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WITHOUT DELAY

Getting Britain's railways moving

Richard Wellings
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Contents

About the author	06
Summary	08
Crisis on the railways	10
From private to public	13
Outcomes	17
Where privatisation went wrong	26
Rail privatisation	30
Is there a case for subsidies and price controls?	34
Getting privatisation right	37
Options for denationalising the rail industry	41
Political obstacles	44
Conclusion	45
References	46

About the author

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Summary

- The renationalisation of rail infrastructure has not been a success. Network Rail has been plagued by crisis after crisis, with major projects hit by delays, mismanagement and very large cost overruns. By the end of financial year 2014-15 the firm had missed 30 out of its 84 planned milestones in its Enhancements Delivery Plan. Network Rail's problems echo those suffered by the inefficient nationalised industries of the post-war period.
- Rail subsidies remain high, with the industry costing taxpayers £5 billion in 2014/15. The true level of government support has been disguised by increases in Network Rail debt, which in 2015 reached an astounding £38 billion. It is likely to surpass £50 billion by 2020, representing a major long-term burden on future generations.
- The railways had been returned to the private sector in the mid-1990s, at the tail end of the privatisation programme. However, unlike the light-touch approach of the 19th century, the sector was subject to strict regulation. A complex artificial structure was imposed on the industry, which separated track and train. Much of the network was subject to price controls. Rather than full-blooded privatisation, the model could more accurately be described as a public-private hybrid.
- Despite severe regulatory constraints, private train operators were able to bring entrepreneurship and innovation to the sector, including improved marketing and the introduction of very low-cost, off-peak fares. Where allowed, competition between different operators brought benefits such as improved customer service, additional direct trains and lower fares.

- Passenger traffic has doubled since privatisation, while fares have risen broadly in line with average earnings. Punctuality has remained at roughly the same level as under British Rail and there appears to have been little increase in overcrowding over the last fifteen years. Safety has continued to improve. Many of the common criticisms of the post-privatisation industry are misplaced.
- The sector has however remained heavily dependent on taxpayer funding. The level of financial support from government has increased significantly compared with the British Rail years, yet there has been no step change in outcomes according to several key measures. In terms of cost-effectiveness, the sector's performance has been relatively poor.
- The rail industry is a good example of how political interference can prevent privatisation from delivering the expected benefits. A combination of heavy regulation and dependence on state subsidies meant that many of the potential benefits did not materialise. Instead, a 'distributional coalition' of special interests developed, which focused on obtaining financial support and regulatory favours from government.
- A successful privatisation model would wean the industry off state support and allow its structure to evolve to more cost-effective organisational forms through mergers and demergers. There is strong evidence that a liberalised railway would exhibit a far higher degree of vertical integration than the current state-imposed model.
- Private railways should be free to cut costs by closing loss-making lines and services, to introduce 'super-peak' fares to tackle overcrowding, to offer cut-price 'economy class' options such as standing-only carriages and to determine an appropriate level of safety expenditure.
- Effective reform would face severe opposition from the special interests that depend on rail subsidies and industry regulation. It could also require a renegotiation of EU directives, if the UK chooses to remain within the bloc.

Crisis on the railways

2015 was a year of crisis for Network Rail. Even before it began, the firm was heavily criticised for the 'Christmas chaos' at King's Cross and Paddington on 27 and 28 December 2014, which resulted from overrunning engineering work. According to a damning investigation by the Office of Rail Regulation, the severe disruption to passengers, on two of the UK's key inter-city routes, reflected 'weaknesses in Network Rail's planning, oversight and the incident response which followed, which failed to put the impact on passengers at the centre of decision making' (ORR 2015a: 3).

The debacle was quickly followed in early January 2015 by serious overcrowding problems at London Bridge station, one of the network's busiest, following upgrading work. The difficulties persisted for several months and at worst resulted in long delays, station entrances being closed, desperate commuters jumping ticket barriers and police being deployed to maintain order.¹

While these events created a large amount of negative publicity for the railways, their economic significance was trivial compared with the failings revealed in June. The government 'paused' flagship rail schemes such as the electrification of the Midland main line and the Transpennine route between Leeds and Manchester because Network Rail's investment programme was running over budget and behind schedule.

By the end of financial year 2014-15, the firm had missed 30 out of its 84 planned milestones in its Enhancements Delivery Plan (ORR 2015b). Perhaps most alarmingly, it was later admitted that the cost of electrifying

¹ See for example: <http://www.standard.co.uk/news/transport/london-bridge-commuters-leap-barriers-to-escape-overcrowding-amid-rush-hour-chaos-10083409.html>

the Great Western main line had trebled from the initial budget (an overrun of almost £2 billion) while the completion date had been delayed by an estimated two years.²

In addition, Network Rail had failed to reach its targets for ensuring punctuality and reliability, had under-delivered renewal work, and fallen short on its efficiency improvement objectives. There was also evidence of a significant fall in passenger satisfaction (ibid: 22). As a sign of the severity of the crisis, the government replaced the chairman of Network Rail and added a senior director from the Department of Transport to the firm's board.³ In July, it announced a review into the longer-term structure and financing of the company.⁴

The pressure was not restricted to Network Rail. In September, the Labour Party announced enhanced plans to increase public ownership of the industry. The government would take over train operations after existing franchises expired. Indeed, full renationalisation is now firmly on the political agenda. Senior Labour figures have also restated their support for a freeze on fare increases, representing a further extension of state intervention in the rail market.⁵ Similarly, in September 2014 the Conservative Chancellor announced that increases in regulated rail fares would be capped at the rate of inflation.⁶

Clearly the deeply politicised and crisis-prone railway observed today is far removed from the successful and largely independent industry envisaged by the architects of privatisation. The remainder of this paper therefore examines the policy decisions that led to the current problems.

The next section provides a brief history of the privatisation process, placing it in the context of a long-term increase in the degree of state intervention in the railways. The complex artificial structure imposed on the industry is summarised. The post-privatisation performance of the sector is then assessed according to various key measures, including its cost to taxpayers. It is concluded that many outcomes have been disappointing, particularly in terms of cost-effectiveness. These failings

2 <http://www.rail.co.uk/rail-news/2015/great-western-upgrade-project/>

3 <http://www.networkrail.co.uk/about-us/board/>

4 <https://www.gov.uk/government/publications/shaw-report-terms-of-reference>

5 These policies are summarised in the 2015 Labour manifesto: <http://www.labour.org.uk/manifesto/transport>

6 <http://www.telegraph.co.uk/news/uknews/road-and-rail-transport/11079842/Rail-fare-rises-will-be-capped-says-George-Osborne.html>

are analysed through the lens of economic theory, including transaction cost economics and public choice theory. The paper concludes by setting out broad guidelines for reform that could substantially improve the efficiency of the sector, although it is argued that such radical changes would face powerful opposition from the special interests that benefit from current arrangements.

From private to public

It is often assumed that the railway is a 'public service' that should naturally be owned and operated by the government. In fact, the bulk of Britain's extensive rail network was developed by the private sector in the 19th century. Railway entrepreneurs raised capital to build new lines and then operated services on a commercial basis. Government did however play a major role in enabling land to be allocated for the construction of new lines. Routes typically had to be approved by Parliament and the process was subject to all manner of lobbying from landowners and other interests.

While state regulation of the industry gradually expanded in this period, with the important exception of compulsory purchase it could generally be described as 'light touch' (see Hibbs 2006). State intervention expanded dramatically during and after World War I, however. The apparent success of the wartime 'command economy' convinced many that central planning would be an effective means of achieving social and economic goals.

Intervention in the rail industry was also justified for sector-specific reasons. Given its strategic importance, the government had taken over the network during the conflict. The infrastructure was severely degraded by heavy traffic and lack of maintenance; it would require vast expenditure on repairs. At the same time, rail faced an existential threat from the growth of road transport. This combination undermined the viability of much of the network.

The government's solution was to merge around 120 railway companies into four regional monopolies, bolstering industry finances by eliminating 'wasteful competition'. The plan was implemented at the start of 1923. But by the late 1930s the 'Big Four' were struggling themselves, partly due to the growth of road transport, which offered door-to-door convenience to travellers and hauliers.

World War II resulted in a major upsurge in rail traffic, in part due to road fuel shortages and rationing, but at the same time put immense strain on the infrastructure. By the end of the war, facing vast outlays, the Big Four were effectively bankrupt. The sector was nationalised at the start of 1948, as part of the Labour Party's programme. A single state-owned firm, British Railways or British Rail, ran the industry until the mid-1990s.

For much of this period the government adopted a policy of managed decline in order to limit the subsidy burden on taxpayers. Cost-control also drove the Beeching cuts in the 1960s which led to the closure of roughly one third of the network (though these lines only carried about 1 per cent of rail traffic (Beeching 1963: 10)). By the early 1990s, heavy railways carried only five per cent of passenger traffic in the UK, while over 90 per cent went by road (DFT 2014).

Privatisation

The 'privatisation' of British Rail came at the tail-end of the wave of flotations instigated under the Conservative governments from 1979-1997. Indeed, Margaret Thatcher had resisted denationalising the rail network, fearing political opposition and aware that the largely loss-making industry would require ongoing financial support from the government (Shaw 2000).

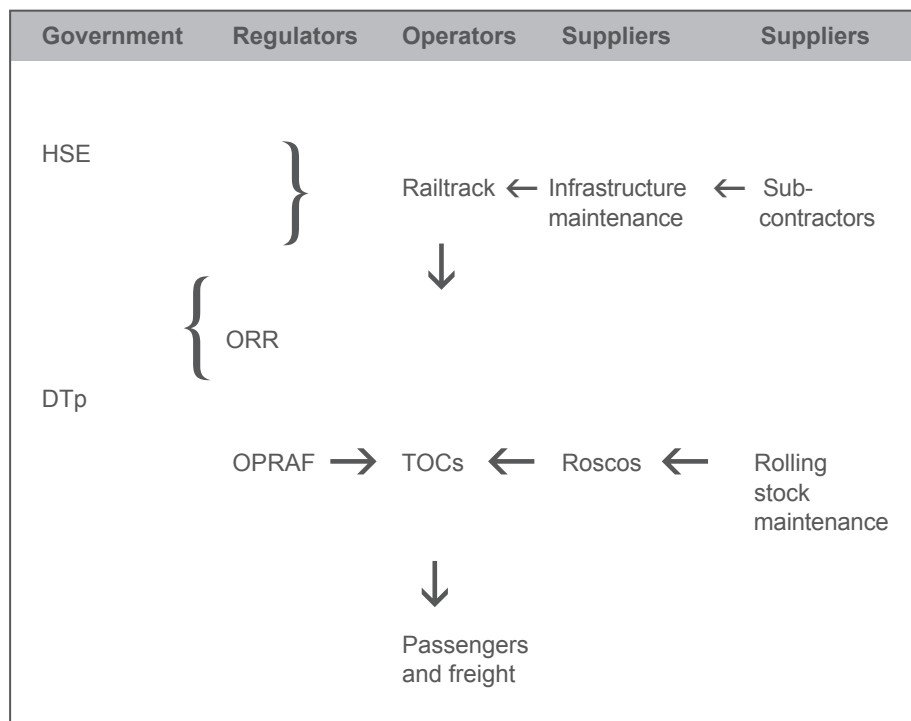
In many ways her fears were borne out. Risk aversion among politicians meant that the privatised railway was subject to highly restrictive government regulation. Price controls limited fare increases on much of the network, including the core London commuter market. It was also next to impossible to close loss-making routes. Perhaps most importantly, the government imposed an artificial structure on the industry, partly in response to EU 'open access' directives.

The private-sector entrepreneurs that developed the Victorian railways had quickly decided that vertical integration, with the same firm owning the track and operating the trains, provided the most profitable model. The lessons of this 'market discovery' process⁷ were largely ignored, however, and under the new arrangements these functions were split up. Railtrack, the infrastructure manager, was segregated from 25 train operating companies (TOCs) and 3 freight operating companies. The

7 For the theoretical background, see Kirzner (1997).

remainder of British Rail was divided to form three rolling-stock leasing companies (Roscos), 13 infrastructure service companies (Iscos) and other support organisations (Tyrrall 2006). The Office of Passenger Rail Franchising was created to sell franchises to the TOCs, while the Office of the Rail Regulator (ORR) was set up to regulate the infrastructure.

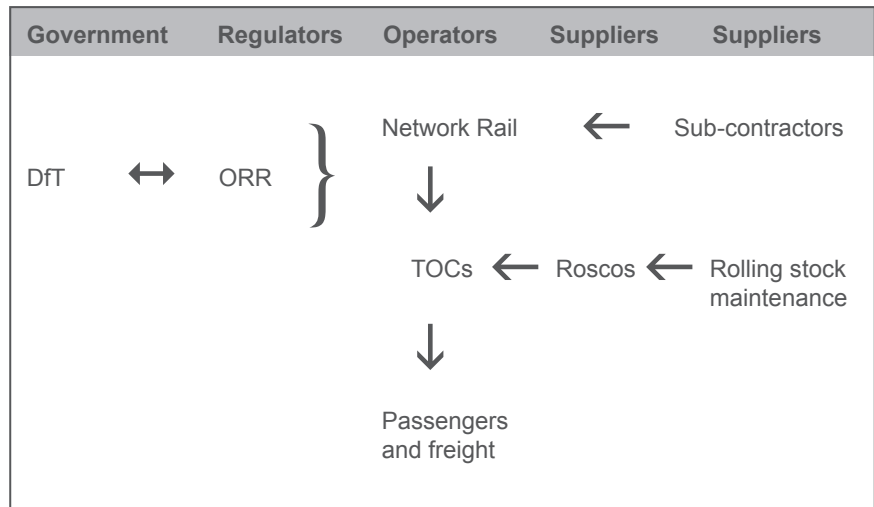
Figure 1: The 1997 privatised structure: a simplified view



Source: Wellings (2014)

Railtrack got into financial difficulties following the Hatfield crash of 17 October 2000. Costly emergency repairs were undertaken and temporary speed limits imposed. The firm also faced huge cost overruns on its flagship West Coast Main Line modernisation project, together with rising political and regulatory risks from hostile elements within the Labour government.

In October 2002, the infrastructure was taken back under de facto state control, with Railtrack replaced by Network Rail, ostensibly independent at this stage, but in reality a government-backed company. Thus a major element of the industry has already been renationalised.

Figure 2: The current privatised structure: a simplified view⁸

Source: Wellings (2014)

The railways have therefore gone from being privately owned and lightly regulated in the 19th century, to privately owned but increasingly state-directed in the 1920s and 1930s, to fully nationalised from 1948 to the mid-1990s, then privately owned but heavily regulated for about a decade, and now a hybrid in which the infrastructure is publicly owned but there is still nominal private ownership of train operating companies and other industry elements.

⁸ In April 2015 the Office of Rail Regulation was absorbed in the new Office of Rail and Road.

Outcomes

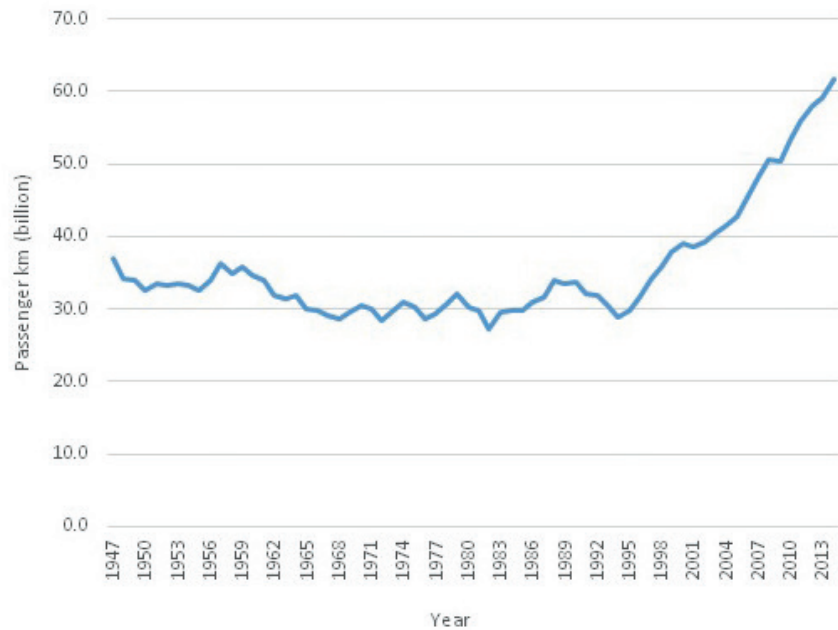
Assessing the success or failure of the post-privatisation railway is problematic given the large number of variables influencing outcomes. It is not possible to compare 'like with like' given changing market conditions, wider transport policies, new technologies and so on. While broad conclusions can be made, these caveats should be borne in mind.

Passenger traffic

Certainly there has been a major increase in rail traffic, with passenger miles doubling from 1995 to 2014 (Figure 3). Heavy rail's modal share of passenger transport rose from 4.2 per cent to 8.0 per cent in the same period (DfT 2014).⁹

It seems likely that more entrepreneurial approaches to pricing and promotion by TOCs contributed to this success story (Pollitt and Smith 2002; SRA 2003). Factors unrelated to privatisation plausibly explain the bulk of the growth, however. These include robust employment and population growth in London, where rail plays a particularly important role. In provincial cities, rail's strong recent performance may partly be explained by 'anti-car' policies introduced since the mid-1990s that have deliberately pushed more commuters on to public transport (see Cassini and Wellings 2016).

⁹ Heavy rail does not include subway (e.g. London Underground) or tram networks.

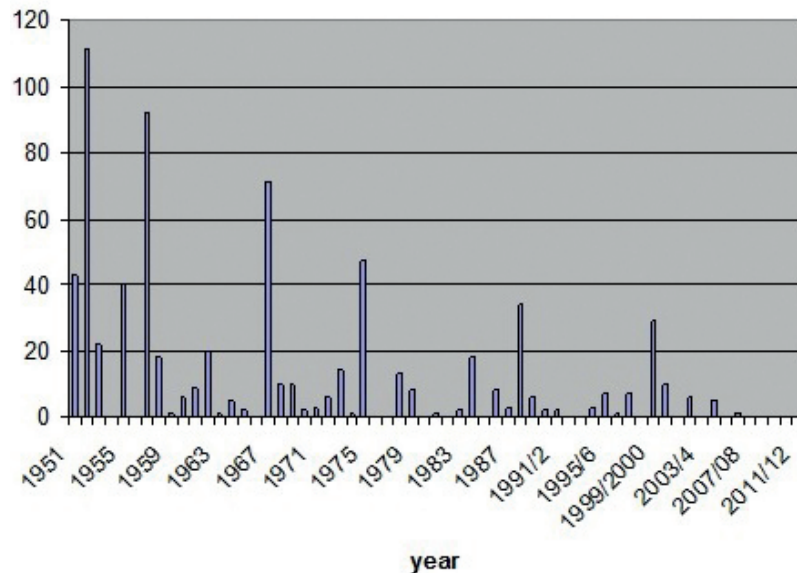
Figure 3: Rail passenger traffic, 1947-2014

Source: ORR (2015c)

Safety

A perceived decline in safety standards was one justification given for the winding-up of Railtrack and the de-facto renationalisation of the infrastructure through the creation of Network Rail. It was claimed that fragmentation of the industry and cost-cutting put safety at risk, although examination of long-term accident trends does not provide clear support for this interpretation (Figure 4). Given the downward trend due to improvements in railway technology, it seems likely that changes in structure and ownership made little difference to the accident rate.

Figure 4: Passenger fatalities from train accidents, 1951-2012



Source: ORR (n.d.)

It should be pointed out that in terms of economic efficiency it is possible for rail firms to spend too much on safety, perhaps in response to regulation imposed by government. Many consumers might prefer a reduction in safety in return for lower fares. Indeed safety spending on the railways may be counterproductive if resulting fare increases and delays incentivise travellers to use less safe modes, such as motorcycles.

Subsidies

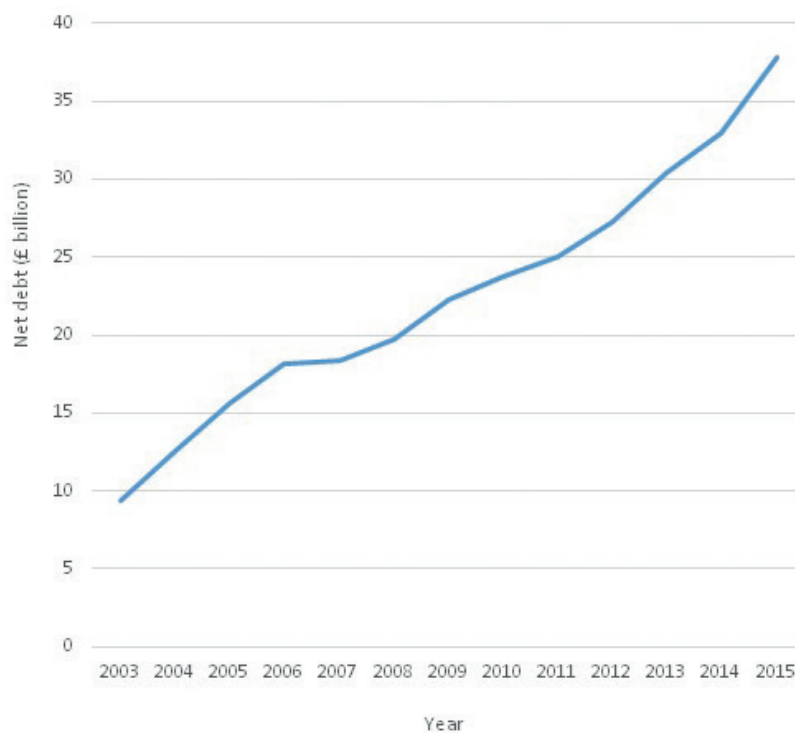
On many measures the reformed British Rail ran the most cost-effective railway in Europe during the late 1980s and early 1990s (Shaw 2000). The level of government subsidy declined from between 0.3 per cent and 0.35 per cent of GDP in 1978-85 to between 0.12 per cent and 0.16 per cent in 1989-92. The Western European average was around 0.5 per cent (Harris and Godward 1997).

Subsidies have increased significantly in the post-privatisation era, hitting a peak of around 0.5 per cent of GDP in 2006/7, before falling back to

about 0.3 per cent of GDP (£5 billion) in 2014/15 (ORR 2015d). State support is likely to start a strong upward trend again in 2017 if construction of the High Speed 2 project commences as planned.¹⁰ Over the last decade subsidies in real terms have been running at roughly two to three times the level that British Rail received in the late 1980s.

The high levels of subsidy arguably underplay the degree of government support. Network Rail has borrowed heavily to fund the railway, effectively shunting costs on to future taxpayers. Net debt has quadrupled since the firm's creation, to £38 billion in 2015 (Figure 5). It is forecast to exceed £50 billion by 2020, with interest payments absorbing a large and growing share of the firm's income (see ORR 2013: 30-34).

¹⁰ A planned high-speed railway from London to the West Midlands (Phase 1) and then to Manchester and Leeds. The current funding envelope is £55.7 billion in 2015 prices, with the line due to open fully in 2033. See: <https://www.gov.uk/government/organisations/high-speed-two-limited>

Figure 5: Network Rail net debt

Source: Network Rail Annual Report and Accounts (various years).

Investment

The growth in subsidies can be partly explained by a wider shift in transport policy. A strategy of managed decline was reversed in the mid-1990s, coinciding with privatisation, largely as a result of the green agenda (Dudley and Richardson 2003).

Rail was at the centre of efforts to bring about a modal shift from private cars to public transport. In the context of the industry's long-term decline, the marginal cost of accommodating additional passenger growth was initially likely to be low in many locations. However, on some parts of the network a combination of capacity constraints and government-imposed

fare regulation resulted in overcrowding and political pressure for investment in new or upgraded infrastructure (Wellings 2015).

The additional capacity was not commercially viable and thus required support from taxpayers. Spending on such projects - for example the West Coast Main Line upgrade, Thameslink and the Great Western Electrification – explains a large part of the subsidy increase. Unfortunately much of this ‘investment’ has represented poor value for money and has been plagued by delays, cost overruns and subsequent de-scoping (see, for example, NAO 2006). These problems in part reflect a high degree of politicisation, with projects often selected on political grounds rather than to maximise economic returns. A prime example today is the High Speed 2 line from London to the North of England, which, if it commences in 2017 as planned, will subsequently absorb a large proportion of the rail investment budget (Aizlewood and Wellings 2011; Wellings 2013).

Structure

The remainder of the increase can plausibly be explained by inefficiencies created by the fragmented, artificial structure imposed on the industry post-privatisation. This not only introduced large ‘transaction costs’ (see below) at the ‘interfaces’ between the different layers of the sector, it also arguably increased the incentives and ability of various special interests, from rail unions to consultants, to increase dramatically their remuneration. Some components of the industry, particularly the Roscos and various subcontractors, were able to achieve abnormally high rates of return, partly because the rigid structure imposed on the sector protected them from competition (see Bowman et al. 2013: 60-67). A recent review suggested that the inefficient, fragmented, post-privatisation structure was costing the industry approximately £1.5 billion a year (adjusted to 2015 prices) (Taylor and Sloman 2012: 18).¹¹

¹¹ While the methodology used may be challenged, the estimate may be conservative because it does not include difficult to quantify costs, including the impact of the post-privatisation structure on the political economy of rail subsidies.

Fares

Fares have risen in the post-privatisation railway, though to a much lower extent than subsidies. Between 1995 and 2015, regulated standard fares, which cover a high proportion of commuter journeys, rose by 6.6 per cent in real terms, while unregulated standard fares rose by 32.9 per cent and first class fares by 61.7 per cent (ORR 2015e: 8). These figures suggest that, on average, fares rose by about 25 per cent in real terms during this period. In terms of affordability, this is broadly in line with the rise in median earnings over the period, though fares have tended to outpace incomes since the mid-2000s as wages stagnated and then fell in the Great Recession (ONS 2014).

The aggregate figures disguise considerable variation, however. In particular, it could be argued that private train operators have become far more adept than British Rail at market segmentation, for example by offering extremely cheap fares on off-peak long-distance services booked in advance. For low-income groups there are now probably more opportunities to travel by train at relatively low cost. This contrasts with large increases in unregulated, peak-time walk-on fares, bought at the station just before travelling (de Castella 2013).

Quality of service

The performance of the post-privatisation railway in terms of quality of service would also appear to be mixed. A large number of stations have been improved and modern rolling stock introduced on much of the network. Some rolling stock replacement was partly driven by regulation though, including the phasing out of 'slam door' commuter trains in the southern region.

The average age of rolling stock has actually increased somewhat since the last years of British Rail, rising from 16 to 18 years (Bowman et al. 2013). Ageing trains are not necessarily a negative development, since consumers may prefer lower fares to newer trains and private operators may have greater incentives to discover such preferences – though such market responses have been severely constrained by regulation in any case.

British Rail achieved good punctuality figures in the early 1990s, with around 90 per cent of services running 'on time' in 1993/94.¹² This dropped to 78.6 per cent in 2001/02 during the Railtrack crisis. By 2014/15 it had climbed back up to 90 per cent (Network Rail 2015). It might be concluded that the reforms made little difference to reliability, although recent performance seems more impressive in the context of passenger growth and increases in service frequency.

Despite perceptions, levels of overcrowding also appear to have remained broadly steady in the post-privatisation era. In 2014, 4.1 per cent of passengers were travelling 'in excess of capacity' on peak-time services in London and the South East. This compared to 3.6 per cent in 2000 and a trough of 2.2 per cent during the recession of 2009 (DfT 2015). However, if the steep rise in overcrowding since 2013 continues, it would suggest the problem is worsening significantly. Nevertheless, the relatively stable performance so far has been achieved during a period of substantial traffic growth.

Recently introduced commuter rolling stock has typically reduced the proportion of seating and dedicated more space to standing passengers in order to increase capacity. This low-cost strategy to reduce overcrowding arguably represents a significant reduction in quality of service (see Starkie 2013).

Mixed outcomes at a high cost

With the exception of the crisis period of the early 2000s, the post-privatisation railway appears to be performing relatively well in terms of quality of service and fare levels. While current performance shows little improvement compared with the latter years of British Rail, it has been achieved in the context of a doubling of passenger traffic, which has put considerable strain on some parts of the industry.

12 Network Rail's claim of 'record punctuality' runs into criticism. *Rail News*, 27 May 2009.

This outcome has been achieved at a high cost to taxpayers and the wider economy, however. And the long-term level of state support has been hidden by the transfer of costs to future taxpayers through rapidly expanding Network Rail debt.

To summarise, there would appear to be four key elements driving up the cost of the railways. Firstly, the shift in policy since the mid-1990s towards deterring private motoring and promoting public transport has encouraged policymakers to direct investment towards poor-value-for-money rail projects. Secondly, the complex and fragmented structure imposed on the industry has introduced unnecessary 'transaction costs'. Thirdly, heavy government regulation, including price controls, has contributed to problems such as overcrowding, creating political pressure for wasteful spending. Finally, the high level of subsidy encouraged the growth of a distributional coalition of special interests that profit directly from state handouts and the regulatory framework that protects their access to them. Effective reform must address these pathologies of the post-privatisation railway.

Where privatisation went wrong

Privatisation is a political process and as such will be vulnerable to the problems afflicting political processes in general. Almost inevitably it will be influenced or even 'captured' by special interests. As a result, there is a risk that the outcome is not a dynamic free market, or even a lightly regulated sector. At worst, government will regulate the market to enable special interests to extract 'rents' from taxpayers and consumers. Such a model would protect favoured interest groups from new market entrants, competition and disruptive entrepreneurship, while participants' profits might well rely on state subsidies.

As public choice theory¹³ would have predicted, many of the privatisations of the 1980s and 1990s did not produce anything approximating to free markets in the sectors concerned. In some industries at least, the period might more accurately be characterised as a shift from 'state-capitalism' Model A to 'state-capitalism' Model B. This raises the question whether Model B, consisting of heavily regulated markets under nominal private ownership, delivered economic benefits compared with the direct state ownership of Model A.

The answer is likely to depend both on the characteristics of a particular industry and the regulatory structure adopted post-privatisation. In an unhampered market economy, sectors characterised by major economies of scale and vast, inflexible, long-term capital investments – such as the rail industry – are likely to be dominated by large firms exhibiting high degrees of vertical integration (see below). The 'command economies' within such firms will exhibit significant knowledge and incentive problems

13 For an introduction to public choice theory, see Butler (2012).

no matter what the ownership model. Thus, *ceteris paribus*, the benefits of privatisation are likely to be lower in such industries than in naturally more fragmented, dynamic and competitive sectors.¹⁴

Nonetheless, there are particular problems associated with state ownership that are likely to apply across all sectors. These are explained in detail elsewhere, but include politicisation, producer capture, and poor incentives for entrepreneurship, innovation and cost-control (see Parker 2009). Where state regulation ensures monopolies, such pathologies may be exacerbated by an absence of competition. The poor results became apparent in the nationalised industries of 1970s Britain. Endemic misallocation of resources led to heavy taxpayer subsidies and poor quality services for customers.¹⁵

However, some of the privatised sectors exhibit broadly similar problems today. The following (non-exhaustive) analysis therefore draws on theory and recent evidence to summarise some possible reasons why artificial post-privatisation markets could fail to produce efficiency gains compared with the directly state-controlled model that preceded them:¹⁶

- *Politicisation* – The propensity of politicians to interfere in a sector could hypothetically increase post-privatisation, resulting in increased regulation/taxation and concomitant efficiency losses. This outcome may be particularly likely in sectors with high political salience. Any change in the status quo creates risks for policymakers, providing incentives for them to intervene. The costs of such intervention are likely to be opaque and widely dispersed, leading to limited accountability.
- *Overregulation* – Politicians may face fewer disincentives to impose costly regulations on a nominally privatised sector than under state ownership. In the former case, the negative effects can be blamed on private firms, whereas in the latter they are likely to be blamed directly on the government, creating higher political costs. Voters and ‘opinion formers’ have weak incentives to become well informed about

14 This distinction was implicitly acknowledged by some communist leaders, who, realising direct state control of the latter was particularly harmful, allowed limited private ownership and entrepreneurship in some activities. Examples include Lenin's New Economic Policy (1921-1928) and Deng Xiaoping's derivative 'socialism with Chinese characteristics' (1979-) (on the former see Steele (1999)).

15 On the nationalised railways, see Hibbs (2006); on government project disasters within the nationalised industries, see Myddelton (2007).

16 This analysis draws heavily on the public choice and transaction cost economics literature. Key texts include Coase (1937), Dunleavy (1991), Niskanen (1971), Olson (1965), Stigler (1971), Tullock (1989) and Williamson (1985).

such issues. Senior officials may benefit from the salary and status opportunities provided by expanded regulatory oversight, while key corporate players in the sector may welcome additional regulation if it serves their interests (for example, by raising barriers to market entry and protecting them from competition).

- *Flotation receipts* - Short-term incentives to maximise flotation receipts may encourage the creation of heavily regulated 'rigged markets' that reduce the risks facing investors. Large, risk-averse institutional investors, such as pension funds, may prefer a model that effectively guarantees returns rather than entrepreneurial and disruptive free markets that threaten incumbent players.
- *Transaction costs* – Artificial post-privatisation markets may depart significantly from the organisational forms likely to evolve in an unhampered market economy. It is conceivable that in some instances such artificial structures increase transaction costs compared with direct state ownership, thereby reducing allocative efficiency.
- *Restructuring costs* – Structural changes may weaken 'social capital' within a sector by disrupting working relationships, as well as losing specialist, often asset-specific knowledge and skills through the departure of long-term staff. Organisational cultures may also be weakened or destroyed. The role of such factors in efficient operations may be somewhat opaque to both policymakers and senior management.
- *Moral hazard* – If sectors comprise 'essential' infrastructure then firms can be sure that governments will step in if they fail. Indeed, rules are typically in place that set out how this would be done. Limited liability laws and the use of special purpose vehicles¹⁷ also limit downside financial risks. These factors may encourage excessive risk-taking and a concomitant misallocation of resources.
- *Rent-seeking* – A combination of heavy regulation and private ownership could potentially increase incentives for special interests to engage in rent-seeking activity. Profit-making businesses might have stronger incentives to lobby for regulations and subsidies that increase their profits than the less commercially minded managements of state industries. There is even a danger that 'crony capitalism' could emerge, as observed with privatisations in post-Soviet economies.

¹⁷ A legally separate subsidiary company set up to fulfil a particular contract or undertake a project that shields its parent companies from liability should it fall into financial difficulties.

Finally, it should be noted that flawed privatisation models impose economic losses beyond the sector concerned. Although the problems experienced in privatised industries have largely been the result of political interference and state regulation, their failure may be misused by ideological interventionists to undermine trust in markets more generally. Both the public and opinion-formers have weak incentives to properly investigate why particular sectors have not performed well and this ignorance can be exploited. If the political culture turns against relatively free markets, the wider efficiency losses are likely to be substantial, as more and more economic activity becomes subject to high taxes and restrictive controls.

Rail privatisation

Unfortunately the experiment imposed on Britain's railways in many respects represents a case study on how to get privatisation wrong, combining many of the pathologies described above. The sector remained deeply politicised and heavily regulated, offering only limited scope for the entrepreneurship and innovation that delivers such vast benefits in less tightly controlled industries. Government intervention also led to misallocation of resources on a grand scale, culminating in vast 'investment' in poor-value projects.

Politicisation

Political interference has been pervasive in the post-privatisation railway and accordingly only a selection of particularly important examples can be sketched out here. One is the imposition of price controls, despite their well-known negative economic effects (see, for example, McNulty 2011). Their wide extent partly reflected fears among Conservative MPs that the unpopular rail privatisation policy would lose votes in key marginal constituencies. There was a perceived need to make the programme more politically palatable, particularly given the weakness of the Major government with its tiny majority (see Wolmar 2001: 68-69). More recently, overtly political reasons were used to justify the decision not to allow train operating companies to charge 'super-peak' fares to tackle overcrowding on some commuter routes, despite the substantial efficiency benefits of liberalising price controls (see DFT 2013).

Politicisation is also very evident in the allocation of rail investment, which often reflects 'vote buying' behaviour and special interest influence rather than the objective of maximising economic returns. In other words, low-value-for-money schemes that serve political priorities get precedence over high-value-for-money schemes. Such an approach is exemplified by high-speed rail and the Northern Powerhouse agenda, although there are numerous other examples.¹⁸

The political determination of both rail fares and infrastructure investment contributes directly to high levels of state subsidy and the inefficient allocation of resources in the industry.

Fragmentation

The post-privatisation fragmentation of the rail sector might also be considered a consequence of politicisation. A politically-driven, top-down, 'constructivist' approach to privatisation seemingly ignored the lessons of both railway history and transaction cost economics by imposing a fragmented structure on an industry naturally exhibiting a high degree of vertical integration.

Indeed the pioneering Stockton and Darlington line, which opened in 1825, began as an 'open access' railway, but due to costly and disruptive conflicts among train operators, became fully vertically integrated by 1833 (see Kirby 2010). The latter model was subsequently favoured by other rail firms in the era of what might be described as almost full private ownership. Vertical integration was therefore the result of an entrepreneurial discovery process in a market relatively unhampered by government intervention, an outcome that should carry considerable weight in any analysis of railway structure.¹⁹

Coase (1937) explained how the trade-off between the costs and benefits of contracting with external parties and costs and benefits of absorbing activities within a single organisation determines the boundary of the firm. Most railways have characteristics that suggest a natural tendency towards

18 For a detailed analysis of the political economy of high-speed rail, including both High Speed 1 and High Speed 2, see Wellings (2013).

19 Comparisons of different modern-day rail networks are to a large extent compromised by the morass of government interventions that make like-for-like analysis problematic.

vertical integration.²⁰ Fundamentally this reflects the high degree of mutual interdependence between track and train. More specific explanations include asset specificity (for example, rolling stock adapted to a particular route) (Williamson 1985) and very long-term investments combined with a high level of risk and uncertainty that may be costly and problematic to deal with in contracts. With separate firms, one party could engage in opportunistic behaviour at the expense of the other (Joskow 1984).

Accordingly, there is a large body of empirical evidence that illustrates the problems of fragmentation identified by transaction cost economics and which goes beyond the decisions of rail entrepreneurs to adopt vertical integration in the *laissez-faire* conditions of 19th century Britain.

The government's own *McNulty Report* (2011: 91) identifies fragmentation as a key barrier to efficiency and summarises many of the resulting transaction costs. Similarly, Taylor and Sloman's (2012) review of the literature provides concrete examples of inefficiencies, including large numbers of staff employed to deal with the 'interfaces' between the various layers of the industry. Although caveats apply to cross-country comparisons, particularly given the distortions of pervasive state intervention, Drew and Nash's (2011) analysis of railways across the EU, which includes an extensive literature review, finds that: '[o]n existing evidence ... there is no reason to conclude that vertical separation improves rail performance.' Bitzan's (2000) study of US railroad costs concludes more strongly that 'multiple-firm operation over a single rail network would lead to large cost increases.' This is not to deny the potential benefits of competition, which are discussed below.

As well as introducing transaction costs, it has also been argued that fragmentation destroyed valuable industry relationships and specialist knowledge (see Tyrrell 2004). Some sections of the industry were able to exploit various inefficiencies to draw vast profits at taxpayers' expense (see Bowman et al. 2013).

20 Despite a strong tendency towards vertical integration, different organisational models are likely to suit different parts of the rail industry. For example, long-distance freight and passenger services may run over several firms' tracks, making full integration impossible.

Rent-seeking

The rich pickings from rail subsidies provided strong incentives for the industry to engage in rent-seeking behaviour, helped by a wider green policy agenda that favoured rail over road. Nominally private but state-funded firms arguably proved far more effective at lobbying government than British Rail. Operators, contractors and bureaucrats formed a distributional coalition to push for more subsidies (Wellings 2014). In many cases their profits and livelihoods depend on continued industry fragmentation and regulation. Price controls play a particularly important role. By creating congestion and overcrowding they provide the political pressure for investment in new capacity and increased subsidies (Wellings 2015).

Effective reform

Any effective reform must address these key problems. The sector should be freed of political interference; its structure should be free to evolve to a more efficient form; and opportunities for rent-seeking by special interests should be eliminated or at least limited. In broad terms this means phasing out state subsidies and deregulating the industry.

Is there a case for subsidies and price controls?

The case for a reform programme involving major reductions in both government financial support and regulation would be undermined, however, if it could be demonstrated that such interventions had economic benefits that exceeded the substantial costs set out above. The following section therefore addresses the economic arguments in favour of rail subsidies and regulation of fares.

Subsidies

Subsidies are justified on the grounds that there are positive externalities from rail services, wider economic benefits (such as ‘agglomeration economies’) that cannot be captured through fare revenues (see, for example, Starkie 2013: 30-37). This is of course true of very many sectors, and applying this argument consistently would lead to the socialisation of vast swathes of the economy. Furthermore, it is highly questionable whether rail subsidies offer the most efficient means of delivering such benefits. In the transport sector, there is evidence that, in large cities at least, high capacity busways would be a more cost-effective way of achieving similar or greater gains (Withrington and Wellings 2015).

This case for rail subsidies is also partly contingent on state control over land-use in the UK. A freed land market would allow firms to ‘capture’ a greater share of the wider economic benefits through property development, as used to be the case before strict planning laws were imposed (see Harrison 2006). A return to private property would also better internalise the very substantial negative externalities associated with rail transport

(see Beito et al. 2004). These include environmental effects such as noise and air pollution, as well as negative impacts on other transport networks. Railways often create major barriers to movement, dividing neighbourhoods and imposing longer journeys for road users. Crossing points may also cause delays.

From a methodological perspective, it is hugely problematic to quantify the positive and negative externalities from rail in order to set the optimal level of subsidy (or taxation). Worse still, the pattern of externalities will inevitably be contingent on a morass of market distortions due to state interventions in land-use and other regulations (Wellings 2012).

In reality the rate of subsidy is an arbitrary political decision that bears little or no relation to maximising economic benefits. It opens the door to political interference and all the associated pathologies, most notably rent-seeking by special interests. The tax bill itself creates further problems, distorting economic activity in other sectors and producing 'deadweight losses'. The case for rail subsidies is superficially attractive but in practice weak.²¹

Regulation of fares

Regulation is often justified on monopoly grounds. Indeed this was the reason given for the price controls imposed on the post-privatisation railway (DfT 2012: 18). It was argued that rail firms could abuse their 'market power' to overcharge passengers, particularly where competition appeared to be limited, such as within the London commuter belt.

This approach is flawed for several reasons. Firstly, there is in fact significant contestability, even for passengers commuting into central London. A viable, unsubsidised, commuter coaching industry offers competing services from many locations, typically at a much lower price than rail.²² Price controls and rail subsidies will of course tend to suppress such competition. Another option for commuters is to drive to stations operated by different firms or indeed different public transport networks such as London Underground or buses. Information technology also enables more people

21 This also applies to social inclusion/egalitarian arguments for subsidies, since rail-use is concentrated in high-income groups, particularly long-distance commuters from London's 'stockbroker belt' (see Wellings 2015).

22 For example: <http://www.thekingsferry.co.uk/commuter-services/commuter>

to work from home for at least part of the week, reducing dependence on rail firms. In the longer term, rail fares will affect residential and business location decisions. If fares are perceived as too high, potential passengers may reject a particular rail corridor or long-distance commuting, perhaps choosing to live closer to work even if it means smaller accommodation in a less desirable area. Fare levels may be an important factor in such trade-offs.

While, if narrow assumptions are adopted, there may be a theoretical case for fare regulation on certain commuter routes, as with subsidies the real-world costs of such intervention in terms of politicisation and special-interest capture are likely to far outweigh the benefits.

Getting privatisation right

The weakness of the arguments for extensive state intervention in the rail sector strengthens the case for a *laissez-faire* approach to reform. This would focus on improving outcomes and increasing efficiency by phasing out government-imposed distortions to both the rail market and the wider transport market. The following section sets out key elements of such a policy agenda.

Ending wasteful investment

In terms of overall government policy, a mode-neutral approach is likely to be far more cost-effective than the current anti-car, pro public-transport bias. Scarce resources could then be directed to the schemes offering the highest value for money, whether road or rail.²³ Applying this principle would help avoid the wasteful investment that has become endemic. In the longer term, a return to private investment in new transport infrastructure would eliminate many of the tendencies towards waste inherent in government projects (see Knipping and Wellings 2012).

Tax reform would be another essential component of a truly mode-neutral approach. High rates of fuel duty and car tax are imposed on motorists whereas rail users do not even pay VAT (Wellings 2012). This distorts patterns of demand which in turn distorts patterns of infrastructure investment. If the government insists on pursuing reductions in greenhouse-gas emissions, this can be achieved at much lower cost through measures such as a carbon tax or emissions trading than direct interventions in the transport market (Niemietz 2013: 20-26).

²³ For a comparison of rates of return, see Dodgson (2009).

Vertical integration versus competition

As explained above, railway history, the transaction cost economics literature and a large body of empirical evidence suggest that in an unhampered market economy, railways would have strong tendencies towards vertical integration. Imposing fragmentation is thus likely to be a major source of inefficiency in the sector. Instead the degree of vertical integration should be allowed to evolve according to changing market conditions. This would mean permitting rail firms to merge and demerge as circumstances changed. In other words, rather than politicians and officials deciding it from above, the structure of the rail industry would be determined through a market discovery process.

There will be fears of reduced competition on routes where open access operators are active and indeed of choking off the potential for greater competition on other lines. Currently such firms only account for a small share of the rail market – about one per cent of passenger miles (CMA 2015). However, as economic theory would suggest, there is strong evidence that on-rail competition brings considerable benefits, which has been used to make a case for its extension.

On the East Coast Main Line, where Grand Central and First Hull Trains have operated alongside the main franchisee (currently Virgin East Coast), competition between operators has resulted in faster journey times, lower fares, less crowding, incentives to cut costs, and innovation in ticketing and overall service (Lodge 2013: 21). Moreover, there were larger increases in both the number of passenger journeys and revenues at those stations with competing operators (ibid: 22).

Nonetheless, it should be accepted that competition is just one of several factors contributing to the efficiency of the sector - and it is possible that the costs of the fragmentation associated with 'open access' may exceed the benefits. As Drew and Nash (2011: 2) explain:

'Any efficiency advantages arising from competition must be compared with possible reductions in efficiency because of transaction costs between the infrastructure manager and the incumbent operator, the reduced pressure on costs and the negative impact on decision making, particularly for investment.'

There is clearly a possible trade-off between the benefits of greater vertical integration in terms of lower industry costs and losses from higher prices and worse service due to a greater degree of monopoly power (Williamson 1968). This in itself is a powerful argument for allowing the market to determine the structure of the sector, given the well known knowledge limitations of central planning (Hayek 1945). Moreover, to the extent it requires state intervention to maintain it, artificial competition is likely to bring with it the negative impacts associated with politicisation and special-interest capture.

Deregulation

Allowing rail firms to introduce more flexible pricing, including super-peak fares on overcrowded commuter routes, would enable more efficient use of existing capacity and reduce the pressure to build expensive new infrastructure (Starkie 2013). The ability to raise prices would also provide a means of funding new infrastructure without recourse to the taxpayer, where firms considered it a viable commercial proposition. As discussed, fears of rail companies exploiting their market power over 'captive markets' are overblown, and a strong case can be made that the costs of fare regulation are likely to far outweigh the benefits.

Flexibility in pricing should be combined with freedom to determine quality of service, allowing greater 'market segmentation'. For example, standing-only, 'economy class' carriages could be offered at a significant discount to the standard fare, serving that segment of passengers preferring to trade-off lower service quality for cheaper prices (ibid.).

Rail firms should also be free to close loss-making lines. The small number of passengers on many rural and regional lines, for example, makes their continued operation indefensible on economic or indeed environmental grounds. Scarce resources could then be redeployed to higher value uses, such as improving high-volume, commercially viable commuter services in the South East.

Reducing special interest influence

A combination of reducing wasteful investment, simplifying industry structures and removing counterproductive regulation would go a long way towards undermining the ‘distributional coalition’ that relies on and lobbies for vast subsidies from the taxpayer. However, if the rail industry remains subject to a high degree of politicisation, with politicians and senior officials able to adjust policies to favour particular special interests, the incentives for rent seeking behaviour will remain relatively strong.

Depoliticisation will not be achieved while Network Rail remains in the public sector. Retaining high subsidy levels means the government will inevitably wish to exercise some control over how the money is spent. The following section therefore provides some broad guidelines on how effective reform might be achieved by fully denationalising the rail industry. While the long-term objective should be to remove barriers to the adaptation of the sector to changing market conditions, it is clear that policymakers will have to make important decisions on the process followed to liberate the rail market from its current regulatory constraints.

Options for denationalising the rail industry

The denationalisation of the sector could be achieved in different ways. One option is to allow prospective train operating companies, perhaps in consortia, to take over the ownership of the infrastructure they wish to use. This could perhaps be achieved via a bidding process once current franchises came to an end. Chunks of the network could then be sold off or given away. The process could be speeded up if current TOCs were compensated for terminating their franchises early.

Several problems are apparent. Firstly, policymakers and/or the prospective buyers would have to decide the appropriate geographical scale by which to divide the network into tranches. Adopting the existing division of Network Rail into eight 'routes' would be one option²⁴, although some long-distance services stray into two or more of these areas. Another would be to adopt something similar to the Big Four model of the inter-war years. Alternatively, the network could be split up into relatively self-contained units, though in practice these are relatively limited in number. This approach could also lead to significant lost economies of scale if applied to relatively small examples such as the Chiltern Line or the London, Tilbury and Southend.²⁵

Secondly, much of the rail network is loss-making from a commercial perspective, which suggests, if the government insisted on retaining those sections, that ongoing subsidies would be required. Clearly it would be possible to incorporate a long-term subsidy agreement into the bidding process, even if the economic case for retaining such payments is weak.

24 See: <https://www.networkrail.co.uk/structure-and-governance/our-routes/>

25 And long-distance freight uses sections of both these lines.

Thirdly, there would be dangers that breaking up Network Rail would lead to the kinds of transaction costs, broken relationships and lost knowledge that afflicted the industry after the fragmentation of British Rail, potentially resulting in efficiency losses.

Finally, given the economies of scale in the industry, together with transaction costs from artificial boundaries, it seems likely that the 'sale' of the network in tranches would quickly be followed by a series of mergers and acquisitions. While this could be a costly and disruptive process that might be avoided by a different approach, a plus point would be that the industry itself would decide whether and where re-integration should take place, according to prevailing market conditions.

An alternative strategy would be for Network Rail to take over train operations once franchises ended (once again, the process could be speeded up, for example through compensation arrangements). One possibility to smooth the administration of this process would be to move Directly Operated Railways, the company formed by the Department for Transport that successfully managed East Coast Main Line services from November 2009 to February 2015, under Network Rail's remit. The resulting vertically integrated entity would then be transferred to the private sector, for example via a flotation, effectively becoming a kind of British Rail plc. This would not preclude future demergers or open access arrangements if suitable market conditions pertained.

Such an approach would however risk entrenching the bad practices and nationalised-industry culture of Network Rail, together with senior staff responsible for the firm's recent problems. Having said this, the prospect of privatisation could increase the degree of 'commercial-mindedness' within the organisation, as happened in the latter years of British Rail.

Yet the absence of competition, at least within the rail sector as opposed to the wider transport market, could also favour the retention of inefficiencies and reduce entrepreneurial dynamism, though this could be mitigated by the possibility of takeover and demerger. Clearly there is no easy solution to the problem of determining the optimal privatisation process or the initial structure of the industry.

Furthermore, the loss-making nature of much of the rail network would complicate any flotation process. While there is a strong economic case for a rapid halt to subsidies, it would create huge risks for both politicians

and investors. The industry would then be forced to close numerous lines, reducing the network to commercially viable routes, probably restricted to the London commuter belt, the major inter-city links and possibly a couple of bulk freight railways (see Serpell 1983). Moreover, some routes appearing to make a profit do so only as a result of previous state infrastructure investment, borne by taxpayers rather than recouped through fares and freight charges.²⁶ Even major trunk routes could be at risk when major renewal work is required, though recent growth in passenger traffic has made their finances more robust and ending price controls could further strengthen their viability.

A possible compromise might provide a definite programme of phased subsidy reductions over the medium term, although this could make it more likely that future governments would intervene given the political opposition that would ensue once closures were made (see below). Non-state mutual ownership models might be considered as an alternative to the problems of flotation, although they can suffer weaker incentives for entrepreneurship and innovation.

26 For example, the 1970s/1980s electrification of the East Coast Main Line and the 2000s modernisation of the West Coast Main Line.

Political obstacles

The reform of the rail industry would face severe political obstacles, in particular from the 'distributional coalition' of special interests which profit from subsidies and regulation. These include various commercial interests such as consultancies, construction firms, train operators and rolling stock companies, as well as elements of the transport bureaucracy and the trade unions. Various passenger groups can be added to this, together with vocal railway enthusiasts.

Different aspects of reform would attract different opponents. Objections to allowing vertical integration are likely to be most vehement from firms and officials profiting from fragmentation and the various interfaces between industry layers. The European institutions would represent a further obstacle, if British voters choose to remain in the bloc. EU 'open access' regulations constrain vertical integration and prohibit full private ownership, which requires that owners are able to exclude others from using or controlling their property. If the structure of the rail sector should be the outcome of market processes rather than government diktat, there is a strong case for EU rules to be rescinded. Indeed an opt-out from the relevant EU directives could form part of the UK's pre-referendum renegotiation process.

Deregulation of fares would almost certainly be opposed by subgroups of commuters, together with local politicians seeking their votes, though some passengers may prefer 'super-peak' fares if it reduces overcrowding.

Subsidy cuts and the resulting line closures would be strongly resisted by passenger groups, railway enthusiasts and local politicians, as well as the industry itself. The main beneficiaries of such reforms, including general taxpayers and competitors offering other transport options, have very weak incentives to engage in lobbying activity, giving rail's distributional coalition a large advantage in terms of political influence.

Conclusion

Britain's railways are neither fully public nor properly private. They are instead a complex web of state-subsidised firms operating in a heavily regulated, artificial market. While post-privatisation outcomes in terms of fare levels and quality of service have been similar to those achieved in the latter years of British Rail – and, more positively, passenger traffic has doubled – the additional financial burden on taxpayers and the wider economy has been substantial.

The recent crisis of mismanagement at Network Rail provides strong evidence that the deficiencies of state ownership remain as difficult to overcome now as in the heyday of nationalised industries in the post-war period. Extending nationalisation to the train operating companies would therefore be a mistake.

Critics of the rail industry would however appear to be correct that fragmentation is the source of major inefficiencies. Effective reform must therefore embrace the entrepreneurship, innovation and dynamism of the private sector while rejecting the imposition of artificial organisational structures by the government and EU. The railways should be moved fully into the private sector, weaned off subsidies, and the owners should be free both to control the infrastructure and operate the trains.

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