INSTITUTE FOR TRANSPORT STUDIES
UNIVERSITY OF LEEDS

ITS Working Paper 586
February 2005

The Restructuring and Future of the British Rail System

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This paper was prepared whilst the author was a visitor to ITS under the EU Marie Curie research training programme.

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Abstract

The paper focuses mainly on reviewing and analysing the restructuring of Britain's railways, including the recently published proposals for its future. The objective is to investigate the current market structure, the market behaviour and the overall performance of the British rail system over time. In order to learn what other people think about the problems of the industry and their solutions, interviews with key people associated with the industry and several submissions of some key interest parties to the 2004 railway structure review are used in this paper. The results are that all major characteristics of the rail reform in Britain are seen as workable and empirical data reveal that they have worked comparatively successfully, before Hatfield. Because of bad implementation some of the features, and in particular the private infrastructure manager, have not worked well. Most of the problems have arisen because of indecision over refranchising and the disruption following Hatfield. Furthermore the policy of the Government after Hatfield created an extremely risk averse culture within the industry, at a time when Railtrack had not enough insights about the state of the rail network. Although empirically unjustified, safety improvement became the main issue, costs escalated and reliability and productivity experienced a huge fall. The current White Paper "The Future of Rail" is seen as partially misleading and not at all detailed. At present it is only clear that the proposals will result in further increase of political interference. Much will depend on the precise implementation of the proposed measures and therefore the future of British rail remains unclear.

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1 Introduction

Britain has today the fastest growing passenger rail market in Europe when measured in passenger kilometres and the rail network is very densely used (ATOC, 2004). Nevertheless the British Government published its White Paper "The Future of Rail" (DfT, 2004) in July this year, supposing again some fundamental changes in the administration of the railway industry. The question arises whether all the changes since 1994 had any impact on the performance of the whole system and if there is anything wrong with the current structure of the industry? Sir Christopher Foster (1994) one of the architects of the initial rail reform, points out in his recent submission to the White Paper that it is widely acknowledged that Britain's railways are in a mess these days (see Foster/Castles, 2004). There has been always a highly concerned press and there have been always opponents of the privatisation, in first row Christian Wolmar (1996, 2001). Economists and key player of the industry became even more critical after the actions undertaken by the Labour Government since 1997 (see Glaister, 2002 or Shaw/Walton/Farrington, 2003). The critics did not fall silent and probably will not do in the future (see Wolmar, 2005). Especially the inability of the Government to set appropriate incentives for the industry to deliver value for the money was often critically reviewed (see e.g. Nash, 2002a). But there are as well articles concluding that the initial privatisation or at least single measures were appropriate at that time and successful pre Hatfield. The aims of this paper will be to assess the performance of the rail system over time and to examine whether there was something fundamentally wrong with the post-privatisation structure or if its main characteristics could have worked and can work in the future under different circumstances.

2 Methodology/ Approach

First a pragmatic policy review will be given to provide a short overview over all the changes and their initial aims during the last decade. As the British rail industry was fundamentally

[1] This paper was prepared during a Research Fellowship at the Institute for Transport Studies, Leeds University. With support of the Human Resources and Mobility Program "Marie Curie" of the European Union it was presented at "INFRATRAIN Autumn School 2004" at Berlin University of Technology. The author acknowledges comments from Chris Nash, Jeremy Toner and Andrew S.J. Smith. All remaining errors are the responsibility of the author.

transformed in 1994, in 2001 and is going to be transformed again by the end of this year the focus will be on questions about potential problems with the pre-changed systems. Because the British rail reform is now relatively well known, the policy review will be rather short and the attention will lay on the current system, on recent developments as well as on the proposed changes. To assess whether all the structural changes were necessary and in any sense effective the paper will also draw published statistical material. The objective for using some empirical data in some kind of descriptive cost benefit analysis is to examine significant trends in the change of performance of Britain's railways. The literature and empirical findings are then supplemented by interviews with key people associated with the industry and by submissions of the various interest parties to the 2004 rail structure review. This paper investigates some major indicators for the overall performance of the British rail system over time. It examines the main problems which led the Government to publish the White Paper (DfT, 2004) and takes a critical view on the proposed measures.

3 Policy review

3.1 Was there anything wrong with British Rail?

The British railway system is not only known as the most liberalised railway system in Europe (see IBM/Kirchner, 2004), but sometimes also as an example that privatisation as a single step is not enough to ensure a sustainable railway system. It is important to set the right frame for competition, for appropriate incentives to cost efficient production and for maintaining and renewing a qualitative and quantitative reliable infrastructure.

Following a series of privatisations in Britain carried out by successive Conservative administrations, railways were the last network sector to privatise, and probably the most complex one. Since nationalisation in 1948, British Rail (BR) the state owned vertical integrated infrastructure manager experienced four major shifts in the way it was controlled by the state (Joy, 1998, pp. 27). There was the "sectorisation" in 1981 which tried to establish market-facing business sectors within BR (Charlton, 2000) and before it came to the actual privatisation in 1994 most activities of BR, which did not belong to its core business, were sold off between 1981 and 1993 (e.g. Sealink UK, BR Hotels). The biggest problem of BR and the main reason for selling off its non-core businesses was the weak profitability of the railways (Welsby and Nichols, 1999, p. 56). Since the 1950s Britain's railways have been in a loss-making position largely depending on government subsidies and over the years the industry financial position

continued to deteriorate. At the same time the railway's market share both in passenger and in freight has been in long-term decline. Although Cowie (2002, p. 34) reveals that efficiency of the railways had improved between 1985 and 1990, the performance of railways was generally perceived as too little especially when it came to service quality (DoT, 1992). Before that background the government aims of the railway privatisation process, as stated in the White Paper (DoT, 1992) "New Opportunities for the Railways" were: to make better use of the railways, to ensure greater responsiveness to the customer, to provide higher quality of service and to provide better value for money. The key to succeed in achieving these aims was seen (similar to previous privatisations of network industries) in improving reliability, efficiency and in strengthening the financial position of the industry. The introduction of competition through greater involvement of the private sector and ending BR's monopoly in the operation of services was the proposed instrument for achieving this. The general idea of the Conservative party was to lead the industry towards more efficient network (the unspoken aim was a smaller network) and it was seeing competition as the most appropriate tool to improve efficiency: "Introducing competition, innovation and the flexibility of private sector management will enable the railways to exploit fully all the opportunities open to them." (DoT, 1992). It is worth to mention that railways are not only a very complex industry but that the assets (tracks, rolling stock etc.) which were going to be privatised were in an unknown state. There was a need for increased renewal activity with the high volumes of track renewed in the 1970s now becoming due for renewal. Although Ford (2004, p. 15) reveals that only the last decade has experienced underinvestment most people believe that BR spent too little on maintenance and renewals for a long time pre privatisation.

3.2 Deregulation and privatising process – the Railtrack era (1994-2001)

Because the British rail reform is now widely known and exhaustively discussed in the existing literature, this section will provide only a brief description over the steps undertaken by the British Government. Between 1994 and 1997 the organisational structure of the rail industry was fundamentally rebuilt (Kain, 1998 as well as Harris and Godward, 1997, provide comprehensive overviews). The principal change was the separation of BR's infrastructure from its transport operations. Under the Railways Act (1993) a new government owned company, Railtrack, took ownership and management of almost all BR's railway infrastructure in 1994. All other BR activities were split into more than 100 companies and then transferred to the private sector, mainly by tendering. Railtrack was sold in 1996 to the private sector through flotation on the stock market, following the model of a regulated private infrastruc-

ture monopoly. By following the European Directive 91/440, Shaw (2000) argues that this directive was used to support the government's plan for vertical separation. In result, the organisational change undertaken by the Conservative government went far beyond the directives requirements, and was completed just before the election in 1997 which the Conservatives were expecting to lose (Freeman & Shaw, 2000). By then all railway activities were privatised. Railtrack staff undertook signalling and control, but did not carry out engineering tasks. For those tasks, mainly infrastructure renewal and maintenance, the approach was to subcontract former BR units, which were, after outsourcing and sale, now individual private companies. To introduce more competition and reduce market entry barriers the other essential asset, rolling stock, was sold off to three private Rolling Stock Companies (ROSCOs). For the transport market a franchise model with 25 Train Operating Companies (TOC) was chosen for passenger transport, while the freight operations were sold off to Freight Operating Companies (FOC). Whilst the franchised passenger market was regulated, there was open access in the freight market. After a while there was also severely limited open access on a few passenger transport lines. As part of the reform two regulatory bodies were installed. The Office of Rail Regulator (ORR) was responsible for economic regulation and mainly focused on Railtrack as the monopoly player of the industry. The Office of Passenger Rail Franchising (OPRAF) was primarily responsible for awarding franchises and, through that, paying subsidies as well as regulating the TOCs. Safety regulation was given to the Health and Safety Executive (HSE). As a result, there have been three bodies involved in regulation, in order to separate the roles of economic and safety regulation from determining subsidy levels and in theory there was not much overlapping of responsibilities. This regulatory structure was completed with a complex compensation regime and a fare regulation as well as a track access charge regime. In general the privatisation and reorganisation of the industry was very controversial and had strong opponents (Winsor, 2004a, p. 12). When Labour came into power in 1997, it announced, changes in policy and administration with a trend of renationalisation of the industry. In contrast to the Conservatives, the Labour government was putting railways at its centre of transport policy. In its 10 Year Transport Plan (DETR, 2000) Labour envisaged 50 per cent increase in passenger traffic and 80 per cent increase in freight traffic. Given that there had already been substantial increases in rail traffic since privatisation, the network was faced with scarce capacity. The Labour party expected enormous investments, especially from the private sector to enhance the network, which was ambitious and as Glaister (2002) shows, little else than the announcement was achieved. To realise this fundamental growth, the responsibility of the OPRAF (then already called Shadow Strategic Rail Authority) was ex-

panded to take on a strategic role in the industry and in 2001 it was re-named to Strategic Rail Authority (SRA). The purpose of the SRA was according to the White Paper of the Government in 1998, to provide "a clear, coherent and strategic programme for the development of our railways" (DETR, 2000). Following the new plans of the Labour government (using still with the same legislation) the SRA will be abolished by the end of 2004. Therefore one could argue that either the abolishment or the set up of this agency was a mistake on itself. Although there have been substantial cost savings and performance improvements (Pollitt and Smith, 2002) there has been much criticism regarding many aspects of the rail reform. Most failures are widely known today. Therefore only some of the main failures from the early post-privatisation period will be captured in this section.

One source of problems during the early post-privatisation period was the overachievement of one of the aims of the rail reform. Growth on passenger as well as on freight markets was much more than anticipated. Privatisation was expected to result in some, generally modest, traffic growth through filling trains, especially off peak. Instead the growth on some lines was by far too much for the existing capacity, especially on the routes into London. At the same time the industry was faced with problems related to service quality, investment, safety (at least perceived as problem) and profitability (Nash, 2002a). Most of the problems were caused by the rushed implementation and combination of the initial franchise system, the regulatory regime and the incentive structure (e.g. performance regime). Foster (2005) argues that for political reasons too much was attempted too quickly (only five years until the next election), but this is a standard problem in regulatory economics and not specific for the British market. In the first franchise round the TOCs with the highest revenue forecasts or lowest cost succeeded. Some TOCs had therefore ambitious revenue targets and others were building their franchise bids around big reductions in operating cost, and a reduction of the subsidy was included in the contract. The TOCs had in both cases a strong interest to increase their revenue. Because almost 50 per cent of the fares were regulated (RPI price caped) and because the marginal cost of train operation were low, due to the 91% fixed part of the track access charges (Crompton and Jupe, 2003, p. 405), the TOCs were trying to increase the traffic on the network, which was already on its capacity limit on certain lines. On the other hand Railtrack had no incentives to enable the TOCs to operate more trains on its network. One reason for that was the structure of the track access charges, another was the complex penalty regime which was part of the track access agreements. Railtrack was forced to compensate the TOCs for performance below a certain level, and more trains on the network meant an in-

crease of probability that Railtrack could not provide that certain level. Because TOCs had to pay Railtrack as well if they were the cause of delays, they were not waiting anymore for other TOCs who were running late and in result the delays multiplied. At the end most TOCs were not able to increase revenues and tried therefore to save money in service, staff cost (including training). Many of the TOCs went into financial trouble. Instead of allowing some of them to go bankrupt the SRA moved to the "cost plus" franchises contracts, and therefore the subsidies to the industry increased. These "cost plus" contracts were always seen as a temporary measure, but changing franchising policy and the post-Hatfield crisis delayed things. With its Periodic Review the ORR (2000) made a major change of the incentive structure to realign the interests of Railtrack with the TOCs. To incentivise Railtrack to facilitate growth on the network, the proportion of variable charges (including a new capacity charge) was increased to 20%. Other problems occurred as a result of too much fragmentation both in administration (overlapping responsibilities) and in the private sector. Concerning rolling stock, Preston (1999) points out that there was a virtual freeze in rolling stock investment in the early years post privatisation. Current figures reveal that recovery is underway and that there is substantial investment at present (SRA, 2004a, p. 51). NAO (1998) argues that the rolling stock was initially sold for £1.7bn by the Government, and subsequently sold on for around £2.7bn, which could be seen as a substantial loss for the taxpayer.

To sum up, although there were some sceptics especially regarding vertical separation (see e.g. Preston, 1996) and privatisation (Wolmar, 2001) it is now acknowledged that the early post- privatisation experience was better than perceived by many people (see e.g. Pollitt and Smith, 2002). Preston (1999) draws 20 lessons from the British rail reform, the majority being positive. He highlights the positive effects of the (although limited) on-the-track competition, like product differentiation, increased service frequency and selective fare cuts. Van de Velde et al., (1998) point out that there have been important entrepreneurial initiatives since privatisation, with the most important concern in ticketing and distribution. Nash (2002b) concludes that the industry structure adopted at privatisation was the best way of introducing competition to the railways. The new structure clearly increased complexity and created some problems. However they have occurred, mainly due to the rushed implementation and were mostly related to contractual design. Additionally these problems have to be weighted against the benefits of competition. In total the increased performance, the growth in traffic and the achieved cost savings outweigh the experienced problems faced between 1994 and 2000.

3.3 The problems of Railtrack and the introduction of its successors

Because many of the difficulties of the British railways were related to the infrastructure manager, this section will provide a brief introduction to the weaknesses of Railtrack and its successors. Since its flotation in 1996 Railtrack was a private company on the stock market, knowing neither its assets (there hasn't been any asset register) nor its cost drivers, nor having a management experienced in railways, because most of the top managers were appointed by the Government from outside the industry. Instead of realising that there had been underinvestment in the asset base (mainly due to the investment cycle), and instead of concentrating on its day to day business, the management was focused on serving the shareholders, after the unexpected growth in traffic and in line with a satisfactory development of the share price in the early years. Although Railtrack welcomed the unanticipated growth at the beginning, it was weak incentivised to enhance the network and to ensure appropriate capacity.

As mentioned in section 3.2, Railtrack sub-contracted all its maintenance and renewal activities and the maintenance and renewal companies sub-contracted many tasks as well. By outsourcing these former BR units, there were at some point more than 2000 subcontractors, the infrastructure manager lost skilled engineering staff and valuable information about the condition of the infrastructure (Grayling, 2001, p. 23). The split between the Infrastructure Maintenance and the Track Renewal Companies was perceived as particularly inefficient and as an example of too much fragmentation in the private sector (Wolmar, 2001, p. 92). In Lord Cullen's report on railway safety (Cullen, 2001) the poor management of the maintenance and renewal contracts by Railtrack is highlighted too and it is concluded that better co-ordination, clearer lines of accountability and fewer subcontractors are desirable, but vertical integration is not a necessary prerequisite. Foster (2005) highlights that BR had already reduced maintenance substantially in 1992 and kept it that way for two years. This was the result of massive pressure from the Treasury and he argues that this could have been a cause for the Hatfield crash. Already, the accident at Ladbroke Grove had changed the mindset of ministers, who were under pressure from the opposition to resign and finally the Hatfield accident changed the whole story of the British rail reform. Whilst Hatfield was demonstrating some inadequacies of the system, the Labour government used the media attention to support their position against the privatisation done by the former Conservative government and made safety political issue without considering any cost or the reliability of the railways. Even more damaging to the industry, the trackside became a police scene of crime (Foster, 2005). One could argue

that similar things were said post Clapham in 1989, and that BR handled the situation a lot better, but after the Hatfield crash it was not enough, as it had been before, that the railways deplored what happened and promised a careful investigation. Instead Railtrack board members were vilified, their home address displayed and the whole rail system became risk averse, encouraged by the perception at all levels that managers would be sued or even criminally prosecuted. Given that background, one could possibly understand the actions of Railtrack managers after the Hatfield derailment, even if they seem insufficiently considered. Trying to avoid every risk, with poor understanding of the condition of the network but knowing that the cause for the accident was a broken rail, every metre of the network was inspected for gauge-corner cracking. One could argue that the management lost its confidence after Hatfield completely (safety was actually increasing since privatisation), which led to a multitude of re-railing initiatives and temporary speed restrictions "just in case" anything was wrong (Foster 2005). By doing so, Railtrack restricted the ability of the TOCs to run their advertised timetables and freight, as well as passenger travel, collapsed (passenger number fell by up to 40% within the early days, CFIT, 2001). In result, Railtrack was obliged to pay more than £500m in compensation to train operators (Kennedy and Smith, 2004, p. 158). Because the derailment heightened concerns over the condition of Britain's rail infrastructure maintenance and renewal activity was also intensified, which resulted in Railtrack facing an even sharper increase in cost. At the same time, the cost of high profile intensification projects as the upgrade of the West Coast Line went out of control and escalated from an initial estimate of £2.3bn in 1996 to £5.8bn in 2000 (ORR, 2000). All these costs undermined Railtrack's finances, devastated its share price and compromised its capacity to raise capital. Hence Railtrack was forced to request direct financial support from the government, and as the offered funding (£1.5bn under various conditions) was thought to be not enough, the government withdrew support for Railtrack and placed it in administration in October 2001 (Shaw et al., 2003, p. 148). It is worth mentioning that Railtrack could have been rescued through a TAC-review by the ORR, but neither the government nor Railtrack did ask for it until the last minute (Winsor, 2004a).

The administrators of Railtrack plc – the accountancy firm Ernst & Young - planed to run the company as normally as possible while it was under their control. During that time there was a political driven demand for massive safety improvements on the network and, because there were not enough companies to cover all the demand, the subcontractors could increase the price. In result, the maintenance and renewal cost increased dramatically during the time of administration. In October 2002, a new company, Network Rail (NR) purchased Railtrack and

this company now owns and manages the infrastructure. This not-for-dividend company is limited by guarantee and its members are rather stakeholders than shareholders. Network Rail has a profit motive but it reinvests any profit, instead of paying a dividend to its members. The decision to place Railtrack into administration, and replace it with a not-for-dividend company, may have weakened incentives for cost control at a critical time for the industry.

The British infrastructure manager has seen three different ownership models within less than ten years and many difficulties of the British rail reform were related to the infrastructure. Key findings of a Mercer Management Consulting and DTLR (2002) study which are mainly based on more than 50 interviews with key persons of the industry and related professionals, reveal four major problems, all related to the infrastructure manager and a general lack of consideration of value for money. They point out the failure to implement correctly maintenance and renewal of the network, stemming from a loss of knowledge and expertise, compounded by historic under-investment. Furthermore they highlight the poor investment planning and strategies, the inefficient capacity utilisation on a congested network and the onerous and bureaucratic safety concern without a balance of benefits and costs of safety regulation. To get cost and the maintenance difficulties under control NR recently has been taking maintenance back into house. To achieve further efficiency improvements NR recently has been changing its organisation structure. Since 1996 Railtrack was based around seven geographical zones and this structure remained under NR. Since the 24th. May 2004 NR has what they call a functional structure (interview Marlee). On top of the people in charge of operations or maintenance in their 18 areas, there are now people who are in charge for 8 major routes and 5 asset management territories. For the 8 routes a central department of operations and costumer services has the responsibility and the asset management territories report to a central maintenance unit. Internally, NR also changed its bonus regime. Under Railtrack, the bonus regime was based on individual performance, now it cascaded down to NR's performance, which is supposed to motivate individuals more around the core company objectives.

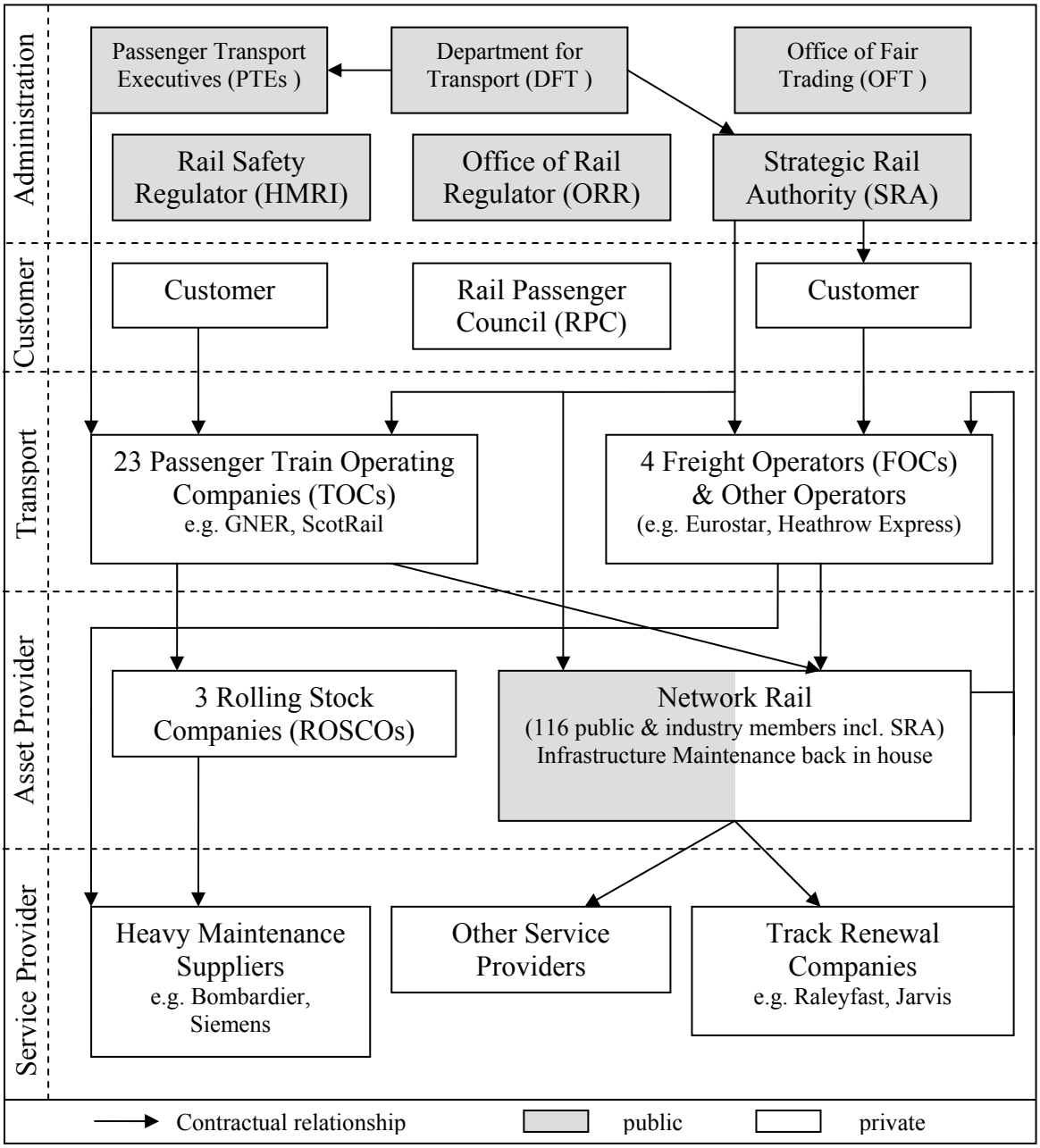
To sum up, it was shown that there have been difficulties with the rail infrastructure. However most of them were caused by management failures and weak incentive structures, but not much related to the fundamental structure. Many things have been changed in relatively little time, and it is even today difficult to fully understand such a complex system as the British railways. Hence the next section will provide a detailed overview of the current organisation of the British rail system, followed by a critical analysis of its proposed and possible future.

4 Review of the current system

4.1 main players in the field and their relation to each other

As Accenture (2003) has done it for Network Rail, it might be worth examining the supply chain of the whole British rail industry. On top there are public bodies setting the framework for the private industry to deliver what customers and the government are demanding. As illustrated in Figure 1 there are basically six key parts to the structure of public bodies.

Figure 1:
Financial flows and relations within the British Rail Industry in 2004



The **Department for Transport** (DfT) is on top of the whole system and is responsible for the overall policy for the railways, setting it within a wider transport context. It issues furthermore direction and guidance to the Strategic Rail Authority (SRA) and gives general guidance to the Office of Rail Regulation (ORR). The SRA and the ORR have common statutory purposes and different powers by which those purposes are to be achieved. The **SRA** (which will be abolished by next year and the DfT will take over its responsibilities) depends on directions and guidance from the Government. It provides the overall strategic direction for the railway's, lets and manages passenger franchises as well as freight grants and is responsible for the development, sponsoring and monitoring of major infrastructure projects. It promotes the use of the railway network, as it secures and contributes to its development and has general responsibility for consumer protection matters. Furthermore the SRA publishes an annual 'Strategic Plan', that the DfT probably will not publish in future, which could mean a loss in transparency within the rail system (see interview Glaister). The **ORR** focuses more on the monopoly and dominant elements of the railway industry. Its main function is to regulate Network Rail's stewardship of the national rail network, including reviewing and setting its access charges. The ORR also licenses operators of railway assets, approves agreements for access by operators to tracks, stations, and light maintenance depots, and enforces domestic competition laws. The model of regulatory regime which the Conservatives devised was one of an individual regulator, appointed by the Government but through its five year contract, independent of the Government. Tom Winsor (2004a) who was the regulator for the last five years describes mainly two functions for a rail regulator: first to protect users of networks from abuse of monopoly power by their owners and operators and second to protect the private sector (for example from unjustified political interference) to ensure a stable, predictable and fair financial and operating environment for the enterprises in question. Following his experiences regarding his attempt to rescue Railtrack using his right to reassess the financial needs of the infrastructure provider and what would have enabled Railtrack to charge more from its customers and therefore to strength its financial position and to prevent the bankruptcy. The regulator has this right under the Railways Act (1993) usually every five years or in specific circumstances like it was the case with Railtrack in 2001. On the other hand Railtrack has to ask for such a review and it did not until the last minute. It seems to be questionable whether this was a deal between the senior manager of Network Rail and the DfT behind Tom Winsor's back and whether the regulator had real power to use his certain degree of independence for doing what's best for the railway industry. It seems to be the case that the regulator had not enough power to prevent the private sector from the objectives of the Gov-

ernment to take Railtrack back into administration. On the 5th of July 2004, just after the term of Tom Winsor ended, the Government changed the model of the regulatory regime and appointed a new nine member regulatory board. Like in all other British regulated sectors it is no longer a single-person regulator but a board with a separate chairman, chief executive, executive and non-executive directors. Time will show whether this new board will have the same degree of independence and power as the former single regulator had.

The Health & Safety Executive and more precisely its department for railway sector issues **Her Majesty's Railway Inspectorate** (HMRI, now transferring to ORR) is the regulatory authority for health and safety on the railways. It is mainly responsible for protecting the health and safety of workers and the public in respect to risks arising from railway operations, but also ensures that the risks are properly controlled. The SRA, ORR and HMRI are supposed to work together to tackle the problems facing the rail industry. This structure and the behaviour of these three public bodies in interaction with each other have been however the source of much controversy especially about overlapping responsibilities.

The **Office of Fair Trading** (OFT) delegated most of its rail responsibilities to the ORR but is generally in charge for all regulation matters and enforcement of competition acts in the UK, including railways. It works jointly with the Competition Commission (CC).

The local authorities in metropolitan areas outside London ('Transport for London' has got a unique status) are organised as **Passenger Transport Executives** (PTEs) and are funded by a combination of local council taxes and grants from the Government. The provision of regional services on a metropolitan-wide basis existed as well pre-privatisation. The objectives of this regionalisation are to give local authorities responsibility and to place them in competition with each other for the allocation of public resource from central government (see Docherty, 2000). The seven PTEs of England and Scotland which serve between them more than 13 million people in Greater Manchester (GMPTE), Merseyside (Merseytravel), West Midland (Centro), South Yorkshire (SYPTE), West Yorkshire (Metro), Strathclyde (SPT), Tyne and Wear (Nexus) have the power to secure passenger rail services in their areas and can make their own local franchise contracts with TOCs to provide these additional services. The PTEs are mainly responsible for implementing the Passenger Transport Authority's (PTA) policies and administrating the funding for public transport. Merseytravel is most independent from government because it was made a franchise authority for Merseyrail Electrics in 2003.

Besides the government the main demanding party and source of revenue are the customers. The customers are part of the public. Every customer will judge the perceived overall performance of the rail services and will compare it with the fares. The perception of the railway will assumingly influence their voting behaviour, because the government is still responsible for funding and setting the transport policy. But customers pay not only fares, they pay taxes as well, which are partially used for (local) railway services. Therefore the users demand to play a certain role in the system as well as protection of their rights. The **Rail Passenger Council** (RPC) co-ordinates the work of eight regional **Rail Passenger Committees** (now to be abolished). All nine bodies are funded by the SRA and try to protect and promote the interests of rail passenger mainly in respect to the TOCs.

On the supply side there can be three levels of value added elicited. The supply chain can be roughly distinguished into transport provider, asset provider and service provider. The first level, the level of transport provider, consist of 23 franchised **train operating companies**, 4 **freight operating companies** and other operators. The passenger transport market is organised by a strict franchise model for most of the network. The SRA awards franchises on the basis of competitive tenders, however beside these core services there is room for **open access operators**, for example Heathrow Express or Hull trains who run services without a franchise agreement. (all operators without a number in the TAC-column in Table 1). For the freight market there is open access since 1994. The customers of the FOCs include Network Rail and the track renewal companies, due to the providing of haulage for them.

There are several relations between the administration and the transport provider. This paper will focus on the contractual relations which imply financial transactions. The TOCs receive, at first, money from the PTEs and from the central government (SRA grants=subsidies) to provide certain services at agreed levels of performance. However some TOCs, for example Great North Eastern Railway Ltd, who operate in profitable areas don't receive any subsidies through their franchise agreements but have to pay a premium to SRA for the allowance to run business in the areas in question. The level of subsidies/premiums is determined through competitive bids (competition for the market) to win franchises with significant protection from on-rail competition. The TOCs are regulated through the provisions specified in the relevant franchise agreement and detailed in depth in the franchise plans. Hence the level of subsidy/premium per train kilometre differs recognisable between franchises as Table 1 reveals.

Table 1

TOCs and their current Pkm (in mio.), TAC & subsidies on main network (£ in mio.)

Train operator	Owner	Pkm 2003/04	% of total	TAC 2004/05	TAC 2008/09	Δ in %	Subsidy 2003/04
C2C Rail Ltd	National Express Group (NEG)	836.2	2.06	10.88	22.31	105	20.1
Central Trains Ltd	NEG	1363.0	3.35	46.11	104.14	126	147.1
Midland Mainline Ltd	NEG	1330.0	3.27	16.57	37.11	124	-3.5
Gatwick Express Ltd	NEG	197.9	0.49	4.87	10.91	124	-13
ScotRail Railways Ltd	NEG (from 10/2004 First Group)	2081.8	5.12	60.62	134.66	122	268.4
Silverlink Train Services Ltd	NEG	1062.4	2.61	31.67	76.77	142	52
West Anglia Great Northern Railway Ltd (WAGN)/ (One West Anglia Ltd)	NEG	2228.3	5.48	36,69	80.68	120	10.5
One Anglia Railways Ltd	NEG	860.2	2.12	14,34	30.74	114	4.4
One Great Eastern Railway Ltd	NEG	1835.4	4.52	23.80	50.93	114	-31.9
Wessex (Wales&West) Trains Ltd	NEG	435.4	1.07	9.72	21.12	117	78
One Stansted Express Ltd	NEG	-	-	-	-	-	-
National Express Group		**12230.6**	**30.09**	**255.27**	**569.38**	**123**	**532.1**
South West Trains Ltd	Stagecoach plc	4290.4	10.56	56.79	131.97	132	116.2
Cross Country Trains Ltd	Virgin Trains (Stage-coach & Virgin Group)	2666.3	6.56	67.87	157.61	132	246.1
West Coast Trains Ltd	Virgin Trains (Stage-coach & Virgin Group)	2744.9	6.75	140.16	344.97	146	332
Stagecoach & Virgin Group		**9701.6**	**23.87**	**264.83**	**634.54**	**140**	**694.3**
North Western Trains Ltd	First Group	803.7	1.98	36.19	80.71	123	191.7
Great Western Trains Ltd	First Group	2610.0	6.42	56.63	124.68	120	31.9
First Great Western Link/ Thames Trains + Trans Pennine Express (+ Hull Trains)	First Group	1124.3	2.77	-	-	-	25.1
First Group		**4538**	**11.16**	**92.83**	**205.38**	**121**	**248.7**
Arriva Trains Northern Ltd	Arriva plc	1424.3	3.50	43.59	92.22	112	241.4
Arriva Trains Wales Ltd (incl. Wales & Borders)	Arriva plc	785.7	1.93	26.93	58.78	118	123.6
Arriva plc		**2210**	**5.44**	**70.52**	**151.01**	**114**	**365**
Southern (South Central) Ltd	Go-Ahead/GOVIA	2726.8	6.71	40.93	92.51	126	90.8
Thameslink Rail Ltd	Go-Ahead/GOVIA	1368.9	3.37	15.12	33.56	122	-41
Go-Ahead/GOVIA		**4095.7**	**10.08**	**56.05**	**126.07**	**125**	**49.8**
The Chiltern Railway Ltd	John Laing plc – M40Trains	635.7	1.56	8.02	18.19	127	24.4
Great North Eastern Railway Ltd	Sea Containers	3939.4	9.69	58.62	129.58	121	-22.4
MerseyRail Electrics 2002 Ltd on behalf of Merseytravel	Operated by Serco/ Ned-Railways	-	-	9.14	18.71	105	-
South Eastern Trains (incl. Connex)	Administrated by SRA	3296.4	8.11	53.91	119.78	122	134.2
Eurostar + Eurotunnel (Shuttle) + Grand Central + Heathrow Express	NEG, BA, SNCF, SNCB, BAA	-	-	-	-	-	-
All Operators		**40647.4**	**100**	**884.22**	**2006.35**	**127**	**2026.1**

Source: own calculations; ATOC; NEG; ORR (2004b) for TAC-figures in 2004/05 prices; SRA (2004a) for subsidies and Pkm in 2003/04, websites of all the train operating companies.

In general are all the contracts illustrated in Figure 1 performance based contracts. Therefore every arrow in Figure 1, with the exception of the two arrows within the administration, should be a back arrow. A crucial part of that contract is that if one contract partner (e.g. one TOC), fails to deliver the pre-agreed minimum service the other partner (e.g. SRA) will get a certain amount of compensation.

The TOCs have as well contracts with the customers, which are the main source of revenue for them. If a customer is buying a ticket, he is agreeing to a contract which ensures him a certain service and protects him if the TOC fails to deliver. In Britain the fares, the price the user has to pay for the services, depend widely on the time of purchasing the ticket (how much time in advance), the distribution channel (e.g. internet), the quality of the services (e.g. first class). There is as well a large variety in fare types for different market segments, like long distance versus regional journeys. A certain amount of tickets, at present all Saver fares, standard class weekly season tickets and most commuter fares in and around London, are regulated by the SRA and since January 2004 only increases of 1 per cent more than the Retail Price Index (RPI+1%) are permitted on those national railway fares (from 1996 to 1999 it was RPI and from 1999-2004 it was RPI-1%, see SRA 2003). Due to this price cap regulation the possibilities for TOCs to increase their revenues are limited to getting more passengers on their trains or better market segmentation.

The second level of the supply chain includes two asset providing players, the infrastructure provider Network Rail and the three **rolling stock companies**. The last provide the train operators with rolling stock and receive through a performance based contract pre-agreed lease and maintenance charges. **Network Rail** owns and operates the national rail network (16553 track km open for traffic), about 2500 stations as well as interchange facilities. Network Rail is the only player in the supply chain which is not entirely private. This not-for-dividend company is limited by guarantee and his 116 members are rather stakeholders than shareholders. There are just 12 TOCs plus 3 FOCs among the industry members and there is the SRA among the public members. However most of the members are just ordinary people. The members have clearly defined and limited powers, but the board in which the SRA has a seat as well is directly accountable to the members. NR finances itself partially through the form of grants issued by the SRA and the other part through the track access charges (TAC) paid by the TOCs and FOCs for the use of network. In March 2004 the company got the approval of the rail regulator (supported by the Government and the SRA) to spend £22.2bn (this deter-

mines the level of TAC and the amount of government funding as well) over the next five years for operation, maintenance and renewal of the core national network (Winsor, 2004a). This is an increase of approximately £7bn over the regulators October 2000 settlement for Railtrack. These proposals do not change the December 2003 determination (ORR, 2003a) that NR's net revenue requirement between 2004 and 2009 is £21.45bn. NR will receive this money through three different ways. Most of the money will come through grants direct from the SRA or in the future from DfT (£9.35bn). The rest will come to a largely from track access charges from train operators (£8.96bn) and the rest from additional borrowing (£3.14bn). Table 2 shows the proposed year-by-year split of the net revenue requirement established by the ORR's 2003 final conclusions.

Table 2

Composition of net revenue requirement under Network Rail's proposal

£ million (2002/03 prices)	**2004/05**	**2005/06**	**2006/07**	**2007/08**	**2008/09**	**Total**
Net revenue requirement	4,444	4,413	4,245	4,203	4,142	21,448
Fixed and variable charges	1,203	1,219	2,132	2,121	2,284	8,959
Grants	1,710	1,585	2,113	2,082	1,858	9,348
Shortfall made up by: Additional borrowing	1,532	1,609	0	0	0	3,141

Source: ORR (2004b), p. 8.

Table 2 reveals that 42% of Network Rail's income will come from track access charges. The TAC paid by franchised TOCs can be divided into a variable track usage charge, a variable traction electricity charge, a variable capacity charge and a fixed charge (Nash et al., 2003, p. 4). Whilst the variable charges are designed to incentivise and to reflect marginal cost, the fixed part is insulated through the franchise agreements. The level of franchised passenger operators track access charges is determined by the rail regulator and the last determination was the access charge review in 2003 (see ORR, 2003a). The new TAC will be allocated by the cost of enhancement and upgrading, and therefore every franchisee will experience different changes of its TAC. The cap of permitted increases is regulated by the regulator as RPI-X, whereby X is a factor for performance improvement (e.g. the efficiency target set by the ORR for NR for the next five years is 41%) As Table 1 illustrates the TAC for franchised TOCs will increase through four steps within the next five years and will be already doubled in 2006/07 compared to 2004/05. Because the proposed increase of TAC only affects the fixed part of the TAC, and as this part is insulated, the rise will be matched by growing subsidies and the cost increase will be passed to the SRA.

The structure of TAC for open access passenger and freight operators is roughly the same as for TOCs with the difference that open access passenger and FOCs only pay the variable of the TAC. Therefore the proposed increase of TACs will not affect those operators in short term. In long term all operators will have to renegotiate their contracts either with SRA/DfT or with Network Rail and will be affected by higher TACs either way. As well as track access charges the train operators have to pay for the use of stations and light maintenance depots.

Because of wrong incentives for the TOCs in the 2000 Periodic Review, the ORR increased the variable part of the TAC to 20 per cent. The supposed substantial increases of the TAC published in the 2003 Review by the ORR will only affect the fixed part of the TAC. Therefore the variable part will be by definition, again, much less than 20 per cent.

All passenger train operators have a clause in their track access agreement which compensates them when NR takes possession of the rail network to carry out engineering work. This is unique in Europe and of great value to the TOCs (see interview Bastow). In every track access agreement there is, as well, a performance regime included, which provides financial incentives for both the train operators and NR. This performance regime draws on the recorded causes of delay and cancellations distinguished into infrastructure or operation failure.

The third level on the supply chain consists of **heavy maintenance suppliers** (rolling stock), **track renewal & infrastructure maintenance companies** and other **service companies**. All of them provide services for the ROSCOs and for Network Rail. The heavy maintenance suppliers provide in some cases direct services to train operators too. Until the beginning of 2004 there have been privately owned infrastructure maintenance companies, but those are now back in house of Network Rail.

To sum up, the current British rail system seems to be a coherent one, with many interactions and many bodies in the administration. It is furthermore very transparent compared to most European rail markets (e.g. interview Bastow). The Government sets the framework for a private rail sector and seems to have, not only through the main player in the industry Network Rail, a lot of power and tools to control the railways. The regulation of fares is done by SRA and all other regulation issues are the responsibility of the ORR. The performance system and the contracts within the supply chain are sensible to provide incentives for delivering appropriate services. The main characteristics of the British rail market are private ownership, vertical separation of infrastructure from operations, rolling stock owned by ROSCOs, franchis-

ing for passenger operators (competition for the market), open access for freight and a few passenger operators (competition in the market), incentive-compatible charges as well as performance penalties and bonuses and an independent regulator. These characteristics are consistent since 1994 and will not be affected by the White Paper.

4.2 Market structure

The British national rail network and about 2500 stations, as well as interchange facilities, are owned and managed by Network Rail. The British Government decided to have a regulated monopoly for the infrastructure. With maintenance back in house and due to the proposed changes in the White Paper (2004), Network Rail will become the major player within the British rail sector and will set most of the strategic and operational agenda (e.g. long term investment planning, day-to-day-operation, timetabling).

For the train operating companies in the passenger rail market the Government has chosen a franchise model for most of the national rail network. The SRA awards franchises on the basis of competitive tenders and under their current franchising policy the term of a franchise contract will be between five to eight years. After British Rail was privatised in 1994, 11 companies owned the 25 franchises. The National Express Group was the most successful franchise bidder and was awarded five franchises. Since then, National Express Group has acquired Prism Rail, which was awarded four franchises, making it the largest train operator in the UK with more than 30 per cent market share (see Table 1). Because First Group has won the Scotrail franchise and started operations in October 2004, National Express Group is losing about 5 per cent market share, but is still the biggest player. Stagecoach, working jointly with Virgin Group, is the second major player with almost 25 per cent market share in the rail passenger market. The three other companies who control more than one franchise are First Group, Arriva plc and Go-Ahead/GOVIA. The Great North Eastern Railway Ltd. is the biggest standalone TOC and the South East Trains Ltd. is administrated directly by the SRA. Today the 23 franchises are controlled by 9 companies (see Table 1). Therefore it seems to be reasonable to conclude that much of the rail passenger market is controlled by a few companies. Because it is planned to reduce the number of franchises from 23 to 15 (see interview Shaw) it can be assumed that the ongoing consolidation process will continue. There will be less competition for the market and less competition at the overlapping areas as well.

The open access passenger operators, the three biggest are Hull trains, Eurostar and Heathrow Express, play a minor role in British rail market and have only a little market share. There is nevertheless a strong inter-modal competition. Most of the big railway companies for example National Express Group and Stagecoach control as well big parts of the complete deregulated bus market. There is strong competition between the bus and the rail market and some companies try to make use of a multimodal approach to control all the modes of transport. One example for that is the attempt of First Group to acquire the Scottish Rail Franchise (SRF) in 2003. First Group operates buses and rail services in the UK and is the largest bus operator in Scotland. In March 2003 First Group was short-listed to bid for the SRF and in January 2004 the Office of Fair Trading referred that case to the Competition Commission. In April of this year the Competition Commission (2004) published its provisional findings which confirmed the OFT's concerns that the proposed acquisition may be expected in a substantial lessening of competition in the relevant markets. As First Group won this franchise and started to operate on the 17th October 2004, it might be interesting to see whether they are forced by the Competition Commission to sell bus businesses like National Express was, when it started to operate SRF in 1997. In result, it can be concluded that there are sufficient bodies to prevent a change towards an anti-competitive market structure in both rail and bus passenger transport.

Although there is open access to freight since privatisation there are just four major freight operating companies within the British rail freight sector today. In February 1996, British Rail's bulk freight operations were sold to North and South Railways – now called English, Welsh and Scottish Railway (EWS) who is the main player in the field. The other three major freight operating companies are Freightliner Ltd (formerly the BR container business), Direct Rail Services (mainly operating nuclear waste trains) and GB Railfreight (owned by First Group). There are some smaller companies like Advenza Freight, but due to their insignificant market share they play a small role in the freight rail market.

Other issues of the market structure are often related to discrimination as seen in many European countries and as particularly experienced by Arriva International (interview Bastow). In a particular kind of market structure for example it may be difficult for companies who want to enter the rail transport market to get access to rolling stock, to stations and to interchange facilities, to depot and maintenance facilities, access to subsidies and, also important, to appropriate trained employees. These issues are mainly solved through the structure of the British Rail system, for example by leasing all the rolling stock from ROSCOs (sometimes the

contract includes even maintenance) and by not leaving any essential facilities in control of a single TOC or FOC (Preston, 1999). However, as Nash and Toner point out (see interviews), there might be a lack of competition between the three ROSCOs. In total, the structure of the British rail system is fairly transparent and designed to introduce as much competition as possible on every chain of supply. Nevertheless there are still some market entry/exit barriers e.g. getting a safety case (might be cost and time intensive), and within the franchised passenger market it is very difficult for small companies to enter the market and will become even more difficult by the proposed reduction in number of franchises and the increasing of their size.

4.3 Behaviour of the main players

There is no reason to believe that there is any discrimination of the infrastructure manager against his customers regarding access to the network. Due to the separation of infrastructure from operations, Network Rail or Railtrack have no benefit in discriminating TOCs or FOCs on the network. Nevertheless it can be assumed that the bigger train or freight operating companies use their market and financial power to influence decisions made by the infrastructure company. In fact the ORR has not made any infringement decisions at the present time. It has made three non-infringement decisions, though. These are decisions which, following a formal investigation under its competition law powers, the ORR has decided that the conduct complained about does not infringe the Competition Act 1998. One of these decisions was regarding to the alleged abuse of a dominant position by Network Rail against his Subcontractor Welding Federation in June 2004 (ORR, 2004c). There is no evidence that there was any discriminating behaviour of Network Rail against a single operator. The other two non-infringement decisions made by ORR were related to behaviour among the TOCs and FOCs where there have been complaints that bigger companies tried to use their power. First, in November 2003 the ORR (2003b) made a decision, in relation to complaints against English Welsh and Scottish Railway (EWS) received by the ORR in April 2003 and June 2003, that EWS had not infringed the prohibition contained in Chapter II of the Competition Act 1998 by engaging in predatory pricing or selective discounting. In the second case the ORR received 32 complaints from passengers and their representatives alleging abusive behaviour by Virgin West Coast (providing services on the West Coast Main Line) concerning changes to the level and conditions applying to certain fares for services on various routes, including those between London to Manchester and London to Liverpool. In the end, the ORR (2001) concluded that there were no reasonable grounds for suspecting Virgin of having infringed the Competition Act 1998 and it did not proceed to open a formal investigation. The only suspi-

cious anti-competitive known case quoted in literature (see e.g. Preston, 1999) happened in 1997. That year Virgin and Railtrack negotiated a package with respect to the Passenger Upgrade II of the West Coast Main Line. This package included a revenue sharing arrangement between the train operator and Railtrack as well as additional protection from competition to protect remuneration on the investment. They submitted this package for regulatory approval and although there had been concerns that this investment incentive scheme was potentially anti-competitive, they got the approval (see ORR, 1998, p. 25).

The behaviour of every single party is controlled by the ORR, so that there is only little space for anti-competitive behaviour within the British rail market. Furthermore there is only little evidence that there have been significant problems with discrimination since privatisation. Toner (see interview) points out that there has been some kind of cartel operating among the four biggest maintenance companies, at the time when the CTRL project was eating up capacity. As a result the costs of that project were ten times bigger than expected. Most of the contractual relationships between all players within the rail sector have some kind of compensation scheme. There have been some doubts about the behaviour incentives set by those compensation schemes, but at the end of the day most of key players in the industry believe the compensation regime is complex, but useful and necessary as it is set up today. Moreover, it is widely acknowledged that the British rail market is the most transparent one in Europe. It can be summarised that anti-competitive behavior is not a big issue in the British rail market.

5 The change of performance since 1994

If the White Paper (2004) is pointing out so many problems within the current rail system, there has to be some evidence in the main performance indicators. To examine the performance change since 1994 one could use parametric measurement techniques or other econometric tools to examine gains in allocative or technical efficiency and productivity. The most recent papers for Britain using those kind of techniques are Affuso, Angeriz and Pollitt (2002), Cowie (2002), Pollitt and Smith (2002), Kennedy and Smith (2004) and Rivera C. (2004). Within this paper the aim is to show some trends without putting everything in a complicated model with a lot of assumptions underlying it. The focus will be on important, and widely used input and output factors (for the key indicators see Table 3) giving in result a picture/trend of what was achieved. This kind of more descriptive Cost-Benefit Analysis based

on recent data, will show whether there were considerable achievements in improving the overall performance of the railways.

Table 3

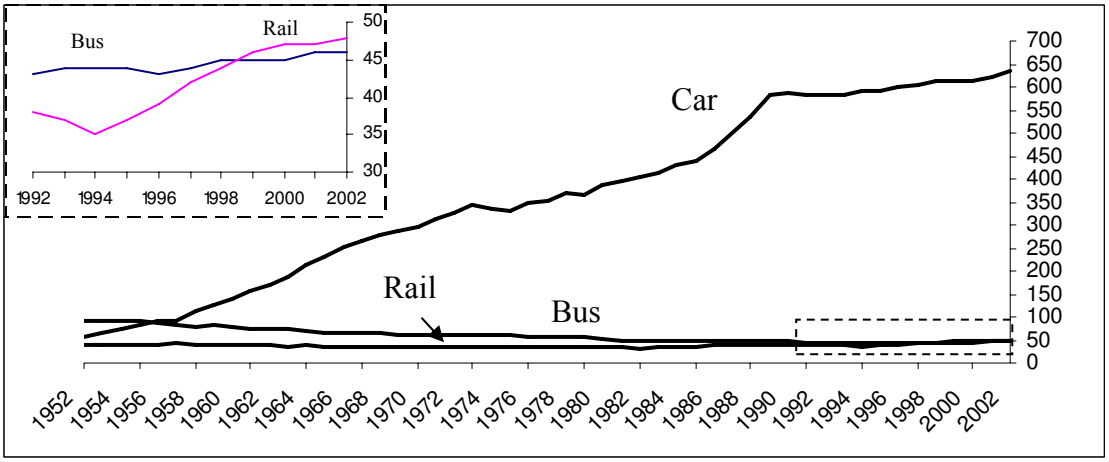
Used data set/ key indicators for cost benefit trend

Output	Input
• Passenger train kilometres • Freight net tonne kilometres • Percentage of trains arriving on time • Number of train incidents per train-km • Number of broken rails • Price level/fares	• Government support to the rail industry • Investment in the rail industry • Cost (operating cost, capital expenditure) • Number of employees

When measured in **passenger kilometres**, the standard and accepted industry growth measure, Britain has the fastest growing railway in Europe. As illustrated in Figure 2 the car has been the dominant mode of transport since the late 1950s and has today an overwhelming market share. Nevertheless, more recent data show that Britain's railways have experienced unprecedented levels of growth over the past decade and have overtaken the Bus in terms of market share (see the enlarged part of Figure 2).

Figure 2

Passenger transport by mode 1952-2002 in billion passenger kilometres



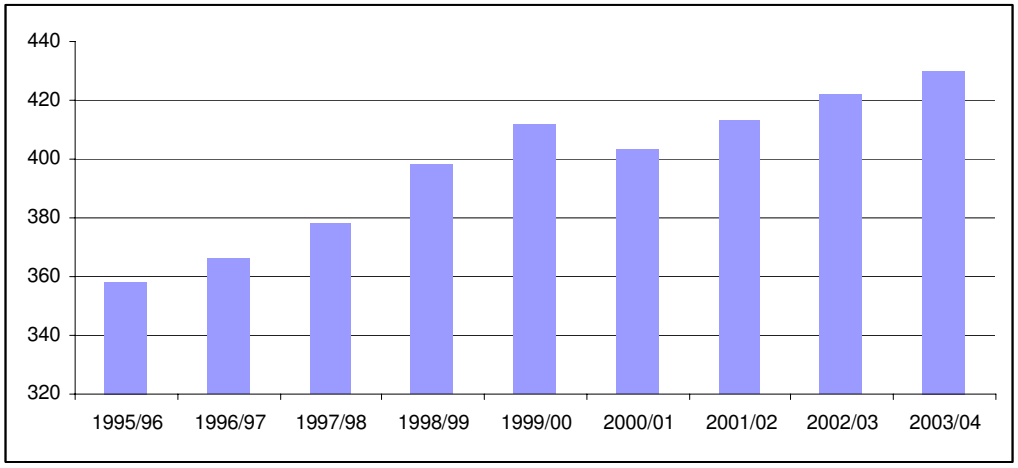
Source: DfT (2003).

Over the past 10 years, since privatisation there has been a rise of over 36% in the number of passenger kilometres travelled on Britain's railways (but starting from a bad year in 1994). This is the highest level of growth of any country in Europe (ATOC, 2004). The Hatfield ac-

cident and the resulting disruption precipitated a significant decrease at passenger rail travel in the year 2001/02. A comparison of pre and post-Hatfield figures identifies up to 40% railway passenger loss on some franchises in the early days (CFIT, 2001). But since then the number of passenger kilometres is climbing again and has reach a record number in 2003 of more than 40.9 billion Pkm (SRA, 2004a). Figures from Network Rail about passenger traffic on their network show the same trend (see Figure 3).

Figure 3

Passenger train kilometres 1995/96-2003/04 (in million)

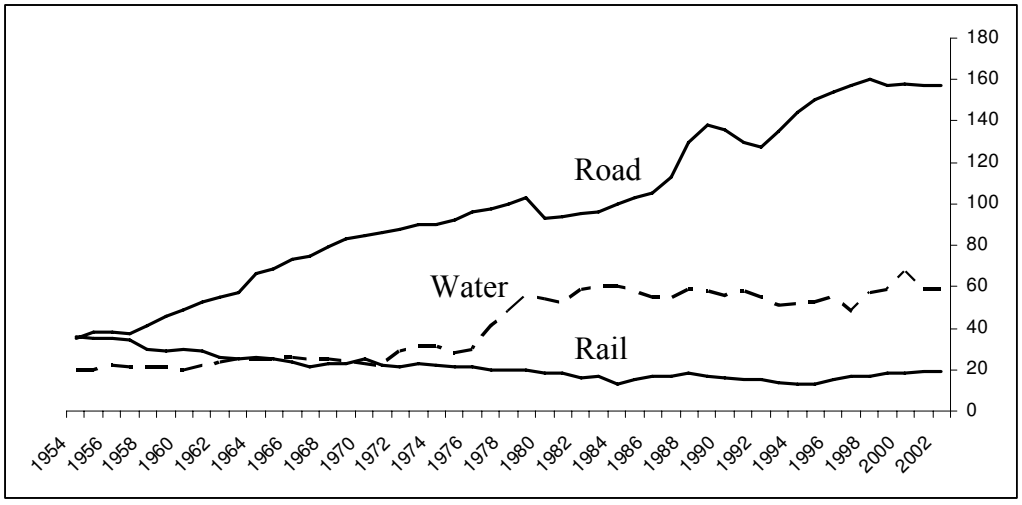


Source: Network Rail (2004).

In freight rail transport there has been a similar development. Since the 1960s freight on road is clearly the major mode of transport in the UK as Figure 4 points out. Data from UIC and DfT (2003) proves that rail lost market share between the late 1950s and 1994.

Figure 4

Domestic freight transport by mode 1954-2002 in billion tonne kilometres

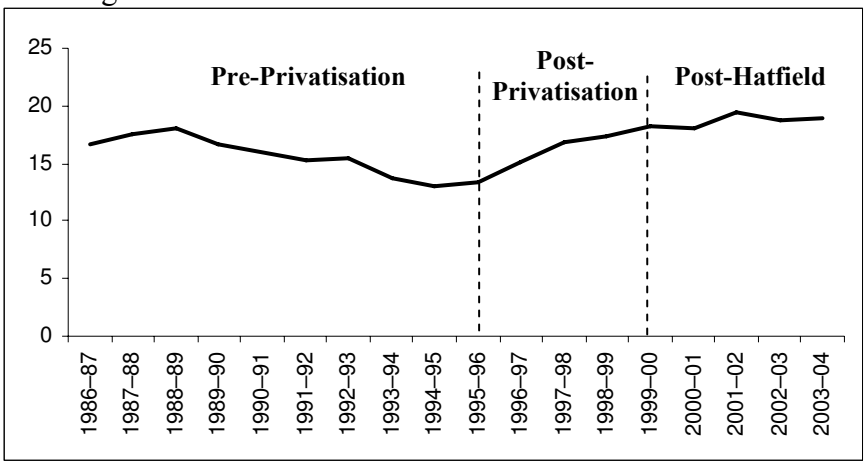


Source: DfT (2003).

Since privatisation the growth in rail freight was significant higher than that of freight transport on road (see also Figure 5). In the six years between 1997 and 2003 rail freight kept off the road and the freight operating companies recognise their market as a strong growing one with even more potential for improvement as Smith, G. (2004) shows. In the year 2003/04 the total number for freight moved was 18.9 billion net **tonne kilometres** (SRA, 2004a). Although not as much freight is being carried as in previous years in terms of absolute tonnage, what is being carried is travelling significantly longer distances. In total, rail freight traffic in Britain measured in tonne kilometre has grown substantially in the last 10 years (by 32.6%), making it the fourth highest performer in Europe (ATOC, 2004).

Figure 5

Freight moved on rail 1986-2004 in billion tonne kilometres

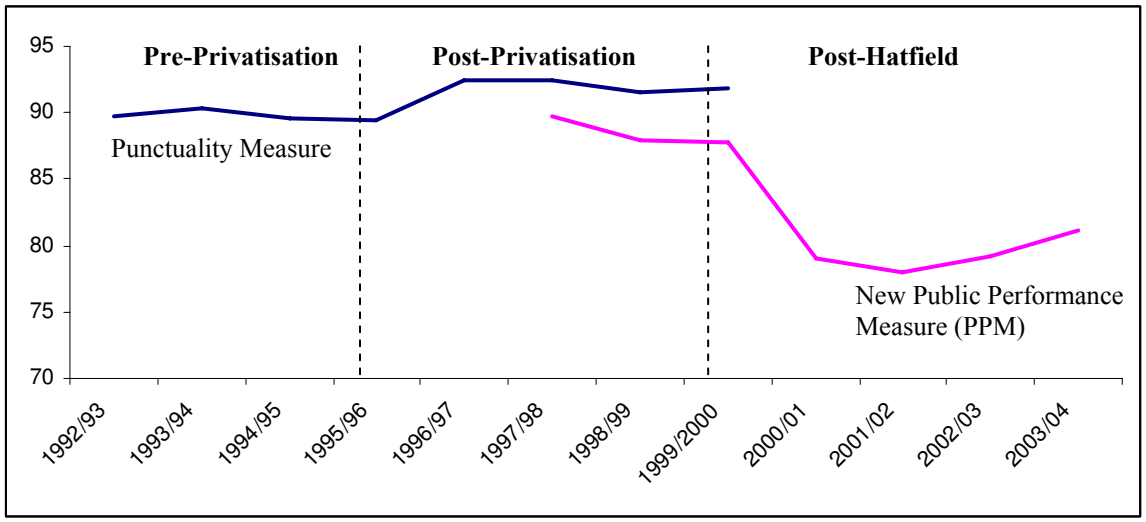


Source: SRA (2004a), p. 28.

In both passenger and freight transport, traffic has improved since privatisation. Because of the not increasing rail network it might be questionable how the scarce capacity on the network is allocated and whether the increasing number of trains had any impact on the overall punctuality. Figure 6 shows evidence that the punctuality improved post privatisation. There are two measures illustrated in Figure 6. This is due to the circumstances that the Shadow Strategic Rail Authority (SSRA) – now the SRA – introduced a new Public Performance Measure (PPM) in June 2000 to give a better indication of the actual performance of Britain's passenger railways. The PPM combines figures for punctuality and reliability into a single performance measure. Unlike the replaced Charter Punctuality measure, it covers all scheduled services, seven days a week. The PPM measures the performance of individual trains against their planned timetable and is therefore the percentage of trains 'on time' (within five minutes regional and 10 min. long distance) compared to the total number of trains planned.

Figure 6

Punctuality/ Percentage of trains arriving on time (all operators)



Source: DfT (2002); SRA (2004a), p. 15.

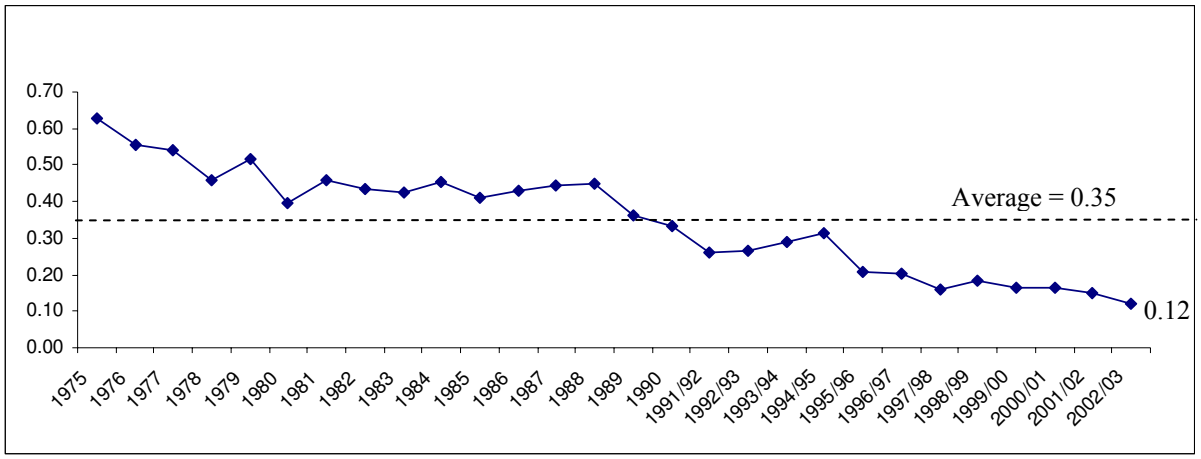
There had been some early success in improving punctuality post-privatisation. However Figure 6 reveals that Hatfield had a strong negative impact on the punctuality of the trains and that since then, the percentage of trains on time is recovering rather slowly. Although there are improving numbers in the last two years the level of punctuality still remains below pre Hatfield numbers and can therefore be seen as not sufficient.

The quality related performance indicator with the most publicity in Britain is certainly safety. The opponents of the privatisation, including politicians in key positions, used every train accident to convince the public that the whole rail reform was a disaster (e.g. Wolmar, 2001) and there has been a highly critical press. And of course, there have been massive train accidents in the UK since 1994, but none caused by the railway system in the past two years. The ones with the highest number of fatalities and therefore with most public awareness have been Ladbrooke Grove on the 5th October 1999 with 31 fatalities, Hatfield on the 17th October 2000 with 4 fatalities, Potters Bar on the 10th May 2002 with 7 fatalities and most recently Berkshire on the 11th November 2004 with 6 fatalities. Investigations found evidence that the last accident at the Berkshire level crossing was caused by a motorist committing suicide, but in Hatfield and Potters Bar poorly maintained infrastructure was most likely the cause for the derailments (e.g. HSE, 2003a). This might be an argument stating that there were weak incentives to maintain the network, but if one looks at historical data it becomes obvious that those massive train accidents happened before privatisation too. Two examples are the Polmont

accident on the 30th July 1984 with 13 fatalities, and the accident at Clapham Junction on the 12th December 1988 with 35 fatalities. In respect to the number of significant **train incidents per train-km**, initial statistical analysis of accidents and fatalities data revealed that safety was not worse post privatisation (see HSE, 2003b; Evans, 2000 and 2004). Figure 7 illustrates an improvement in safety performance and Evans (2004) concludes even stronger that safety has improved faster since privatisation than under British Rail for all classes of accidents.

Figure 7

Number of significant train incidents per million train-km



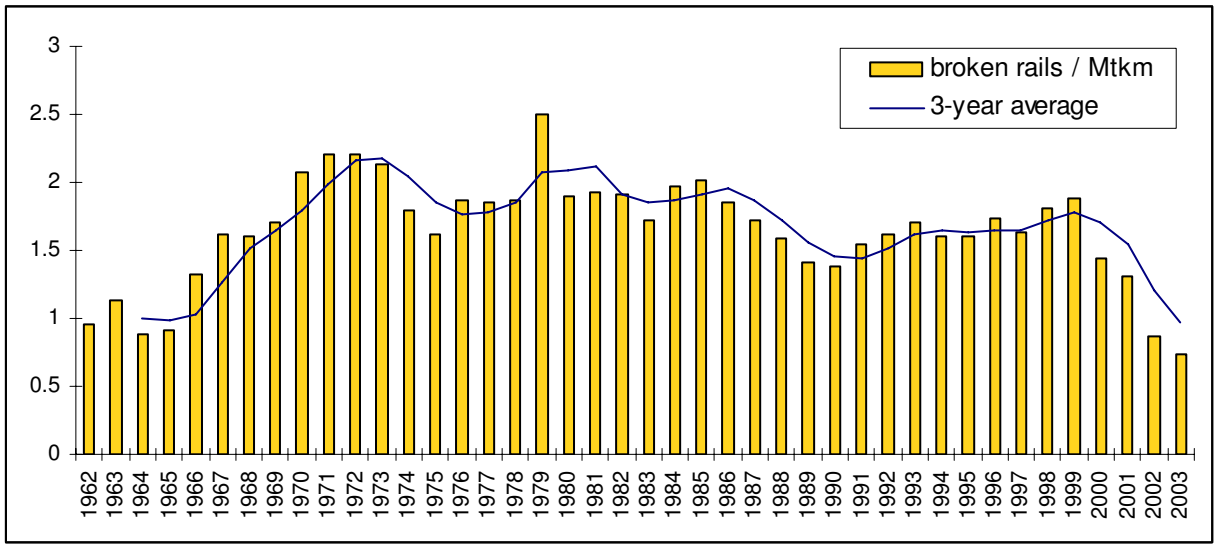
Source: Evans, A. (2004); HSE (2003b), p. 30ff.

In an European wide perspective safety performance in the UK, although the post-privatisation safety performance of the UK railway has received considerable criticism, has remained generally in line with the performance in the EU, where restructuring generally has evolved more slowly (see RSSB, 2004, p.29).

As some of the huge accidents on the network were caused by broken rails, it seems sensible to analyse how the number of **broken rails per train kilometre** has changed over time. Figure 8 indicates that there was a peak post privatisation, but that there have been even higher peaks pre privatisation. Even more interesting, is that rail breaks have more than halved since 1999, as a result of massive renewal activities. In 2003, the number (380) and the rate (0.74 broken rails per Mtkm) were the lowest since 40 years and that can be seen as an indication of the better quality of the tracks.

Figure 8

Number of broken rails per million train kilometre



Source: Network Rail/RSSB.

Another output indicator for performance is the **level of prices** for the provided service, here rail passenger transport. Beside safety, that might be the most important indicator for customers because they are very aware of the changes in fares, and information about price level is comparatively easy to access. Preston and Root (1999, p. 51f.) indicate that for the period of 1990 to 1996 there was an increasing trend in the overall rail fares (in current prices). However, after correction for inflation they calculate that this trend stabilised since the privatisation started. They mention, as well, that overall fare trends have to be interpreted carefully because there is a large variety in fare types for different market segments with different developments. Taken more recent data published by SRA (2004, p. 43) for the years from 1995 until 2004 into account, the trend stabilised further. Since 1995 the real terms changes in average price for all ticket types were 4.7 per cent. Especially the long distance operators have increased their fares since 1995 (15.6%) while fares for regional train did not increase at all (-0.3%). The First class tickets for all kinds of markets have increased as well while standard regulated ones haven't. Passengers using regulated fares have actually benefited from real reductions in regulated rail fares of around 6.6% since privatisation (SRA, 2003, p.6). In 2003 the SRA did a consultation exercise/review of the fares and the majority of the industry stakeholders agreed that the RPI-1% was unsustainable. Therefore the fare cap changed in 2004 to RPI+1%, but even after that change passenger will continue to pay less for regulated fares than they paid before privatisation. In total (regulated + unregulated fares) it can be summarised that the increase in fares was moderate. Nevertheless there has been a slight increase in

rail fares and not a decline as one would have expected before the introduction of competition. This could be due to the fact that there is only little competition in the passenger market.

To sum up, there is a slight trend of improving output performance indicators since privatisation. The performance in passenger train kilometres as well as freight net tonne kilometres has improved whilst the percentage of trains arriving on time remains problematic, especially due to the effects of the Hatfield accident. Safety on the network has improved and since 1999 the condition of the tracks measure in number of broken rails improved as well. There haven't been huge consumer benefits due to lower price levels, but there hasn't been a huge increase either. In addition it can be concluded that the overall output performance has increased slightly since privatisation and would have probably even more without the Hatfield accident.

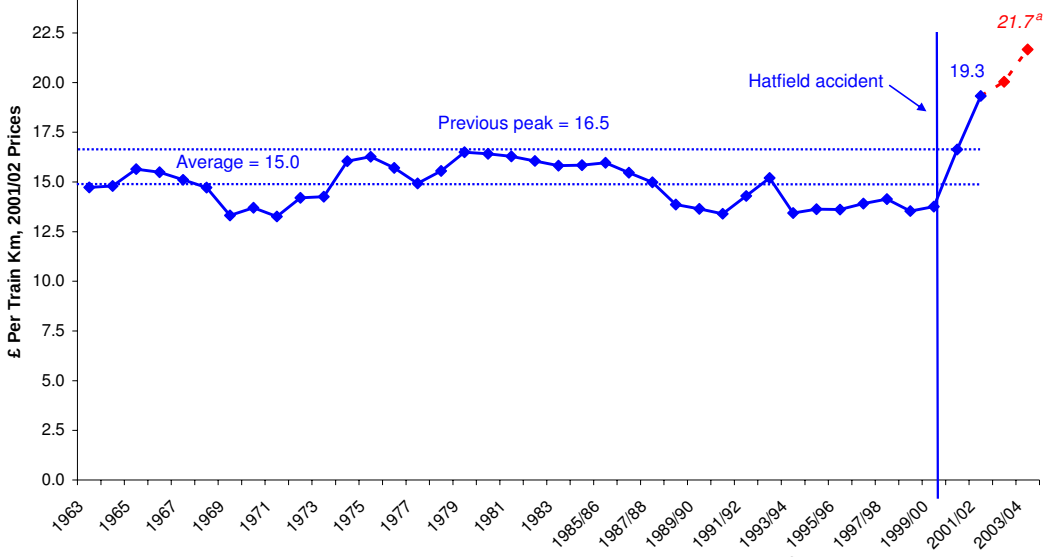
To get a cost-benefit trend, to examine productivity and efficiency gains it is essential to get a precise picture over the input factors. It is questionable whether the cost increased due to the just identified output improvements and if so how much the state is supporting the rail industry to accomplish the increased outputs.

The White Paper (DfT, 2004) identifies the increasing cost of the rail industry as one of the main problems. To examine sources for potential cost increases it will be distinguished between capital expenditure and operating cost of the industry in the following section. It is essential for maintaining and renewing a qualitative and quantitative reliable infrastructure/ rolling stock to have sufficient investment which is related to capital expenditure. It is widely acknowledged that Britain's railways had been underinvested pre-privatisation and during the Railtrack era as well. It was argued that the **level of investment and renewals**, although increasing since 1996, remained inadequate and was not providing sufficient capacity for a growing industry. As Figure 9 illustrates there has been a rapid increase in total rail industry cash cost per train-km after the Hatfield rail accident. The cause for that might be a change in government policy recognisable in comments of John Prescott who declared to the cameras again and again that "This must never happen again", meaning the prevention of accidents at any cost. Nevertheless, although it has been argued that the BR period saw long periods of underinvestment (which is not agreed by Ford (2004)), and that the investment cycle has created an additional need for increased renewal activity (with the high volumes of track renewed in the 1970s now becoming due for renewal), the recent rapid increase in infrastructure costs still appears not to be fully justified (see Smith, 2005). Especially some major projects

like the West Coast Line had been subject of massive cost increases on budget. Ford (2004) calculated that investment schemes on the railways cost around π [=3.14…] times what they used to under BR, even ignoring that inflation increased. He concludes that today's record levels of investment are mainly because projects are costing a great deal more. This is seen as the result of the use of contractors and unnecessary safety requirements (interview Glaister).

Figure 9

Total rail industry cash costs per train kilometre (£ millions)

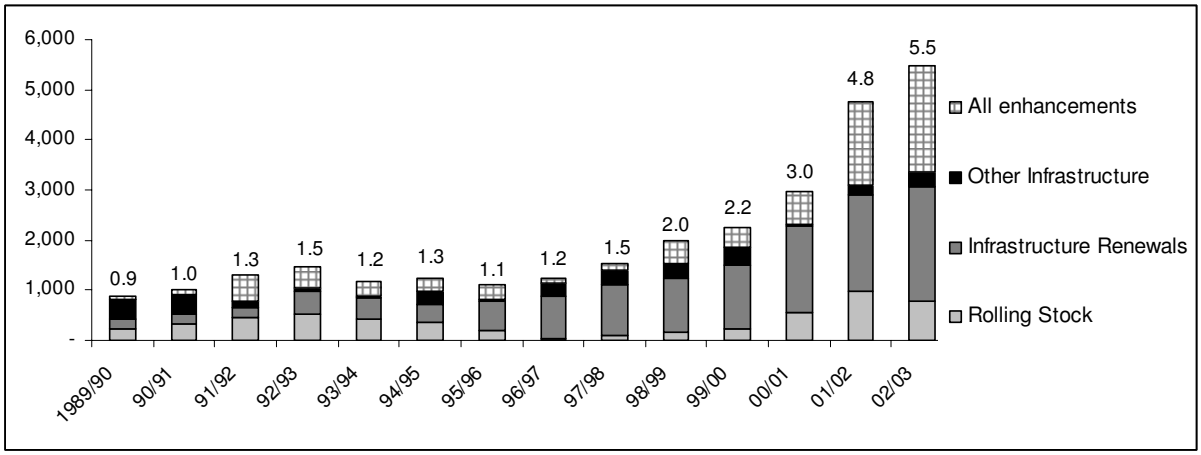


Source: Smith, A.S.J. (2004).

The capital expenditure has increased substantially by £4.6bn in nominal terms between 1989/90 and 2002/03 with the increase primarily occurring in recent years. Figure 10 shows that there has been an increase in capital expenditure mainly due to infrastructure renewals and enhancements (including the implementation of the Train Protection and Warning System (TPWS)), but there has been as well an increase in capital expenditure for rolling stock.

Figure 10

Rail industry capital expenditure between 1989/90 and 2002/03 (£ 2002/03 millions)



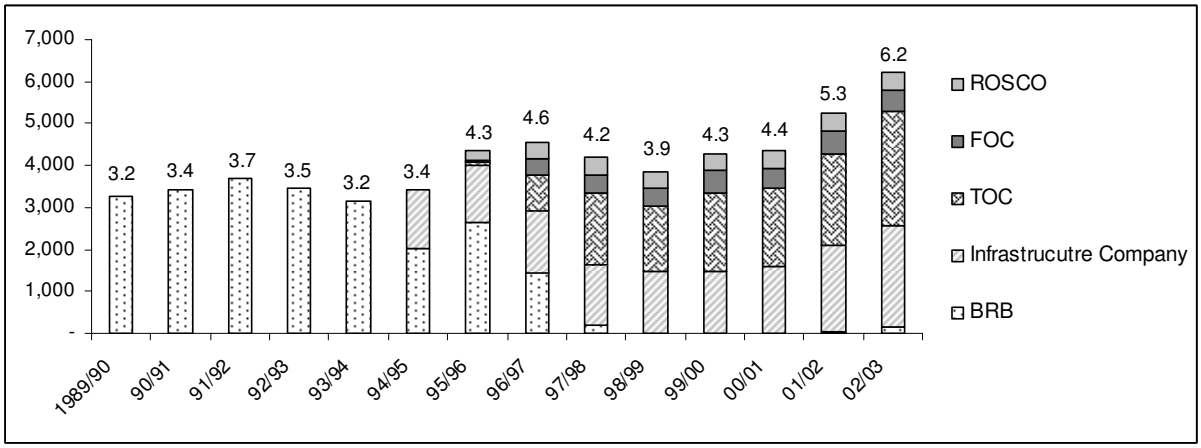
Source: Goddard (2004).

More recent data for investment in rail, published by SRA (2004a, p. 51), indicate £5.5bn in total and £774m for rolling stock for the year 2003/04. The peak year for rolling stock investment was 2001/02 but even today the investment in rolling stock is much higher than before privatisation. It seems to be the case that after problems in the first years of pre-privatisation there is nowadays sufficient investment in rolling stock to assure that train operating companies don't lack the access to those assets. Keith Bastow points out, that it is in a European perspective an advantage of the British rail market, that something like ROSCOs exists (lower market entry/exit barriers for TOCs) and that they are prepared to invest.

Operating costs have increased by £2.9bn in nominal terms between 1989/90 and 2002/03 (see Figure 11). Pollitt and Smith (2002) pointed out some early successes of rail privatisation – in the form of significant operating cost savings – but the picture has changed dramatically since October 2000. The Hatfield accident and September 11 created a culture of risk aversion which led to a reappraisal of the level of maintenance and renewal activity required to sustain the network, and resulted in a sharp increase in infrastructure costs. However like in capital expenditure there is evidence that there were cost increases in many segments of the industry after that rail derailment. Figure 11 reveals cost increases for every part of the rail industry with the exception of the freight operating companies. Between the years 1999/00 and 2002/03 the operating cost of the TOCs had increased by 45 per cent and the operating cost of the ROSCOs had increased during that time by 10 per cent. Smith, A.S.J. (2004) got similar results, calculating that infrastructure is responsible for 58 per cent of the post-Hatfield cost increases (capital expenditure + operating cost).

Figure 11

Rail industry operating cost between 1989/90 and 2002/03 (£ 2002/03 millions)



Source: Goddard (2004).

As a result, it becomes apparent that there are several sources for the cost increase. However the main cause seems to be the massive safety improvements on both infrastructure and operations. In total, **cost of the rail industry** (capital expenditure+operating cost) has increased by £7.5bn in nominal terms between 1989/90 and 2002/03. This is a considerable increase and one could ask whether the achieved output improvements are worth that amount of money.

One could argue that the political, regulatory and legal environment in which the railways nowadays operate has created a culture of risk aversion. As a result, the outcome might focus "too much" on safety, at the expense of performance. Rail accidents make headline news. On the other hand senior executives might fear lengthy follow-up enquiries, as well as the threat of manslaughter charges. If safety is the number one reason for rising cost it is worth to do a cost-benefit test for that single indicator. Smith (2005) reveals that even if fatalities were reduced to zero for the year 1999/00, the social welfare benefit would only add up to £157m. (47deaths*£3.35m). Comparing those figures with the Hatfield effect on industry cost (around £2.1bn.) he argues that the cost of the undertaken safety improvements exceed the benefits.

A key question for policy makers is how to rearrange the framework to incentivise the industry to deliver the right balance between safety and all the other performance parameters at reasonable cost, or in other words, how to deliver value for money. The second question is how much money the state should provide and by that how much the taxpayer has to bear of the recent cost increases. It is important to mention that the form of privatisation led to higher government grants in short term. All assets were sold off and train operating companies had suddenly to pay commercial rates for using them. Therefore the revenue support grants to domestic passenger services (central government grants + PTE grants) increased sharply after privatisation as Table 4 reveals. The amount of subsidies declined then but not as much as expected over time, partially because of the financial difficulties of some TOCs, particularly those in less profitably parts of the country, which had built their franchise bids around big reductions in operating cost or ambitious revenue targets. Instead of allowing some TOCs to go out of business (bankruptcy) the SRA moved a number of regional franchises on to a form of annually renegotiated "cost-plus" type contract (see Nash, 2002a, p. 268). Moreover with the cost effects of Hatfield and the introduction of the SRA, the government support to the rail industry increased again quite considerably and will reach a record level this year. The subsidies to the industry now amount to £3.80 per passenger journey, compared to only £1.21 per passenger journey in 1989/90 (see Ford, 2004, p. 16).

Table 4

Government support to the rail industry (£ millions)

Year	Central government grants	PTE grants	Direct rail support	Other elements of gov. support	Freight grants	Total gov. support
1985–86	849	78	0	61	7	**995**
1986–87	755	70	0	22	6	**853**
1987–88	796	68	0	-251	2	**615**
1988–89	551	70	0	-175	2	**448**
1989–90	479	84	0	232	1	**796**
1990–91	637	115	0	440	4	**1196**
1991–92	902	120	0	562	1	**1585**
1992–93	1,194	107	0	870	2	**2173**
1993–94	926	166	0	535	4	**1631**
1994–95	1,815	346	0	-464	3	**1700**
1995–96	1,712	362	0	-1,643	4	**435**
1996–97	1,809	291	0	-1,044	15	**1071**
1997–98	1,429	375	0	25	29	**1858**
1998–99	1,196	337	0	53	29	**1615**
1999–00	1,031	312	0	75	23	**1441**
2000–01	847	283	0	84	36	**1250**
2001–02	731	306	684	105	57	**1883**
2002–03	935	304	1,166	183	49	**2637**

Source: SRA (2004a), p. 47. Note: Other elements of government support include lending to finance investment and receipts from the sale of assets.

To reduce the burden of the taxpayer one of the government objectives for the rail reform was to attract private investment. In fact there has been considerable private investment especially in rolling stock through ROSCOs (see Affuso, Newbery, 2002) but in infrastructure as well, for example in the Channel Tunnel Rail Link. However the government still spends enormous amounts of money on infrastructure. In 2001/02, direct rail support comprised £499 million of network grant paid to Railtrack and £185 million CTRL capital grant. In 2002–03 it comprised £792 million of network grants paid to Railtrack/Network Rail and £374 million Channel Tunnel Rail Link Capital Grant. The July 2000 10 Year Transport Plan (DETR, 2000) put not only railway at the centre, but envisaged 50 per cent increase in passenger traffic and 80 per cent increase in freight traffic. To deliver the necessary capacity enhancements the Government expected a great deal of funding by the private sector. In fact the Government planned that £34.3bn of the total £53.0bn rail investment would come from private investment, funded out of increased passenger and freight revenues. Glaister (2002, p. 180) points out that especially the assumption regarding the traffic volumes seems to be unrealistic. In contrast Nash (interview) argues that there was the potential of such a traffic increase because there had been massive network capacity left, which was just badly allocated. Glaister questions furthermore whether the industry would be physically capable of delivering an invest-

ment programme of this scale. Moreover, he insists that the treasury does still dominate the public spending control process. Foster (see interview) argues that there have been no truly private investments, because all of them were only done under the assumption to receive subsidies. All investments carried out by Network Rail are financed by the taxpayer, and only legally private to put the expenditure off the government books. On the investment side there is overall still a strong government support and this trend will continue as Table 2 reveals. In fact, industry cost has increased especially since the Hatfield accident and the government support to the rail industry is rather growing than the expected other way around.

As there were no cost savings (after Hatfield), it is questionable whether the industry gained productivity gains through reducing **employed staff**. As DfT (2003) reveals the rail industry halved more than pre privatisation employee jobs, although the increased output and a growth in all transport industry related employee jobs. However much of the fall in railway workforce jobs since 1995, has mainly been due to some parts of the old British Rail group being reclassified to other sectors (other transportation, telecommunication etc.). One example for this decline through reclassification is that more than 18.000 maintenance staff is transferred back to Network Rail this year, due to tacking maintenance companies back in house.

To sum up, the cost benefit trend reveals that in total not much was achieved since privatisation. It was not a tremendous success, but it wasn't a total failure either. The British rail system is a very complex one and to give a simplified answer to the question whether the reform has worked might be misleading. Nevertheless, it seems to be widely acknowledged that there was a promising start (there were with no doubt problems with implementation, but the general picture was good) with rail traffic improving rapidly, improvements in performance, increasing investments and recognisable cost savings. BR productivity improved overall from the mid 1980s until Hatfield when it became lower than ever before (Smith, 2005). Safety is statistically both historically and in comparison to European railways not a problematic issue in Britain. The two real problematic indicators are the dramatically increasing cost and the weak punctuality since the Hatfield accident. In general it seems that things started to go wrong with the Hatfield derailment and more precisely with the effects of that accident. My own personal experience reveals that other service quality indicators like passenger information, overcrowding and the quality of regional trains are, as well, rather substandard compared to European railways. Nevertheless the British railways receive now the same level of public resource as the national road programme, which seems to be too much referring to the modal

split (Figure 2+4). Taking the last years in account it becomes obvious that the much higher costs after Hatfield have not resulted in recognisable better train performance relative to historic data. The excessive focus on safety, without considering cost or the implications on reliability can be seen as one of the reasons for this result.

6 What's the current plan for the future?

The government has been well aware of the weak performance and the cost escalation. Because of these problems and the fact that the ORR spending review decision will determine industry funding to 2008, the government saw the rail industry at a critical point of its development (House of Commons Transport Committee, 2004). There was an urgent need of the government to understand the reasons for recent cost rises and to get control over costs and its subsidies to the rail industry. It wanted clear political control over the expensive and troublesome, but publicly so important, railway sector. Therefore the Government initiated a review of the industry in January 2004 and invited several people and key players of the industry to submit their views on the current structure and their perceived problems with it. The debate about cost levels and the future of Britain's rail resulted in the Government's publication of the White Paper "Future of Rail" (DfT, 2004). Although it remains unclear how and to what extent the recommended measures of the White Paper will be implemented, it is worthwhile to identify the most important reasons for, and the implications of these proposals.

First, it is questionable whether the perceived reasons for the problems of the railways as described in the White Paper are really that problematic for the industry? The next question would be to what extent the proposed measures contribute to solve these problems. And third to what extent the White Paper will contribute to ensure a sustainable infrastructure, to make railways more efficient and attractive to private investors as well as to users on both passenger and freight market?

The results of a few interviews with key people associated with the rail industry as well as some of the above mentioned submissions to the rail review, will play a role in examining these three question within the following part of the paper. The White paper addresses the following reasons for the problems described above:

1. *There is a lack of accountability and of clear strategic direction.*

- It is widely agreed that there is accountability missing (but even for that there was the Network Code) in the current system but there is a dispute over the clear strategic direction.

2. *The SRA as a public sector cannot lead the industry from within and there are limits to its ability to set strategic agenda for the railways.*

- As a public body it can't lead the industry from within but from outside (one example might be that it got the cost of the West Coast Line project under control)
- The SRA might have a limited ability for setting strategic agenda, but this could be because of a missing policy (DfT did not provide a consistent policy under which SRA could have developed a fitting strategy).

3. *The SRA is only responsible for a single mode of transport and has therefore no flexibility to make changes within the wider transport budget to reflect changing priorities.*

- That is true, but the DfT has the responsibility and tools for multi transport mode policy and it controls the SRA.

4. *Too much fragmentation of responsibilities in the public sector.*

- That is widely agreed.

5. *There is a lack of any single body with operational responsibility which would automatically take leadership of major projects.*

- There has been some confusion about the roles of SRA and Network Rail.

6. *There is no binding arrangement between the Government and Network Rail.*

- Formally that is true but there were interactions between the Government and Network Rail which could be seen as a binding agreement (like Network Rails network licence).
- It is not clear why something like that would be needed additionally to the contracts that exist today.

7. *There is a very inefficient penalty payment regime.*

- The penalty/performance regime is a complex one and Network Rail is trying to simplify it, but in general it is useful to know who is responsible for performance and to incentive to improve performance. It is not clear whether there is a potential more effective system than the current one and the White Paper leaves this system in place as it is today.

8. *ORR determines output and price of NR's work. In addition are the TOCs insulated from the effects of increasing TAC through their franchise contracts. In result, the Government has no control over the subsidies to rail and is not able to control the level of public funding.*

- There is a wide disagreement with that statement. Although the TOCs are insulated, the SRA and the DfT have the opportunity to tell the ORR how much money they have and then have a respecification of the output. The Government could have specified what it wants from Network Rail (e.g. decrease the amount of infrastructure available if too expensive).

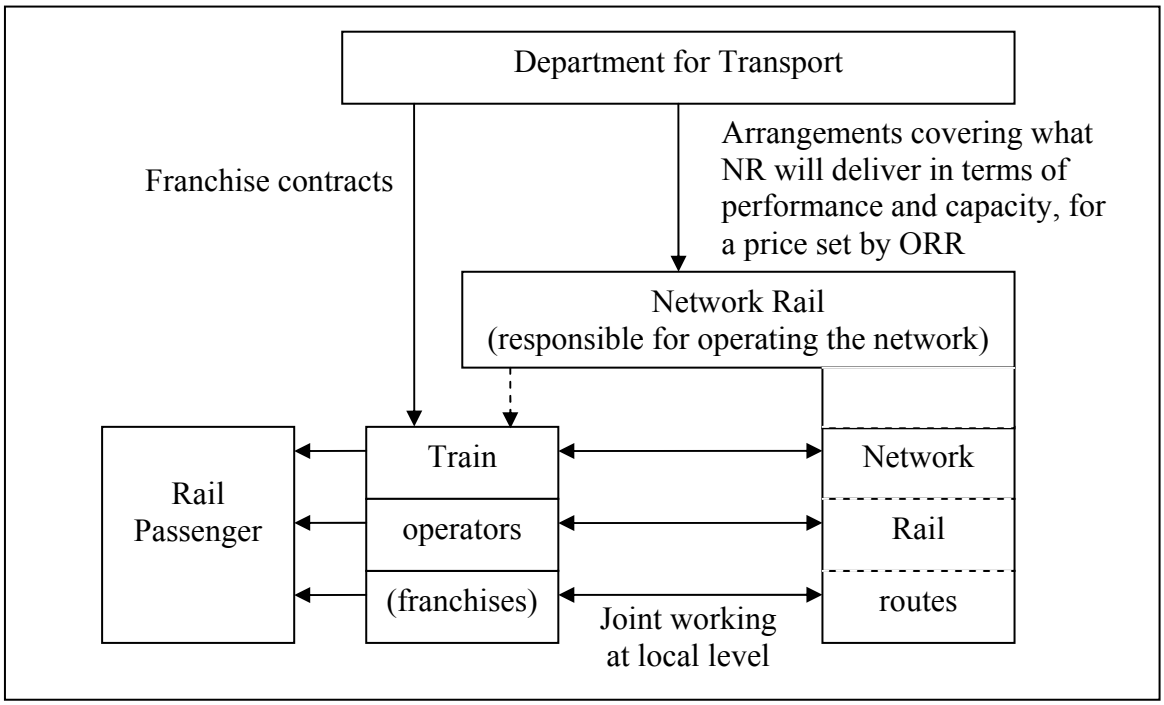
9. *Too complex and bureaucratic relationships lead to longer reaction time (the system is unable to react quickly because consensus between Network Rail, freight operators and TOCs is needed (e.g. dealing with incidents, timetable changes) and everyone is just passing the buck, rather than working in partnerships.*
- Possibly there is some truth in this, because there are many players involved but there is not much empirical evidence (only a few cases which are already solved via new arrangements) and the White Paper will not change anything.
10. *Ticket revenues are inefficient allocated to train companies (by number of services run, rather than by number of passengers).*
- Nash (interview) points out that the ticket revenues are allocated by a logit model which predicts passenger numbers as well and the White Paper will not change any of this. Additionally can the TOCs pay for a passenger survey if they are unsatisfied with the allocation.

In short, then, it becomes obvious that some of the reasons for the problems of the British rail industry perceived and published by DfT are not wholly convincing. Additionally the White Paper is not going to change many of those "weaknesses" as the following paragraph reveals.

In response to the first four points, the Government will take direct charge of setting the strategy and the level of public expenditure for the railways, which means the abolition of the SRA next year. All functions regarding strategic planning and franchising will move to the DfT, because the Government would like to have direct political control over an industry which is receiving such enormous amounts of subsidies. It is however questionable whether the Government did not have this control already. In result of the Transport Act 2000 the SRA was the instrument of the Government. The DfT has direction power and for every strategy the SRA has to have the specific approval of the Secretary of State for Transport. Glaister (see interview) even fears that the abolishment of the SRA will lessen the degree of transparency within the rail system. He points out the SRA as a separate public body published annual reports, which the DfT is probably not going to do so. The other function of the SRA, mainly timetabling and studying capacity utilisation (as well as planning of minor enhancements of the network) will pass to Network Rail. In result, NR will get almost complete control of day-to-day operations. Once the timetable is set up by NR the TOCs will not have the right to add extra services, and Network Rail will be able to cut services if it considers that they interfere with its duty to maintain the tracks. Figure 12 provides a broad overview of the proposed structure of the rail industry.

Figure 12

A new structure for the rail industry



Source: DfT (2004), p. 62.

Network Rail will be the responsible body for the performance of the rail network and the whole industry (the performance regime is going to be simplified) through a new binding agreement with the Government. It is questionable whether this "new" binding agreement doesn't exist already in the form of the Network Code and revised network licence conditions, so that nothing new is intended. On the other hand, one could fear as well that the "new" binding agreement will be just a piece of paper and that NR will get a lot of power with no direct link to the Government. Furthermore the number of franchisees will be reduced and they will be aligned more closely with NR's regional structure. The objective of this proposed measure is to enhance local responsibility and to enable NR and the TOCs to work more closely together. It is widely seen as sensible to reduce the number of franchises, although this will lead to less competition for the market. The benefits of less fragmentation are expected to outweigh the losses of potential less competition. In result, of large size franchises, the entry barriers for small TOCs will increase, due to higher financial needs for running the business and for putting a bid together for such a franchise (see interview Bastow).

That local authorities (PTEs) in major cities will get the responsibility for apportioning subsidies between different modes of public transport and that London, Scotland and Wales get greater power is seen as reasonable. The effects of this move might be that the Government

will shift some financial responsibilities towards the PTEs and that in result there will be more bus services, because buses are in total much cheaper than railways. The regional Rail Passenger Committees, who could oppose potential line closure on regional and local level, will be abolished, whilst the Rail Passenger Council will champion passenger concerns both regionally and nationally. From an economic point of view the most sensible measure is the shift of HMRI towards ORR. In the future the ORR will cover safety, performance and cost and can try within this single institution to examine the right balance between those three factors. It is largely agreed that this move will increase the efficiency of rail regulation. Nevertheless there are concerns regarding the ability of ORR with respect of handling safety issues. It is furthermore planed to provide rail freight with long-term certainty over access to the network, and to identify a group of key routes on which freight operators will enjoy and pay for more assured rights of access. This measure will possibly mean that FOCs in the future will pay as well, to some extent, a fixed part of the TAC. This measure sounds on one hand incompatible to EU objectives to ensure open access for freight and on the other hand it means increasing cost for freight on rail, which in result could lead to a shift to road transport.

The White Paper does interestingly not affect any of the main characteristics of the British rail system examined in chapter 4.1 of this paper. Train operators and the infrastructure manager will have to work more closely together in the future, but the main features like vertical separation or the independent rail regulator are reasserted. Therefore it can be assumed that the general approach did not change since 1994 and will not change in the near future. In general, the White Paper is seen as a very curios document without precise figures, but with many misleading points, and reads in terms of detail rather as a Green Paper (see e.g. interview Glaister). Some of the addressed problems are not wholly convincing and are most often not linked to the proposed measures. Additionally, one could argue that the White Paper is trying to introduce things which are already in place since long ago, for example the “new“ binding agreement between the Government and Network Rail.

7 What has worked and problems to be solved

If the White Paper provides partially although not wholly convincing reasons for the problems of the rail system, it is questionable what other people suggest are the real problems and what reasons they see for that development. Therefore interviews with key people associated with the industry and a few submissions of the various interest parties to the 2004 railway structure review will be used in the following section. As Smith (see interview) points out, one of the

weaknesses of the initial reform has been the hurry the Government rushed privatisation through. He argues that there were not many fundamental problems with the proposed structure but a lot of problems with the implementation of that structure. With respect to the current White Paper it appears to be questionable whether the conclusions and proposed changes of the DfT come too fast again and how the implementation will look like. Glaister (interview) points out that the White Paper is short both on evidence of the problems and on detail on the solution. It is trying to introduce things which are already in place and it is widely agreed that there will be another White Paper in the near future. It might be worth to examine the major problems of the rail industry that still have to be solved before this background.

Surprisingly the SRA (2004b) tells a positive story in its submission to the rail review: "Britain's railway is now rehabilitated and ready for real delivery to passengers and investors alike. There is now stability, clarity and certainty around major projects and train franchising, where before there was drift, doubt and confusion." As examined in section 5 of this paper, there are problems with the current system and most other people who handed in a submission, like Foster and Castle (2004) see Britain's railways in a mess.

The first critical question one could ask is why the Government is abolishing an agency just three years after installing it, and whether this could lead to even bigger political interference. One of the general problems of the British rail reform was that in rail, different from other liberalised network sectors, the Government interfered continuously with an incoherent policy, and therefore the industry had no time to establish the favoured structure (see interview Glaister). It is common sense that the Government can't runt the railways on its own. The aim should be to attract more private investment and to introduce more incentives for performance improvements. The White Paper will even enhance political interference and therefore the uncertainty for private investors will increase.

Because of wrong incentives for the TOCs in the 2000 Periodic Review the ORR increased the variable part of the TAC to 20%. The supposed massive increases of the TAC published in the 2003 review by the ORR will only affect the fixed part of the TAC. Therefore the variable part will be by definition again much less than 20%. This could lead to similar incentive problems as those experienced between 1994 and 2000 (this is one reason for the rail review). Furthermore the Government created Network Rail, a private company without private disciplines, seemingly to keep the enormous costs of the railway infrastructure away from the

Government's balance sheet. The decision to place Railtrack into administration, and replace it with a not-for-dividend company, may have weakened incentives for cost control at a critical time for the industry. The ownership structure of NR could be seen as weak because many members are just ordinary people and most members (labour unions, SRA, TOC etc.) have the objective of a larger network, which might not be sustainable. With its new powers NR will become the major player within the industry. The DfT will set the policy and NR will implement it. Given that there might be no "new" binding arrangement, there could be as a result no formal link between the Government and NR and therefore no accountability.

As many others, Foster and Castles (2004) see the main problems in the weak performance improvement since Hatfield and in the scale of public resources going into rail due to the alarmingly increase of industry cost after that derailment. The ORR (2004a) points out (as stated above) that the Government has the power to determine how much money it puts into the railways. It is the Government's decision how to spend its budget and to set the output of Network Rail. The ORR mentions, as well, that there was no legal overlap or conflict concerning the roles and powers of SRA and ORR, but there has been some confusion about the behaviour of both institutions. With the abolishment of SRA this problem will not longer exist. Furthermore, Winsor (see interview) expresses concerns about the merger of ORR and HMRI. He underlines that this merger is one with considerable complexity and that the government should be fully aware of this complexity when designing and implementing such a radical change to the safety regime. The Health and Safety Commission (2004) supports this argument and highlights that with the merger there would be even more overlapping than before, although only in a single body. Nash (2004) emphasises on the importance on the details of the careful implementation of the proposed measures. He identifies as the major problems the cost escalation (mainly due to little control over (sub-)contractors by NR and excessive spending on safety), the poor service quality and the reconciliation of aspiration of different stakeholders in the efficient planning of services and investment. He believes that the problems are addressed by the recent reforms and advocates now a period of stability without political interference, although he is expecting as well a further White Paper in the near future.

To sum up, the interviews and submissions reveal that most of the problems are of a contractual nature and rather related to behaviour and implementation issues than to structural fundamental problem. Therefore it is worth summarising which of the main features of the British rail system, all of them in place from 1994 until present, worked well and which ones

were rather problematic. Because the White Paper will not affect any of the main characteristics of the British rail system examined in section 4.1 of this paper, a statement of the future of these characteristics will be made as well.

There is much evidence, and it is widely acknowledged among key people of the industry, that the split of infrastructure from operations is workable. Merkert (2005) reveals that this model works beneficial in Sweden and Mr. Bowker, Chairman and Chief Executive of SRA summarised it as follows: "I think that the separation of track operations is entirely workable. It is a model that is being rolled out across the whole of Europe. It is actually the fundamental principle around liberalisation and markets. I think it can work, I think it does work and I think it will continue to work better." (House of Commons Transport Committee, 2003). There have been concerns about to much fragmentation of the industry, but these concerns were rather directed to the horizontal than to the vertical organisation of the industry. Furthermore there have been misaligned incentives for both TOCs and Railtrack, the track access charges were until the Periodic Review in 2000 not reflecting all social cost (for example the scarcity of capacity/congestion) and there were higher transaction cost mainly related to timetabling and maintenance contracts. All of these points are of contractual nature, and not related to the fundamental idea of splitting infrastructure from operations. Foster (see interview) argues, that if the split has been a problem, that it was a very minor one. Moreover the separation has among other benefits, led to more competition (at least for the market), more transparency and substantial growth in traffic on the network. In total the benefits are by far bigger than the potential threats of vertical separation of infrastructure from operations. Therefore the conclusion is that vertical separation is a sensible tool which has worked in Britain's railways up to now and is expected to continue working in the future as well.

There is no doubt that having a private infrastructure manager called Railtrack has not worked. The question is whether having a private infrastructure manager was bound to fail as Wolmar (2001) argues or whether it could have worked with a more careful implementation. In chapter 3.3 it was shown that Railtrack was badly managed and that most of the contractual environment of this company was weakly designed. Despite of Evans and Toner, all interview partners favoured a private infrastructure manager as it works successfully in all other British network industries. It is widely agreed that a private infrastructure manager within an appropriate incentive framework and staffed with experienced management could work. Foster (2005) argues that the nationalised railways would have not avoided the experienced prob-

lems. NR, the current "not-for-dividend" infrastructure manager, is formally a private company, but in practise it is able to borrow funds only because it has government backing and is seen as a company which is heavily political influenced. One could argue that the only reason for its existence is to keep a highly cost utility away from the government balance sheet. Combining this fact with the weak ownership structure of the company, it is questionable whether NR will be able to achieve similar cost improvements as Railtrack did pre Hatfield.

The creation of ROSCOs removed an important barrier to entry the rail transport market. Nevertheless there were two implementation mistakes with that issue. First the ROSCOs were initially sold for £1.7bn by the state, but were subsequently sold on for around £2.7bn, which represented poor value for the taxpayer (NAO, 1998). Secondly there were weak incentives for investment in the early years post privatisation. Then again the ROSCOs started to invest and nowadays there is sufficient investment to provide rolling stock in appropriate quantity and quality. It is however questionable if there is enough competition among the ROSCOs.

Open access in freight transport has worked well. Increasing performance and reductions in cost pre Hatfield are indicators that open access in that market segment is sensible. However to allow some open access passenger transport has led to disputes. On the one hand, it has led to lower fares and service innovations. On the other hand it may lead to duplication of services, make inefficient use of scarce infrastructure and, by reduce the revenue of the franchisees increase the need for subsidy (Preston et al., 1999).

The question whether franchising has worked, or not, is an even more complex one. If the objective of the government was to grow passenger traffic on the network, franchising has been very successful. The initial structure implied 25 franchises, and left only little scope for competition on the tracks at overlapping areas. The bidder with the lowest cost or the highest revenue forecast got the contract, and because many TOCs were building their franchise bids around big reductions in operating cost or ambitious revenue targets, many of them went into financial trouble. Most of the problems have arisen because of indecision over refranchising and the disruption following Hatfield (e.g. cost post Hatfield doubled over night). The "cost plus" contracts might have weakened incentives for cost savings and quality improvements and transferred enormous risk back to the taxpayer. The new contract style of SRA (in place since 2004) is more sensible (more specified and better risk sharing) and generally the idea of franchising is seen as workable. The proposed reduction to 15 franchises is seen as useful. In

general there appears to be a choice between short franchises, in which public authorities control service planning, fares and investment, and long franchises in which much more responsibility for the above is given to the franchisee (Preston et al., 2000). Actually the SRA wanted longer contracts to attract private investment but after Hatfield they went for shorter service contracts. Shaw (interview) points out that one must not necessarily have a long contract to incentivise investment. What matters is how that investment is protected through the franchise competition and transferred to the subsequent operator and the SRA has now such mechanisms in their contracts. Today they are looking for franchises between 5 and 8 years, which is widely recognised as sensible and workable.

Regarding independent regulation one could argue that parts of the recent cost increases are due in part to regulatory failure. The government announces that it has no control over its expenses into rail, but as shown above it actually has. The ORR has the power to determine the right level of operating and maintenance cost as well as renewal investment requirements, but the government can still ask for less output from NR. It is however in practice a very difficult matter for politicians to close lines. Although the ORR awarded not less than £22.2bn funding for NR for the next five years, Tom Winsor indicates that he in fact has saved the government money because NR was initially asking for £26bn. It is widely agreed that independent regulation is essential to ensure fair access to the network as well as to protect private investment and the White Paper reasserted the independence of ORR.

The performance regime was initially badly designed and implemented and has therefore led to wrong incentive structures. It is however common sense that a performance regime like the current one is needed and in general an essential tool for increased accountability and performance improvements. In case it will be possible to simplify the regime, the whole system will become even more workable.

To sum up, all major characteristics are seen as workable. Because of bad implementation some of the features, and in particular the private infrastructure manager, have not worked. However it can be concluded that there was not much fundamentally wrong with the chosen structure of the British rail system, except the lack of a strategic planer. The outcome of the rail structure review of 2004 in practice leaves most of the structure unchanged, and the one major change – the abolition of the SRA and the transfer of its strategic functions to a government department – is inadequately justified and of doubtful value.

8 Conclusion

The taxpayer is making a substantial investment into British railways and therefore it is essential that the railway provides excellent value for money. The experience in Britain shows that railways operate in a highly sensitive political and media environment. Given that background too many fundamental changes were done in comparatively too little time and without a clear Master Plan (e.g. White Paper) or a truly detailed and transparent policy/strategy. Although the implementation process was poorly coordinated and rushed, the early post-privatisation experience was positive. There has been massive growth in traffic and at the same time substantial cost savings as well as performance improvements were achieved. Confusion about policy and regulation roles, unaligned incentives structures, not well specified contracts especially regarding franchising, maintenance and renewal could not prevent the industry to grow and to perform better post privatisation. Safety performance improved as well and is continued to improve until now, even though there were some well publicised accidents. However since the Hatfield derailment in 2000 the story changed rapidly. Mainly the policy by the Labour government and Railtrack's poor understanding of the infrastructure made safety, although empirical unjustifiable, the number one issue. In the aftermath the industry turned into an extremely risk aversion culture on all levels, the total industry cash cost went out of control, productivity became lower than ever before and reliability experienced a substantial fall. The political decisions to place Railtrack into administration and then to replace it with the not-for-dividend company Network Rail have weakened incentives for cost control at a critical time for the industry and therefore reinforced the escalation of costs. By only keeping a highly cost intensive asset away from the government balance sheet, and by introducing "cost plus" franchise contracts (re-franchising delayed additionally) no market forces faced the industry. In result, the Government transferred most, if not all, of the risk related to running railways back to the taxpayer. Since Labour is in power there is an ongoing re-nationalisation, and the proposals in the White Paper "The Future of Rail" confirm this trend. It is widely agreed that this White Paper means nothing more than even more political interference, and hence independent regulation remains essential. The Government should focus more on setting financial incentives, should believe in market forces and should attract/protect private investment by leaving the industry deliver what the government or its agency has ex ante specified in detail and transparently. The main characteristics of the British rail system, vertical separation, franchising for passenger and open access for freight transport, independent regulation, the establishment of ROSCOs as well as performance regimes are reasserted by the White Paper and seem workable, if they get the chance and sufficient time to prove it.

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