Agenda

Advancing economics in business

All change please? Rethinking how the rail sector contributes to the UK economy

Ahead of the 2015 UK general election, and given the problems faced by the rail sector, debate is increasing about the future of GB rail and whether renationalisation would bring economic and passenger benefits. In a July 2014 report, Oxera analysed, for the first time, the contribution of rail to the UK economy

Oxera's report[1] was commissioned by the Rail Delivery Group (RDG), which brings together Network Rail and the owners of Great Britain's passenger train and freight operators.[2] Figure 1 sets out how the GB rail industry is structured.

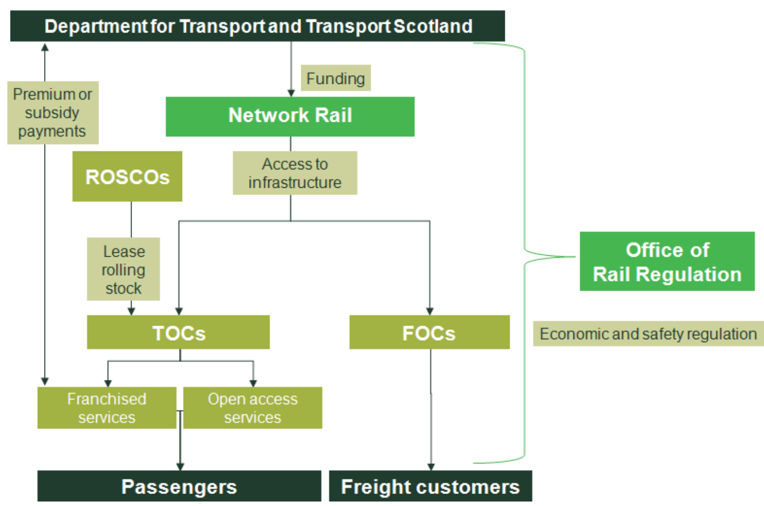
There is significant debate, ahead of the 2015 UK general election, around how the rail industry will look in the future—in terms of both what the physical network will look like, and how the industry will be run. The Labour Party is currently arguing for part-renationalisation of the network—which would, in part, reverse the decision to privatise the industry 20 years ago.[3] In addition to the renationalisation debate, the rail industry in Great Britain is facing a number of other challenges. These include:

- passenger growth (with passenger numbers doubling since 1995), which creates challenges in terms of providing sufficient capacity to meet demand.[4] The problem is currently being approached through proposed large rail projects such as the Thameslink Programme and the Northern Hub, but also many 'pinch-point' schemes delivered as part of the multi-annual agreements between Network Rail and its funders;[5]
- no guarantee that the investment that continued throughout the recession will continue after the end of the current five-year funding agreement in 2019;[6]
- changes to the franchising programme after the cancellation of the West Coast Main Line franchise competition in 2012;[7]
- the establishment of a new high-speed rail line (HS2) linking London with Birmingham, and potentially Manchester and Leeds. It is estimated that HS2 will cost £50bn, with the first phase of the project set to begin operation in 2026.[8]

Now is a relevant time, then, to consider the contribution that the rail sector makes to the economy, and to examine whether the change in the industry model in the mid-1990s provided benefits. In addition, with rail receiving a total government subsidy of £4bn in 2012/13,[9] it is important to consider the tax contribution that the industry has made in return.

Oxera used a number of approaches to analyse the sector's contribution to the UK economy and to understand the impact of the change in the industry model.[10] These topics are discussed in turn overleaf.

Figure 1 Structure of the rail sector



Note: TOCs, train operating companies; FOCs, freight operating companies; ROSCOs, rolling stock leasing companies.

Source: Oxera.

Measuring how much the rail industry and its supply chain contribute to the UK economy

Before Oxera's report, the economic impact of the rail industry had never been analysed at a national level, although studies had considered parts of the sector or parts of Great Britain.[11]

A number of metrics can be used to measure the contribution of the rail sector to the UK economy, with one of the most common being gross value added (GVA). GVA is a measure of the value of goods and services, and is approximately equal to the sum of wages and profits. Other indicators include employment, tax and investment. The analysis indicates that the rail industry and its supply chain employ 212,000 people and generate £9.3bn of GVA per year (around 0.7% of UK GVA or over £2 for every £1 of public support). In addition, capital expenditure in the industry was calculated at approximately £5bn in 2011/12.[12]

However, these measures do not capture the full impact of the rail sector on the welfare of UK consumers, because they do not account for the benefits that passengers gain from using rail services. These benefits arise because every time a consumer purchases a good or service, they experience a benefit that is greater than or equal to the price they pay (known to economists as 'consumer surplus').

To estimate the consumer surplus from rail services, Oxera calculated the disadvantages from not being able to travel by train (i.e. a 'without rail' scenario), such as longer journey times and potentially higher financial costs, against a scenario in which rail travel is available. These factors were monetised and then compared across the two scenarios to derive the contribution that the industry makes to the economy, based on this passenger benefit. Using this approach, Oxera estimated the benefits for both passengers and rail freight users to be worth up to £13bn per year. Further details of the approach are given in the box.

In addition to the consumer surplus benefit to passengers, the rail sector facilitates further benefits, in terms of increased output, in other sectors of the economy (known as 'wider economic impacts'). For example, a more extensive rail network would be associated with less road congestion, which would result in reduced (and less variable) travel time for heavy goods vehicles. Quantifying wider economic impacts when appraising transport schemes has become increasingly important, as they account for the added value that transport schemes and existing assets have in the wider economy. For the rail sector, these wider economic impacts could be worth as much as £10bn a year.[13]

The impact on the economy is only one way in which the rail sector affects the UK. There are at least two additional effects: environmental and social impacts. Rail is a more environmentally friendly mode of transport than both road and air.[14] If all rail passengers and freight travelled by road or air, carbon emissions could increase by 7.4m tonnes annually, at a cost of £430m per year, and there could be an additional 950 serious and fatal road accidents per year.[15]

How has the change in the industry model affected the rail sector?

The industry model introduced in the mid-1990s led to several changes that were unlikely to have been provided under British Rail (the government-owned body that previously managed GB railways), or were at least unlikely to have happened as quickly.[16] These changes include:

- access to larger amounts of private sector capital (particularly for rolling stock);
- the establishment of five-year funding periods for Network Rail;
- an increase in the incentives on train and freight operators to grow the market and reduce costs where possible;
- the availability of heavily discounted advanced purchase fares.

A world without rail?

When considering the contribution of an asset or industry to the economy in terms of its impact on consumers, it is important to consider the counterfactual—i.e. the alternative scenario used for comparison. In this context, the comparison is between a scenario where passenger rail travel is available and a counterfactual scenario where it is not.

This thought exercise involves envisaging a scenario with no rail travel, and analysing the subsequent impacts that this would have on both those people who would have travelled by rail, and those who would not. If rail is no longer a travel option, there would be increased levels of road usage and hence more congestion, which has negative effects on road users. In addition, it would affect the labour market and where people choose to live and work. For example, would commuters still travel into central London from the surrounding counties if it took three times as long by car or bus?

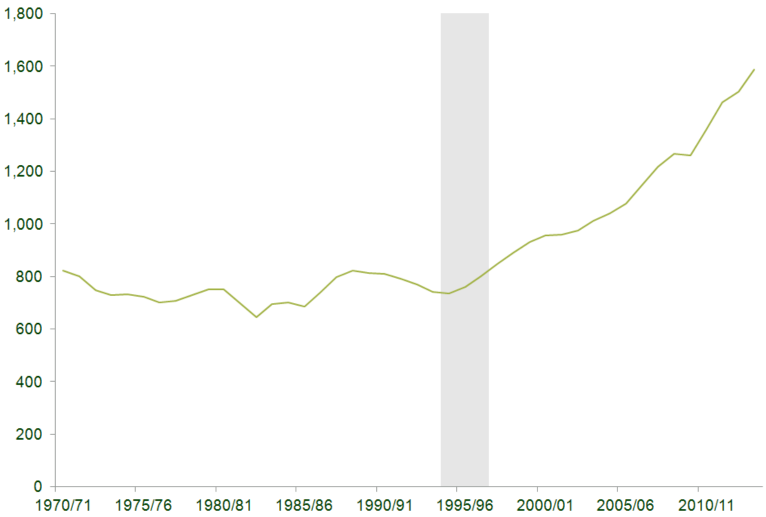
Source: Oxera.

Rail demand grew by approximately 4% more per year in the 20 years after the change in the industry model than during the 20 years before. This change in growth is illustrated in Figure 2.

Some of this difference between the pre- and post-privatisation rail passenger growth rates will be due to factors unrelated to the rail sector, including economic growth; changes in population, employment, and the cost of running a car; and changes in car ownership. Approximately 2% a year of this growth in passenger rail demand since the mid-1990s can be explained by these factors.

However, it would not be sensible to attribute all of the remaining growth to the change in the industry model, as there may be factors not adequately captured in the analysis owing to data limitations or trends that would have happened anyway had the model not changed. One might therefore assume that 25–75% of the difference between the growth attributed to external factors and the increase in passenger demand around the mid-1990s can be attributed to the change in the industry model.[17]

Figure 2 Passenger journeys (m) in GB rail



Note: The shaded area indicates the period of industry transition as a result of the change in the industry model.

Source: Office of Rail Regulation.

This analysis suggests that between 0.5% and 1.5% of the annual rail passenger growth since the mid-1990s could be due to the change in the industry model. Adding the wider economic benefits to this growth uplift, using the approach outlined above, the annual benefit to rail passengers and the wider economy of the change in the industry model could have been between £2bn and £7bn in 2013.[18] Given the significant changes to the industry, the actual impact is likely to be towards the upper end of this range.

What does this mean for the rail sector in Great Britain?

Oxera's report quantifies the contribution of the GB rail sector to the UK economy. It also provides an indicative estimate of the economic benefits that have arisen from the change in the industry model in the mid-1990s, from a publicly owned industry to the current model of public sector specification and private sector service delivery. The various measures used to evaluate the contribution of the rail sector highlight the importance of the industry to both users and the economy as a whole.

The finding that the sector almost entirely contributes through tax what it receives in government grants has two important policy implications. First, it reflects the relative success of government's approach to franchising. By using fares policy to increase the relative contribution of users, and by letting operators compete for the sole right to provide a tightly specified package of services, the funding for the industry will inevitably tilt towards users and away from taxpayers. However, the government has recently announced that regulated fares will be capped in real terms for 2015 (mirroring a decision for 2014). This will slow the rate at which the funding of the industry moves from the taxpayer to the users of the rail network.

Second, the lack of any meaningful net contribution from government to the operators casts doubt on the need for government to specify any but the socially necessary services in franchise agreements—or even the need to franchise commercial services at all.

Oxera's report for the RDG opens up a number of opportunities for new policy thinking.

[1] Oxera (2014), 'What is the contribution of rail to the UK economy?', prepared for the Rail Delivery Group, July.

[2] Network Rail is the rail infrastructure manager and is responsible for running, maintaining and developing Britain's rail tracks, signalling, bridges, tunnels, level crossings and viaducts, and 19 key stations.

[3] BBC (2014), 'Labour plan to part renationalise rail network', 17 July.

[4] Office of Rail Regulation (2014), 'Rail journeys continue to rise across England, Scotland and Wales', 24 April.

[5] The Thameslink Programme is an upgrade and expansion of the existing Thameslink rail network to provide new and longer trains between a wider range of stations to the north and south of London. The Northern Hub project is a series of proposed changes across Northern England, which include an increase in train services; reductions in journey times; and electrification of lines between the major cities of Northern England.

[6] See Department for Transport (2014), 'Rail subsidy per passenger mile', 21 August; and Johnstone, R. (2014), 'Rail subsidies down to £4bn, regulator reveals', *Public Finance*, 16 April.

[7] Department for Transport (2013), 'The Brown review of the rail franchising programme', 10 January.

[8] For more details, see http://www.hs2.org.uk.

[9] Department for Transport (2013), 'The Brown review of the rail franchising programme', 10 January.

[10] Since the mid-1990s, rail freight services have been operated by competing FOCs, with passenger rail services specified by the government and delivered by TOCs, and first Railtrack—and now Network Rail—managing the infrastructure, regulated by the Office of Rail Regulation.

[11] For example, see Network Rail (2010), 'Value and importance of rail freight', July; and University of Strathclyde (2013), 'Scotrail – economic and performance impacts, 2004-2013', a report to Scotrail from the Fraser of Allander Institute, September.

[12] Oxera (2014), 'What is the contribution of rail to the UK economy?', prepared for the Rail Delivery Group, July.

[13] Oxera (2014), 'What is the contribution of rail to the UK economy?', prepared for the Rail Delivery Group, July.

[14] See International Union of Railways and Community of European Railway and Infrastructure Companies (2008), 'Rail Transport and Environment: Facts and Figures', June, pp. 1–36; and Department for Transport (2014), Table ENV0201, October.

[15] Oxera (2014), 'What is the contribution of rail to the UK economy?', prepared for the Rail Delivery Group, July.

[16] Oxera (2014), 'What is the contribution of rail to the UK economy?', prepared for the Rail Delivery Group, July.

[17] Oxera (2014), 'What is the contribution of rail to the UK economy?', prepared for the Rail Delivery Group, July.

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