The Privatisation of Britain’s Railways

An Inside View

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Abstract
The authors present a survey of the privatisation of the rail industry in Britain in the context of national rail policy over recent decades. They draw attention to the inherent problems of the British rail privatisation, including the need for continuing subsidy. They focus attention on the revised management structure of the industry, and how this may affect performance, and also on the franchising system, and whether this will give incentives for competition. They conclude that difficult choices still remain to be made.

1. The Background to Privatisation

1.1 British rail since nationalisation
With privatisation of the railway now complete, it is opportune to review the background and development of the policy. It is too soon to pass judgement on the performance of the new operators, but it is already clear that some of the policy problems privatisation was intended to solve are likely to reappear in modified form.

Following the nationalisation of the railways in 1948, the major task facing the government and management was the rebuilding and modernisation of a system that had been run into the ground during the war years. The dominant view at the time was that, sufficient investment in modern technology would be enough to restore the railways to profitability. Throughout the second half of the 1950s and the early 1960s very large sums of money were spent on investment in new rolling stock and infrastructure, though the modernisation programme was only partly completed. The railways continued to lose substantial sums, and the cash requirement to complete the modernisation plan began to look prohibitive.

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A new strategy was called for. The British Transport Commission was broken up and a separate British Railways Board formed. Dr Beeching was appointed Chairman in 1963 with a remit to produce a commercially viable railway. Much of the network was very lightly used and major investment would not change that position, which was largely determined by basic demographic features and the overexpansion of the railways in an earlier age. The Beeching report on reshaping the railways¹ involved the closure of the lightly used parts of the network, with diversion of the resources saved to the remaining parts of the system with potential for development. The advent in 1964 of a Labour government opposed to the Beeching closures brought this attempt to put the railways on a firm financial footing to a halt, although many services had already been withdrawn.

This was the first episode of many in the struggle to reconcile the desire for a high quality railway with the constraints of public finance and ownership.

A brief attempt was made in the late 1960s to apply rudimentary cost-benefit analysis to output decisions on the passenger railway at the individual service level, but this attempt had collapsed by the early 1970s, and government subsidy for passenger services changed from a line-by-line allocation to a subsidy paid in return for meeting a public service obligation, cast in very general terms to provide a service broadly comparable with that provided in a benchmark year. Over the past thirty years the size and coverage of the passenger network has remained virtually unchanged, although service patterns have altered. Fluctuations in the financial performance of the passenger railway and the demands for public expenditure reductions punctuated the period up to 1979, with governments failing to set any clear objectives for the railway. Railway management argued for more funds on the grounds that demand for railway services was bound to grow in the future. Government pointed to the fact that passenger demand had been static for a generation and freight demand had been falling for two. This was a genuine “dialogue of the deal”, resulting in policy over the period drifting without much sense of direction.

By the early 1980s the combination of railway management’s dire predictions of a “crumbling edge of quality”, the onset of general economic recession, and the public expenditure pressures of the time, brought railway finances back into the spotlight. The Serpell Inquiry was set up to examine railway finances² and once more raised the question of reducing the network size in order to cut back on subsidy requirements. Following a public outcry at the possibility of route closures, the government hastily disowned the option. The episode did bring into focus the lack of any clear objectives for BR, and from 1983 onwards the government set medium-term targets for financial support, and supplemented these with other targets indicating the way in which they wished the Board to manage. From this stage onward the government also made it clear that it wished to see BR withdrawing from non-core activities, so hotels, shipping, advertising, station catering, and rolling stock manufacture, and some heavy maintenance facilities, were sold.

¹ British Railways Board (1963): The Reshaping of British Railways.
In addition to disposing of the non-core activities, the management of the operational railway underwent very considerable change throughout the decade. Prior to 1982 management had been dominated by a regional structure that had changed little from pre-nationalisation days. Regional managers were responsible for virtually everything within their geographical domain — except the profitability of the railway they ran! As well as the regional general managers there were powerful functional managers at the centre who also saw their responsibilities in terms of their particular discipline, rather than in the context of a commercial business. This structure ignored the commercial reality of the market place and made the delivery of financial targets virtually impossible; in short, like many other railways, BR was led by operational and engineering considerations, rather than the requirements of the market place.

The management changes introduced during the 1980s were designed to downplay the importance of the regional and functional dimensions and supplant these by a small number of business managements responsible for identifiable market segments and accountable for all aspects of business performance, including profit and loss performance. The route by which these changes were made is worthy of separate description, but it is sufficient to note here that by the end of the decade there was a much stronger identification between managers and the performance of their business, both physical and financial. The changes also enabled layers of management to be removed with consequent savings in administrative costs.

The combination of prevailing economic circumstances, and the reductions in operating costs achieved by BR management, meant that until the end of the decade BR finances prospered. Between 1983 and 1988/9 subsidy to the passenger railway was approximately halved in real terms; InterCity was moving into profitability; and the subsidy for the commuter services around London had fallen rapidly enough for it to be considered likely that it could soon be eliminated.3 There had been consideration of privatisation of some parts of the network, but this was largely a case of reacting to specific propositions put forward by entrepreneurs to take over specific parts of the network; wholesale privatisation of the railway was not considered seriously until 1988.

1.2 Privatisation in the rest of the economy
On the wider front, the government’s privatisation programme had been gathering pace. After disposing of a number of non-core industries and share holdings, the policy accelerated with the sale of the industries that had previously been regarded as the “commanding heights” of the economy, the monopoly utilities of energy, telecommunications, and water. The rationale for the sales was complicated: the monopoly status of the industries meant that they could always be made profitable, though government was unhappy about involving itself in price setting. More significantly, despite this profitability, there was a widespread belief that the industries were inefficient and

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3 The measurement of profitability was somewhat distorted by the use of accounting rules that understated the consumption of capital. Comparisons of financial performance before and after privatisation are extremely difficult.
under-invested. Privatisation offered an opportunity to raise money from the sale, transfer future investment needs into the private sector and, through a mixture of regulatory pressure and competition, force the industries to improve their performance. At one stage it was also hoped that privatisation would encourage the wider ownership of shares by individuals; however, although sales were structured in a manner that skewed purchases to individuals, the share registers tended to shrink soon after sales had been completed.

The privatisation of the major utilities made rapid progress and, on balance, have generally been judged a political success. Government looked for further candidates, but three industries appeared untouchable: rail and coal — because they made heavy losses; and the Post Office, because of its unique status in the public eye. The momentum of the privatisation programme brought all three onto the agenda, and while the Post Office slipped away, the other two remained, much to the surprise of many Conservative as well as Labour politicians.

2. Rail Privatisation

2.1 The genesis of rail privatisation

In the case of the railways, the timing of the initial decision was crucial. By the late 1980s the InterCity business was moving into profit, subsidy for the London commuter services was falling sharply, and the heavy-haul freight business was generating large cash surpluses. It was therefore possible to conceive of a core railway that could be transferred to the private sector without need of subsidy. There was no suggestion that the regional passenger services could ever be profitable, but there was a belief that while profitable and unprofitable services were operated by the same owner the good would degenerate to the level of the bad, and the potential for virtually unlimited calls on the public purse would remain. Privatisation was therefore seen initially as a means of banking the improvements that had already been made, as well as securing the additional benefits of private sector ownership.

Work on privatisation was announced, but the politicians were careful to avoid any commitment to proceed. Indeed, following transport minister Paul Channon's announcement that the issue was under examination, there was some cooling of enthusiasm under his successor Cecil Parkinson. At that stage there was no clear view of the industry model to be used as the basis for privatisation, merely a strong belief in government that BR would need to be broken up to prevent it drifting back to a position in which losses would have to be met by government, because closure of loss-making passenger services could not be countenanced. In spite of evidence that railways in Britain were operated much more cost-efficiently than their European counterparts, there was a strong belief in government that some activities within BR remained fundamentally inefficient and untouched by the commercialism of the previous decade: track and rolling stock maintenance, and driver productivity, were often cited as examples. There was also a belief that, as a public service enjoying some element of local monopoly power,
the railways would always be vulnerable to trades union power in ways that had been eliminated elsewhere in the economy.

The Board argued that the railway should be privatised as a single entity, believing that the loss of economies of scale would more than outweigh any gains to be made by disaggregating ownership. Government was not convinced, and attention centred on finding the most appropriate way of splitting the railway up for privatisation. Developments in the EU meant that railways would be called upon to provide separate accounting information on their infrastructure and, naturally enough, that generated interest in the concept of a separate infrastructure authority. Other forms of disaggregation being examined included regional or market segment based divisions, which could have retained a vertically integrated structure, that is, an organisation combining the ownership of the infrastructure and the operation and marketing of the train services. A consultation exercise was undertaken to identify whether there were private sector companies interested in involvement in the industry; this raised considerable interest, but also great wariness about the risks involved in such a loss-making industry.

While this work was going on the financial performance of the railway was deteriorating. The strong growth of the economy in general, and central London employment in particular, came to an abrupt halt in early 1989, and over the next four years passenger demand fell by 10 per cent and revenues fell only marginally less. The property market collapsed and the cash surpluses generated during the 1985-88 period disappeared. Rolling stock investment schemes, which had been started during the period of rapid growth, were coming to fruition, and the peak expenditures on the Channel Tunnel rail services were being incurred. The Hidden Report into the Clapham rail crash of 1988 made management more risk-averse, and led to large-scale expenditure to ensure that safe systems of work were put in place. The net result was that BR moved from a cash position of a requirement (that is, grant plus net borrowing) of £700m in 1988/9 to a requirement of over £2 billion in 1991/2.

2.2 Developing proposals
The first detailed commitment to the concept of privatisation came in the 1992 Conservative manifesto, which clearly identified the break-up of BR as the monopoly supplier as a principal goal. The manifesto promised the transfer of existing rail services to the private sector, initially through franchising, but it also envisaged the private sector introducing new services as a result of breaking the BR monopoly. Infrastructure was expected to be retained in public ownership and operated as a division of BR, with organisational separation necessary to ensure that competition between the various operating companies could be fair. Stations were seen as candidates for privatisation as separate business units, reflecting government’s belief that there were commercial opportunities available at stations that the public sector had failed to exploit. Passenger operations were to be franchised by a Rail Regulator. Although there was no prescription for the franchise units, there were hints that they might reflect the old regional structure; indeed newspaper reports at the time suggested that the Prime Minister, John Major, personally favoured such a model, and the manifesto talked nostalgically of
wanting to “recover a sense of pride in our railways and to recapture the spirit of the old regional companies”.

Following the Conservative Government’s re-election in 1992, the commitment to privatisation was quickly restated in the White Paper published in July of that year.\(^4\) The White Paper again emphasised the role of competition, and it was clear at that stage that the government anticipated many new entrants to the industry. A new Franchise Office was to be set up to oversee the franchising process, whereas the manifesto had envisaged a single Regulator undertaking this role. The White Paper foresaw the passenger operations being transferred to the private sector by means of franchises, leaving only the infrastructure management and operation in BR hands. The freight and parcels businesses would be divided up and sold in their entirety with the aim of creating competition between different rail providers.

It is worth noting that none of the published documents considered in any detail what a franchise might entail. Who would own rolling stock? Who would operate the stations, maintenance facilities, and so on? Nor was it clear how the franchising process was to be integrated with the government’s long term intention that InterCity services should be sold. However, franchising was seen as a means of encouraging maximum private sector involvement in marketing and service provision — two areas of perceived public sector weakness — with minimum barriers to entry since there would be few assets to fund.

The Railways Bill was presented to Parliament in the autumn of that same year. The Bill presented franchising and competition as the central planks of the policy, with private sector franchises competing with open access operators on a publicly owned infrastructure. The Bill included duties for both the Regulator and the Secretary of State — they were to pursue both franchising and competition — but did not recognise the inherent conflict between these duties. Candidates to operate franchises would want certainty about the competition they would face, and if other operators were free to compete then plainly that would represent an extra dimension of risk that would inevitably lead to higher subsidy bids. Competition in the final market between train operators would mean higher subsidies emerging from the bids from competition for the market through the process of bidding for franchises.

The debates on the Bill concentrated on the traditional fears that government was seeking to undermine the size of the network. Under pressure from supporters and opponents alike, the government agreed numerous amendments that effectively guaranteed that the perceived benefits of a national system would be maintained after the break up into a multi-provider industry. Since the long-term objective was to procure an openly competitive industry, these obligations were to be made a condition of the operating licence rather than simply being a condition of the franchise contract. For instance, the Regulator was given a duty to maintain network benefits, notably the continued availability of through tickets, which would enable travellers to use the services of more than one operator. Other specific obligations were provided for in the Regulator’s duties that


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had not previously been set out explicitly other than in general statutes; for example, policies on environmental matters and policies towards disabled passengers. Procedures for closing lines were also tightened up.

Although the rhetoric of privatisation had been concerned with liberating management, the Railways Act of 1993 had the effect of ensuring that in many ways the privatised industry was subject to more regulation than its nationalised predecessor had ever been. Transferring a loss-making activity to the private sector meant that the specification of the service to be provided had to be much more tightly defined in order to prevent the new operator improving his financial performance simply by reducing output or reducing quality. This view was strengthened even more when the Franchise Agreements, under which passenger services were to be provided, came to be drafted. It also had the consequence that some operating requirements were set by the Regulator as a condition of the operator’s licence, and others by contract agreement with the franchise authority, the Office of Passenger Rail Franchising (OPRAF). The potential for confusion of authority was considerable.

It is also interesting to note that the Bill was drafted and passed while policy was still evolving. It had now been decided that the infrastructure would be held and operated by a separate company, Railtrack, but that was not explicitly mentioned in the Bill, and at that stage there was no policy to privatise the infrastructure for the foreseeable future. Nor did the Bill include any provisions covering the rolling stock leasing companies (ROSCOs), which were to be set up to lease the passenger vehicles to franchisees.

2.3 Restructuring for private operation

Once the Railways Act came into force the primary objective was to restructure BR into 90 to 100 companies to facilitate franchising of the passenger services, the sale of the ROSCOs and the numerous support activities, particularly those relating to maintenance of both rolling stock and infrastructure. This restructuring activity began in late 1993 and took about two years to complete.

The key to the privatisation of the passenger business was the franchise. Twenty-five Train Operating Companies (TOCs) were set up, and these would form the basis of the future franchise units. These TOCs would operate and market the passenger services: their staff would drive trains, sell tickets, man stations, and undertake day-to-day maintenance of the trains. But the franchisee would own very few assets: rolling stock would be leased from ROSCOs, which were responsible for procuring heavy maintenance; and infrastructure access would be purchased from Railtrack, which was responsible directly for the operation of the infrastructure, notably the signalling, but which would procure maintenance and investment work from outside suppliers. Although Railtrack was vested in April 1994 as a government owned company, separate from BR, there was still no intention of privatising.

The structure therefore separated railway asset ownership from service operations and depended on outsourcing a large volume of work that had previously been undertaken in-house. This switch, from a vertically integrated company operating with a command style management culture to an industry comprising a large number of com-
panies buying and selling goods and services between each other, would clearly take time. It would also involve a substantial volume of legal work to create contracts where informal internal arrangements had previously been sufficient. Internal transactions had to be put onto a contractual and pricing basis that would be recognised by potential purchasers and could be used by them as a basis for valuing the new companies. For the support activities, establishing contracts that allowed realistic profits to be made gave incentives to increase efficiency, and a security of workload would be the key to their privatisation.

In the case of the maintenance and other support businesses this was relatively straightforward; in most cases there were external companies either competing or operating in similar markets whose prices and profit rates could be used to benchmark prices in the new contracts. In order to guarantee continuity of supply to their internal customers, and to provide some security of workload, thereby making the companies saleable propositions, they were given contracts of typically 3 to 5 years duration with diminishing levels of guaranteed workload, to ensure that supply would increasingly be opened up to free competition. Prices were generally set with RPI-X clauses to encourage efficiency improvements.

3. Setting Prices For Assets
For the ROSCOs and Railtrack, this approach to determining asset values could not be used. There were no outside comparators; the assets were largely specific to the railway industry, and the owners would have a degree of monopoly power over their immediate customers, the train operators, and their ultimate customer the government, which was underwriting passenger rail services. The issue was further complicated by the longevity of the assets; a pricing and contract regime was needed that would not only provide a fair return to private sector owners but would also sustain reinvestment in assets that might last thirty years or more. Obviously the shorter the life the asset owner assumes in writing off the asset, then the higher the price to be paid by the customer. The asset owners were, in many cases, facing potential monopsony power, in that the assets concerned could only be used to provide services that were dependent on subsidy from government.

Rolling stock prices had to reflect the cost of building new vehicles, but also had to take account of the age and quality of the existing fleet. To provide an incentive for the ROSCOs to invest, prices needed to be high enough to provide an economic return on any new vehicles that might be ordered, while the prices for older vehicles had to be discounted to take account of their higher operating cost and lower attractiveness to passengers, which would reduce their earning power for the operator. The basic lease price for a new vehicle was set at a level that would deliver a 10 per cent rate of return over the life of the vehicle, and the prices for older types was set with that price as a reference point. Using engineering figures for cost escalation over vehicle life, and data on demand elasticity with respect to various aspects of vehicle environment, prices were set that were intended to leave the operator indifferent between vehicles of varying vintage.
within broad classes. So for, say, a 90 mph Diesel Multiple Unit (DMU), the price of a twenty-year-old vehicle should have been discounted sufficiently compared to a five-year-old vehicle to make the train operator indifferent between them. These administered prices were set for the term of the leases, which ran on average for eight years, though a proportion of the leases were signed on the basis of a four-year term with renewal options for two further periods of two years.

The administered prices for the rolling stock were high enough to deliver very strong cash flows to the ROSCOs, which would enable them to fund investment in new vehicles, but in the absence of any obligation to invest there was a clear risk that the companies would simply manage their affairs with a view to short-term cash maximisation. The sustainability of the rolling stock market in the light of this regime is a key problem to which we will return later.

The initial price for access to the track and infrastructure was set at a level that provided for depreciation on a Modern Equivalent Asset Value (MEAV) basis and for a rate of return to be earned on that asset base. However, provision was made for the Regulator to review the level and structure of charges, and that review took place in 1994-5. Although during the passage of the Railways Act the policy had been for the infrastructure to remain in public ownership, the government decided in the summer of 1994 that it would float Railtrack at the earliest opportunity, and therefore the Regulator’s review of prices would take place while the industry was publicly owned, but would set the regime for the first five years in the private sector.

The Regulator reduced the level of charges by 8 per cent and provided for an RPI-X regime to apply over the review period; his view of the level of charges was determined primarily by his perception of the need for Railtrack to fund its investment and renewal requirements.\(^5\)

In common with many of the other privatised utilities (the water industry is the closest analogue) the stage had been set for a continuing argument between the regulator and the regulated industry about whether the investment level provided for in the charges was actually being achieved. The tension between an external regulator seeking to simulate the effects of competition in setting prices and other operating conditions, and the regulated industry seeking to maximise returns to shareholders, is inevitable, but the lack of any external comparators against which Railtrack could be benchmarked, and the absence of any realistic threat of competition from new entrants in its core business, makes Railtrack unique among the major privatised utilities.

The access charges are virtually fixed for the passenger operators: some 91 per cent of the access charge is totally invariant to the level of use, and two-thirds of the variable element is accounted for by the charges for traction electricity current where Railtrack is effectively providing a centralised procurement facility. Since the charges do not vary significantly with the level of demand on the railway, the provider of the infrastructure is immunised from the vagaries of the market for the final product.

As far as the train operating company is concerned the access charge has many of the characteristics of a tax, and the impact of the Regulator’s decisions on the level of the charge should feed straight through pound-for-pound on to the level of bids received for the franchises. In effect, therefore, the Regulator is deciding on the level of public expenditure that will be paid through the passenger subsidy, and using his regulatory powers to coerce Railtrack to spend efficiently enough money to justify the charge. The Regulator is standing in for the market place in influencing how much should be spent on the infrastructure, but the continuing dependence on subsidy calls into question the objectives and criteria used in these decisions, and the accountability of an independent regulator in making decisions with such transparent effects on public expenditure. In other privatised utilities regulators began with the intention that prices would be set for, say, a five-year period, and the regime would not change in the interim period. In reality, regulators have found it necessary to adjust more or less continuously as new information became available or circumstances changed. There is no reason to believe that the regulation of access charges will be any different.

Within a year of Railtrack’s privatisation public disagreements emerged about the adequacy of the investment levels, and the Regulator moved to negotiate amendments to the Railtrack licence to increase his powers to monitor the investment programme. While any shortfall of investment can in principle be taken into account at subsequent price reviews, price setting, which is reactive to the industry’s performance, is much less than perfect.

4. The Freight Railway

The sale of the freight railway had been an early commitment in the 1992 White Paper. Prior to privatisation the business had been split into three:

- The Trainload Freight business, which as its name suggests operated heavy haulage of bulk materials in whole trainloads;
- Railfreight Distribution, which operated the wagon based services hauling containers and smaller loads including the Channel Tunnel services, which began operation in 1994;
- The Parcels business, which operated an express parcels service using passenger trains (Red Star) and the mail trains operated for the Post Office.

The Trainload business had been making healthy profits transporting bulk materials, although the decline of the British coal industry and, to a lesser extent, iron and steel, meant that traffic volumes had been in long-term decline. The other parts of the freight business had been under severe competitive pressure from road haulage and, in the case of Railfreight Distribution, had a history of heavy loss-making, which would make a rapid sale difficult to achieve.

The early sale of the Trainload business was seen as an important signal to the private sector that the government was in earnest about its privatisation programme. However, the belief that competition would prosper in the new railway led the government to insist on dividing the business into three companies based on geographical regions. These
companies were then to compete with one another for the market. BR advised that the economies of scale were such that splitting in this way would reduce the competitiveness of the trainload freight activity and reduce the sale proceeds. The three companies were offered for sale, and the bidding made clear that the sale of all three to a single buyer would indeed achieve a significantly better price. The new owner, English Welsh and Scottish Railways (EWS), was allowed to put the companies back together again.

EWS was also successful in bidding for the operation of the Post Office trains and the Channel tunnel freight services, so after setting out to create a freight railway with large-scale on-rail competition the end result was a railway with only two significant players, EWS and the management buyout team who had purchased the domestic container transport activity, Freightliners. Given the ferocity of competition between road and rail for freight, this outcome does not necessarily present problems, but the efforts to create on-rail competition in defiance of the business economics were to a large extent wasted.

5. Passenger Service Franchising

The structure decided upon meant that the franchisees would operate the train services and employ the 50,000 or so staff engaged in those activities, but would own very few of the assets. The franchise proposition that was marketed involved inviting bids to operate services over part of the network in return for subsidy, or possibly the payment of a premium. Significant problems arose in trying to ensure that franchisees faced incentives that would lead them to manage their operations in an appropriate manner.

Consultations with potential franchise operators had indicated that many claimed that they would only be interested in bidding if the franchise ran for a long period. However, government hopes of reducing the subsidy bill depended on competition between bidding companies when franchises were let, and the threat of losing the franchise subsequently. The longer the franchise, the greater the opportunity for the operator to create barriers to entry that would prevent effective competition when the franchise expired, so government was keen to keep franchise lengths short. While this maintains competitive pressure and should prevent franchisees from discouraging new entrants, it can have a distorting effect on business behaviour. With a short franchise period, the threat of the loss of the franchise effectively means that the business planning horizon becomes time limited; this may reduce the incentives for the franchisee to develop the business, particularly in the later years of the contract. This is a potentially serious problem for which there is no clear solution.

Since the services were for the most part loss-makers, not just on an average cost but in many cases on a short-run marginal cost basis, the franchise agreement needed to be

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7 Open access competition was also permitted in the freight market, although only two companies took up the opportunity to enter the market in this way. One of these, National Power, subsequently sold its operation to EWS.
structured in a way that prevented profit improvement simply by running down service levels or, where some degree of monopoly power existed, for example in the London commuter market, by raising prices. Considerable effort was expended in designing service specifications to ensure that the essential characteristics of the service pattern and level of provision would continue to be protected by contract.

The franchise specification was to include a description of the minimum service requirement, with the operator free to operate additional services over that specified minimum. Following legal challenge from opponents of privatisation, the criteria for drawing up that minimum service specification were tightened, so that in the case of the most heavily subsidised services the minimum specification closely resembled the existing BR timetable. This requirement on the volume of services was supplemented by other contract controls covering punctuality, levels of cancellations, levels of crowding on commuter trains, requirements for customer satisfaction surveys, and so on. These conditions were to be enforced in some cases by a financial penalty/reward system, and in other cases by the potential threat of a loss of the franchise contract itself. Coupled with the licensing conditions mentioned earlier, it was plain that the specification of the outputs from the passenger railway would be much tighter in the private sector than in public ownership. This outcome was a remarkable contradiction in the light of the instruction that the Franchising Director had also been given to develop criteria for the allocation of subsidy, implying that the service patterns to be supported would be derived from objective criteria rather than a roll forward of the existing timetable.8

Restrictions on the operators became even tighter when the Secretary of State decided that many fares would be restricted by formula to rise by no more than RPI for a three-year period, and by RPI minus 1 per cent thereafter. This change was driven by political rather than economic objectives; over the previous decade public expenditure decisions on the railway had been predicated on the assumption that fares would increase in real terms where net revenue gains could be made.

In most cases, the franchise contract would penalise the operator for poor physical performance. It was therefore necessary to ensure that where poor operating performance was caused by failures on the part of the infrastructure provider that he was penalised in turn. While the negotiation of the terms of the performance regime was — and remains — contentious, it had the unambiguous benefit of enforcing a dramatic improvement in performance monitoring and recording systems, and providing incentives at the margin to improve performance.

As preparations for franchising progressed it became clear that bids would be adversely affected if the prospect of full open access competition remained in place; each franshisee would have to assess the possibility that others would choose to cherry-pick the better performing services, leading to the deterioration of financial performance. The Regulator, who had a duty to take account of the Franchise Director’s financial position, therefore reviewed the terms under which open access competition would be al-

8 The Franchise Director’s criteria were actually published after the first round of franchising had been completed. OPRAF: Appraisal of Support for Passenger Rail Services, November 1997.
owed, and offered protection from open access to current operators on all significant flows. Open access competition was severely curtailed in order to ensure the successful launch of the programme.9

The split between the franchises and the asset owners has important implications for the ability of the restructured industry to withstand risk. The concept of franchising involved companies bidding in competition for the right to operate specified services for a predetermined period. In order to ensure competition in the long term it would be essential that there should be the scope to hand the franchise on to another operator at the end of the franchise period; given that any new operator taking over would need the rolling stock and access rights of his predecessor, it was essential that the franchisee should not own the rolling stock or the infrastructure, since that would bestow monopoly power at the point of franchise renewal. At a more mundane and pragmatic level, it had emerged from discussions with potential private operators that while they were interested in operating trains, few had the resources to purchase assets with replacement costs running to billions of pounds. Because the franchisees had few assets to fund, it was necessary to ensure that they had a significant stake at risk in the event of failure. They were therefore required to put up a performance bond of around 15 per cent of revenue, and to prove they had access to as much again in reserve capital.

The structure under which the franchisees received fares and subsidy income, but leased their key assets on a medium-term basis from the ROSCOs and Railtrack, meant that, while the franchisees had been freed from the burden of funding a capital-intensive business, they had been left with many of the remaining risks of the industry. The charges levied for the use of the assets do not change with passenger revenues, and therefore fluctuations in revenue are borne entirely by the franchisee. With little opportunity to save costs by changing output levels, and with fixed charges for rolling stock and access accounting for about two-thirds of their total costs, fluctuations in revenue around planned levels will pass straight through to franchise profitability. If revenues exceed expectations the franchises will be potentially highly profitable, but if revenues fall short, the lack of asset backing for any substantial borrowing means they are less likely to be able to withstand any prolonged revenue shortfall.

Following a comparatively short period during which the TOCs were formed as separate legal entities that could then be sold, contracts were put in place with suppliers, and sales documentation prepared, and the first three franchises were opened to bids in the autumn of 1995. Interest in these early franchises was greater than expected and this encouraged government to accelerate plans for the rest of the franchise programme. In the event the entire passenger railway was franchised by March 1997, whereas expectations earlier had been that the programme would take several years to complete. This is not the appropriate place to review the bids, but it is clear that the promises of subsidy reductions became increasingly ambitious as the programme progressed.

9 A full description of the terms under which franchise contracts were let is set out in the Passenger Rail Industry Overview published by OPRAF.
6. The Economic Rationale

With Railtrack floated by means of a public share offer in May 1996, the ROSCOs sold six months earlier, and the various subsidiaries supplying goods and services being sold in parallel, virtually the entire railway had been transferred from public to private ownership within the space of eighteen months. What was the government seeking to achieve?

The government's rationale for privatising the railway appears to derive from three very firmly held beliefs. First, private sector entrepreneurialism would yield a far more innovative approach to development of the railways than public sector management, who were seen as being insulated from the demands of the market place. Second, the level of innovation could be further enhanced by introducing competition into the provision of services through liberalising access to the network. Third, access to private sector funds would relieve the government of the very heavy capital expenditure commitments that would arise if the railway remained in the public sector. Together these advantages would lead to a higher quality railway provided at lower overall cost to the exchequer, with the added advantage that the operational and financial risks inherent in the provision of railway services would be placed firmly in the private sector.

Each of these beliefs has a superficial attraction. Experience in the UK suggests that management of the railways in the public sector is beset by a number of difficulties. These largely derive from the fact that government, as owner, has multiple roles. It acts as shareholder — appointing directors, setting objectives, and often reserving to itself important decisions. It also acts as banker to the corporation — with nationalised industries being limited to borrowing via government's own funding mechanisms. In the case of railways the government was also a major customer of the corporation, as it provided substantial subsidy in return for agreement to continue running non-commercial passenger services. These three roles can easily conflict with each other and, perhaps more importantly, they can be in conflict with the government's wider responsibilities in managing macro-economic affairs and setting the climate for the economy as a whole. Governments are continually tempted to manage their nationalised industries for the benefit of their macro-economic policies rather than for the long-term benefit of the industry itself. The shareholder wants the company to be run efficiently; the banker wants to minimise the call on public funds; the customer wants increased quality of output and lower prices. At a macro-economic level the government wants lower levels of unemployment and inflation. The result is continued and inconsistent interference with the management of the company. Experience suggests that this level of interference not only leads to demotivation and demoralisation of managers who, though nominally in charge, feel that they do not have the freedom to manage, but also seldom delivers government's own objectives for the industry.

While privatisation has certainly brought in some new ideas from the private sector, many of the gains have come from allowing existing managers the freedom to implement proposals they would not have been allowed to take forward under public ownership. In short, the most powerful argument for privatisation is that government is ill
equipped to act as a corporate shareholder. Greater entrepreneurialism does appear to accompany privatisation, but this would appear to have less to do with the respective qualities of management than the substitution of private for public shareholding. The privatisation of the passenger railway has brought with it a tightening up of the specification of the service to be delivered in return for the subsidy. While this may be essential to ensure that government achieves value for money from the subsidy it pays, additional restrictions on the freedom of the operator inevitably carry the risk that the costs imposed — or cost savings forgone — in preventing change, outweigh the benefits to consumers. In the absence of clear criteria against which regulations can be evaluated, there is a substantial risk that potential efficiency gains will be suppressed.

The arguments for competition are less clear. Here one is balancing the allocative efficiencies that derive from an industry subject to significant economies of scale against the improvements to the production possibility frontiers (X efficiencies) that the stimulus of competition is expected to provide. In the real world the process has to be overlaid with both uncertainty and interdependence, and the recognition that the ultimate outcome will almost certainly be path dependent; for example, to allow open access operations to precede franchising will lead to a different outcome from proceeding in the reverse manner.

The development of competition between rail service providers would depend critically on the structure and level of the charges levied for the use of the infrastructure. Short-run marginal costs are undoubtedly low for a rail network except on those parts of the system and at those times of day when capacity is fully utilised. But low charges that might attract new entrants to provide services would leave a large rump of fixed charges to be borne by the infrastructure operator, presumably supported by subsidy; but how would a subsidised infrastructure operator be incentivised to be efficient?

The original intention was that the infrastructure provider would remain in the public sector, and in that case the role of the Regulator would have been to protect the private sector operators from a public sector monopoly supplier of infrastructure. Having decided to privatise the infrastructure supplier, the Regulator has become responsible for setting charges that pass through the franchisee to subsidy payments. The structure chosen therefore relies on efficiency incentives being exerted by shareholders seeking increased profits, and a Regulator acting as proxy for a market and setting prices with implicit efficiency targets. With the fixed charge accounting for 90 per cent of the total for infrastructure, and new entrants paying only marginal costs, competitive pressure between rail operators will have little effect on the bulk of infrastructure costs, which amount to roughly 40 per cent of the total cost of the passenger railway. In short, there is little to suggest that the competition brought about by privatisation per se will contribute much to infrastructure efficiency.

There will undoubtedly be competition between the suppliers of goods and services to Railtrack that should give rise to substantial cost savings over time. Civil and signalling engineering services are both areas in which the former BR companies were sold to trade purchasers already established in highly competitive markets. Any efficiency gains from that source could, however, have been obtained by contracting out those sup-
port services; they were not dependent on changing the ownership of the infrastructure itself.

The ROSCOs were sold with leases for virtually the whole of their fleets for 4 to 8 years, and those leases were necessary for the franchisees to fulfil their contractual commitments. So for the existing rolling stock leases there is no competition between the ROSCOs. Competition could arise at the point at which the leases are renewed or new requirements for rolling stock materialise, when the ROSCOs or other potential lessors might vie with one another to meet lessees’ requirements for additional rolling stock. However, unless conditions generate liquidity within the market such competition is unlikely to have much effect; competition is only likely to arise if the demand for rolling stock falls and thereby generates surplus capacity, or if potential lessors perceive the prices as being so high that it is worth building new vehicles to earn supra-normal profits. With the capital costs of the existing fleet substantial — but sunk — speculative entry into the rolling stock lease market is highly unlikely. Where franchisees have entered into commitments to buy or lease new vehicles there will certainly be competition between manufacturers for the build contracts and between leasing companies to provide finance. If competition is to become significant it is likely to take a considerable time to bring competitive pressure to bear on prices. Competition in the asset markets created by privatisation is, we would argue, extremely limited.

7. Competition Between Train Operators

The Government’s original aim was to encourage competition between train operators, and the duty to pursue open access competition was embedded in the legislation. Have there been competitive gains in that area?

Certainly when ORPRAF came to let franchises there was a considerable appetite for the companies from other transport operators. The 25 franchises were let rapidly amid stiff competition to a total of 13 different operators, and as the franchising process proceeded bids showed a tendency to promise ever more ambitious reductions in subsidy. While one might question the realism of some bids, there can be little question that competition for the right to operate generated promises to reduce subsidy that, if delivered, will generate significant benefits for the exchequer, and have been backed by substantial performance bonds as security in the event of failure. Between 1996/7 and 2002/3 the annual subsidy requirement bills are contracted to reduce by around £1 billion. In the long term these benefits can only be maintained if first-round franchisees face real competition at the point of renewal.

If competition for franchises is to be maintained it is essential that current contracts are managed in such a way that at the point of re-letting the incumbent does not enjoy a significant advantage over other potential franchisees. It is inevitable that the incumbent will have a better understanding of markets and costs than others, but there are other advantages that could be gained but that will need to be minimised if there is to be a real prospect of new entrants. The greatest barrier to new entrants is likely to be the existence of sunk costs, assets to the business that are available free at the margin to the in-
cumbent but will be a significant cost to new entrants. Examples might be capital goods that do not have to be passed on to a successor franchisee, or marketing spend linked to a brand name that might have no value to another company. Competition for franchises can continue to yield efficiency improvements, but franchise management will need to be focused on the tendency to try to create advantage for the incumbent at re-letting. The longer the franchisee controls the operation, the greater is his opportunity to build up knowledge, sunk costs, and other competitive advantages over other potential operators. It is little surprise therefore that many operators have complained at the length of the franchise on offer and have attempted to negotiate extensions on the grounds that short franchises are a barrier to investment. Asset providers will invest on the basis of their judgement of the willingness of the franchising body to specify services using the assets. The identity of the intermediary operating the franchise should — creditworthiness apart — be irrelevant. Such arguments linking investment to franchise length are entirely consistent with franchisees seeking to reduce future competition.

As noted above, open access competition had to be “moderated” in order to facilitate the letting of franchises. Such competition between rival train operators might attract operators wishing to serve popular routes at peak times, but would reduce the scope for cross-subsidy between different routes and different times. It is likely that such competition would not attract new entrants to the industry, but would encourage existing operators to make more profitable use of their existing rolling stock by operating in another franchisee’s area. For instance, for a commuter TOC the rolling stock requirement will be determined by the need to meet peak capacity needs. Outside peak times there may be spare stock, and if access paths are available it may be possible to provide additional services in competition with another TOC at very low marginal cost. If such extra services attract additional passengers or provide user benefits they may be justified, but there is a risk that such services merely spread a fixed volume of demand among a larger number of service providers, with the marginal revenue to the open access operator exceeding the marginal revenue to the system as a whole. (This risk is particularly acute since the system for allocating revenues from a given point-to-point flow where there is more than one provider is driven by average usage, not by the marginal traffic attracted on to the system by a new provider.) In those circumstances, open access services can lead to an increase in subsidy requirement that exceeds user benefits, and a higher overall subsidy requirement. Such overproduction might be efficient if it generated significant user benefits. Experience in the bus industry suggests that services produced by new entrants are targeted at taking competitors’ customers rather than expanding the market, so services are introduced to run immediately before those of competitors rather than halving headways, and in such cases the benefit to users may be very small. Competition between train operators for the market is likely to need to be managed carefully to ensure its benefits exceed its costs. This point has been recognised by the Regulator, and his proposals for the opening up of access rights suggest that additional services will

10 The 1993 Railways Act gave the Franchise Director the power, subject to Treasury approval, to underwrite investment that might last longer than the life of the franchise itself. Those powers have been little used.
be evaluated on a case-by-case basis using cost benefit criteria; this is some way removed from the original open access concept.\footnote{Office of the Rail Regulator (1988): \textit{New Service Opportunities for Passengers}. March.}

The trend of reducing subsidy will present a difficult conundrum for government. The present level of subsidy is the result of massive cross-subsidy from profitable to unprofitable services, but the cross-subsidy takes place primarily within the franchise, that is, virtually all the franchises require subsidy. If the franchise bids are achieved by early in the next decade there will be substantial cross-subsidy between franchises, that is, the reduced level of subsidy in total is dependent on the receipt of premiums from some franchises to offset the large subsidies paid to others. There is no economic difference between cross-subsidy within and between franchises, but the transparency of the franchising process will make it much more obvious, and government will find itself having to justify extracting the monopoly rent from granting the exclusive right to operate a profitable franchise in order to cross-subsidise a poorer performer elsewhere. The issue of the criteria for subsidy and their application to the network size question is destined to reappear. Privatisation has not relieved government of the burden of making that decision; rather it will focus attention on the issue.

\section*{8. Relieving the Funding Burden}

One of the reasons for privatising the railway was the impending build up of investment required to maintain — let alone improve — the system. The emphasis on cash control meant that investment had often been used as a means of achieving short-term financial targets. During the early years of the 1990s, falling demand had enabled managers to meet cash targets by shrinking the size of the rolling stock fleet simply by failing to replace life expired equipment. Once demand stabilised or grew, which was highly likely once the economy recovered, there would be a need to expand capacity, and the cash consequences for the exchequer would be detrimental as the increase in income would be offset by the need to fund investment. Similar problems were visible on the infrastructure, where a backlog of signalling renewal schemes was building up as the existing equipment reached the end of its economic and physical life. The most notable and sensitive requirement for investment involved the replacement of much of the infrastructure and rolling stock on the West Coast Main Line route; although this route was potentially the most important on the system, the track and signalling had not been comprehensively replaced since the original electrification in the 1960s. In arguing the case for privatisation it was essential that the structure should ensure that the investment was undertaken and that the funding involved should fall on the private sector.

In the case of the infrastructure, for which Railtrack was responsible, the incentive to invest was provided through the regulatory regime and the performance payment regime under which Railtrack was rewarded when infrastructure performance improved and penalised when it deteriorated. However, while there are incentives to invest to maintain the existing capacity, there is no contractual incentive to provide additional capacity in the event of traffic growth. This presents major problems for the future because
the franchises were let on the basis of bids that assumed increasing levels of passenger demand, but there is no robust mechanism to ensure the availability of the infrastructure to handle the traffic. At the same time, EWS, the new major player in the freight railway, was promising to triple rail freight volumes, but the consistency between those plans and the ambitions of the passenger operators using the same track was untested.

In setting access charges the Regulator had taken account of Railtrack’s investment plans and their consequent funding requirement. In the aftermath of the Railtrack sale there was widespread criticism that Railtrack was not spending as much as had been promised, and the Regulator negotiated an amendment to the Railtrack licence to increase his influence over the specific delivery of the investment plan. There should be no great surprise at these events; previous privatisations had illustrated the tactics that regulated industries use to justify higher charges — that is, before the review they argue the need for a high investment programme, which is subsequently slow to be delivered once charge levels have been settled. Over time regulators adjust for the tendency of the industries to exaggerate their investment needs, but the asymmetry of information tends to mean that regulators are often one step behind their industry. There is no reason to expect that the railway industry will be any different from other privatised regulated industries in this regard.

In the meantime the charging mechanism has had a rather perverse effect. Charges have been set on the basis of the forward programme of investment. This has smoothed the burden of funding for Railtrack, but since expenditure is forecast to increase over the period of the price review, access charges and subsidies are funding investment in advance of the expenditure being made.

The situation regarding rolling stock is fundamentally different. The sale of the ROSCOs carried with it no obligations or commitment to invest in new vehicles, and can therefore be viewed as a classic sale and lease back transaction: ownership was transferred in return for a commitment to pay a rental stream. It is the leasing of new stock rather than the sale of the ROSCOs that may shift the burden of funding.

Almost the whole of the vehicle fleet is committed through medium-term leases and is needed to provide the services specified in the franchise agreements. The franchise plans assume rapid growth in passenger demand, which would imply a need for an increase in vehicle numbers, but it is not clear who will invest in such an expansion of the fleet. The franchise plans also include, in some cases, a commitment on the part of the franchisees to invest in new stock, either to replace old stock on existing services or to provide new services. Who will provide this new equipment, and what are the implications for investment in rolling stock in the long term?

Franchises were not set up to own many assets; indeed, the only capital requirement for a franchisee was a performance bond set at 10 to 15 per cent of annual passenger revenue — a trivial amount when compared to the replacement cost of the rolling stock fleet, which would amount to roughly four times the annual revenue. TOCs will therefore have to look to more heavily capitalised intermediaries to purchase new stock, which the TOCs will then be able to lease. Such intermediaries will need to take a view
on the reliability of lease rentals over the life of the asset, given that the franchisee with whom they are initially contracting may only have a contract for a very short period. Perhaps inevitably, some franchisees have argued that without a long franchise period they would be unable to invest, and plainly the longer the client commitment the less risk there is to the rolling stock purchaser. However, the longer the franchise period the less the chance that the franchise would be contestable when it came to be let. There is therefore a tension between the desire to encourage investment and the desire to ensure that competition for franchises is sustained.

Investment in rolling stock carries distinct types of risk:
(1) Project risk: will the new equipment be delivered to time and to specification?
(2) Commercial risk: is the operator able to extract the benefits (such as revenue gains or cost savings) as projected?
(3) Ownership risk: will there be a market for the rolling stock once the initial lease period is over?

Project risk can be transferred to the private sector by a variety of means; for example, procurement of capital goods can be made conditional on performance warranties and liquidated damages for non-performance. Experience suggests, however, that substantial warranties lead to substantial risk premiums being incorporated into the prices. Privatisation will certainly transfer such risks, but the premium will be reflected in rolling stock prices and hence subsequent franchise bids.

The commercial risk associated with the investment will pass to the franchisee at least until the end of the franchise term. Unless at that point there is a surplus of rolling stock above the level needed to meet the franchise specification, the new stock will be needed and new bidders will take their own view of the value of the asset, and if the asset is generating smaller — or larger — benefits than expected then losses or gains will be reflected in subsidy bids at renewal. The transfer of risk is therefore relatively short term unless the franchise body is prepared to let the franchise without the new asset, that is, making the owner bear a real residual value risk.

The third form of risk has to a large extent been created by the privatisation process. Even when the railway operated in the public sector there was some chance that assets that had been purchased for the passenger business might be stranded by a policy decision to stop supporting loss-making services; but the existence of a non-time-limited obligation to operate services incorporated in the 1993 Railways Act, and government's own willingness to fund investments, were clear signals of a long-run commitment to the size and scale of the network. With franchises of, typically, seven years duration, the owners of rolling stock have to form their own view of the subsequent market, and it is perhaps unsurprising that potential asset owners have begun to understand that the risk that the network might be seriously reduced is very small and therefore a continuing market is highly probable. The transfer of ownership risk may prove to be illusory, given the subsidised nature of the passenger railway system. Any risk transferred in the short term is likely to materialise in the subsidy requirement through asset prices, lease rental levels, and subsidy bids.
Will a privatised railway cost government less? Any assessment will be dogged by the curious accounting conventions of UK public expenditure measurement. The measurements and controls used in the UK have been based on crude calculations of cash spend within a twelve-month period, and take no account of capital consumption, the opportunity cost of capital, the structure of funding, and so on. In short, government expenditure measurements have been a woefully inadequate measure of the true economic cost of supporting the passenger railway system. Using those crude cash measurements would indicate that initially subsidy virtually doubled as a result of the restructuring necessary for privatisation, from grants of £1,092m in 1993/94 to £2,132m one year later. Privatisation has fundamentally changed the financial flows within the system, so that in many ways they are now a closer approximation to long-term economic costs, in that subsidies should now be providing for the opportunity cost of capital in a way that was previously absent. On that basis the costs of support could certainly be claimed to be falling over the life of the franchises, but has the “privatisation project” delivered a net improvement for the public sector? The case is unproven.

Any analysis of the financial effects of privatisation would face considerable problems in establishing a genuine like-for-like comparison. (For example, how much of any increase in passenger income is due to the change of ownership, and how much would have taken place anyway given the upturn in the economy that coincided with it?) It would also be necessary to take account of the very substantial transaction costs (that is, privatisation costs of over £500m), and the net gains or losses from transfers of ownership (that is, the difference between the sales proceeds and the discounted value of the profit streams that have been transferred to private ownership). In the case of the rolling stock companies the National Audit Office concluded that the value of the discounted income stream at public sector discount rates easily exceeded the sale proceeds achieved. 12 We would not be surprised if other elements of the sale process failed this particular test of value for money.

9. Conclusions

It is far too soon to claim that privatisation has succeeded or failed in terms of changing the fortunes of the railway in the transport market. Nor is it particularly illuminating to speculate on whether the financial results are better or worse than they would otherwise have been. It is much more important to seek to understand how the new organisational framework will work and what gaps or problems are likely to emerge.

The new industry structure will undoubtedly alter the incentives perceived by individual managers, and the move towards contract-driven relationships between customers and suppliers should facilitate a more rigorous approach to decision making. This is certainly welcome. However, in a loss-making industry, we would argue that a change of ownership is unlikely to transfer risk to the private sector, other than in the short term,

unless the private operator has freedom to take decisions on output and price levels. In the longer term, costs and risks of the network will find their way back to government through the franchise bidding process.

Privatisation was intended to take Government out of direct involvement in issues of railway finance and management. Its role as customer for the passenger railway remains, and we would argue that the difficult decisions relating to choices about the scale and balance of funding are likely to become more acute as the contrast between the subsidised and unsubsidised services becomes more visible. The fundamental problems of government having to choose how much it wishes to spend on supporting the passenger railway, and what are its priorities for the use of that support, have not been addressed by privatisation and will surely return.

The most significant problems may turn out to be those of success. Increasing volume and demand for infrastructure was not adequately addressed in the privatisation design, and the indications are that the private sector will be reluctant to invest to increase the capacity of the system. The government’s proposals for a Strategic Rail Authority may provide a mechanism to plan such capacity requirements, but ensuring that the new private sector players genuinely bear the risk of increasing the capacity of the system, without implicit government underwriting through the franchise process, remains a problem to be solved.

Postscript

The Government published its Transport White Paper on 21 July 1998, some time after the draft of this article was submitted. The White Paper recognised many of the problems highlighted here and committed the government to the establishment of the Strategic Rail Authority; this should go some way towards resolving the confusion of responsibilities that has been evident between the Rail Regulator and the Franchising Director, and filling the strategic planning void. While the White Paper includes a good deal of encouragement for the rail industry to increase its passenger and freight carryings, it has given few clues about the way in which government wishes to exercise its own influence over the future development of the system. Difficult choices and trade-offs remain.

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An Analysis of the Potential for On-track Competition in the British Passenger Rail Industry

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Abstract
This paper undertakes a systematic review of the potential for on-track competition in the passenger railway industry in Great Britain, and concludes that some such competition is likely. A simulation model is developed and tested on an inter-city rail line. The findings in respect of different forms of competition are examined. It is concluded that on-track competition is unlikely to promote economic efficiency unless it leads to cost reductions and/or product differentiation.

1. Introduction
The 1992 White Paper New Opportunities for Railways (HMSO, 1992) and the resultant 1993 Railways Act (HMSO, 1993) offered the possibility of open access competition on the British passenger rail network in excess of that required by the European Commission’s Directive 91/400. In the event, open access competition has been moderated by the Office of the Rail Regulator, so as to ensure the success of the initial franchising process. This moderation consists of three stages. In the first stage, train operating companies can nominate all flows that contribute more than a certain threshold (usually 0.2 per cent of revenue) to be exempt from open access competition. Flows on which no through service is operated may be subject to competition. In a second stage, a new nomination process will be enacted with open access competition permitted on up to 20 per cent of nominated revenues. The original intention was for this second stage to commence on 1 April 1999. A third stage, which was expected to involve further incremental extension of open access competition, would commence on 1 April 2002 (ORR, 1994). Following a full round of consultation it has been decided that the second stage will begin with the winter 1999 timetable (that is, September 1999). The possibility of a third stage will be examined when the success of the second stage is determined (ORR, 1998).

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It is the aim of this paper to explore the implications that the potential relaxation of entry restrictions will have for the profitability of operators and the economic welfare of society. In Section 2, we make a systematic attempt to identify the most likely competitive scenarios and examine the implications for modelling. In Section 3, we outline an econometric rail operations model and evaluator developed to assess the likely outcomes of various forms of competition. The model is applied to an inter-urban rail route and is based on real demand and cost information. In Section 4 we define a set of plausible competitive scenarios and show their simulated outcomes. The results are shown in terms of changes in overall economic welfare together with a disaggregation of the principal gains and losses. In Section 5 we examine the results of a second case study so as to assess the transferability of our results. Finally, we draw some conclusions and make some suggestions for further research in Section 6.

2. Competitive Strategies

In this section a game theoretic framework is used to determine likely competitive scenarios (see Preston, 1997, for more details). This will inform the competitive scenarios modelled in Sections 4 and 5. The overall approach is based on the decision tree structure shown by Figure 1. The five levels in this figure are discussed in sequence.

2.1 Market potential

Assessing market potential can involve consideration of Porter's (1980, 1985) five forces theory of industry structure. The five forces that drive industry competition are postulated as: threat of substitutes; threat of new entrants; bargaining power of suppliers; bargaining power of buyers; and intensity of rivalry among competitors. If any one or more of these five forces are sufficiently adverse, monopoly profits are not sustainable due to the effect of actual or potential competition. In general, for rail, the threat of substitutes (such as car, coach, and plane) and the bargaining power of suppliers (such as Railtrack and the ROSCOs) is high, but the bargaining power of buyers (particularly long-distance commuters and medium-distance business travellers to London) is low. The intensity of rivalry is likely to be mixed. In the long run (that is, after 2002) there should be few barriers to entry to the industry.

Such an analysis suggests that the potential for rail competition is mixed but there are a number of markets that might attract entry. In the first instance these would be mainly based on inter-urban and long-distance commuting routes into London, where rail has a competitive advantage over other forms of travel and there is a historic record of active rivalry (for example, London-Birmingham, London-Peterborough, London-Gatwick/Brighton). Shaw et al. (1998) provide a recent review of historic rivalries. Competition up to 1999 will be limited to the margins, where franchises overlap or where they serve the same destinations by different routes. Subsequently, competition is possible on key inter-urban routes to London, some key regional express routes, and on many routes in central England.