



Centre on Regulation in Europe
Improving network industries regulation

Liberalisation of passenger rail services

Project Report

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range of research projects, funded by, for example, the British Office of Rail Regulation, Ofwat, the European Commission, SNCF, UK Research Councils, National Institute for Health Research (NIHR), and the UK Department for Transport. Andrew is also an academic advisor to the water regulator, Ofwat, on econometric benchmarking.



Executive summary

Passenger rail services may be liberalised in two ways. The first is by means of competitive tendering for public service contracts. The second is by open access for the operation of commercial services.

The countries which have taken the first approach furthest are Britain, Sweden and Germany. Britain has adopted franchising by means of competitive tender for almost all passenger services, subsidised and commercial; state-owned British Rail was not allowed to bid and ceased to exist as a train operator. Sweden has adopted it for virtually all subsidised services; most are procured by the regions, and 45% of all services in Sweden are now operated by new entrants. In Germany, the federal states are responsible for procuring all subsidised services; there is a trend towards competitive tendering and 18% of regional services are operated by new entrants.

All three countries have at least some commercial open access operation, but the country that has taken this furthest is Italy, where a new entrant provides frequent services in competition with the state-owned operator on the high-speed network. By contrast, France has no competitive tendering or open access competition (except on a couple of international routes).

In all three countries – Sweden, Germany and Britain - there has been rapid growth in demand for regional services, and subsidy per train km has generally fallen. By contrast in France, with no competition, it has risen substantially. Whilst in Germany and Sweden costs have been reduced, in Britain train operating costs have actually risen, although this has been more than offset by increased revenue. A factor in this is thought to be that in Britain the winner of a franchise takes over an existing company including its staff, wages and conditions. In Germany and Sweden, the winner is responsible for assembling its own staff. For a country such as France first introducing competitive tendering on a large scale, the issue of how to handle existing staff is the biggest barrier; if they do not transfer to the new operator it may have difficulties recruiting staff, and the incumbent will find it difficult to manage the resulting staff surplus. However, if they do transfer should it be on the existing uncompetitive wages and conditions? If not, who should pay any required compensation?

Important decisions in franchising are:

- **What organisation should be responsible for franchising?** In Sweden, Germany and France this is predominantly the region. In Britain, there is no regional tier of government, but in the Scottish, Welsh, Greater London and Merseyside franchises this responsibility is devolved, and in England joint bodies of local authorities are increasingly playing a role. It might be expected that regional bodies would be better placed to understand the needs of the area and to coordinate with decisions



on land use planning and other modes of transport, although a degree of coordination with long distance services remains necessary and allocation of infrastructure capacity becomes a more complicated issue.

- **Size and length of franchises:** In both Germany and Britain, there is evidence that the largest franchises incur diseconomies of scale. German evidence suggests longer franchises are more cost effective, although this may be because franchisees are expected to procure their own rolling stock. Longer franchises may also give better incentives regarding tackling inefficient working practices.
- **Risk Sharing:** There is some evidence from Germany that gross cost contracts perform best, perhaps by reducing barriers to entry, although under such contracts incentives are needed for quality of service. In addition, they are not suitable unless there is another body, such as a regional authority, responsible for pricing and marketing.

In countries other than Britain, commercial services are still predominantly operated by the state-owned incumbent, with open access competition in some countries. In Britain, commercial services are subject to franchising, so all operators have faced competition for the market. There is evidence that open access competition may lead to lower prices and better services. On the other hand, it reduces profitability and may lead to less well-integrated services and poorer utilisation of scarce capacity. Its impact on costs is hard to predict; it will lose economies of density but increased competition may put pressure on wages and efficiency. It is likely to work best where there is strong demand, spare track capacity and low track access charges.



1. Introduction

Liberalisation of passenger rail services within the European Union has preceded much more slowly than for freight. Freight liberalisation was largely complete by 2007 whereas at the time of writing (2016) open access for passenger services is only required for international services. Although agreement on further liberalisation under the 4th railway package now appears to have been reached, it will still be 2020 before open access for commercial services is required, and 2023 for competitive tendering in the case of public service contracts. Even then, it will be possible to restrict open access to protect the financial position of services operated under public service contracts. It will also be possible to make direct awards of public service contracts, subject to the monitoring of performance by an independent body to ensure that direct award is appropriate.

Liberalisation essentially follows some combination of competitive tendering for public service contracts and open access for new commercial operators. Given that in most European countries the majority of passenger rail services are unprofitable, it is inevitable that the most important form of competition is for public service contracts. Several countries have already introduced these forms of competition for at least some services. Foremost amongst these is Britain, where by 1997 virtually all services had been franchised out to private operators and the incumbent – British Rail – had ceased to operate any services, having not been allowed to bid for contracts. Britain also allows open access subject to capacity being available and the open access operation attracting new business to rail and not simply abstracting revenue from franchisees. However in 2016, open access operation accounts for less than 1% of British passenger rail kilometres. Second in degree of liberalisation is Sweden, with almost all regional services franchised by means of competitive tendering and open access competition permitted. 45% of passenger kilometres were carried by new entrants in 2012 (EU, 2014). Amongst larger countries, the third most liberal is Germany, with 18% of passenger kilometres in regional and suburban traffic carried by new entrants and open access on commercial services (although with less than 1% of traffic carried by new entrants). At the other extreme, in France, the state-owned operator, SNCF, still has a legal monopoly of all commercial and subsidised passenger rail services, although some experiments with tendering are now under discussion.

The aim of this report is to consider whether market reform to date has been successful and, if so, how best it should proceed. Where competitive tendering is practiced, who should be responsible and what should be the nature of contracts in terms of size, length, incentives and allocation of risks?¹ (). Finally, what should be the role of open access competition in a liberalised passenger rail market? After a brief review of developments country-by-country, each of these issues is considered in turn in subsequent sections. Finally, we seek to draw

¹ We will use the term franchising to cover all such contractual arrangements, although the term concessioning is also often used particularly where revenue risk is retained by the authority commissioning the services.



conclusions on these issues. Most of the evidence is drawn from commissioned case studies of the four countries referred to above, although wider literature will be referred to, particularly in the case of open access competition, where the experience of Italy, Austria and the Czech Republic are of particular importance. Lessons from these countries will be useful to consider the opening to competition, either 'off-track' or 'on-track', for other countries like France, where this process has yet to start.

2. Development of passenger rail market liberalisation by country

2.1 Sweden

The first country both to separate infrastructure from operations and to start competitive tendering of non-commercial services was Sweden in 1988. In Sweden, each county or region has a Public Transport Authority responsible for providing local and regional transport, and in many cases this includes rail services. In almost all cases, these are procured by means of competitive tendering. The PTA generally determines timetables and fares for bus and rail services, with the operator having little freedom of action. The PTA also owned the rolling stock; and in 1999, most of them set up a jointly owned subsidiary – Transitio AB – which purchases or leases rolling stock and charges the PTAs on a cost recovery basis. Transitio also handles heavy maintenance.

In the case of non-commercial services crossing regional boundaries, competitive tendering was undertaken by a national body, Rikstrafiken, which was established in 1999. This was abolished in 2010 and responsibility for tendering cross-regional services transferred to the newly formed body Trafikverket, which is also responsible for rail and road infrastructure. The only services remaining in this category are night services between the south and the north of the country.

Whilst initially some local private companies won franchises, it is now the case that the only franchisees other than the state-owned operator SJ AB are foreign government-owned (DB, DSB, Transdev, NSB, MTR). (Table 1)

Table 1: Non-commercial services in Sweden by 2016

	Name	Commuter/ Regional; Proc./Negot.		Year	Operator	Contract length
1	Stockholm Roslagsbanan	C	P	2013	Arriva	8+4
2	Stockholm Saltsjöbanan	C	P	2012	Arriva	8+4
3	Stockholm Commuter trains	C	P	2016	MTR Pendeltågen	10+4
4	Pågatågen (Malmö)	C/R	P	2007	Arriva	8+2
5	Västtågen (Göteborg)	C/R	P	2015	SJ Götalandståg	9+3
6	Upptåget	C/R	P	2011	DSB Uppland	10,5+0.5
7	Östgotapendeln	C/R	P	2015	Arriva	10+4
8	Tåg i Mälardalen (Mälab)	C/R	?	2017	SJ AB	4+2
9	Värmlands regionaltåg	R	P	2009	Tågkompaniet	9+2
10	Arctic Circle Train (Night trains)	R	P	2013	SJ Norrlandståg	5+2
11	Kustpilen	R	P	2013	Transdev	5+3
12	Krösatågen	R	?	2014	Transdev	5+3
13	X-tåget	R	P	2014	Tågkompaniet	10+5
14	Öresundståg	R	P	2015	Transdev	5+2
15	Kinnekulletågen	R	P	2016	SJ Götalandståg	8,5+3
16	Norrtåg	R	P	2016	Tågkompaniet	9
17	Tåg i Bergslagen	R	P	2016	SJ AB	10+1

Source: TED EU, Trafikanalys avtalsinsamling, pressreleaser från RKM

Until 2010, the state-owned operator SJ AB had a legal monopoly of all commercial services. In one case, a region also subsidised it to provide more frequent service and to accept regional tickets on one of its commercial services. From 2010, new entry has been possible on commercial routes; the first entrant was Veolia, running weekend services between Stockholm and Malmo. In addition, a locally owned private company, TAGAB, has begun running low frequency commercial services on several routes. Most recently, MTR has entered the key Stockholm-Goteborg market, with a frequent service taking slightly longer than the titling trains of the incumbent, but with lower prices. In 2012, provision was also made for entry on non-commercial lines.

2.2 Britain

Reform of British railways began in 1994 with the separation of infrastructure from operations. The new infrastructure manager, Railtrack, was privatised in 1996 by sale of shares, but became



insolvent in 2001 as a result of large increases in expenditure on infrastructure as a result of the Hatfield accident (as well as a massive cost overrun on the West Coast Main Line upgrade project). It was replaced by a not-for-profit company whose debts were guaranteed by the government and which became recognised as part of the public sector in 2014.

In Britain, virtually all passenger services were divided into 25 companies which were franchised out by central government over the period 1994-7. British Rail was not allowed to bid. Thus over a very short period all passenger services, commercial and subsidised, passed into the hands of new operators – mostly private British bus companies and foreign government-owned railways (Table 2).

Table 2: Britain's Rail Franchises in 2016

Train operator	Ownership	Term	m train-km
Greater Anglia	Abellio (owned by NS)	9 years	29.8
Arriva Trains Wales	Arriva (owned by DB)	15 years	24.0
Essex Thameside	National Express (private operator)	15 years	7.0
Caledonian Sleeper	Serco (private operator)	15 years	1.4
Chiltern Railways	Arriva (see above)	20 years	11.1
CrossCountry	Arriva (see above)	9 years	33.0
East Midlands Trains	Stagecoach (private operator)	2.5 years; direct award	23.0
Govia Thameslink Railway	Govia (65% Go Ahead; 35% Keolis)	7 years	61.9
Great Western Railway	FirstGroup (private operator)	4 years; direct award	43.0
London Midland	Govia (see above)	2 years; direct award	25.0
London Overground	Arriva (see above) – from November 2016	7.5 years + 2 year option	8.1
Merseyrail	50:50 joint venture (Abellio / Serco)	25 years	6.6
Northern	Arriva (see above)	9 years + 1 year option	46.2
ScotRail	Abellio (see above)	7 years + 3 year option	46.7
South Western	Stagecoach (private operator)	10 years	40.2
Southeastern	Govia (see above)	3.5 years; direct award	31.1
TfL Rail (Crossrail)	MTR Corporation (see above)	8 years + 2 year option	2.3
TransPennine Express	FirstGroup	9 years + 1 year option	19.6
Virgin West Coast	51% Virgin ; 49% Stagecoach	3 years; direct award	35.2
Virgin East Coast	10% Virgin ; 90% Stagecoach	8 years	22.1

Source: own analysis of government announcements of franchise awards; ORR statistics

Rolling stock was placed in three separate companies which were sold to the private sector. It remains the case that most rolling stock is leased from these so-called ROSCOS. However, some large fleets have been procured on long run contracts in which the manufacturer provides both



the capital and maintenance. Meanwhile, the Crossrail fleet in London is being financed by Transport for London, a public sector body.

The initial privatisation of the British passenger rail market relied on competition for the market rather than in the market, and considerable protection was provided from new entry by commercial operators for franchisees. This initial 'moderation of competition' policy gave way to a policy that new entry should be allowed provided that it was not primarily abstractive of revenue from franchisees. (In practice the criterion was that revenue new to the railway had to be at least 30% of revenue taken from other operators, which seems quite a weak interpretation of 'not primarily abstractive'). Under this policy, a small number of entrants were permitted but only two currently survive, Grand Central (owned by DB) and Hull Trains (owned by Firstgroup). Both operate between London and cities not served by regular through trains run by the franchisee, although under the new franchise the franchisee will introduce more direct services on these routes. However, two new sets of services have now been authorised. The first is on the West Coast Main Line, again operated by a DB subsidiary, and running between London and Blackpool, a city again not served by regular through services by the franchisee. The other is a Firstgroup service between London and Edinburgh providing a low cost, no-frills service designed to compete with the low cost airlines. A recent report from the Competition and Markets Authority has advocated a gradual extension of open access competition.

One feature of the British system which does not apply elsewhere is that all passenger operators (whether franchised or open access) are required to participate in national schemes for provision of information and sale of tickets, and must accept inter-available tickets. Thus the leading operator on each route sets the fare for the inter-available ticket which other operators must accept (although they may also sell cheaper company specific tickets and indeed the lead operator may also do so in the case of advance purchase tickets valid only on a specific train). Whichever operator runs the booking office at a particular station must sell tickets for all operators without discrimination, and a common website is provided for information on services of all operators through a scheme managed by the Association of Train Operating Companies. Thus it remains possible to buy a ticket from anywhere to anywhere and valid on the services of all operators.

2.3 Germany

In Germany, the rail infrastructure and state-owned rail operations remain in the hands of separate subsidiaries of the government-owned rail company DB AG. Since 1996, the individual German states have been responsible for procuring regional passenger rail services; the federal government does not subsidise passenger services. One effect of this was the disappearance of the former long distance but unprofitable inter-regio services, as the states concentrated on services within their own territory rather than between them. They have freedom to do this by competitive tender or by direct award. Contracts also vary greatly in size; some covering an entire regional network and others a single line. Service levels are defined quite tightly as are

fares. Most contracts require the operator to provide the rolling stock, although there is a trend for the states to acquire rolling stock themselves and lease it to operators.

In 2015, DB still operated 70% of regional passenger train km although its share was steadily declining. The rest were shared mainly between foreign and municipal railway companies (Table 3). There is open access for new operators to compete with commercial or subsidised services, although 99% of commercial services are still operated by DB. New entrants run at low frequencies on one or two routes.

Table 3: Market structure for German regional services by type of company in 2015 (train-km)

Company1)	Type	Train-km (mill.)	Market share (%)
DB Regio	German National rail company	433	72.3
Transdev	Internationally operating rail company	44	7.4
Ferrovie dello Stato	Foreign National rail company	29	4.1
Hamburger Hochbahn	Municipal/federal state rail company	11	1.8
Hessische Landesbahn	Municipal/federal state rail company	9	1.5
Keolis S.A.	Internationally operating rail company	8	1.4
Erfurter Bahn	Municipal/federal state rail company	7	1.1
Others2)		55	9.3
Rail companies are allocated to parent company when the share of parent company is above 50%. - 2) Includes various companies with a market share below 1% each.			

Source: H Link own database.

2.4 France

In contrast to all the above countries, in France the state-owned operator, SNCF, still has a legal monopoly of passenger rail services. These are divided into three categories: commercial services, mainly high-speed; other intercity services, subsidised by the national government; and regional services, which since 2000 have been procured by the regions. However, SNCF still owns the rolling stock, even when it was paid for by the regions.

In 1997, rail infrastructure was separated out into a new publicly-owned company, RFF. However, it still contracted out all operations, maintenance and renewals to SNCF. However in 2014, this was again merged with SNCF, with infrastructure and operations in separate subsidiaries.



There are plans to start trials with competitive franchising in the regional sector and debates about possible open access competition. However, so far the only on-track competition to be found in the French passenger rail sector is on a couple of international routes.

Thus France is, along with many European countries, still at the start of the process of passenger rail market liberalisation and thus in a position to benefit from the lessons learned from other countries as discussed in the following sections.

3. Has passenger rail market liberalisation been a success?

3.1 Introduction

We will judge the success of passenger rail market liberalisation in terms of developments in passenger rail traffic, service levels and quality and cost. However, the obvious difficulty is that we do not know what would have happened in the absence of liberalisation, and without a comprehensive modelling exercise for each country we do not even have estimates. Many economic, social and demographic factors influence what happens to demand and costs, whilst services may have improved even without reform. Nevertheless, it is of interest to look at trends in all these variables.

3.2 Growth of traffic

Table 4: Trends in passenger rail traffic

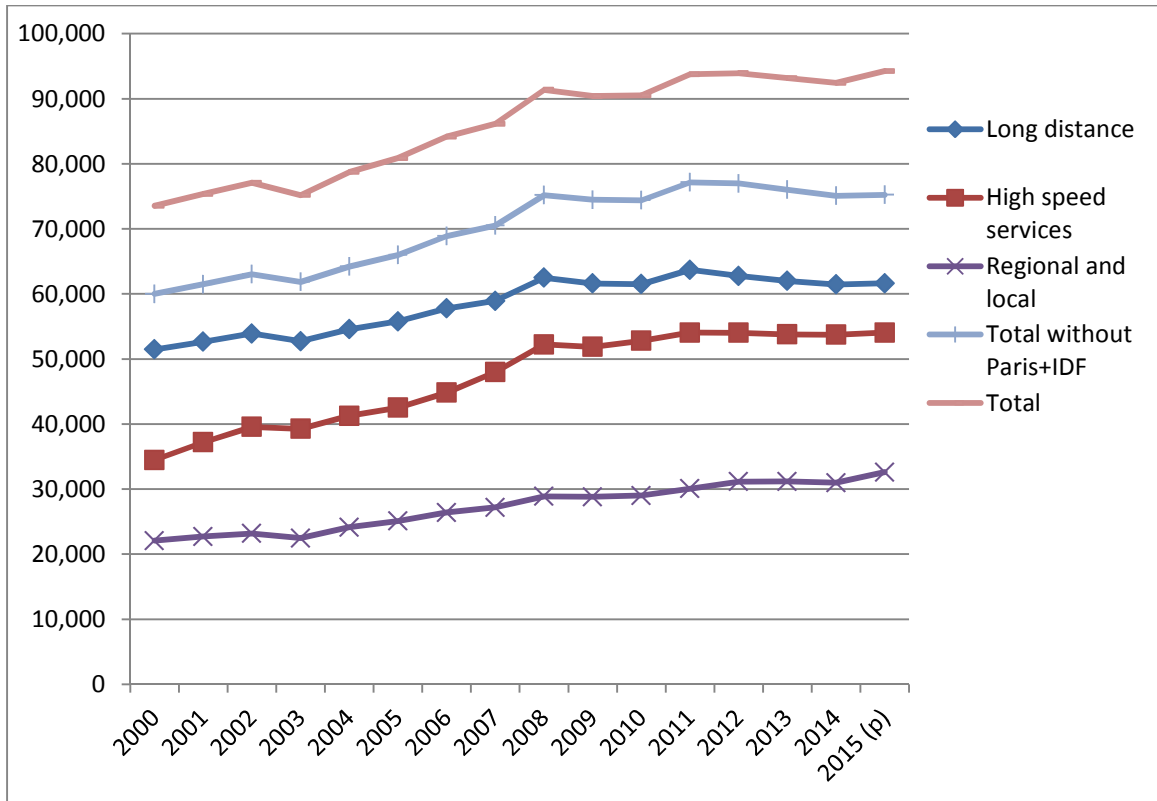
	Passenger Rail km 1995-2013				
	1995	2005	2013	2013/ 2005	2013/ 1995
France	54.2	76	87.4	1.15	1.61
Germany	71	76.8	89	1.16	1.25
Sweden	6.8	8.9	11.9	1.34	1.75
UK	30.3	44.6	62	1.39	2.05

Note: Northern Ireland railways remain government-owned and vertically integrated. However, they are a very small part of the UK total rail operations.

Source: EU Transport in Figures. 2015.

Table 4 shows the overall development of passenger rail traffic in these countries. There was growth in all countries, but in recent years the UK and Sweden have enjoyed twice the growth of France and Germany. In the previous 10 years France also enjoyed fast growth, but this was mainly due to the past development of high-speed services. Since 2008, high-speed rail traffic in France has been almost stable and even regional traffic outside the Paris area has fallen a little since 2013 (Fig 1).

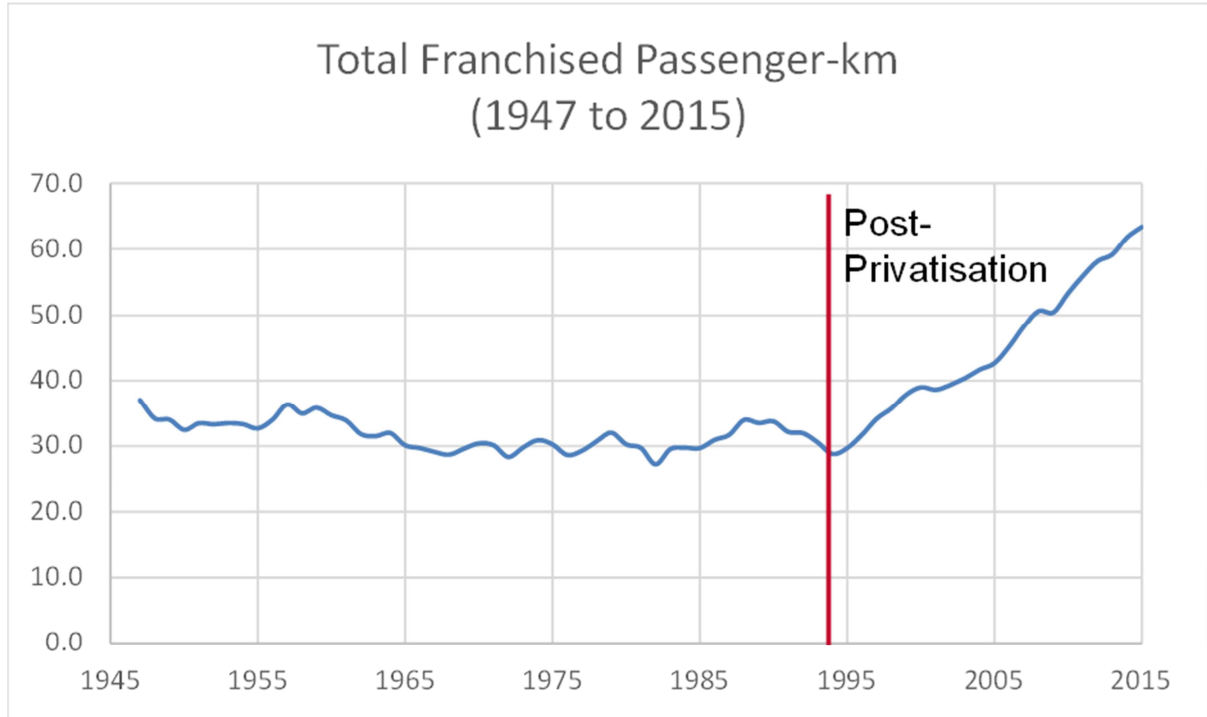
Fig 1: Passenger rail traffic in France in million Pkm.



Source: Ministry of Transport <http://www.statistiques.developpement-durable.gouv.fr/publications/p/2587/112/comptes-transports-2015-1.html>

How far were these trends due to rail reform? We only have econometric evidence from Britain, and that only for the early years of franchising. In Britain, the change in trend at the time of franchising was remarkable (fig 2).

Fig 2: Passenger rail traffic in Britain 1947-2015



Source: Transport Statistics Great Britain

Nevertheless, Wardman (2006) suggests that external factors – economic growth, growth of road congestion and a marked slowing in the rate of growth of car ownership - were the main drivers of growth, although trends in fares and service levels played a part. Some 20% of the growth in the early period covered by this research remained unexplained, and may be attributed to other improvements in quality or marketing following franchising. Preston and Robins (2011) find a much greater increase in demand due to franchising taking account of reductions in fares and increases in service levels.

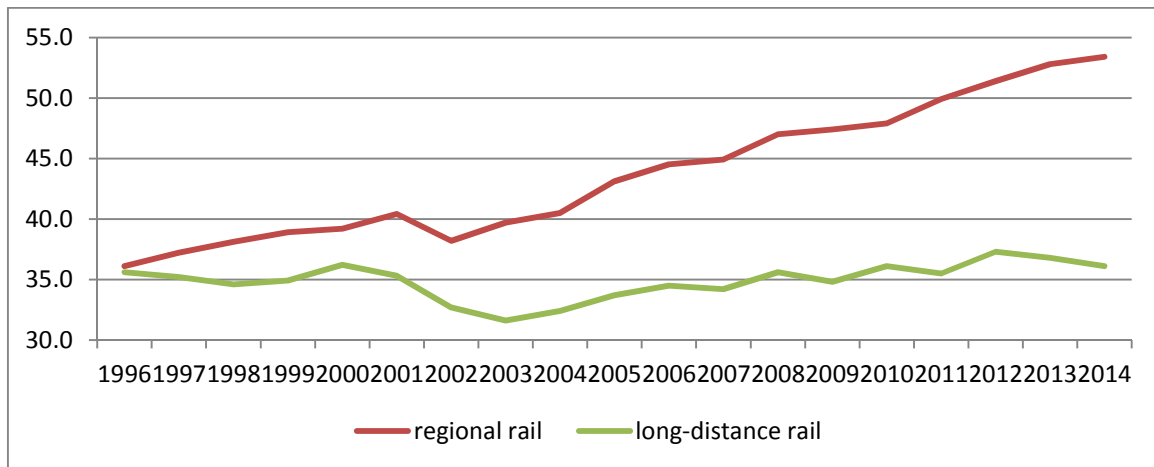
Britain, which franchises all market segments, has seen similar growth in all market segments (Table 5), whilst in Germany and Sweden, growth has been strongest in the regional sector where franchising is concentrated (figs 3, 4). As noted above, this fast growth should not all be attributed to franchising and regionalisation; probably much of it comes from external factors such as the growth of cities and city centre jobs.

Table 5: British Passenger-km Growth by Sector

Passenger km – franchised (billions)	1998	2016	% change
Long-distance	12.3	21.1	72%
London and South East	16.1	30.3	88%
Regional	6.3	12.3	97%
All services	34.7	63.8	84%

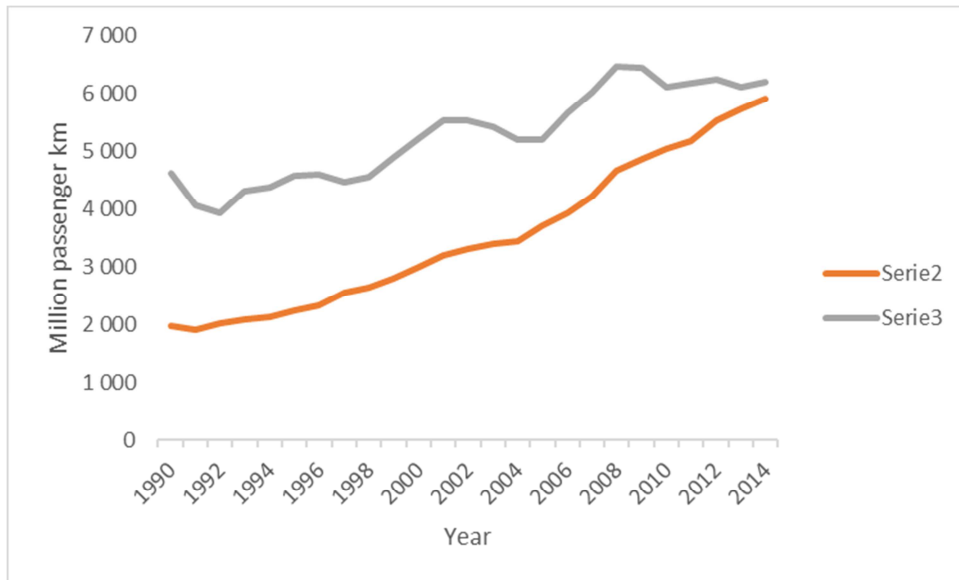
Source: ORR National Rail Trends Data Portal

Fig 3: Transport performance in regional & long-distance passenger rail transport in Germany 1996-2014 (billion passenger-km)



Source: BMVI/DIW: Transport in figures, various volumes.

Fig 4: Growth of regional (Series 2) and commercial rail traffic in Sweden between 1990 and 2014



Source: Data available at www.trafa.se.

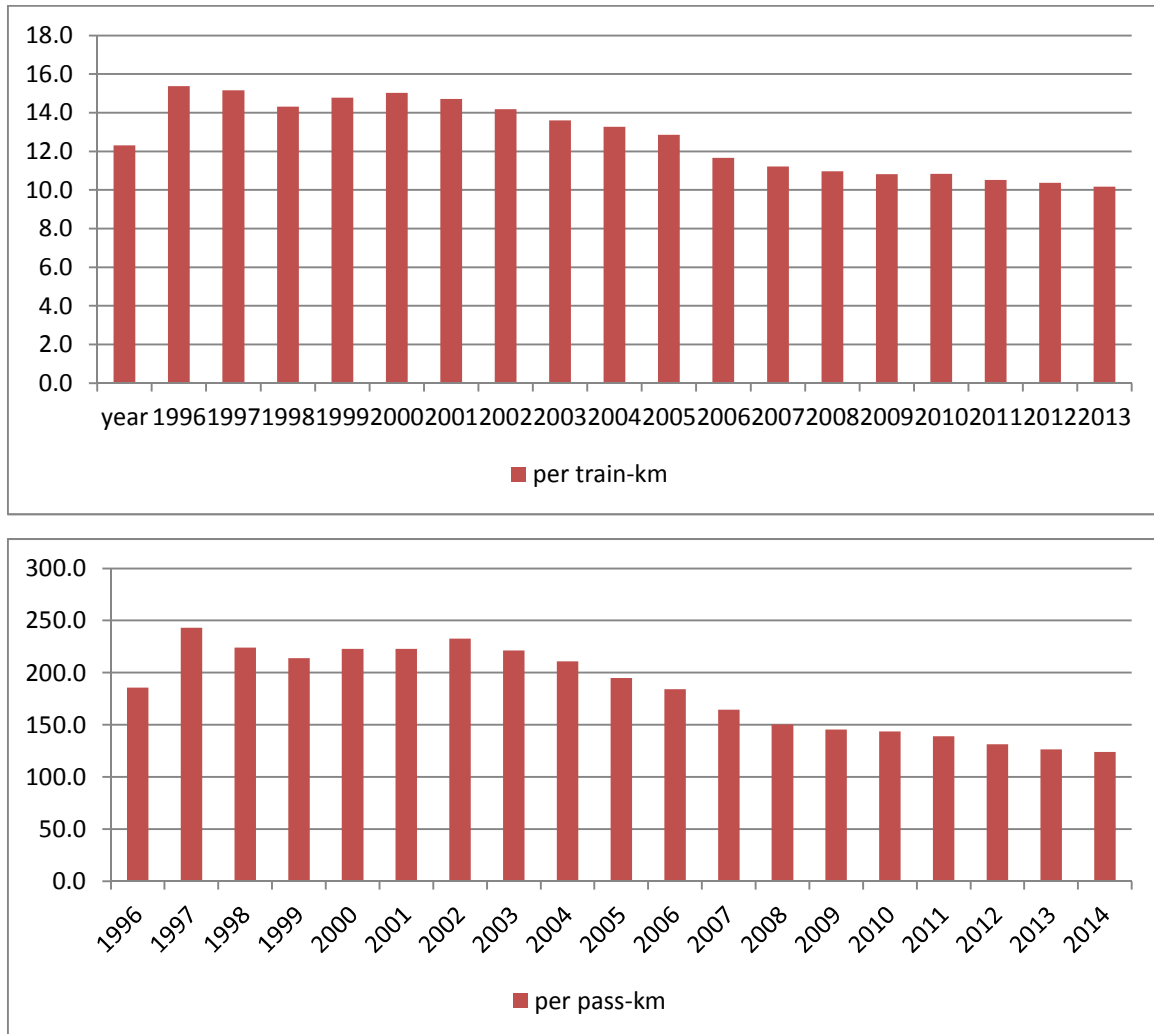
However, there has also been growth in the regional sector in France (Table 5), where responsibility for passenger rail services has been transferred to the regions, but with SNCF still as the monopoly supplier. Therefore, it may be that the development of regionalisation, which has also taken place in Sweden and Germany, is an important contributor to growth. It seems reasonable to conclude that whilst franchising has not been the major determinant of growth in rail traffic, it has been a contributory factor.

Franchising has not been associated with lower fares. Indeed, in all three countries fares have risen in real terms and faster than the cost of motoring. However, franchising has generally been associated with increases in train kilometres run, use of more modern rolling stock and improvements in punctuality and reliability. Despite concerns about safety in Britain in the early days of privatisation, when there were several fatal accidents in which the restructuring might have been a factor, Britain now has one of the safest railways in Europe.

3.3 Costs and support

Turning to costs and support, the picture is more mixed. Only in Britain were rail franchises set up as separate companies, with published accounts telling us what has happened to costs in each franchise. There is more evidence on levels of support, but of course falling support may be compatible with rising costs if revenue grows fast enough. Various studies in Germany show a reduction in subsidy at franchising of 15-26% and over the period since franchising started there has been a significant fall in subsidy per train km and per passenger km. (fig 5).

Fig 5: German regionalisation subsidies in Euro per transport unit at 2010 prices



Source: H Link own database

There is no comparable data on subsidies for Sweden, but according to Nash, Nilsson and Link (2013) support per passenger/km remained roughly constant in Sweden over the period 1997-2007, whereas in Britain it rose substantially in this period, although since has substantially declined. This in turn has been associated with a 25% increase in cost per train km in Britain (Table 6), although the increase in cost per vehicle kilometre is somewhat lower, and the rapid growth in traffic means that cost per passenger kilometre has fallen substantially. Indeed, support per train kilometre in Britain is now lower than at the start of the franchising process (Table 8).



Table 6: Train Operating Company Real Unit Cost Changes (1998-2015) in Britain

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

Source for cost data: ATOC (2013) and Great Britain Rail Industry Financial Information 2011-12 to 2014/15, Office of Rail and Road (ORR). Note: actual vehicle-km data were sourced from ORR and Network Rail for the years 1998 to 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.

Table 8: Government support for passenger rail services in Britain (excluding investment in enhancement)

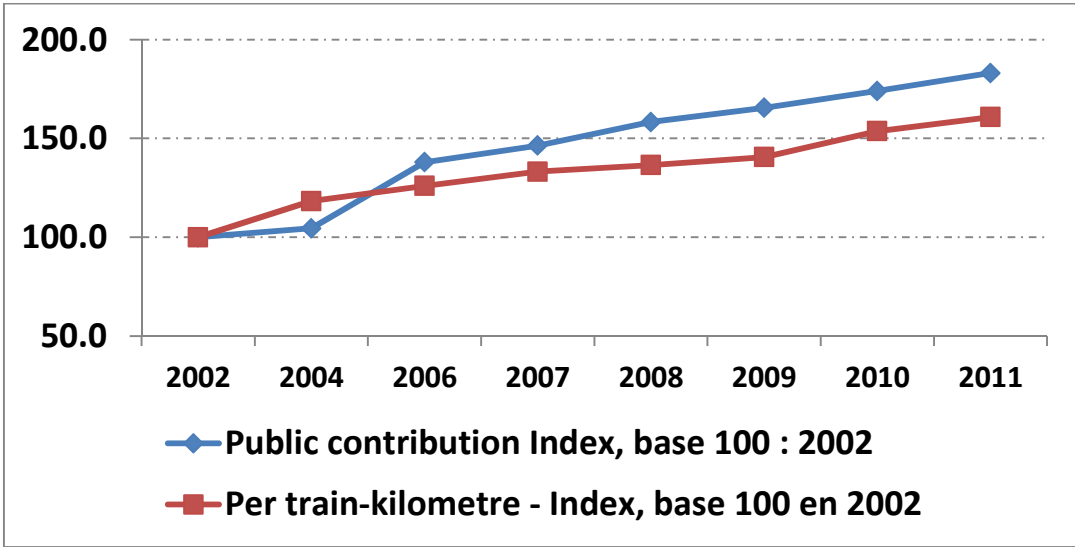
£m, 2015 prices	Net payments to/from train operating companies	Support to Network Rail for Operations, Maintenance and Renewal*	Total Government Support (excluding enhancements)	Total support per train-km (£)
1996-97	3,447	0	3,447	9.05
1997-98	2,863	0	2,863	7.27
1998-99	2,396	0	2,396	5.79
1999-00	2,039	0	2,039	4.78
2000-01	1,686	0	1,686	4.05
2001-02	1,521	3,631	5,152	12.06
2002-03	1,767	4,490	6,256	14.39
2003-04	2,455	5,431	7,885	17.70
2004-05	1,706	4,494	6,200	13.96
2005-06	1,580	4,044	5,624	12.37
2006-07	2,213	3,151	5,364	11.79
2007-08	1,725	2,953	4,678	10.21
2008-09	669	4,084	4,753	10.14
2009-10	873	3,136	4,009	8.23
2010-11	167	2,626	2,793	5.64
2011-12	88	2,621	2,710	5.36
2012-13	-265	2,734	2,479	4.90
2013-14	143	3,341	3,485	6.88
2014-15	-679	3,320	2,641	5.15

* This is Network Rail Operations, maintenance and renewal costs less income from track access charges and property income. It is zero for the first few years as during this periods the infrastructure was run by a private company, Railtrack.

Source: ORR

The suggestion is therefore that franchising has been relatively effective in controlling costs in Sweden and Germany but less so in Britain. This will obviously be a key concern when we turn to look at the way franchising has been carried out in the three countries. Even so, Britain has achieved a reduction in subsidy per train kilometre. In France, where there has been no competition, the modest growth of regional rail traffic from regionalisation in 2000 to 2011 is correlated with a big increase of public subsidies of around 60% per train-km. (fig 6)

Fig 6: Public contribution to regional rail traffic in France



Source: Desmaris Ch. 2014, *La régionalisation ferroviaire en Suisse : la performance sans la compétition*, *Revue Politiques et Management Public* Revue 31/2 Avril-Juin 2014/pp. 169-191

4. How should franchising best be undertaken?

4.1 Franchising authorities

In both Sweden and Germany and also in France, planning of regional rail services is the responsibility of regional authorities. It might be expected that such authorities would have a better understanding of the needs of regional passengers and a greater ability to integrate rail planning with other transport and land use planning. In Sweden, night trains to the north are still franchised by central government (this used to be the responsibility of a specific office but is now undertaken by the infrastructure manager, Trafikverket) and central government contributes to the costs of some inter-regional franchises which are managed by adjacent regions. The federal government in Germany is not responsible for any franchises and its subsidies for regional services are paid to the states to manage. The result has been the disappearance of an entire network of unprofitable interregional services. It may be therefore that the national government needs to play a role in coordinating the networks ordered by the regions and in filling any gaps in services that result from their decisions. There may also be an issue of coordinating these with longer distance services, a role made easier if these services are also franchised rather than being solely determined by commercial operators.

Only in Britain has franchising mainly been a central government function, initially carried out by an office set up specifically for the purpose (Office of Passenger Rail Franchising) but now carried out directly by the Department for Transport, and even here things are changing. Responsibility for the main franchise in Scotland, Wales, Greater London and Merseyside has now been delegated to the appropriate national or local authority. Elsewhere in Britain there is no appropriate tier of government (the combined authorities in the main conurbations still cover too small an area), but local authorities are starting to group together to take over franchising. In the North of England, Rail North, a consortium of 29 local authorities, now shares responsibility for the Northern franchise with the Department for Transport.

An issue which becomes important when different layers of government are specifying franchises is the allocation of track capacity between them. In such an environment attention needs to be paid to track access charging systems which correctly charge the franchise operator (and thus ultimately the franchising authority) for the cost of the capacity they use. This may suggest a two-part tariff, in which the regional authority is charged separately for the capacity they contract for on a long-term basis and for the use they make of it.

4.2 Who are the franchisees?

When franchising started, there was concern as to whether there would be sufficient competition. In practice, there has generally been substantial competition but a surprisingly large proportion of it has come from the national railway companies of other countries. In

Sweden, companies owned or part-owned by the governments of Germany, Denmark, Norway, France and Hong Kong account for all the franchises not held by the Swedish national operator, SJ, although there were genuine private companies involved in franchising at an earlier stage and one remains in open access competition (Table 1). In Britain, the government-owned railways of Germany, Netherlands and France are also major franchisees, along with MTR (Hong Kong), although there are genuine private companies, mainly bus companies which were established at the time of privation of the bus industry (Table 2). In Germany, Transdev and Trenitalia are major operators (the former operations of Arriva were sold to Trenitalia when Arriva was bought by DB); there are also local government-owned railways involved in competition for franchises (Table 3).

It is not clear whether this extensive involvement of government-owned companies in rail franchise competition is a problem. It may obviously block entry for genuine private companies to the extent that state-owned companies have access to finance on favourable terms. However without it, the impact of liberalisation may have been much less.

4.3 Size and length of franchises

Regarding the size and length of franchises, there is considerable variety in all three countries. In Sweden, the largest franchise is around 13m train kilometres p.a. with some as small as 1m. In Germany, the mean contract size is only 5.3m train km p.a. although some are very much larger. By contrast, in Britain the smallest franchises are 6-8m train km per annum (and the largest 60m.).

In terms of contract length, the mean in Germany is around 10 years but with a range from 2 to 20 years; in Sweden, the mean is somewhat shorter but with a possible extension which is usually implemented. In Britain, after a couple of periods when longer franchises were favoured, we have returned to the norm of 7 years with a possible extension to 10, although franchise length may be varied according to particular circumstances.

On the issues of franchise size and length, we do have some econometric evidence on what works best. Evidence from both Britain and Germany suggests diseconomies of scale for very large franchises, which presumably become too large to manage efficiently as a single entity. On the other hand there is strong evidence of economies of density, so overlapping franchises are to be avoided, although this is less of a problem for costs if the services are of a different nature (e.g. intercity and regional) and using different types of rolling stock. There is also evidence from Germany that longer franchises tend to reduce subsidies by permitting more appropriate lengths of leases on rolling stock. This is in line with the conclusion of the McNulty report in Britain, that longer franchises promote investment. However, longer contracts do need to include arrangements for revision of train service specification as circumstances change, and this may be problematic.

4.4 Sharing of risks

Sweden and Germany both have a mix of gross and net cost contracts; in Sweden gross cost contracts are dominant, and although in Germany almost all contracts used to be net, it seems there is now a trend towards the use of gross cost contracts. In Britain, almost all contracts have been net cost, the only exceptions being the London Overground, where all pricing and marketing is undertaken by public authority (Transport for London) and the Thameslink, Southern and Great Northern franchises, where major investment is leading to a radical restructuring of services with attendant uncertainties about revenue.

It is usually concluded that in a contract risks should be borne by the party best able to manage them, and that exogenous risks not controllable by any party should be borne by the government, as the risk premium charged by the private sector for bearing these will be greater than the government's cost of risk. Whilst overall costs are clearly best managed by the franchisee, even here some aspects of costs (e.g. world movements in the price of fuel; national movements in wages as well as track access charges) are outside their control and in German contracts are most often borne by the franchising authority. In British contracts, changes in track access costs are borne by the franchising authority (as well as in some cases changes in national labour costs, as bidders may choose whether to index cost elements to a price or a labour cost index, and in the case of the London Overground contract, changes in electricity prices). However, it has been argued (McNulty, 2011) that franchisees do have some powers to work with the infrastructure manager to reduce infrastructure costs and that they would be incentivised to do this if they bore some or all of the changes in track access charges.

Regarding revenue, many of the key determinants (economic growth, motoring costs) are outside the control of franchisees. Where regional authorities are responsible for planning and marketing services, it may be argued that revenue is largely outside the control of franchisees so that gross cost contracts make sense (although obviously some sort of incentive mechanism regarding any quality of service attributes not directly controlled by the franchising authority is needed). Gross cost contracts may also give increased incentives to stand up to trade unions, even if the consequence is industrial action and loss of revenue (although to the extent that an industrial dispute leads to a failure to satisfy franchise commitments in terms of service provision, much will depend on the support of the franchising authority). Elsewhere, it may be that net cost contracts, but with some provisions to protect franchisees from uncontrollable risks, is the best approach. For instance, in Britain some contracts adjust the subsidy or premium to allow for the impact on revenue of changes in GDP or central London employment. There is evidence from German econometric work that gross cost contracts may be more effective in reducing subsidies than net, perhaps because they attract more bidders and bidders include less of a risk premium in their bid. A particular issue is that the incumbent may have much better knowledge about revenue than an entrant, although to a degree this may be overcome if the franchising authority has good data which it shares with bidders.

4.5 Provision of rolling stock

A key issue in franchising is the provision of rolling stock. In Germany, the fact that at the start of the franchising process almost all rolling stock was owned by the incumbent posed a significant barrier to entry. As a result, franchising authorities are increasingly acquiring rolling stock themselves. In Sweden most of the existing rolling stock was placed in the hands of a separate leasing company owned jointly by the regional authorities and most rolling stock leased from it. In Britain, rolling stock was also placed in the hands of leasing companies, but three were set up and these were privatised.

As noted above, even where rolling stock is leased, if contracts are short then franchisees are not able to sign the sort of length of leasing agreement that would enable them to get a favourable price (leasing companies will add a premium for the risk of not being able to release the rolling stock at the end of the current franchise). This may be overcome if the franchising authority guarantees reuse of rolling stock by the succeeding franchisee. This is a feature of some contracts in Britain and Germany (and of course can be required in Sweden where rolling stock is usually provided by the franchising authority). However, recent British experience is that with strong rail traffic growth and low interest rates such an arrangement is only necessary for very specialised rolling stock. However, another problem is that with short franchises, franchisees will not be interested in innovation or in life cycle costs. They will want equipment that will minimise costs over the length of franchised they face and be reliable from the start.

These considerations seem to suggest a choice between long franchises (at least 10 years) or the franchising authority being responsible for the provision of rolling stock.

A further barrier to entry may be access to facilities such as stations, depots, maintenance and cleaning services. In some cases, stations and depots remain in the hands of the incumbent train operator. In Britain, these were placed in the hands of the infrastructure manager but leased to main train operator using them. In either case, there is a need for regulation to ensure access to these facilities for new entrants. This is now provided for under EU legislation.

4.6 Quality of service

Where services and service quality are tightly specified then, provided that there are adequate penalties for not fulfilling those standards (some combination of financial penalties or the threat of early termination of the franchise), there may be no need for further incentives regarding quality of service. Where there is a net cost contract and revenue is relatively high compared to costs then the increase in revenue may itself adequately incentivise the franchisee to provide good quality services, although this depends on there being relatively high quality elasticities of demand. However, if neither of these situations applies, thought must be given to the provision of further incentives, such as a revenue sharing arrangement.

4.7 Franchise failure

A significant problem in Britain has been over optimistic bids leading to the failure of the franchise. Whilst there have been instances of this in Sweden and Germany as well, they do not seem to have been so significant a problem. This is perhaps because the franchises concerned were generally smaller than the British ones, and also the fact that these countries still have a government-owned passenger operator means that there is an obvious operator of the last resort to take over.

In Britain, the size of the franchises and the risks involved led to concerns as to whether there would be sufficient companies coming forward to operate them. However, the risk for the parent company is reduced by the fact that franchises are set up as separate companies which could become bankrupt without necessarily bringing down the parent company as well. Moreover, the parent companies may withdraw from a franchise at any time. They do have to put up bonds, however, to meet future obligations to season ticket holders (where they have already received the revenue) and to meet the costs of refranchising if they withdraw early. More recently, they have also been required to provide a subordinated loan facility under which a certain amount of finance to the train operating company must be provided before a parent company can withdraw. The sums of money involved are substantial, and indeed the Brown review considered that they had become so large that even major companies would be very limited in terms of the number of franchises they could take on. There is a fine balance to be drawn between making it too easy to withdraw (and thus encouraging risky bids) and discouraging companies from bidding at all.

In practice, there has not generally been a shortage of bidders in Britain, although the fact that there have only been two shortlisted bidders in the most recent two competitions has again raised that fear.²

The response of the British government to the first round of franchise failures (mainly companies in the regional sector who had been too optimistic in terms of the cost reductions they expected to achieve) was to negotiate for the franchises to be taken over and run on management contracts until retendering could take place. There is evidence that this led to a significant increase in costs in the short term, but this did not persist after refranchising and does not therefore help to explain the major rise in costs that has persisted. More recently, the problem has been that two successive winners of the major East Coast Main Line franchise surrendered it after only a short time because it emerged that the revenue forecasts behind their bids had been too optimistic. After the second failure, the government set up a

² The very high cost of bidding, estimated at £10m per bid, because of the level of detailed planning that has to take place to prepare the bid, has been suggested as a serious problem. Smaller franchises would also ease this problem, and help maintain a strong field of bidders; there has been a suggestion that a set of smaller franchises may be developed to attract new bidders into the market.

government-owned company that could take control of a failed franchise (because franchises are run as separate train operating companies this is relatively straightforward; the staff and assets pass to the government operator and only senior management is changed).

4.8 Costs

If this problem does not explain the 25% increase in real cost per train km since franchising began in Britain, what does? We have noted the evidence already that British franchises may typically be too large and too short. In addition, some costs will have been incurred in dealing with the rapid growth of traffic which has grown much faster than train kilometres. However, there is another important way in which they differ from rail franchises elsewhere in Europe. Because they are formed as separate companies which are taken over by whoever wins the franchise, transfer of employment protection applies. Thus, the winner of a franchise inherits the staff, working practices and wage rates of its predecessor. That greatly weakens the pressure on wages and on working practices compared with the situation in Sweden where a new operator is responsible for recruiting its own staff. Germany seems to be in an intermediate position, where employees do have some transfer rights, and these have just been extended in new legislation. Increases in staff costs have been a major factor in the increase in train operating costs in Britain (Table 6). However, it does ease some other problems which have occurred for instance on the Stockholm suburban network where new operators have been unable to recruit sufficient staff to run the committed services. In addition, it permits the handover of the franchise more quickly – obviously in the period between a company learning that it has lost a franchise, and a new operator actually taking over, incentives to perform well and to invest for the future will be particularly weak. Given the scale of franchising in Britain, it is difficult on practical as well as legal grounds to see any alternative approach to franchising. In any event, the strong growth in rail traffic will have led to competition for skilled staff (particularly drivers) and the ability of particular groups of skilled workers such as drivers or signallers to halt services places them in a strong position in the event of an industrial dispute. There may be a greater willingness to face up to this in a long contract where the operator will stand to get more years of benefit than in a short one. Open access operators would only be under the same restriction if they were directly replacing services run by a franchisee rather than operating additional services, and may have a greater incentive to take long run impact on costs into account, so an expansion of open access operation may be one way round this problem. Open access operation is considered further in the next section.

Another cause of the cost increase in both infrastructure and train operating costs identified by McNulty (2011) is the misalignment of incentives between the infrastructure manager and the franchisee. This is despite Britain having the most sophisticated system of track access charges and performance regimes in Europe. These are designed to encourage the operation of track friendly rolling stock and the efficient use of scarce paths on congested parts of the network, and to encourage both train operators and infrastructure managers to avoid delays. McNulty

believed that closer working together of infrastructure manager and train operators could improve performance, for instance by reducing the costs of and disruption caused by track maintenance and renewal, and improving the efficiency of maintenance and enhancement of infrastructure. To the extent that in Germany the majority of franchises are still operated by a company that is part of the same government-owned group (DB AG) as the infrastructure manager, some of this cooperation may occur anyway, but in a way that is limited to DB-held franchises. This may give DB an advantage in bidding contests.

The solution in Britain has been to seek closer working between infrastructure managers and train operators in the form of alliances, which in most cases only deal with specific activities but in some cases go much deeper. The first such 'deep' alliance, in which the staff of both train operator and infrastructure manager in the area concerned were brought under a single management structure with a sharing of costs and revenues, the case of South West Trains, was terminated in 2016. However, a similar arrangement is in place in Scotland regarding the Scotrail franchise. Sharing costs and revenues of course completely corrects the misalignment of incentives – both parties have an incentive to optimise the system as a whole – but the problem then is to prevent the arrangement from disadvantaging other operators over the same infrastructure, including other franchisees where franchises overlap, open access operators and freight. Moreover, the fact that train-operating companies are then bearing the risk of increases in infrastructure costs may discourage competitive bids.

McNulty also suggested that specific cost reduction targets should be built into franchise agreements, although obviously this would require tight control to ensure that this was not achieved at the expense of quality of service. This proposal has not been implemented, but the Thameslink, Southern and Great Northern, and the Northern franchise agreements do contain a specific obligation regarding conversion of trains to driver-controlled operation (in other words removing the need for guards to operate train doors, as is currently the case on many routes in Britain). However, this may have more to do with reducing station dwell times and improving punctuality than saving costs, as it is thought that most trains will continue to carry a second member of staff to undertake passenger-facing duties (ticket sales and inspection). However, it would mean that, if necessary trains, could operate without a second member of staff, improving reliability, reducing union power and opening up the way to further cost savings in the future as ticketing systems change.

4.9 Implications for France

This discussion has some interesting implications for countries only now considering introducing competition for public service contracts. In France, there are essentially three categories of service that might be tendered. The first is the *trains d'équilibre du territoire* (TET), which are medium- to long-distance service subsidised by central government. The second is the *trains express régionaux* (TER) which are managed by the regions. The third is trains in the Paris and Ile de France region (transilien). The government has ruled out competitive tendering for the third



until at least 2029 when the existing contract runs out, but is considering experiments with tendering for the other two.

A major issue that has arisen in countries already practicing competitive tendering is the arrangements for the transfer of staff, rolling stock, stations and depots to the new operator.

In France, rolling stock is most often in the balance sheet of SNCF, even if paid for by the regional public authority. Unless the rolling stock was transferred to the regional authorities, as in Sweden, this would pose a serious barrier for entry.

Similarly, essential facilities like depots and stations are also controlled by SNCF-Mobilités who operate the services (not by SNCF-Réseau who only own the tracks and the platforms). Unless these are transferred to SNCF-Réseau, new entrants will be faced with negotiating with their principal rival for access to these facilities.

Most fundamental is the position of the labour force. There are essentially two approaches that could be taken. The first is to require new operators to recruit their own staff, whilst giving existing SNCF employees the chance to remain with SNCF. This is the approach in Sweden and Germany. The second is to transfer staff directly to the new operator as in Britain.

The first approach may be feasible if only a few small contracts are let to operators other than SNCF. But if tendering were practiced for all TER services, for instance, and SNCF lost the contracts for several regions, then two problems would arise – how would the new entrants recruit enough trained staff (particularly drivers) to run the services, and how would SNCF cope with the influx of staff for which it had no work.

However under the second approach, it would be a requirement to transfer SNCF workers (presumably with their advantageous terms and conditions) to the new operator of a franchise.

As in Britain, this would block one major source of economies, in terms of different rules for wages, holidays, hours of work per day etc. It may be that the sort of arrangement implemented at the time of rail restructuring in Germany, whereby the state bore the costs of existing employees having more favourable wages and conditions than would have been the case in a free market, whilst new employees face market conditions, will also be needed in France. However, this is also likely to be a controversial and difficult policy to implement.

5. What should be the role of open access competition?

Both Germany and Sweden only franchise subsidised services, leaving other services in the hands of the national government-owned operator, but with open access for new competitors to enter the market. In Britain, (almost) all services are franchises whether profitable or not, and open access has to date been limited by a 'not primarily abstractive' test; only open access operations where revenue new to the rail industry is at least 30% of that abstracted from existing operators are permitted. To date, this has meant that only a small number of services linking cities with no regular direct service as part of a franchise have been approved, although a recent decision of the regulator will allow an open access operator to challenge low cost airlines between London and Edinburgh with a 'no frills', low cost rail service.

Germany has had very little new entry in practice, perhaps because of the relatively high track access charges and strong competition from air and now intercity bus. Open access has only applied in Sweden for a short period of time, but already there is intense competition on one key intercity route, between Stockholm and Goteborg. There is also an unexpected development that services sponsored by regions are competing with SJ services on one or two routes.

For more experience of on-track competition, we have to look outside our case study countries, to Italy, Austria and the Czech Republic. In Italy a new entrant, NTV, now runs hourly services in head-on competition with the state-owned operator on the high-speed network (Croccolo and Violi, 2013). In Austria, a new entrant runs a similar frequent service in competition on the Vienna-Salzburg route. However, the Czech Republic has the only case of three operators competing head-on on its most important route (Tomeš, et al, 2016).

In most cases to date, new open access entrants have offered lower prices and competed on service through factors such as on board services rather than speed or frequency. There is no doubt that they have expanded the rail market and benefited consumers. However, there is also evidence of disadvantages, particularly in the Czech Republic, where the increased intercity operations have caused difficulties for other operators on a heavily congested route and where a regular interval service has given way to a service with more bunching of trains and fewer trains at less popular times. There is also the problem that the open access operator and/or the incumbent may be losing money, so it is not clear what will be an equilibrium position. In Italy, the entrant only became profitable after a substantial reduction in track access charges.

Where new entrants are challenging a previously monopolistic, state-owned operator, we might expect them to achieve lower costs and in that way to put pressure on the efficiency of the incumbent. However, in Britain new entrants are competing with a franchisee who has already won a franchising competition designed to ensure that only efficient operators survive. However, we have already seen reasons why even in Britain a new entrant might be able to



adopt more efficient working practices and lower wages than the franchisee, by avoiding transfer of employment protection for staff (although only where capacity exists for an expansion of services rather than replacement of the incumbent by the entrant). There is indeed evidence that, despite their small size and lack of economies of density, entrants achieve similar unit costs to the franchisee. They achieve this partly by paying lower wages and partly by adopting more flexible working practices. This leads to an argument that an expansion of open access competition might be a way of putting more pressure on costs, with the reduction of costs of the open access operator outweighing any loss of economies of density by the franchisee (CMA, 2015). In fact the CMA sees benefits in more on-track competition in general, and has put forward a range of options including splitting existing franchises into two separate franchises covering the same routes or deliberately planning to achieve more overlap between franchises. However, only in the case of an expansion of open access competition would the transfer of employment protection rules not apply, and in any event, it is not clear that they would be able to expand whilst maintaining lower wages given the shortage of skilled staff.

Expansion of open access competition, where most services are franchised, raises the problem that franchises may become less profitable, and that this cost will ultimately be passed back to the government. This is particularly an issue in Britain, where variable track access charges (which is all that open access operators pay) are set to cover short run marginal cost, but franchisees pay a large fixed charge, and on some intercity routes a premium to the government to contribute towards the fixed costs of the infrastructure. It has been suggested that some sort of contribution to the fixed charge and to meeting public service obligations should be paid by the open access operator, perhaps by converting the fixed charge into a variable charge paid by all operators and by adding a supplementary levy per passenger kilometre in the case of open access operators. However, by raising charges above marginal cost this would encourage cuts in frequency of service and might well lead to open access operators concentrating only on the most profitable routes rather than serving smaller cities as now.

One interesting proposal which seems to combine features of open access competition with franchising is that for Spain. Currently all Spanish long-distance passenger services are operated by RENFE but there is a proposal that for part or all of the network bids should be invited for a second operator. The bid would take the form of a proposal in terms of what services the second operator would provide based on paying track access charges but with no premium payment for the access rights but also no subsidy. It would obviously be necessary to contractualise the offered services to prevent bidders from exaggerating what they intended to provide. This might discourage cream skimming behaviour as the right to access would go to the operator promising the most attractive set of services, but would avoid the need for the public authorities to specify the set of services and encourage the ploughing back of any expected profits into improved service levels.

France appears to be the best place in Europe to develop competition for long distance rail services. With about 54 billion passenger kilometres per annum on high-speed rail services,



there looks to be room for new comers. However until now, France and SNCF promoted cooperation instead of competition. Commercial (and profitable) services, mainly high-speed, are operated by SNCF or, for international services, by subsidiaries of SNCF like Thalys (Brussels), Eurostar (London) or Lyria (Geneva), or in cooperation with DB (Germany) or RENFE (Spain). 'On-track' competition does not exist except for two international links (Milano-Paris and Milano-Marseille operated by Thello, an Italian company). In 2020, on-track competition for national services will be opened, but many barriers to entry remain.

High-speed services in France are no more a 'cash cow'. TGV services are facing a scissors effects: loss of passengers on the demand side (-1.8% during the first semester of 2016) and rising costs, namely track access charges, on the supply side. Moreover, in order to prevent the entry of new competitors, SNCF is developing a 'low cost' service (OUIGO in France, IZY between Paris and Brussels). However, the impacts of this new commercial strategy are not clear. Low cost services are increasing the number of passengers but not the turnover. Therefore, high-speed services are not necessarily attractive for entry in France. In the case of on-track competition, the result could be a lose-lose game. The main barrier to entry is the high level of track access charges (TAC) on new high-speed tracks. Even SNCF is complaining about the fact that TAC represent 40% of the ticket price. However what if, as in Italy, the infrastructure manager decided to reduce the TAC? Who will pay for that given the fact that the debt of SNCF-Réseau is already above 42 billion euro?

6. Conclusion

The evidence we have suggests that passenger market liberalisation to date has been a success. Although it is not the main cause of traffic growth, franchising has contributed to the provision of improved services carrying more traffic, particularly in the regional market to which (except in Britain) it has been largely confined. At the same time, in Germany and Sweden it has led to stabilising or declining support per train km. Even in Britain, a substantial increase in cost per train km has been offset by a rise in revenue, due both to increases in traffic per train km and in fares, leading to reducing support. All this is in marked contrast to the experience of France, where under a state monopoly support per train km has increased by 60%.

There is a great variety of arrangements regarding franchises both within and between countries. There is a trend towards regional franchises being managed by regional government, which should be in the best position to understand the needs and to integrate rail services with other planning decisions. However, there remains a need to coordinate regional and long distance services and to allocate track capacity between the two. If the franchising authority is responsible for planning and marketing services, then there is some evidence favouring gross cost contracts; it may be efficient also for the franchising authority to supply the rolling stock, particularly if franchises are relatively short. The franchising authority may also efficiently bear other risks, such as changes in track access charges and national movements in fuel and labour prices. Obviously, the contract needs to provide incentives regarding quality of service either in the form of financial payments or standards which must be met if the contract is to continue.

If the franchisee is in the lead in planning and marketing services, as is more likely to be the case for intercity services, then there may be a stronger case for net cost contracts. There is some evidence that smaller, longer franchises are more cost effective, but there are losses in economies of density if franchises overlap, although these are not so pronounced in the case of different types of services using different types of rolling stock.

Only Britain franchises intercity services whether profitable or not; Sweden and Germany both left these in the hands of a state-owned operator but with open access for new entrants. Both countries have had limited competition whereas Britain has had intense competition for franchises for these services. This may suggest that franchising is a more effective way of introducing competition to intercity services than on-track competition.

A key factor influencing the outcome of franchising appears to be the arrangements regarding the transfer of staff. In neither Sweden nor Germany was the new entrant required to take on the staff of the incumbent; instead, they were responsible for recruiting their own staff and setting their own terms and conditions. In both cases, franchising seems to have led to a considerable reduction in costs. However, in both countries franchising has proceeded gradually, so that staff displaced by the new entrant could readily be absorbed within the organisation of the incumbent. Moreover, there is usually a long time lag between the award of a contract to a

new entrant and its actually taking over, to allow time for staff to be recruited and, if necessary, trained. Even so, there have been occasions when services have been disrupted by the inability of the new entrant to obtain sufficient staff.

In Britain, the winner of a franchise competition takes control of an existing company and inherits its staff and terms and conditions. This makes for a smooth and rapid transfer. However in Britain, train-operating costs have actually risen since the introduction of franchising. Staff costs have risen rapidly, admittedly in the context of rapid growth in traffic and services leading to the need to recruit more staff. The fact that open access operators, who are free to recruit their own staff and set their own terms and conditions, have lower staff costs, suggests that this is a factor in the failure of franchising in Britain to reduce costs.

For countries such as France, at the start of the franchising process, this leaves a stark choice. If they franchise very gradually, it might be feasible not to require transfer of staff to the new operator, although undoubtedly trade unions will fight against this. A fast development of franchising makes this a much riskier scenario. Compulsory transfer of staff would permit the much faster development of franchising with a smoother transition, but may serve to limit the efficiency gains. A possible solution is that adopted at the time of the setting up of DB AG in Germany, of the government paying the excess costs of existing staff whilst new staff are taken on at market rates and conditions. However, this is likely to be very controversial and difficult to implement.

As regards open access competition, even though it has been permitted on international services since 2010, and on domestic services in some countries for much longer than that, it has been slow to develop. In Germany, competition to date has been limited to a few routes and low frequency services. There are a number of barriers to entry including high track access charges and the difficulty of procuring rolling stock and access to depots. In Sweden, with its low track access charges, intense competition is now developing on its most profitable route, Stockholm – Gothenburg. There is also intense competition on a single route in Austria, the Czech Republic and Slovakia, with more competition anticipated in the latter two countries. However, the most intense competition seen so far is in Italy on the new high-speed network. Nevertheless even here the entrant struggled to achieve profitability and only did so after the regulator reduced the (relatively high) track access charges.

It appears that a number of factors favour new entry:

- High traffic volumes suggesting potential profitability
- Low track access charges
- Spare infrastructure capacity, making obtaining suitable paths easy
- Perception that the existing operator is relatively inefficient and could be undercut on costs.

Britain franchises all services, even commercial, and has to date limited open access competition to cases where it is seen as 'not primarily abstractive' from franchisees. However, the



Competition and Markets Authority has examined a number of ways of encouraging open access competition, from a simple relaxation of the 'not primarily abstractive' rule, to splitting franchises on particular routes to two competing operators, increasing overlaps between franchises or licensing multiple operators on individual routes (possibly with some public service obligations attached, which could actually be traded between operators). Spain has proposed introducing competition by inviting bids to see which new entrant would commit to introducing the largest set of additional services, on the basis of neither subsidy nor payment of a premium.

Thus a variety of ways forward regarding the introduction of competition on commercial routes exist, from relying entirely on competition for the market through franchising to leaving such services open to all to compete in the market. There are a number of intermediate positions. Any solution involving on-track competition could lead to loss of economies of density and scale, which could offset the benefit of competition leading to reduced costs. Moreover on heavily used lines, where an entrant could only be accommodated by taking paths away from the incumbent, the same issue of transfer of staff as discussed above for the case of franchising, would arise. On the other hand, allowing new entry, even if only on a limited scale, might permit innovations and improvements in services which would not otherwise take place.

Open access entry appears to bring lower fares and competition in terms of on-board services, with benefits for passengers. On the other hand, there is evidence of disadvantages in terms of less efficient timetables and use of scarce track capacity, and there are problems with the profitability of both competitors particularly where (as is usual on high-speed lines) track access charges are high. In British circumstances, where franchisees are obliged to take on the wages and working conditions of their predecessor, there is evidence that open access operators may achieve lower costs than franchisees; thus an expansion of open access operation may be one way of tackling the increases in costs that have occurred in Britain, although longer, smaller contracts, more use of gross cost contracts and closer alliances with the infrastructure manager may be other ways of doing so.



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