provided that performance was deemed satisfactory. That, of course, has the disadvantage of greatly reducing the competitive pressures on franchisees, although it does give the franchisee a greater interest in building up the long term potential of the service. The other alternative is to intervene more directly in the rolling stock market, either by the

public sector building stock for lease or by it at least offering guarantees regarding the future deployment of suitable privately built stock. This seems to be the alternative favored by Government who have proposed BR's rolling stock should be divided between three rolling stock leasing companies.

7. Institutional Complexity and Transactions Costs

We have examined a number of objections to the proposals and found ways of resolving them, albeit at the price of restrictions on the commercial freedom of rail operators and on the degree of competitive pressures they bear. This section raises a more fundamental objection to the proposals. This is, to bring about a degree of competition in rail transport, the government has had to postulate such a complex institutional arrangement that each organization will be involved in negotiating and monitoring a huge number of contracts with the result that transactions costs will be prohibitive.

Consider the position of a new franchisee. The most important contracts for negotiation are with the Director of Franchising and with Railtrack covering the terms of the franchise - what services are to be operated, what quality standards are required, and at what price in terms of payments from the Franchising Director to the Franchisee and from the Franchisee to Railtrack. Clearly all these conditions will need to be subject to variation in agreed circumstances given the length of the contract; circumstances may change requiring more or less services to be run at a higher or lower price per train. At the same time, Railtrack will negotiate with the (possibly many different) owners of stations to secure access rights. Any disputes in this area will presumably require the franchisee to take them up with Railtrack who will in turn deal with the station owner.

The franchisee may also need to make a number of other contractual arrangements, for instance, with other operators via the proposed Joint Industry Board regarding any through ticketing or revenue sharing agreements, with leasing companies regarding the provision of rolling stock, and with maintenance companies regarding fuelling, cleaning, and maintenance. It will need a license from the Regulator, who will examine whether it has fulfilled the safety standards laid down by the Health and Safety Executive and whether it is acting in such a way as to unreasonably impede competition.

Suppose, as happens every day, a problem occurs with a train of another operator that affects this operator's services. It will presumably need to monitor whether this gives cause for a complaint to Railtrack, who will have to take the issue up with the other operator if it was failing to abide by the terms of its contract with Railtrack.

Will such a network of contractual arrangements prove more effective than what went before? Even within a unified British Rail, there has been a tendency to put relationships between different parts of the organization onto a quasi contractual basis in recent years. But there is a marked difference between that and what is proposed. In the past, the various sectors have been part of the same organization, and the Chief Executive of BR has been well placed to obtain information and to resolve any disputes as to whether the terms of the contracts were fair and whether they were being adhered to. In the new situation, any such disputes will be conducted through an external body, the Rail Regulator (who will find it much less easy to obtain reliable data on the costs and benefits of alternative courses of action) or, probably, through courts of law. One clear indicator of the success of the reforms will be the extent to which operators are able to settle disputes amongst themselves on an amicable basis as opposed to resorting to litigation.

Again, there would be ways to proceed with franchising without the degree of institutional complexity of the current proposals. For instance, suppose that a body called British Rail continued to exist, and fulfilled the role of both Railtrack and of the Franchising Authority. Suppose also that the franchisee leased from

British Rail the infrastructure, rolling stock, and stations on the services it operated. If franchises were exclusive, its relationship with other operators would be simplified, although there would still be many cases where other franchisees or freight operators needed the use of its tracks. Again, this approach appears to offer a more workable alternative (variants of it have been proposed by others eg Jones et al., 1993 and Steer Davies Gleave, 1993A) but at the cost of reducing the degree of competition; it also has the significant advantage of reducing the degree of disruption in the transition from existing institutional arrangements.

8. Lack of Competitive Bidding

So far there appear to be a number of organizations interested in taking on the role of franchisee for railway passenger services:

a) New companies formed by existing rail management:

These have the experience of running railways (which is in short supply) big advantages regarding information about the economics of existing operations, and a strong incentive to keep their jobs. What is less clear is whether they will be able to raise the amount of capital required. Whilst the ability to lease assets and take over existing staff substantially reduces capital requirements, there are still substantial legal costs and costs of preparing a safety plan, which have to be incurred before a bid can be considered. Thus, it may be that railway managers will most often bid as part of a consortium with other interested parties rather than as a separate company.

b) Bus operators:

A number of bus operators have shown an interest. Obviously they have relevant experience, and in a number of cases they have former railway managers on their staff. One of the attractions to them is the prospect of offering an integrated bus and rail public transport service throughout their area, although it currently appears unlikely that this will be permitted in the interests of preserving competition between bus and rail.

c) Firms from other parts of the travel business, including a shipping company and an airline.

d) Manufacturers of railway equipment and civil engineering companies might be interested where major new investment is needed. Such consortia have been formed to design, build, operate, and maintain light rapid transit systems in Manchester and Birmingham, whilst a consortium of Balfour Beatty, GEC, and Trafalgar House has recently been formed with the West Coast Main Line in mind.

Overall, the degree of serious interest appears limited, and many of those expressing an interest have reservations about the precise way in which franchising is to take place. We have suggested measures to make the business more attractive to potential franchisees in the interest of stimulating more competition and gaining more competitive prices. There is clearly a risk that the number of competitors may be so low that bids are not competitively priced or that collusion takes place, whilst an incumbent franchisee might feel that it faced relatively little threat to its future. In particular, it may be difficult for a rival firm to mount a bid without being detected by the incumbent. In such cases experience from the recent ITV franchises suggests that bids will be positively correlated with the amount of competition, suggesting a degree of non-contestability.

From the above description of the proposals, we may conjecture that the franchising system will be based on near complete contracts (i.e., contracts that are specified in great detail by the franchiser) administered

on a net subsidy basis. Obviously, there will have to be agreed circumstances in which both the level of service and the payment might vary over the - relatively long - life of the contract. The franchise will be essentially an operating contract in which the franchisee supplies the management and takes over the labor. The threat of franchises being won by new operators with a totally new set of staff, which was an important factor in achieving cost reductions in the bus industry, is not a realistic possibility here. The main areas where private sector managers will have the possibility of making improvement is in marketing the product and reducing labor costs. However, labor productivity on BR is relatively high compared to other western European railways, and the scope for improvement may be modest. Unit cost reductions may be achieved by the reduction in real wages, especially outside London, that is likely to result from the break-up of the national pay bargaining system, but we would expect it to be difficult to achieve the 20-30 percent reductions achieved in the contracting out of other services (see, for example, Domberger et al., 1986). Privatization will introduce a bankruptcy constraint, which should act as a spur to efficiency. But this will be blunted by the scope for contract re-negotiation that would be posed by the need to hand over quickly to another operator in the event of the bankruptcy of a franchisee. Asset handover has been a problem in other industries that have been franchised (see Williamson, 1976) and arose as an issue when the franchise for the urban rail system in Boston changed hands. A recent study by consultants (Steer Davies Gleave, 1993B) estimated that potential cost savings as a result of productivity gains may be only around five percent, and these could be more than offset by transaction costs and the profit requirements of intermediate bodies such as Railtrack, the rolling stock leasing companies, and station owners.

9. Conclusion

We have seen how the continued decline in the market share of rail transport and a perception of a major role for rail in the future has led governments all over Europe to start examining new ways of providing rail services on a more competitive basis and with more private sector involvement. We then examined in depth the proposals of the British government to separate rail operations from infrastructure and to make rail operations entirely a competitive private sector activity with competitive bidding for franchises in the case of passenger services.

We consider that there are clear advantages of these proposals in increasing the incentives to efficiency and innovation and attracting private sector capital into the rail industry. However, we also see major problems. These concern the efficient planning and provision of infrastructure, preservation of a well integrated network of services able to exploit the potential for economies of scale, provision of adequate incentives for private operators to invest in new rolling stock, and avoidance of heavy transaction costs. In particular, we feel that head-on-the-track competition is undesirable as many of the benefits could be obtained by off-the-track competition through franchising as well as some peripheral competition on parallel routes and competition by emulation.

None of this argument appears particularly important in the freight sector, which is generally a minority user of the infrastructure in British conditions and where most services are operated on a contractual basis for a single customer. Indeed, in the freight sector there appear to be a number of potential operators wishing to enter the market and many freight customers eager to try them out. We thus support the opening of access to the infrastructure for new freight operators. But the problems appear to warrant significant changes to the proposals for passenger services. In particular, it would seem more appropriate for British Rail (or a successor organization) to continue in the role of the provider of the infrastructure and the planner of services but to progressively subcontract more of their operations including maintenance of infrastructure and the operation of signalling and real time control. In this way, competitive private concerns could play a major part in rail transport without the problems of disintegration of the network into a host of small, competing operations ultimately envisaged by the current proposals. This would, in our view, allow a more optimal degree of both horizontal and vertical integration.

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