Research in Transportation Economics 100 (2023) 101321

Contents lists available at ScienceDirect

Research in Transportation Economics

journal homepage: www.elsevier.com/locate/retrec

Research paper

Will the latest British reforms to rail passenger service procurement work?

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ARTICLE INFO

Keywords:
Rail
Reforms
Vertical structure
Cost efficiency

ABSTRACT

In the 1990s Great Britain embarked on one of the most radical railway reforms undertaken anywhere in the world, with full vertical separation and privatisation of all aspects of the railway and the introduction of competition throughout the sector. However, since then Britain's railways have been plagued with multiple problems, most notably a failure to control costs, as well as multiple franchise failures and problems with developing sensible timetables, with consequent impacts on train performance. Multiple attempts to reform the initial model have failed and in 2018/2019 a fundamental review was undertaken which culminated in the publication of the Williams–Shapps plan for rail which proposes a major step back towards vertical integration with the establishment of a new government owned organisation to take charge both of infrastructure and services, although the latter will be operated by private companies under concessions. This paper reviews the reasons behind the problems experienced by Britain's railways – which led to the review – before setting out the proposed reforms and discussing whether they might solve the problems and what some of the critical success factors might be.

1. Introduction

The Williams–Shapps plan for rail (DfT, 2021) proposes radical changes to the structure of the rail industry in Britain, including a major step back towards vertical integration with the establishment of a new government owned organisation to take charge both of infrastructure and services, although the latter will be operated by private companies under concessions. This paper considers the background to the reforms in terms of the criticisms of the current structure, and the proposals themselves. The methodology is based on review of the literature and evidence, drawing out key themes and issues that will be important for the success of the reforms. Section 2 outlines the current structure of the industry in Britain and the main criticisms of it in terms of costs, franchise failure, fares structure and timetabling. Section 3 considers the key issue of costs in more depth. In sections 4 and 5 we then outline the changes proposed and consider their likely effectiveness before reaching our conclusions.

2. Background: problems with the current structure

2.1. Initial reforms of Britain's railways in the 1990s

In the last thirty years all EU member countries have been required to make significant reforms to the organisation of rail transport in their countries, whilst reforms have also taken place in many other parts of the world. Britain is the country which has made the most radical reforms (Nash & Smith, 2011). In just three years, 1994-7, the former vertically integrated state owned monopoly, British Rail, was split into more than one hundred companies and completely privatised. The aim of the restructuring was to introduce competition wherever possible. Thus almost all passenger services were franchised by competitive tender to private operators as 25 companies covering individual routes or areas, mainly on net cost contracts which transferred much of the revenue and cost risk to the private sector. Rolling stock was placed in the hands of leasing companies, which would compete to lease rolling stock to the train operators. A new arm's length public agency was created to manage franchising. Infrastructure was placed in the hands of a separate company, Railtrack, and privatised by sale of shares. It was recognised that the infrastructure was a natural monopoly, but all maintenance and renewals work was also contracted out. A strong independent regulator was put in place not just to guard against discrimination (given the complete independence, even of ownership, of the infrastructure and train operators this was not seen as a serious problem) but most importantly to incentivise the infrastructure manager by price regulation as well as examining quality of service and investment plans. Freight was privatised with complete open access, and more limited

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https://doi.org/10.1016/j.retrec.2023.101321
Received 8 December 2022; Received in revised form 16 June 2023; Accepted 22 June 2023
Available online 27 July 2023

open access introduced for passenger services (the current position is that open access passenger operations are only permitted if they are 'not primarily abstractive' of passenger traffic from franchisees).

2.2. Subsequent structural changes and concerns over the vertical structure

Since 1997 further important changes have been made to the structure of the industry. Following Railtrack's bankruptcy a new body, Network Rail, was created to manage the infrastructure and since 2014, this has been recognised to be a state owned company. Responsibility for franchising, as well as strategic planning, has been brought within the relevant ministry, the Department for Transport. However, there has remained considerable dissatisfaction with the performance of the industry. Much of this discontent is associated with the fact that, far from reducing costs, the period post reform has seen substantial cost increases, particularly in infrastructure but also in operations. A report on value for money (McNulty, 2011) in 2011 blamed these cost increases in particular on misalignment of incentives between the infrastructure manager and train operators. These misalignments were not fully solved by contracts (track access charges; performance regimes) and the McNulty report led to the strong encouragement of alliances between the two sides. The deepest alliance, between South West Trains and the relevant division of Network Rail, involved not just the merging of management teams but the complete sharing of cost and revenue risk. However, it was abandoned after just 3 years. In Scotland, an alliance involved appointment of the same person as both Managing Director of the train operating company and regional director of Network Rail. But most alliances only covered specific activities, such as performance management, training or management of stations. Clearly this was not seen as an adequate solution. The issue of costs is considered in more detail in the following section.

2.3. Franchise failure

A further source of dissatisfaction was the financial failure of a number of franchises. Franchise failure had been a feature of early franchises, where the problem was over optimistic forecasts of the scope for cost reductions. But more recently, the problem has been over optimistic forecasts of future revenue. Under the British system, the owners of franchises must support the train operating company up to a certain level of loss, but can then surrender the franchise. Three successive owners (Sea Containers, National Express and Virgin/Stagecoach) of the franchise for the most profitable set of services in Britain, the East Coast Main Line, have incurred such losses that they have been forced to surrender the franchise (the franchise agreements permit this when losses reach a pre specified level), due to the failure to increase revenue in line with forecasts. By the time the Williams Review was set up, several more franchises, including Northern, Transpennine Express and South West Trains, were in or heading for the same position. Subsequently, the loss of traffic as a result of the Covid pandemic made all the franchises unprofitable, and the government was forced to take emergency measures to take over revenue risk. At the time of writing, traffic is still running some 20% below pre Covid levels and the resulting uncertainty about future traffic levels would make it very difficult to resume net cost franchising at least for some years to come.

2.4. Fares, timetabling and performance

There was also dissatisfaction with the complicated nature of the pricing structure (Passenger Focus, 2012). Even under British Rail, Britain had moved away from a simple kilometre based tariff to a system of pricing according to the circumstances in individual markets, with charges per kilometre varying greatly by route and ticket type. A move had been made towards yield management through advance purchase tickets with limited numbers being released for each train according to demand. But with the reform the system was taken further. Responsibility for setting fares for each origin-destination pair was allocated to a designated lead train operator. As a licence condition, all other operators were required to accept these tickets, although they could also offer operator specific tickets of their own. An existing computer model (ORCATTS), which forecast how far passengers used the services of different operators was used to allocate revenue from these tickets between operators. All operators were free to offer advance tickets for specific trains for which they would of course retain all the revenue. Finally increases in some fares, particularly season tickets, ordinary returns for shorter distance and off peak returns for longer distances, were regulated on an RPI-X basis.

The result was much confusion about operator specific tickets and time of day restrictions, with many reports of people – including pensioners – being forced to pay large sums of money to buy new tickets because the tickets they were travelling on were not valid. To a degree this situation was the inevitable result of market pricing and yield management systems; different fares by time of day and by type of service (e.g. intercity versus commuter) were an integral part of such a pricing system. But the way in which fares were set meant that that many other anomalies arose. The fact that the fares from A to B and B to C may be set by different operators from that from A to C meant that there was no systematic relationship between them, and cases where the sum of the fares from A to B and B to C was less that the fare from A to C were common. Thus knowledgeable passengers would search to see if they could get a cheaper fare by so-called 'split' ticketing, buying several tickets to cover different parts of the journey rather than a through ticket. As soon as private providers of information and ticketing began offering on line facilities to take advantage of split ticketing, the existing way of setting fares began to look less and less sustainable.

Finally, there was dissatisfaction with the way the timetabling process worked. Essentially, train operators bid for the paths they wanted, and Network Rail had the task of reconciling competing bids as far as possible, both in terms of multi annual track access contracts, which entitled operators to specific numbers of paths within specific time bands (but not to specific paths), and of the actual annual timetabling process. This process did not necessarily lead to attractive or reliable timetables in terms of spacing of trains and availability of connections between trains. Moreover, Network Rail was widely criticised for over selling numbers of paths in terms of what could be operated reliably.

These issues came to a head with the introduction of new timetables in spring 2018 on important parts of the network which proved simply unworkable, and was politically the immediate cause of the Williams review (ORR, 2018). The two parts of the network concerned were firstly the Thameslink services which cross London between places as far apart as Cambridge and Brighton or Peterborough and Horsham. Infrastructure investment had been undertaken to permit these services to serve a wider range of origins and destinations but there was uncertainty until late in the day over whether the infrastructure would be fully available in time for the timetable change. Secondly, was a set of services run by a variety of operators crossing Manchester serving a wide area of the North including Newcastle, Glasgow and North Wales. The issue here was a late running electrification scheme which meant that services which had been intended to be electrified in the new timetable would need to be operated by diesel multiple units meaning that insufficient diesel units would be available for the planned improvements in services by other operators to which these units were planned to be transferred.

In both cases, the issues regarding the infrastructure led to timetables being finalised with too little time to fully check that they were feasible, for instance in terms of the traction and route knowledge of train crew. In the case of Thameslink, at one stage 10% of trains were being cancelled, which given that this was the most overcrowded part of the rail network led to severe problems. In the case of cross Manchester services, the problem was partly caused again by Network Rail overselling paths. A subsequent study found that whilst Network Rail had

sold 15 paths per hour over the junctions in question, 13 trains per hour was the maximum service that could be reliably operated (Network Rail, 2019).

Late running infrastructure projects may occur under any structure of the rail industry, although the question obviously arises as to whether such delays are more common under some structures than others. But questions were raised as to whether the fact that several operators plus Network Rail (and the Department for Transport) were all involved in the timetabling process, with no-one in the lead, lead to a failure to plan sufficiently far ahead and to take account of all the relevant factors in producing the timetable (ORR, 2018).

2.5. Towards a new structure (The Williams Review)

The Williams Review was established in September 2018 to report in autumn 2019. The report was much delayed by the Covid pandemic but finally published in May 2021 as the Williams-Shapps Plan for Rail (DfT, 2021). The review was staffed by the government department (DfT) but Keith Williams, former Chief Executive British Airways was appointed independent chair. An Expert challenge panel was established, including no-one from the current rail industry in Britain although one member, Dick Fearn, former Chief Executive Officer of Irish Rail, worked for both Railtrack and train operators earlier in his career. The review was given the task of recommending the most appropriate organisational and commercial frameworks for the rail industry in Britain and told to be comprehensive and bold, challenging received wisdom.

3. Costs

Whilst all the shortcomings outlined above are important, arguably the crucial factor is the scale of the failure to control costs.

On paper, the British model appeared to be a textbook implementation of reform of a network industry. Infrastructure (the natural monopoly) was separated and regulated by an independent regulator with strong powers and adequate resources. Privatisation was implemented throughout the system (at least initially; as noted the infrastructure manager is now a state owned company) and competition introduced in freight (competition in the market) and for all passenger services (mainly in the form of competition for the market).

However a key challenge facing Britain's railways for most of the period after the reforms has been rising costs (and unit costs). Indeed, given the very substantial growth in passenger journeys and train-km achieved since the reforms – one of the successes (see Fig. 1) – and given the strong economies of density that prevail in railways, unit costs would have been expected to fall. In addition, it might have been expected that the combination of a strong, independent regulator (infrastructure) and completion in and for the market (freight and passenger services) would have delivered cost reductions through improved efficiency performance in addition to capturing any benefits of growth through exploiting economies of density.

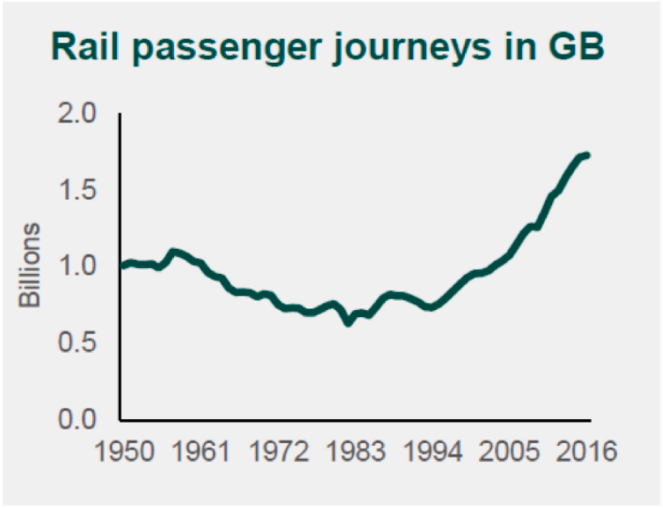

Fig. 1. Growth in rail passenger demand in Great Britain.
Source: DfT, Rail Factsheet 2017

Below we discuss cost trends in respect of rail infrastructure and franchised passenger services in more depth, consider some of the reasons for the increases, and also what some of the solutions might be, based on the literature.

3.1. Rail infrastructure cost trends

Table 1 below shows the evidence on infrastructure cost trends for the period leading up to the Williams Review. The overall picture is one in which, despite strong growth in passenger numbers and train-km, combined with strong economies of density, the unit cost of rail infrastructure has risen very substantially. In comparison, in other network industries, privatisation, combined with strong economic regulation (and benchmarking), substantial unit cost reductions have been achieved.

The early period after privatisation was characterised by considerable efficiency gains but whether these were true savings was later called into question following an accident in 2000 at Hatfield (just north of London) where a train derailed due to poor quality of track. This accident prompted a major increase in maintenance and renewal activity and led to the private infrastructure manager, Railtrack, being placed into administration and replaced with Network Rail, initially a company limited by guarantee (and now a state owned company).

In 2004 and later 2008 it was recognised that the rise in costs following the Hatfield accident was at least partly the result of inefficiency and from 2008 the independent regulator, The Office of Rail and Road (ORR), began to apply reasonably sophisticated econometric techniques using international data, as well as exploiting regional data within the infrastructure manager, to benchmark Network Rail's efficiency performance (see Smith, 2012; Smith & Wheat, 2012).

The result was a challenging set of efficiency targets – of around 40% - set during the 2008 Periodic (regulatory) Review, to be achieved over a ten year period (with roughly 20% to be achieved over the first 5 years). Network Rail came close to achieving the 20% target during the first 5 years, but subsequently targets were not met and indeed efficiency performance began to deteriorate. This situation is therefore reflected in the data in Table 1 and forms the evidence base available to the Williams Review – suggesting a significant problem in terms of the ability to control rail infrastructure costs in Great Britain.

The reasons for the failure of the regulatory system to constrain costs are to some extent unclear. The ORR has had the strongest power of any economic regulator in Europe and has been well resourced and clearly set up to be independent of government. There has also been a process in place to ensure that Network Rail can plan on a long term basis (with 5 year price controls, but with costings also based on longer term cost minimisation). A formal process was put in place to ensure that if ORR's

Table 1
Rail infrastructure cost trends 1998–2017 (real terms).

	Per train-km (RPI)	Per train-km (CPI)
Maintenance	−13%	+2%
Operations	+2%	+19%
Renewals	+20%	+40%
Total OM&R	**+6%**	**+23%**
Enhancements	+892%	+1056%
Total cost	**+67%**	**+95%**

Source for cost data: Network Rail Regulatory Accounts: Notes: RPI and CPI are different UK measures of inflation (RPI is typically around 1% higher per year than CPI and is usually used in economic regulation)

assessment of Network Rail's legitimate (and efficient) expenditure needs were in excess of the government's affordability criteria, that services/performance could be cut to bring the two into line. In theory at least these process should therefore avoid historical problems of under-investment amongst state-owned enterprises such as British Rail, where governments restricted funding but without explicitly changing requirements. And stop-go funding should not have been a problem because Network Rail has had long term funding stability.

Given the benign picture then, what has gone wrong? A few possible areas can be highlighted. During the period before Network Rail was a formally a state-owned company it operated as a company limited by guarantee, funded by debt, but with no shareholders. This meant that the company's borrowing did not go onto the government's balance sheet, which may have reduced the (indirect) pressure brought to bear by the government on Network Rail's costs, since in one sense it could be seen that the company had an open-cheque book. This was particularly an issue immediately after Network Rail was formed in 2002, during which the regulatory framework was temporarily suspended given the huge cost shock resulting from the collapse of the privately-owned Railtrack.

From 2004 the ORR started to put more pressure on Network Rail in terms of efficiency, culminating with the 40% (10 year target) set in 2008, based primarily on an econometric cost model utilising international data. However, this "top-down" evidence was also supported by a large number of "bottom-up" engineering studies that also pointed to a substantial efficiency gap. As noted above, Network Rail performed reasonably well during the first five years of the 10 year target period, achieving an 18% efficiency gain against a target of 21% for the 5 year period to 2014. Thus far it appeared therefore that economic regulation was starting to work, albeit to bring costs down from the historically very high levels reached during the first few years after the formation of Network Rail.

However, Network Rail was then tasked with closing the remainder of the 40% gap identified (with the size of the remaining gap being broadly confirmed by further econometric and engineering based benchmarking in the 2013 Periodic review). However, the experience over the next few years saw unit costs rise and efficiency begin to deteriorate, rather than improve. A number of reasons have been highlighted by ORR, including lack of planning to deliver planned renewal projects which reduced productivity and also that Network Rail was too much driven by centrally-planned efficiency targets, but without the detailed, local knowledge to deliver these. This has been one reason behind an increasing trend towards devolution within Network Rail prior to the Williams Review.

Interestingly, and relating back to the wider literature on the efficiency of state-owned enterprises (see e.g. Rees, 1984), one factor impacting Network Rail's efficiency was the re-introduction of annual cash limits on the company after 2014 when it was formally reclassified as a state-owned company. This led to a re-planning of maintenance and renewal activity which reduced efficiency.

The fact that all of these factors were allowed to occur, however, given the presence of a well-resourced, experienced independent regulator, with a reasonably sophisticated set of benchmarking tools (international and internal econometric models plus engineering based studies) is surprising. One factor that may have impacted is the apparent loss of confidence of the economic regulator in its top-down econometric tools, which had to rely ultimately on international compactors plus Network Rail's own internal cost data. In the end ORR was always dealing with a single company – in contrast to other UK economic regulators such as in water and energy, who were able to benchmark against several, domestic comparators. That said, the kinds of models and compromises that other regulators have had to make in their benchmarking approaches were not necessarily very different to those that ORR faced, and ORR did have the ability to compare different Network Rail regions against each other. Ultimately, it is not totally clear – or has not been demonstrated - that the data, heterogeneity and information asymmetry problems are really much greater in rail than other sectors, though the lack of truly independent, domestic comparators remains a limitation.

3.2. Train operating company cost trends

Whilst there have clearly been substantial cost challenges in respect of rail infrastructure, similar cost inflation has also occurred in the franchised passenger rail sector. Table 2 below shows that costs per train-km increased by 25% between the beginning of the franchising process in the mid to late-1990s and 2015. Note that there are some cost allocation issues that mean the apparent reduction in rolling stock costs is not fully accurate because some of the associated maintenance costs (which may or may not be included in the lease payments) are hidden within "Other Costs".

Here it should be noted that typically, the introduction of competitive tendering in rail (and indeed other sectors), combined with some introduction of private operation, has brought unit costs down in the region of 20–30% (see for example Alexandersson, 2009 and Alexandersson & Hulten, 2007). Thus the British experience has been both disappointing and somewhat surprising given that in many ways it can be seen to follow a textbook reform model.

So again, what has gone wrong? One very peculiar and specific issue affecting Britain is the fact that the incumbent, state-owned company, British Rail was dismantled and closed down during the reforms. This differs from other European countries who have tendered their rail services since, where the incumbent operator competes against new private firms (or state-owned firms from other countries) in the tendering process.

Related to this, Britain's franchises are very large compared to those in other countries (see Table 3). These two factors mean that when a franchise is won by a new party against the incumbent, the winner takes over an existing company with all of its staff and rolling stock. This compares against the experience elsewhere in Europe whereby new entrants can bring their own staff (with their own wages and conditions) and potentially their rolling stock (after a mobilisation period), with the outgoing staff being absorbed back into the incumbent (though labour rules on transfer of staff have now been tightened in Germany for example).

A further, and again related problem is that Britain chose to adopt net cost contracts, in contrast to the widespread and growing use across Europe of gross-cost contracts. Therefore, since train operators are heavily exposed to revenue risk, any industrial action by staff during a 7–10 year franchise has the potential to destroy any (already relatively slim) margins that train operators can earn during the period of the franchise. This significantly reduces the incentives for operators to challenge the labour cost base – particularly since any hard-won structural cost benefits achieved would in any case be available to any new bidder at the next franchise competition (given, as noted, that the winning bidder takes over an existing company). Efforts have been made

Table 2
Train operating company real unit cost changes 1998–2015

	Per train-km	Per vehicle-km*
Staff	44%	34%
Rolling stock lease payments	−20%	−26%
Other	46%	35%
Total (excluding payments to Network Rail)	25%	16%

*Note: actual vehicle-km data were sourced from ORR and Network Rail for the years 1998–2010. From 2010 to 2015 vehicle-km are estimated on the assumption that average train length continues to increase at the same rate as over the 1998 to 2010 period.
Source for cost data: ATOC (2013) and Great Britain Rail Industry Financial Information 2011-12 to 2014/15, Office of Rail and Road (ORR). See Smith (2016).

Table 3
Franchise size by country (train-km).

	Mean
Britain	26.5 m
Germany	3.3 m
Sweden	2.6 m

Source: Nash et al., 2013, p. 199

to try to contractualise initiatives such as driver-only-operation (DOO) into franchise contracts but this has been met by widespread industrial disputes.

More widely, net cost contracts have created a situation whereby franchising bidding has been dominated by which firm can make the most aggressive revenue bid, which apart from leading to multiple franchising failures in the system, as described above, has further reduced the focus on cost. Reverting back to franchise size and risk, there is evidence that some of Britain's franchises are above their efficient size (see for example Wheat & Smith, 2015) meaning that costs could therefore be reduced by splitting franchises (in some cases); which would also reduce revenue risk by making franchises smaller.

Overall then, and combined with some of the other issues raised in section 2 above, it was concluded that franchising in its current form (pre-COVID) was not fit for purpose. This led to calls for increased use of open-access operators where some evidence has been put forward to suggest that, despite their very small scale, they are nevertheless operating on a slimmer cost model than franchised operators (see Wheat et al., 2018); though also these operators have been found to perform less well in terms of punctuality (see Stead et al., 2019). However, there has been little corroboration of those findings in terms of any cost advantage that open access operators may have and the broader picture is that the Williams Review (see section 4) has called for more integrated solutions and it is perhaps difficult to combine open access operations with a more integrated approach.

3.3. Fragmentation and vertical structure

Finally it should be noted that a crucial point in the debate also relates to fragmentation and vertical separation and the impact on overall industry costs. Wider co-ordination issues, for example relating to the timetabling process have already been discussed in section 2. On the cost side there is good evidence from the academic (and policy) literatures that more integrated vertical structures can deliver cost savings for intensely utilised networks such as the GB network (e.g. Mizutani et al., 2015).

Thus it can be argued that a key issue affecting both infrastructure and train operating costs (see sections 3.1 and 3.2 above) relates not only to specific issues in the regulatory and tendering approaches applied but to cross-industry co-ordination issues. These could relate to operational and planning (including timetabling), co-ordination (or lack of) in respect of investment in rolling stock and infrastructure, and also efficient planning of track possessions for maintenance and how they impact on train services.

The above discussion suggests some solutions that could address the cost issue, including better co-ordination (perhaps with more integrated solutions), greater use of gross cost contracts and considering splitting franchises into smaller units, the possible increased use of open-access (though this remains a hotly contested issue) and enhancing further the benchmarking framework in respect of rail infrastructure. This evidence base ultimately led to calls for a review of the industry (the Williams Review) – which in turn suggested a move to a more integrated railway in the Williams-Shapps Plan for Rail (2021) (this is discussed in Section 4 below).

4. The william-shapps plan for rail

Before discussing the proposals, it should be noted that although the Williams-Shapps plan has been published, much remains to be worked out in terms of the details of its eventual implementation.

The central point of the changes proposed by Williams-Shapps is the establishing of a new public sector body, Great British Railways (GBR), to take control both of the infrastructure and of contracting out train operations. GBR would take charge of planning timetables, fares and allocation of capacity whilst services are to be provided under gross cost concessions. GBR will also be responsible for both long run (30 year) and medium run plans for the rail industry in Britain. This can be seen as a form of vertical integration, with GBR planning and setting the timetable and fares for train services, but not directly operating train services, instead sub-contracting this activity to private operators.

By bringing together responsibility for infrastructure planning and operations with train service planning in a single organisation, more efficient timetables should result, although there is a risk that freight and open access services suffer. Presumably GBR will also take the lead on procuring and allocating rolling stock although leasing it from third parties is likely to continue. Having a single organisation responsible for pricing should lead to a simpler more coherent fares structure, although the conflict between simplicity and revenue maximisation will remain. Separating train service planning from operations should facilitate smaller and more varied train operating company size – this links back to the findings noted earlier that some of Britain's franchises could be too large from a cost perspective.

Removing most or all revenue risk from train operators will remove the main cause of franchise failure – in the aftermath of Covid it is doubtful if there is any alternative to this change in the short-term. But of course, much will depend on the quality of the planning, and on incentivising train operators to provide good quality services even without the incentive of earning more revenue.

It is intended that GBR should be a strongly decentralised body, building on the current structure of Network Rail. It is stated that the responsibilities of the national and regional organisations to which franchising is devolved (Scotland, Wales and Greater London) will not change. But presumably GBR will have the final word in terms of timetabling and use of capacity, to be able to achieve coordination at the national level.

With the adoption of gross cost contracts, competition (competitive tendering) will largely be concentrated on costs (there may still be some revenue sharing, especially on more profitable routes and ultimately operators of such routes may have more freedom to influence services and fares; it is not clear how this fits in with GBR having complete control of timetables). As noted earlier there is evidence that gross-cost contracts have been successful elsewhere in Europe in bringing about cost savings. Ultimately there will need to be some incentive mechanism for train operators on all routes to promote traffic growth even where the operator takes no revenue risk.

More widely in terms of cost, at a high level closer integration should help support the industry in addressing the problems it has faced with cost escalation.

Two possible areas of conflict are particularly notable. The first is the relationship between GBR and the regulator. It is clearly intended that a strong regulator should remain, and in some respects with increased responsibilities. For instance, the Regulator will be responsible for monitoring costs and efficiency for the rail industry as a whole and not just the infrastructure. However it is stated that GBR will be responsible for managing the use of capacity in the public interest. This obviously fits in integrating planning and operation of infrastructure and train services. But it does raise a question about the position of freight and open access passenger operators. Since GBR is not responsible for freight operations, and open access passenger operations actually deprive it of revenue, there is certainly a risk that the new structure will disadvantage both of these, although GBR is to be given a specific objective of

expanding rail freight. Giving GBR rather than ORR responsibility for capacity allocation will limit the power ORR has to ensure that these services are not disadvantaged.

As noted, ORR will take responsibility for overseeing the efficiency of the whole industry. The responsibility for achievement of those efficiencies will of course lie with GBR. In part efficiency savings should come through closer integration and through the competitive tendering process for provision of train operations. However strong regulatory oversight will be needed and again, the literature shows that strong economic regulation (in rail) can lead to lower costs (e.g. Smith et al., 2018 [1]). This finding is also borne out in other network industries.

However, there are particular challenges in setting up the right regulatory framework to ensure such savings are delivered, particularly in respect of rail infrastructure costs. It will therefore be important that ORR continues to develop its existing "yardstick competition" comparisons between different parts of the rail network. This will be an important tool in setting efficiency targets in future. Whilst integration will be a key enabler of efficiency savings, it is likely that in the short term infrastructure will be benchmarked separately from operations because of the data challenges of aligning the various areas/train-operators. In the absence of private equity, mechanisms will be required to support delivery against targets set.

More widely, there is a question mark over the role of open access operations in the new structure. Achieving integration of infrastructure with operations implies that open access passenger operations should be very limited, if indeed they have a future at all. On the other hand, open access operation does provide a possible source of innovation in the industry and there is evidence that it may help to control costs (see above).

5. Conclusions

As a result of the reforms of 1994-7, Britain adopted the most fragmented structure of any rail system in Europe, with passenger train operations largely operated under franchises awarded by competitive tender, infrastructure completely separated from operations, infrastructure maintenance and renewals and provision of rolling stock contracted out. The major problem of this structure is that it failed to control costs, with both train operating and infrastructure costs having risen significantly since the reform. But it was other issues – franchise failure, complex ticketing systems and (especially) poor quality and in some cases unworkable timetables that led to the Williams review being established in 2018.

The outcome of this review is the proposed establishment of a new publicly owned body, Great British Railways, to bring together planning and management of infrastructure with planning and timetabling services. Actual operation of the services will be largely contracted out on the basis of gross cost contracts. This proposal should tackle the problems of franchise failure (removing most revenue risk) timetabling (which will be concentrated on GBR) and make possible a simpler ticketing system. It should also tackle the cost issue by concentrating attention of bidders on costs and overcome the problem of misalignment of incentives between the infrastructure manager and train operating companies by concentrating service and infrastructure planning in the same body.

It thus represents a major return to a vertically integrated planned system. As in any planned system, its success will depend on the quality of the planning. Strong economic regulation will also be required, including through continued and developing application of a yardstick competition type benchmarking framework. What is not clear is what role open access passenger operations will have in the new structure, and if it is small, whether other means will be found to provide the pressure on costs and quality of service that open access operators can bring.

Since the Williams-Shapps Plan for Rail was published, there has been a period of political instability in the UK, during which the Prime Minister was replaced twice within a few weeks and Grant Shapps has been replaced as Secretary of State for Transport. It is not clear how committed to these reforms the current administration as of November 2022 is. Thus, although a Transition Team has been established to take forward planning of the new regime, parliamentary time for the legislation necessary to establish GBR has not been found before the general election in 2024. As a result of the continued loss of revenue compared with the pre covid situation, there is also now intense pressure to reduce costs. Given the difficulty in re-establishing the previous franchising regime referred to above, it would seem that the current position of tight control of fares, services and expenditure by the Department for Transport may continue for some time. Whether such close government control can achieve the benefits foreseen by the Williams-Shapps Plan for Rail remains open to doubt.

[1] Note that in this study ORR was measured (based on its independence, funding and range of powers) as being one of the strongest economic regulators in the sample of European regulators.

CRediT authorship contribution statement

Andrew S.J. Smith: Writing – original draft, worked jointly on this paper drafting roughly equal parts, taking into account the quantitative elements. **Chris A. Nash:** Writing – original draft, worked jointly on this paper drafting roughly equal parts, taking into account the quantitative elements.

Declaration of competing interest

There are no competing interests to declare.

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