Acquisition by Arriva Rail North Limited of the Northern rail franchise

Appendices and glossary

Terms of reference and conduct of the inquiry

Terms of reference

1. On 20 May 2016 the CMA referred the completed acquisition by Arriva Rail North Limited of the Northern Rail franchise:

    1. In exercise of its duty under section 22(1) of the Enterprise Act 2002 (the Act) the Competition and Markets Authority (CMA) believes that it is or may be the case that:

        (a) a relevant merger situation has been created, in that:

            (i) the enterprise or enterprises of the Northern Rail franchise (now carried on by or under the control of Arriva Rail North Limited, a wholly owned subsidiary of Arriva plc) have ceased to be distinct from the enterprise or enterprises carried on by or under the control of Arriva plc; and

            (ii) section 23(1)b of the Act is satisfied; and

        (b) the creation of that relevant merger situation has resulted, or may be expected to result, in a substantial lessening of competition within a market or markets in the United Kingdom for the supply of public transport services.

    2. Therefore, in exercise of its duty under section 22(1) of the Act, the CMA hereby makes a reference to its chair for the constitution of a group under Schedule 4 to the Enterprise and Regulatory Reform Act 2013 in order that the group may investigate and report on the following questions in accordance with section 35(1) of the Act:

        (a) whether a relevant merger situation has been created; and

        (b) if so, whether the creation of that situation has resulted, or may be expected to result, in a substantial lessening of competition within any market or markets in the United Kingdom for goods or services.

Andrea Coscelli
Executive Director, Markets and Mergers
Competition and Markets Authority
20 May 2016

Conduct of the inquiry

2. On 20 May 2016, the transaction was referred for an in-depth (phase 2) merger investigation.

3. We published biographies on the members of the inquiry group conducting the inquiry on 23 May 2016, and the administrative timetable for the inquiry on 9 June 2016, with subsequent updates being published as applicable.

4. We sent detailed questionnaires to interested parties and evidence was obtained from these third parties through hearings, other telephone contact, and written requests. Evidence provided to the CMA during phase 1 was also considered in phase 2. Non-confidential versions of the summaries of our hearings with third parties have been published on our webpages.

5. On 14 June 2016, we published an issues statement, setting out the main issues we were likely to consider in this inquiry and inviting comments from the main and third parties. Responses to our issues statement were also published.

6. On 24 June 2016, members of the inquiry group, accompanied by staff, visited the Leeds area to conduct hearings with third parties and visit Arriva's business operations.

7. We received written evidence from the Parties. A non-confidential version of their main submission is on our webpages. On 4 August 2016, we held a hearing with the Parties.

8. In the course of our inquiry, we sent to the Parties, as well as third parties, some working papers and extracts from those papers for comment.

9. A non-confidential version of the provisional findings report has been placed on the case page.

10. We would like to thank all those who have assisted in our inquiry so far.

Industry performance

Introduction

1. This appendix provides background information on the performance of the rail and bus industries, focusing where possible on relevant trends (eg changes in demand and fares) in the geographic areas most relevant to the Merger (ie England/North of England).

2. In relation to rail, the sector is commonly segmented as follows: by nation (England, Wales and Scotland); by franchise (eg Northern Rail, Chiltern Railways); by types of services or routes covered (whether serving long distance, commuter (eg London & South East) or regional routes); or by ticket type (eg regulated/unregulated fares, first or standard class).

3. For buses, data is reported for the following areas: London; metropolitan areas in England (excluding London); non-metropolitan areas in England; Wales and Scotland.

Rail industry

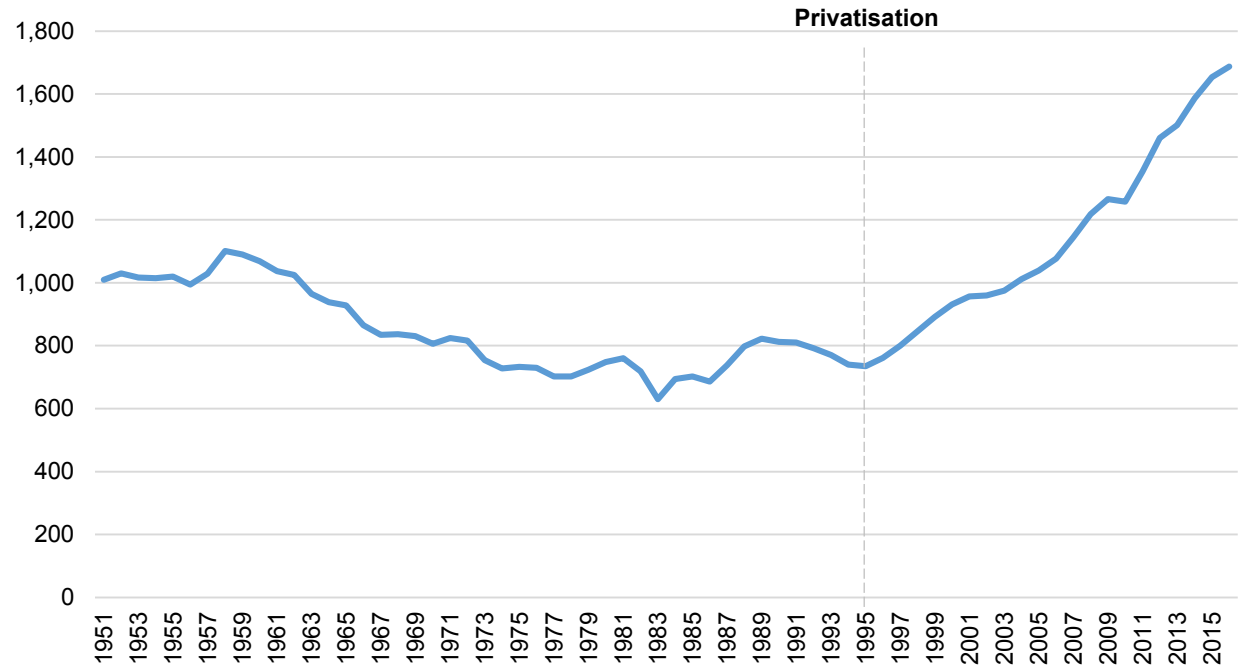
Demand levels

4. Rail demand is commonly measured through a number of different metrics, including number of passenger journeys, passenger kilometres travelled and revenue generated.[1]

5. In terms of passenger journeys, the number decreased during the 1960s and 1970s, remained relatively flat during the 1980s, but has been increasing since mid-1990s, achieving +4.0% CAGR since 1995. This is illustrated in the graph below:

[1] ORR/NRT (National Rail Trends) data portal, Tables 12.4, 12.5 & 12.8. Other metrics include total timetabled kilometres, train kilometres, and various measurements made on a per-head basis; however, these are not included in this appendix.

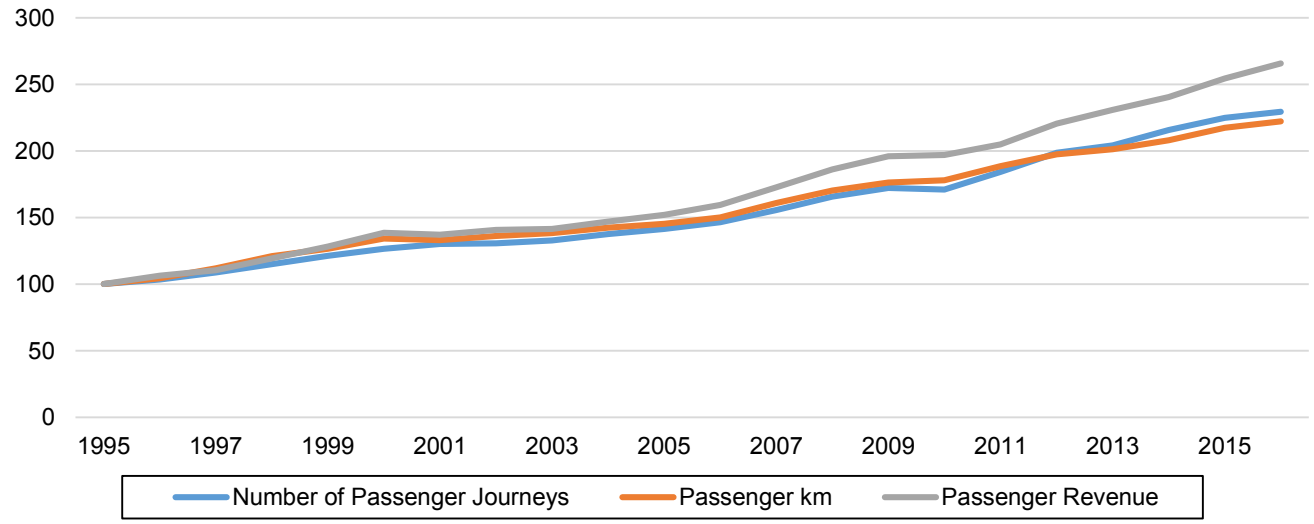
Figure 1: Number of rail passenger journeys (in millions), 1951 to 2016



Source: ORR/NRT data portal, Table 12.5.

6. The time of rail privatisation in 1995 represented an inflection point. All three demand metrics mentioned above increased, although passenger revenue has seen the largest increase over this period, due to an increase in fares, as noted below. In 2016, the number of passenger journeys was 1.7 billion, passengers travelled a total of 64 million kilometres and passenger revenue generated was £9.2 billion.

Figure 2: Growth in passenger rail demand in Great Britain during the period 1995 to 2016, indexed to 100 in 1995



Source: ORR/NRT data portal, Tables 12.4, 12.7 & 12.9.
Note: Revenue figures are based on current prices.

7. We have also examined the level of growth by rail segment. Growth is similar between the different types of services offered, as is shown in Table 1 below:

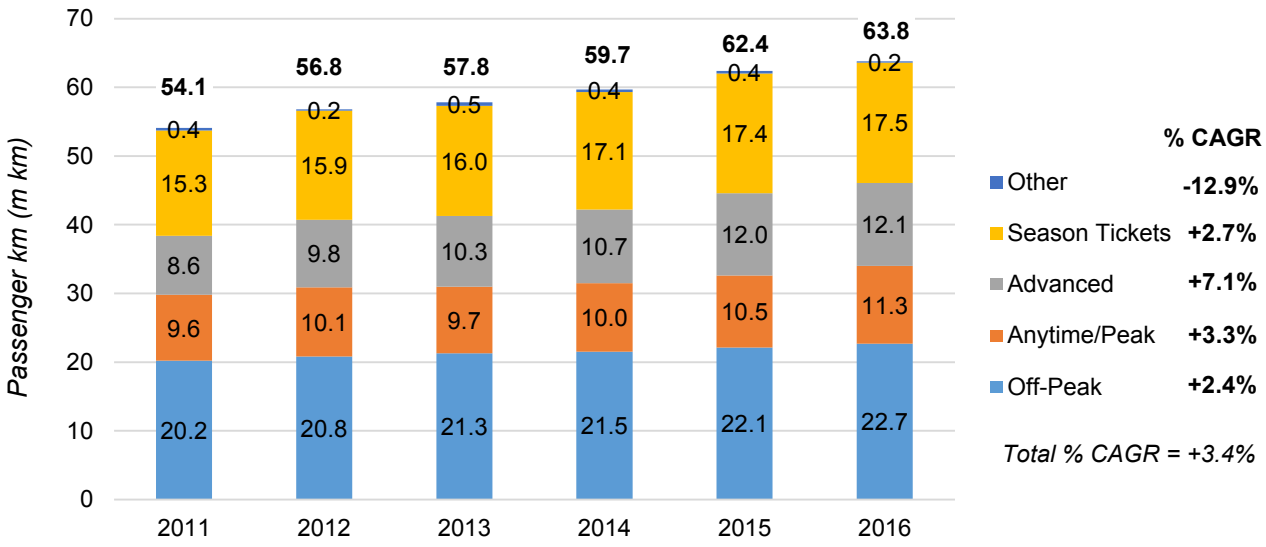
Table 1: Comparison of % CAGR by service type from 1995 to 2016

Service type	*Passenger journeys*	*Passenger km*	*Revenue*
Long distance	+4.5%	+3.6%	+7.1%
London & South East	+4.1%	+4.0%	+7.3%
Regional*	+3.6%	+4.2%	+6.5%
All franchises	**+4.0%**	**+3.9%**	**+7.1%**

Source: ORR/NRT data portal, Tables 12.3, 12.6 & 12.8.
*The Northern Franchise covers mainly regional routes.

8. In terms of the ticket types in Great Britain, Figure 3 shows that off-peak tickets are the most common type of ticket (by passenger kilometres),[2] with a share of approximately 35% in 2016. We have observed growth across all of the major ticket types, although the purchase of advanced tickets has seen the greatest growth:

Figure 3: Passenger kilometres (in millions) by ticket type, 2011 to 2016



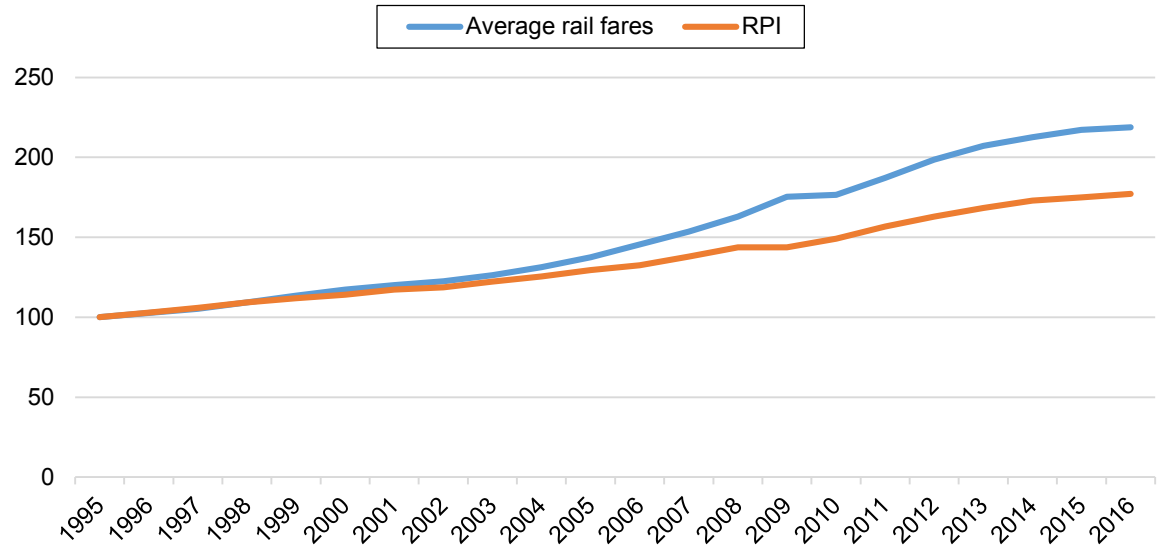
Source: ORR/NRT data portal, Table 12.4.

Fares

9. Rail fares have been increasing steadily since privatisation and at a rate higher than RPI, particularly in more recent years:

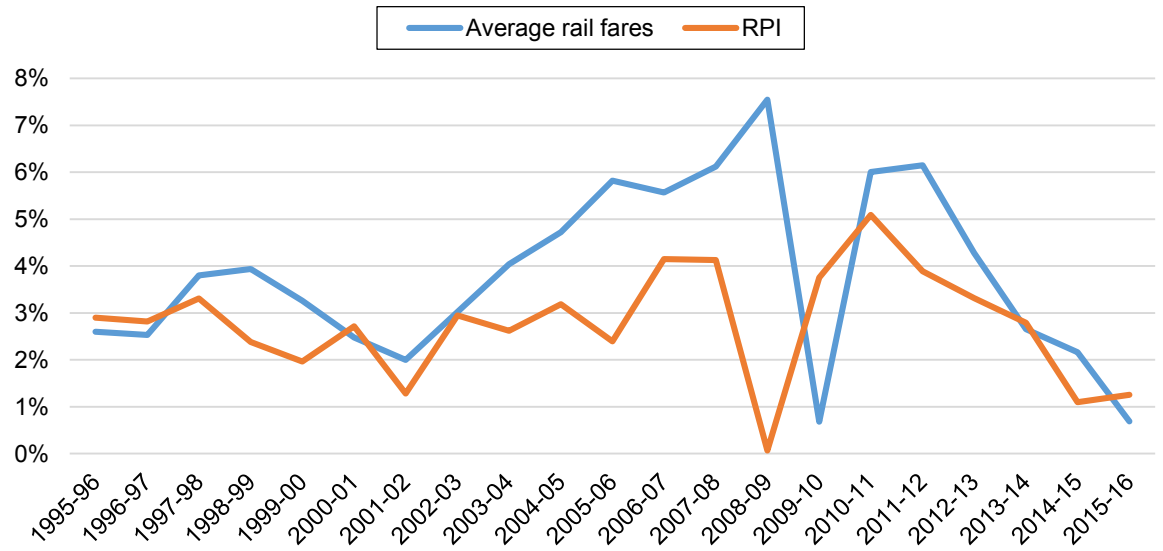
[2] Equivalent graphs based on the other demand metrics (number of passenger journeys and revenue) are included in Annex 1.

Figure 4: Rail fares index as at 1 January in specified year compared with RPI, indexed to 100 in 1995



Source: ORR/NRT data portal, Table 1.8.

Figure 5: Year-on-year change in rail fares index for 1 January between specified years compared with RPI



Source: ORR/NRT data portal, Table 1.8.

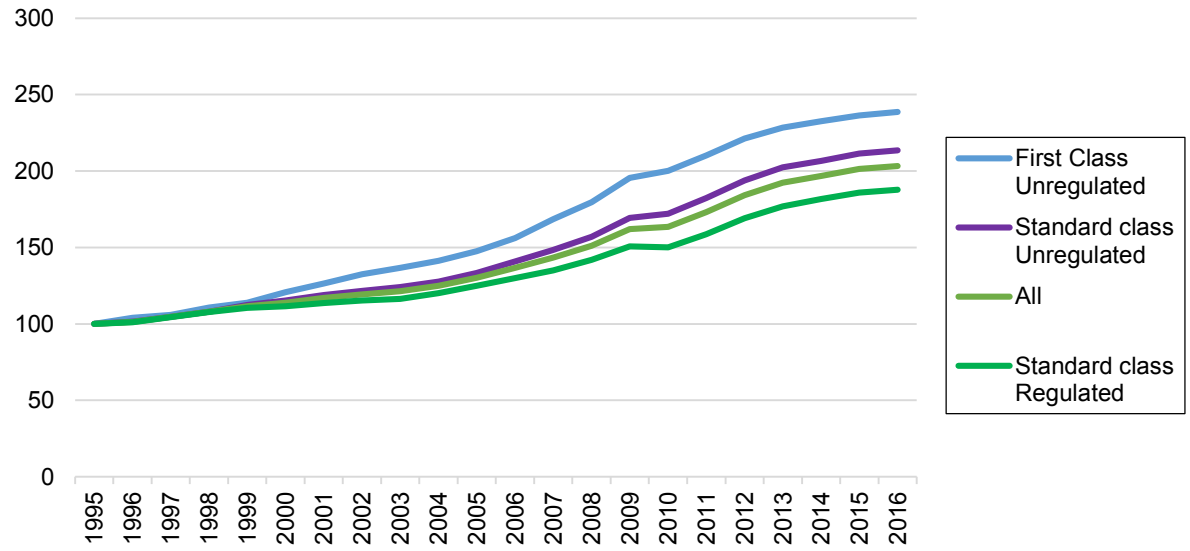
10. These changes in price are likely to be in large part a result of the existing caps on regulated fares of RPI+X%, which form part of franchised TOCs' obligations under their franchise agreements.[3]

11. The rail fares index provides a breakdown for specific types of tickets. There is also information on the different types of services available (eg whether long distance or regional). The fares of regional rail services are show in

[3] RPI is based on July in previous year.

Figure 6 below. This indicates that unregulated fares have increased at a faster rate than regulated fares since 1995.

Figure 6: Rail fares index for 1 January in specified year for regional rail services, indexed to 100 in 1995



Source: ORR/NRT data portal, Table 1.81.

12. We observed this trend also in the context of long distance services.

Regulation on fares

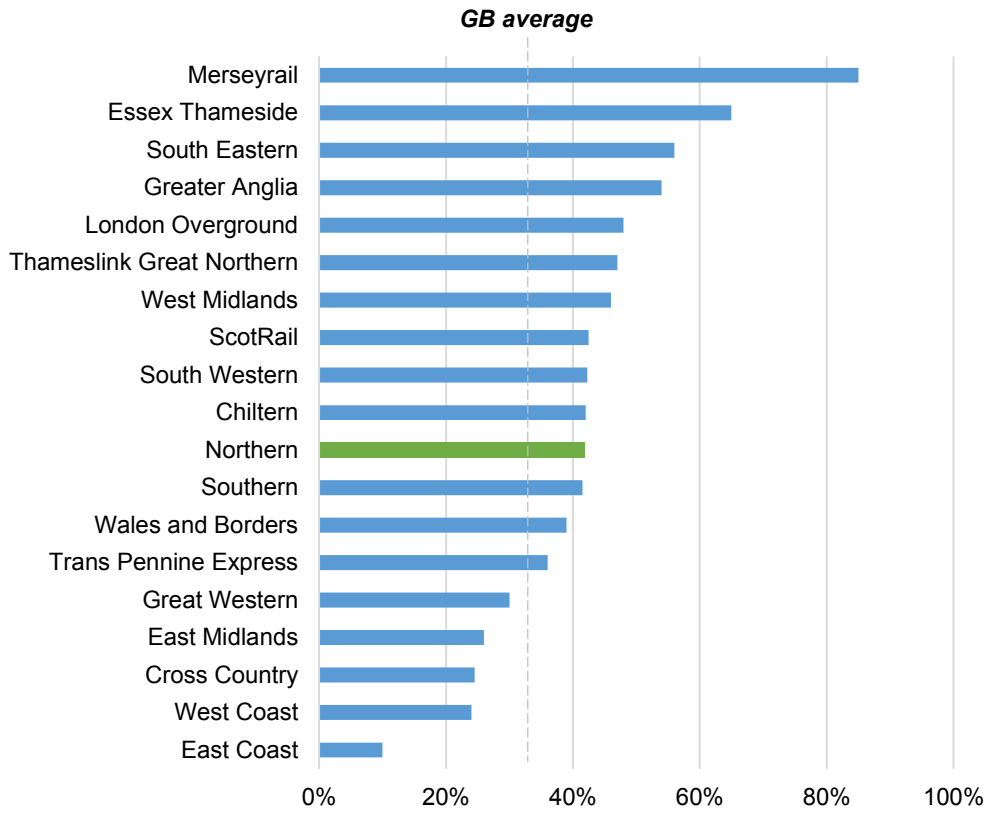
13. The share of regulated compared to unregulated tickets purchased will differ between routes and franchises. Regulated tickets primarily consist of off-peak returns, standard returns, weekly travel cards and commuter fares (ie season tickets to/from London, standard tickets to/from London from a specific suburban area, and some tickets within London).[4]

14. In general, the long distance franchises (eg East Coast and West Coast) generate a lower proportion of their revenue from regulated fares.

15. Based on data from ORR, the Northern Franchise generates an average proportion (around 40%) of its fares from regulated tickets, as shown in Figure 7 below. Additional information on the split of revenue from different ticket types is included in Annex 1.

[4] House of Commons briefing paper on rail fares and ticketing, March 2016.

Figure 7: Share of fares revenue from regulated tickets by franchise in 2014



Source: ORR, GB rail industry financial information 2014-15, extracted from Figure 2.3.

Punctuality and reliability

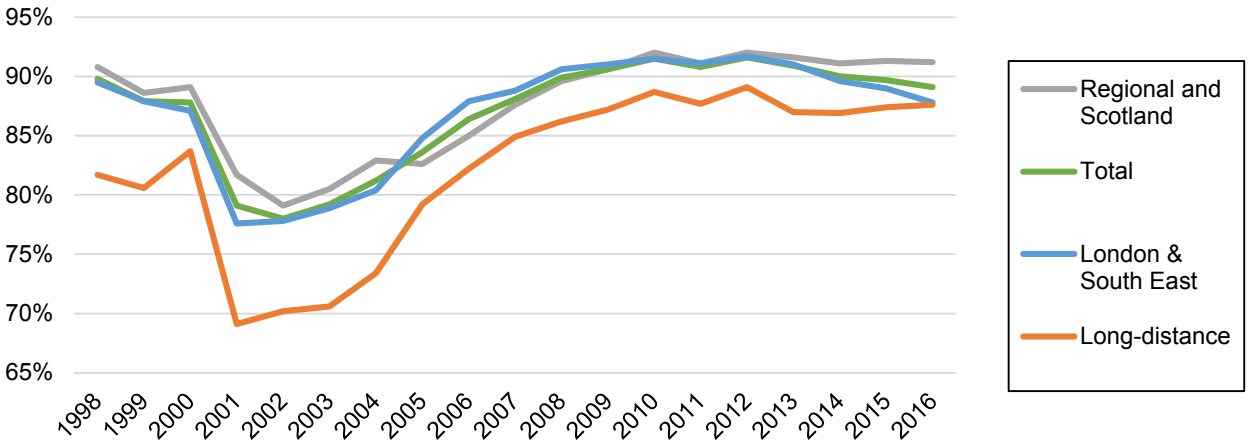
16. Punctuality and reliability are a key service measure for rail passengers.

17. The standard industry measure for punctuality and reliability is the public performance measure (PPM). It is calculated as the percentage of trains that arrive 'on time' at their destination.[5]

18. There was a significant dip in this performance measure at industry level during the early 2000s, but this has since recovered and performance has levelled out at around 90%. Regional services (including Scotland) are generally more reliable/punctual than the other services in Great Britain, as shown in Figure 8 below:

[5] A train is defined as being on time if it arrives at the destination within 5 minutes of the planned arrival time for London and South East or regional services, or 10 minutes for long distance services. If a train fails to run its entire planned route calling at all timetabled stations it will count as a PPM failure.

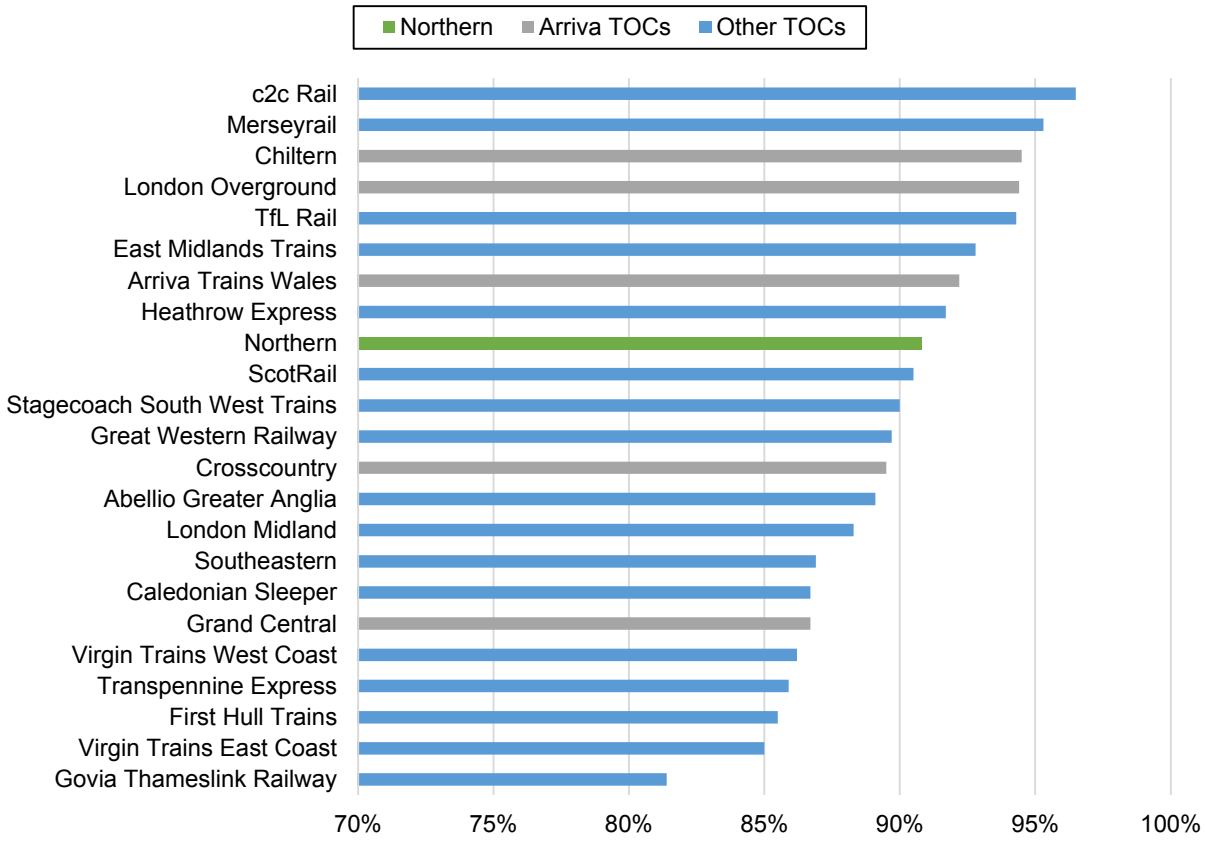
Figure 8: PPM trends by service type in Great Britain, 1998 to 2016



Source: ORR/NRT data portal, Table 3.43.

19. Performance, as measured by PPM, varies by operator (see Figure 9). Arriva's franchises have generally performed well over the last year, and the Northern Franchise (while still being run by Serco/Abellio) was in the top half of performers.

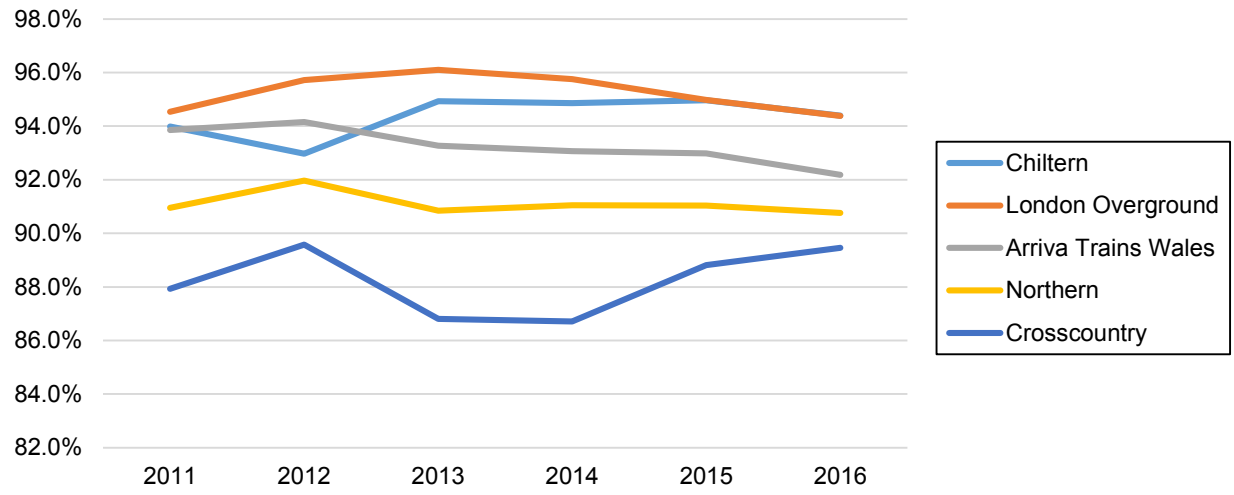
Figure 9: PPM by operator, annual average for the year ending 31 March 2016



Source: Network Rail performance website.

20. Arriva's punctuality and performance measures have been relatively stable over the last six years, in line with general industry performance. The PPM changes for Arriva's rail operations are shown in Figure 10 below. This graph also shows performance by the Northern Franchise, although operated by the previous franchisee.

Figure 10: PPM for Arriva franchises, annual average 2011 to 2016



Source: ORR/NRT data portal, Tables 3.10, 3.12, 3.13, 3.22 & 3.24.

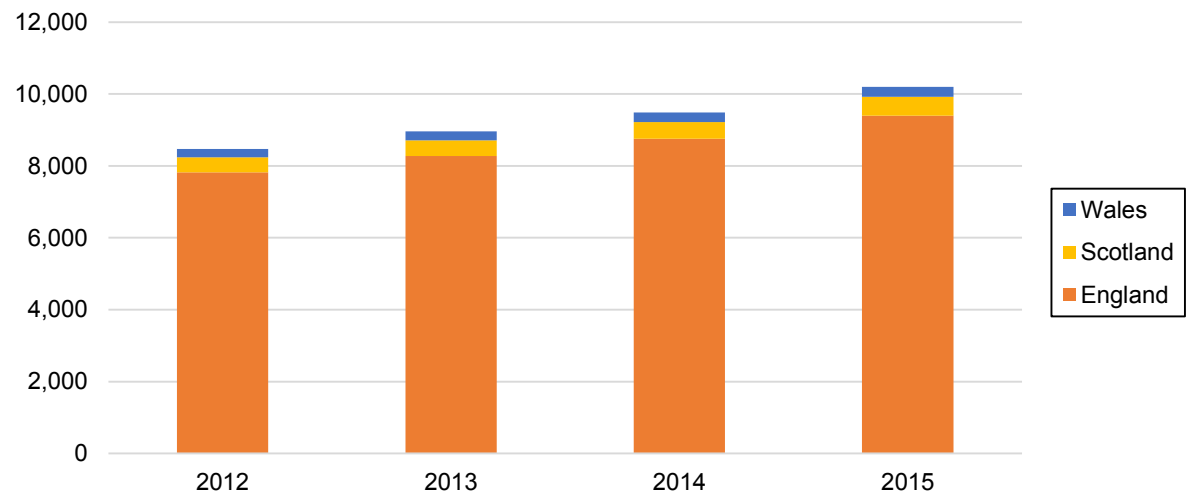
Financials

21. We have reviewed financial data, which provides information on both industry-wide and franchised TOC performance. This reflects the increasing demand and price profiles described above.

22. Industry income (excluding income from public subsidies) has been growing at +6.4% CAGR over the last four years and reached a total of £10.2 billion in 2015.[6] The level of growth has been similar across England, Wales and Scotland (with 6.3%, 7.7%, and 6.5% CAGR respectively), as shown in Figure 11 below:

[6] Excluding intra-industry income (ie payments made from one TOC to another or to Network Rail).

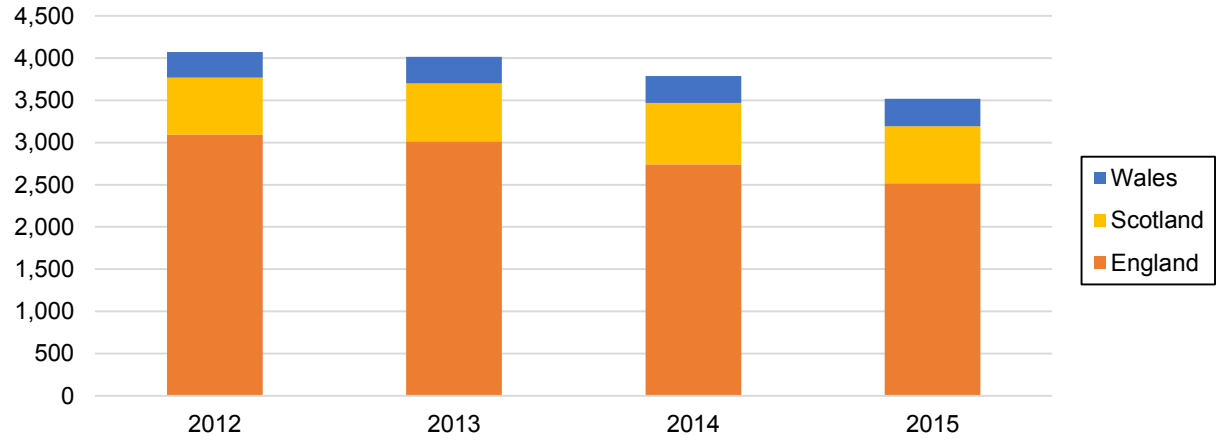
Figure 11: Rail industry income excluding public subsidies (£m), 2012 to 2015



Source: GB rail industry financial information 2014-15 spreadsheet, and GB rail industry financial information 2013-14 spreadsheet.

23. In 2015, net public subsidies reached approximately £3.5 billion. This includes payments and receipts to/from franchised TOCs and expenditure on rail infrastructure through Network Rail. The level of net public subsidy has been decreasing at -4.7% CAGR, particularly driven by decreasing levels of subsidy to franchises in England.

Figure 12: Net public subsidy for passenger rail (£m), 2012 to 2015



Source: GB rail industry financial information 2014-15 spreadsheet, and GB rail industry financial information 2013-14 spreadsheet.

24. This reduction is primarily the result of a drop in net public subsidy expenditure in certain franchise areas since 2012:

(a) CrossCountry: -£133 million.

(b) Southern: -£120 million.

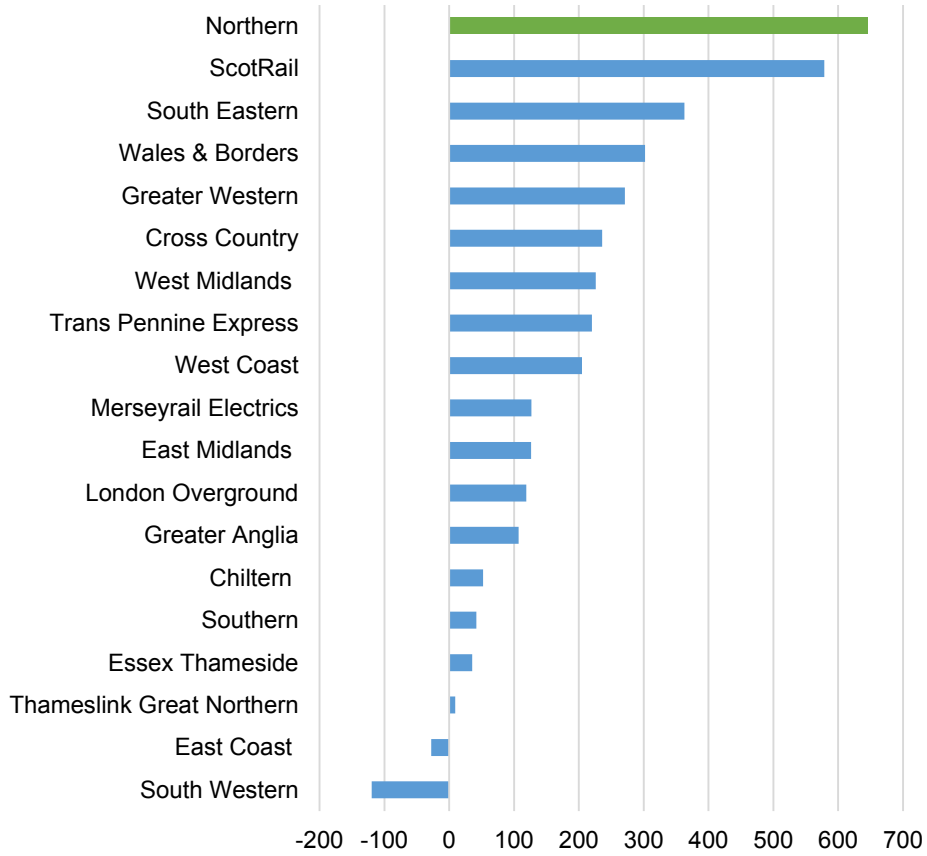
(c) South Western: -£114 million.

(d) Greater Anglia: -£108 million.

25. The reduction in net public subsidies in these areas has resulted in a large differential in the level of net public subsidy, making up approximately 20% share of operating revenue in England, while both Scotland and Wales are approximately 55%. In 2011-12, the corresponding share in England was 28%, in Scotland 61% and Wales 57%.

26. The Northern Franchise is the most subsidised rail franchise in Great Britain, receiving a net subsidy of £645 million in 2015. Of this amount, approximately £245 million was paid directly to the operator and approximately £400 million reflects infrastructure investments.

Figure 13: Net public rail subsidy (£m), by franchise operator, 2015



Source: GB rail industry financial information 2014-15 spreadsheet, and GB rail industry financial information 2013-14 spreadsheet.

27. Although there has been an increase in industry income over the last four years,[7] costs have been increasing at a faster rate particularly in England, which indicates that the profitability of franchised TOCs will have been

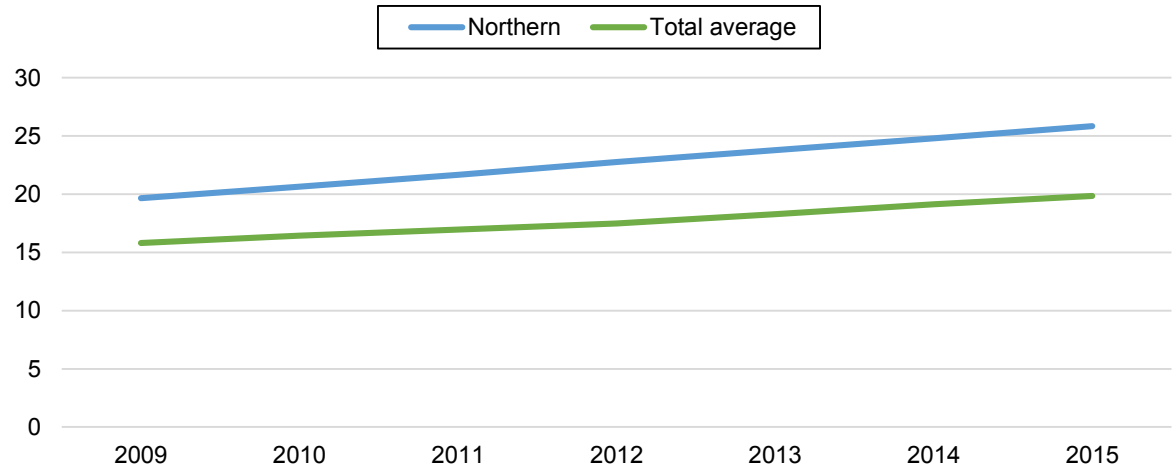
[7] Rail income (excluding subsidies) has been increasing by 6.4% CAGR, but subsidy levels have been decreasing at -4.7% CAGR, resulting in an overall revenue growth of 3.0% CAGR.

declining in recent years. During this period, industry costs across Great Britain increased by 5.4% CAGR.

Rolling stock

28. The age of passenger rolling stock is one indicator of the level of investment being made by TOCs in their services. The average age of passenger rail rolling stock used in Great Britain has been steadily increasing, reaching approximately 20 years in 2015. The fleet of the Northern Franchise has followed a similar trend:

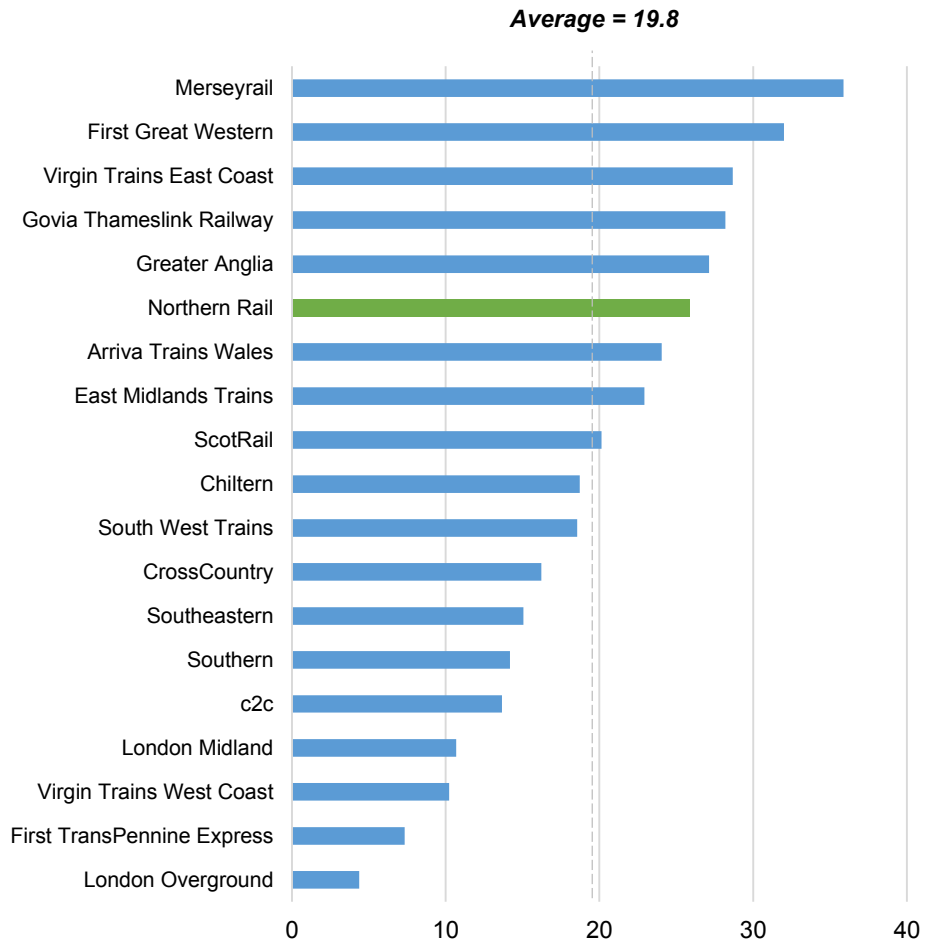
Figure 14: Average age of rolling stock for franchised TOCs and the Northern Franchise, 2009 to 2015



Source: ORR/NRT data portal, Table 2.31.

29. The average age of the Northern Franchise's fleet is 25.8 years, which is above the industry average for 2015, as shown in Figure 15 below:

Figure 15: Average age of rolling stock by franchised TOC, 2015



Source: ORR/NRT data portal, Table 2.31.
Note: Based on straight average of quarterly figures.

30. This may be one of the reasons for the DfT including as an obligation in the Franchise Agreement for the Northern Franchise the requirement for increased investment (and replacement) of rolling stock. By the end of the Northern Franchise, ARN is expected to have replaced half of its current fleet.[8]

Bus services

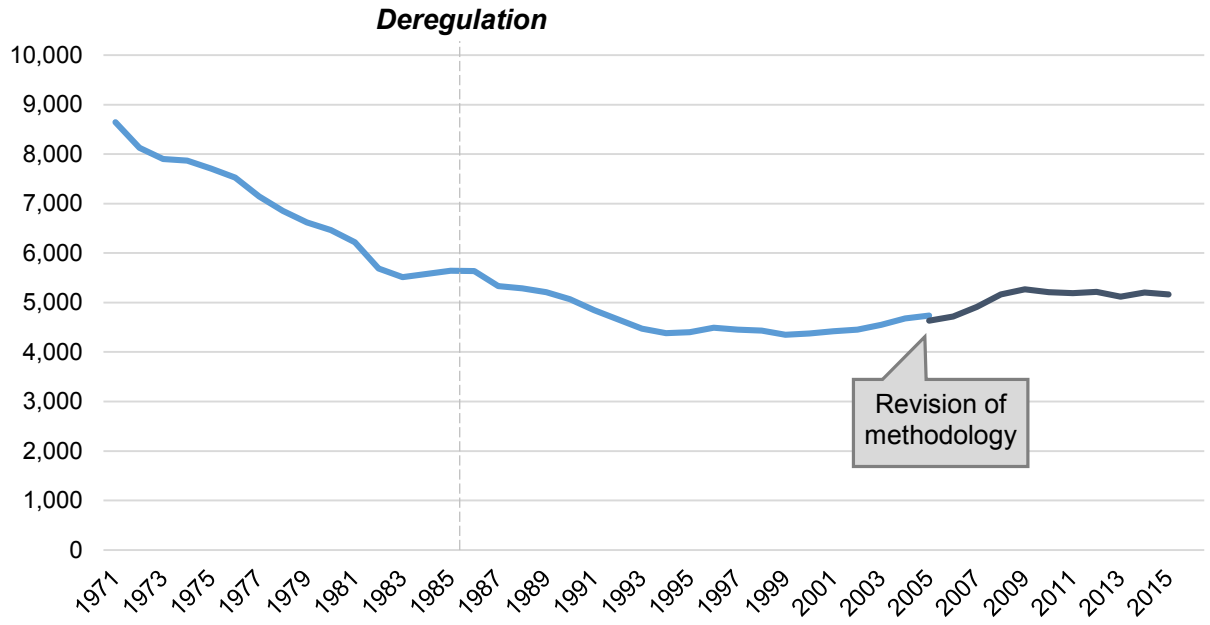
Demand levels

31. Bus use declined from the 1970s to 1990s. Following deregulation of the bus market in 1986, overall journeys increased to 5.2 billion in 2015 from 4.4 billion in 1999, reflecting an increase of 1.1% in CAGR. This period of

[8] Calculation based on number of units from Northern Franchise Agreement, Schedule 1.7, Tables 1-3.

demand growth is slower than the increase seen in the rail sector for the equivalent period (approximately, +4% CAGR).

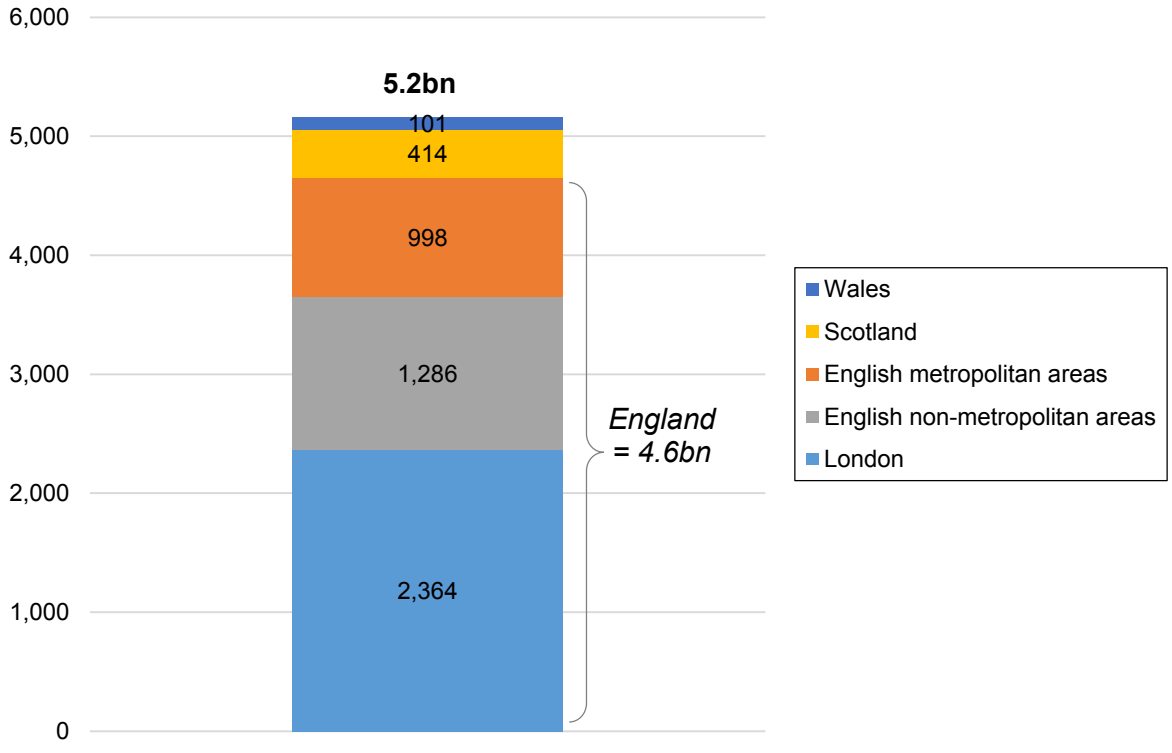
Figure 16: Passenger bus journey numbers (in millions), 1971 to 2015



Source: DfT, Table BUS0103.

32. The majority of bus journeys in Great Britain have taken place in England (4.6 billion) and approximately half of those have been in London.

Figure 17: Passenger journey numbers by bus segment (in millions), 2015

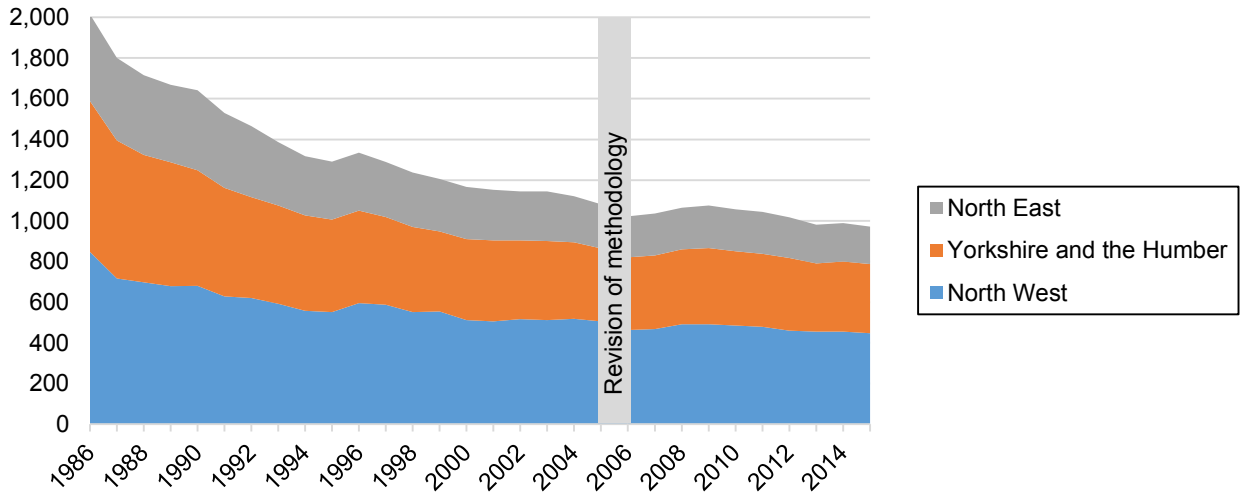


Source: DfT, Table BUS0103.

33. The increase in bus journeys since 1999 has been primarily driven by growth in London (+4.0% CAGR). Demand in non-metropolitan areas in England has been flat (0.0% CAGR), while in metropolitan areas in England, Scotland and Wales there has been a slight decrease in bus journey numbers (-1.4%, -0.2%, and -1.0% CAGRs respectively).

34. The number of bus journeys in the North of England, which is the geographic area that the Merger concerns, have also been decreasing over the past 30 years, as shown in Figure 18 below:

Figure 18: Passenger bus journey numbers in the North of England (in millions), 1986 to 2015

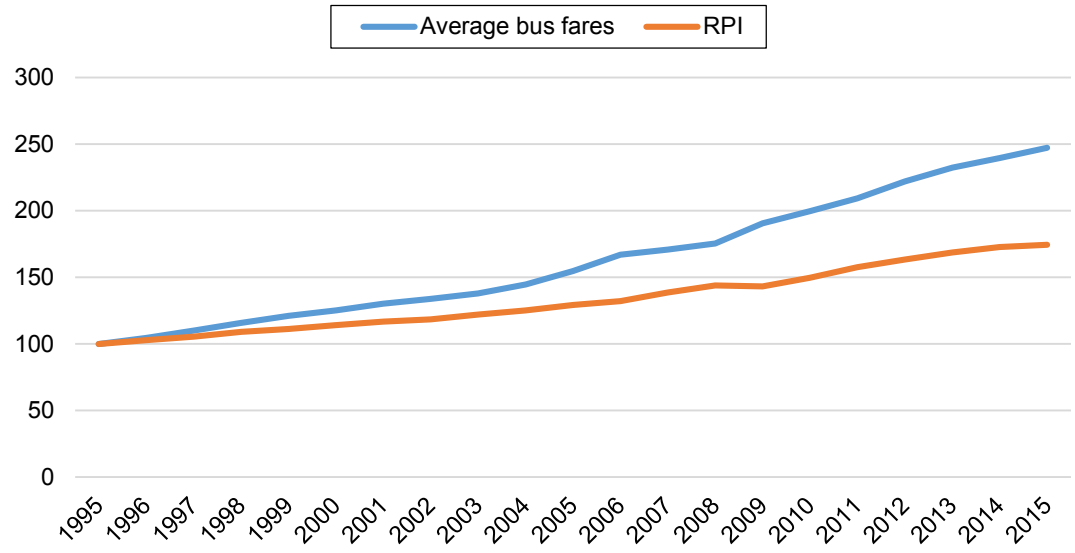


Source: DfT, Table BUS0108.

Fares

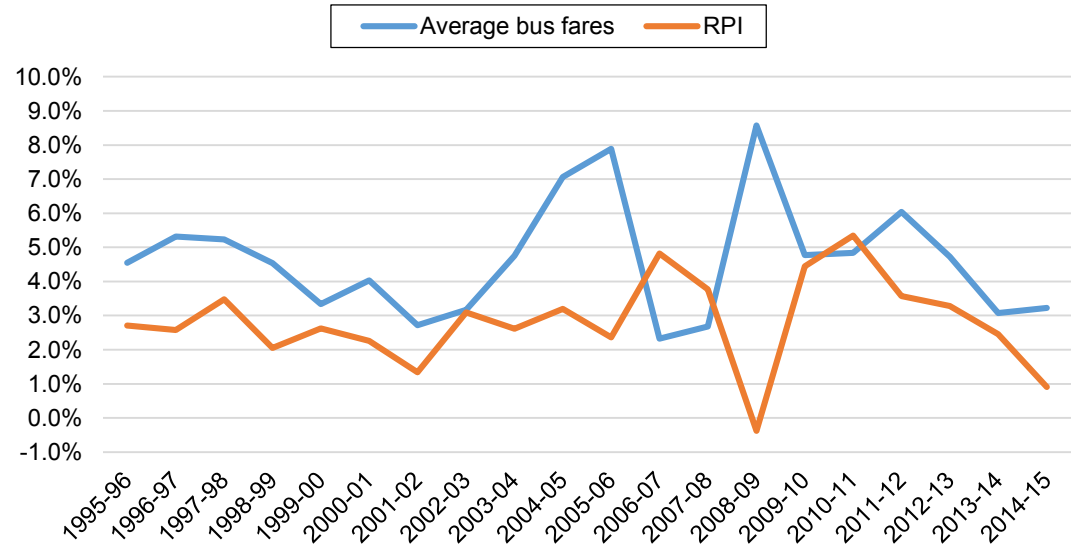
35. Bus fares are generally unregulated, and so are constrained by the levels of effective competition on routes and networks. Over the past 20 years, average bus fares in Great Britain have roughly doubled (equivalent to +4.6% CAGR), and increased significantly faster than RPI, as shown in Figure 19 below:

Figure 19: Local bus fares index and RPI comparison for Great Britain 1995 to 2015 (indexed to 100 in 1995)



Source: DfT, Table BUS0405a.

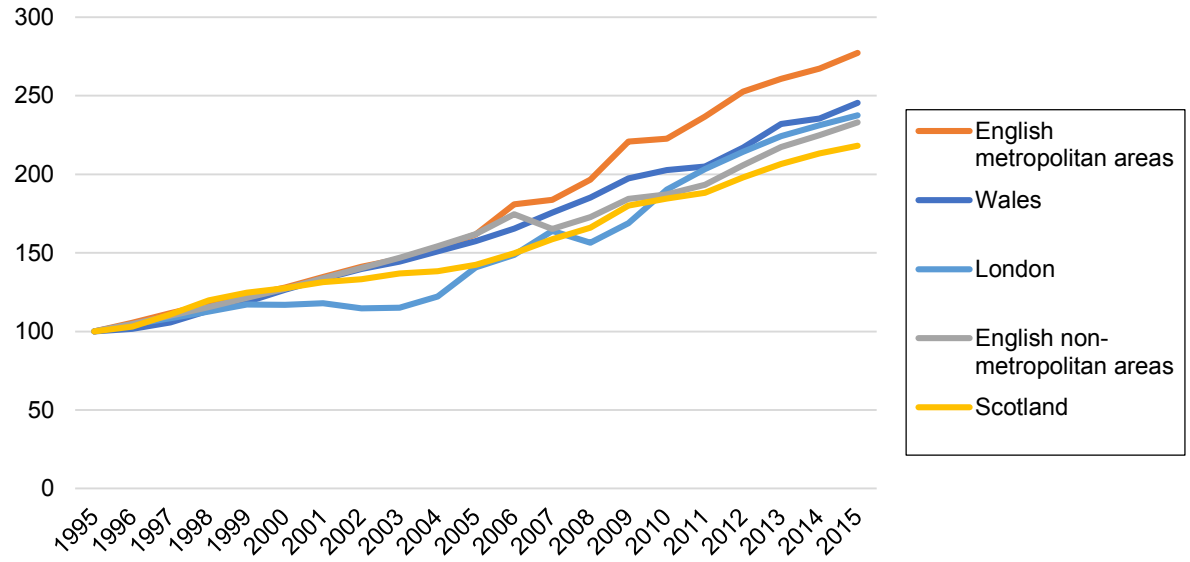
Figure 20: Local bus fares index and RPI comparison for Great Britain % change 1995 to 2015



Source: DfT, Table BUS0405a.

36. Increases in bus fares have been experienced across all segments of the bus sector, including in London (where the majority of fares are regulated through franchising). The highest price increases have been observed in metropolitan areas in England and the lowest in Scotland.

Figure 21: Local bus fares index by segment 1995 to 2015 (indexed to 100 in 1995)



Source: DfT, Table BUS0405a.

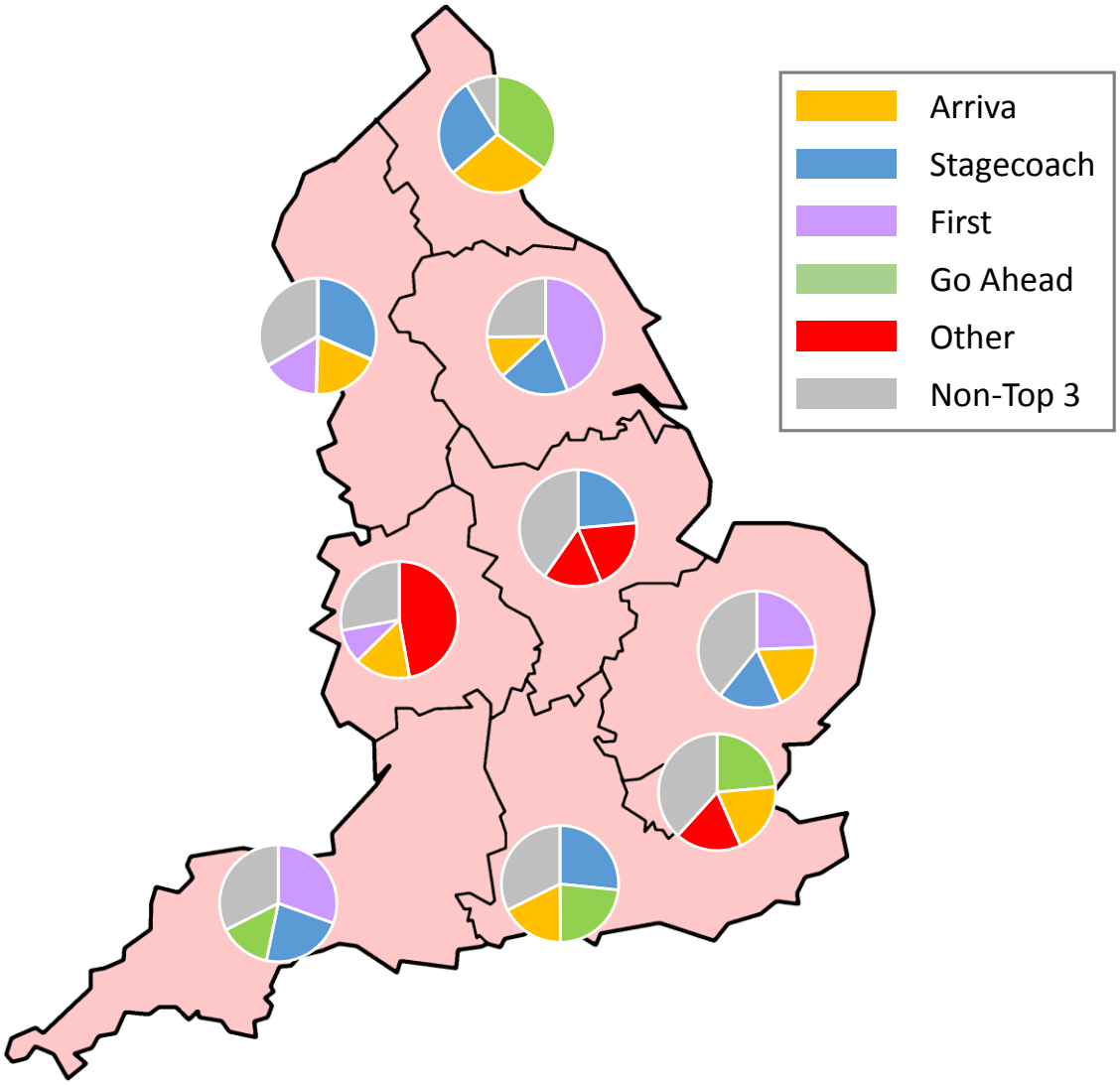
Scale of bus operators in England

37. In 2013, the three largest bus operators in England were Stagecoach (holding 19% of bus services), Arriva (holding 17.3% of bus services) and FirstGroup (holding 12.8% of bus services). Excluding London, Arriva drops to being the third largest operator with a 15.5% share.[9]

38. The level of bus operators' share of bus services in each region of England is shown in Figure 22 below:

[9] Source: DfT, Table BUS1002.

Figure 22: Bus market shares in each region of England based on volume of bus journeys, October 2013



Source: DfT, Table BUS1002.

39. However, even within regions, there are significant variations. For example, there are 14 local authorities where Arriva holds over 50% of bus services. Six of these local authorities are in the North of England, which is the region that the Merger concerns:

Table 2: Share of bus services in local authorities in England >50% (based on volume of bus journeys), October 2013

Local authority	*Arriva market share* %
North East - Darlington	98
West Midlands - Telford and Wrekin	95
South East - Medway	93
North East - Redcar and Cleveland	86
South East - Milton Keynes	73
West Midlands - Shropshire	69
West Midlands - Staffordshire	63
East of England - Luton	61
North East - Northumberland	57
North West - Halton	56
South East - Buckinghamshire	56
North West - Merseyside ITA	54
East Midlands - Derby	52
North East - Middlesbrough	52

Source: DfT, Table BUS1001b.

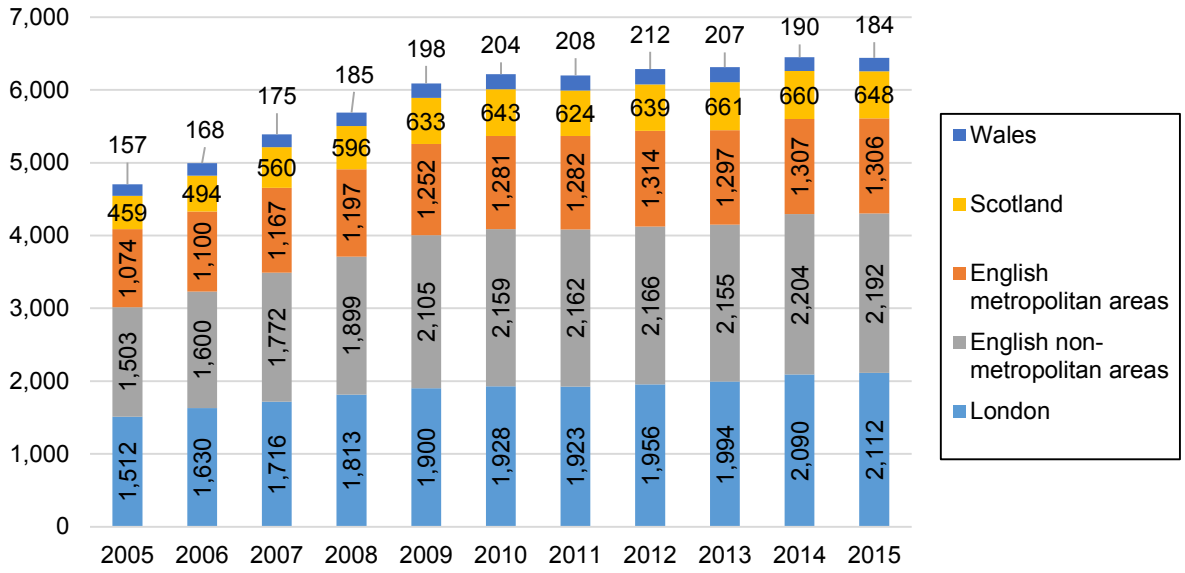
Financials (including levels of public subsidy)

Revenues

40. Bus services generate an estimated £6.4 billion of operating revenue across Great Britain, with nearly 90% of this amount realised in England. This grew at a rate of +5.7% CAGR from 2005 to 2010, but then slowed to only +0.7% CAGR from 2010 to 2015.[10]

[10] Excluding London, this is equivalent to +6.1% CAGR for 2005 to 2010, and +0.2% for 2010 to 2015.

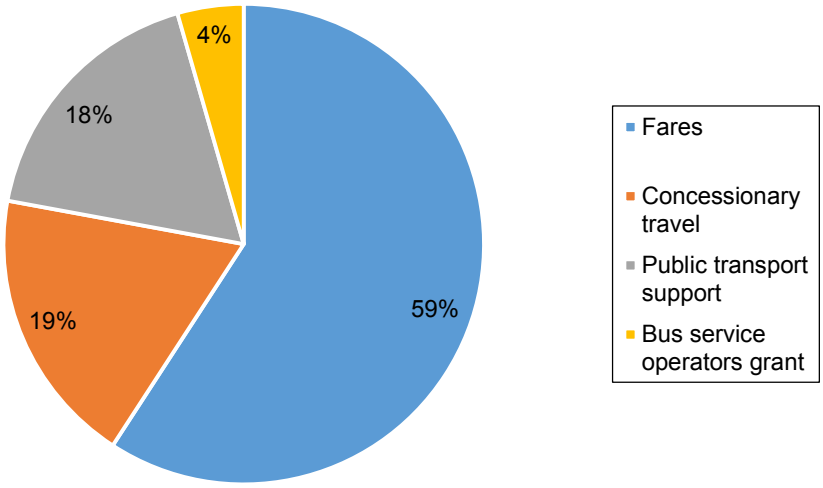
Figure 23: Operating revenue of local bus services by segment (£m), 2005 to 2015



Source: DfT, Table BUS0401a.
Note: Includes passenger fares, concessionary reimbursement, BSOG (bus service operators' grant), contracts, and other public support.

41. The breakdown of this operating revenue in England for 2015 is shown in Figure 24 below:

Figure 24: Breakdown of bus industry operating revenue in England, 2015



Source: DfT Annual bus statistics: England 2014/15; Table BUS0501a.
Notes:
Fares: Only includes fare receipts retained by bus operators. On some tendered or supported services, fares revenue is passed on to the local authority.
Concessionary travel: Total of all local authorities' net costs of statutory or discretionary concessionary bus travel.
Public transport support: Total of all local authorities' gross costs incurred in support of bus services, the bulk of which will be accounted for by payments to operators providing tendered or supported bus services.
Bus service operators' grant: Subsidy provided by central government to many operators of local bus services to help them recover some of their fuel costs.

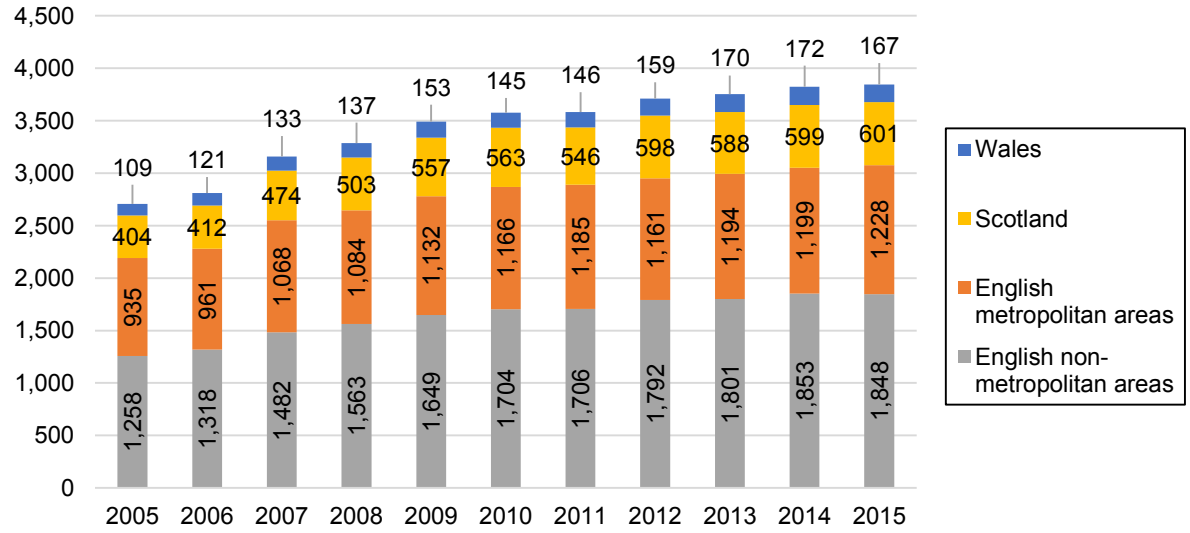
42. Of the total bus journeys in England in 2015 (4.6 billion), an estimated 1 billion involved travel through concessionary schemes (eg older and disabled passengers).[11] This represents approximately 20% of all journeys. In the North of England (including the North East, North West, Yorkshire and the Humber), the share of concessionary travel is higher than the national average (about 32%).

43. In 2015, 17% of local bus vehicle kilometres operated in England (excluding London) were supported by local authorities, rather than being commercially run. This is higher than the proportion of local authority supported bus journeys (9%).[12] The share of bus vehicle kilometres supported by local authorities in the North of England is similar to the national average (excluding London) at 16%.[13]

Costs

44. Excluding London, operating costs in the sector increased in line with operating revenues for the period from 2005 to 2010 (+5.7% CAGR), but since then have been increasing at a faster rate than revenues (+1.4% CAGR).

Figure 25: Operating costs of local bus services by segment (excluding London) (£m), 2005 to 2015



Source: DfT, Table BUS0406a.
Note: in current prices.

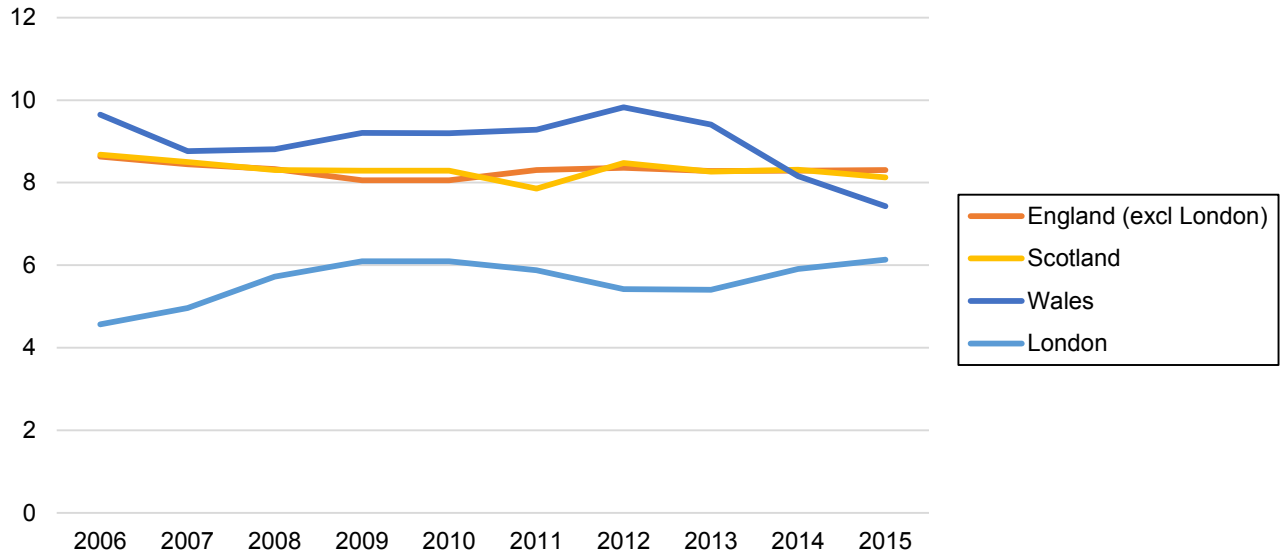
[11] DfT, Tables BUS0823. A number of Travel Concession Authorities (TCAs) have not reported these figures for 2015. In these cases, the most recent reported year's figures are used where available, although where TCAs have not reported any figures it is not possible to include these at all.
[12] DfT, Tables BUS0208b and BUS0112.
[13] DfT Table BUS0208b.

45. This shows that operating margins of bus services were relatively flat from 2005 to 2010 and have been decreasing since then. This trend was more pronounced in Wales and non-metropolitan areas in England.

Fleet

46. Bus vehicles have an average age of about eight years. However, the underlying trend since 2005 has been for the average of buses in London to increase slightly (from a lower base), this being offset by decreasing average ages in other regions, particularly Wales:

Figure 26: Average age of local bus fleet by segment, 2006 to 2015

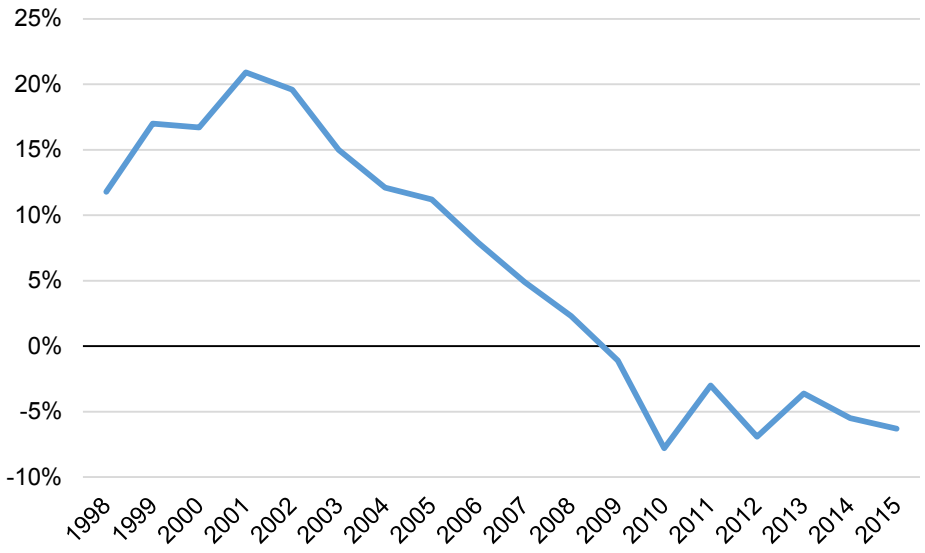


Source: DfT, Table BUS0605.

Public tenders

47. The average number of bids per tender has generally been flat with three bids submitted per tender, while like-for-like prices (for tender renewals) have been driven down in recent years, as shown in Figure 27 below:

Figure 27: Price changes in local bus contracts for subsidised services in Great Britain, 1998 to 2015



Source: DfT, Table BUS0504.

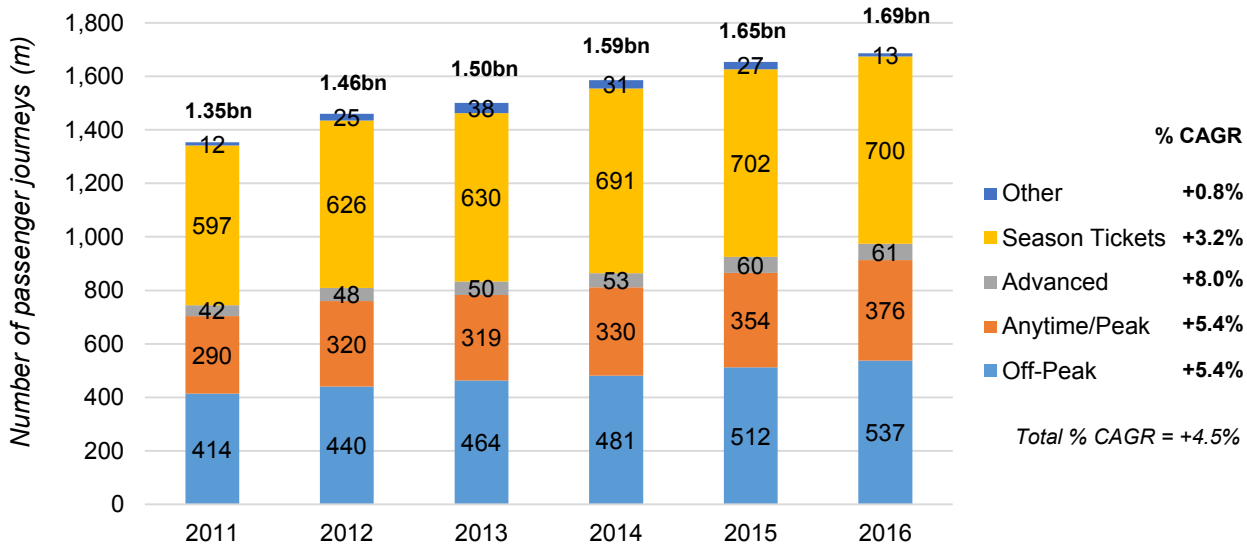
48. We note that bids are usually conducted at a local level, and so national averages could differ.

Annex 1: Additional charts

Passenger rail

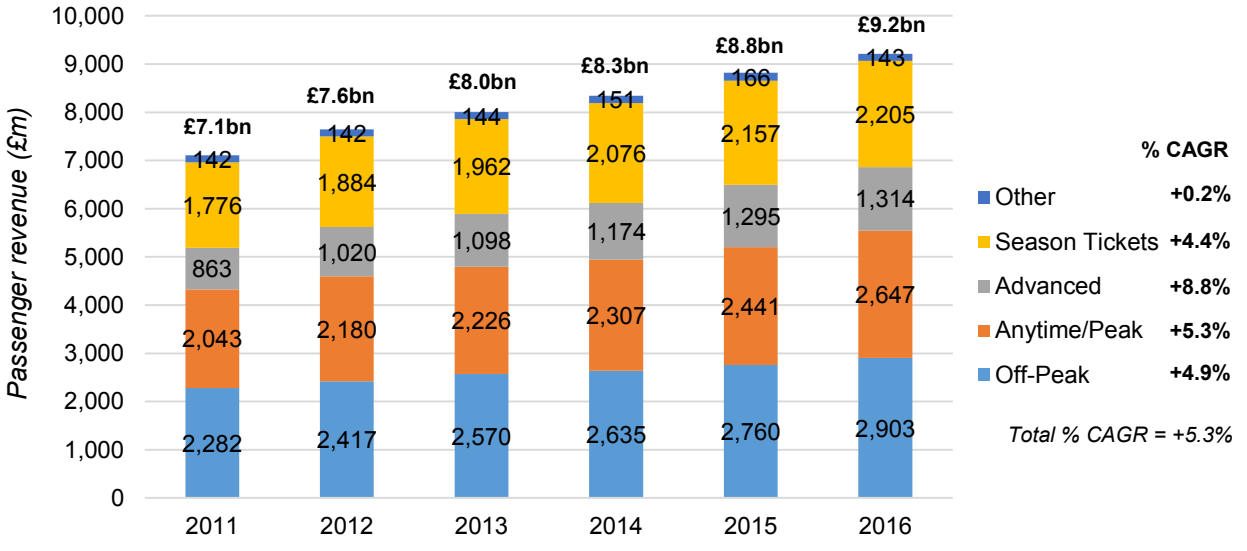
Demand levels

Figure 1: Passenger journeys by ticket type in Great Britain, 2011 to 2016



Source: ORR/NRT data portal, Table 12.7.

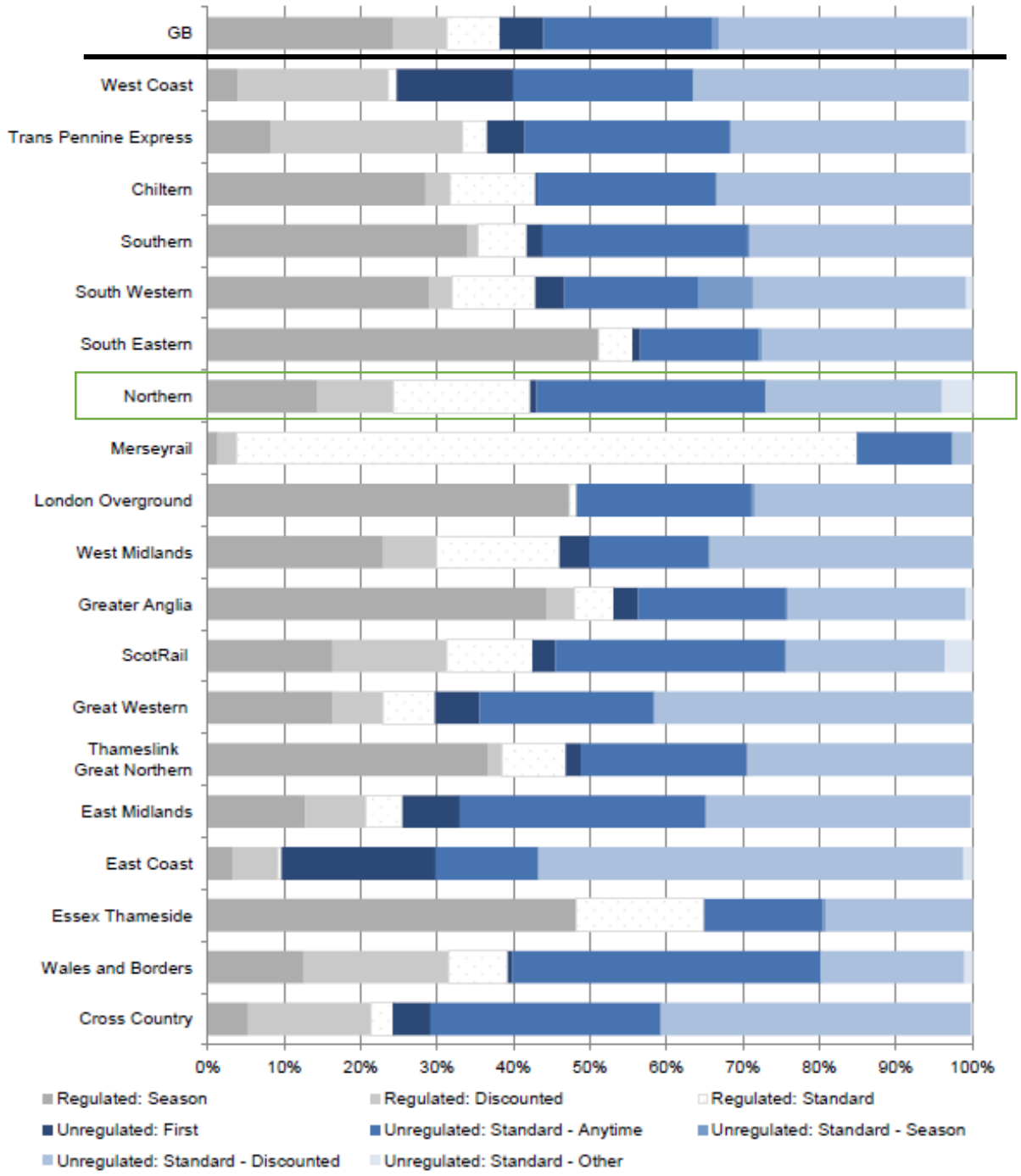
Figure 2: Passenger revenues by ticket type in Great Britain, 2011 to 2016



Source: ORR/NRT data portal, Table 12.9.

Fares

Figure 3: Contribution of fares to passenger income by franchise in 2014



Source: ORR, GB rail industry financial information 2014-15, Figure 2.3.

Financial performance of the Parties

Introduction

1. This appendix provides an overview of the financial performance of the Northern Franchise in the period prior to its award to Arriva, Arriva's plans for the new Northern Franchise and also includes an analysis of the financial performance of those Arriva UK Bus operations that overlap with the Northern Franchise.

Financial performance of the Northern Franchise

Historical performance

2. Prior to the Merger, the Northern Franchise was operated by Serco/Abellio from December 2004 to March 2016. Under the terms of its franchise agreement, the joint venture company established to run the Northern Franchise was held as a separate entity and, for this reason, filed separate statutory accounts. Statutory accounts can be used as a source of information on historical performance.

3. Serco/Abellio were also required to provide monthly management accounts to the DfT as part of their franchise obligations.[1] Management accounts provide an additional source of information on Northern Franchise's financial performance.

Statutory accounts

4. The CMA reviewed statutory accounts for the Northern Franchise from 2010 to 2014. The statutory accounts show that revenue generated by the Northern Franchise has fluctuated to a degree over the last five years. This is a reflection of the following factors:

   (a) passenger revenue has grown at 7.5% CAGR;

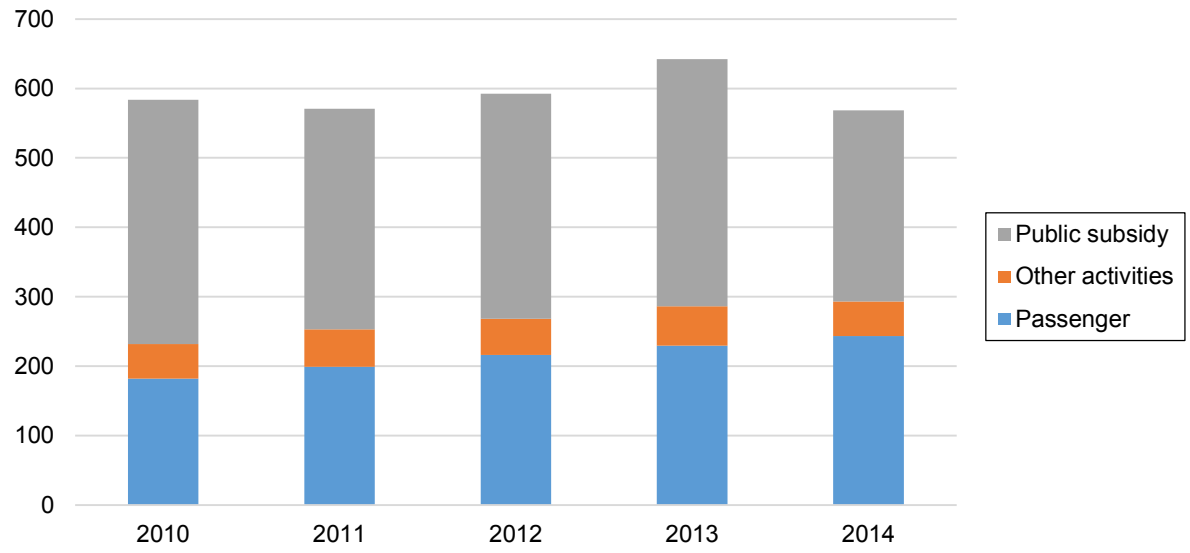
   (b) other external revenue sources were relatively flat; and

   (c) the public subsidy payable each year has fluctuated to reflect changes in Network Rail charges.

[1] Thirteen times four-week periods.

5. Figure 1 below illustrates this point:

Figure 1: Northern Franchise historical revenues and sources according to statutory accounts (£m)



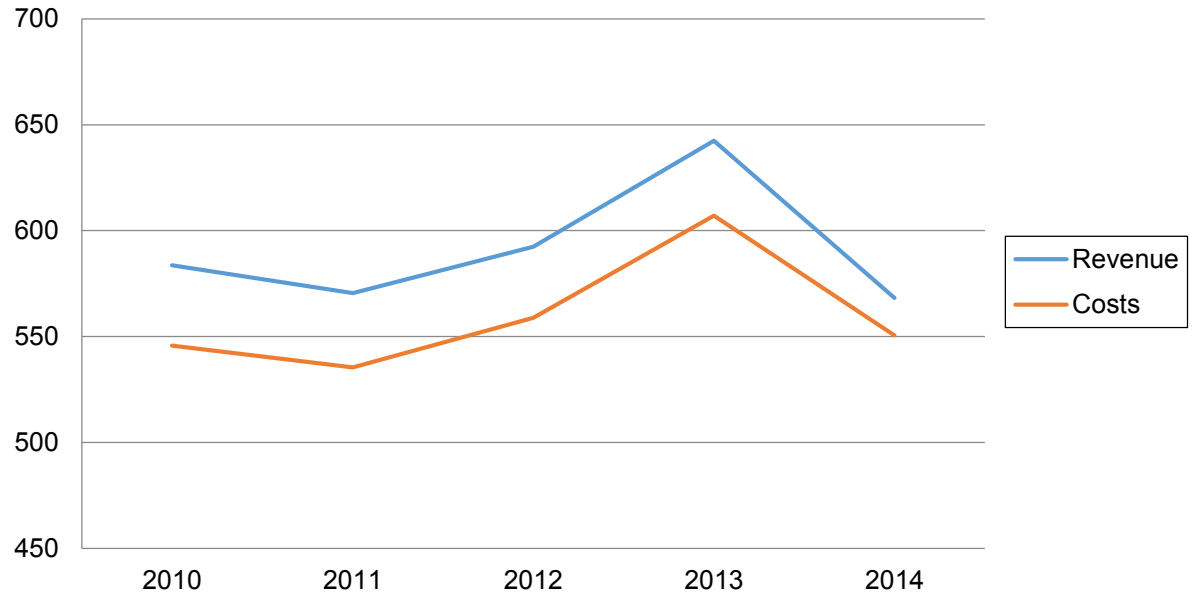
Source: Annual accounts, CMA analysis.
Note: Annual accounts run to early January in the subsequent year, for example, for 2014 the reporting period runs from 5 January 2014 to 3 January 2015.

6. The fluctuation in public subsidy relates to changes in the structure of Network Rail's charges which took place following ORR's periodic review in 2013.[2] In particular, from 2013-14, there was a large increase in Network Rail's fixed track access charge from £[✂] to £[✂] which all franchised TOCs (including Serco/Abellio) were required to pay.[3] Franchisees are protected from such increases in their franchise agreements.[4] The DfT effectively reimbursed the Northern Franchise operator for the additional costs incurred within the same year by increasing the public subsidy (in this case, from £[✂] to £[✂]).[5]

7. In Figure 2, we compare the Northern Franchise's costs and revenues for the period 2010 to 2014:

[2] The ORR's periodic review included an assessment of what Network Rail is required to achieve in the period 2014 to 2019, the funding required for this and the incentives needed to encourage delivery and outperformance.
[3] Northern Franchise historical cost breakdown according to management accounts.
[4] Summary to final determination for CP5, paragraph 120.
[5] The CMA notes that 2014 was the first year of the Northern Franchise's direct award to Serco/Abellio for which the subsidy was reduced.

Figure 2: Northern Franchise historical costs and revenues according to statutory accounts (£m)



Source: Annual accounts, CMA analysis.
Note: Annual accounts run to early January in the subsequent year, for example, for 2014 the reporting period runs from 5 January 2014 to 3 January 2015.

8. This figure shows that the cost profile broadly follows the revenues profile. However, there was an increase in costs relative to revenues over the five-year period, resulting in a declining level of margin. In 2010, the Northern Franchise generated an [✂] margin of 6.5% (£38 million), but this fell to 3.1% in 2014 (£18 million).

9. As franchised TOCs hold few assets, it is relatively difficult to assess the actual and projected margins against benchmark rates of return. However, across the industry, margins have been falling in recent years, and the average margins of 4 to 5% for the last five years on the Northern Franchise have been above the industry average. For example, Arriva UK Trains generated an EBIT margin of 2.5% in 2015.[6,7] Data from ORR for 2014 indicate that average margins across all franchisees were also about 2%, and that, in absolute terms, the Northern Franchise was the most profitable of all franchises.[8]

Management accounts

10. [✂]

[6] Earnings Before Interest and Tax.
[7] Deutsche Bahn (2015), Integrated Report, p138.
[8] Analysis and underlying data prepared by ORR and available at GB rail industry financial information 2013-14

11. [✂]

Figure 3: [✂]

[✂]

Source: [✂]

12. [✂]

Figure 4: [✂]

[✂]

Source: [✂]

Financial forecasts

13. Arriva told us that, as part of its bid for the Northern Franchise, it was required to provide an evidence-based assessment of the revenues and costs associated with the new franchise. In particular, the volumes and revenues used within the bid model were required to be based on the prescribed forecasting model, MOIRA.

14. Based on its projections, Arriva bid for the subsidy required to meet the obligations under the franchise agreement. The subsidy reflected:

    (a) projected costs of operating the Northern Franchise;

    (b) other costs (specified by the DfT for consistency);

    (c) Arriva's profit requirement; net of

    (d) projected passenger revenues.

15. Arriva's plans for the Northern Franchise require a 'step-change' in financial performance, with significant reductions in annual subsidy over the life of the franchise. [✂]. Arriva has also indicated to the CMA that it [✂]. A summary of Arriva's strategic intentions is included in Annex 1.

16. Figure 5 illustrates our analysis of Arriva's franchise bid model, based also on what Arriva told us on its expectations as regards the impact on financial performance.

17. Forecast revenue during the life of the franchise [✂]. However, this [✂].

Figure 5: Arriva's forecast revenues and source for the Northern Franchise (£m)

[✂]

Source: [✂], CMA analysis.

18. During the term of the Northern Franchise, the share of revenue will shift from [✂] being derived from public subsidy in year 1 to [✂] by year 9. For this to occur, [✂] is required.

19. In Arriva's franchise bid model, passenger miles travelled [✂]. This includes [✂], but in particular [✂], as shown in Figure 6 below:

Figure 6: Forecast growth in passenger miles on the Northern Franchise (in millions of passenger miles)

[✂]

Source: [✂], CMA analysis.

20. The CMA considers that the remaining [✂] in passenger revenue may be driven by expected [✂]. Arriva told us that '[✂]'.[9] It also has the ability and the incentives to raise unregulated fares to the maximum level that the market will bear (as may be constrained in certain instances by factors such as the regulated fares).

21. Arriva told us that it expected its costs to [✂] in total revenue, resulting in [✂] during the term of the Northern Franchise. We assume that bid was based on a [✂] EBIT margin for the life of the Franchise. Figure 7 illustrates this point:

Figure 7: Arriva's forecast costs and revenues for the Northern Franchise (£m)

[✂]

Source: [✂], CMA analysis.

22. As revenue is expected to [✂], we consider that this forecast of [✂] results in expected EBIT [✂]in absolute terms from £[✂] in year 1 to £[✂] in year 9.

Projected growth

23. As noted above, Arriva's bid was based on [✂] in the revenues of the Northern Franchise being realised over the term of the franchise, derived both from [✂] of the rail service, and also from [✂].

24. Arriva told us that, within its bid model, it was required to base revenue estimates for the Northern Franchise on the DfT's modelling. In designing its bid, Arriva also considered the risks associated with the DfT's modelling. Table 1 summarises the key changes in real revenue assumed by Arriva on a like-for-like basis.

---

[9] [✂]

Table 1: Arriva's forecast revenues for the Northern Franchise and areas of growth relative to the previous franchisee

[✂]

Source: [✂]; CMA analysis.

25. The 'Other' category in Table 1 above includes a range of initiatives valued at about [✂], including [✂], [✂], some of which Arriva told us offered [✂].

26. In summary, for Arriva to reach its financial targets and achieve its targeted EBIT margin of around [✂], the Northern Franchise needs to [✂] across a wide range of initiatives. Arriva told us that it expected much of the [✂] to result from an increase in rail patronage, reflecting the general trend in the sector over the last 20 years and taking into account the wider economic context and demographic factors.

Profit share thresholds

27. The DfT's profit share mechanism is calculated based on [✂]. However, the only [✂] included in the bid calculation are related to the [✂] as part of the franchise agreement. This results in [✂], as shown in Table 2 below:

Table 2: [✂]

[✂]

Source: [✂], CMA analysis.

28. The comparison between [✂] profit thresholds is shown in Figure 8 below:

Figure 8: [✂]

[✂]

Source: [✂], Finalised and priced Northern Franchise Agreement, CMA analysis.

29. This illustrates that the level of outperformance required to exceed the first profit share threshold is lower during the early years of the Northern Franchise, and is higher in the later years. We consider that this could be because the DfT would want to share in benefits realised in the early stages of the Northern Franchise which may not be directly attributable to any improvements made by Arriva, whereas if Arriva drives improvements over time then it would be allowed to retain more of the resulting profits.

Financial performance of Arriva UK Buses

30. Arriva UK Buses is organised into a series of divisions which operate across the different regions of Great Britain. These include:[10]

(a) Arriva North West and Wales;

(b) Arriva Yorkshire and North East;

(c) Arriva Midlands and the Shires;

(d) Arriva Southern Counties; and

(e) Arriva London.

31. This section of the appendix focuses on the operations of those divisions whose activities overlap with those of the Northern Franchise as follows:

(a) Arriva North East;

(b) Arriva Yorkshire; and

(c) Arriva North West.

Market shares

32. The DfT provides estimates of market shares held in the bus sector by the three largest operators in each local authority in England.[11] The market shares held by Arriva and its ranking are included in Table 3 below:

[10] Arriva initial submission, Annex 3, paragraph 18.
[11] Estimates available from October 2013.

Table 3: Ranking of bus market shares and estimates by local authority, October 2013

Local authority	*Arriva rank, by share*	*Arriva market share**	*Total number of passenger bus journeys, m (2014/15)*	*Implied estimate for Arriva number of bus journeys, m*
North East total	**2nd**	**29%**	**185**	**53.7**
Darlington	1st	98%	6	5.9
Redcar & Cleveland	1st	86%	4	3.4
Northumberland	1st	57%	10	5.7
Middlesbrough	1st	52%	8	4.2
Durham	2nd	39%	23	9.0
Stockton-on-Tees	2nd	35%	9	3.2
Tyne and Wear ITA	3rd	8%	120	9.6
Hartlepool	2nd	5%	5	0.3
North West total	**2nd**	**19%**	**447**	**84.9**
Halton	1st	56%	5	2.8
Merseyside ITA	1st	54%	123	66.4
Cheshire West & Chester	1st	35%	11	3.9
Cheshire East	2nd	29%	5	1.5
Warrington	2nd	10%	8	0.8
Greater Manchester ITA	3rd	5%	213	10.7
Lancashire	Not Top 3	N/A	50	N/A
Cumbria	Not Top 3	N/A	16	N/A
Blackpool	Not Top 3	N/A	11	N/A
Blackburn with Darwen	Not Top 3	N/A	4	N/A
Yorkshire & the Humber total	**3rd**	**12%**	**340**	**40.8**
West Yorkshire ITA	2nd	24%	157	37.7
North Yorkshire	3rd	15%	16	2.4
York	3rd	7%	16	1.1
South Yorkshire ITA	Not Top 3	N/A	108	N/A
Kingston upon Hull, City of	Not Top 3	N/A	23	N/A
North East Lincolnshire	Not Top 3	N/A	8	N/A
East Riding of Yorkshire	Not Top 3	N/A	7	N/A
North Lincolnshire	Not Top 3	N/A	4	N/A

Source: DfT, Table bus1002 and bus0109a.
* The market shares are calculated based on the number of vehicle journeys rather than the number of passenger journeys. This indicates the relative size of the bus segments in these different regions.

33. Annex 2 includes the details of the three largest operators in each of these local authorities.

34. Arriva is one of the three largest operators in each of these regions; however, its estimated market share differs significantly when examined at a more granular level within each of the regions concerned. In particular, there are areas in the North East where Arriva has a market share of over 80% (eg Darlington and Redcar & Cleveland) and areas within both the North East and the North West where Arriva's market share is over 50% (eg Northumberland, Halton and Merseyside).

Aggregated financial data

35. The financial performance of Arriva UK Bus in these regions is shown in Table 4 below:

Table 4: Aggregated financial measures (Arriva North East, Arriva Yorkshire, Arriva North West), 2011 to 2015 (£m, %)

[✂]

†[✂]

*[✂]

Source: [✂], CMA analysis.

36. We found that, although revenue has been [✂], operating costs have been [✂], primarily driven by [✂]. The combined effect of this is that trading profit has [✂] from £[✂] in 2011 to £[✂] in 2015, with the associated margins [✂] from [✂] to [✂].

37. EBIT margins [✂] from 2011-12, but have [✂] at between [✂]% over the past four years.

38. Arriva told us that, in terms of maintaining profitability, in recent years the main challenge bus operators faced was maintaining patronage as, unlike in the case of rail, underlying demand for bus services had been declining over time. This varied in different areas, and was therefore also likely to affect incentives to respond to competition. Arriva had [✂] in the face of these challenges.

Financial data by region

39. The trends deriving from our analysis of the aggregated financial data we have reviewed are [✂] as shown in Table 5 below:

Table 5: Key financial measures by region (£m, %)

[✂]

Source: [✂], CMA analysis.

40. We found that the financial performance of Arriva North East [✂], with a [✂] than the other regions, but also a [✂]. In spite of this [✂] over the past four years, Arriva North East still has the [✂] compared to the other regions.

Conclusion

41. As shown above, [✂]. However, it may not be appropriate to directly compare margins between bus and rail as the market context is different.

42. In order to achieve a [✂] margin on the Northern Franchise, Arriva is required to [✂], while also ensuring that it takes full advantage of the underlying economic context and demographic changes which are expected to result in [✂]. Therefore, as part of its strategy, Arriva will have to find ways of increasing demand for its rail services. Although this represents a major challenge, the Northern Franchise has been one of the most profitable franchises in Great Britain and achieved a [✂].

43. Franchised rail margins are the product of competition ‘for’ the market and the resulting monopoly on many franchised services. Northern Rail’s margins have been based on revenues which include a large amount of pass through costs[12] and fixed subsidies ([✂]).[✂].

[12] These are costs that the Northern Franchise can immediately claim back from the DfT (eg increases in access charges).

Annex 1: Summary of Arriva's stated strategy for the Northern Franchise

1. This annex is taken directly from [✂]. It was designed to provide supporting rationale for the bid by explaining the intended strategic approach in the case where Arriva was the successful bidder.[13]

[✂]

2. [✂];

3. [✂];

4. [✂];

5. [✂]; and

6. [✂].

[✂]

7. [✂]:

[✂]

8. [✂]:

[✂]

[✂]

9. [✂].

10. [✂].

11. [✂].

12. [✂].

[✂]

[13] [✂]. There were some other aspects of the strategy discussed, but these have not been included in this annex, as they appear less relevant to this case. These include the [✂].

13. [✂].

14. [✂].

15. [✂].

16. [✂].

17. [✂].

18. [✂].

19. [✂].

20. [✂].

21. [✂].

Annex 2: Bus operator market shares table

Table 6: List of market shares of the three largest bus operators by local authority, covering the North East, North West, and Yorkshire & Humber regions, October 2013

Local authority	*Est no. operators*	*Largest operator*	*1st Share*	*Second operator*	*2nd Share*	*Third operator*	*3rd Share*
North East	**67**	**Go Ahead Group**	**35%**	**Arriva**	**29%**	**Stagecoach**	**28%**
Darlington	5	Arriva	98%	Scarlet Band	2%	Procters Coaches	1%
Durham	24	Go Ahead Group	41%	Arriva	39%	Scarlet Band	9%
Hartlepool	6	Stagecoach	91%	Arriva	5%	Go Ahead Group	2%
Middlesbrough	8	Arriva	52%	Stagecoach	38%	Croft Coach Travel	5%
Northumberland	26	Arriva	57%	Go Ahead Group	11%	Perrymans Buses	11%
Redcar and Cleveland	8	Arriva	86%	Redcar & Cleveland BC (Local Authority)	7%	Leven Valley Coaches	4%
Stockton-on-Tees	10	Stagecoach	49%	Arriva	35%	Compass Royston	6%
Tyne and Wear ITA	23	Go Ahead Group	51%	Stagecoach	39%	Arriva	8%
North West	**154**	**Stagecoach**	**32%**	**Arriva**	**19%**	**First**	**16%**
Blackburn with Darwen	16	Transdev	54%	Darwen Coach Services	16%	M & M Coaches	8%
Blackpool	10	Blackpool Transport	85%	Oakwood Travel	5%	Stagecoach	5%
Cheshire East	20	D & G Coach & Bus	30%	Arriva	29%	GHA Coaches	14%
Cheshire West and Chester	16	Arriva	35%	Stagecoach	33%	GHA Coaches	16%
Cumbria	33	Stagecoach	84%	Reay's Coaches	8%	The Travellers Choice	1%
Halton	12	Arriva	56%	Halton Transport	35%	Ashcroft Travel	2%
Lancashire	70	Stagecoach	36%	Transdev	15%	Rotala	15%
Warrington	14	Network Warrington	80%	Arriva	10%	Fairbrothers Coaches	5%
Greater Manchester ITA	43	First	38%	Stagecoach	37%	Arriva	5%
Merseyside ITA	40	Arriva	54%	Stagecoach	20%	Huyton Travel	6%
Yorkshire & The Humber	**106**	**First**	**44%**	**Stagecoach**	**19%**	**Arriva**	**12%**
East Riding of Yorkshire	15	East Yorkshire Motor Services	83%	Busking Ltd	4%	Stagecoach	3%
Kingston upon Hull, City of	5	Stagecoach	65%	East Yorkshire Motor Services	33%	CT Plus	2%
North East Lincolnshire	6	Stagecoach	100%	Amvale	0%	2 Way Transport	0%
North Lincolnshire	16	Stagecoach	44%	Hornsby Travel Services	38%	East Yorkshire Motor Services	6%
North Yorkshire	40	Transdev	29%	East Yorkshire Motor Services	21%	Arriva	15%
York	15	First	69%	Transdev	16%	Arriva	7%
South Yorkshire ITA	31	First	50%	Stagecoach	36%	Wellglade	5%
West Yorkshire ITA	35	First	58%	Arriva	24%	Transdev	5%

Source: Department for Transport, Table bus1002.

Competition for the award of rail franchises

Introduction

1. This appendix examines the award of franchises which is relevant for the analysis of the competition for the market theory of harm. The award of the franchise may result in horizontal effects in rail franchise tenders if it significantly reduces competition for such tenders. This could arise if the award of the franchise significantly reduces competition between bidders in the tendering process, resulting in higher franchise costs for the DfT (eg lower premium offers or higher subsidy requirements), and a reduced overall non-price offer. Competition for the market could be reduced by the franchise award if it could lead to a reduction in the number of bidders available for future franchise competitions or it provides the Parties with an incumbency advantage relative to other bidders in future bids for franchises.

2. The award of franchises in England and Wales is managed by the DfT on behalf of the Secretary of State through a tendering process.[1,2] The DfT issues invitations to tender, inviting bids from pre-qualifying transport companies[3] to manage rail franchises and the bidders compete to become operators of the franchise for the period specified in the franchise. Therefore, competition for the award of franchises is a type of competition for the market.

3. This competition for the market is currently the principal form of competition in passenger rail services in the UK, with franchised rail services covering 99% of passenger rail miles.[4]

Background on the rail franchise process

4. There are currently 15 franchises where the procurement process is managed by the DfT, five franchise contracts are procured by other authorities

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[1] According to the functions of the Secretary of State under the Railways Act 1993 and the Railways Act 2005, as amended and in force.
[2] Rail franchising in Scotland is managed by the Scottish government as set out in the Scotland Act 1998 and the Scotland Act 2016, as amended and in force.
[3] The DfT adopted a new approach to pre-qualification by adopting pre-qualification questionnaire passports. From 15 December 2015, the following 11 companies would be allowed to bid for future franchises: Abellio Transport Group Limited, Arriva UK Trains Limited, First Rail Holdings Limited, Go-Ahead Holding Limited, Govia Limited, Keolis (UK) Limited, MTR Corporation (UK) Limited, National Express Trains Limited, Stagecoach Group Plc, Trenitalia SpA and Virgin Holdings Limited. Source: DfT (2015), Written statement to Parliament: Rail franchising: pre-qualification questionnaire (PQQ) passport award.
[4] CMA (2015), *Competition in passenger rail services in Great Britain: A discussion document for consultation*, paragraph 1.10.

(Scotland, London, Mersey). Table 1 lists the current franchises in Great Britain and their operators.

Table 1: Rail franchises in Great Britain, 2016

Franchise	*Operating name (franchised TOC)*	*Franchisee (TOC owner group)*	*Duration*
England and Wales			
Chiltern	Chiltern Railways	Arriva	Mar 2002–Dec 2021
Cross Country	CrossCountry	Arriva	Nov 2007–Oct 2016*
East Anglia	Abellio Greater Anglia	Abellio	Feb 2012–Oct 2016
East Coast	Virgin East Coast	Stagecoach/Virgin	Mar 2015–Mar 2023
East Midlands	East Midlands Trains	Stagecoach	Nov 2007–Jul 2018
Essex Thameside	c2c	National Express	Sep 2014–Nov 2029
Great Western	First Great Western	FirstGroup	Apr 2006–Apr 2019
Northern	Northern	Arriva	Apr 2016-Apr 2025
South Eastern	Southeastern	Govia	Apr 2006–Jun 2018
South Western	South West Trains	Stagecoach	Feb 2007–Jun 2017
Thameslink, Southern & Great Northern	Thameslink, Great Northern, Southern, Gatwick Express	Govia	Sep 2014–Sep 2021
TransPennine Express	First TransPennine Express	FirstGroup	Apr 2016–Apr 2023
West Midlands	London Midland	Govia	Nov 2007–Oct 2017
West Coast	Virgin	Stagecoach/Virgin	Mar 1997–Apr 2018
Wales & Borders	Arriva Trains Wales	Arriva	Dec 2003–Oct 2018
Scotland			
Caledonian Sleeper	Caledonian Sleeper	Serco	Mar 2015–Mar 2030
ScotRail	ScotRail	Abellio	Apr 2015–Mar 2025

Source: Compiled by the CMA using data from: CMA (2016), *Competition in passenger rail services in Great Britain: A policy document* and DfT (2015), Written statement to Parliament: Rail franchising: Northern and TransPennine Express franchises.
*[✂]

5. The specification and length of the franchise is determined by the relevant government body, which then awards the contract to a TOC. European law specifies that rail franchises may initially be awarded up to a period of 15 years, but may be extended in certain circumstances for a further 7.5 years.[5] The Brown Review which examined the franchising process and was published in January 2013, recommended franchise agreements should be concluded for an initial term of seven to ten years with a pre-contracted extension, in the event that agreed criteria are met, for a further three to five years.[6]

6. Prior to formally tendering a franchise, TOCs are invited to declare their intention to bid, during a pre-qualification stage. The pre-qualification stage is designed to limit competition for the franchise tender to those companies that can demonstrate the necessary competency and capability to run rail passenger services. As part of this process, TOCs are required to demonstrate at least five years' experience in transport management, with two years specific rail experience.[7]

7. TOCs identified as pre-qualified are issued with a formal invitation to tender, which sets out the detailed terms of the proposed franchise agreement. TOCs

[5] Article 4(3) and (4) of Regulation (EC) No 1370/2007.
[6] See DfT (2013), *The Brown review of the rail franchising programme*.
[7] See DfT (2014), *Specialist technical advice for rail framework: pre-qualification questionnaire*.

then compete for the franchise on the basis of the amount of funding they would require (or the premium they would be prepared to pay), as well as on a number of important parameters of the offer to passengers, such as frequency of services, journey times, service specification (eg station stops) and aspects of service quality.

8. Bids are scored according to the evaluation criteria set out in the invitation to tender. In the case of the Northern Franchise, the assessment criteria consisted of two components: a financial robustness evaluation, and a quality and deliverability score.[8] The financial robustness evaluation models the risk adjusted net present value (NPV) of the proposed bid. The quality and deliverability score requires bidders to submit a delivery plan, which is assessed against the weighted criteria set out in Table 2.

Table 2: Northern Franchise delivery plan evaluation weightings

(A) Delivery Plan	*(B) Sub-Plan*	*(C) Sub-Plan Weighting*
Delivery Plan 0: Bid Summary		N/A
Delivery Plan 1: Franchise Management	DP1.1: Leadership and management	3.50%
	DP1.2: Mobilisation	0.50%
	DP1.3: Stakeholder partnering	3.00%
	DP1.4:Sustainability and environment	3.00%
	DP1.5: Innovation	2.00%
	DP1.6: Community engagement	2.00%
Delivery Plan 2: Train service and performance	DP2.1: Train service	20.00%
	DP2.2: Rolling Stock	17.50%
	DP2.3: Performance	7.50%
	DP2.4: Supporting infrastructure change	5.00%
Delivery Plan 3: Revenue	DP3.1: Marketing and branding	5.00%
	DP3.2: Fares, ticketing and revenue protection	11.00%
Delivery Plan 4: Customer experience and stations	DP4.1: Customer experience	12.00%
	DP4.2: Stations	8.00%

Source: Northern Franchise invitation to tender.

9. The franchise is awarded to the bidder that achieves the highest final score, calculated as a combination of the final bid NPV and the quality score of the bidder's delivery plan.[9] Table 3 shows the DfT's bid score assessment for the Northern Franchise competition.

Table 3: Northern Franchise bid score assessment

[✂]

Source: DfT.

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[8] Northern Franchise invitation to tender.
[9] Specifically, the Final Score is calculated as follows:
Final Score = P + (n x Q)
Where
P = a score equivalent to the bidder's risk adjusted NPV;
Q = a quality score relating to the assessment of the bidder's delivery plan; and
n = 28.

Competition for the market theory of harm

10. In markets that are characterised by bidding or tenders, as in the case of rail franchises, bidders compete for the right to be the preferred provider of the contracted products or services. This is also known as a form of competition for the market, since the successful bidder acquires the right to be the sole supplier of the contract requirements. In such circumstances, the incentives to compete arise from the tendering entity's ability to award the contract to alternative suppliers. Bidders are incentivised to offer improved terms on their bid when competition is fierce because bidders expect competitors to submit competitive bids. Overall, this process of competitive tendering results in improved terms of the supply for the customer, such as lower prices or improved quality.

11. Paul Klemperer's paper for the CC on bidding or tender competition uses 'ideal bidding markets' as a starting point, against which, features and expected outcomes of real world markets are compared. The necessary conditions for 'ideal bidding markets' to exist are as follows:[10]

    (a) Competition is winner takes all – the bidder wins all or none of the contract. Therefore, there is no smooth trade-off between the price offered and the quantity sold.

    (b) Competition is 'lumpy' – each contract is large relative to size of bidding firms, so that the value of each contract is very significant to the competing firms.

    (c) Competition begins afresh for each contract, and for each customer – there is no repetition of elements of the contest, by which the outcome of one contest determines another.

    (d) Entry to the bidding market is easy.

12. These features are important since where they are all present, a small number of competitors (in the extreme two competitors) may be sufficient to achieve competitive outcomes (eg bid prices are close to marginal costs).[11] Therefore, the assessment of the effects of mergers in markets characterised by bidding or tender competition considers the extent to which the features of

[10] See Klemperer, P (2005), *Bidding markets*, paragraph 2.1.
[11] Klemperer (2005) notes that it may be uncommon for bidding markets to meet all four criteria, instead, it is likely that bidding markets will cover a wide spectrum from being close to the ideal 'bidding market' described, to being very far away from it.

'ideal bidding markets' exist in the relevant market and the effect of the merger on these.

13. Bidding markets may diverge from this ideal state in the following important ways:

(a) Increased information asymmetry – winning bidders may gain advantages over losing bidders, such as valuable information about how to structure a bid in the future, or from knowledge gained though the day-to-day operation of the tendered contract. This could negatively affect future tenders if it leads to fewer bidders (eg, because other firms are at a disadvantage to the incumbent) or the incumbent competes less fiercely in the knowledge of these advantages over competitors.

(b) Increased economies of scale – an incumbent with significant market share may be able to benefit from increased economies of scale, or exert a degree of pricing power over suppliers. This may lead to the incumbent being able to operate a rail service at a lower cost, relative to potential competitors. This, in turn, could allow the incumbent to propose more favourable terms in its bid offer for future rail franchise tenders. While this may be beneficial to the customer in the short term, in the long term barriers to entry may become more significant and deter entry by competitors.

14. We consider whether and how the rail franchise bidding process departs from such 'ideal bidding markets'.

Rail franchises and 'ideal' markets

15. Competition for UK rail franchises might satisfy conditions (a) – competition is winner takes all and (b) – competition is lumpy, as a single bidder is selected to service the contract and the size of the contract is large relative to bidding firms.[12] However, the literature states that condition (c) – competition begins afresh, is not likely to apply if there is repetition of an auction or bidding process. This is because the winner of the contract may learn valuable information about how to bid in future, for example how to structure a successful bid, or how best to position itself against rivals. Moreover, through operating the rail franchise, the winner may gain a learning-by-doing advantage. This information advantage may disincentivise entry for other firms on future franchise competitions. If the franchise bidding market process fails (c) due to the periodic repetition of tendering, it is likely to fail (d) – ease

[12] According to Arriva's bid model for the Northern Franchise, revenue over the length of the franchise is estimated to be around [✂].

of entry, for the same reasons. Additionally, there are other factors that may restrict entry into the bidding market, such as high costs of mounting a bid, and requirements to provide evidence of competency in operating rail services.[13]

16. Therefore, rail franchise competitions are not examples of 'ideal' bidding markets, despite displaying certain features of these. This means that the number and scale of competitors are important predictors of tender outcomes.

Arriva's submissions

17. Arriva submitted[14] that the award of the Northern Franchise would not affect competition for the award of future rail franchises, as it did not confer material incumbency advantages to Arriva, for the following reasons:

    (a) The franchise award would not lead to a reduction in the number of bidders for future franchises. Arriva would continue to bid in future franchise competitions against a number of multi-franchise bidders, such as Govia, Stagecoach, FirstGroup, Abellio and Virgin Group. The rolling nature of the rail franchising process also facilitated this process.

    (b) Arriva's combined share of passenger rail franchises after the award and the increment were not significant. Arriva estimated that post-award combined share was under 25% and the increment below 10%.

    (c) Rail franchise processes were arranged so as to minimise incumbency advantages. For example, after the award of a franchise, the new franchisee took over all the staff and almost all of the assets to allow the operation of the franchise.

18. Furthermore, Arriva submitted[15] that the franchise agreement contained provisions that prevented the conferral of material incumbency advantages for future rail franchise competitions:

    (a) Contractualisation of critical resources such as restricting the use of the train fleet prescribed for the Northern Franchise and as such precluding its use on other current or future franchises.

[13] Bidders must have at least five years' experience of transport management, with at least two years' experience in rail operations.
[14] [✂]
[15] [✂]

(b) Maintaining the Northern Franchise as a separate business to Arriva's other businesses, so that there can be a clean transfer of the business at the end of the current franchise to the new operator.

(c) Requirement to deal on an arm's length basis: The franchise agreement requires that every contract ARN enters into in connection with the Franchise Agreement, including with other Arriva business units, be on a bona fide arm's length basis. Arriva submitted that this prevented it from using the Northern Franchise to benefit in respect of other current or future franchise operations.

19. Arriva submitted[16] that to the extent that there were benefits to its successful bid for the Northern Franchise, these were limited and confined to:

(a) Some reduction in bid preparation costs: Arriva submitted that while it expected to gain some expertise it could employ in future bids, other TOCs had similar expertise or could obtain it by hiring external consultants. [✂]

(b) Arriva may enjoy some reputational benefits from delivering the ambitious targets set in the Franchise Agreement. However, Arriva stated that this consideration would apply in relation to any franchise agreement. In addition, the transparent nature of the rail industry (and the public nature of franchise agreements) meant that other operators would have some visibility in respect of Arriva's planned measures to deliver its obligations as part of the Northern Franchise and could seek to replicate them in other franchise bids.

Assessment of the theory of harm

20. Previous CC and OFT cases have assessed competition in imperfect bidding markets by considering potential advantages gained by incumbents. This approach is similar to that set out in academic papers.[17] We consider each of these conditions below.

Number of bidders for rail franchises

21. There are eight transport companies currently running the 15 rail franchises that the DfT is responsible for letting and managing, with some of these run under joint venture arrangements (for example the East Coast mainline services are operated jointly by Virgin and Stagecoach). Arriva currently

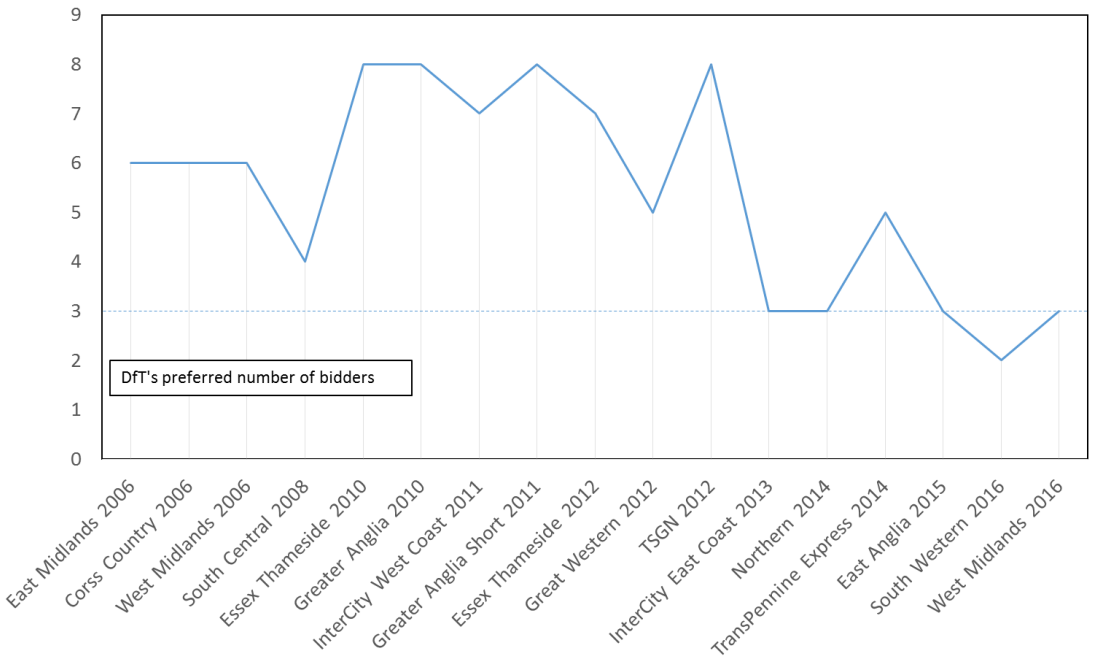
[16] Arriva submission in response to question H.4 of the Market and Financial Questionnaire 24.06.2016.
[17] Transatlantic Divergence in GE/Honeywell: Causes and Lessons.

operates four rail franchises: Chiltern, CrossCountry, Arriva Trains Wales and Northern.

22. Figure 1 shows that the number of firms applying to pre-qualify for franchises has fallen over time. This reduction in the number of firms seeking to pre-qualify has translated into fewer bids being submitted for recent franchises. The DfT received three bids for each of the first five franchise competitions it has completed since the programme was relaunched in 2013, with just two firms currently bidding for the South Western franchise.[18] The previous ten competitions received an average of four bids.[19] The competition for the Northern Franchise received three bids from Abellio (one half of the incumbent joint venture), Arriva and Govia.

23. Arriva noted[20] that there were a range of factors that would affect a TOC's decision to bid for franchises. In particular, the very significant and increasing costs of bidding the high demands that the bidding process placed on specialist and senior internal resource and the fit of the franchise (eg in terms of risk profile, revenue opportunities, reputation and duration/end date) all played a strong role in bidding decisions.

Figure 1: Applicants seeking to pre-qualify for franchises



Source: DfT.

[18] Stagecoach (incumbent) and FirstGroup.
[19] House of Commons (2016), *Reform of the rail franchising programme: Twenty-first Report of Session 2015-16*.
[20] [✂]

Ability of bidders to win tenders

24. Of the six completed franchise competitions since 2011, each have been won by operators already operating rail franchises in the UK. Of those six franchise competitions, four have resulted in a change of operator.[21] Table 4 shows the TOCs' share of passenger train kilometres and how this has changed over 2010 to 2016 as a result of franchise awards to new operators.

Table 4: Passenger train km % 2010 to 2016

	Passenger train km %					
Franchisee (TOC owner group)	*2010-11*	*2011-12*	*2012-13*	*2013-14*	*2014-15*	*2015-16*
Arriva	13.26	13.39	13.46	13.40	13.29‡	22.85‡
Abellio	13.45	13.63*	20.68*	20.84	20.89‡	15.29‡
Stagecoach	16.79	16.55	16.35	16.35	16.19†	20.20†
Virgin	3.68	3.61	3.58	3.57	3.48†	3.89†
National Express	8.23	8.11*	1.38*	1.36	1.34	1.40
FirstGroup	10.36	10.40	10.33	10.21	10.50§	12.51§
Govia	23.69	23.59	23.51	23.55	23.38	23.59
Serco	4.68	4.63	4.61	4.61	4.61‡	0.28‡
Keolis	1.76	1.72	1.71	1.71	1.95§	0.00§
EastCoast	4.11	4.38	4.40	4.39	4.38†	0.00†

Franchise award	
*	Greater Anglia
†	InterCity East Coast
‡	Northern Rail
§	TransPennine Express

Source: Compiled by the CMA using ORR statistical data.

25. Nash and Smith, in their assessment of the performance of UK rail franchising, suggest there has been a relatively high level of competition for franchises in Great Britain.[22] Nash and Smith note that even when an incumbent has operated a relatively large number of passenger rail franchises, as in the previous case of National Express, a sustained incumbency advantage has not been witnessed.[23] Instead, most TOCs have changed hands at refranchising. The Northern Franchise award sees a change in operator from Serco/Abellio to Arriva, with Arriva successfully winning the franchise against competition from one half of the incumbent partnership, Abellio.

26. The DfT noted that the franchise process is designed in such a way as to minimise any possible incumbency advantage. Incumbent operators are contractually obliged[24] to provide all information required to re-let the franchise. This is to ensure that all relevant information is available to all bidders in advance of the invitation to tender. Furthermore, rail franchise awards are subject to EU regulation that dictates that competitors are treated

[21] See Annex 1, Table 1.
[22] Nash, C, Smith, A (2006), *Passenger Rail Franchising - British Experience*.
[23] After the first round of rail franchising during 1994 to 1997, National Express operated five franchises. National Express now operates just one franchise.
[24] Under Schedule 15 of the franchise agreement.

equally and fairly.[25] As such, no weight is given by the DfT to the performance of incumbents during the tendering process.[26,27]

27. It is, therefore, unlikely that competing firms would consider that Arriva has an information advantage due to its award of the Northern Franchise and not enter the bidding market on this basis.

Impact of the Northern Franchise award on passenger revenue and franchised passenger rail kilometres

28. Arriva submitted passenger revenue figures for its franchise operations. Table 5 shows that taking into account Arriva's current franchises, the Northern Franchise would result in Arriva having [10-20%] of total franchise passenger revenue in 2014-15. Arriva stated that the re-mapping of TransPennine services would add [0-5%] to [10-20%], resulting in [10-20%] share of passenger rail revenue. Arriva anticipated no other material changes to its passenger revenues.

Table 5: Arriva passenger revenue

Passenger revenue (millions)	*2012-13*	*2013-14*	*2014-15*
Arriva Trains Wales	[✂]	[✂]	[✂]
Chiltern Railways	[✂]	[✂]	[✂]
CrossCountry	[✂]	[✂]	[✂]
Northern	[✂]	[✂]	[✂]
Industry total	[✂]	[✂]	[✂]
% of total (exc Northern)	[✂]	[✂]	[✂]
% of total (inc Northern)	[✂]	[✂]	[✂]

Source: [✂]. Excludes concessions such as the Tyne & Wear Metro services.

29. Table 6 shows franchised passenger train kilometres by TOC owner, compiled by the CMA using the ORR's passenger rail use statistics.[28] Following the award of the Northern Franchise, Arriva will operate [✂]. Two TOC owners, Govia and Stagecoach, operate a similar amount, and Abellio and FirstGroup operate [✂]. Firms operating with a relatively smaller share of franchised passenger train kilometres, such as Virgin and Serco, have recently entered into joint ventures to win franchise contracts.[29]

[25] EU Regulation 1370/2007.
[26] However, performance in the operation of previous rail franchises is considered at the pre-qualification stage, whereby firms must detail their experience in operating rail services.
[27] [✂]
[28] ORR passenger rail use statistical release 2015-2016 Q4.
[29] Virgin and Stagecoach currently jointly operate both the East and West Coast franchises. Serco-Abellio jointly operated the Northern Franchise from 12 December 2004 to 31 March 2016.

Table 6: Franchised passenger train kilometres by operator (2016, post-Northern Franchise award)

Franchisee (TOC owner group)	*Passenger train km (m)*	*As % of passenger train km*
Govia	29	23.52%
Arriva	28.5	23.11%
Stagecoach*	24.695	20.03%
Abellio	18.7	15.17%
FirstGroup	15.4	12.49%
Virgin*	4.705	3.82%
National Express	1.9	1.54%
Serco	0.4	0.32%

Source: ORR passenger rail use statistical release 2015-2016 Q4.
*Where franchises are jointly operated, as in the case of the East and West Coast Mainlines, passenger rail km is calculated according to the firm's ownership share of the franchised TOC.

30. The passenger train kilometres analysis in Table 6 suggests it is unlikely the Merger will result in significant scale advantages for Arriva, relative to other TOCs. Several firms operate with a comparable share of passenger train kilometres and should remain well placed to compete for future tenders. Furthermore, entering into a joint venture with other TOC owners provides an opportunity for firms operating with less passenger rail kilometres to compete successfully in the bidding market for rail franchises.

31. Therefore, it is the CMA's view that the Merger is unlikely to provide Arriva with significant incumbency or economies of scale advantages when competing in future franchise competitions.

DfT's views

32. [✂], the DfT was content that the quality of bids had remained strong.[30] The DfT argued that [✂].[31]

33. [✂]. In recent franchise competitions where there had been at least three bidders,[32] the DfT had not witnessed a decline in the competitiveness or quality of bids.

34. [✂].[33]

Third party views

Third parties did not express concerns that the Merger would result in a more advantageous position for Arriva during future franchise competitions.

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[30] [✂]
[31] [✂]
[32] East Coast (2014), Northern (2015), TransPennine Express (2015), East Anglia (2015).
[33] Recent examples include Stagecoach withdrawing from the joint venture with Abellio in the East Anglia rail franchise competition (2015), and MTR withdrawing from the West Midlands competition (2016).

Annex 1

Table 1: Franchise bidders and winners 2006 to 2014

*Year**	*Franchise*	*Winner*	*Incumbent*	*Pre-qualified bidders*
2006	East Midlands	Stagecoach	National Express	Stagecoach Arriva FirstGroup National Express
2006	New Cross Country	Arriva	Stagecoach/Virgin	Arriva FirstGroup National Express Virgin
2006	West Midlands	Govia	National Express	Govia MTR Serco/Ned Railways John Laing
2008	South Central	Govia	Govia	Govia National Express Ned Railways Stagecoach
2011	InterCity West Coast	FirstGroup†	Virgin	Abellio FirstGroup Virgin Keolis/SNCF VTI Veolia/Trenitalia
2011	Greater Anglia	Abellio	National Express	Abellio Go-Ahead Stagecoach
2012	Essex Thameside	National Express	National Express	Abellio FirstGroup MTR National Express
2012	Thameslink, Southern Great Northern	Govia	Govia	Abellio FirstGroup Govia Stagecoach
2013	InterCity East Coast	Stagecoach/Virgin	East Coast	FirstGroup Keolis/Eurostar Stagecoach/Virgin
2014	Northern Rail	Arriva	Abellio/Serco	Abellio Arriva Govia
2014	TransPennine Express	FirstGroup	FirstGroup/Keolis	Arriva FirstGroup Keolis/Go-Ahead Stagecoach

Source: CMA
*Year refers to the commencement of the franchise tender process.
†The FirstGroup award was subsequently cancelled after technical flaws in the bidding process were discovered. A management contract was subsequently awarded to Virgin Trains for the franchise until November 2014. Subsequently, it was agreed with Virgin Trains that the franchise would be extended, currently until April 2018.

Assessment of overlapping rail services

Introduction

1. In this appendix we set out our detailed competitive assessment of the seven overlapping rail flows that we examined in detail following the application of filters and on which we provisionally conclude that the Merger has not resulted in or may not be expected to result in an SLC.

2. In Annex 1, we describe MOIRA analysis. In Annex 2 we include a map illustrating the geographic area of Northern Franchise rail services.

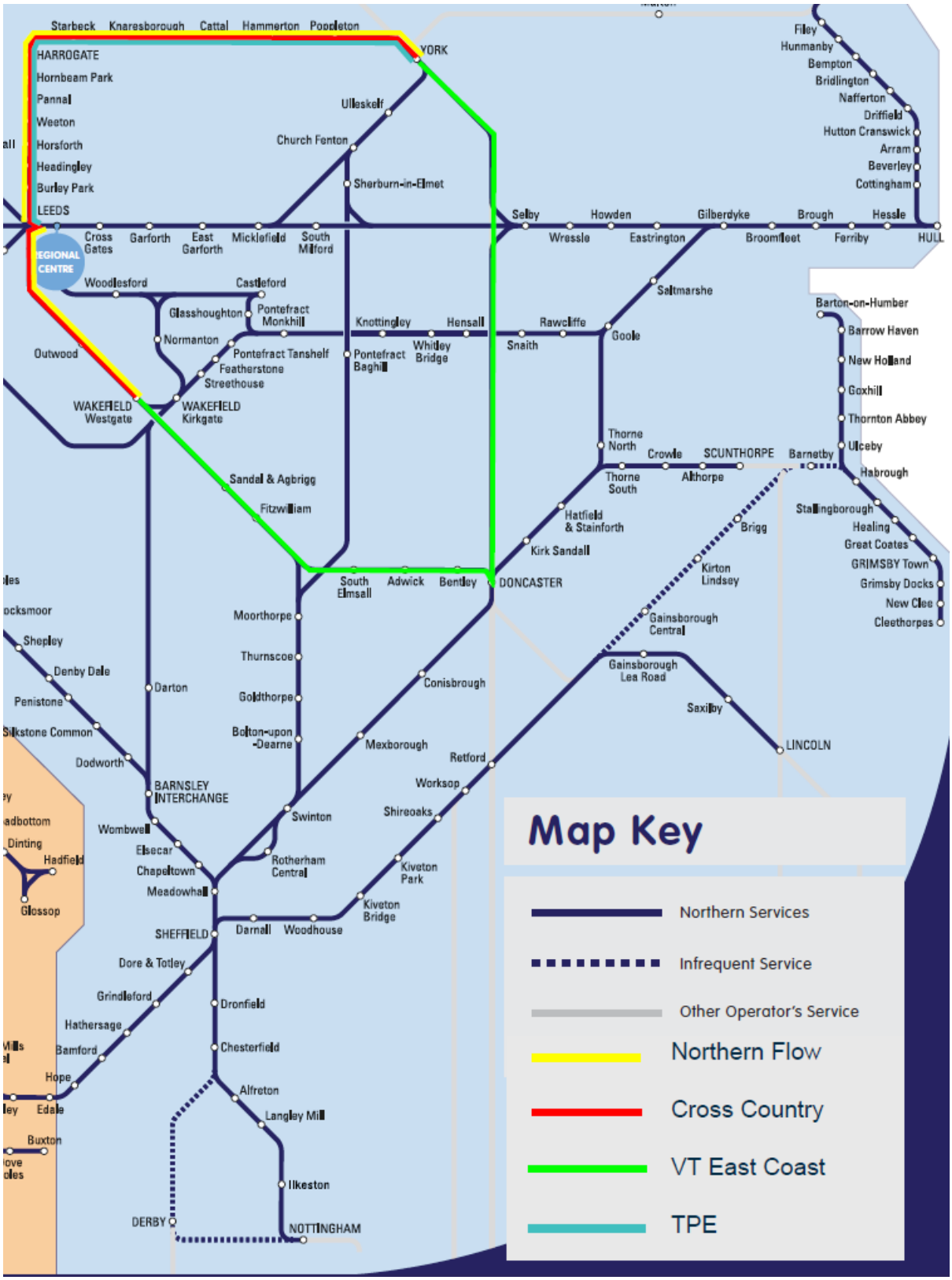
Flow-by-flow assessment – Yorkshire flows

3. In this section, we set out our detailed competitive assessment of the overlapping rail flows in Yorkshire on which we provisionally conclude that the Merger has not resulted in or may not be expected to result in an SLC.

York to Wakefield

4. Northern Franchise services overlap with the CrossCountry services between York and Wakefield, as indicated in Figure 1.

Figure 1: Map of York to Wakefield flow



Source: The Parties. 'Northern Flow' refers to overlap between the Northern Franchise and other Arriva TOCs.

5. CrossCountry provides direct services, while the Northern Franchise services are indirect (the Northern Franchise serves the Leeds to Wakefield portion of

the indirect journey in combination with TPE).[1] There are other indirect services on the flow through a combination of TPE and VTEC services.

6. Table 1 sets out service frequencies on the flow.

Table 1: Number of weekly train services between York and Wakefield

	Direct				*Indirect*			
	Weekday peak	*Weekday off-peak*	*Saturday*	*Sunday*	*Weekday peak*	*Weekday off-peak*	*Saturday*	*Sunday*
Northern	0	0	0	0	5	11	15	0
Grand Central	0	0	0	0	0	0	0	0
CrossCountry	12	18	31	25	1	0	0	0
ATW	0	0	0	0	0	0	0	0
Arriva/Northern + Other					12	16	27	21
Other indirect					6	10	31	22

Source: The Parties.

7. CrossCountry offers 12 services in the peak weekdays and 18 in the off-peak. There are a significant number of weekend services (31 on Saturday and 25 on Sunday). The Northern Franchise indirect services operate mostly during off-peak and on Saturdays. There are other multiple indirect services on the flow involving TPE and VTEC.

The views of the Parties

8. [✂].[2] The Parties said that CrossCountry was the only operator offering direct services between York and Wakefield, which was reflected in the large journey time differences between Northern Franchise and CrossCountry services. The Parties also said that the increment from the Merger was relatively small at less than [0-5%] in revenue terms.

9. The Parties said that there was no pre-Merger price competition between CrossCountry and Northern Franchise. Inter-available fares account for [90-100%] of revenues on the flow, there are no dedicated tickets on offer and VTEC is the lead operator which sets the price of inter-available fares.[3] The Parties said that even if Arriva became the lead operator and was able to set fares, it had little incentive to increase fares post-Merger as Northern Franchise's share on this flow was small, there was indirect competition from third party TOCs, and there was a possibility that passengers would switch to other modes of transport (private car had similar journey time of about 40 to 50 minutes).

[1] The Leeds to Wakefield portion of the journey is also operated by VTEC.
[2] [✂]
[3] This includes routed fares set by TPE which allow travel via Leeds only.

CMA assessment

10. Table 2 sets out key statistics on the flow.

Table 2: York to Wakefield summary data and analysis

Flow characteristics	*Northern*	*Arriva (Other)*	*Third party*
Minimum in-vehicle journey time (minutes)	64	37	45
Third-party competitors			TPE, VTEC
Lead operator (fare-setter) for the 'any permitted' fares: VTEC			
Inter-available fare (£)*			22.60
Routed fare*			13.70
Dedicated fare (£)†	NA	NA	NA
Share of total flow journeys (%)	[✂]	[✂]	[✂]
Share of flow revenue (%)	[✂]	[✂]	[✂]
TOC overlap flows revenue as % of route revenue (includes filtered out flows)	[✂]	[✂]	
TOC flow revenue as % of route revenue	[✂]	[✂]	
Total flow revenue (all operators)			[✂]
Regulated revenue on flow (%)			[✂]
Inter-available fares (%)			[✂]
MOIRA analysis	**All TOCs (£000)**	**Arriva TOCs' share (%)**	
Total gains	[✂]		[✂]

Source: The Parties and CMA calculations using MOIRA.
* This is the minimum-priced relevant fare on the flow.
† Dedicated fare price here is a journey-weighted average (ie ratio of total revenue from advanced purchases and total journeys undertaken on these tickets).

11. The CrossCountry journey time is 37 minutes compared to an average of 64 minutes on the Northern Franchise because the latter is indirect. However, the Northern Franchise journey times vary significantly and some indirect services offer a comparable journey time for travel between York and Wakefield.

12. We note that VTEC is the lead operator on this flow and that dedicated tickets account for [0-5%] of tickets sold. CrossCountry accounts for the majority of revenues of this flow (around [80-90%]) and the Northern Franchise increment is around [0-5%). This flow accounts for a small proportion of route revenues for both the Northern Franchise and CrossCountry services (less than [0-5%]). These factors in combination suggest that the Merger does not significantly affect the Parties' commercial incentives on this flow.

Summary and provisional conclusion

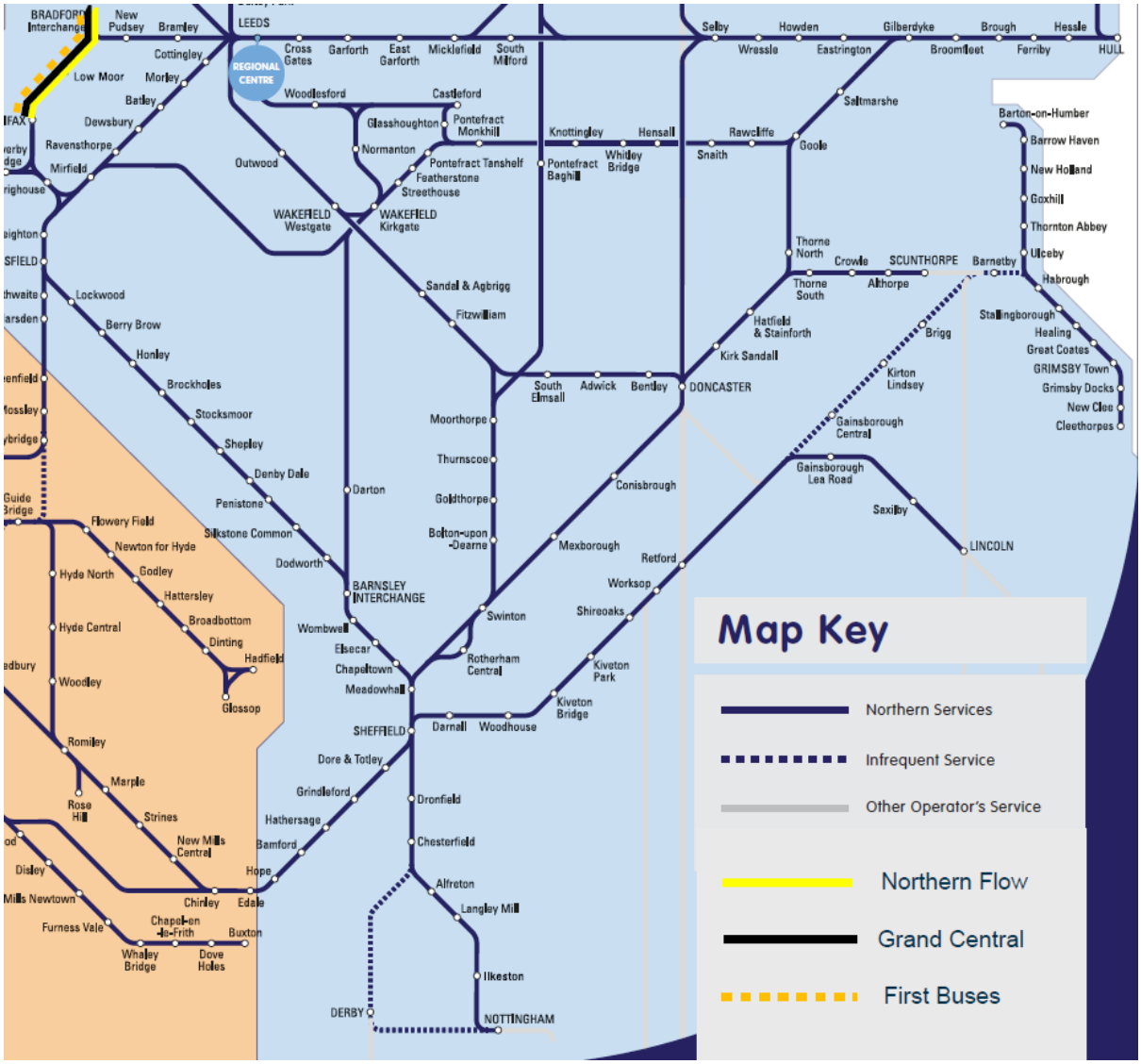
13. In summary, Northern Franchise services appear to be a weak alternative to the CrossCountry direct services, as indicated by the significant differences in journey times, frequency and pre-Merger share of revenues on this flow. Moreover, CrossCountry and the Northern Franchise do not set fares on this flow, indicating that the Merger may not be expected to lead to fare increases or withdrawals.

14. We therefore provisionally conclude that the Merger has not resulted in or may not be expected to result in an SLC on the York to Wakefield flow.

Bradford to Halifax

15. Northern Franchise services on this flow operate on the Leeds to Manchester, Leeds to Blackpool, Selby to Huddersfield and York to Huddersfield routes. A limited number of services are operated by Grand Central as part of its London to Bradford service. Figure 2 illustrates the overlap between the Northern Franchise and Grand Central on this flow.

Figure 2: Map of Bradford to Halifax overlaps



Source: The Parties.

16. Table 3 sets out service frequencies on the Bradford to Halifax flow.

Table 3: Number of weekly services on the Bradford to Halifax flow

	Direct				*Indirect*			
	Weekday peak	*Weekday off-peak*	*Saturday*	*Sunday*	*Weekday peak*	*Weekday off-peak*	*Saturday*	*Sunday*
Northern	48	83	126	83	0	0	0	0
Grand Central	4	4	8	8	0	0	0	0
CrossCountry	0	0	0	0	0	0	0	0
ATW	0	0	0	0	0	0	0	0
Arriva/Northern + Other					0	0	0	0
Other direct					0	0	0	0
Other Indirect					0	0	0	0

Source: The Parties.

17. The flow is predominantly served by the Northern Franchise, which accounts for [90-100%] of revenue. Grand Central operates only eight trains a day, compared to the 131 operated by the Northern Franchise on weekdays.[4]

The views of the Parties

18. The Parties told us that Grand Central accounted for only [0-5%] of revenue on this flow and the Merger did not materially change the market structure on this flow.[5] The Parties also told us that there was limited competition between the Northern Franchise and Grand Central as indicated by the relative frequency and share of revenue of the two TOCs' services and given Grand Central's focus on long distance travel.[6]

19. The Parties also told us that the GJC of using a Northern Franchise was £[✂], whereas the GJC for Grand Central was £[✂]. The Parties also said that all fares were inter-available and most were regulated.

20. The Parties said that rail passengers could also choose to use private transport as an alternative, as journeys by car took between 20 and 25 minutes.

CMA assessment

21. Table 4 sets out key summary data for the Bradford to Halifax flow.

[4] The Northern Franchise operates 126 services on a Saturday and 83 on a Sunday.
[5] [✂]
[6] The Parties estimated that even if all overlapping Grand Central flows on the route were considered, these accounted for only [0-5%] of Grand Central's total revenue on the route.

Table 4: Bradford to Halifax summary data and analysis

Flow characteristics	*Northern*	*Arriva (Other)*	*Third party*
Minimum in-vehicle journey time (minutes)	11	11	
Third-party competitors			
Lead operator (fare-setter) on the 'any permitted' fare: Northern Franchise			
Inter-available fare (£)*	2.70		
Routed fare*	NA	NA	NA
Dedicated fare (£)	NA	NA	NA
Share of total flow journeys (%)	[✂]	[✂]	
Share of flow revenue (%)	[✂]	[✂]	
Total overlap flow revenue as % of route revenue	[✂]	[✂]	
TOC flow revenue as % of route revenue	[✂]	[✂]	
Total flow revenue (all operators)			[✂]
Regulated revenue on flow (%)			[✂]
Inter-available fares (%)			[✂]
MOIRA analysis at flow level	**All TOCs (£000)**	**Arriva TOCs' share (%)**	
Total gains from Northern decrement	[✂]		[✂]

Source: The Parties and CMA calculations using MOIRA.
* This is the minimum-priced relevant fare on the flow.

22. We consider that the Northern Franchise and Grand Central services may not have been competing closely pre-Merger given the lack of price competition on this flow, the difference in frequency between the two TOCs and the fact that the flow accounts for less than [0-5%] of Grand Central's route to London. We note that the Merger may therefore not significantly affect competitive conditions on this flow.

23. We therefore provisionally conclude that the Merger has not resulted in or may not be expected to result in an SLC on the Bradford to Halifax flow.

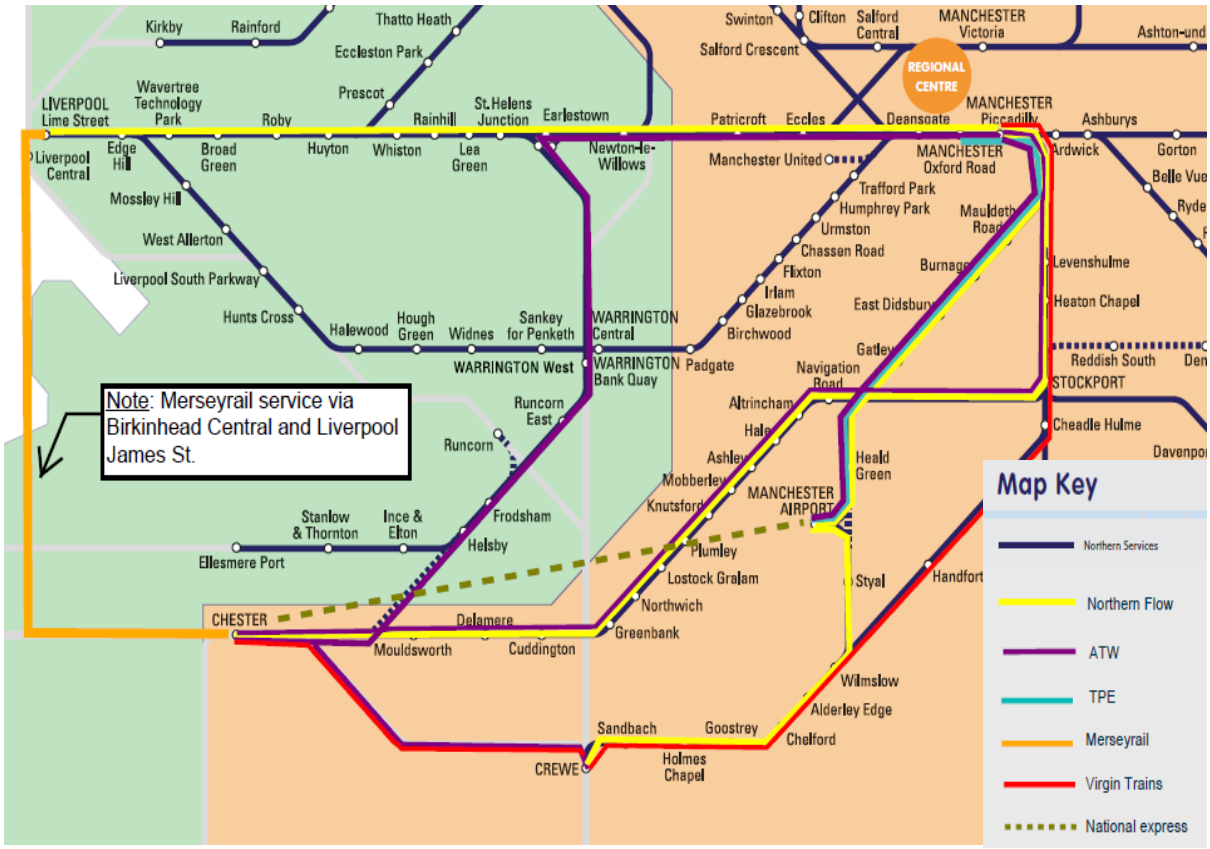
Flow-by-flow assessment – Manchester flows

24. In this section, we consider the rail-rail overlap flows in the Manchester area. The overlaps predominantly arise where Northern Franchise and ATW services overlap.

Chester to Manchester Airport

25. ATW operates a direct service between Chester and Manchester Airport via Warrington and one direct service per day via Altrincham. There are no direct Northern Franchise services on the flow. There are a number of indirect services, including an indirect services on ATW and the Northern Franchise involving a change at Crewe. The overlap is illustrated in Figure 3.

Figure 3: Map of Chester to Manchester Airport overlaps



Source: The Parites.

26. Table 5 sets out service frequencies on the flow.

Table 5: Number of weekly services on the Chester to Manchester Airport flow

	Direct				*Indirect*			
	Weekday peak	*Weekday off-peak*	*Saturday*	*Sunday*	*Weekday peak*	*Weekday off-peak*	*Saturday*	*Sunday*
Northern	0	0	0	0	1	3	5	2
Grand Central	0	0	0	0	0	0	0	0
CrossCountry	0	0	0	0	0	0	0	0
ATW	0	5	3	0	0	0	0	0
Arriva/Northern only					12	19	31	9
Arriva/Northern + Other					17	33	46	51
Other direct					0	0	0	0
Other indirect					0	0	0	1

Source: The Parties.

27. As indicated in Table 5, there are also some indirect services on the flow operated by the Northern Franchise, Merseyrail, TPE (with short legs operated by VTWC). Most services during the week and weekends are served indirectly by two or more operators.

The views of the Parties

28. The Parties told us that there was no price competition between TOCs on this flow as all fares were inter-available.[7] The Parties said that the Northern Franchise was planning to introduce dedicated fares on this flow from September 2016 and that this would increase competition relative to the pre-Merger situation.

29. The Parties told us that non-rail competitors constrained the commercial behaviour of the Parties on the flow, with National Express serving the flow with comparable journey times to rail (57 to 87 minutes), with fares of about £9.10 (plus a £1 booking fee). The Parties said that car competition was significant on the flow as it served an airport, citing a Civil Aviation Authority departure survey which found that 83.5% of passengers travelling to the airport used private transport. The Parties said that the car journey took between 40 and 60 minutes.

CMA assessment

30. Table 6 sets out key data on the Chester to Manchester Airport flow.

Table 6: Chester to Manchester Airport summary data and analysis

Flow characteristics	*Northern*	*Arriva (Other)*	*Third party*
Minimum in-vehicle journey time (minutes)	118	76	112
Third-party competitors		VT, Merseyrail, TPE	
Lead operator (fare-setter) for 'any permitted' fares: ATW			
Inter-available fare (£)*		22.50	
Routed fare†		19.10	
Dedicated fare (£)	NA	NA	NA
Share of total flow journeys (%)‡	[✂]	[✂]	[✂]
Share of flow revenue (%)	[✂]	[✂]	[✂]
Total overlapping flows revenues (combined) as % of route revenue	[✂]	[✂]	
TOC flow revenue as % of route revenue	[✂]	[✂]	
Total flow revenue (all operators)			[✂]
Regulated revenue on flow (%)			[✂]
Inter-available fares (%)			[✂]
MOIRA analysis at flow level	**All TOCs (£000)**	**Arriva TOCs' share (%)**	
Total gains	[✂]		[✂]

Source: The Parties and CMA calculations using MOIRA.
* Minimum-priced anytime 'any permitted' ticket price, here it is a standard single.
† There are some ATW set fares 'via Crewe' such as the off-peak return (£22.40) and the peak single (£19.10).
‡ Indirect journey legs are counted separately resulting in double-counting.

31. The Northern Franchise and ATW services are differentiated on this flow. The Northern Franchise service journey time is approximately 118 minutes compared to ATW services which take approximately 76 minutes. However, 'routed fares' which permit travel via a connection at Crewe are cheaper than

[7] Including the Northern Franchise set routed fares via Altrincham.

the ‘any permitted’ route fares which provide access to the direct ATW services. Therefore, passengers have a choice between the direct, but more expensive ATW services and the indirect but slightly cheaper indirect journeys via Crewe.

32. The proportion of inter-available revenue on this flow is relatively low at [40-50%], once routed fares are taken into account.[8]

33. However, we note that both the inter-available and the routed fares via Crewe are set by ATW and, as such, there may be limited or no pre-Merger fare competition. Moreover, we do not consider that ATW and Northern were significant competitors on this flow pre-Merger.

34. We therefore provisionally conclude that the Merger has not resulted in and may not be expected to result in an SLC on the Chester to Manchester Airport flow.

Earlestown to Manchester

35. This flow is almost entirely served by the Northern Franchise and ATW. The overlap is illustrated in Figure 4.

Figure 4: Map of Earlestown to Manchester overlaps

Source: The Parties.

[8] The difference between the figure quoted by Arriva and that in Table 6 are the ATW set routed fares via Crewe.

36. Both TOCs offer a frequent service on this flow, with similar stopping patterns and in-vehicle journey time. Table 7 sets out service frequencies on the flow.

Table 7: Number of weekly services on the Earlestown to Manchester flow

	Direct				*Indirect*			
	Weekday peak	*Weekday off-peak*	*Saturday*	*Sunday*	*Weekday peak*	*Weekday off-peak*	*Saturday*	*Sunday*
Northern	17	25	40	28	1	0	1	0
Grand Central	0	0	0	0	0	0	0	0
CrossCountry	0	0	0	0	0	0	0	0
ATW	14	26	35	30	0	0	0	0
Arriva/Northern + Other					0	0	0	0
Other indirect					0	0	0	0

Source: The Parties.

The views of the Parties

37. The Parties told us that ATW and the Northern Franchise were not close competitors on this flow. The Parties said that ATW had a much larger share of revenues and there was no pre-award competition on fares. Furthermore, the Parties argued that fare regulation was a constraint (regulated fares account for [✂] of revenues). The Parties told us that this flow accounted for a relatively small share of route revenues.

CMA assessment

38. Table 8 sets out the key data on the flow.

Table 8: Earlestown to Manchester summary data and analysis

Flow characteristics	*Northern*	*Arriva (Other)*	*Third party*
Minimum in-vehicle journey time (minutes)	36	34	
Third-party competitors			
Lead operator (fare-setter) for 'any permitted' fares: Northern Franchise			
Inter-available fare (£)*	7.80		
Routed fare	NA	NA	NA
Dedicated fare (£)†	2.98		
Share of total flow journeys (%)	[✂]	[✂]	[✂]
Share of flow revenue (%)	[✂]	[✂]	[✂]
Total overlapping flows revenues (combined) as % of route revenue	[✂]	[✂]	
TOC flow revenue as % of route revenue	[✂]	[✂]	
Total flow revenue (all operators)			[✂]
Regulated revenue on flow (%)			[✂]
Inter-available fares (%)			[✂]
MOIRA analysis at flow level	**All TOCs (£000)**	**Arriva TOCs' share (%)**	
Total gains	[✂]		[✂]

Source: The Parties and CMA calculations using MOIRA.
* Regulated fare is peak day return £8.50. Other tickets are off-peak day return £8.00.
† There is no dedicated ticket sold on this flow.

39. The Northern Franchise offers a dedicated ticket which is priced well below the inter-available fare on the flow, although there was very little revenue from

the sale of dedicated tickets ([0-5%]). [80-90]% of revenue derived by the Northern Franchise on this flow is from the sale of regulated products. There are no routed fares on this flow and there was very little competition on the flow pre-Merger.

40. The Northern Franchise and ATW offer a similar service based on train frequency and journey time. The MOIRA analysis conducted for this flow indicates that ATW is a strong alternative to the Northern services (with an RR ratio of [80-90]%).

41. However, we note that prior to the Merger, the Northern Franchise was the fare-setter on this flow, indicating that the competition between the Northern Franchise and ATW services was limited, particularly in light of the lack of fare competition.

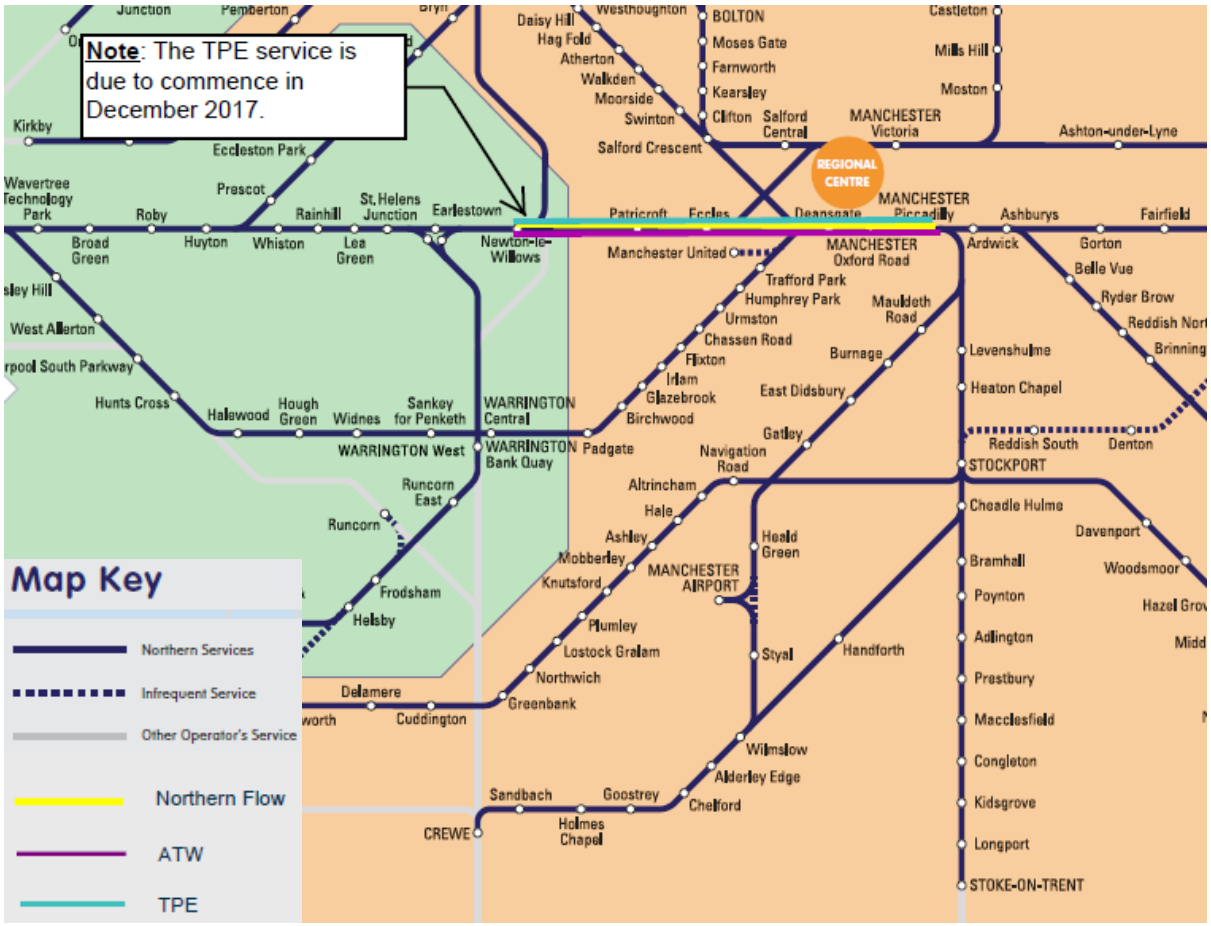
42. Northern Franchise services serving the flow start from Liverpool Lime Street and operate to Manchester Piccadilly and Manchester Victoria, with the flow accounting for [5-10%] of route revenue. ATW services serving the flow run from Holyhead to Manchester Piccadilly, with the flow accounting for [0-5%] of route revenue.

43. We therefore provisionally conclude that the Merger has not resulted in or may not be expected to result in an SLC on the Earlestown to Manchester flow.

Newton-le-Willows to Manchester

44. All train services that serve the Earlestown to Manchester flow also operate on the Newton-le-Willows to Manchester flow. Figure 5 illustrates the overlap.

Figure 5: Map of Newton-le-Willows to Manchester overlaps



Source: The Parties.

45. Table 9 sets out the service frequencies on the flow.

Table 9: Number of weekly services on the Newton-le-Willows to Manchester flow

	Direct				*Indirect*			
	Weekday peak	*Weekday off-peak*	*Saturday*	*Sunday*	*Weekday peak*	*Weekday off-peak*	*Saturday*	*Sunday*
Northern	29	43	69	29	0	0	0	0
Grand Central	0	0	0	0	0	0	0	0
CrossCountry	0	0	0	0	0	0	0	0
ATW	14	26	35	30	0	0	0	0
Arriva/Northern + Other					0	0	0	0
Other Indirect					0	0	0	0

Source: The Parties.

46. The Northern Franchise operates a large number of direct services on this flow and it has a significantly larger service frequency compared to ATW.

47. Additional services connect Newton-le-Willows and Manchester Oxford Road, Manchester Piccadilly and Manchester Airport. TPE will begin serving this flow from 2017, providing direct services.

The views of the Parties

48. The Parties told us that this flow was close to being filtered out on the basis of the proportion of inter-available and regulated fares on the flow, indicating there was no price competition pre-Merger. The Parties also told us that the Northern Franchise was the only operator offering dedicated tickets and [✂]. The Parties said that the incentives to change its offer on the flow were likely to be limited, as the flow accounted for a small proportion of total route revenues (5-10% as regards ATW's route).

CMA assessment

49. Table 10 sets out key data on the flow.

Table 10: Newton-le-Willows to Manchester summary data and analysis

Flow characteristics	*Northern*	*Arriva (Other)*	*Third party*
Minimum in-vehicle journey time (minutes)	33	31	
Lead operator (fare setter): Northern Franchise			
Third-party competitors			
Lead operator (fare-setter) of the 'any permitted' fares: Northern Franchise			
Inter-available fare price (£)*	7.80		
Routed fare	NA	NA	NA
Dedicated fare (£)	3.04		
Share of total flow journeys (%)	[✂]	[✂]	[✂]
Share of flow revenue (%)	[✂]	[✂]	[✂]
Total overlapping flows revenues (combined) as % of route revenue	[✂]	[✂]	
TOC flow revenue as % of route revenue	[✂]	[✂]	
Total flow revenue (all operators)			[✂]
Regulated revenue on flow (%)			[✂]
Inter-available fares (%)			[✂]
MOIRA analysis at flow level	**All TOCs (£000)**	**Arriva TOCs' share (%)**	
Total gains	[✂]		[✂]

Source: The Parties and CMA calculations using MOIRA.
* Regulated fare is standard day return = £8.50. Only other ticket available is cheap day return = £8.00.

50. The Northern Franchise and ATW services are comparable in terms of journey time and both offer frequent services (although Northern Franchise services are more frequent). The similarity is supported by the share of revenues on this flow.

51. The MOIRA analysis indicates that the ATW services are a close alternative to the Northern services. However, we note that prior to the Merger, the Northern Franchise was the fare-setter on this flow and that [90-100%] of fares are inter-available. This indicates that the competitive constraint between Northern Franchise and ATW services was limited, particularly given the lack of fare competition.

52. We therefore provisionally conclude that the Merger has not resulted in or may not be expected to result in an SLC on the Newton-le-Willows to Manchester flow.

Manchester to Wilmslow

53. This flow is served by four TOCs, with the Northern Franchise and ATW being the two main operators. All Northern Franchise train services operate from Manchester Piccadilly to Crewe or Alderley Edge. The overlap is illustrated in Figure 6.

Figure 6: Map of Manchester to Wilmslow overlaps

Source: The Parties.

54. Table 11 sets out service frequency on the flow.

Table 11: Number of weekly services on the Manchester to Wilmslow flow

	Direct				*Indirect*			
	Weekday peak	Weekday off-peak	Saturday	Sunday	Weekday peak	Weekday off-peak	Saturday	Sunday
Northern	30	54	75	31	0	0	0	0
Grand Central	0	0	0	0	0	0	0	0
CrossCountry	2	1	1	2	0	0	0	0
ATW	12	22	33	28	0	0	0	0
Arriva/Northern only					6	9	14	4
Arriva/Northern + Other					4	11	15	1
Other direct	10	21	29	20				
Other indirect					0	0	0	0

Source: The Parties.

55. The service frequency on the Northern Franchise is more than twice that of ATW and several times higher than the indirect flows which involve an Arriva train service. VTWC operates a similar level of service to ATW and has different stopping patterns to Northern Franchise services. CrossCountry

operates an infrequent indirect service (three trains per weekday) although it is 20% quicker than on the Northern Franchise.

The views of the Parties

56. The Parties told us that there was very little price competition pre-Merger given the large proportion of inter-available fares and that [80-90%] of revenue was generated by the sale of regulated tickets. The Parties said that there were only a few dedicated tickets sold on this flow.

57. The Parties also told us that there was strong competition from VTWC which also offered direct services on the flow (and had the fastest journey times on the flow). The Parties conducted a GJC analysis which showed that GJC for using VTWC services is lower than that for ATW services, but slightly higher than for Northern Franchise services. CrossCountry has a significantly higher GJC, which the Parties said suggested that VTWC competed more closely on the flow than other Arriva TOCs.

CMA assessment

58. Table 12 sets out the key data on the flow.

Table 12: Manchester to Wilmslow summary data and analysis

Flow characteristics	*Northern*	*Arriva (Other)*	*Third party*
Minimum in-vehicle journey time (minutes)	35	27	26
Third-party competitors			VT, TPE
Lead operator (fare-setter) of 'any permitted' fares: Northern Franchise			
Inter-available fare (£)*	5.70		
Routed fare	NA	NA	NA
Dedicated fare (£)†	2.05		4.90
Share of total flow journeys (%)	[✂]	[✂]	[✂]
Share of flow revenue (%)	[✂]	[✂]	[✂]
Total overlapping flows revenues (combined) as % of route revenue	[✂]	[✂]	
TOC flow revenue as % of route revenue	[✂]	[✂]	
Total flow revenue (all operators)			[✂]
Regulated revenue on flow (%)			[✂]
Inter-available fares (%)			[✂]
MOIRA analysis at flow level	**All TOCs (£000)**	**Arriva TOCs' share (%)**	
Total gains from Northern decrement	[✂]		[✂]

Source: The Parties.
* The regulated fare is the standard day return priced at £8.10; cheap day return is priced at £6.10.
† Only VTWC offers dedicated tickets (standard day return, for instance, priced at £6.50) but there are other cheaper tickets with more restrictions.

59. There are some VTWC and CrossCountry services operating on this flow with a combined market share of about [40-50%].

60. Overall ATW, CrossCountry and VTWC have a comparable in-vehicle journey time, compared to the Northern Franchise which runs slower services. The

MOIRA analysis indicates that the services operated by other Arriva TOCs are a close (timetable) alternative to the Northern Franchise services.

61. The Northern Franchise is the lead operator on the flow and sets the 'any permitted' fare. There are a range of inter-available fares, with the regulated ticket being the standard day return priced at £8.10. The Northern Franchise offers an advance dedicated ticket priced at £2.90 which accounts for a small proportion of revenues. However, VTWC offers a more widely available set of dedicated tickets on the flow which are competitively priced against all the inter-available tickets.

62. However, we note that prior to the Merger, the Northern Franchise was the lead operator on this flow and VTWC was the only TOC offering dedicated tickets. This indicates that the competitive constraint between Northern and ATW services was limited, particularly in light of the lack of fare competition.

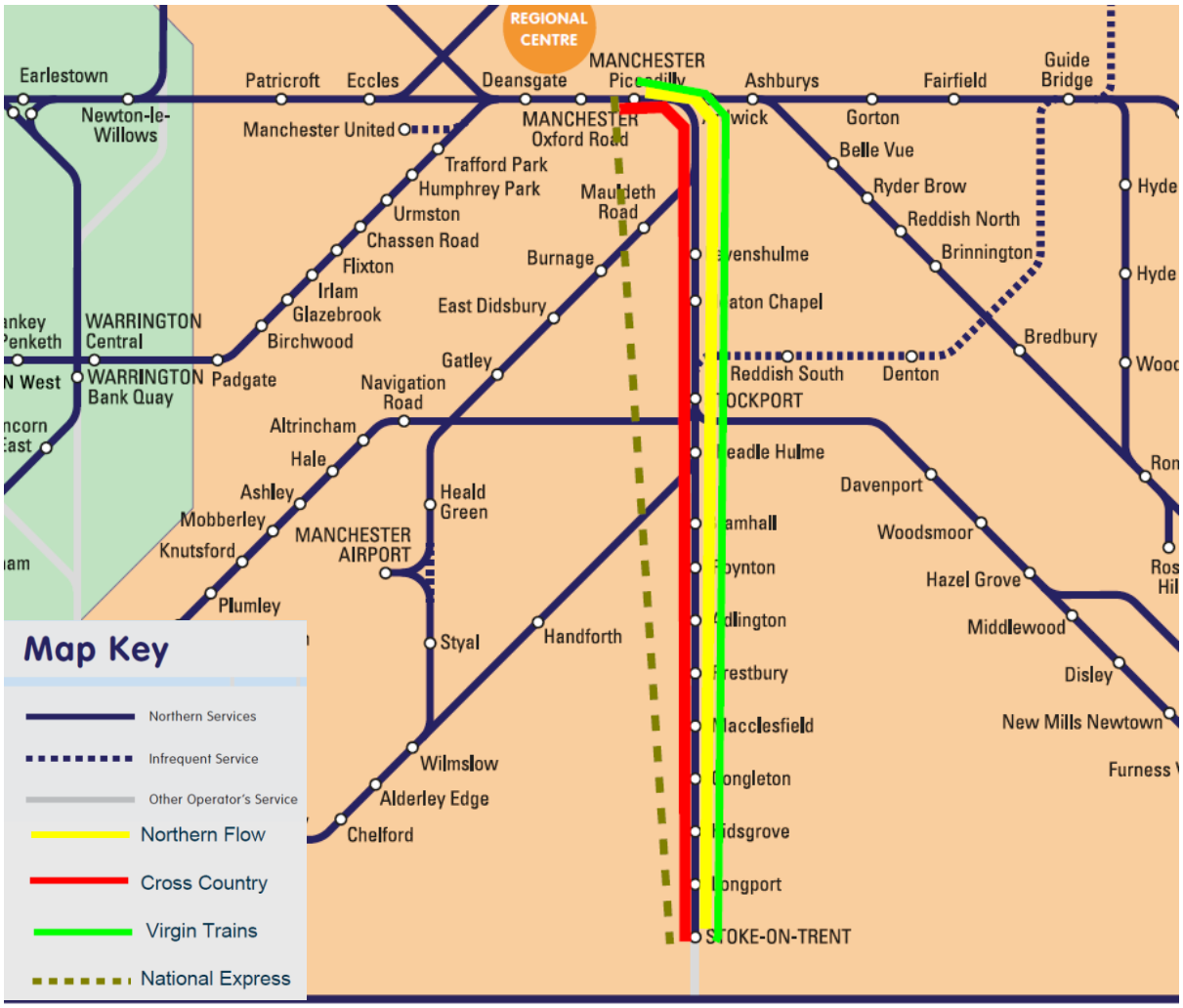
63. We therefore provisionally conclude that the Merger has not resulted in or may not be expected to result in an SLC on the Manchester to Wilmslow flow.

Manchester to Stoke-on-Trent

64. We consider the Manchester to Stoke-on-Trent flow in greater detail as we saw evidence from internal documents which suggests there may have been some competitive interaction, [✂], between Northern Rail (the previous operator of the Northern Franchise) and CrossCountry pre-Merger.

65. This flow is operated by three train services, VTWC, Northern Franchise and CrossCountry. The overlap is illustrated in Figure 7.

Figure 7: **Map of Manchester to Stoke-on-Trent overlaps**



Source: The Parties.

66. Table 13 sets out service frequencies on the flow.

Table 13: Number of weekly services between Manchester and Stoke-on-Trent

	Direct				*Indirect*			
	Weekday peak	*Weekday off-peak*	*Saturday*	*Sunday*	*Weekday peak*	*Weekday off-peak*	*Saturday*	*Sunday*
Northern	12	20	31	8	0	0	0	0
Grand Central	0	0	0	0	0	0	0	0
CrossCountry	20	41	61	42	0	0	0	0
ATW	0	0	0	0	0	0	0	0
Arriva/Northern + Other					0	0	1	3
Other	22	38	54	45	0	0	1	0

Source:

67. VTWC operates into London Euston and has fast services on the route covering this flow. CrossCountry operates a similar service to VTWC although less frequent. VTWC operates 34 weekday services while the Northern Franchise operates 12 services and CrossCountry 20 services.

The views of the Parties

68. The Parties told us that the Merger did not significantly alter competitive conditions on this flow. The Parties said that CrossCountry offered greater frequency, shorter journey times and had as a result a significantly higher share of revenues. The Parties also said that VTWC offered similar services to CrossCountry, as indicated by having a similar GJC (only [✂]% difference with CrossCountry, as opposed to around [✂]% between CrossCountry and the Northern Franchise). The Parties told us that pre-Merger competition had been limited, with the majority of fares being inter-available.

69. The Parties also told us that non-rail competitors were present on the flow. National Express offers a competing coach service with eight services per weekday. The journey times on the National Express service range between 70 and 100 minutes, but the Parties said that fares may be lower than those of the rail services. The Parties also estimated that it would take around 60 to 100 minutes to make the journey on the flow by private car.

CMA assessment

70. Table 14 sets out key data on the flow.

Table 14: Manchester to Stoke-on-Trent summary data and analysis

Flow characteristics	*Northern*	*Arriva (Other)*	*Third party*
Minimum in-vehicle journey time (minutes)	65	47	44
Third-party competitors			VT, EMT
Lead operator (fare-setter) on 'any permitted' fares: Virgin Trains West Coast			
Inter-available fare (£)*		15.90	
Routed fare			12.60
Dedicated fare (£)	3.08	7.03	6.96
Share of total flow journeys (%)	[✂]	[✂]	[✂]
Share of flow revenue (%)	[✂]	[✂]	[✂]
Total overlapping flows revenues (combined) as % of route revenue	[✂]	[✂]	
TOC flow revenue as % of route revenue	[✂]	[✂]	
Total flow revenue (all operators)			[✂]
Regulated revenue on flow (%)			[✂]
Inter-available fares (%)			[✂]
MOIRA analysis at flow level	**All TOCs (£000)**	**Arriva TOCs' share (%)**	
Total gains	[✂]		[✂]

Source: The Parties and CMA calculations using MOIRA.
* Minimum-priced inter-available peak fare is the peak single at £15.90.

71. VTWC is the lead operator on the flow. Northern Franchise services are slower than CrossCountry services as they stop more frequently (taking 65 minutes as compared to 47 minutes).

72. The MOIRA analysis indicates that CrossCountry services are an important alternative to the Northern Franchise services and the RR ratio is [✂]%.

However, Northern Franchise services appear a weak alternative to CrossCountry and VTWC services on this flow given their slower journey time.

73. VTWC is the lead operator on the flow, with the regulated ticket being the Saver Return priced at £16.30. The minimum-priced anytime 'any permitted' ticket is the standard day single priced at £15.30.

74. VTWC operates on the flow, with a similar journey time to CrossCountry. VTWC has a revenue share of [60-70%] on the flow. VTWC offers a wide array of dedicated tickets on this flow and is the only TOC to offer a significant number of dedicated tickets on this flow, with the Northern Franchise and CrossCountry deriving a very small share of revenue from such tickets.[9]

75. Northern Franchise services account for a relatively small proportion of revenues on the flow and both CrossCountry and Northern Franchise services will continue to face a significant constraint from the VTWC services post-Merger.

76. We therefore provisionally conclude that the award of the Northern Franchise has not resulted or may not be expected to result in an SLC on the Manchester to Stoke-on-Trent flow.

[9] On this flow, about [50-60%] of all flow revenues are generated from the sale of dedicated tickets. VTWC services on this flow are an important competitor, offering a dedicated walk-up fare (VTWC accounts for around [80-90%] of dedicated revenue on the flow), with Northern Franchise and CrossCountry deriving a very small share of revenue from such tickets.

Annex 1: MOIRA modelling and analysis

Rail modelling and the MOIRA model

1. The MOIRA model is a rail industry-accepted best practice tool for train service planning and analysis of service changes on the rail network. It is widely used by TOCs, the DfT and other members of the Passenger Demand Forecasting Council (PDFC).

2. It is used as the core demand assignment tool in franchising models, in the DfT's network modelling framework for strategic rail interventions, and by other parties building bespoke models for analysing rail interventions.

3. The DfT (and CMA) version of MOIRA allows the user to inspect the train services that operate on the Great Britain rail network and the revenues and journeys information assigned to these train services, and to analyse the impacts of timetable changes on all operators' demand and revenue.

MOIRA analytical approach

4. MOIRA predicts the effect of timetable changes on passenger demand and revenues. The assumptions in the model are based on the industry standard as set out in the Passenger Demand Forecasting Handbook (PDFH – which is a confidential document containing guidance and recommendations on the demand forecasting methodology and parameters for drivers of demand, for example GJT elasticities).

5. The base demand and revenue data are mostly from the industry ticket sales database called LENNON. This database contains the record of all daily rail ticket transactions and their corresponding revenue and an estimate of demand for each station to station pair.

6. The MOIRA model aims to match a passenger's preferred departure time at an origin station to their best opportunity to travel (OTT) by minimising the passenger's GJT. It combines passengers' profiles, train services and PDFH parameters.

7. Once a change in GJT is modelled from a timetable change, the model will estimate the demand change and will assign it to the available train services. Some passengers will no longer travel if the journey time is increased (as they are subject to a journey time elasticity). These passengers who no longer make the journey will either stop travelling or travel by other modes. Some will make their journey by private car (and guidance on this aspect of mode shift can be found in the DfT's *Transport Analysis Guidance (TAG)*.

8. The model used to compute the GJT is the Rooftop model and is a widely accepted method of combining different aspects of time components in travel.

Opportunities to travel and the Rooftop model

9. An OTT is a train service that will make it possible for a passenger to travel from A to B. Usually there are many opportunities to travel which are effectively train services that are in proximity to a passenger's preferred departure time. More OTTs will indicate a wider choice of train services available to a passenger (it could be an earlier train or a later train than their preferred departure time. A routed OTT is a train-specific OTT (ie dedicated to a particular operator) and all other OTTs are 'any permitted' ie offer a choice of travel on other operators' services.

10. The Rooftop model is a representation of available train services including direct and connecting services and the corresponding GJT at any time interval. Broadly speaking the GJT is defined as follows:

$$GJT = J + S + I$$

where:

J is the total station-to-station journey time (including interchange time);
S is the service (frequency) interval penalty;
I is the sum of the interchange penalties for any interchanges required; and
Interchange and frequency penalties are taken from PDFH.

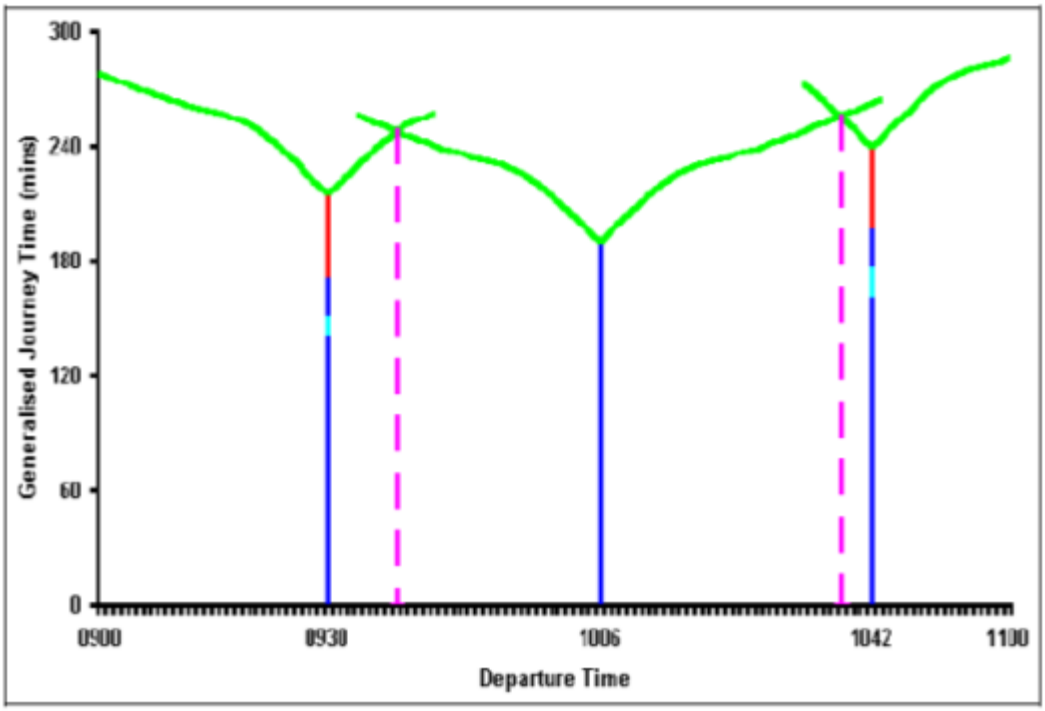
11. The diagram below (sourced from the MOIRA Technical Guide made available by PDFC), shows three train services departing from a particular station at the following times:

(a) 9:30;

(b) 10:06; and

(c) 10:42.

Figure 1: The Rooftop model



Source: Passenger Demand Forecasting Council.
The upright axis represents generalised journey time (in minutes); the axis along the bottom represents GJT (in minutes); the axis along the bottom represents departure times through the day (note that, for clarity of explanation, only a two hour segment is shown).

12. Each service has its own components of GJT shown by three vertical lines. Each line is composed of journey times (in dark blue), wait time (light blue) and interchange penalty (red line). The larger the gap in train services the more the frequency penalty indicated by the height of the roofs (in green).

13. The pink dotted lines show the 'watershed' times which show points where passengers are indifferent between train services, so they are assigned to the train which matches closely to their profiles.

14. MOIRA will calculate the GJT for each timetable or change in timetable. It will then apply a GJT (from PDFH) to 'grow' demand, which it then assigns to trains based on profiles.

15. Routed fares will be routed (assigned) to specific trains and not based on profiles. All other fares types will be assigned to all OTTs based on profiles and OTTs.

16. MOIRA takes into account not just the fare type (including full, reduced and seasons), but also time of day (based on profiles such as peak, off peak, weekend), and by geography such as London and South East and regional traffic).

Main assumptions and caveats

Assumptions

17. MOIRA is an elasticity-based model using PDFH parameters and elasticities. It assumes a 'linear' effect from a timetable change irrespective of the size of the change. It is understood that these elasticities are not meant to represent the response of passengers to large changes in any of the drivers of demand.

18. It has a fixed number of demand profiles (96) which describe people's preferences to travel at a particular time of day or day of the week. These profiles are based on historic data on passengers' travel patterns, which are therefore assumed to be a good indication of future travel patterns.

19. The model analyses flows mostly at a station to station level distinguishing travel by distance, ticket type (seasons, full, reduced, inter-available, routed), by geography (London, South East, long-distance, regional), and time of week (weekdays and weekends). In some cases these may be coarse categories to use to analyse more specific changes in a timetable. But the level of detail is deemed sufficient as they incorporate the main categories in PDFH.

20. MOIRA uses a logit model to implement the GJT change with a fixed spread parameter and using PDFH GJT elasticities. The logit model is an effective method to estimate demand change from a change in GJT, and it is assumed that the spread parameter is robust to capture how demand change is calculated.

Caveats and cautions

21. Care must be taken to interpret large timetable changes as it is an elasticity-based model. For instance, a large change in a timetable, eg deleting a whole set of trains from a timetable may only provide a broad indication of passengers' responses. We therefore undertake more detailed analysis of the flow and use the evidence from MOIRA analysis 'in the round'.

22. PDFH elasticities are essentially derived from econometric estimations of relationships based on historic data. It may not be representative of future behaviour and care should be taken when interpreting results of analysis that forecasts demand far into the future.

23. The Rooftop model is an effective tool to bring together a heterogeneous set of train services, but is based on GJT and not on journey cost. It excludes fares and crowding. Therefore, when MOIRA assigns demand to trains, it may

be that in some cases ‘too many’ passengers are assigned to particular trains and therefore overestimating loading or demand.

24. Explicit fares differentials or a different policy on fares cannot be modelled in MOIRA. But where there is a large share of inter-available fares, ie the proportion of routed tickets is low, this is deemed to be less of an issue.

MOIRA modelling for competition analysis

25. The approach to using MOIRA in competition analysis has been as follows:

(a) Use the list of flows that remain of concern after applying the filters.

(b) Use the data inspector function in MOIRA to understand each of the flows identified, including the services ran on the route, the particular share of each TOC on that flow.

(c) Analyse the combined effects of a diminution of train services on all the flows in (a).

(d) Analyse the individual effects of a diminution of services for each flow.

26. The combined effects of a decrement in (c) was attempted in two ways: a removal of whole train (Northern Franchise only) services on the route serving the flows; a removal of all (destination) train stops (from Northern Franchise timetables) on the relevant flows but keeping all services flowing through to all other timetabled stops.

27. The individual effects of a decrement in (d) was attempted in several ways including: removal of whole (Northern Franchise) trains that serve the individual flow under consideration; removal of destination station stop on the relevant flow from Northern Franchise timetabled services; in some cases, removal of origin station stop on the relevant flow from Northern Franchise timetabled services; and, removal of some identified ‘peak’ services on each of the relevant flows.

28. While the removal of whole trains from timetables provide an effective and quick way to analyse diversion of passengers from one operator to another, the analysis must be conducted at a flow level, such as flexing the stopping patterns of trains to capture the responses of passengers on these flows. This is the approach adopted in the competition analysis for which results are reported in this appendix. In some instances, changing some train services in the peak for the Northern Franchise was attempted in order to validate the results of the other analyses conducted, ie to check the validity of the removal of a stop within a flow on the Northern train services. We consider the results

presented in this appendix appropriate to use for an understanding of the retention ratio from changing a particular aspect of the Northern timetables.

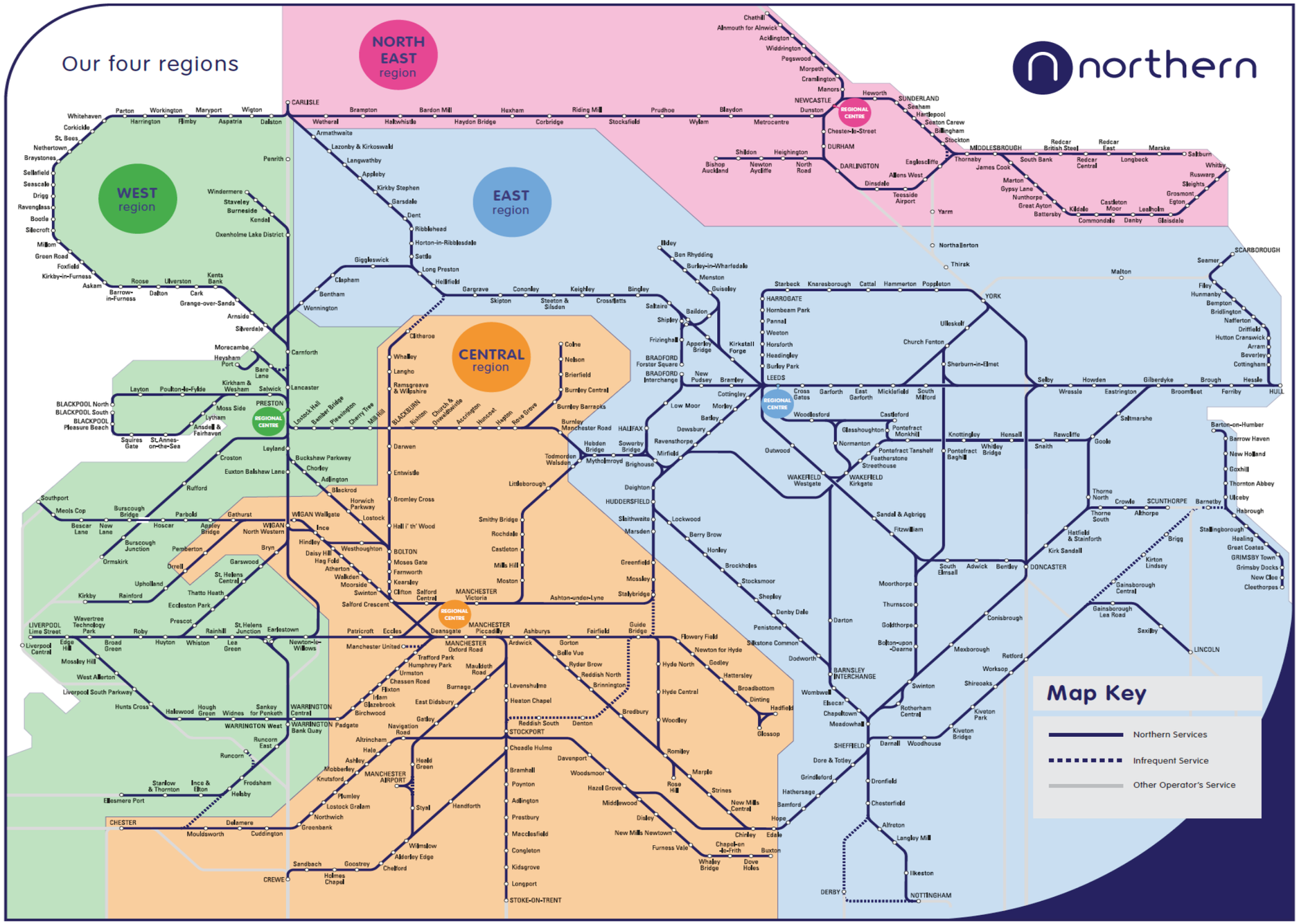
29. Table 1 below shows summary information on the flows where the RR ratio is above 50%, indicating that the relevant Northern Franchise and Arriva TOCs services are likely to be close alternatives in terms of GJT. The remaining flows involve overlaps between CrossCountry and Northern in Yorkshire and overlaps between Northern Franchise and ATW on several Manchester flows.

Table 1: Retention ratios from flow-by-flow analysis conducted using MOIRA

Flow	*All TOCs gains (£000)**	*Arriva TOCs share (%)*
Newton Le Willows-Manchester BR	[✂]	[✂]
Earlestown-Manchester BR	[✂]	[✂]
Chester-Manchester BR	[✂]	[✂]
Bradford-Halifax	[✂]	[✂]
Manchester-Wilmslow	[✂]	[✂]
Chester-Manchester Airport	[✂]	[✂]
Leeds-Sheffield	[✂]	[✂]
Wakefield-Sheffield	[✂]	[✂]
Manchester-Stoke	[✂]	[✂]
Chester-Stockport	[✂]	[✂]
York-Wakefield	[✂]	[✂]
Bradford-Wakefield	[✂]	[✂]
Stoke-Stockport	[✂]	[✂]
Leeds-Nottingham	[✂]	[✂]
Wakefield-Nottingham	[✂]	[✂]
Manchester-Congleton	[✂]	[✂]
Leeds-Wakefield	[✂]	[✂]
Doncaster-Sheffield	[✂]	[✂]
Nottingham-Sheffield	[✂]	[✂]
Nottingham-Chesterfield	[✂]	[✂]
Doncaster-Chesterfield	[✂]	[✂]
Leeds-Chesterfield	[✂]	[✂]

Source:
[✂]
*[✂]

Annex 2: Northern Franchise map



Source: The Parties.

The Parties' survey of selected bus-rail overlaps

Introduction

1. The Parties appointed the market research agency Accent to conduct survey work among passengers on bus-rail overlap flows.

   This appendix describes the methodology and results of the bus passenger survey undertaken by the Parties as analysed by the CMA.

Methodology

2. The Parties' description of the survey methodology and a copy of the face-to-face version of the questionnaire are appended for reference as annexes. In summary, the survey was designed to interview bus passengers on a subset of 18 of the 65 flows remaining after application by the Parties of a set of filters on overlap flows. These were chosen as the largest overlap flows on each route, together with the two remaining overlap flows with annual revenues of over £100,000.

3. Freelance interviewers were recruited to work shifts that were organised to cover the hours of 7 am to 7 pm spread across all seven days of the week. Passengers were recruited at bus stops (in many cases these were bus stands within bus stations) at one end of a surveyed flow (shifts were arranged such that some covered one direction of a flow and some the other direction) but were only eligible for the interview if their journey corresponded to the relevant overlap flow.

4. Interviewers could either conduct an interview, lasting about 10 minutes, at that time or ask a few questions to check eligibility and collect email or telephone contact details for follow up interviews. In the former case an email with an electronic link to the questionnaire was sent to the respondent; in the latter case the passenger was contacted by a member of Accent's telephone interviewing team. A target minimum of 100 completed questionnaires per flow was set.

Assessment of survey quality

5. As with all survey evidence, limitations of survey design and any issues that may arise during the conduct of the survey need to be carefully considered.

Coverage and sampling

6. The Parties' survey was designed by the Parties to provide a representative sample of passengers on overlap flows. The survey was planned to start on 18 July to be completed, as far as possible, by the end of that week (25 July). The Parties suggested that the timing was important because transport patterns may change with the start of the school holidays.

7. In practice, fewer than 40% of interviewer shifts took place before 25 July; the last shifts were on 5 August, with telephone and internet follow up closing on 7 August. The impact of the school holiday has been considered. It will change the composition of bus travellers, particularly at peak times with more people taking holidays and fewer school age children on buses and trains. This may mean that there may be less traffic on the roads, especially during the morning rush hour, making bus travel more attractive as well as road alternatives.

8. On the whole, these effects are unlikely to have a substantial effect on key results.

9. The extended fieldwork period was necessary as the number of completed questionnaires on most surveyed flows fell short of the target of 100. In total, 1,597 interviews were completed. The following table sets out final numbers for each of the 17 flows (there are two flows on the 110 route, Leeds – Wakefield Westgate and Leeds – Outwood).

Table 1: Achieved interviews, by flow and interview mode

	Number of completed interviews			
Flow (and bus route number)	*Total*	*In person*	*Online*	*Telephone*
Halewood - Liverpool Lime Street (76)	2	0	1	1
Halewood - Liverpool Lime Street (79)	42	17	17	8
Huddersfield - Shepley (84)	34	26	4	4
Huyton - St Helens Central (89)	62	23	21	18
Leeds - Wakefield Westgate & Outwood (110)*	249			
Castleford - Wakefield Westgate (189)	151	104	43	4
Glasshoughton - Leeds (410)	124	52	25	47
Selby - York (415)	99	85	13	1
Bradford Interchange - Harrogate (747)	12	8	3	1
Featherstone - Wakefield Westgate (145/148/149)	92	78	9	5
Garforth - Leeds (163/166/X60)	85	69	7	9
Middlesbrough - Redcar Central (4/X4)	139	26	57	56
Bradford Interchange - Wakefield Kirkgate (425/7)	88	70	4	14
Durham - Middlesbrough (X12)	54	51	3	0
Morpeth - Newcastle (X14/X15/X16/X18)	235	178	42	15
Redcar Central - Saltburn (X3/X3A)	22	7	11	4
Newcastle - Cramlington (X9)	107	55	33	19
Total	1,348	849	293	206

Source: Parties' survey
*There were two surveyed flows on this route: Leeds City Centre - Wakefield Westgate and Leeds City Centre - Outwood.

10. It is standard practice in the CMA to regard 100 completed responses to be the minimum threshold for diversion analysis. While the total number of

survey responses was clearly well above this number, the threshold was only reached in seven of the individual surveyed flows (more than 100 responses were obtained on each of the flows on route 110). We have not looked in detail at the distribution of respondents by time of day and day of week, but note that interview shifts were arranged to ensure coverage of peak and off-peak times of weekdays and of weekend travel.

11. Contact details were collected for 1,248 passengers, of which 591 (47%) subsequently completed interviews either online (368) or by telephone (223). This is a high percentage, but is perhaps not unexpected as a £5 payment was offered to incentivise response. We have no information about the number of passengers who initially refused to participate in the screener questions and we have not analysed potential non-response bias.

Fieldwork

12. Ahead of survey work the CMA had explained its concerns about the difficulty of ensuring high quality fieldwork in bus surveys of this type, particularly when employing an ad hoc field force of freelance interviewers. The CMA asked permission to conduct spot checks on fieldwork. The Parties agreed to this request; Accent provided interview shift schedules to enable this to be done.

13. Two members of the CMA's Statistics Team made visits to the North of England and observed interviewers at the following locations: 20 July, Wakefield and Leeds; 21 July Featherstone, Selby; 26 July, Liverpool – Queen's Square, Liverpool – Charlotte Street and Durham; 27 July, Newcastle, Redcar and Middlesbrough. Additionally, an attempt was made to spot check interviewing in Harrogate on 21 July, but the shift was cancelled due to illness. In total, the interviewers we observed together accounted for 48% of all interview shifts (although, of course, we only observed a very small proportion of each interviewer's fieldwork and in only one location per interviewer). We also listened to three recordings of telephone interviews chosen and sent to us by Accent.

14. When making spot checks, most of the interviewers were present for shifts although several shifts started late and, as stated above, one was not fulfilled due to illness. Location of interviewing was a significant problem:

    (a) In Durham, interviewers were not allowed to conduct fieldwork in the bus station. When we visited Durham bus station the interviewer was not there. We therefore phoned the Accent field manager who said that interviewers were being asked to interview at the next bus stop on the route. However, he subsequently gave incorrect directions to us for getting to this stop. This gives rise to some uncertainty about where the

interviewers on different shifts actually conducted their interviews, although in Durham the bus and train stations are close to each other and so it is unlikely that interviewers would interview outside the overlap catchment area.

(b) In Featherstone the interviewer was not at the bus stop ('F6') where we were told she would be and contact was made via the Accent area supervisor. The interviewer said that she had not received a map or any guidance about where to interview. On the previous day she had chosen F6 after local people had told her that it was the busiest stop, but on the day of the CMA's visit she had chosen a different stop as F6 was 'too hot'.

(c) In Liverpool (Charlotte Street) the interviewer was not at the designated bus stop, but at another location. There was some confusion at the time about exactly where this was, although we now understand it to have been at One Bus Station on the edge of, but still within, the catchment area. The interviewer said that she had been asked to move there by Accent's fieldwork manager after she had reported that it was hard to recruit passengers at the designated stop. She had worked several shifts including some at the other end of the flow (in Halewood) where she had also interviewed at a different location to the one intended (a shopping centre on the bus route nearer to Liverpool city centre which we believe must have been Belle View Shopping Centre – well outside the catchment area).

(d) Several interviewers had not received maps and only one interviewer was clearly using maps to check that respondents' destinations were bus stops within the overlap catchment area. In many cases it is likely that the passenger's destination would have been within 1.2 km of the train station. For example, if the respondent was asked whether their destination was Glasshoughton then this is a relatively small geographical area. However, where, for example, the destination is a city there is much more opportunity for the passenger to alight at a bus stop outside the overlap catchment area.

(e) When analysing the survey dataset we found a number of cases where a journey origin or destination town/city stated by the respondent did not correspond to the intended overlap flow.

15. The geographical starting and stopping points of the respondents' journeys are important to the accuracy of the survey results. If either end of a respondent's journey was outside the overlap catchment area then train travel would have a diminished chance of being cited as a diversion alternative. There is some evidence that this has happened in some cases and that the

magnitude of this bias varies by individual flow. Based on our spot checks we have not used survey responses on the Liverpool-Halewood flow.

16. An additional concern has been that our spot checks on fieldwork only covered a small proportion of interviewing and that we only spoke to interviewers on about half the surveyed flows. It is possible that there are other flows, like that in Liverpool, where locational issues may have undermined the reliability of survey results.

17. We observed a high degree of variation in the way that interviewers conducted interviews. Some only conducted full interviews at the bus stop, while others chose only to ask screener questions in person and collect details of eligible customers. It is possible that respondents may think more openly about different transport options when at home answering a follow up questionnaire, than they would at the bus stop (particularly in a bus station) where bus alternatives might be paramount in their mind. This may make comparison of results for individual flows harder to interpret, although we consider that these differential mode effects are not likely to be large.

18. The quality of interviewing was very variable. Some interviewers were good, following the script closely, but there were many instances of paraphrasing and prompting. This introduces random error or unknown biases into survey responses. There are two particular problems of note arising from our observations. First, there was a tendency by more than one interviewer to ask the screener questions in a leading affirmative way. For example, rather than asking which bus the passenger was waiting for, asking 'Did you know it was Arriva?' This accentuates the problem of including passengers in the survey who might not be eligible and again may lead to fewer customers citing rail as an alternative to the diversion questions. Second, the frequency diversion question was long and complex and we only heard one interviewer reading it out in full. The others paraphrased it in a variety of ways and we have consequently decided not to use responses to this question.[1]

19. The interviewer schedule shows that on many flows most of the interviewing/recruitment was conducted by no more than two interviewers. This accentuates the impact, on results for individual flows, of interviewer variation and bias.

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[1] Oxera's analysis of the survey results, 'Bus-rail overlaps: survey evidence', shows a high degree of variability between surveyed flows in the proportion of passengers who would stay on the bus; much more variability than among the equivalent proportions for the price diversion question. The same analysis also shows that many of those who said that they would not take the same bus stated that they would catch a different bus instead. This suggests some confusion about the meaning of the question and appropriate responses. These analyses reinforce our view that this question was not administered well in the field.

20. The questionnaire was unnecessarily long and made little attempt to mitigate the perception that this was a survey about buses. It might have been helpful to have had more questions about other modes of transport (and positioned them nearer to the diversion suite of questions). In addition, the usual caveats apply to the diversion questions that are hypothetical in nature and may result in responses which do not reflect the actual behaviour that the respondent would take if the circumstances of the question were to be realised.

21. In view of the above:

(a) Despite the methodology and other problems identified with the survey conducted by the Parties, there may be some useful indications about the closeness of competition between different transport modes on overlap flows in general when the survey results are analysed in aggregate. Results would need to be interpreted in caution. There are a number of ways in which the survey may not have fully captured the extent of diversion to rail travel (notably the possibility of capturing passengers who are not making journeys corresponding to overlap flows, for which, by definition, train is a particularly viable alternative).

(b) We observed that the frequency diversion question did not work well in the field and will therefore not look at the results to this question.

(c) We identified particular problems with interviewing on the Liverpool Lime Street – Halewood flow and will not include responses on this flow in our analyses.

(d) Given the high degree of interviewer variation, and the absence of any systematic way of assessing the quality of interviewing (particularly with respect to the eligibility of the respondent journey), we are cautious about survey results for individual flows. This is particularly true for those flows where the number of completed questionnaires was less than 100. We will therefore only use the results of individual flows in combination with each other to look for relationships between estimated diversion ratios and other non-survey derived competition metrics.

Survey results

22. The main interest in survey evidence in most merger cases is usually to help assess closeness of competition between the two merger parties' offerings. In this survey, when interpreting the results we have started with an analysis of the extent to which different modes of transport are second choice alternatives to the passenger's bus service and then estimated the more

conventional diversion ratio of the proportion of customers on overlap flows who would divert to a Northern Franchise rail service.

23. The results for all responses, aggregated across all surveyed flows (except the Liverpool flows which, for the reasons set out above, we removed from the dataset before analysing it), for the relative closeness of competition of different transport modes are set out in Table 2.

Table 2: Diversion to transport modes

Mode	*Price diversion (%)*	*Forced diversion (%)*
Walk/bike/other	2	2
Private car/van/motorbike	7	16
Train	46	33
Bus	15	23
Taxi/cab/Uber	0	3
Not travelling	31	23
Base	133	1,385

Source: Parties' survey Q22, Q22a, Q29.

24. It shows that 46% of passengers who would change their travel as a result of a 10% price increase in the ticket price for their journey would travel by train instead. Only 7% said that they would travel by car while 31% said that they would not travel at all. This was based on a relatively small sample as only paying passengers (eg not those over the age of 60 who travel free of charge) were asked the question and of those only 17% (136 passengers) said that they would not have paid the higher price.

25. These customers are defined as the marginal customers and are of most interest in our analysis. However, since sample sizes are small for this group we need to rely on responses to the forced diversion question to be able to look at diversion among sub-populations. It is useful in this respect to compare the pattern of diversion results between the two different diversion questions. Table 2 shows that less price sensitive customers (most of the respondents to the forced diversion question), are less likely to travel by train instead (33%) although this is still twice as many as would travel by car (16%).

26. The more conventional diversion ratio, measuring the proportion of diversion to the merger party (Northern Franchise) is shown in Table 3. There are two versions of the calculation. The first includes in the denominator diversion to all other Arriva bus and train services (as well as all the other usual denominator components) while the other excludes diversion to Arriva bus services and to all other Arriva train services apart from those operating under the Northern Franchise. The resultant diversion ratios are similar to percentages diverting to rail travel, shown in Table 3. This is because most

passengers who responded that they would divert to a train service said that they would travel on a Northern Franchise train (presumably because most were travelling on the overlap service). The impact of differences in the treatment of own party diversion on the results of the calculations is negligible.

Table 3: Diversion to Northern Franchise

	Price diversion	*Forced diversion*
Including own party diversion	36%	27%
Base	136	1,385
Excluding own party diversion	37%	29%
Base	133	1,275

Source: Parties' survey Q22, Q22a, Q23, Q25a, Q29, Q30, Q30a.

27. Respondents were asked earlier in the questionnaire whether they had used any other types of transport to make the same journey within the last three months. An analysis of responses is shown in Table 4, with an additional breakdown by ticket type (journey refers to single and return tickets; most of the concessionary tickets are people over the age of 60 who travel free of charge). Note that respondents were able to give more than one response (column percentages sum to more than 100).

28. Most passengers (62%) had not made the specific journey by any other mode of transport or using another bus company within the last three months. This was particularly true among those with concessionary tickets (74%). The proportion of people having travelled by car is difficult to calculate from the table because some respondents may have responded that they had travelled by car both as a passenger and driver. However the proportion (in the range of 13 to 21%, but probably at the upper end) is similar to those having made the journey by train (15%).

Table 4: Other types of transport used to make this journey in the last three months

		Ticket type		
Mode	*All (%)*	*Journey (%)*	*Season (%)*	*Concession (%)*
No other transport	62	53	50	74
Walked	3	6	4	1
Bicycle	1	2	2	0
Car/van/motorbike (passenger)	13	15	21	8
Car/van/motorbike (driver)	8	9	6	7
Other bus company	6	7	7	6
Rail	15	22	19	8
Taxi/minicab/Uber	4	5	9	1
Tram	0	0	1	0
Base	1,553	542	280	731

Source: Parties' survey Q8, Q16.

29. The small number of respondents stating that they would change their behaviour in response to a 10% increase in ticket price provides too small a sample for analysis of the diversion behaviour of sub-populations. We

therefore need to use the bigger sample provided by the forced diversion for this purpose, remembering, as shown in Table 2, that diversion to rail, as a proportion of all those that divert, is smaller under this measure.

30. Table 5 shows diversion to different transport modes broken down by which ticket type the passenger was travelling with ('journey' for this purpose includes all single, return and daily pass tickets). It shows that paying bus passengers were more likely to say that they would divert to a train alternative (45% and 42% of 'journey' and 'season' ticket holders respectively) than passengers with concessionary tickets[2] (21%). Over a third of non-paying passengers (37%) said they would not have made the journey if the bus service was not available.

Table 5: Mode diversion by ticket type

	Ticket type		
Mode	*Journey (%)*	*Season (%)*	*Concession (%)*
Bicycle/walk/other	2	4	1
Private transport	18	17	15
Rail	45	42	21
Bus	20	22	25
Taxi/minicab/Uber	3	6	2
Not travelling	12	9	37
Base	542	280	731

Source: Parties' survey Q16, Q29.

31. Table 6 shows that diversion to rail is higher among those that have no access to private transport[3] (37%) than those who have (26%). Two thirds of survey respondents stated that they did not have access to private transport (although 6% of these gave an inconsistent answer to the forced diversion question saying that they would use private transport instead). This suggests that a high proportion of bus passengers on the surveyed flows are dependent upon public transport.

Table 6: Mode diversion by access to private transport

	Access to private transport	
Mode	*No (%)*	*Yes (%)*
Bicycle/walk/other	2	0
Private transport	6	36
Rail	37	26
Bus	26	16
Taxi/cab/Uber	3	2
Not travelling	25	19
Base	1,056	497

Source: Parties' survey Q30, Q34a.

[2] Most concessionary ticket holders had Freedom Passes, available to those over the age of 60.
[3] 'Private transport' covers travel, either as passenger or driver, by private car, motorbike or van.

32. Table 7 shows that diversion to rail was stated more frequently by those who were making the bus journey to travel to work or school or for a business reason (47%), than for those making the journey for a leisure or personal reason (31%). Among the latter group 27% said that they would not have made the journey if the bus service was not available.

Table 7: Mode diversion by purpose of travel

	Purpose of travel	
Mode	*Work/school/business (%)*	*Personal/leisure (%)*
Bicycle/walk/other	4	1
Private transport	15	16
Rail	47	31
Bus	22	23
Taxi/cab/Uber	5	3
Not travelling	7	27
Base	288	1,265

Source: Parties' survey Q1, Q30.

Comparison of survey results against other competition metrics

33. We have set out above the reasons why we consider that survey results for individual flows are not usable in their own right. However, we were interested to see whether there were any other competition metrics that had a systematic relationship with survey estimates of diversion ratios[4] at a flow level. If this was the case, then the metric might be suitable as a proxy for closeness of competition between bus and Northern Franchise services at a flow level.

34. To analyse these relationships we collected a range of competition metrics for which the parties have provided data at a flow level. The following 13 metrics were compiled for each surveyed flow (where available):

(a) Relative fares – Arriva adult single bus fare over Northern Franchise equivalent fare.

(b) Relative journey time – Arriva bus journey time over Northern Franchise journey time.

(c) Relative service frequency – Arriva bus service frequency over Northern Franchise frequency.

[4] Survey responses to the forced diversion question were used for this purpose to maximise the sample of respondents for each individual flow.

(d) Relative generalised journey cost – Arriva bus generalised journey cost over Northern Franchise generalised journey cost.

(e) Relative passenger numbers – number of Arriva bus passengers over number of Northern Franchise passengers.

(f) Relative revenue – Arriva bus revenue over Northern Franchise revenue.

(g) Number of bus competitors.

(h) Northern Franchise fares.

(i) Northern Franchise frequencies.

(j) Northern Franchise journey times.

(k) Northern Franchise generalised journey cost.

(l) Northern Franchise passenger numbers.

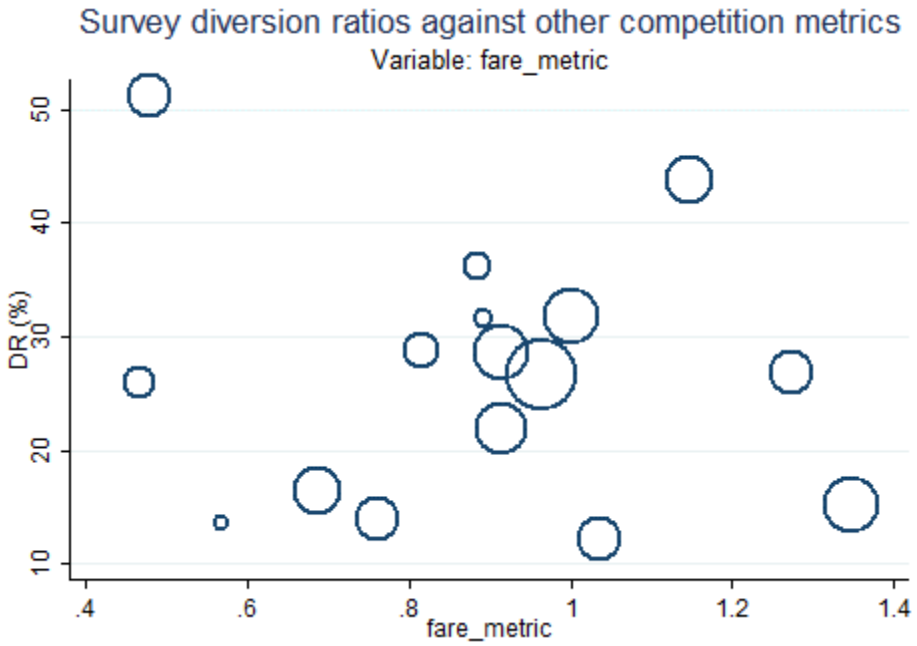
(m) Northern Franchise revenue.

35. The resulting scatter plots are annexed to this appendix. Each circle in each scatter plot represents a surveyed flow and the size of each circle is scaled according to the number of survey responses for that flow. There are 15 scatter plots in all as two versions of the plots are shown for two of the metrics (relative passenger numbers and relative revenue); with and without outliers. In some of the plots there are some flows missing. This occurs where the corresponding competition metric is not available for that flow.

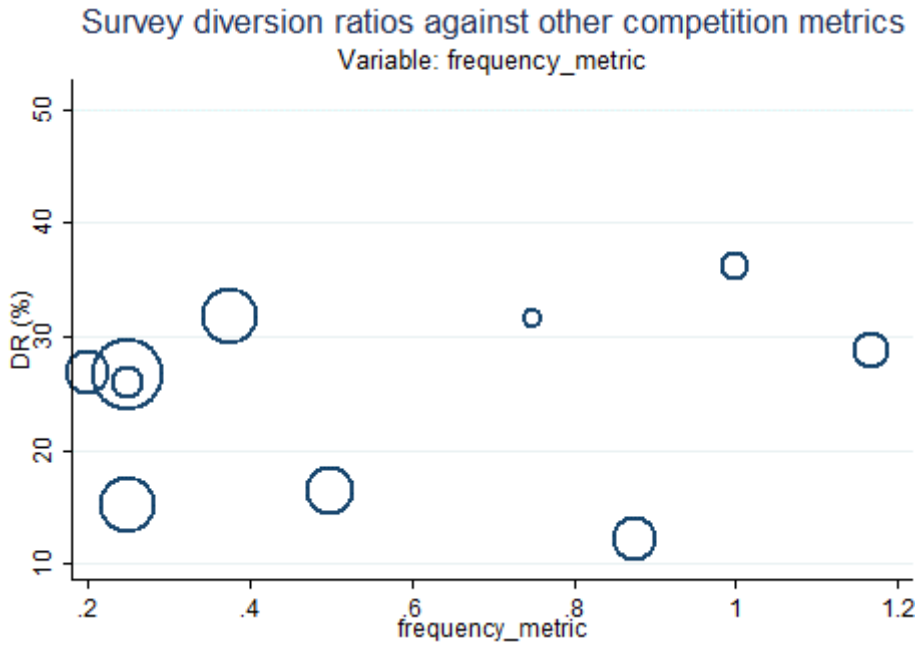
36. A visual inspection of plots suggests that none of the competition metrics are good predictors of diversion ratios. This might mean that there is no underlying behavioural relationship with any of these individual competition metrics or that survey errors at an individual flow level are sufficiently large to obscure any relationships that do exist.

Annex 1: Diversion ratio scatter plots with competition metrics for surveyed flows

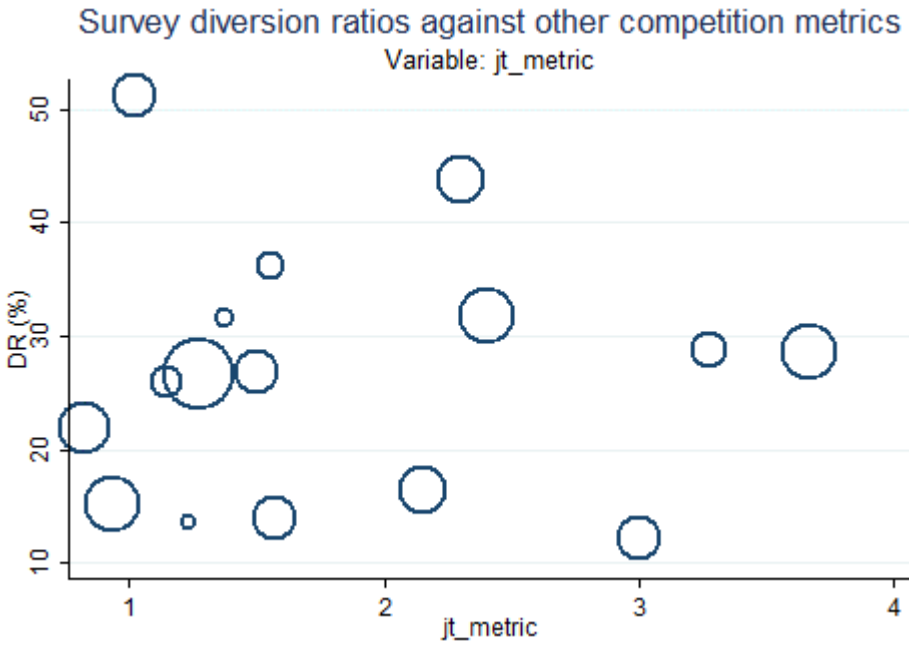
Plot 1: Relative fares (Arriva bus over Northern Franchise, adult single fare) against forced diversion ratios



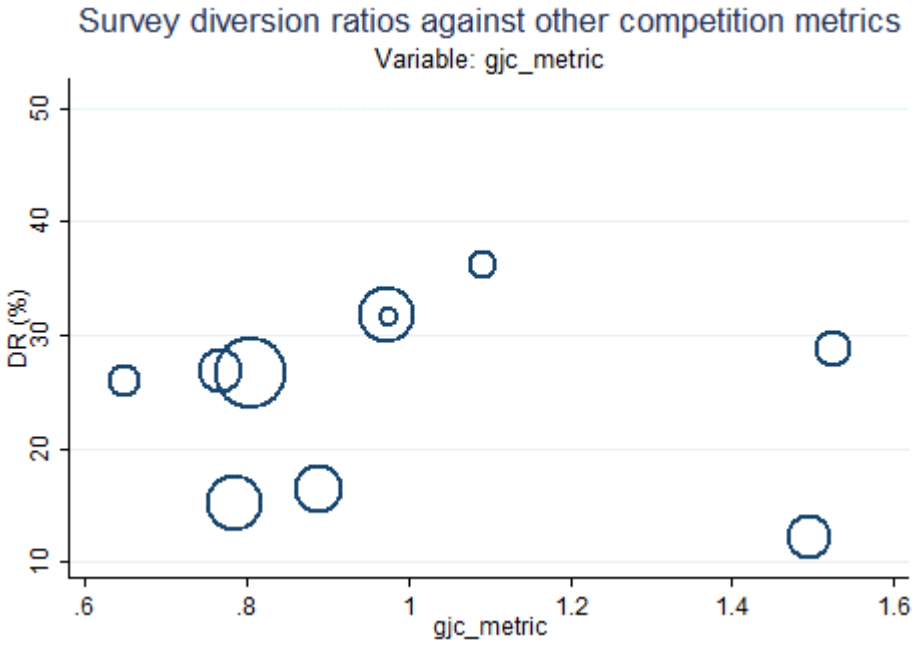
Plot 2: Relative service frequencies (Arriva bus over Northern Franchise) against forced diversion ratios



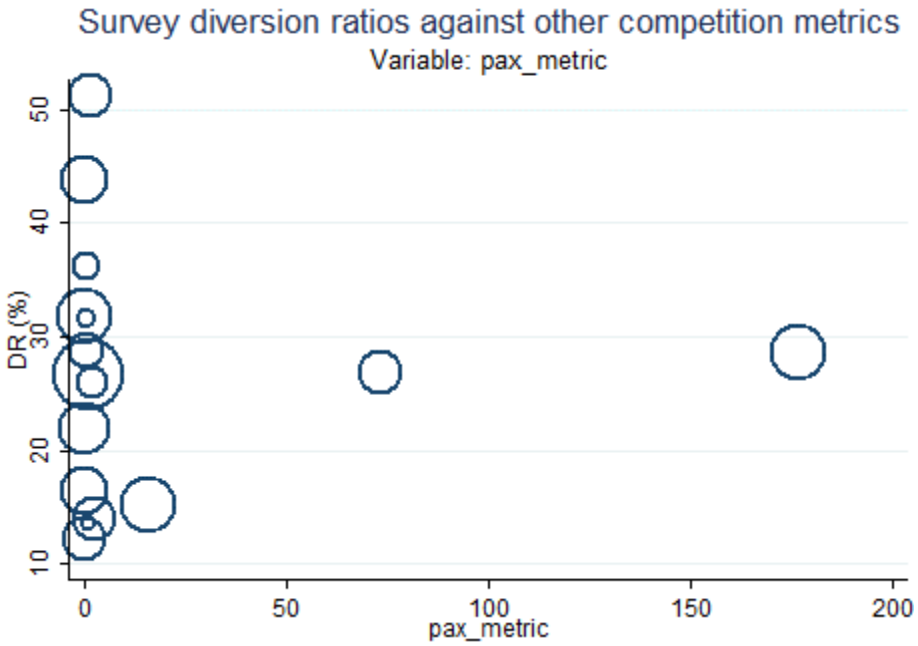
Plot 3: Relative journey time (Arriva bus over Northern Franchise) against forced diversion ratios



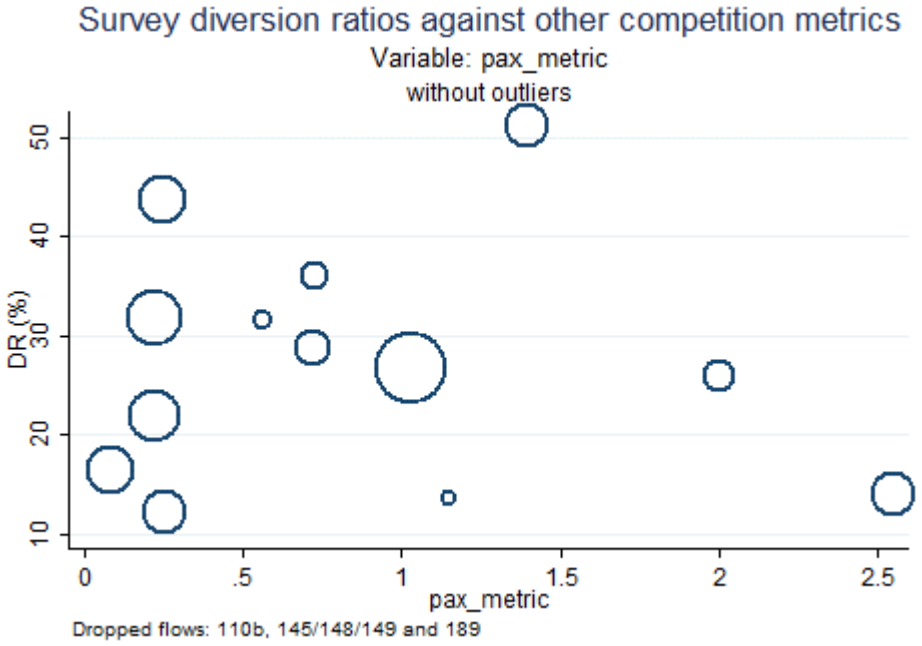
Plot 4: Relative generalised journey cost (Arriva bus over Northern Franchise) against forced diversion ratios



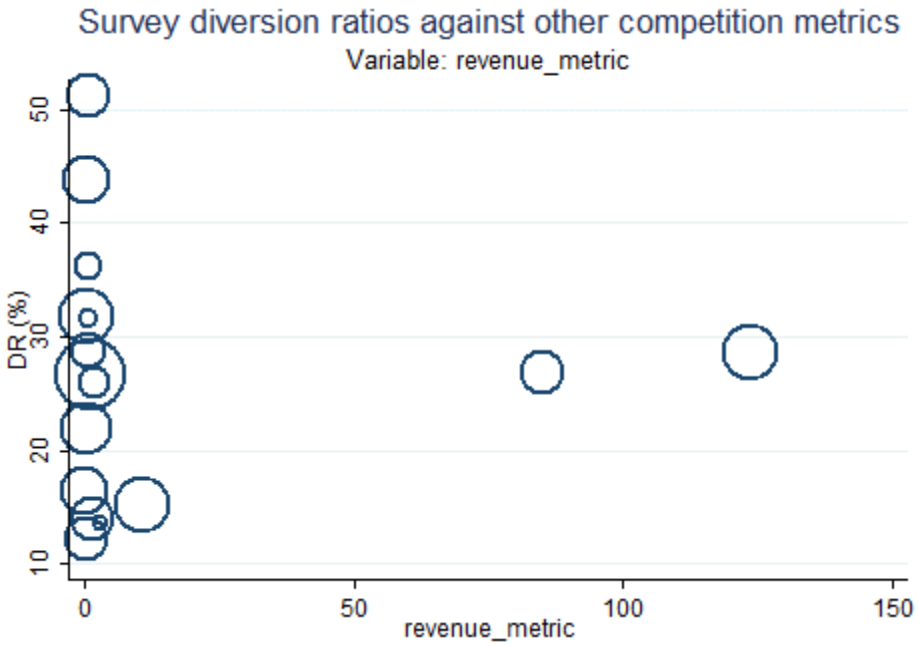
Plot 5: Relative passenger numbers (Arriva bus over Northern Franchise) against forced diversion ratios



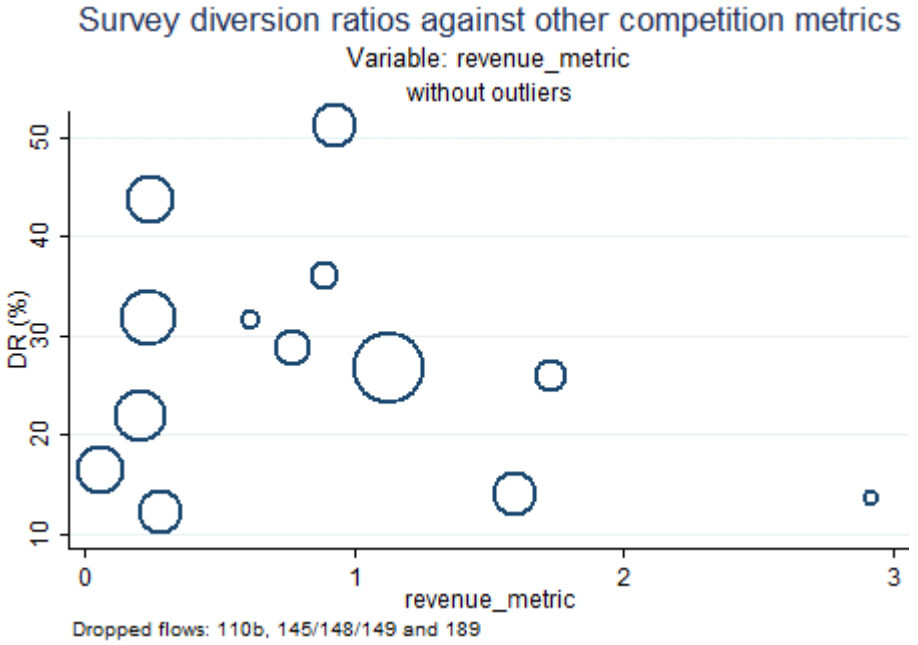
Plot 6: Relative passenger numbers (Arriva bus over Northern Franchise) against forced diversion ratios, without outliers



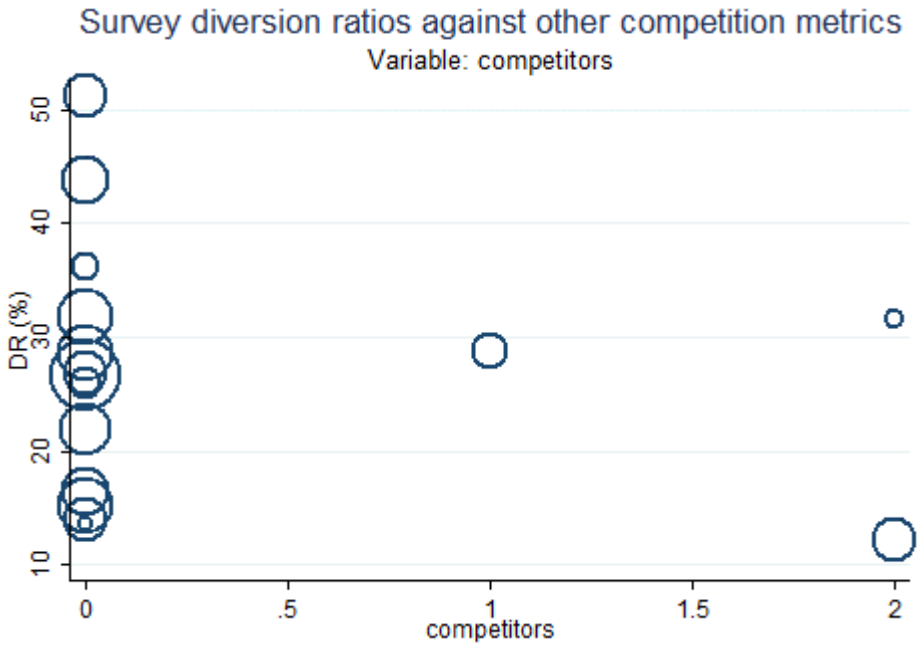
Plot 7: Relative revenues (Arriva bus over Northern Franchise) against forced diversion ratios



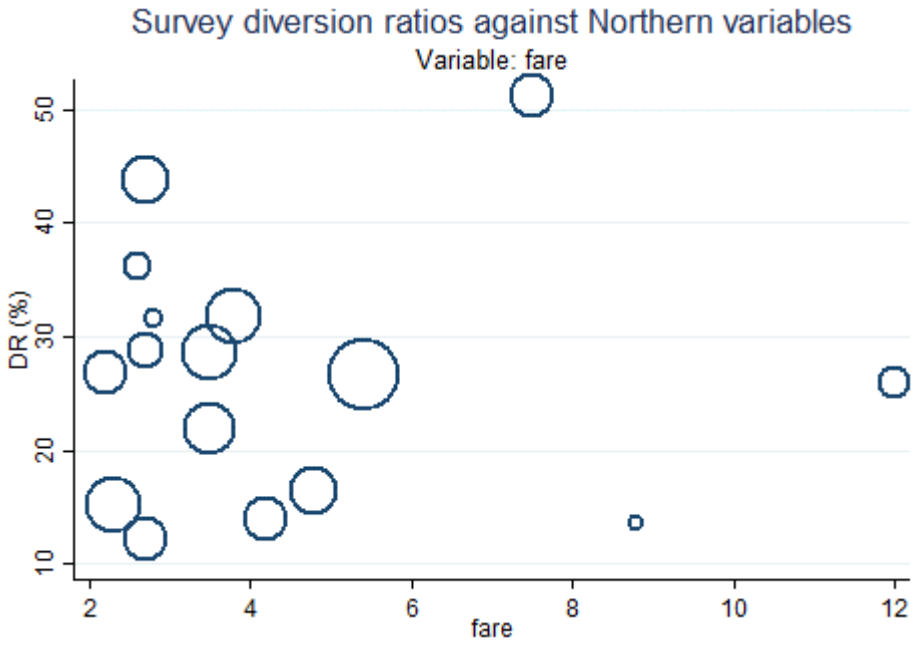
Plot 8: Relative revenues (Arriva bus over Northern Franchise) against forced diversion ratios, without outliers



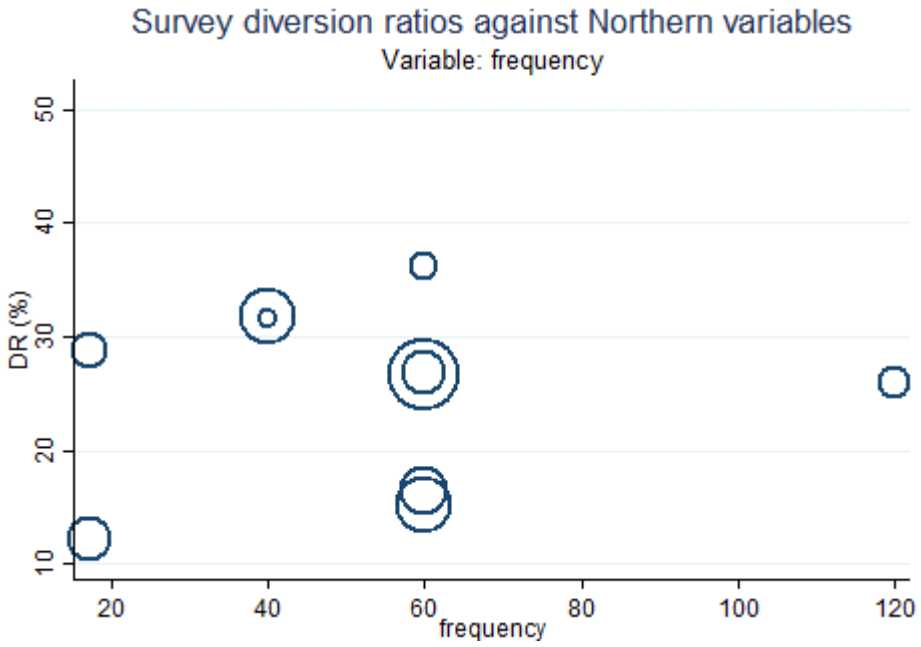
Plot 9: Number of bus competitors against forced diversion ratios



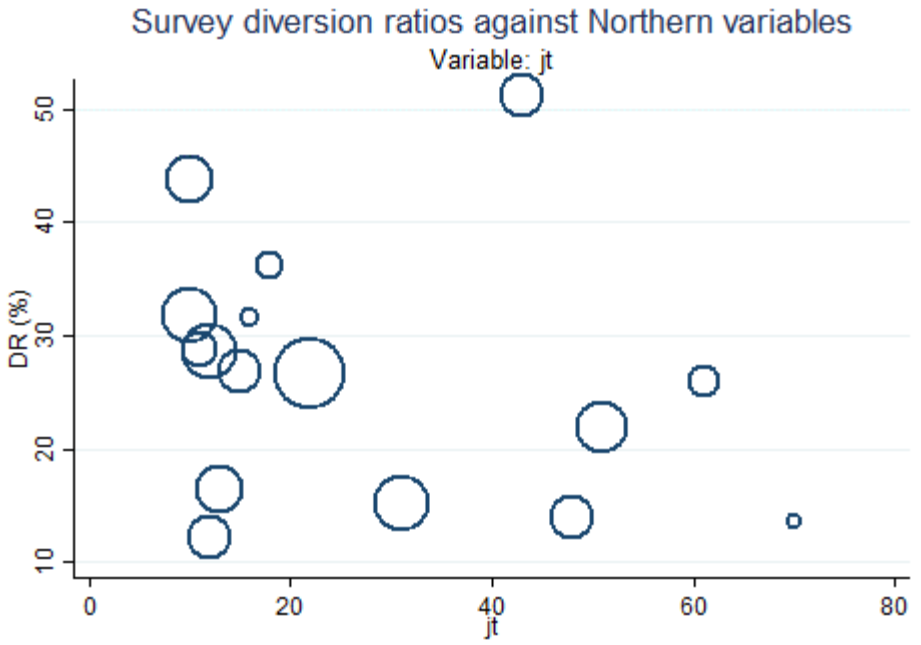
Plot 10: Northern Franchise fares against forced diversion ratios



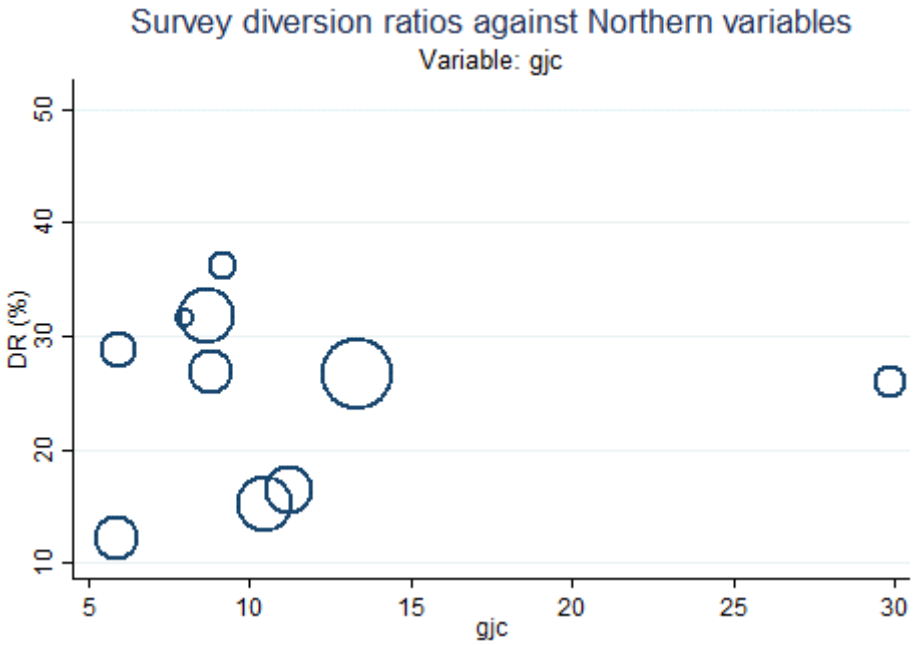
Plot 11: Northern Franchise service frequency against forced diversion ratios



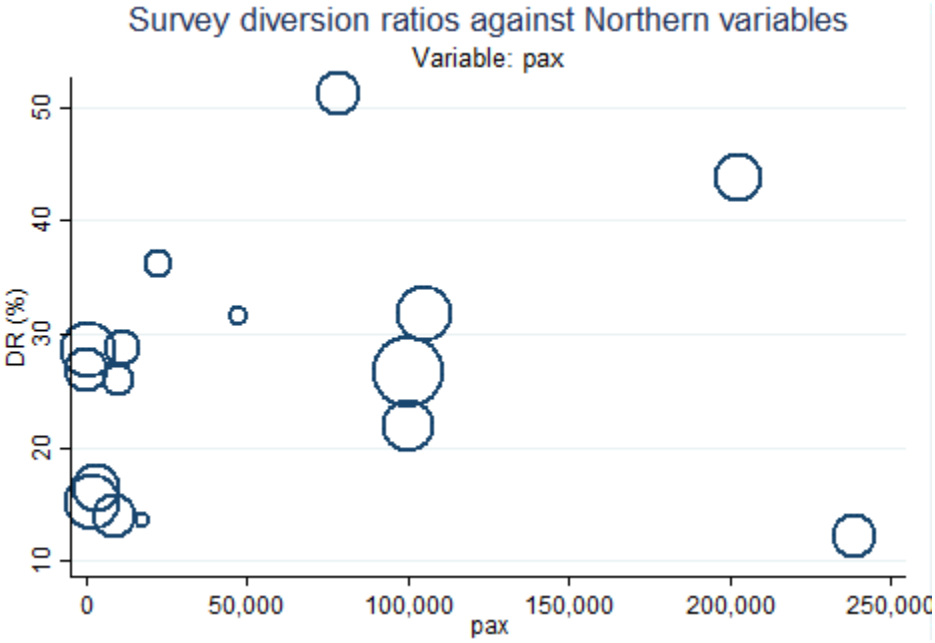
Plot 12: Northern Franchise journey times against forced diversion ratios



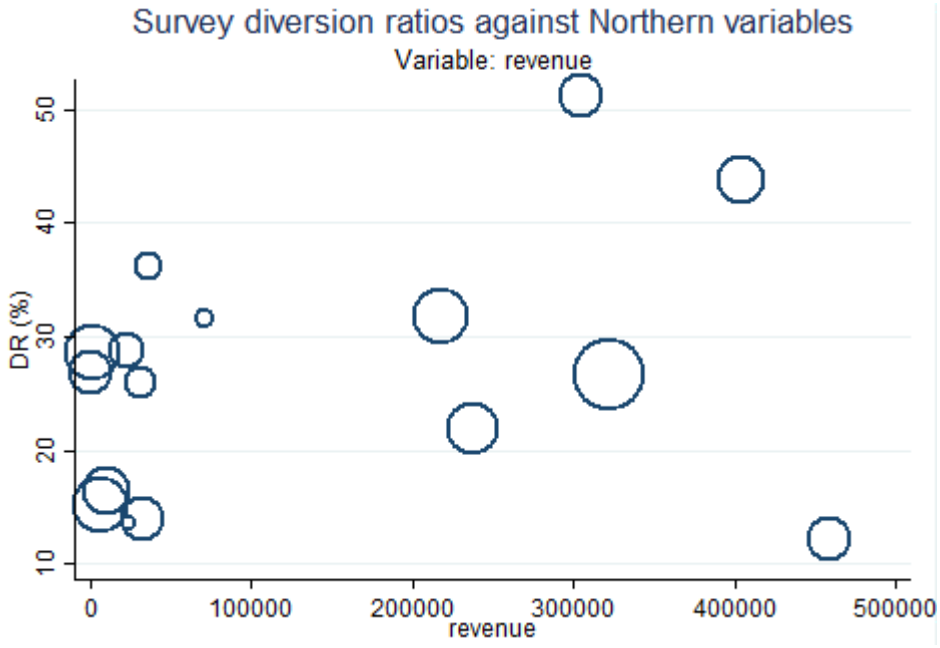
Plot 13: Northern Franchise generalised journey costs against forced diversion ratios



Plot 14: Northern Franchise passenger numbers against forced diversion ratios



Plot 15: Northern Franchise flow revenues against forced diversion ratios



Annex 2: Accent's methodology note for the bus-rail survey

3017 Recruitment
Arriva Northern franchise research

SYSTEM INFORMATION:
Interviewer number
Interviewer name
Date:
Time interview started:

Need to import from recruitment:
DATE
ROUTE
COMPANY
X
Y

Introduction

ONLINE:
Thank you very much for agreeing to complete this on-line survey which is being conducted by Accent. The closing date for completion of this survey is 31st July. If you complete the survey by the closing date, we will send you a £5 voucher to thank you for your time.

CATI: Good morning/afternoon/evening. My name is ..... from Accent. Please may I speak to [name from sample]. I understand you kindly agreed to take part in a transport survey which we are carrying out. [IF NECESSARY EXPLAIN THAT THEYGAVE THEIR CONTACT DETAILS TO ONE OF OUR INTERVIEWERS RECENTLY AT THE START OF A BUS JOURNEY]. I'd like to carry out a short telephone interview with you which will take no more than 10 minutes. Once you've completed the interview we will send you a £5 voucher to thank you for your time.

ONLINE/CAPI/CATI:
The research is being conducted under the terms of the Market Research Society code of conduct and is completely confidential. If you would like to confirm Accent's credentials please call the MRS free on 0500 396999.

ONLINE/CAPI: The questionnaire will take about ten minutes.

Any answer you give will be treated in confidence in accordance with the Code of Conduct of the Market Research Society

ONLINE/CATI: Please think about the journey you made on the day we interviewed you when you were travelling from #X# to #Y# by bus.

Q1. ONLINE/CATI: What was the **main** purpose of your bus journey on that day? ***SINGLE CODE***
CAPI: What is the **main** purpose of your bus journey today? ***SINGLE CODE***
Travelling to/from work
Travelling to/from school/college
On employer's business
Visiting/meeting friends/relatives

Shopping trip
Leisure trip
Other

Q2. How often do you make the trip between #X# and #Y# using the bus?
Every day
Every weekday
3-4 days a week
Once-twice a week
About once a fortnight
About once a month
Quarterly
Once a year/rarely
This was the first time

~~Q3. Do you have access to a car, van or motorbike that you could have used for this journey?~~
~~Yes~~
~~No~~
~~Don't know~~

Q4. Why did you choose to travel by bus for this journey? ***RANDOMISE***
CAPI: SHOW SCREEN
CATI: Why did you choose to travel by bus for this journey? I am going to read out a list of possible reasons and I'd like you to tell me which is the main reason?
RANDOMISE

Cost
Frequency of service
Convenience
Journey time
Availability of seats
Reliability
Not aware of other options
Other means of transport not available
Other

Q5. When you decided to make your journey, did you plan to use a specific bus company?
CAPI/CATI: READ OUT
Had one specific company in mind
Had several specific companies in mind
Had no specific company in mind but planned to get on the first bus that was going to my destination
GO TO Q8
Don't know GO TO Q8

Q6. ASK IF HAD ONE OR SEVERAL SPECIFIC COMPANIES IN MIND AT Q5 (OTHERS GO TO Q8): ONLINE/CATI: When you were waiting at #X# bus stop, did you consider different bus companies from the one(s) you had originally planned to take before you left?
CAPI: Have you considered using different bus companies to the one(s) you originally planned to take before you left?

Yes

No
Don't know

Q7. Why did you choose to travel with this specific bus company? RANDOMISE
CAPI: SHOW SCREEN
CATI: Why did you choose to travel with this specific bus company? I am going to read out a list of possible reasons and I'd like you to tell me which is the main reason? READ OUT ***RANDOMISE***

Cost
Frequency of service
Convenience
Journey time
Availability of seats

Reliability
Not aware of other options
Other means of transport not available

Q8. Have you used any **other** types of transport, including other bus companies, to make **THIS** journey, between #X# and #Y#, in the last 3 months? *MULTICODE. RANDOMISE (APART FROM NO AND OTHER)*
No – have not used any other type of transport
walked
bicycle
car/van/motorbike (as passenger)
car/van/motorbike (as driver)
other bus company
rail
taxi/minicab/Uber
tram
other (please specify)

Q9. **IF OTHER BUS COMPANY AT Q8 ASK, OTHERS GO TO** Q9b**:** Which company or companies operated the bus service that you used? ***MULTICODE. RANDOMISE***
Arriva
Yorkshire Tiger
First Leeds
Cumfybus
Stagecoach
Redcar & Cleveland Borough Council
Other (please type in)
Don't know

Q9a. **IF RAIL AT Q8 ASK, OTHERS GO TO** Q9b: Which company or companies operated the rail service that you used? ***MULTICODE. RANDOMISE***

Northern
Arriva Trains Wales
Transpennine Express
Virgin
Cross Country
Grand Central
Other
Don't know

Q9b. What is the address and postcode of the place where you set off from to take this journey (e.g. home/work)?

Address:……
Postcode:……

Don't know

Q10. ONLINE/CATI: How long did it take you to get to the bus stop where we interviewed you, #X#, from the point where you started your journey on that day? *MINUTES*
CAPI: How long did it take you to get to this bus stop from the point where you started your journey today?

……

Can't remember

Q11. How did you get to the #X# bus stop from your starting point? If this involved you using more than one means of travel please mention them all. *MULTICODE. RANDOMISE*

walked
bicycle
car/van/motorbike (as passenger)
car/van/motorbike (as driver)
other bus
rail
taxi/minicab/Uber
tram
other

Q12. **IF BUS AT Q11 ASK, OTHERS GO TO Q12a:** Which company operated the bus service that you used?

Arriva
Yorkshire Tiger
First Leeds
Cumfybus
Stagecoach
Redcar & Cleveland Borough Council
Other
Don't know

Q12a. **IF RAIL AT Q11 ASK, OTHERS GO TO Q13**: Which company or companies operated the rail service that you used? *MULTICODE. RANDOMISE*

Northern
Arriva Trains Wales
Transpennine Express
Virgin
Cross Country
Grand Central
Other

Q13. ONLINE/CATI: How did you get from #Y# to your end destination point? If this involved you using more than one type of travel please mention them all. *MULTICODE. RANDOMISE*

CAPI: How will you get from #Y# to your end destination point? If this involves you using more than one type of travel, please mention them all. MULTICODE
walking
bicycle
car/van/motorbike (as passenger)
car/van/motorbike (as driver)
other bus
rail taxi/minicab/Uber
tram
other
don't know

Q14. **IF OTHER BUS AT Q13 ASK, OTHERS GO TO** Q14a**:** ONLINE/CATI: Which company operates the bus service that you used for that part of your journey? RANDOMISE
CAPI: Which company operates the bus service that you will use for that part of your journey?
Arriva
Yorkshire Tiger
First Leeds
Cumfybus
Stagecoach
Redcar & Cleveland Borough Council
Other
Don't know

Q14a. **IF RAIL AT Q13 ASK, OTHERS GO TO Q14b**: ONLINE/CATI: Which company or companies operated the rail service that you used? ***MULTICODE. RANDOMISE***
CAPI: Which company or companies operate the rail service that you will use?
Northern
Arriva Trains Wales
Transpennine Express
Virgin
Cross Country
Grand Central
Other
Don't know

Q14b. What is the address and postcode of your destination at the end of the journey (e.g. home/work)?

Address:……
Postcode:……

Don't know

Q15. ONLINE/CATI: How long did it take you to get from #Y# to the destination at the end of your journey? ***MINUTES***
CAPI: How long will it take you to get from #Y# to the destination at the end of your journey?

……

Can't remember/Don't know

Q16. ONLINE/CATI: What type of ticket did you purchase to make this trip from #X# to #Y#? CATI: PROMPT IF NECESSARY

CAPI: What type of ticket did you or will you purchase to make this trip from #X# to #Y#? SHOW SCREEN IF NECESSARY

Adult Single
Adult Return
Child Single
Child Return
Day Saver
Weekly Saver
4-Weekly Saver
Annual Saver
Family/Group Saver
Student Saver/Student Pass
Older person's Bus Pass
Disabled person's Bus Pass
Other (please type in)

Q17. ONLINE/CATI: Could you use your ticket for buses run by companies other than #COMPANY# for that journey?
CAPI: Would you be able to use your ticket for buses run by companies other than #COMPANY# for this journey?

Yes
No
Don't know

Q18. IF OLDER PERSON'S/DISABLED PASS AT Q16, GO TO Q26. ASK OTHERS: ONLINE/CATI: When was the ticket purchased?

On the day of travel
On the day before I travelled
2-6 days before I travelled
1-4 weeks before I travelled
Over a month before I travelled
Don't know/can't remember

CAPI: When did you or will you purchase the ticket?

Today
Yesterday
2-6 days ago
1-4 weeks ago
Over a month ago
Don't know/can't remember

~~Q19. ONLINE: Did you benefit from a discount off the full ticket price (eg student discount) when purchasing your ticket?~~
~~CAPI: Did you or will you benefit from a discount off the full ticket price (eg student discount) when purchasing your ticket?~~

~~Yes~~
~~No~~
~~Don't know~~

Q20. ONLINE/CATI: Where did you purchase the ticket?
CAPI: Where did you or will you purchase the ticket?

On the bus
Online
Travel store

Ticket office/ticket machine
Other

Q21. ONLINE/CATI: How much did the ticket cost that you used?
CAPI: How much did or will the ticket cost?
IF WEEKLY/4 WEEKLY/ANNUAL/FAMILY/GROUP SAVER TICKET AT Q16 SAY:
ONLINE: Please enter [CAPI/CATI: Please tell me] the price of your season ticket, not how much it costs for this journey.
Please give an estimate if you are unsure.

Don't know **GO TO Q26**

Q22. **IF NOT WEEKLY/4 WEEKLY/ANNUAL/FAMILY/GROUP SAVER/STUDENT PASS TICKET AT Q16 ASK:** When you decided to make this journey, if you knew your bus ticket on this journey by #COMPANY# [IF MORPETH-NEWCASTLE OR NEWCASTLE-MORPETH FLOW SAY: for all the X14, X15, X16 and X18 services] had increased to #**110% of Q21**# what would you have done?
IF WEEKLY/4 WEEKLY/ANNUAL/FAMILY/GROUP SAVER/STUDENT PASS TICKET AT Q16 ASK: Thinking back to when you bought your season ticket, if you knew the season ticket for #COMPANY# services [IF MORPETH-NEWCASTLE OR NEWCASTLE-MORPETH FLOW SAY: X14, X15, X16 and X18] **only** had increased to **#110% of Q21#** what would you have done?
DO NOT PROMPT. SINGLE CODE

I would still use #COMPANY# bus service GO TO Q26
I would still travel but not with this bus service: GO TO Q22a
NON SEASON TICKET SAY:I would not make the journey at all GO TO Q26
SEASON TICKET SAY: I would stop making this regular journey GO TO Q26

Q22a. ASK IF 'I would still travel but not with this bus service' AT Q22 (OTHERS GO TO Q26): How would you travel? RANDOMISE. **DO NOT PROMPT**
Bicycle
Own/family car/van/motorbike (as passenger)
Own /family car/van/motorbike (as driver)
Train
Another bus company
Taxi/minicab/Uber
I would travel by other type of transport: (Please state)
Don't know

Q23. **IF ANOTHER BUS AT** Q22A **ASK, OTHERS GO TO** Q25a**:** Which company operates the bus service that you would use? RANDOMISE. EXCLUDE #COMPANY# FROM THE LIST. **DO NOT PROMPT**
Arriva
Yorkshire Tiger
First Leeds
Cumfybus
Stagecoach
Redcar & Cleveland Borough Council
Other
Don't know

Q24. **IF ANOTHER BUS AT** Q22a **ASK:** ONLINE/CATI: Do you know how much the same or a similar bus ticket to the one you used would cost if you were travelling between #X# and #Y# with another bus company?
CAPI: Do you know how much the same or a similar bus ticket to the one you are using today would cost if you were travelling between #X# and #Y# with another bus company?
Yes **RECORD VALUE** £..:…p .
No, don't know

Q25. **IF NO AT Q24 ASK (OTHERS GO TO** Q25a**):** In comparison to #COMPANY#, do you think the same or a similar bus ticket would be: CAPI/CATI: READ OUT
Much cheaper than the current one
Cheaper than the current one
About the same as the current one
More expensive than the current one
Much more expensive than the current one
Don't know

Q25a. **IF TRAIN AT** Q22A **ASK, OTHERS GO TO Q26:** Which company operates the train service that you would use? RANDOMISE. **DO NOT PROMPT**
Northern
Arriva Trains Wales
Transpennine Express
Virgin
Cross Country
Grand Central
Other
Don't know

Q25b. IF TRAIN AT Q22A **ASK:** ONLINE/CATI: Do you know how much the same or a similar ticket to the one you used would cost if you were travelling between #X# and #Y# by train?
CAPI: Do you know how much the same or a similar ticket to the one you are using today would cost if you were travelling between #X# and #Y# by train?
Yes **RECORD VALUE** £..:…p .
No, don't know

Q25c IF NO AT Q25B **ASK (OTHERS GO TO Q26):** In comparison to #COMPANY#, do you think the same or a similar train ticket would be: CAPI/CATI: READ OUT
Much cheaper than the current one
Cheaper than the current one
About the same as the current one
More expensive than the current one
Much more expensive than the current one
Don't know

Q26. ***DP RANDOMISE QUESTION ORDER: ASK 50% Q26 AND ASK 50% Q27***

IF NOT WEEKLY/4 WEEKLY/ANNUAL/FAMILY/GROUP SAVER/STUDENT PASS TICKET AT Q16 ASK: When you decided to make this journey, if you knew that the frequency of this #COMPANY# bus [IF MORPETH-NEWCASTLE OR NEWCASTLE-MORPETH FLOW SAY of these #COMPANY# buses X14, X15, X16 and X18] had been permanently cut by half such that this bus was still running but the bus before and

after this one were no longer running, what would you have done?. **DO NOT PROMPT**

IF WEEKLY/4 WEEKLY/ANNUAL/FAMILY/GROUP SAVER/STUDENT PASS TICKET AT Q16 ASK: Thinking back to when you bought your season ticket, if you knew that the frequency of this #COMPANY# bus [IF MORPETH-NEWCASTLE OR NEWCASTLE-MORPETH FLOW SAY of these #COMPANY# buses X14, X15, X16 and X18] had been permanently cut by half such that this bus was still running but the bus before and after this one were no longer running, what would you have done? **DO NOT PROMPT**

I would still use this bus service GO TO Q29
I would still travel but not with this bus service GO TO Q27A
I would not make the journey at all GO TO Q29

Q27. **IF NOT WEEKLY/4 WEEKLY/ANNUAL/FAMILY/GROUP SAVER/STUDENT PASS TICKET AT Q16 ASK:** When you decided to make this journey, if you knew that the service frequency [IF MORPETH-NEWCASTLE OR NEWCASTLE-MORPETH FLOW SAY: of the X14, X15, X16 and X18] was reduced so that the particular bus you used wasn't running any more although the one before and the next one were still running, what would you have done? **DO NOT PROMPT**

IF WEEKLY/4 WEEKLY/ANNUAL/FAMILY/GROUP SAVER/STUDENT PASS TICKET AT Q16 ASK: Thinking back to when you bought your season ticket, if you knew that the service frequency [IF MORPETH-NEWCASTLE OR NEWCASTLE-MORPETH FLOW SAY: of the X14, X15, X16 and X18] was reduced so that this bus wasn't running any more although the one before and the next one were still running, what would you have done? **DO NOT PROMPT**

I would still use this bus service GO TO Q29
I would still travel but not with this bus service: GO TO Q27a
I would not make the journey at all GO TO Q29

Q27a. ASK IF 'I would still travel but not with this bus service' AT Q26 OR Q27 (OTHERS GO TO Q29): How would you travel? RANDOMISE. **DO NOT PROMPT**

Bicycle
Own/family car/van/motorbike (as passenger)
Own /family car/van/motorbike (as driver)
Train
Another bus company
Taxi/minicab/Uber
I would travel by other type of transport: (Please state)
Don't know

Q28. **IF TRAVEL BY ANOTHER BUS COMPANY AT** Q27a **ASK, OTHERS GO TO** Q28a: Which company operates the bus service that you would use? RANDOMISE. EXCLUDE #COMPANY# FROM THE LIST. **DO NOT PROMPT**

Arriva
Yorkshire Tiger
First Leeds
Cumfybus
Stagecoach
Redcar & Cleveland Borough Council
Other
Don't know

Q28a **IF TRAIN AT** Q27A **ASK, OTHERS GO TO Q29:** Which company operates the train service that you would use? RANDOMISE. **DO NOT PROMPT**

Northern
Arriva Trains Wales
Transpennine Express
Virgin
Cross Country
Grand Central
Other
Don't know

Q29. **IF NOT WEEKLY/4 WEEKLY/ANNUAL/FAMILY/GROUP SAVER/STUDENT PASS TICKET AT Q16 ASK:**When you decided to make this journey, if you knew that the service operated by #COMPANY# had stopped running for a few months, what would you have done? **DO NOT PROMPT**

IF WEEKLY/4 WEEKLY/ANNUAL/FAMILY/GROUP SAVER/STUDENT PASS TICKET AT Q16 ASK: thinking back to when you bougth your season ticket, if you knew that the service operated by #COMPANY# had stopped running for a few months, what would you have done? **DO NOT PROMPT**

I would travel by bicycle
I would travel by own/family car/van/motorbike (as passenger)
I would travel by own/family car/van/motorbike (as driver)
I would travel by train
I would travel by another bus company
I would travel by taxi/minicab/Uber
I would travel by other type of transport: (Please state)
NON SEASON TICKET SAY: I would not make the journey at all
SEASON TICKET SAY: I would not make this regular journey at all
Don't know

Q30. **IF TRAVEL BY ANOTHER BUS COMPANY AT Q29 ASK, OTHERS GO TO** q30A**:** Which company operates the bus service that you would use? RANDOMISE. EXCLUDE #COMPANY# FROM THE LIST. **DO NOT PROMPT**

Arriva
Yorkshire Tiger
First Leeds
Cumfybus
Stagecoach
Redcar & Cleveland Borough Council
Other
Don't know

Q30a. **IF TRAVEL BY TRAIN AT Q29 ASK, OTHERS GO TO 'SAY TO ALL':** Which company operates the train service that you would use? RANDOMISE. **DO NOT PROMPT**

Northern
Arriva Trains Wales
Transpennine Express
Virgin
Cross Country
Grand Central
Other
Don't know

SAY TO ALL: Thank you for that. Just to make clear, those last few questions were asked only as "what ifs". There are no plans for #COMPANY# to stop operating its bus service.

Classification Questions

~~Q31.~~ . ~~Are you…~~
~~Male~~
~~Female~~

~~Q32. Which of the following age categories are you in?~~
~~16-25~~
~~26-35~~
~~36-45~~
~~46-55~~
~~46-65~~
~~Over 65~~

Q33. Finally, a few questions to ensure we are talking to a good cross section of travelers. Which of the following best represents the gross annual income, before deductions for tax and National Insurance, for your household? CAPI/CATI: READ OUT
Less than £15,000
£15,000 to £25,000
£25,001 to £40,000
£40,001 or more
Don't know
Prefer not to say

Q34. What is your employment status? CAPI/CATI: READ OUT
Working full time
Working part time
Unemployed – looking for work
Unemployed – not looking for work (eg caring for home, family)
In full time education
Retired
Prefer not to say

Q34a. Do you have access to a car, van or motorbike that you could have used for this journey?

Yes
No
Don't know

Q35. We mentioned that there would be a £5 incentive for completing this survey which will be sent to you as an online voucher. Please let us know whether you would prefer an Amazon or an M&S voucher?
Amazon voucher to **EMAIL ADDRESS**
ONLINE ONLY: Amazon voucher to another email id **SPECIFY EMAIL**
M&S voucher **SPECIFY ADDRESS OR EMAIL**
Boots voucher **SPECIFY ADDRESS**

ONLINE: If you have any queries about your incentive please contact us on 0131 220 8770. But please note, we send all incentives at the end of the fieldwork so this could take a couple of weeks to get to you.
CAPI/CATI: Please note, we send all incentives at the end of the fieldwork so this could take a couple of weeks to get to you.

Q36. We really appreciate the time that you have given us today. Would you be willing to be contacted again for clarification purposes or be invited to take part in other research?

Yes, for both clarification and further research
Yes, for clarification only
Yes, for further research only
No

Thank you. This research was conducted under the terms of the Market Research Society code of conduct and is completely confidential. If you would like to confirm my credentials or those of Accent please call the MRS free on 0500 396999.

CAPI: HAND OVER THANK YOU LEAFLET

CAPI/CATI: Interviewer Confirmation

I confirm that this interview was conducted under the terms of the MRS code of conduct and is completely confidential

Yes
No

SYSTEM INFORMATION
Time interview completed:

INTERNAL USE ONLY: Click here

Online only	X			
CATI only		(DP: add QAX)		
CAPI/Tablet	X	(BCQs:	) QAZ2	Paper showcard?
N				
CATI recruit for online/fiel				
		(BCQs:	) QAZ3	
Field recruit for online/CA		(BCQs:	) QAZ1	
Recruit only (ie for qual)				

Annex 3: Oxera's bus-rail overlaps – survey evidence

Bus-rail overlaps: survey evidence

Prepared for
Competition and Markets Authority

17 August 2016

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Executive summary

[✂]

1 Introduction

This section sets out information on the purpose of the survey, an overview of the methodology and the process for selecting bus flows to survey. More detail is provided in Appendix 2 and 3.

1.1 Purpose of the survey

The survey was undertaken in order to analyse characteristics of bus passengers on Arriva's services on a number of bus-rail overlap flows, including demographics, reasons for choosing to travel by bus, and frequency of travel.

The survey also asks these bus passengers what they would do if bus fares were increased, frequency was reduced or the bus service stopped running altogether. The answers to these questions provide useful indications of the extent to which bus passengers on the Arriva services concerned consider rail to be a close substitute, which is relevant to the CMA's potential theories of harm.

The survey was not designed to provide evidence on substitution between bus and rail travel across the Northern franchise area, or even across all flows on which Arriva's bus services overlap with Northern rail. Instead, the purpose was to obtain evidence for specific flows that were not excluded from further analysis by any of the filters.

1.2 Overview of methodology

In order to conduct a survey that could assist the CMA in its decision-making process in the time available, a number of limitations on the scale and scope of the survey were required.

In the time available it was not possible to rely solely on face to face interviews. Therefore surveys were undertaken in multiple ways—face-to-face, online and by phone. The interviews were all conducted between the period of 18 July and 8 August 2016. Oxera designed the survey and analysed the results, while the survey fieldwork was conducted by Accent.

The survey methodology is described in further detail in Appendix 2, and the survey questionnaire is included in Appendix 3. The questionnaire was shared for comment with the CMA before the fieldwork commenced, and the CMA's feedback was incorporated into the final version. The raw survey results were also shared with the CMA. The CMA team were given access to the survey briefing meetings and carried out spot-checks during the interviewing process.

1.3 Bus flows surveyed

Given the number of bus-rail overlaps in this case, the limited time available, and the significant cost of carrying out surveys, it was not possible to survey all bus-rail overlaps.

The surveyed flows were selected based on a number of criteria, as follows:

- Flows that remain after the application of the CMA's filters—bus de minimis, rail de minimis, proportion of overlapping route revenue, effective competitor and revenue increment.[1]

[1] The surveyed flows were selected before the CMA prioritised the remaining flows based on the generalised cost analysis. The rail de minimis filter is set at a level of £10,000. We have not applied the prioritisation approach based on the £20,000 threshold for the rail de minimis filter.

- Flows where the rail station and bus stop are within 1,200m straight-line distance of one another for rural/long flows and 400m straight-line distance for intra-urban/short flows. Since the survey was initiated, the CMA has proposed using a catchment area of 1,200m walking distance for all flows. Therefore, some of the flows surveyed have rail stations and bus stops within 1,200m straight-line distance of one another, but not 1,200m walking distance of one another—see Table 1.1 below.

- Flows which have annual passenger numbers of over 10,000 in order to ensure that we would be able to survey a sufficient number of passengers to obtain reliable sample sizes. Even though the flows surveyed all had over 10,000 passengers per annum, there were a few flows where it was difficult to obtain significant sample sizes. Accent provided periodic updates about the number of passengers recruited and the number of surveys completed on each flow. After a few weeks of surveying, where it was clear that it would be difficult to obtain a significant sample size, we decided to stop surveying the flow and to focus the surveys on the other flows. Table 1.1 lists the cancelled flows.[2]

- The largest flow on each remaining route, with the exception of route 110 where there were two very large flows (revenue of over £200,000 each) so both flows were surveyed.

- There is a flow (Cramlington-Manors/Cramlington-Newcastle) on the X9 which has the same bus origin and destination stops, but different rail destination stations listed as the destination bus stops are equidistant from two rail stations. This flow was only surveyed once.

[✂]

[2] A maximum of 62 respondents answered the survey on any one of these flows. The data has been provided to the CMA for these cancelled routes.

A1 Survey methodology

A1.1 Survey design

The survey design included the following stages:

- Questionnaire design: Oxera, with assistance from Accent, designed the questionnaire.
- Revision of questionnaire: certain routing, questions and options were modified to improve understanding and as a result of discussions with the CMA.
- Pilot: Accent tested the survey on a few select flows and amendments were made.

A1.2 Recruitment and interviewing of respondents

Accent surveyed bus passengers throughout the day and week, at both peak and off-peak times. We also surveyed passengers travelling from A to B and those travelling from B to A.

Given the way that the bus-rail overlaps are identified, in most cases there are multiple bus stops at each end of a bus flow which correspond to each of the rail origin and destination stations and which were therefore in scope for the survey.

The survey itself was then undertaken in one of three ways:[3]

- face-to-face at the bus stop (62% of the completed interviews);
- a link to the survey was sent to eligible passengers' email addresses with a £5 incentive to respond by a specified time (23% of the completed interviews);
- by phone if passengers did not have internet access/an email address or did not want to provide their email address to the interviewer (14% of the completed interviews).

For face-to-face interviews, interviewers engaged with passengers at the bus stop/station while passengers were waiting for the bus. Interviewers asked passengers a number of screening questions to make sure they were eligible for the survey—e.g. to make sure that they were travelling on one of the overlapping flows of interest and with an Arriva service. If passengers did not know the company they were travelling with, they were shown bus company logos and asked to choose the particular bus company. As passengers might not always know the exact name of their final bus stop, Accent showed passengers a map and allowed them to choose the destination bus stop.[4] Face-to-face interviewers were accompanied by their supervisor on a number of occasions.

All interviewers working on this project were personally briefed by either the Project Manager or the Field Manager. The initial briefing for face-to-face interviewers was by phone and was attended by representatives of the CMA. Briefing notes were provided for face-to-face and telephone interviewers.

The sample provided for telephone interviewing was de-duplicated by phone number, and email addresses were also de-duplicated. Where Accent received

[3] Numbers may not sum due to rounding.
[4] There were a few initial shifts where maps were not available.

bounce-backs from incorrect email addresses, these were followed up by phone (where a phone number had also been provided) in order to correct the email address or to conduct the interview by phone as preferred.

[✂]


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Assessment of overlapping bus and rail services

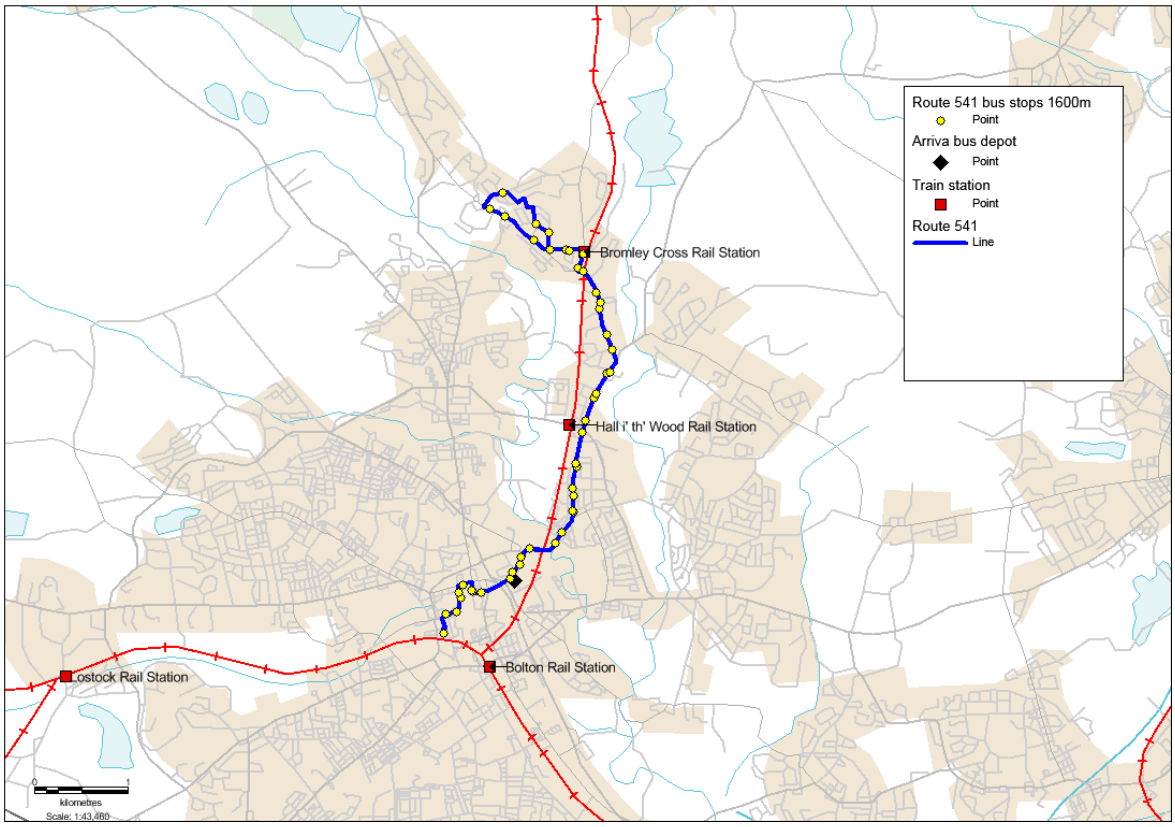
Introduction

1. In this appendix we set out our detailed assessment of the overlapping bus and rail flows in relation to which we provisionally conclude that the Merger has not resulted in or may not be expected to result in an SLC.

Bolton

Route 541

Figure 1: Map of route 541[1]



Source: Basemap data/CMA calculations

2. The 541 is an Arriva North West service, which runs between Toppings Estate and Bolton. The service overlaps with the Northern Franchise's rail services on three flows. After filtering, one flow remains for in-depth analysis: Bromley Cross to Bolton.

[1] Catchment area used to define bus and rail overlaps is 1,200-metre in our analysis.

3. The rail service has a journey time of 8 minutes compared to a journey time of 21 minutes on bus. Moreover, the rail fare is cheaper than the bus fare, with a peak single costing £2.30[2] compared to £2.90 on the 541. The bus frequency is about two an hour and the rail frequency is about 1.5 an hour. The difference in GJC is -[10-20%]. This suggests that there is a degree of differentiation between bus and rail services.

4. Total revenue on the route was £[✂] in the last financial year, with the revenue generated on the overlap flow (£[✂]) representing [10-20%] of total revenue on this route.

5. First Manchester operates an hourly service (533) between Bolton Moor Lane bus station and Egerton, which stops in Bromley Cross. Lancashire Bus operates one service between Bolton and Blackburn four times per hour (approximately double the frequency of the 541).

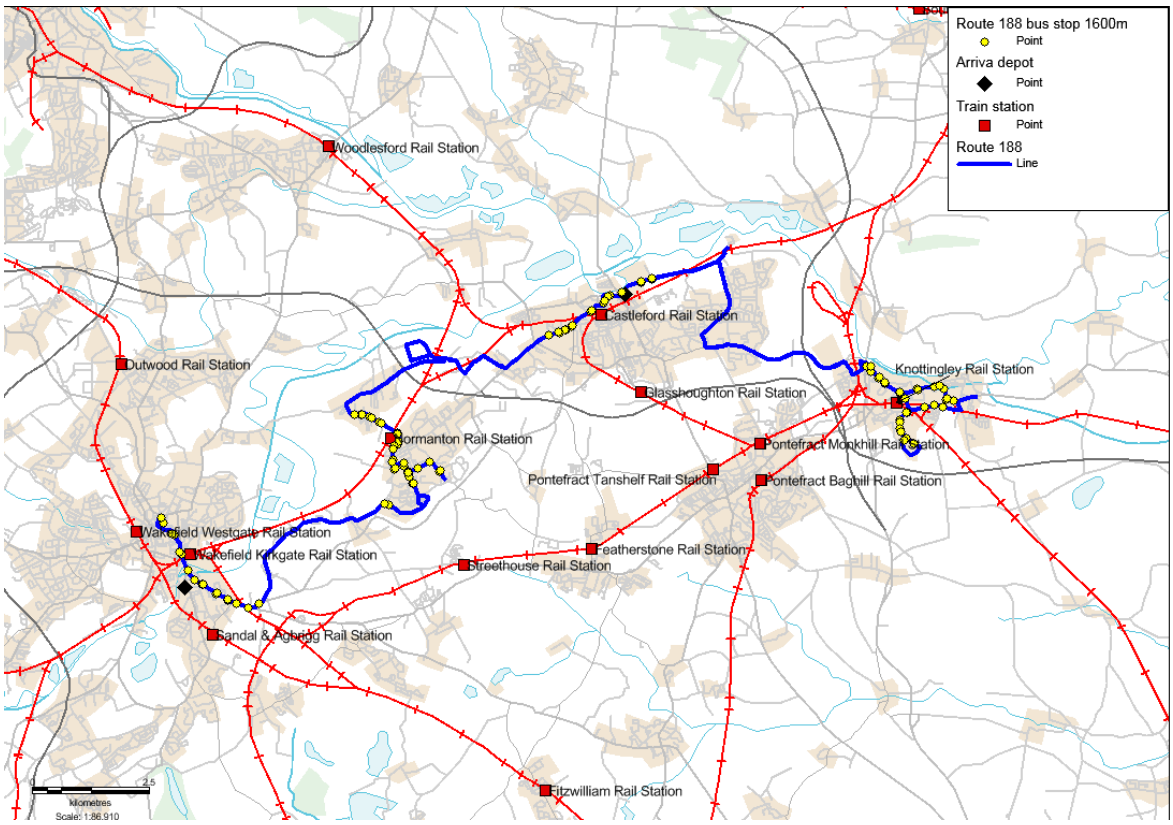
6. We provisionally conclude that the Merger has not resulted in or may not be expected to result in an SLC on this route. Our analysis suggests that there is some degree of differentiation between bus and rail services on this flow. However, bus operators FirstGroup and Lancaster Bus currently operate competing services on parts of the route, which we consider likely to mitigate Arriva's incentive to degrade its bus offering.

[2] Unless otherwise stated, fares quoted are adult single peak fares.

Castleford

Route 188

Figure 2: Map of route 188



Source: Basemap data/CMA calculations

7. The 188 service[3] runs between Wakefield and Knottingley via Castleford and Normanton. There are ten flows on this route that overlap with the Northern Franchise's rail service. After filtering, two flows remain for in-depth analysis: Castleford to Knottingley and Normanton to Wakefield Kirkgate.

8. Arriva operates one bus service per hour, the Northern Franchise also operates one rail service per hour on the overlap flows. Journey time on the bus is 29 minutes (Castleford–Knottingley) and 26 minutes (Normanton–Wakefield Kirkgate), compared to 16 and 4 minutes by rail, respectively. Bus fares are £3.10 (Castleford–Knottingley) and £2.80 (Normanton–Wakefield Kirkgate), compared to £2.20 and £1.60 on rail.

9. Total revenue on this route was £[✂] in the last financial year, with the revenue generated on the overlap flows (£[✂]) representing [0-5%] of total route revenue on this route.

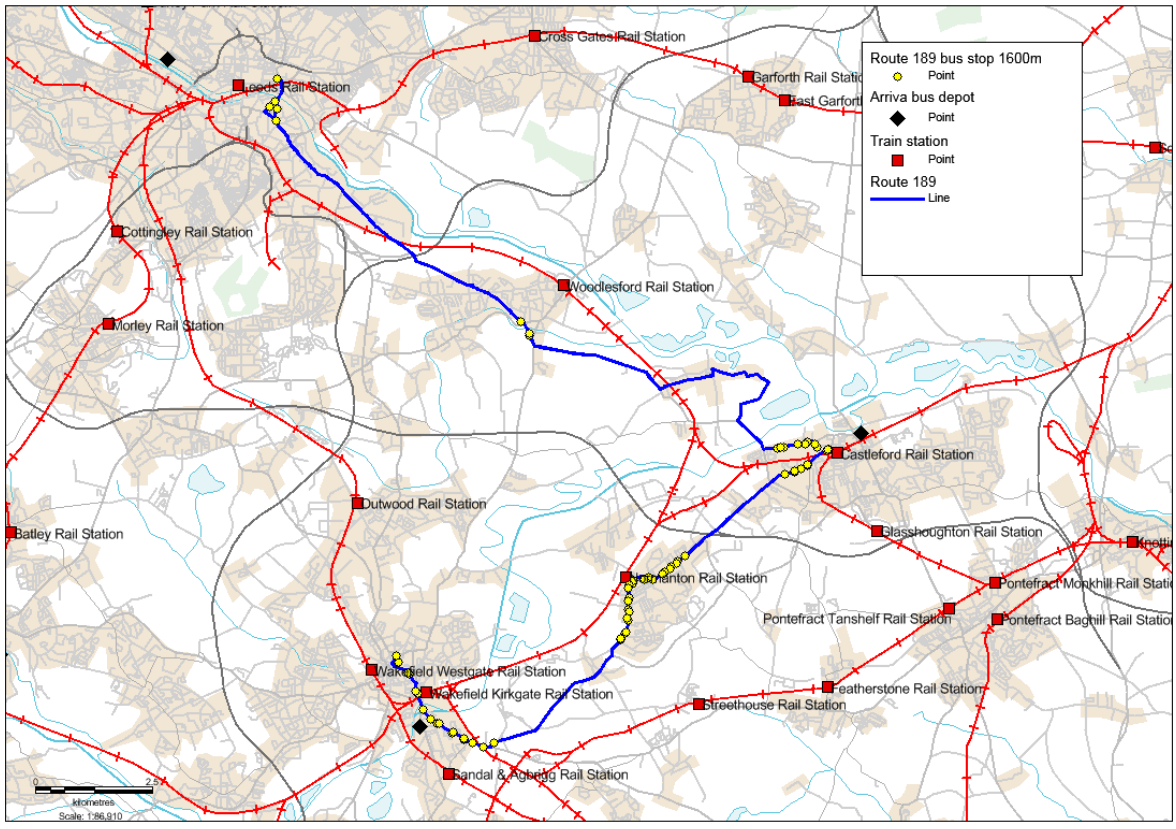
[3] Due to missing information, GJC was not calculated for this route.

10. Local bus operators M Travel and Utopia Coaches run services within the Castleford and Knottingley area. It is possible to travel indirectly on the Castleford to Knottingley flow using a combination of M Travel (service 134) and Utopia Coaches (service 42-2), with a journey time of 28 minutes.

11. We provisionally conclude that the Merger has not resulted in or may not be expected to result in an SLC on this route. The overlap flows cover a small proportion of the total route revenue. Furthermore, the faster journey time and cheaper fare on rail suggests that there is a significant degree of differentiation between bus and rail services on these flows. Both indicators suggest that Arriva is likely to have a limited incentive to degrade its bus offering.

Route 189

Figure 3: Map of route 189



Source: Basemap data/CMA calculations

12. The 189 bus service runs between Wakefield and Leeds city centre via Castleford. There are seven flows on route 189 that overlap with the Northern Franchise's rail services. After filtering, three flows remain for in-depth analysis: Wakefield to Sandal, Normanton and Castleford, with the Wakefield to Sandal flow departing from Wakefield Westgate and the other two flows departing from Wakefield Kirkgate.

13. The GJC difference on the three flows is [20-30%] (Castleford), -[5-10%] (Normanton) and [50-60%] (Sandal). As the Sandal to Wakefield flow has a GJC difference above 25%, this was not analysed further. On the remaining flows, the 189 bus operates four services per hour between Castleford/Normanton and Wakefield. By comparison, the Northern Franchise operates an hourly service on the flow. Journey times from Wakefield to Castleford are comparable on bus and rail (32 minutes on bus; 31 minutes on rail). On the flow from Wakefield to Normanton, the bus takes 18 minutes compared to 4 minutes on train. The Northern Franchise rail service is less expensive (£2.30 Castleford to Wakefield and £1.60 Normanton to Wakefield) than Arriva's bus service (£3.10 Castleford to Wakefield and £2.80 Normanton to Wakefield).

14. The difference in GJC suggests that the degree of differentiation between bus and rail services is low on these flows (other than in the case of Wakefield to Sandal).

15. Total revenue on the 189 route was £[✂] in the last financial year, with the revenue generated on the overlap flows (£[✂]) representing approximately [5-10%] of the total revenue on this route.

16. Ross Travel Group operates a twice hourly service (service 125 and 146) from Wakefield to Pontefract via Castleford.[4] Ross Travel Group is a local operator, based in Featherstone, running in total two routes in the Castleford area. Ross Travel Group does not stop in Normanton. BL Travel operates three bus services per hour (service 223) between Sandal and Wakefield, which overlaps with a portion of route 189.

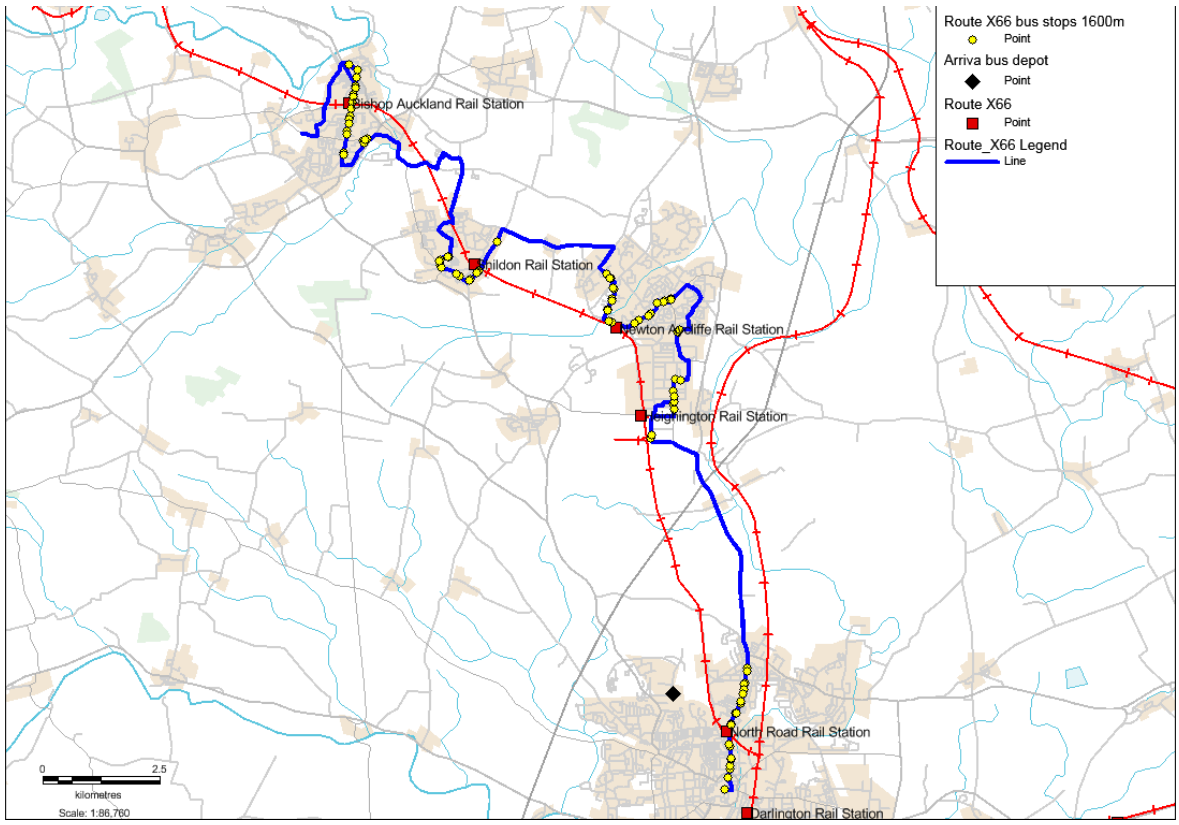
17. We provisionally conclude that the Merger has not resulted in or may not be expected to result in an SLC on this route. The overlap flow covers a small proportion of the total revenue on this route, which suggests that Arriva is likely to have a limited incentive to degrade its bus offering.

[4] The route is different from the 189 bus operated by Arriva, as it runs to the north in Wakefield compared to running south on the 189.

Darlington

Route 5

Figure 4: Map of route 5



Source: Basemap data/CMA calculations

18. Route 5[5] runs from Darlington to Bishop Auckland and operates Monday to Sunday. There are 14 flows on this route that overlap with the Northern Franchise's rail services. After filtering, only one flow remains for in-depth analysis from Darlington to Newton Aycliffe.

19. Bus fares are £1.20 more expensive than rail fares and journey times are twice as long (15 minutes) compared to rail. This suggests that the degree of differentiation between bus and rail services is high.

20. Total revenue on this route was £[✂] in the last financial year, with the revenue generated on the overlap flow (£[✂]) representing [0-5%] of total revenue on the route.

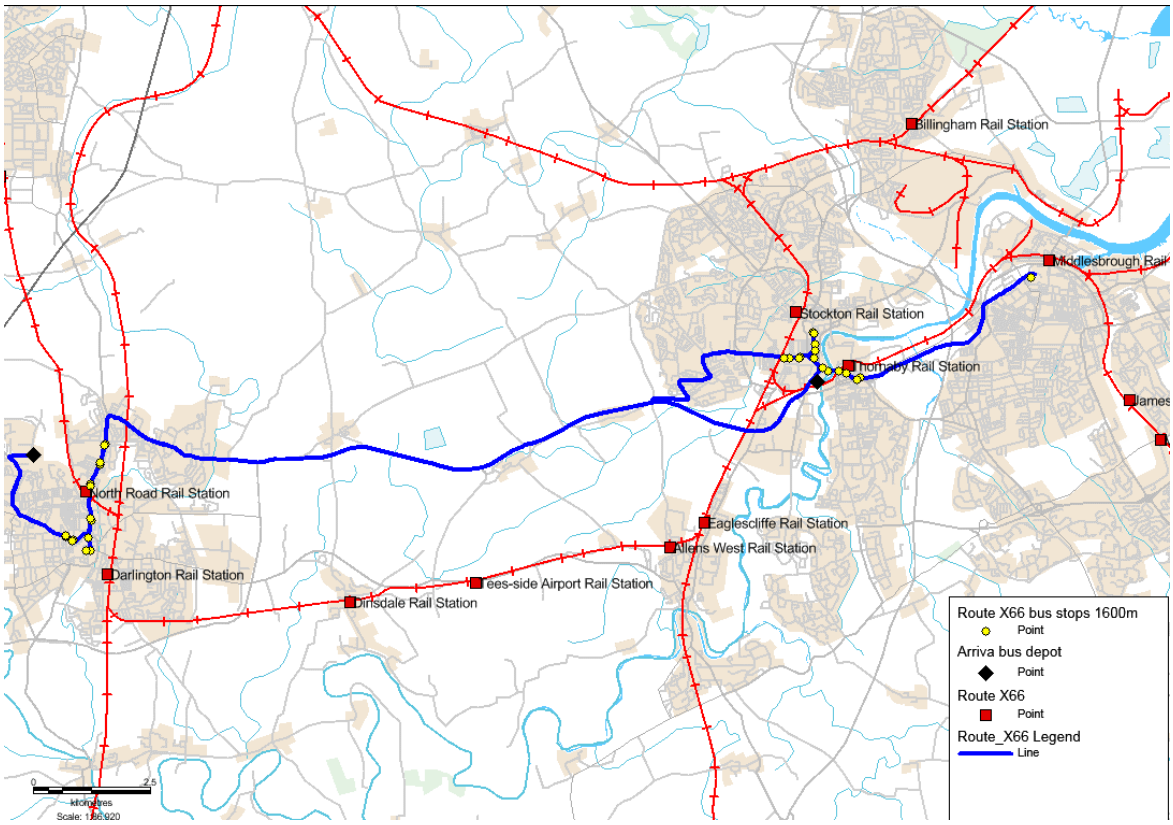
21. We provisionally conclude that the Merger has not resulted in or may not be expected to result in an SLC on this route. The faster journey time and

[5] Due to missing information, GJC was not calculated for this route.

cheaper fare on rail suggests that there is a significant degree of differentiation between bus and rail services on these flows. Furthermore, the overlap flow covers a small proportion of the total route revenue, which suggests that Arriva will have a limited incentive to degrade its bus offering.

Route X66

Figure 5: Map of route X66



Source: Basemap data/CMA calculations

22. The X66[6] bus service is a MAX service operated by Arriva North East, which runs between Darlington and Middlesbrough. There are eight flows on route X66 that overlap with the Northern Franchise's rail services. After filtering, four flows remain for in-depth analysis: Middlesbrough to North Road, Middlesbrough to Thornaby,[7] Darlington to Thornaby and Darlington to Middlesbrough.

23. The bus journey from Middlesbrough to North Road takes 37 minutes, while the rail journey time is 34 minutes. The journey time from Darlington to Thornaby is 34 minutes by bus and 19 minutes by train. On the flow from

[6] Due to missing information, GJC was not calculated for this route.
[7] On the Middlesbrough to Thornaby flow, Stagecoach operates a frequent bus service (eight services per hour) that competes with Arriva. As the flow passes the effective competitor filter, it has not been included in the analysis below.

Darlington to Middlesbrough, the journey by bus takes 47 minutes and the train 26 minutes. The X66 offers four services an hour, while the frequency of the Northern Franchise's rail service is about two services an hour. Bus fares are £5.10 for all three flows compared to £5.40 (Middlesbrough–North Road and Darlington–Middlesbrough), and £4.80 (Darlington–Thornaby) on rail.

24. Total revenue on this route was £[✂] in the last financial year, with revenue generated in the overlap flows (£[✂]) representing approximately [30-40%] of route revenue.

25. Arriva's commercial review documents suggest that:

(a) [✂]

(b) [✂]

26. National Express offers one coach service in the evenings during the week between Middlesbrough and Darlington. The coach service is part of the National Express route between Newcastle and Plymouth. A service operated by GoNorthEast between Darlington and Middlesbrough was withdrawn in August 2013.[8] Stagecoach also operates in the Middlesbrough and Teesside area.

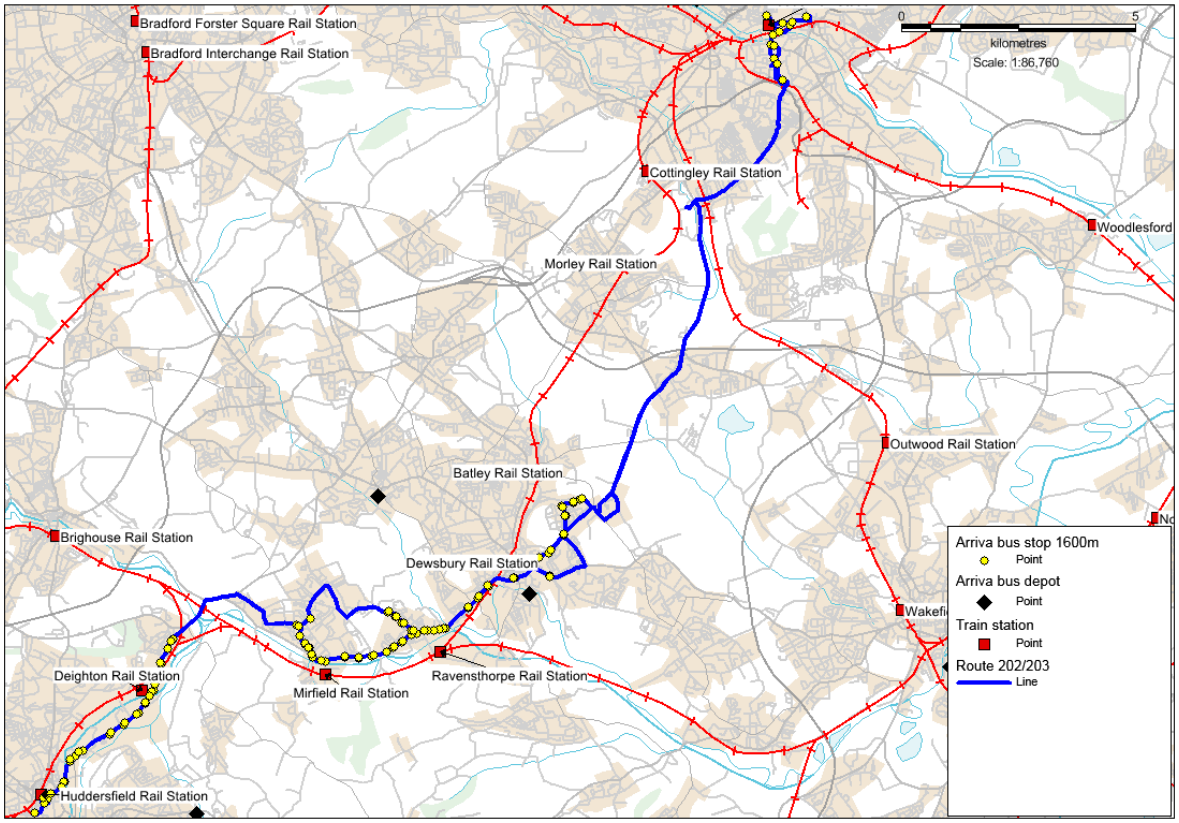
27. We provisionally conclude that the Merger has not resulted in or may not be expected to result in an SLC on this route. The overlap flows cover a large share of the total route revenue, which suggests the incentive to increase fares. However, Stagecoach currently operates at a high frequency on the Middlesbrough to Thornaby flow. Furthermore, GoNorthEast has previously operated services on the route between Darlington and Middlesbrough. We consider the threat of expansion from a national bus operator to be a constraint on Arriva's ability to increase fares on this route.

[8] Arriva North East Commercial Review May 2015.

Dewsbury

Route 202/203

Figure 6: Map of routes 202/203



Source: Basemap data/CMA calculations

28. Routes 202/203 are operate d by Arriva Yorkshire and run from Leeds to Huddersfield Monday to Sunday. There are 17 flows on these routes that overlap with the Northern Franchise's rail services in the area. After filtering, six flows remain for in-depth analysis: Dewsbury to Leeds, Dewsbury to Mirfield, Deighton to Huddersfield, Huddersfield to Mirfield, Huddersfield to Ravensthorpe and Leeds to Ravensthorpe.

29. Journey times are shorter on rail than on bus.[9] Rail fares are typically cheaper on these flows, with the exception of the Dewsbury to Leeds and Leeds to Ravensthorpe flows where fares are more expensive on rail (£4.20 compared to £3.20 bus fare). The differences in GJC between Arriva bus and Northern Franchise services are varied across the route. For example, the GJC on the

[9] The journey from Dewsbury to Leeds takes 46 minutes by bus and 16 minutes by train. From Dewsbury to Mirfield the bus journey time is 18.5 minutes, compared to 13 minutes on the train. Deighton to Huddersfield is 11 minutes by bus and 5 minutes by train. The journey from Huddersfield to Mirfield is 28 minutes by bus and 9 minutes by train. Huddersfield to Ravensthorpe is 42 minutes by bus and 16 minutes by train. The bus journey time from Leeds to Ravensthorpe is 63 minutes while the rail journey is 27 minutes.

Dewsbury to Mirfield flow is -[0-5%], with rail fares 80p cheaper and journey time 5.5 minutes quicker than bus, but bus operating services at twice the frequency to rail. The GJC on the Huddersfield to Mirfield flow is -[20-30%], with the larger GJC difference driven by the 19 minute shorter journey time on rail compared to bus. The GJC difference on the other flows is [10-20%] on the flow from Huddersfield to Ravensthorpe, -[10-20%] on Deighton to Huddersfield and -[5-10%] on the Dewsbury to Leeds flow.

30. Total revenue on these routes was £[✂] in the last financial year, with the revenue generated in the overlap flows (£[✂]) representing [10-20%] of total route revenue on these routes.

31. TransPennine Express operates rail services on all of the overlap flows. TransPennine Express rail fares are equivalent to those of the Northern Franchise and TransPennine Express rail service are typically faster than both the Northern Franchise rail service and Arriva's bus service. For example, between Dewsbury and Leeds the TransPennine Express rail service journey time is 9 minutes, compared to 16 minutes on the Northern Franchise and 46 minutes on the 202/203 bus service. For flows between Dewsbury and Leeds, TransPennine Express operates three services per hour.

32. There are three bus operators currently operating services on routes 202/203:

33. FirstGroup operates a Sunday and bank holiday bus service (route 229) once per hour between Deighton and Huddersfield. Additionally, FirstGroup operates several services within the Leeds and Huddersfield areas.

34. Ladies Only Travel operates an hourly bus service between Leeds and Dewsbury during off-peak hours. Ladies Only Travel also operates a once hourly Sunday service between Leeds and Ravensthorpe.

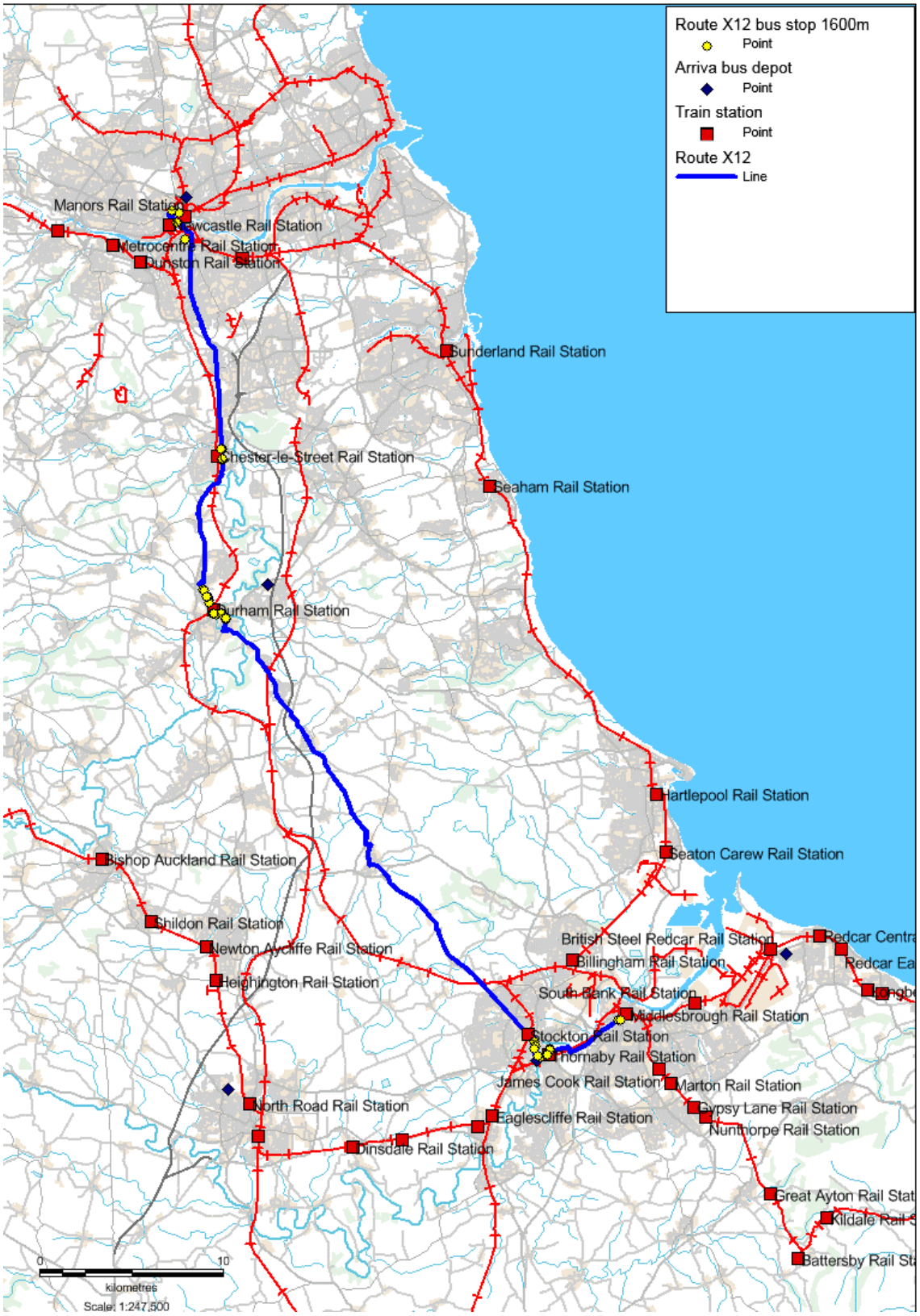
35. Longstaff of Mirfield operates an hourly bus service between Dewsbury and Mirfield during peak hours.

36. We provisionally conclude that the Merger has not resulted in or may not be expected to result in an SLC on this route. Our analysis suggests that Arriva is competing with the Northern Franchise on this flow. However, we consider it likely that the presence of the bus operators mentioned above and TransPennine Express mitigates Arriva's incentive to degrade its bus offering.

Durham

Route X12

Figure 7: Map of route X12



Source: Basemap data/CMA calculations

37. Route X12 is operated by Arriva North East. It runs from Newcastle to Middlesbrough and operates Monday to Saturday, with a reduced service on Sunday. There are 13 flows on route X12 that overlap with the Northern Franchise's rail services. After filtering, there are two flows that remain for in-depth analysis: Durham to Middlesbrough and Durham to Thornaby.

38. Parts of the flow between Durham and Middlesbrough are tendered by Durham University. Under the terms of the tender agreement Durham University students and staff are entitled to free travel between Durham bus station and Middlesbrough bus station.[10]

39. The difference in GJC between bus and rail is high ([50-60%]). This suggests that passengers are unlikely to view bus and rail as close substitutes on these flows. The large GJC difference is driven by higher frequency and lower fares on bus. The single fare on bus is lower on both flows (£5.60) compared to the rail fare (£12.00 for Durham–Middlesbrough and £11.90 for Durham–Thornaby). Frequency for the bus is two services per hour compared to less than one rail service per hour.

40. Total revenue on this route amounted to £[✂] in the last financial year, with the revenue generated on the overlap flows representing approximately [10-20%] of the total route revenue.

41. The overlapping rail flow is an indirect service, with passengers required to change at Darlington to complete journeys between Durham and Thornaby/Middlesbrough. The Northern Franchise operates train services between Darlington and Thornaby/Middlesbrough. However, it does not operate services on the Darlington to Durham portion of the flow. Instead, rail passengers have to take a CrossCountry, TransPennine Express or VTEC service between the Durham to Darlington portion of the flow.

42. We provisionally conclude that the Merger has not resulted in or may not be expected to result in an SLC on this route. Our analysis of GJC suggests that rail and bus services do not compete closely on the overlap flows. Furthermore, the presence of VTEC and TransPennine Express on the Durham to Darlington section of the indirect train service is likely to mitigate Arriva's incentive to degrade its bus offering.

[10] Durham University: Travelling between Durham City and Queen's Campus, Stockton.

Elland

Route X58

43. Route X58 is operated by Yorkshire Tiger and runs between Halifax and Rochdale.[11] The route overlaps with the Northern Franchise on ten flows. After filtering, three flows remain for in-depth analysis: Halifax to Rochdale, Halifax to Littleborough and Rochdale to Sowerby Bridge.

44. On these flows, the Northern Franchise operates a frequent service (2.5 per hour between Halifax and Rochdale, 1 per hour between Halifax and Littleborough, and 2.5 per hour between Rochdale and Sowerby BridgeThe Yorkshire Tiger service has an equal or lower frequency (1 per hour).

45. On the Halifax to Littleborough flow, the rail service takes 32 to 36 minutes (with some services being indirect via Hebden Bridge or Todmorden). The bus journey takes 36 minutes. However, there is a difference in fares between the bus and rail services. The bus fare for the Arriva service is £3.20, whereas the rail fare is £7.90.

46. On the Halifax to Rochdale flow, the rail service is faster taking 33 minutes while the bus journey takes 53 minutes. There is also a difference in fares. The bus fare is £3.20 whereas the equivalent rail fare is £8.40.

47. On the Halifax to Sowerby Bridge flow, the rail service takes 32 minutes. The bus journey takes 34 minutes. There is a difference in fares. The bus fare is £3.20 whereas the rail fare is £7.50.

48. Total revenue on this route was £[✂] in the last financial year, with the revenue generated on the overlap flows (£[✂]) representing [5-10%] of the route revenue.

49. FirstGroup operates a competing bus service (the 590 and 592) on the Halifax to Rochdale flow, which runs once to twice an hour from Monday to Saturday and twice every hour on Sunday.

50. We provisionally conclude that the Merger has not resulted in or may not be expected to result in an SLC on this route. Our analysis suggests that the overlap flows cover a small proportion of the total route revenue resulting in a low incentive for Arriva to degrade its bus offering.

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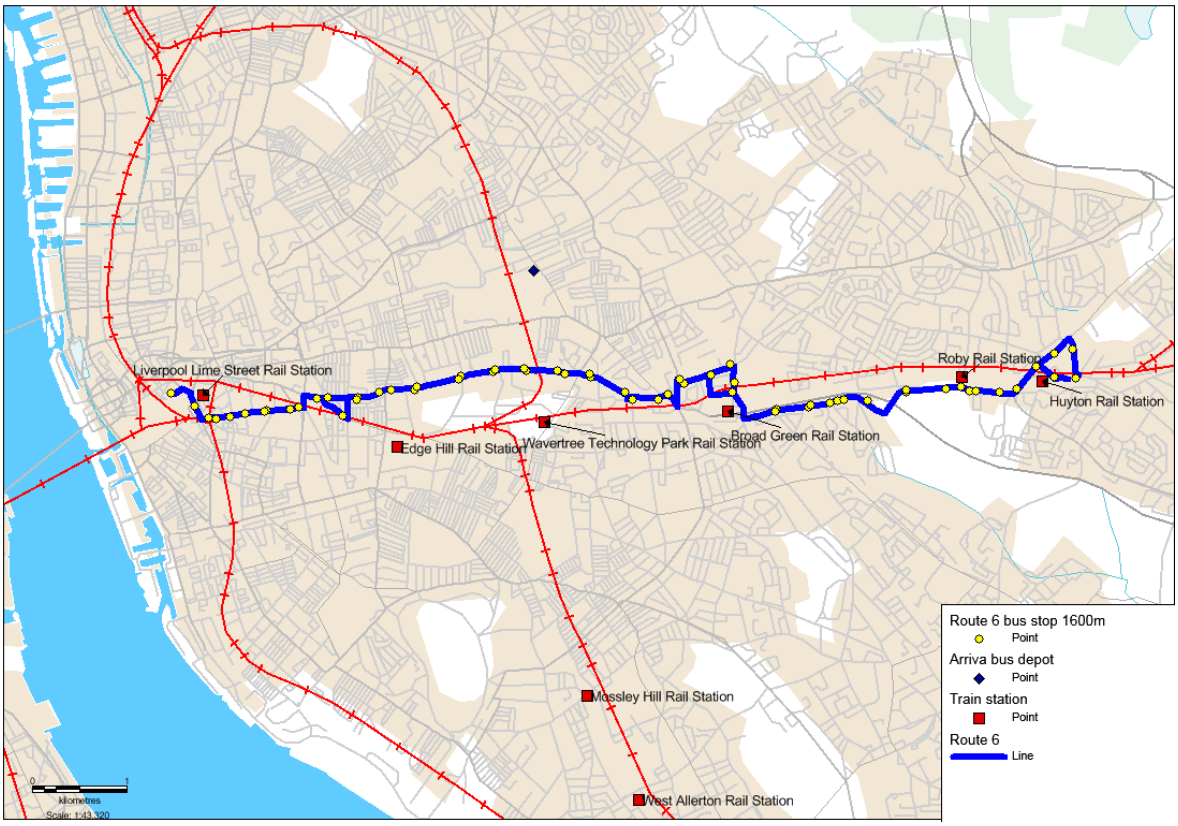
[11] Due to missing information, GJC was not calculated for this route.

Green Lane

Route 6

Figure 8: Map of route 6



Source: Basemap data/CMA calculations

51. Route 6 runs between Liverpool Lime Street and Huyton. There are 29 flows on this route that overlap with the Northern Franchise's rail services in the area. After filtering, two overlap flows remain for in-depth analysis: Huyton to Wavertree Techpark[12] and Edge Hill to Liverpool Lime Street.

52. The bus and rail fares are similar on the Huyton to Wavertree overlap flow where the peak adult single costs £2.20 on the bus and £2.30 on the train. There is a greater difference on the Edge Hill to Liverpool flow where the peak adult single is £2.20 on the bus and £1.60 on the train.

53. Due to differences in journey times (43 minutes on bus compared to 17 minutes on rail) and frequency (2 services per hour on bus compared to 3.5 services per hour on rail), the GJC difference is large for the Edge Hill to

[12] Due to missing information, GJC was not calculated for this flow.

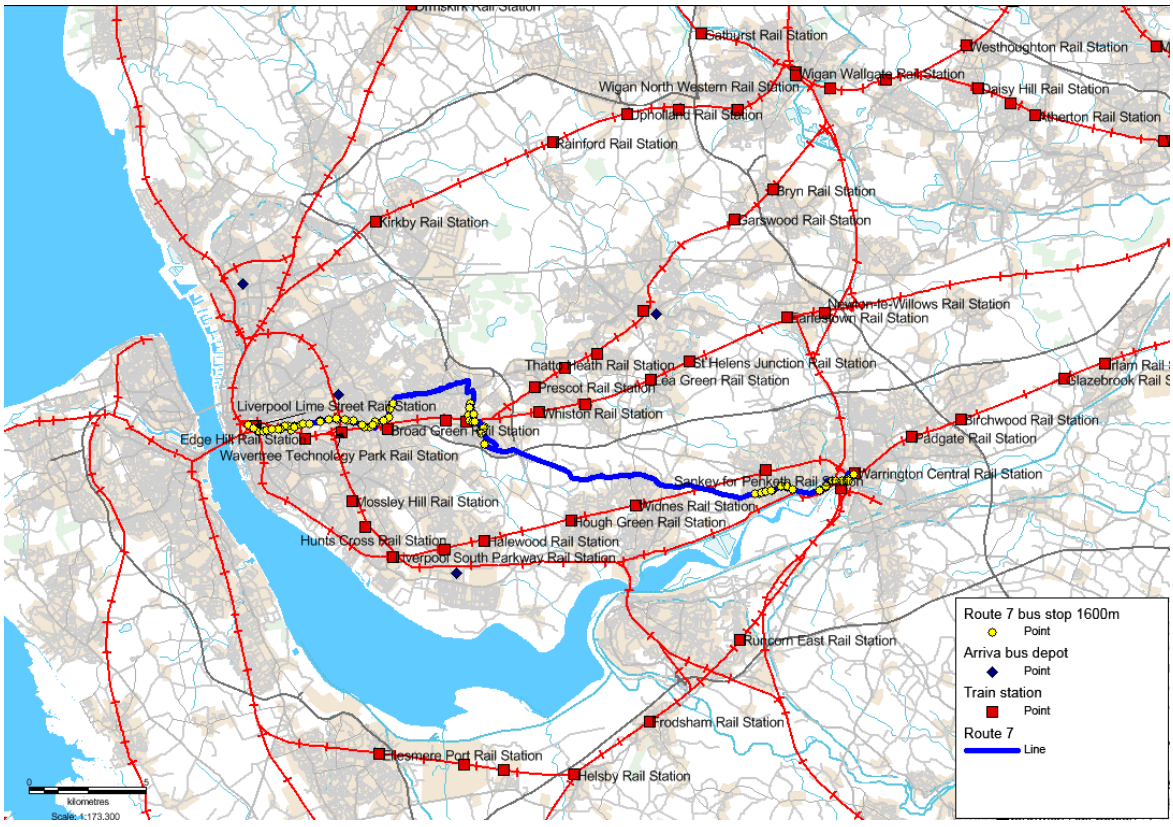
Liverpool Lime Street flow (-[40-50%]). This suggests that bus and rail are unlikely to be close substitutes on this flow.

54. Total revenue on this route was £[✂] in the last financial year, with revenue generated in the overlap flows (£[✂]) representing [0-5%] of total revenue on this route.

55. We provisionally conclude that the Merger has not resulted in or may not be expected to result in an SLC on this route. Our analysis of GJC suggests that rail and bus services are not close substitutes on the Edge Hill to Liverpool Lime Street flow. Moreover, these flows cover a small proportion of the total revenue on the route, which suggests that Arriva will have a limited incentive to degrade its bus offering.

Route 7

Figure 9: Map of route 7



Source: Basemap data/CMA calculations

56. The 7 bus service is operated by Arriva North West and runs between Warrington and Huyton to Liverpool Lime Street. There are 38 flows on this route that overlap with the Northern Franchise's rail services. After filtering,

two overlap flows remain for in-depth analysis: Liverpool Lime Street to Warrington Central and Edge Hill to Liverpool Lime Street.[13]

57. On the Liverpool to Warrington flow, the GJC difference is large, with a GJC difference of [30-40%]. The difference in GJC is driven by the 20- to 30-minute journey time on rail, compared to a 90-minute journey time on bus. The bus fare costs £3.10 as compared to £5.10 on rail. The difference in GJC suggests that bus and rail services are not close substitutes on these flows.

58. On the Edge Hill to Liverpool Lime Street flow, the peak adult single is £2.20 on the bus against £1.60 on rail. The rail journey takes only 4 minutes whilst the bus takes approximately 18 minutes. The difference in GJC is about [40-50%]. This suggests that bus and rail services are not close substitutes on these flows.

59. Total revenue on this route was £[✂] in the last financial year, with the revenue generated on the overlap flows (£[✂]) representing [0-5%] of total route revenue.

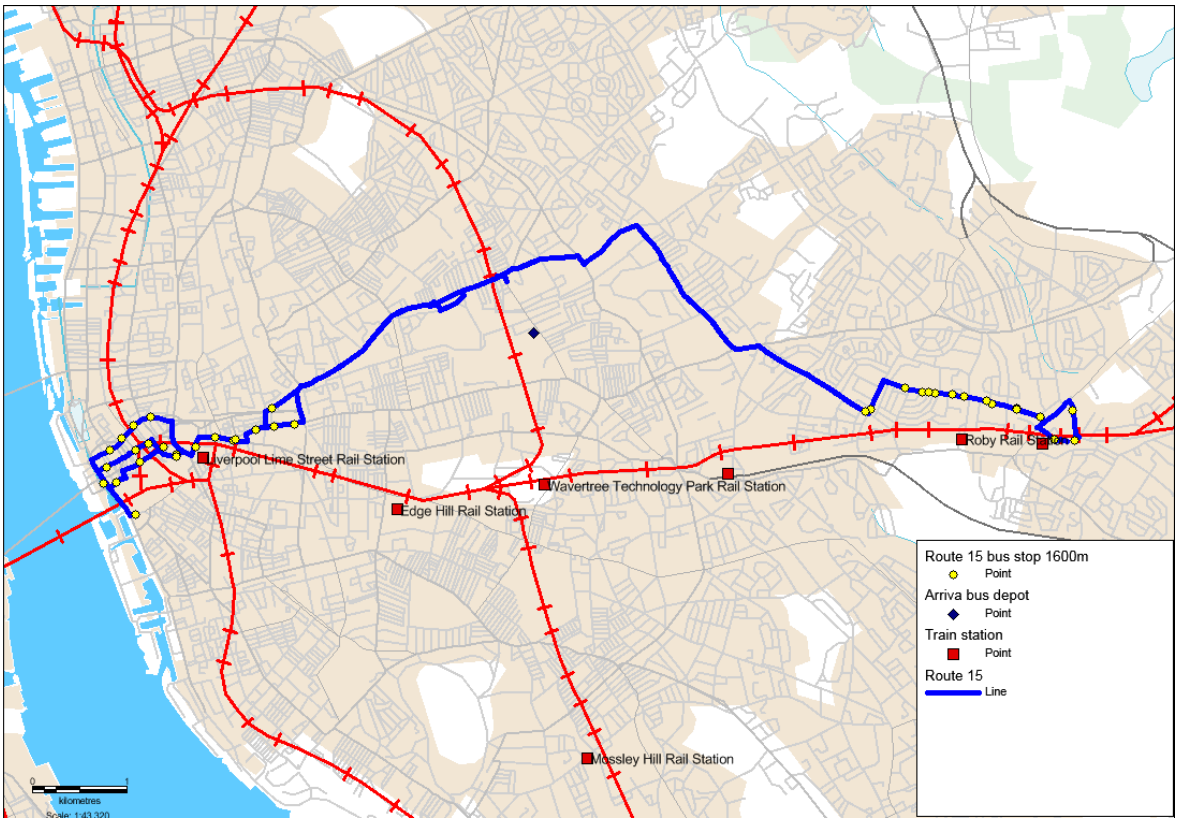
60. Virgin Trains and TransPennine Express run services on the Warrington to Liverpool flow.

61. We provisionally conclude that the Merger has not resulted in or may not be expected to result in an SLC on this route. Our analysis of GJC suggests that the degree of differentiation between bus and rail services is high. Also, the overlap flows cover a small proportion of the total revenue on this route, which suggests that Arriva will have a limited incentive to degrade its bus offering.

[13] This flow has also been discussed in relation to route 6 (see paragraph 51).

Route 15

Figure 10: Map of route 15



Source: Basemap data/CMA calculations

62. The 15 service is operated by Arriva North West and runs between Huyton and Liverpool. There are eight flows on this route that overlap with the Northern Franchise's rail services in the area. After filtering, two flows remain for in-depth analysis: Huyton to Liverpool Lime Street and Roby to Liverpool Lime Street.

63. There is a difference in journey time between bus and rail. From Huyton to Liverpool Lime Street, the bus journey time is approximately 40 minutes whereas the rail service takes 19 minutes. Between Roby and Liverpool Lime Street, the bus takes approximately 35 minutes and the rail service takes 17 minutes. The bus fare (£2.20) is lower than the rail fare (£2.70). In terms of GJC, the difference is about -[10-20%] for the flow from Huyton to Liverpool Lime Street and approximately -[10-20%] from Roby to Liverpool Lime Street. This suggests that the differentiation between bus and rail on these flows is low.

64. Total revenue on this route amounted to £[✂] in the last financial year. Flow revenue in the last financial year was £[✂], which represents [10-20%] of route revenue.

65. There are a number of competing bus services on Liverpool Lime Street to Roby and Huyton flows. Halton Transport operates the 61 service which runs twice an hour for most parts of the day on Monday to Saturday (on Sunday the service is operated by Eazibus and runs once an hour for most parts of the day). Cumfybus operates the 139 service which runs on weekdays and Saturday twice an hour for most parts of the day.

66. Halton Transport/Eazibus and Comfybus operate competing services on the route.

67. We provisionally conclude that the Merger has not resulted in or may not be expected to result in an SLC on this route. Our analysis of GJC suggests that the degree of differentiation between bus and rail services is low on the overlap flow. However, we consider that competition from local operators currently operating on the route will reduce Arriva's incentive to degrade its bus offering.

Route 536

68. The 536[14] service is operated by Yorkshire Tiger and runs between Halifax and Huddersfield. This flow overlaps with the Northern Franchise's rail services.

69. The 536 runs only once to twice a day in the evenings Monday to Saturday and five to six times on a Sunday. In contrast, the Northern Franchise operates more frequent services on the flow (15 to 17 services Monday to Saturday and 8 services on Sunday). The Northern Franchise service takes 24 minutes whilst the bus takes 41 minutes. The peak adult single fare is £2.80 on the bus compared to £3.10 on rail.

70. Total revenue on this route was £[✂] in the last financial year, with the revenue generated on the overlap flow (£[✂]) representing [10-20%] of total revenue on the route.

71. FirstGroup operates services 12 to 13 times per day on the flow from Monday to Saturday. National Express coaches run four to five times per day with a journey time of 20 minutes.

72. We provisionally conclude that the Merger has not resulted in or may not be expected to result in an SLC on this route. The large difference in frequency and journey time between bus and rail suggests that there is a significant degree of differentiation between bus and rail services on this flow.

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[14] Due to missing information, GJC was not calculated for this route.

Furthermore, the revenue on this flow is [✂], which suggests that Arriva will have a limited incentive to flex its bus offering.[15]

Honley

Route 315

73. The 315 Tiger Blue bus service is operated by Yorkshire Tiger and runs between Honley and Huddersfield. This service overlaps with the Northern Franchise rail service on the flow between Honley and Huddersfield.

74. The bus revenue on the flow was £[✂]. However, the revenue for the route as a whole is £[✂] per year, limiting Arriva's incentive to change its commercial offering.

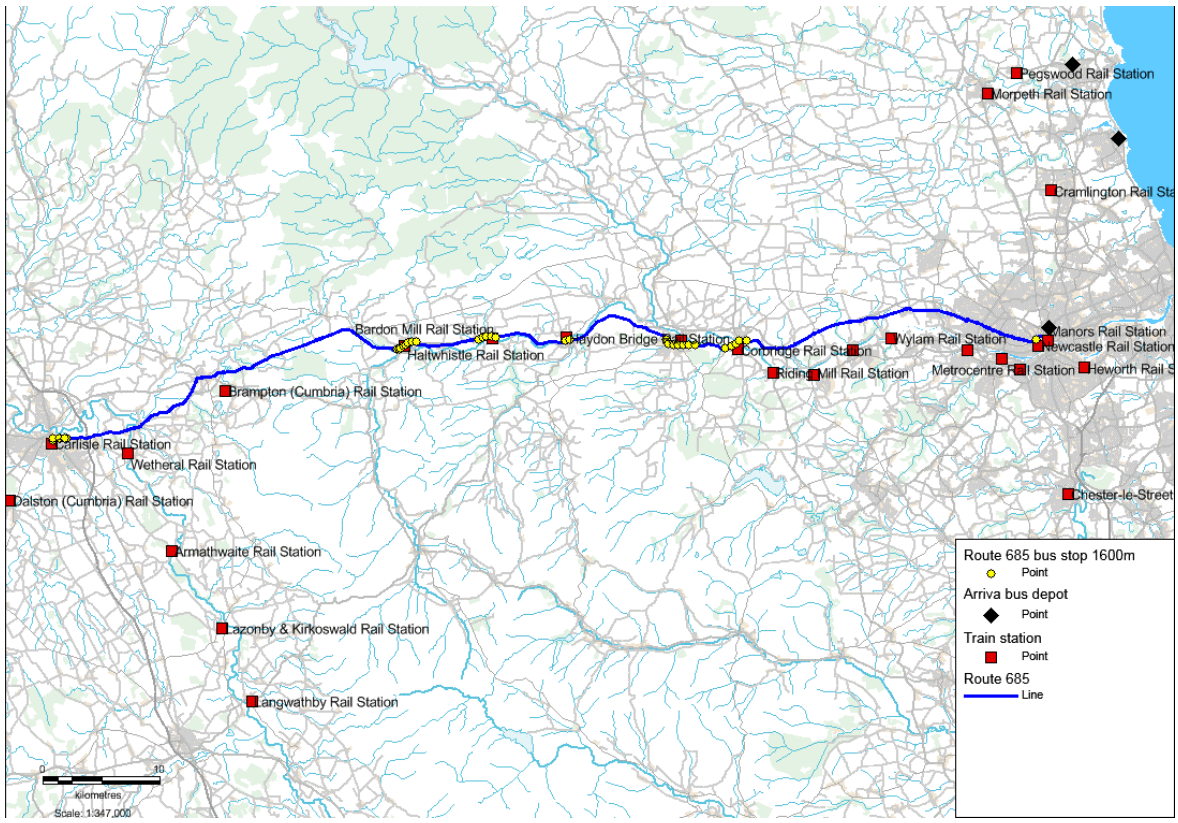
75. We provisionally conclude that the Merger has not resulted in or may not be expected to result in an SLC on this route. As noted above, the low route revenue will likely limit Arriva's incentive to degrade its bus offering.

[15] [✂] In our detailed assessment we considered the additional information available on the flow.

Jesmond

Route 685

Figure 11: Map of route 685



Source: Basemap data/CMA calculations

76. The 685 service runs from Carlisle to Newcastle and is operated by Arriva North East. Five flows on this route overlap with the Northern Franchise's rail services. After filtering, one overlap flow remains for in-depth analysis and that is the flow from Carlisle to Haltwhistle.

77. The bus journey on this flow takes 49 minutes, while the rail journey time is 30 minutes. Bus services on this route operate hourly. Stagecoach also runs the 685 service, in addition to Arriva North East.[16] The Northern Franchise's rail services also run every hour. Bus fares are less expensive than the equivalent rail fare (£8.00 compared to £6.10 on bus). The difference in GJC is small (-[0-5%]). This suggests that there is a low differentiation between bus and rail.

[16] Arriva's service runs Monday to Saturday every hour between 8am and 12pm, 2pm and 6pm, and 7pm and 9pm; there is no service on Sunday. Stagecoach's 685 service runs hourly from Monday to Saturday in the intervening hours ie 6am to 8am, 12pm to 2pm, and 6pm to 7pm. Stagecoach's service also runs on Sunday.

78. Total revenue on this route amounted to £[✂] in the last financial year, with the revenue generated on the overlap flow (£[✂]) representing [5-10%] of total revenue on the route.

79. We provisionally conclude that the Merger has not resulted in or may not be expected to result in an SLC on this route. Our analysis of GJC suggests that the degree of differentiation between bus and rail services is low on the overlap flow. However, the flow covers a small proportion of the total revenue on this route, which suggests that Arriva will have a limited incentive to flex its bus offering.

Leeds

Route 737

80. The 737 service is operated by Yorkshire Tiger and runs from Bradford Interchange to Leeds Bradford Airport. There are 14 flows on this route that overlap with the Northern Franchise's rail services. After filtering, three overlap flows remain for in-depth analysis: Baldon to Shipley Yorks, Frizinghall to Guiseley and Guiseley to Shipley Yorks.

81. Rail fares are lower than bus fares on the overlap flows. Average bus fares across the three overlap flows are £2.40 and £2.00 on the train. The GJC difference is significant for all three flows at more than -[30-40%].

82. Total revenue on this route was £[✂] in the last financial year, with revenue generated on the overlap flows (£[✂]) representing [5-10%] of route revenue.

83. We provisionally conclude that the Merger has not resulted in or may not be expected to result in an SLC on this route. There is a significant difference in GJC between rail and bus, which indicates that bus and rail services are not close substitutes on these flows. Moreover, the overlap flows cover a small proportion of the total revenue on this route, which suggests that Arriva is likely to have a limited incentive to degrade its bus offering.

Route 747

84. The 747 is operated by Yorkshire Tiger and runs between Harrogate and Bradford. There are 14 flows that overlap with the Northern Franchise's rail services. After filtering, one flow remains for in-depth analysis (Harrogate to Bradford Interchange).

85. Route 747 operates at one service per hour, while the Northern Franchise operates an indirect service on this flow at one service per hour. The bus

journey takes 86 minutes and the rail journey 70 minutes; however, the rail service is indirect, requiring a change at Leeds.[17] The bus fare is less expensive than the rail fare (£8.80 compared to £5.00 on bus). The Parties told us that the 747 service [✂].

86. Total revenue on this route amounted to £[✂] in the last financial year, with the revenue generated on the overlap flow (£[✂]) representing about [10-20%] of total revenue on the route.

87. FirstGroup (route X6, X11 and 72) and Transdev (36 City Connect) operate services that enable passengers to make the journey between Harrogate and Bradford by bus with a change in Leeds with a similar journey time of 90 minutes.

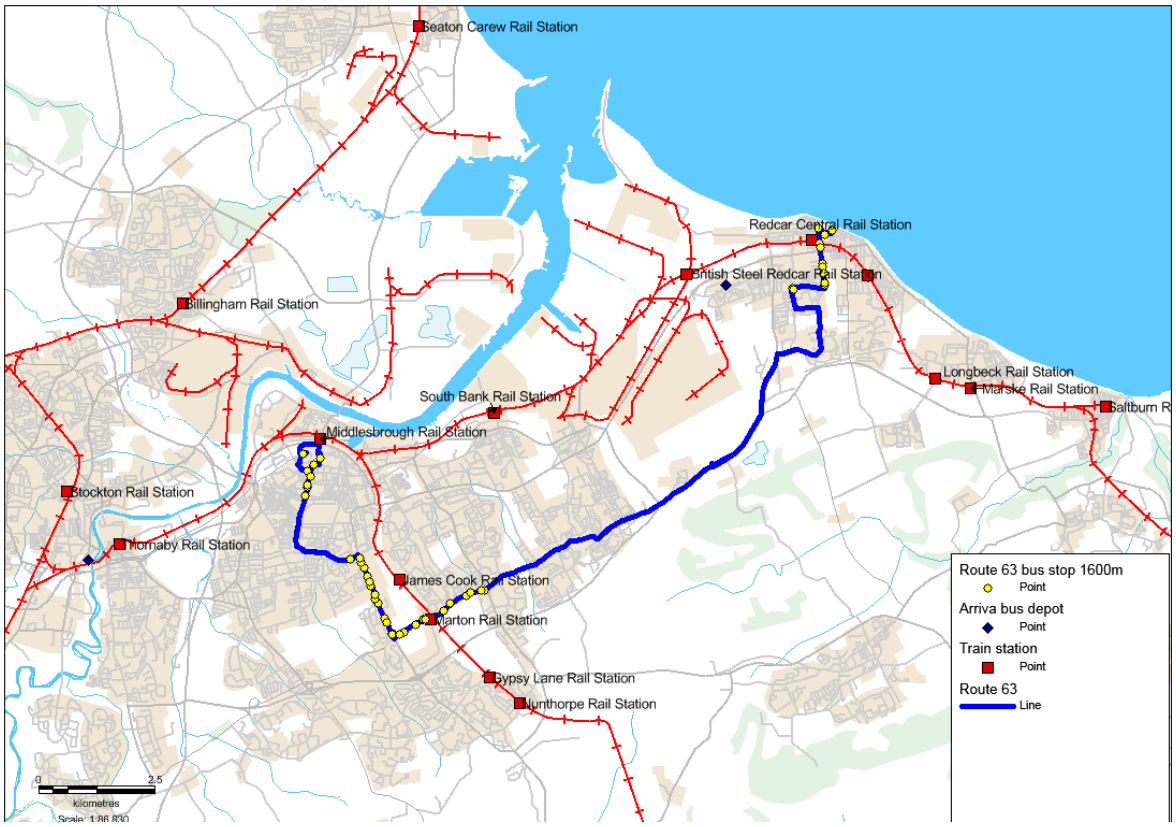
88. We provisionally conclude that the Merger has not resulted in or may not be expected to result in an SLC on this route. Our analysis of journey metrics (ie fares, frequency and journey times) suggests that rail and bus services do not compete closely on the overlap flow. Furthermore, the presence of FirstGroup and Transdev will likely reduce the incentive for Arriva to degrade its bus offering.

[17] [✂], which would bring the bus and rail journey closer together in terms of GJC.

Redcar

Route 63

Figure 12: Map of route 63



Source: Basemap data/CMA calculations

89. Route 63 runs from Middlesbrough to Redcar and operates Monday to Sunday. Unlike the X4 or X3/X3A, the 63 bus is not on a direct route from Middlesbrough to Redcar. Instead it runs from Middlesbrough to Marton and then to Redcar. As a result the 63 is a slower, local service. There are five flows that overlap with Northern Franchise's rail services on this route. After filtering, two overlap flows remain for in-depth analysis: Middlesbrough to Redcar Central and Middlesbrough to Redcar East.

90. Arriva submitted in its detailed flow-by-flow analysis that route 63 had been curtailed in early 2016 and, as such, the closest bus stop to Redcar East was now more than 1,200-metre walking distance from the rail station. On this basis, we have omitted the Middlesbrough to Redcar flow from further analysis.

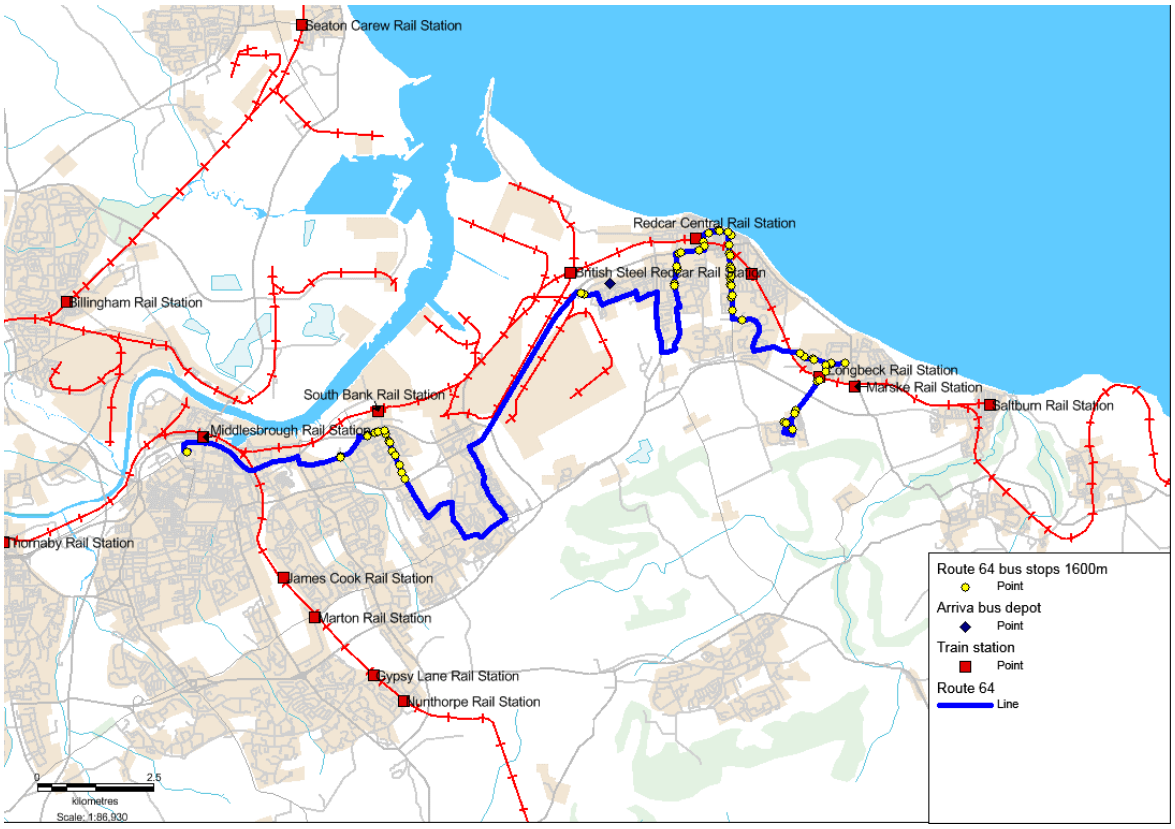
91. The differences in GJC between the bus and the Northern Franchise services is -[20-30%], which suggests there is some differentiation between bus and rail services. The difference in GJC is driven by the large difference in journey time, which is 10 minutes on rail compared to 56 minutes on bus.

Total revenue on this route was £[✂] in the last financial year, with the revenue generated by the overlap flows (£[✂]) representing [0-5%] of the total route revenue.

92. We provisionally conclude that the Merger has not resulted in or may not be expected to result in an SLC on this route. Our analysis of GJC suggests that rail and bus services do not compete closely on the flows. Furthermore, the total number of overlap flows cover a small proportion of the total route revenue, which suggests that Arriva is likely to have a limited incentive to degrade its bus offering.

Route 64 (or 62/62A)

Figure 13: Map of route 64



Source: Basemap data/CMA calculations

93. The 64 is a service operated by Arriva North East, which runs from Middlesbrough to Redcar. In comparison to the X4 or X3/X3A, the 64 bus is not on a direct route from Middlesbrough to Redcar. Instead it runs from Middlesbrough to Marton and then to Redcar. As a result the 64 is a slower, local service; for example, the journey takes 54 minutes on the bus from Middlesbrough to Redcar East, compared to 34 minutes on the X3/X3A buses. The Parties told us that from 17 July 2016 the 64 no longer ran between Middlesbrough and New Marske, but instead ran from Middlesbrough to Ings Farm, and a new service, the 62/62A, had been

introduced to run from Middlesbrough to New Marske in its place. The 64 (or the 62/62A) service overlaps with the Northern Franchise's direct rail service between Marske and Redcar Central.

94. Arriva operates two bus services per hour during peak hours, and one service per hour during off-peak. The Northern Franchise operates 1.5 rail services per hour during peak times, and 1 service per hour during off-peak. The journey time is 26 minutes on bus compared to 15 minutes by rail. Bus fares are the same as for rail (£2.30).The difference in GJC between bus and rail is close to -[10-20%]. This suggests that the degree of differentiation between bus and rail is low.

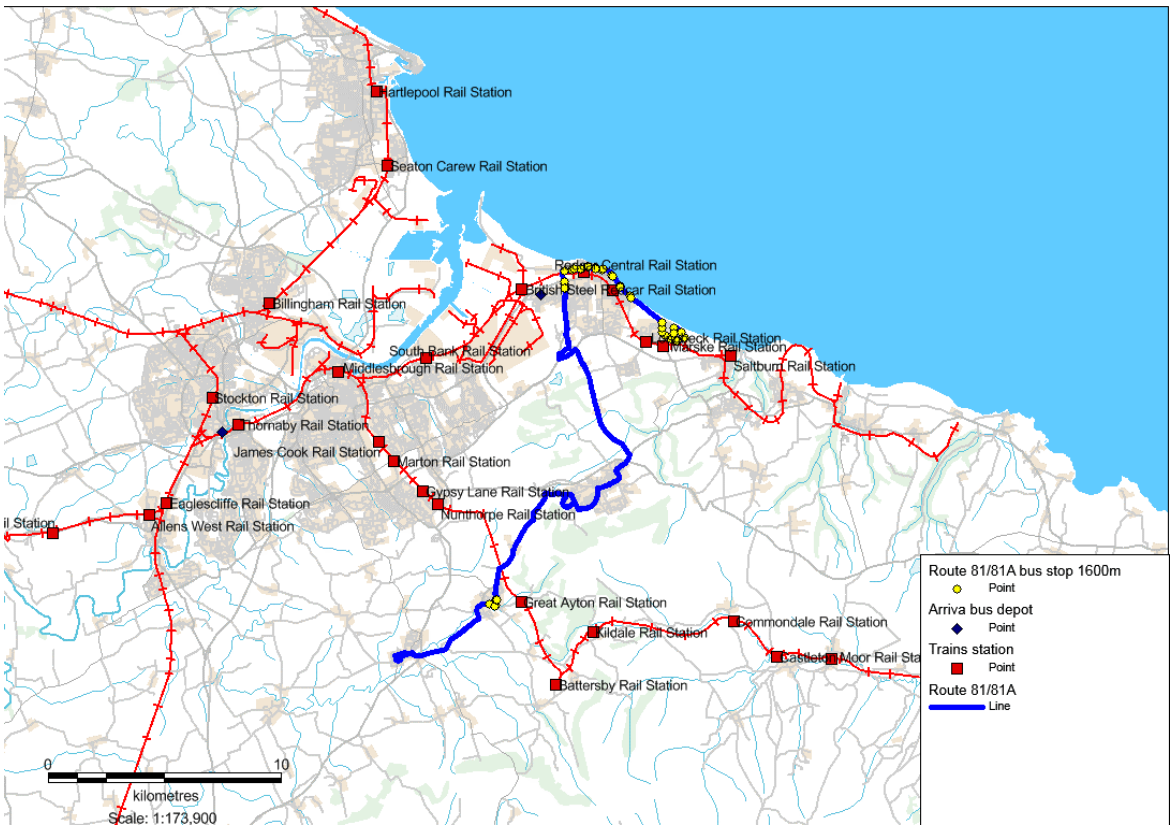
95. Total revenue on this route amounted to £[✂] in the last financial year, with the revenue generated on the overlap flow (£[✂]) representing approximately [0-5%] of the total revenue on this route.

96. Redcar and Cleveland Borough Council is operating an evening service which commences once Arriva's service 64 has ended.

97. We provisionally conclude that the Merger has not resulted in or may not be expected to result in an SLC on this route. Our analysis of GJC suggests that the degree of differentiation between bus and rail services is low. However, the overlap flow covers a small proportion of the total revenue on this route, which suggests that Arriva is likely to have a limited incentive to degrade its bus offering.

Routes 81/81A

Figure 14: Map of routes 81/81A



Source: Basemap data/CMA calculations

98. Routes 81/81A run from Marske to Stokesley via Guisborough. There are four flows on this route that overlap with the Northern Franchise's rail services of which one overlap flow remains after filtering. This is the flow from Marske to Redcar Central.

99. Arriva operates three to five bus services per hour during peak hours, and one service per hour off-peak. The service ends in the early evening, at which point Redcar and Cleveland Borough Council operates an evening service. The GJC ([5-10%]) on this flow suggests that the Northern Franchise and Arriva's bus services are close substitutes.

100. Total revenue on these routes was £[✂] in the last financial year, with the revenue generated on the flow (£[✂]) representing about [5-10%] of total revenue.

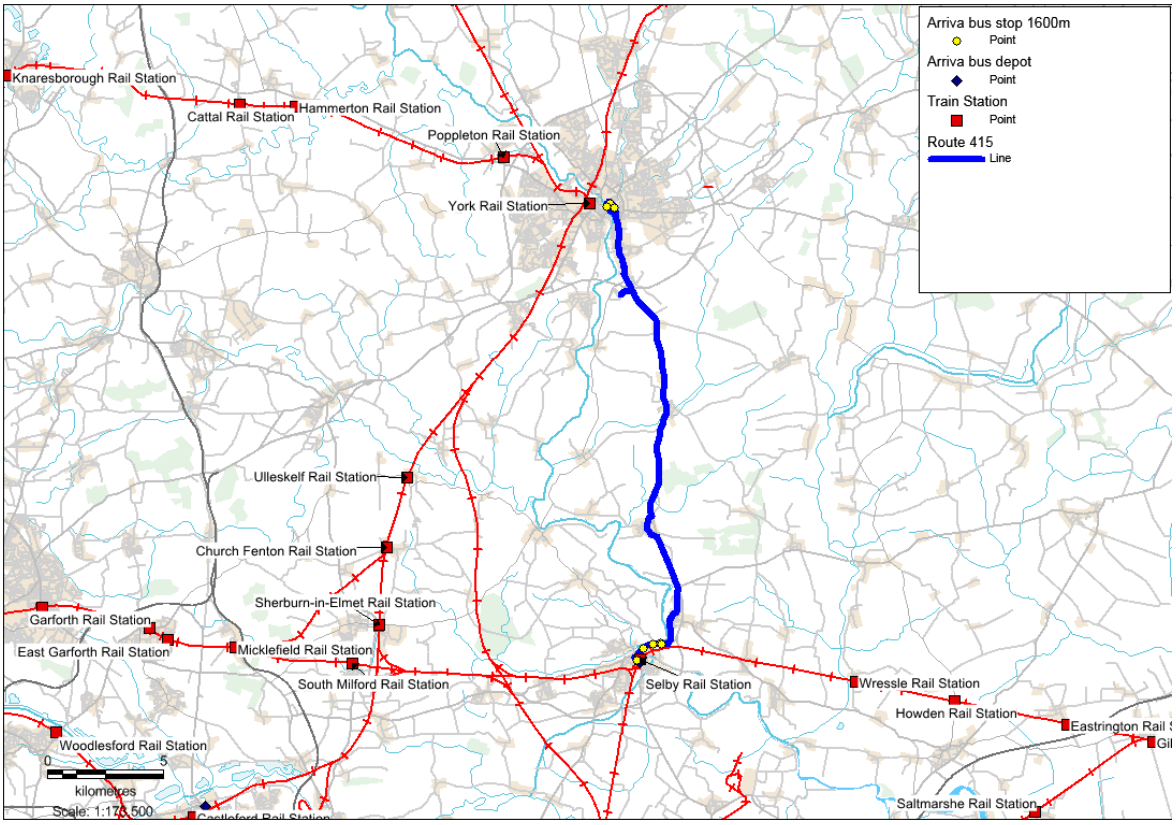
101. We provisionally conclude that the Merger has not resulted in or may not be expected to result in an SLC on this route. Our analysis of GJC suggests that the degree of differentiation between bus and rail services is low. However, the overlap flow covers a low proportion of the total revenue on this route,

which suggests that Arriva is likely to have a limited incentive to flex its bus offering.

Selby

Route 415

Figure 115: Map of route 415



Source: Basemap data/CMA calculations

102. Route 415[18] is a MAX service running from Selby to York and operates Monday to Sunday. There is one flow on this route which overlaps with the Northern Franchise's rail service. This was initially not included in the in-depth analysis being outside the 1,200-metre catchment area. However, as Arriva included the Selby to York flow as part of its survey, it was examined in detail.[19]

103. Total revenue on this route was £[✂] in the last financial year, with the revenue generated on the overlap flow (£[✂]) representing [10-20%] of the total revenue on the route.

[18] Due to missing information, GJC was not calculated for this route.
[19] The flow does not pass any of the initial filters.

104. The bus (£3.60) and rail (£7.50) fares are different, with the rail fare more than twice as expensive compared to the bus fare. Arriva told us that it would be constrained in its pricing on this flow because the route was part of All Yorkshire Day Saver ticket (£5.50), which was the same price as a day ticket on the flow.

105. The bus journey time is 44 minutes and the rail journey time is 24 to 35 minutes. The bus service runs about four times an hour, with rail services running approximately once per hour during the day. There is also an indirect rail service available to passengers on this flow using a combination of Northern Franchise and TransPennine Express services changing via Garforth. This indirect service is available approximately once per hour, with a journey time of 42 minutes.

106. We have not identified a bus operator that currently operates on this flow. However, FirstGroup operates numerous bus services throughout the York area and in particular a route from York to the Designer Outlet, covering part of Arriva's route. Furthermore, a smaller operator, Utopia Coaches, operates a twice hourly service on the route York to Designer Outlet.[20]

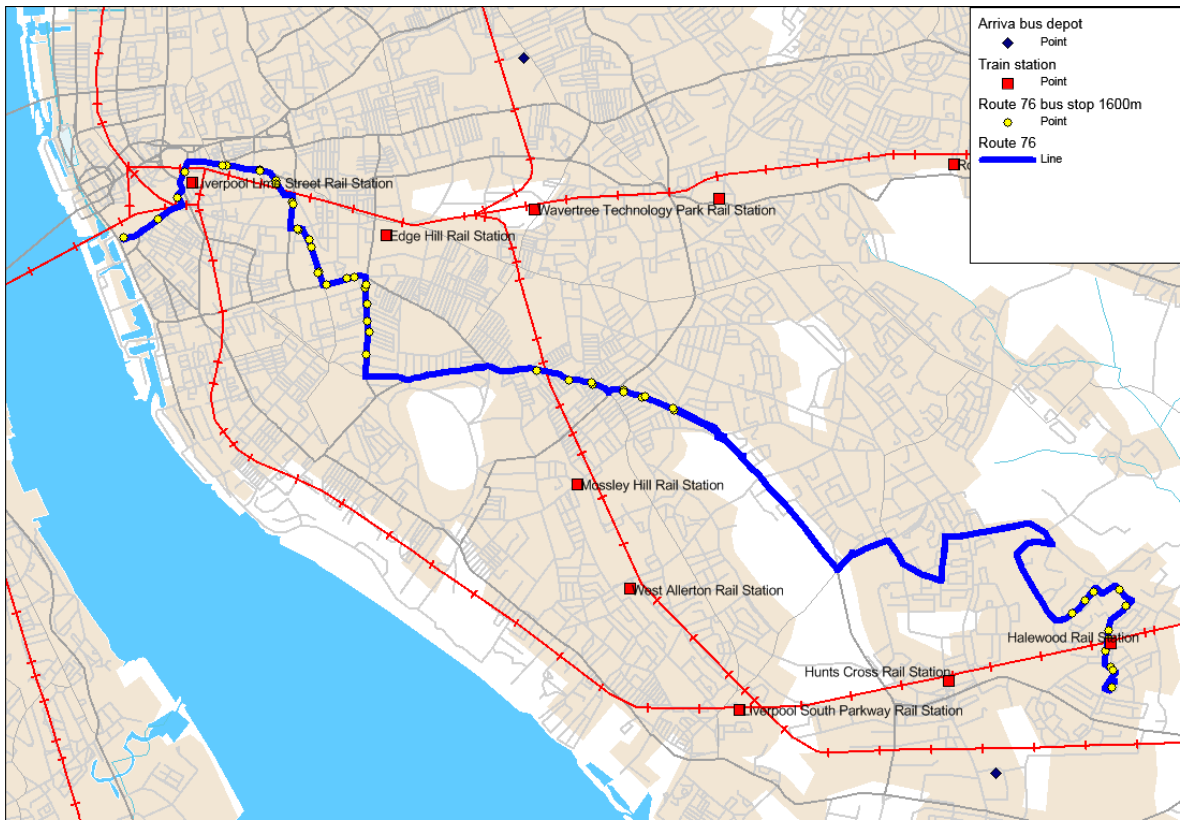
107. We provisionally conclude that the Merger has not resulted in or may not be expected to result in an SLC on this route. Although there are factors which indicate that bus and rail may be viewed by passengers as viable substitutes, the two services are likely to be differentiated given the differences in service frequency and fares. Furthermore, the presence of FirstGroup and Utopia Coaches on a section of the route is likely to reduce the incentive for Arriva to degrade its bus offering.

[20] The service has some gaps in its timetable.

Speke

Route 76

Figure 16: Map of route 76



Source: Basemap data/CMA calculations

108. The 76 bus service is operated by Arriva North West and runs from Halewood to Liverpool Lime Street via Penny Lane and Woolton. There are nine flows on this route that overlap with the Northern Franchise's rail services. After filtering, one overlap flow remains for in-depth analysis: Halewood to Liverpool Lime Street.

109. The journey time by bus is 45 minutes, while the rail journey takes 27 minutes. Bus fares are cheaper than rail fares (£3.80 compared to £2.20 on bus). The GJC difference on this flow is small ([0-5%]), which suggests that the differentiation between bus and rail services is low.

110. Total revenue on this route was £[✂] in the last financial year, with the revenue generated on the overlap flow (£[✂]) representing [0-5%] of total revenue on the route.

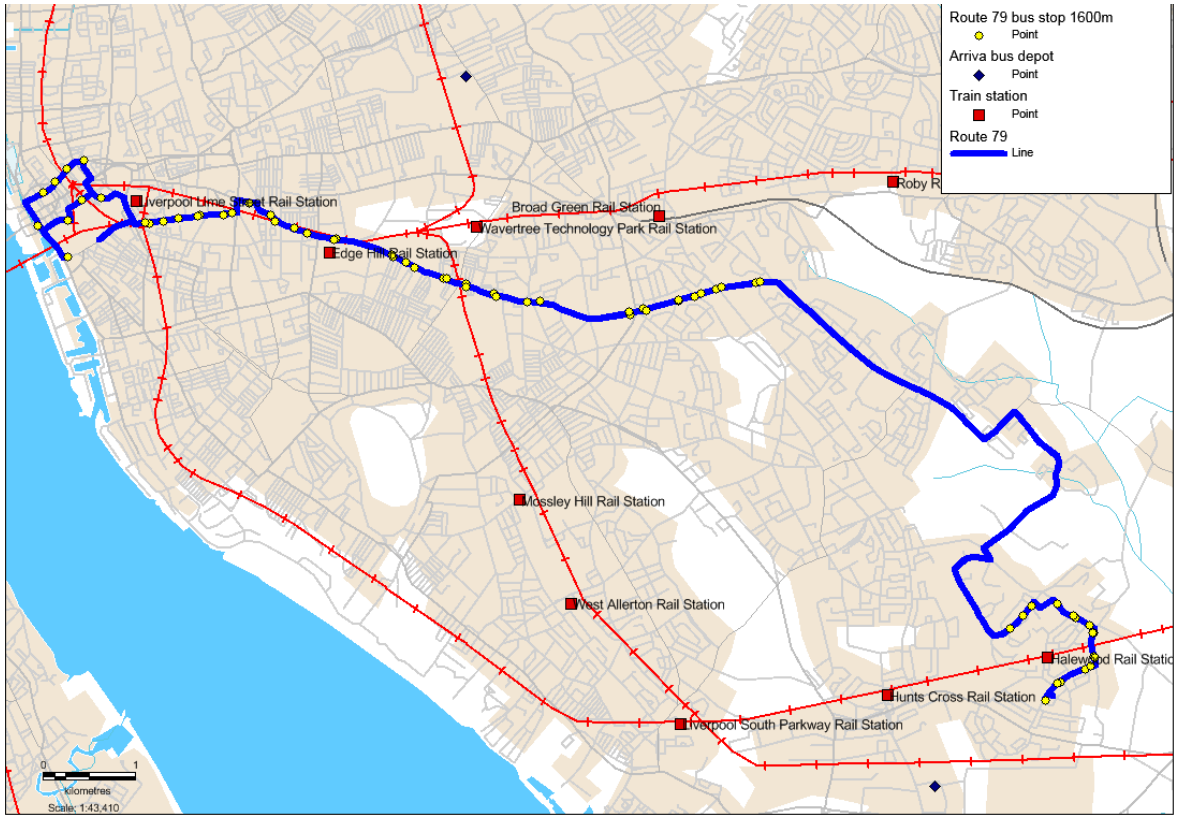
111. The Parties told us that the Merseyside flat fare structure applied to this flow, which created a major barrier to fare flexing. Arriva North West operates the majority of services on the flow (77%) via a tender from Merseytravel. The

fares for tendered services are set centrally by Merseytravel and Arriva is required to provide the tendered services at specified frequencies and must obtain approval for any changes in frequency.

112. We provisionally conclude that the Merger has not resulted in or may not be expected to result in an SLC on this route. The overlap flow accounts for a small proportion of total revenue on this route, which suggests that Arriva will have a limited incentive to degrade its bus offering. Furthermore, the majority of services on this flow are tendered, restricting Arriva's ability to change its fare and service offering, particularly given monitoring by the PTE.

Route 79

Figure 17: Map of route 79



Source: Basemap data/CMA calculations

113. Route 79 is operated by Arriva North West and runs from Halewood to Liverpool bus station. There are 23 flows that overlap with the Northern Franchise's rail services in this area. After filtering, five flows remain for in-depth analysis: Edge Hill to Liverpool Lime Street, Hough Green to Liverpool Lime Street, Wavertree Techpark to Liverpool Street and Halewood to Liverpool Lime Street.

114. Total revenue on this route amounted to £[✂] in the last financial year, with the revenue generated on the overlap flows representing [5-10%] of total revenue on the route.

115. Frequency of services is generally comparable between bus and rail, except from Halewood to Liverpool Lime Street where bus journeys are four times more frequent that the rail services on that flow. Bus journey times are longer than the rail journey, although the difference is marginal in the case of the flows from Edge Hill to Liverpool Lime Street.[21] Bus fares are less expensive compared to rail journeys between Hough Green and Liverpool Lime Street and Halewood and Liverpool Lime Street. However, bus fares are more expensive compared to rail journeys between Edge Hill and Liverpool Lime Street and Wavertree Techpark and Liverpool Lime Street.

116. The difference in GJC between the bus and rail services is low (-[5-10%]) between Edge Hill and Liverpool Lime Street. This suggests that bus and rail services are close substitutes. The difference in GJC between Halewood and Liverpool Lime Street is [20-30%], driven by the higher frequency of bus services on the flow.

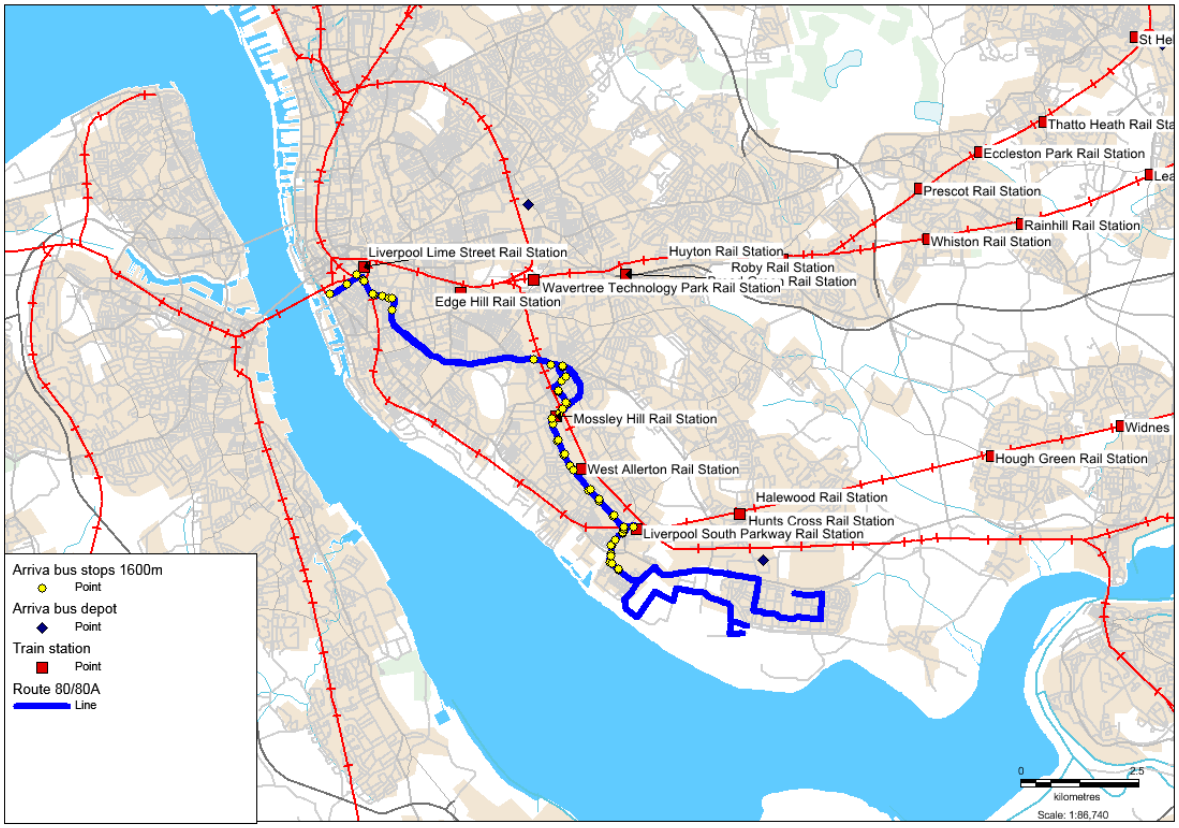
117. Three local bus operators run services that compete directly with Arriva across part of route 79: Halton Transport operates frequent services between Liverpool and Runcorn (route 14); Eazibus operates an hourly service between Liverpool and Rainhill (route 61); and Cumfybus operates two services per hour between Liverpool and Broadgreen (route 13).

118. We provisionally conclude that the Merger has not resulted in or may not be expected to result in an SLC on this route. Our analysis of GJC suggests that the degree of differentiation between bus and rail services is low on the overlap flows. However, the presence of local bus competitors is likely to reduce the incentive for Arriva to degrade its bus offering.

[21] The journey from Edge Hill to Liverpool Lime Street takes 7.5 minutes by bus and 7 minutes by train. From Hough Green to Liverpool Lime Street the bus journey time is 46 minutes, compared to 28 minutes on the train. Wavertree Techpark to Liverpool Lime Street is 15 minutes by bus and 11 minutes by train. The journey from Halewood to Liverpool Lime Street is 45 minutes by bus and 27 minutes by train.

Routes 80/80A

Figure 18: Map of route 80/80A



Source: Basemap data/CMA calculations

119. Routes 80/80A run from Speke to Liverpool Lime Street and. The 80A runs from the Liverpool John Lennon Airport before merging onto the same route as the number 80 service. There are 26 flows on these routes that overlap with the Northern Franchise's rail services. After filtering, four flows remain for in-depth analysis: West Allerton to Liverpool Lime Street and Mossley Hill to Liverpool Lime Street (on both services).

120. The differences in GJC between the bus and the Northern Franchise services are low, which suggests that bus and rail services could be close substitutes. For example, the GJC on the flow between West Allerton and Liverpool Lime Street is [0-5%]. On this flow, bus fares are £2.20 compared to £2.70 on rail and the bus has a frequency of three services per hour compared to 1.5 rail services per hour. However, this is offset by a faster train service, with a rail journey of 15 minutes compared to 27 minutes in bus. We, therefore, consider the degree of differentiation between bus and rail services on these flows to be low.

121. Total revenue on these routes was £[✂] in the last financial year, with the revenue generated on the overlap flows (£[✂]) representing [5-10%] of total revenue on the routes.

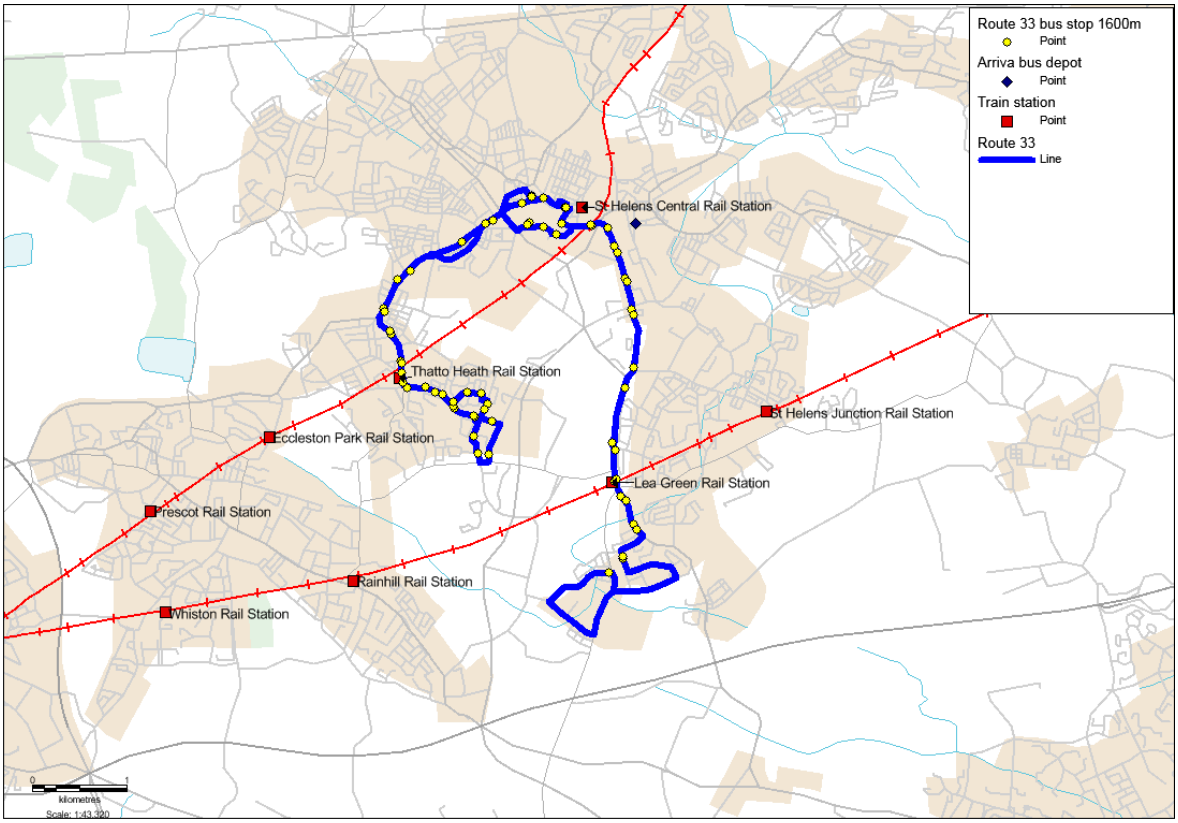
122. Stagecoach operate bus services (82/86) from Liverpool South Parkway to Liverpool Lime Street. These Stagecoach services operate across a section of Arriva's 80/80A route. Stagecoach services are more frequent than Arriva's, running up to 10 services per hour during peak-hours and three services per hour off-peak. Stagecoach's services are typically cheaper than the Arriva fare on the flows which they compete. For example, the Arriva bus fare between Liverpool South Parkway and Liverpool Lime Street is £3.80, while on the competing Stagecoach service it is £2.00.

123. We provisionally conclude that the Merger has not resulted in or may not be expected to result in an SLC on this route. Our GJC analysis suggests that the degree of differentiation between bus and rail services is low. However, the small share of the total route revenue suggests that Arriva is likely to have a limited incentive to increase fares. Furthermore, the presence of Stagecoach will likely reduce the incentive for Arriva to degrade its bus offering.

St Helens

Route 33

Figure 19: Map of route 33



Source: Basemap data/CMA calculations

124. The 33 bus is operated by Arriva North West and runs between Sutton Manor and Sutton Heath. There is one flow that overlaps with the Northern Franchise's rail service between St Helens Central and Thatto Heath.

125. The GJC difference is [5-10%], which suggests that the degree of differentiation between bus and rail services is low. Journey time is only 3 minutes on rail compared to 13 minutes by bus. Bus fares are more expensive than rail fares (£1.60 compared to £2.20 on bus). However, this is offset by the high frequency of the bus service, which operates 12 services per hour (during peak hours), compared to two services per hour by rail. The bus service stops at 18.30 in the evening, while the rail service continues until midnight.

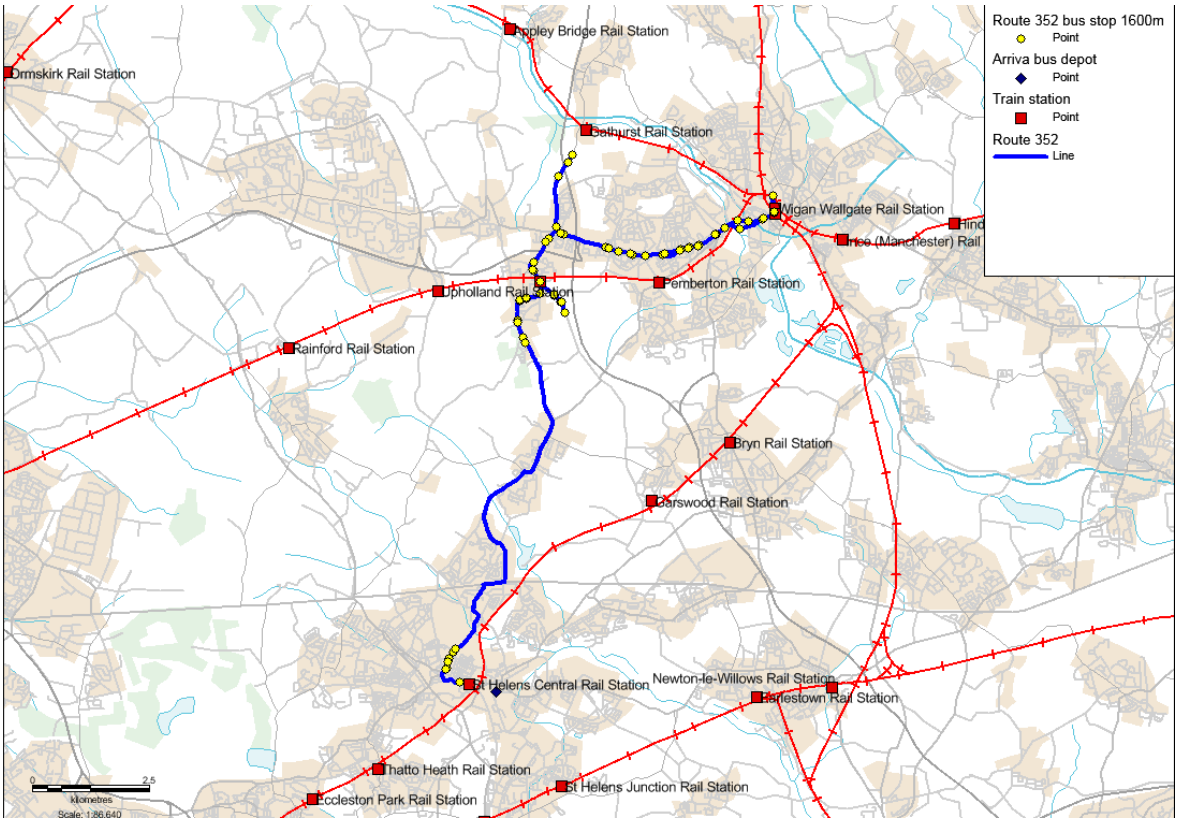
126. Total revenue on this route was £[✂] in the last financial year, with the revenue generated on the overlap flow (£[✂]) representing [10-20%] of total revenue on the route.

127. Several other bus operators serve the flow. Stagecoach Merseyside operates five services per hour on the flow as part of its 10A route and offers a slightly cheaper fare at £2.00. Cumfybus offers an hourly service (139). Huyton Travel runs the 196 service in the evenings Monday to Saturday with six services per hour and an hourly service on Sunday. Nip-on Travel runs an hourly service between 10.00 and 16.00 on Saturday (route 97) and hourly during the day from Monday to Friday (route 297).

128. We therefore provisionally conclude that the Merger has not resulted in or may not be expected to result in an SLC on this route. Our analysis of GJC suggests that the degree of differentiation between bus and rail services is low. However, the presence of local bus operators is likely to reduce the incentive for Arriva to degrade its bus offering.

Route 352

Figure 20: Map of route 352



Source: Basemap data/CMA calculations

129. The 352 service is operated by Arriva North West and runs from St Helens to Wigan. There are seven flows that overlap with the Northern Franchise's rail services in this area. After filtering, four flows remain for in-depth analysis: Orrell to Wigan Wallgate, Pemberton to Wigan Wallgate, St Helen's Central to Wigan North Western and St Helen's Central to Wigan Wallgate. One flow (Orrell–Wigan Wallgate) has a high GCJ difference of [40-50%] due to the relatively infrequent rail service. This suggests that bus and rail services are not close substitutes on this flow. On this basis, the Orrell to Wigan Wallgate flow is not considered further on this basis.

130. The difference in GJC between the bus and rail services on the overlap flows from St Helens to Wigan North Western and St Helens to Wigan Wallgate is about -[10-20%] and -[10-20%], respectively. This suggests that the degree of differentiation between bus and rail on these flows is low. Although bus fares are £1.40 cheaper, and the bus service is twice as frequent as rail, the difference in GJC is driven by the large difference in journey time, with the rail journey being 35 to 36 minutes faster than bus on the flow from Pemberton to Wigan Wallgate, Arriva runs four services per hour compared to an hourly rail service. However, bus fares are marginally more expensive (20p) on bus and

journey times are four minutes shorter on train. Therefore, the degree of differentiation between bus and rail on this flow is also low.

131. Total revenue on this route amounted to £[✂] in the last financial year. Flow revenue in the last financial year was £[✂], which represents approximately [10-20%] of route revenue.

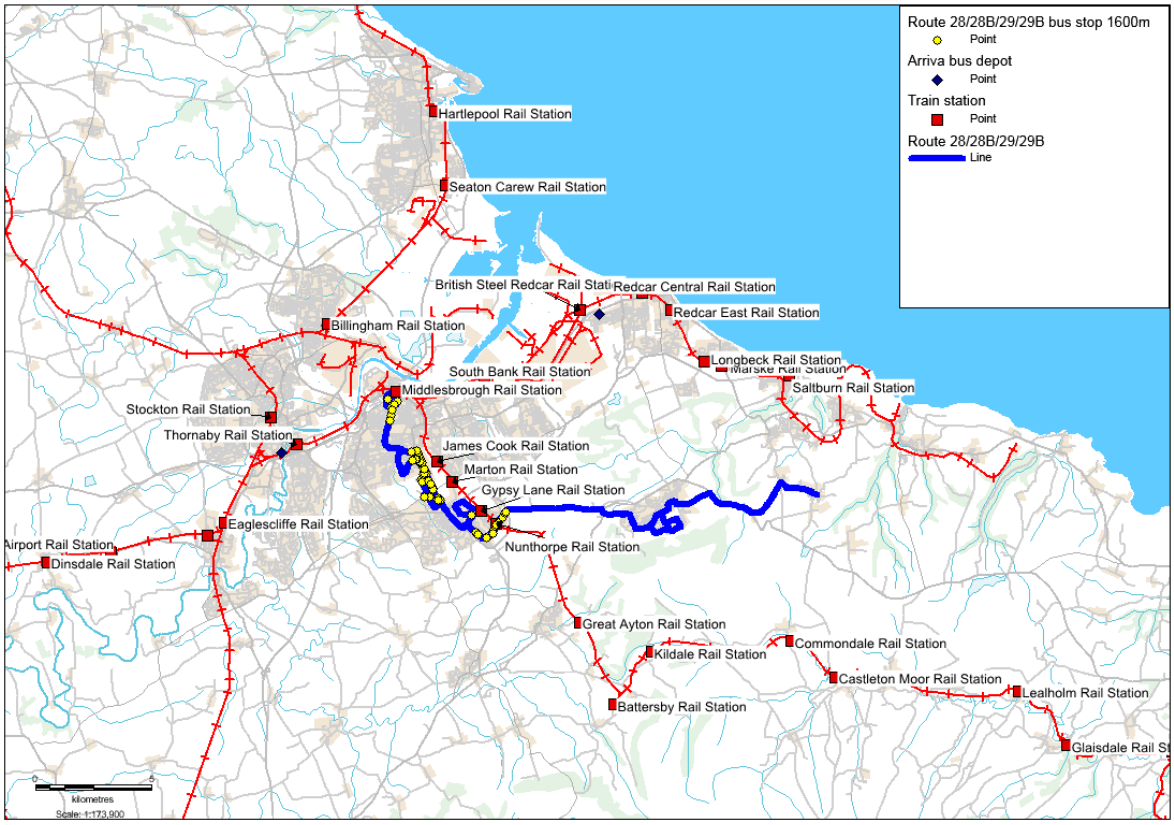
132. Stagecoach operates bus services within the Wigan area that compete directly with Arriva on the flow between Pemberton and Wigan Wallgate.

133. We provisionally conclude that the Merger has not resulted in or may not be expected to result in an SLC on this route. Our analysis of GJC suggests that the degree of differentiation between bus and rail services is low on the overlap flows (except on the flow between Orrell and Wigan Wallgate). However, the presence of Stagecoach, especially the flow from Pemberton to Wigan Wallgate, is likely to reduce the incentive for Arriva to degrade its bus offering.

Stockton

Routes 28/28B and 29/29A

Figure 21: Map of routes 28/28B/29/29B



Basemap data/CMA calculations

134. Routes 29/29A are operated by Arriva North East and run from Middlesbrough to Nunthorpe. The 28/28B run a similar route between Middlesbrough and Nunthorpe before continuing on to Lingdale or Stokesley.[22] There are 15 flows that overlap with the Northern Franchise's rail services in this area. After filtering, four flows remain for in-depth analysis: Gypsy Lane to Middlesbrough (on both the 28/28B and 29/29A) and Middlesbrough to Nunthorpe (on both the 28/28B and 29/29A).

135. The Northern Franchise's rail services have a higher frequency (1.5 per hour; one per hour by bus) between Gypsy Lane and Middlesbrough. Between Middlesbrough and Nunthorpe, bus and rail frequency is the same (one per hour).Bus fares are 10p cheaper than rail between Gypsy Lane and Middlesbrough and 60p cheaper between Middlesbrough and Nunthorpe. Overlap flows have an average GJC of -[10-20%]. This suggests that the degree of differentiation between bus and rail is low. Although bus fares are generally cheaper than rail, the difference in GCJ is largely driven by the faster rail service, which has an 11- to 26-minute shorter journey time compared to bus.

136. Total revenue on these routes amounted to £[✂] in the last financial year, with the revenue generated on the overlap flows (£[✂]) representing approximately [10-20%] of the total revenue on these routes.

137. Stagecoach runs several services that compete directly with Arriva on part of the 28/28B/29/29A routes (10/10A/11/12/13 buses).

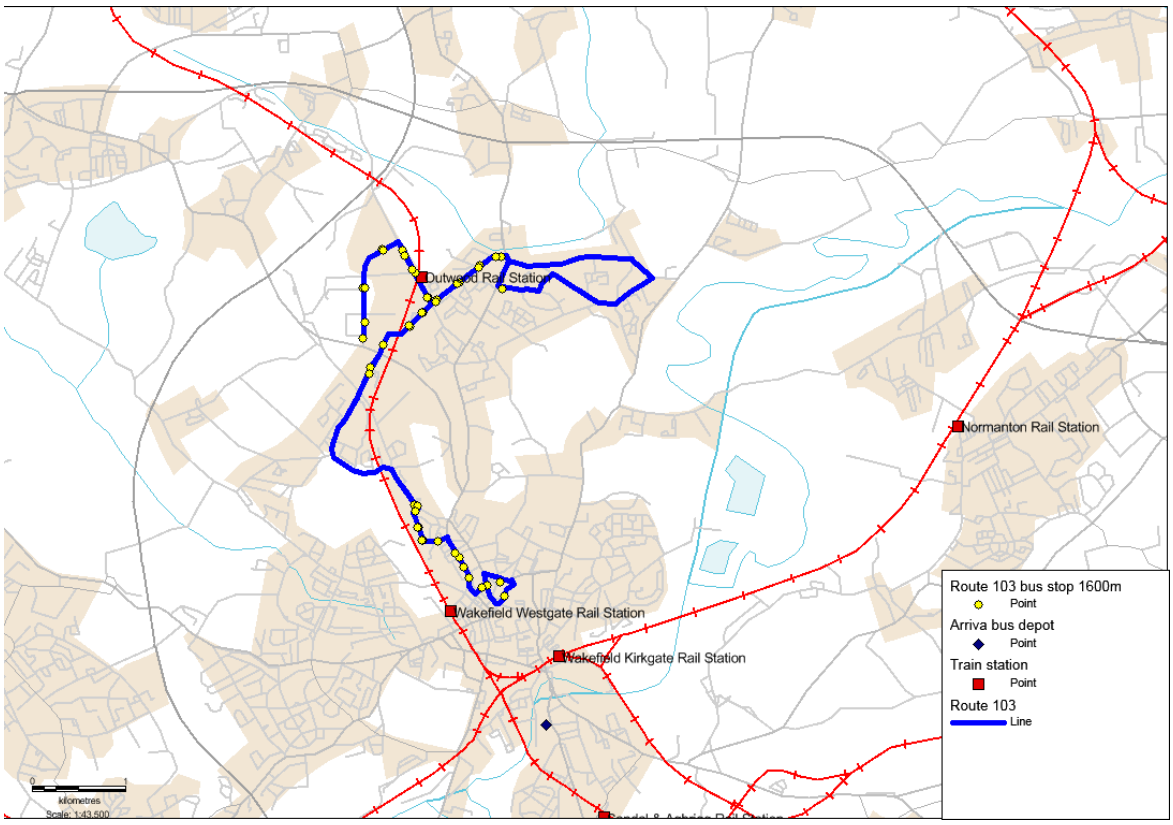
138. We provisionally conclude that the Merger has not resulted in or may not be expected to result in an SLC on this route. Our analysis of GJC suggests that the degree of differentiation between bus and rail services is low on the overlap flows. However, the presence of Stagecoach is likely to reduce the incentive for Arriva to degrade its bus offering.

[22] From 21 February 2016, the evening and Sunday service 28B ceased operating and the new 28A service was introduced, which runs from Middlesbrough to Stokesley.

Wakefield

Route 103

Figure 22: Map of route 103



Source: Basemap data/CMA calculations

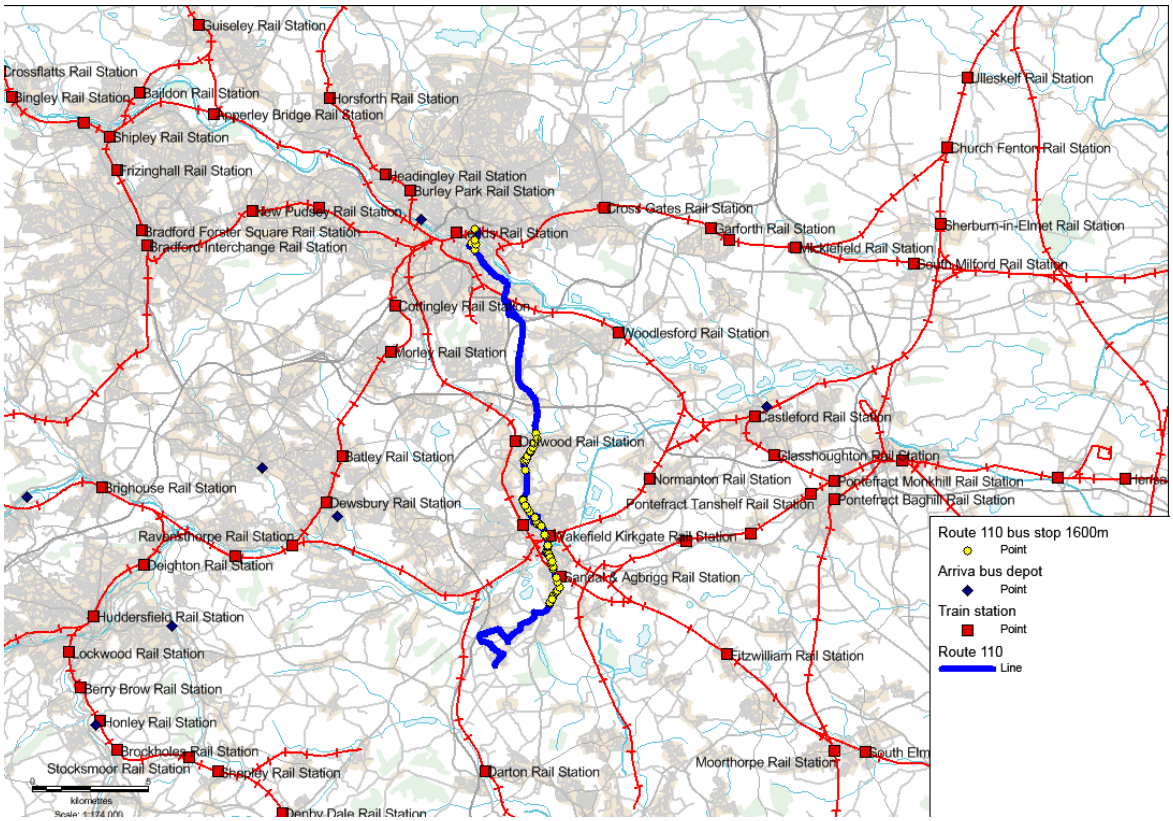
139. The 103 runs from Wakefield to Stanley Lane Ends and is operated by Arriva Yorkshire. There is one flow on this route that overlaps with the Northern Franchise's rail services between Outwood and Wakefield Westgate, which remains after filtering.

140. There is a large GJC difference of -[40-50%]. This suggests that bus and rail services are not substitutes on this flow.

141. Total revenue on this route was £[✂] in the last financial year, with the revenue generated on the overlap flow (£[✂]) representing [10-20%] of total revenue on the route.

142. We provisionally conclude that the Merger has not resulted in or may not be expected to result in an SLC on this route. The GJC difference indicates that bus and rail services are unlikely to be close substitutes for passengers on the flow.

Figure 23: Map of route 110



Source: Basemap data/CMA calculations

143. Route 110 runs from Hall Green to Leeds via Wakefield. There are five flows on this route that overlap with the Northern Franchise's rail services. After filtering, two overlap flows remain for in-depth analysis: Outwood to Wakefield Westgate and Sandal to Wakefield Westgate.

144. We have also assessed additional flows originating in Leeds, which Arriva suggested were outside the 1,200-metre catchment area. However, further analysis shows that the distance between the relevant rail and bus stations is lower (about 800 meters).[23] The flows are from Leeds to Outwood, Sandal and Westfield Westgate.[24]

145. The difference in GJC is [✂] within 25% on the Outwood to Wakefield Westgate flow (-[20-30%]) and the GJC difference is [10-20%] on the Sandal to Wakefield Westgate flow. Bus fares are more expensive compared to rail fares: £2.50 (Outwood–Wakefield Westgate) and £2.10 (Sandal–Wakefield Westgate). The rail fare is £1.60 on both flows.

[23] The distance reported on google maps is 800 metres.
[24] The flow between Leeds and Westfield Kirkgate is not considered further because [✂].

146. On the additional flows, frequency is the same on both bus and rail (two services per hour). Bus fares are £3.10 (Leeds–Outwood) and £3.20 (Leeds–Sandal) compared to £2.70 and £3.50 on rail, respectively. Journey times are significantly longer by bus, with a journey time of 23 minutes (Leeds–Outwood) and 51 minutes (Leeds–Sandal) relative to 10 minutes and 17 minutes on rail. This suggests that there is a degree of differentiation between the bus and rail services on these flows.

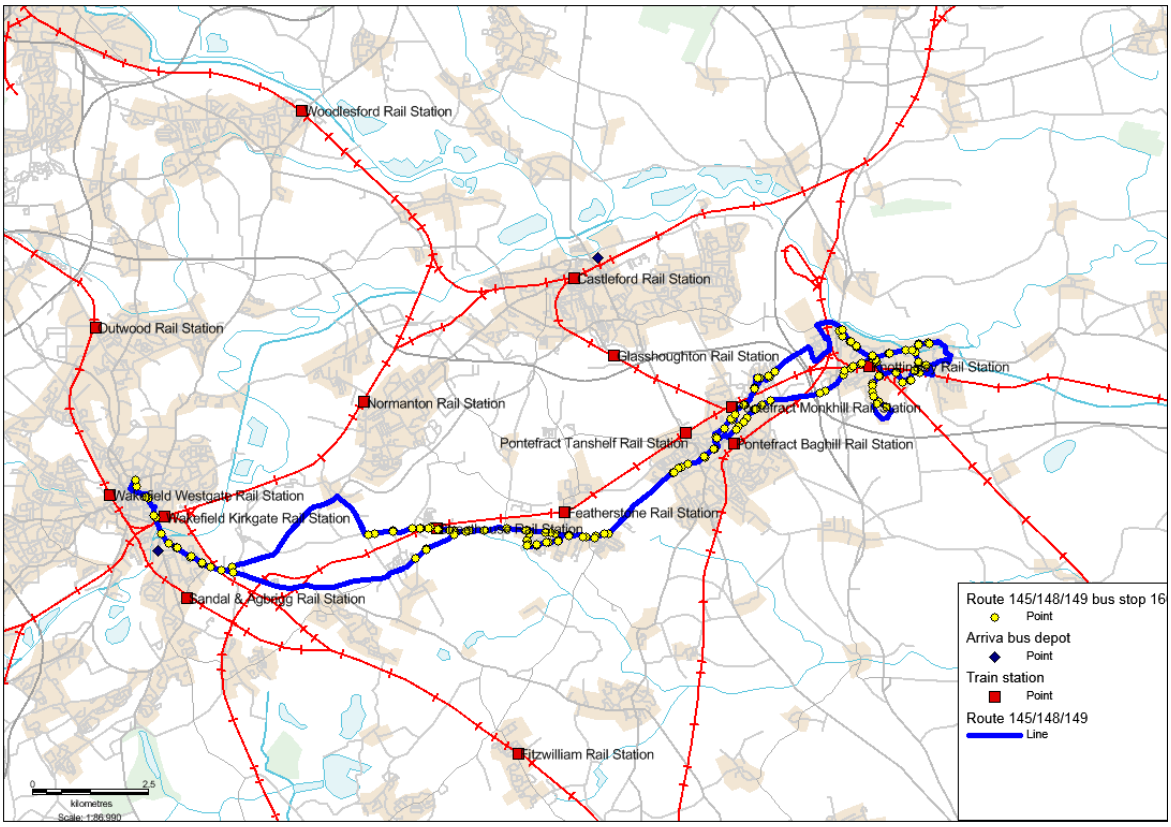
147. Total revenue on this route was £[✂] in the last financial year, with revenue generated on the overlap flows (£[✂]) representing [10-20%] of total revenue on the route.

148. Stagecoach Yorkshire (service 59) operates two services per hour on the Outwood to Wakefield flow. Bus fares are priced at £1.70.

149. We therefore provisionally conclude that the Merger has not resulted in or may not be expected to result in an SLC on this route. Our analysis of GJC and journey metrics (ie fares, frequency and journey times) suggests that there is some degree of differentiation between rail and bus services. Moreover, the presence of Stagecoach on a section of the route is likely to reduce the incentive for Arriva to degrade its bus offering.

Routes 145/148/149

Figure 24: Map of routes 145/148/149



Source: Basemap data/CMA calculations

150. Routes 145/148/149 are operated by Arriva Yorkshire and run from Wakefield to Knottingley. There are 26 flows on these routes that overlap with the Northern Franchise's rail services in the area. After filtering, four flows remain for in-depth analysis: Knottingley to Wakefield Kirkgate, Pontefract Monkhill to Wakefield Westgate, Featherstone to Wakefield Kirkgate and Sandal to Wakefield Kirkgate. Featherstone to Wakefield Kirkgate and Sandal to Wakefield Kirkgate are not considered as the difference in GJC exceeds 25%. Two flows remain for in-depth analysis.

151. Compared to rail, on the flow from Knottingley to Wakefield, bus fares are 30p more expensive, and the journey time takes 20 minutes longer. The difference in GJC is [5-10%], driven by the higher frequency on bus, which runs five services per hour compared to one hourly service on rail.

152. Bus fares on the Pontefract Monkhill to Wakefield Westgate flow are 60p higher than rail, and the journey takes 8 minutes longer. The difference in GJC is [10-20%], driven by the higher bus frequency, which runs five services per hour compared to one hourly rail service.

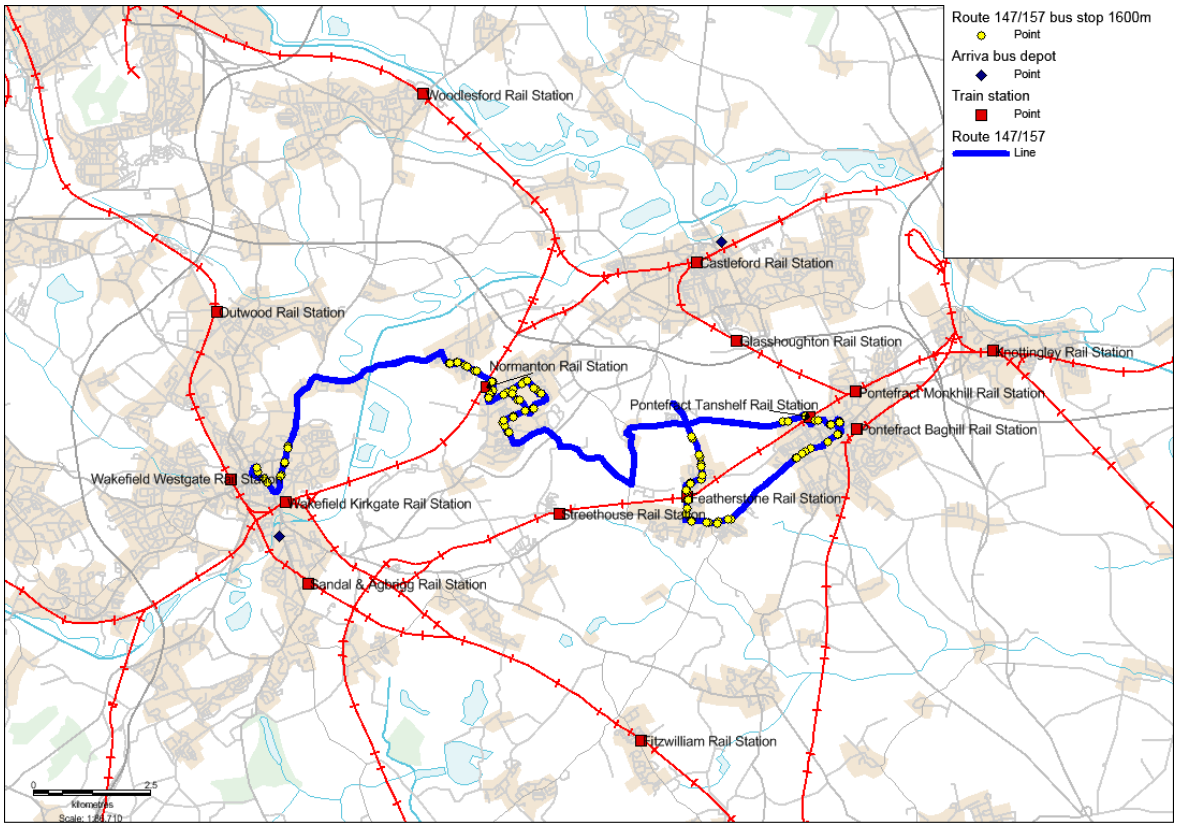
153. Total revenue on the route was £[✂] in the last financial year, with revenue generated on the overlap flows (£[✂]) representing [0-5%] of the total route revenue.

154. BL Travel operates a service between Wakefield and Hemsworth (route 223), which overlaps with the flow from Sandal to Wakefield Kirkgate on routes 144/148/149. Stagecoach also operates one service in Wakefield (route 59).

155. We provisionally conclude that the Merger has not resulted in or may not be expected to result in an SLC on this route. Our analysis of GJC suggests that the degree of differentiation between bus and rail services is low on the overlap flows (except for Featherstone to Wakefield Kirkgate and Sandal to Wakefield Kirkgate). However, the overlap flow covers a small proportion of the total revenue on this route, which suggests that Arriva will have a limited incentive to flex its bus offering. Moreover, the presence of local bus operators is likely to reduce the incentive for Arriva to degrade its bus offering.

Route 147/157

Figure 25: Map of route 147/157



Source: Basemap data/CMA calculations

156. The 147 and 157 services run from Wakefield to Pontefract and are operated by Arriva Yorkshire. There are 13 flows on these routes that overlap with the Northern Franchise's rail services. After filtering, only one overlap flow remains: Normanton to Wakefield Kirkgate.

157. The GJC difference is large at -[30-40%]. This suggests that there is a high degree of differentiation between bus and rail services on this flow.

158. Total revenue on this route was £[✂] in the last financial year, with revenue generated on the overlap flow (£[✂]) representing [0-5%] of total revenue on the route.

159. Frank Poppleton & Co currently operates a single morning service between Wakefield and Pontefract.

160. We provisionally conclude that the Merger has not resulted in or may not be expected to result in an SLC on this route. Our analysis of GJC suggests that bus and rail services are not close substitutes on this flow. Moreover, the overlap flow covers a small proportion of the total revenue on this route, which suggests that Arriva will have a limited incentive to degrade its bus offering.

Route 262

161. The 262 is operated by Yorkshire Tiger and runs between Huddersfield and Dewsbury. There are four flows that overlap with the Northern Franchise's rail services. After filtering, one overlap flow remains for in-depth analysis (Huddersfield to Shepley).

162. Bus fares are slightly cheaper than rail fares (£2.00 compared to £1.90 on bus). There is a small GJC difference of [0-5%] which suggests that the degree of differentiation between bus and rail is low on this flow.

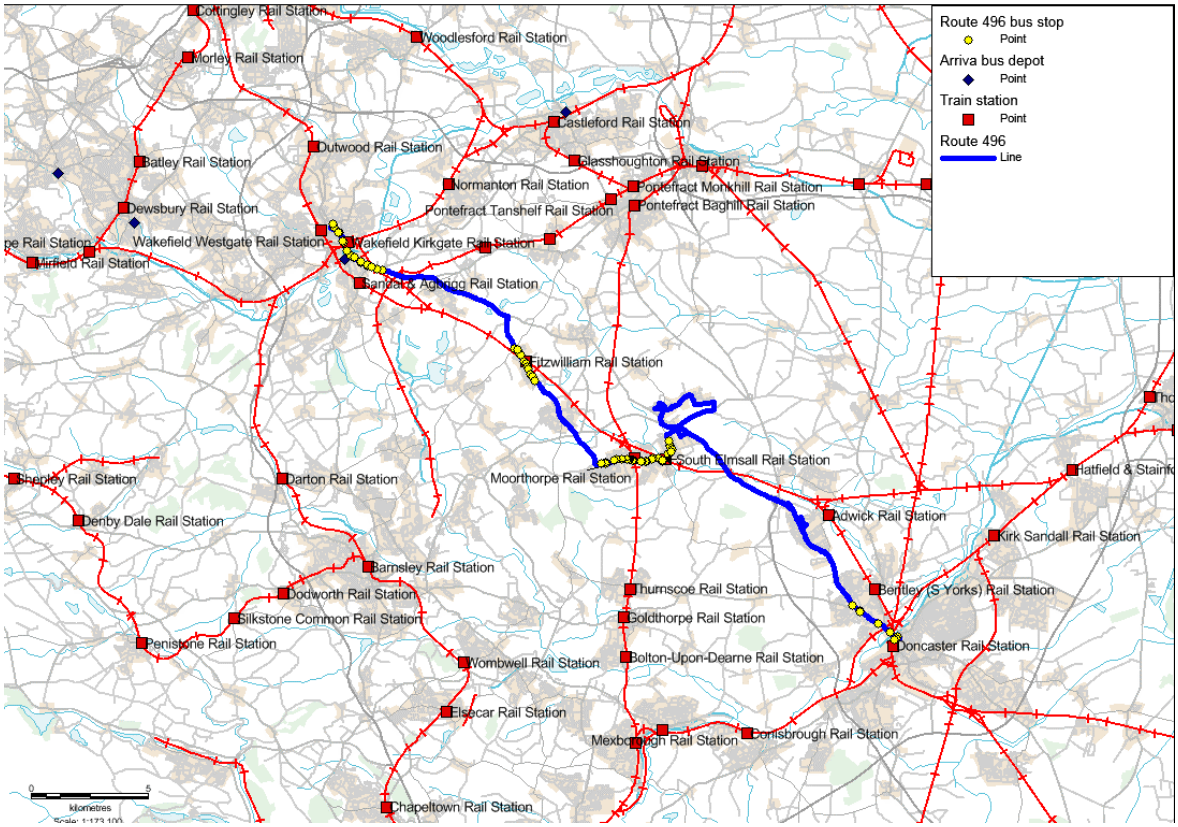
163. Total revenue on the route was £[✂] in the last financial year, with revenue generated on the overlap flow £[✂] representing about [0-5%] of route revenue.

164. Local bus operator Longstaff of Mirfield operates an hourly service between Mirfield and Dewsbury. TransPennine Express operates two rail services per hour between Huddersfield and Dewsbury.

165. We provisionally conclude that the Merger has not resulted in or may not be expected to result in an SLC on this route. Our analysis of GJC suggests that the degree of differentiation between bus and rail services is low. However, the overlap flow covers a small proportion of the total revenue on this route, which suggests that Arriva will have a limited incentive to flex its bus offering.

Route 496

Figure 26: Map of route 496



Source: Basemap data/CMA calculations

166. The 496 service is operated by Arriva Yorkshire and runs from Wakefield to Doncaster. There are 18 flows that overlap with the Northern Franchise's rail services. After filtering, there is one flow that remains for in-depth analysis.

167. Bus frequency is four services per hour compared to one and a half for rail. Bus journey time is 48 minutes relative to 21 minutes on rail. Bus fares are cheaper than the equivalent rail fare (£3.00 compared to £2.50 on bus). The difference in GJC is -[5-10%], which suggests that the degree of differentiation between bus and rail is low.

168. Total revenue on the route was £[✂] in the last financial year, with the revenue generated on the overlap flow (£[✂]) representing [0-5%] of the total route revenue.

169. Stagecoach operates one service in Wakefield (route 59).

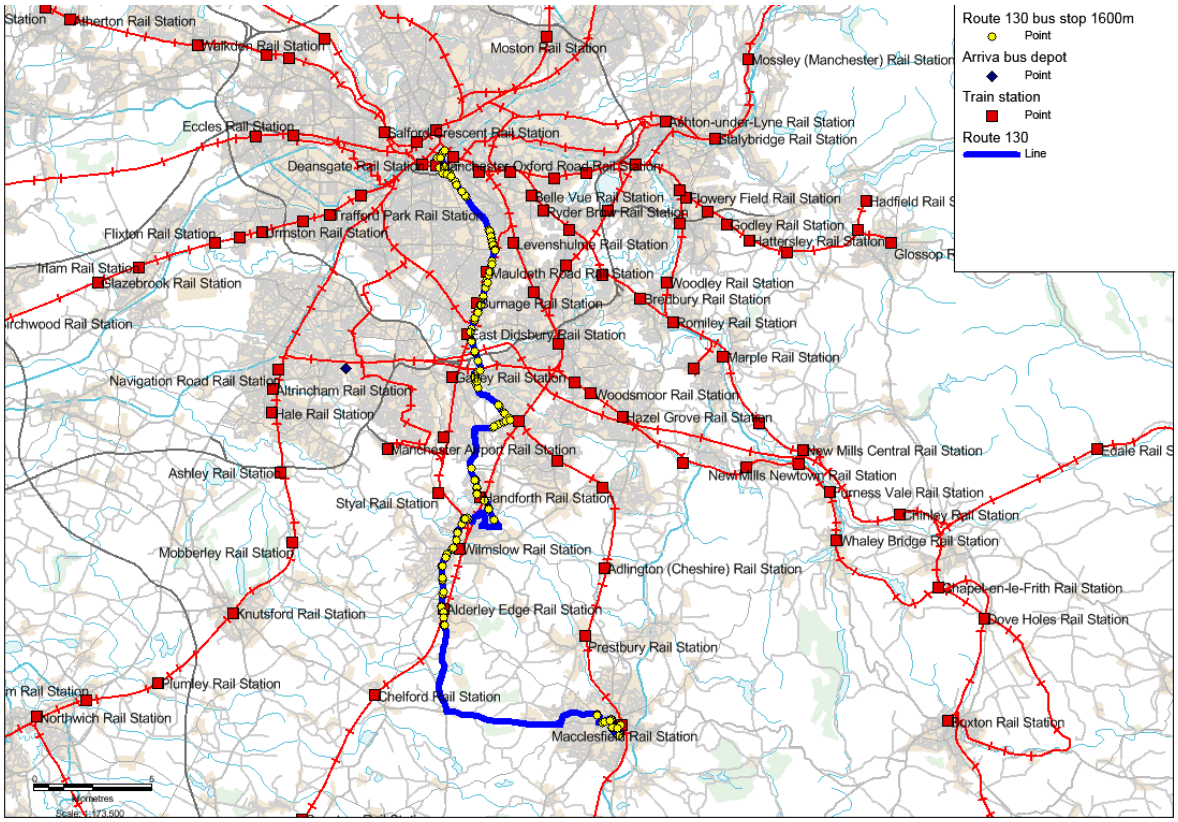
170. We provisionally conclude that the Merger has not resulted in or may not be expected to result in an SLC on this route. Our analysis of GJC suggests that the degree of differentiation between bus and rail services is low. However,

the overlap flow covers a small proportion of the total revenue on this route which suggests that Arriva will have a limited incentive to flex its bus offering.

Wythenshawe

Route 130

Figure 27: Map of route 130



Source: Basemap data/CMA calculations

171. The 130[25] bus service is a Sapphire service operated by Arriva North West, which runs between Manchester and Macclesfield. After filtering, only one flow remains for in-depth analysis (Alderley Edge to Wilmslow). This covers a short distance with the journey time by train being 3 minutes or 9 minutes by bus.

172. Total revenue on this route amounted to £[✂] in the last financial year. Flow revenue in the last financial year was £[✂], which represents just [0-5%] of route revenue.

173. We provisionally conclude that the Merger has not resulted in or may not be expected to result in an SLC on this route. The overlap flow covers a small

[25] Due to missing information, GJC was not calculated for this route.

proportion of the total revenue on this route, which suggests that Arriva will have a limited incentive to flex its bus offering.

Network effects

Introduction

1. The award of the franchise may result in horizontal effects on transport networks if it reduces competition at the level of public transport networks. A network theory of harm is additional to potential competition concerns at the level of individual flows and may take several forms since competition at the broader transport level may occur in several ways (eg competition for passengers on network tickets). We consider the main features of the transport networks in the area served by the Northern Franchise.

2. We examine the features of transport networks which warrant consideration of competition on the broader transport network.

Competition on the wider transport network

3. The OFT and CC have in previous rail franchise cases considered the potential for a franchise award to raise competition concerns at the network level.[1] This is because, in addition to point-to-point flow level demand, certain features of transport markets warrant consideration of the broader network. These include both demand- and supply-side factors:

Demand-side

(a) The presence of PTEs in certain areas which are responsible for managing the transport network within their area.[2]

(b) Passenger demand for transport services may also be at the level of the network, for example because certain passengers require multi-leg or multi-modal transport services across the network. Having different journey needs, such passengers may have a specific demand for network tickets and can be identified as a distinct market segment.

Supply-side

(c) Transport companies organise their services around hubs and depots which have significant implications for their existing network and potential

[1] See for example CC review of methodologies in transport networks, paragraphs 8 & 9.
[2] This includes setting service specifications and intervening where the network does not operate satisfactorily. Both of these considerations are wholly or mostly at the network level, ie the PTE considers the impact that the introduction or removal of bus routes has on the viability and coverage of the existing network.

modifications to their service offering.[3] This suggests that transport operators make strategic choices at regional level by taking into account competition at the level of the network.

4. We note that all aspects above are observed in the area served by the Northern Franchise. Furthermore, Arriva's submissions[4] show that its bus network tickets offering is wide and network tickets account for a [✂] proportion of revenues in the north of England. ARN also offers an extensive range of network tickets.

5. Specifically, Arriva UK Bus offers at least 22 network tickets in the geographical area served by the Northern Franchise. There are 11 different network tickets available in the North East, 3 in Yorkshire, 8 in the North West and few other options offered by Arriva Yorkshire Tiger.[5] On the other hand, ARN offers 17 rail network tickets; there are 4 multi-day tickets ('Rover' tickets which permit travel 4 days in 8 or 7 consecutive days travel),13 single day tickets ('Ranger' tickets which allow unlimited travel within a defined geographic area).[6]

6. In addition to these own-network tickets, both Arriva UK Bus and the Northern Franchise participate in a number of multi-operator ticketing schemes promoted and managed either by LTAs or various stakeholder groups.

7. Table 1 shows Arriva annual revenues from own-network tickets. ARN gets about £[✂] from rail network tickets (ie [✂] of ARN overall revenue) while Arriva bus network tickets seize about £[✂] revenue in the regions served by the Northern Franchise (ie [✂]).

8. Both the wide range of network tickets offered and the [✂] proportion of revenues network tickets account for suggest that there exists a [✂] segment of consumers who buy network tickets and could potentially be harmed if the award of the franchise would result in an SLC at the level of transport networks.

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[3] For example capacity at hubs or depots are a key factor in the decision to introduce new routes or other service changes. As noted by the CC in previous cases, an important entry barrier is the expected response from incumbent operators and their network of bus services to the introduction of a new service/route by a new operator.
[4] See [✂].
[5] See [✂]. Most network tickets are either available for different zones or on a day/weekly/monthly/annual basis or both.
[6] No other rail network tickets overlapping with the Northern Franchise area are offered on a permanent basis by other train operators operated by Arriva (ie Arriva Trains Wales, CrossCountry and Grand Central).

Table 1: Arriva annual revenues from network tickets

[✂]

Source: [✂].
*Revenue generated by ARN for the rail network tickets in 'railway year' 2016.

Unilateral effects on transport networks

9. We have identified four ways through which the award of the Northern Franchise to Arriva may potentially give rise to horizontal effects at the level of transport networks and lead to an SLC between such networks. These include:

   (a) Theory of harm 1: In those areas where bus and rail networks are close alternatives to passengers, the joint operator may have the ability and incentive to degrade its offer of network tickets (eg by increasing their prices or reducing their coverage) following the award of the franchise.[7] This is because prior to the award, the bus and rail network may have competed in relation to passenger demand for network tickets, with an increase in the price of one leading to switching onto the other network ticket. Following the award of the franchise, the joint operator internalises this potential diversion and may profitably increase prices of one or both of the network tickets.

   (b) Theory of harm 2: The joint operator could decide to integrate bus and rail services and offer combined tickets allowing passengers to travel on a wider network. While passengers generally benefit from public transport integration, the combination of rail and bus networks would allow the joint operator to offer a product which other bus and rail operators could not match in network coverage, such that competitor networks exert a reduced competitive constraint on the combined bus and rail network. If passengers switch in sufficient numbers because the joint operator offers its own multi-modal tickets at prices that undercut competitor network tickets (including multi-operator multi-modal tickets), the joint operator could drive competitors out of the market and raise barriers to entry to

[7] Note that we consider the possibility for the joint operator to degrade its offer of both bus and rail network tickets. In Section 12, we focus our discussion on the possibility that Arriva would have the ability and incentive post-Merger to profitably degrade its offer of bus network tickets. As will become clear in this section, our main concern is on bus network tickets,

new bus operators. As a result, competition would be softened and the joint operator would be able to raise fares at a later stage.[8]

(c) Theory of harm 3: The joint operator may enjoy significant incumbency advantages when dealing with the relevant PTE. For example the operator may have significant bargaining power in negotiating with the PTE if it holds a significant proportion of the transport network for that PTE. Alternatively, the PTE may have a preference for awarding contracts to existing operators of networks within their area or have a strong preference for operators that provide integrated multi-modal networks.

(d) Theory of harm 4: The joint operator may have an incentive not to provide passengers with information about competing bus services available at ARN-owned stations as well as to engage in joint-marketing and refuse advertising of other bus operators. This may reduce the ability of competitors to attract passengers and soften competition between bus networks.

Arriva's submissions

10. Arriva submitted that the Merger would not result in a significant reduction in competition at the level of transport networks and none of the theories of harm identified above are likely to materialise. This was for the following reasons:[9]

(a) Arriva and Northern Franchise network tickets are not close alternatives to passengers (eg they are indeed priced very differently and, particularly on longer journeys, bus and rail journey times can differ significantly) and do not impose a cross-modal competitive constraint on each other. Bus network tickets offered by competitors (such as Stagecoach's Day Rider and Mega Rider tickets) and multi-operator tickets represent better alternatives to passengers and exert a stronger competitive constraint on Arriva bus network tickets than Northern Franchise network tickets.

(b) Arriva has made substantial investments in its bus operations in recent years which provides a significant disincentive to any degradation of Arriva's bus services and offers, in favour of another business – such as the rail franchise – which is by nature limited in time. On the other hand,

[8] Note that the integration of rail and bus services would lead to an increase in quality for passengers, which would represent a welfare gain. As a result, one would have to balance the welfare gain from increased service quality with the potential welfare loss of increased fares if competitors are driven out of the market. The overall welfare effect is not clear, ie it might be positive or negative. Furthermore, the incumbent is likely to be constrained in its ability to increase fares if entry costs are low.
[9] Arriva response to issues statement, Section 7.

the existing demand for Northern Franchise network tickets is fairly limited (ie [✂]) and may be affected further by potential price increases.

(c) Under the Northern Franchise agreement, Arriva is contractually obliged to hold the Northern Franchise business separate from other Arriva businesses to ensure the clean transfer of the Northern Franchise business at the end of the franchise term. This implies Arriva would have neither ability to integrate bus and rail services post-merger nor economic incentive to flex its network ticket offer and divert passengers between rail and bus operations.

(d) On the rail side, the franchise agreement would preclude any attempts by Arriva to alter existing Northern Franchise services with a view to integrating services with Arriva's bus services. On the bus side, [✂]. Arriva does not currently offer any Arriva-only multi-modal network tickets in the Northern Franchise area and [✂]. Similarly, [✂].

(e) The franchise award would not confer any material incumbency advantage on Arriva as the scale of an operator has no effect on negotiations with individual PTEs. In particular, the fact that an operator is a larger scale operator has no relevance with respect to the bargaining position of that operator with the PTE. Indeed, services which PTEs put out to tender are generally awarded on a set of criteria based on service specification, quality and price. Being mainly interested in achieving the highest quality for the least cost, contracts may often be awarded to smaller operators. Quality-cost considerations are likely to become even more important with the introduction of franchising powers for local authorities under the Bus Services Bill.[10]

(f) PTEs also play an important role in ensuring the availability of information for passengers. For example, at certain stations within the Northern Franchise area (such as Bradford Interchange), to ensure connectivity local authorities provide bus information/departure screen for onward travel for passengers.

[10] The Bus Services Bill is currently under discussion in Parliament and is expected to significantly extend PTEs' powers on their transport networks. The main points of the Bill are: (i) to introduce new franchising powers with decisions at local level, (ii) to strengthen arrangements for partnership working in the sector, introducing 'enhanced partnerships' and (iii) to improve the quality of information available to bus passengers. Specifically, the 'new franchising powers' encompass the possibility for PTEs to take over the operation of local buses and tender the service (eg routes). Further details can be found in the DfT dedicated Impact Assessments Report.

Assessment of network theory of harm 1

11. Passenger demand for public transport is generally between two specific points or a flow (ie their origin and the destination). For some passengers travelling between the two specific points may involve multiple journey legs on different services.[11] For example a journey between two points may involve an interchange at an intermediate point, which may or may not be of the same mode or the same operator as the first part of this journey. For such journeys, network tickets may become a more attractive proposition for passengers as these allow access to the entire network for a fixed fare, instead of the passenger purchasing a separate ticket for each journey leg.

12. Passengers purchasing network tickets trade-off similar factors to other passengers who purchase point-to-point tickets (eg single tickets) in making choices between transport options, including fares, journey times, access/egress, interchanges, frequency and other aspects of service quality. In addition to these factors, passengers purchasing network tickets are also likely to value the density of the network covered by the network ticket, as it may offer more attractive ways of completing multi-leg journeys.[12]

13. Viewed this way, network tickets are targeted at a specific segment of the passenger population, ie those passengers who value the flexibility of travelling across the network(s).

14. We consider the possibility that the Merger could result in horizontal effects on transport networks as the joint operator may have the ability and incentive to profitably degrade its offer of network tickets following the award of the rail franchise, if it is able to re-capture a significant proportion of passengers who switch in response to the degradation on one of the networks.

15. Similarly to the bus-on-rail theory of harm, the idea is that the award of the Northern Franchise to Arriva could entail the removal of a significant competitive constraint at network level. Arriva could therefore profitably reduce its offer of bus or rail network tickets as it would be able to re-capture a significant proportion of passengers switching onto the other network.

16. We identify two potential strategies: one involving passengers' diversion from bus (rail) network tickets to rail (bus) network tickets (ie strategy one) and the

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[11] This could be as part of a regular journey such as a commuter journey using a network ticket giving access to network zones or leisure journeys on explorer network tickets.
[12] That is, overall journey time is likely to fall on average as network density increases, since more direct options become available with dense networks. As passengers seek to reduce the overall journey time, including in-vehicle journey time, access/egress and interchange time, options with a lower overall journey time are likely to be preferred.

other concerning substitution from bus (rail) network tickets to rail (bus) flow/route specific tickets (ie strategy two).

17. We assess both strategies by looking at the evidence of pre-Merger competition, the level of network substitutability (including how passengers use network tickets), the competition coming from multi-operator tickets and submissions from third parties.

Evidence of pre-Merger network competition

18. We consider whether the rail and bus networks are likely to be viewed as good substitutes from the passenger perspective, such that a significant proportion would be likely to switch between the two in the event of a degradation of the offer on one of the networks. We consider the offer that the rail and bus network tickets provide to passengers and observe that the Arriva bus and Northern Franchise network tickets appear to be aimed at different passenger segments and are marketed very differently. In particular, while bus network tickets are aimed at repeat and possibly commuting passengers, rail network tickets are generally designed for leisure and off-peak longer distance journeys. This emerges from different sources (eg the inspection of operators' websites) and seems to suggest that switching between the two sets of network tickets is likely to be limited.[13]

19. The review of Arriva internal documents reveals that [✂]. Although most of the evidence suggests [✂],[14] we have also found evidence of [✂].[15] This indicates that the award of the Northern Franchise to Arriva may affect its incentives to maintain its offer on its bus network tickets.[16]

20. We have not seen evidence which suggests that there was competition between existing Arriva rail franchises and the Northern Franchise. This is not surprising given that Arriva rail operators do not offer any network tickets on a permanent basis within the Northern Franchise area.[17]

21. Finally, as shown above in Table 1, [✂]. This suggests [✂] and we conclude the incentive for ARN to degrade its rail network tickets offer to divert passengers to bus is likely to be very limited.

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[13] Note that this is not inconsistent with the main case we have considered, which concerns whether passengers may switch from bus to rail on overlap flows if the bus offer is degraded, as we here focus on network tickets, which, as discussed in paragraph 3(b), can be seen as a distinct market segment.
[14] For example, 2014 and 2015 bus operations reports of Arriva North East show that Arriva monitors the performance of its network tickets and regularly adjusts the offer [✂].
[15] Arriva North East Quarterly Review March 2015.
[16] Although Arriva also told us that [✂]. See [✂].
[17] [✂]

Network substitutability

22. The more passengers consider bus and rail networks as alternative travel options and are willing to substitute between these, the more likely is the award of the rail franchise to the operator of the bus network to lead to unilateral effects, ie the joint operator may have an incentive to degrade its network ticket offer post-Merger. To assess closeness of network tickets, we identified three dimensions which are likely to be key to passengers, namely geographical coverage, price and network density.

23. We note that the geographic overlap between coverage provided by the Arriva bus network tickets and the Northern Franchise network tickets appears to be limited. We also note that, wherever the coverage of rail and bus network tickets partly overlaps, the differences in cost as well as network density are such that it seems unlikely passengers would consider rail and network tickets as close substitutes.[18]

24. Throughout the investigation, Arriva has mentioned one area of significant geographical overlap between the Northern Franchise and Arriva bus network tickets. Specifically, Arriva submitted that the Northern Franchise's Tyne and Tees Ranger ticket is a good match for Arriva North East All Zones Saver ticket. However, the price difference between the two is substantial: the Tyne and Tees Day Ranger costs £21.70 for an adult day ticket while the Arriva North East All Zones Saver adult day ticket is priced at £7.80.[19] The daily price of the Tyne and Tees Day Ranger ticket is actually much closer to the weekly price of the Arriva North East All Zones Saver (£27.50) than the daily ticket.[20] This significant difference in prices suggests that the substitution between the Tyne and Tees Ranger ticket and Arriva North East All Zones Saver might be limited.

25. We also note that as a general proposition, networks are more likely to compete with other networks of the same mode than with networks of other modes.[21] In this regard, there are a number of alternative network tickets

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[18] Northern Ranger tickets range from £19.70 to £26 whereas Arriva bus network tickets are generally below £8 (ie for adult day tickets).
[19] We note that the price differential is not conclusive evidence on the lack of pre-Merger competition, particularly in light of the differentiated nature of the offer on network tickets. However, given that the bus network also offers access to a significantly denser transport network, we thought it unlikely that a substantial proportion of bus network ticket passengers would consider the rail network ticket as a particularly good alternative to the bus network ticket.
[20] Fares available at www.arrivabus.co.uk and www.northernrailway.co.uk.
[21] This follows from the assumption that within mode substitution is higher than across mode substitution. This assumption is supported by the general evidence of passengers' substitution between transport modes that can be found in the Passengers Demand Forecasting Handbook (PDFH) (2013). The cross price elasticity estimates reported in the PDFH (2013) between bus and rail are small, suggesting that bus prices tend to have a limited impact on rail demand on average. In general terms, we consider this to apply also for passengers buying network tickets.

available in the area served by the Northern Franchise which are either offered by Arriva bus competitors or involve several operators at the same time. Even if the geographical coverage may slightly differ from the network tickets offered by Arriva, both options are likely to be a better substitute for Arriva network tickets than the Northern Franchise network tickets. This is because they are more likely to provide a comparable offer to passengers in terms of fares and network density.

26. For example, in the area of significant network overlap highlighted by Arriva, there are at least three other options available to passengers: the Stagecoach Tyne and Wear Day rider Plus ticket (£5.05), the multi-operator ticket Unlimited Day Rover Tyne and Wear offered by Network Ticketing Ltd (£7) and the multi-operator North East Smart zone scheme (about £14 a week).[22] Despite the slight difference in geographic coverage, they seem to be close alternatives and are therefore likely to exert a stronger constraint on Arriva's North East All Zone Saver ticket than the Northern Franchise's Tyne and Tees Day Ranger ticket.

Competition from multi-operator tickets

27. As noted above, there are a number of multi-operator ticketing schemes available in the area served by the Northern Franchise. These tickets promote transport service integration and allow passengers to use services from different operators offering access to a wider network.

28. These schemes are often jointly managed by PTEs and private operators which create a dedicated company. The composition of the board can widely vary from scheme to scheme, but prices are generally agreed by the management company with inputs from transport operators. A single private transport operator may have some influence on the fare setting process (for example through designated consultations or voting rounds) which is broadly in proportion to its market share in the area over which the multi-operator ticket applies.

29. Arriva participates in 14 multi-operator ticketing schemes in the relevant area. Although figures vary across regions (eg from [✂] in the North East to [✂] in Yorkshire), multi-operator tickets represent a [✂] proportion of the revenues Arriva obtains from network tickets (ie about [✂] in aggregate). Arriva told us that multi-operator tickets imposed some constraint on its own network tickets. We note that multi-operator tickets may act as a cap on own-network tickets,

[22] See www.stagecoachbus.com, www.networkonetickets.co.uk and www.arrivabus.co.uk.

but do not necessarily remove the potential for fare increases below this cap or other forms of degradation of the offer on network tickets.

Table 2: Arriva revenues coming from multi-operator tickets (2015)

[✂]

Source: [✂].
*Revenues from the scheme North East Smart zone not included as there has not yet been revenue allocation by the scheme administrator. Arriva joined the scheme in December 2015.

Third party submissions

30. No third party expressed concerns about the possibility that the Merger has resulted in or may be expected to result in unilateral effects on competition between bus and rail network tickets.

31. Competitors submitted that bus and rail services tend to serve different customers and multi-operator tickets may place an indirect constraint on ability to flex own-network ticket prices. By way of example, a competitor submitted: '[✂].'[23]

CMA views

32. We focus on the possibility that Arriva would engage in strategies aimed at diverting passengers from bus network tickets to either rail network tickets (ie strategy one) or rail flow/routes (ie strategy two). Indeed, since Northern Franchise network tickets represent a small market segment and no evidence of adjusting rail network tickets in response to competition has been found in Arriva internal documents, we consider the scenario in which the joint operator would flex rail network tickets to profit from passengers diverting to bus to be less likely.

33. We note that Northern Franchise network tickets tend to offer a wider geographic coverage than Arriva network tickets which have a zonal system and may match Northern Franchise coverage only by combining together all zones available in a given region. Even taking into account all those tickets for which there is significant overlap, we note that rail and bus tickets are generally marketed very differently and serve different journey purposes (with bus tickets targeting commuter passengers and rail tickets aimed at leisure travel). Differences in price and network density also point to a limited substitution between bus and rail network tickets.

34. For these reasons, Arriva bus and Northern Franchise rail network tickets are unlikely to be perceived as close substitutes by passengers and therefore we

[23] [✂].

consider that strategy one has not resulted in or may not be expected to result in unilateral effects.

35. In relation to strategy two, [✂].[24] Arriva told us that [✂].[25] In particular, Arriva explained that [✂].[26] Arriva also submitted that [✂].[27] Therefore any attempt to alter it to divert passengers to rail specific flows (even if successful) would have a minimal effect.

36. [✂], we note the large availability of competitors' bus network tickets and multi-operator tickets mitigates the concern that Arriva would find strategy two profitable in other bus network/rail route overlaps also. In particular, we consider that there is little certainty that any alteration to a bus network ticket would result in the diversion to a specific Northern Franchise rail service. Indeed, the number of alternatives available to bus passengers (eg multi-operator as well as competitors' tickets) together with the significant price difference existing between bus network tickets and a train season ticket are likely to act as a constraint and reduce the incentive for Arriva to engage in such a strategy.[28]

Assessment of network theory of harm 2

37. In a number of past rail franchise cases (eg FirstGroup/ScotRail[29]; FirstGroup/Greater Western[30] and Arriva/Wales and Borders Rail[31]), the CC and the OFT expressed concerns and assessed competition issues in relation to horizontal effects arising from the potential integration of bus and rail networks post-Merger.

38. While the CMA acknowledges that the integration of transport networks may provide significant benefits to passengers (eg through the alignment of timetables), we consider whether the Merger could result in network effects on competition between bus operators by enabling Arriva to leverage its position as rail operator to weaken competition to its bus services. This would happen if bus and rail networks were complements in an area and Arriva decided to offer a combined multi-modal ticket restricted to its own services, a product

[24] [✂]
[25] As noted above, Arriva also told us [✂].
[26] See [✂].
[27] [✂].
[28] By way of example, a weekly and a four-week Tees Valley Saver tickets cost £25 and £85 respectively, whereas a rail ticket between Darlington and Saltburn costs £36.30 for one week and £139.40 for four weeks.
[29] FirstGroup plc and the Scottish Passenger Rail franchise (June 2004).
[30] FirstGroup plc and the Greater Western Passenger Rail franchise (March 2006).
[31] Arriva plc and the Wales and Borders Rail franchise (March 2004).

that could not be matched by bus competitors (eg in terms of price) and which could raise barriers to entry to the bus market.

39. Together with Arriva's submissions, in our assessment we consider the role of multi-operator ticketing schemes and the responses of transport local authorities as well as the views of Arriva's competitors.

Arriva's submissions

40. When asked to comment on the complementarity of its bus, coach and rail services to the Northern Franchise services, Arriva submitted that:

> Arriva bus and rail services may be complementary to Northern Franchise services, but the extent to which they are complementary on a particular route will depend on a number of factors (…) including the frequency of the relevant services, journey time, waiting time to transfer between services and the cost of alternative modes of transport (e.g. private transport).[32]

41. As noted above in relation to multi-modal tickets, Arriva told us that '[✂]'.[33] The same applies to ARN. Furthermore, Arriva and the Northern Franchise currently participate in multi-modal, multi-operator ticketing schemes in Merseyside, Greater Manchester, West Yorkshire, South Yorkshire and Tyne & Wear, as well as the national PlusBus scheme.[34]

42. However, Arriva pointed out the following: 'it should be noted that the ARN franchise agreement includes obligations relating to the offering of multi-modal tickets [✂]'.[35]

43. Arriva told us that requirements for participation by ARN in multi-modal ticketing schemes were detailed in the franchise agreement at Schedule 2.5. The franchise agreement also imposes a requirement for the Northern Franchise to participate in additional multi-modal fare schemes if requested by the Secretary of State and required to do so by a local authority'. Schedule 6 provides for enhanced smart ticketing offerings by ARN and potential multi-modal ticket offerings. Arriva submitted that '[✂]'.

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[32] [✂]
[33] Arriva response to CMA Issues Statement dated 4 July 2016.
[34] [✂]
[35] [✂]

Third party submissions

44. Most third parties were not concerned about the potential for the Merger to give rise to unilateral effects through the integration of complementary networks, harming competition in the bus market.

45. An LTA told us that: '[✂].'[36]

46. Overall, LTAs considered there is little or no risk of wider network effects arising on the transport network they are responsible for. This is largely due to the fact that PTEs see a substantial benefit to passengers coming from larger and more integrated transport networks. Many LTAs are indeed themselves committed to developing inter-modal connectivity by promoting and expanding availability of multi-operator ticketing schemes. The growing importance of such schemes has broadly been identified as a significant countervailing factor to the emergence of potential network effects benefiting Arriva in the Northern Franchise area.

47. For example, one PTE submitted that:

> [✂].[37]

48. Some LTAs even mentioned that the award of the Northern Franchise to Arriva might bring positive rather than negative changes for passengers in the future as a result of Arriva's joint ownership of both rail and bus services.[38]

49. Bus competitors responded in a similar way. When asked to comment on the introduction of new inter-modal tickets, only one bus operator stressed the importance of safeguarding ticketing interoperability to keep competition healthy in the bus market.[39] However, Go North East's response suggests that multi-operator tickets are typically open access: 'Multi operator ticket prices are set according to the provisions of the Public Transport Ticketing Schemes Block Exemption and accompanying guidance. As all operators have the opportunity to join multi-operator schemes, there is no increase in bargaining power by virtue of being a member'.[40]

CMA views

50. We note that, in general, PTEs welcome integration between bus and rail networks as they see this as an important way of fostering the quality of

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[36] [✂]
[37] [✂]
[38] [✂]
[39] [✂]
[40] [✂]

services offered in their area. This suggests that the Merger could create some efficiencies at network level and passengers would ultimately benefit from this increased public transport coordination in their local area. We consider this consumer benefit to act as a countervailing factor to potential fare increases in network tickets.

51. As shown in Table 2, the CMA notes that, [✂].[✂]. Multi-operator tickets are also recognised as supporting entry by smaller operators and are generally welcomed by the PTEs.

52. In view of the increasing importance of multi-operator tickets, there seems to be limited rationale for introducing an operator-specific multi-modal ticket which, offering access to a smaller network, would be less appealing to passengers. Arriva told us that [✂].[41] Multi-operator schemes are typically open to all operators in the relevant area and scheme administrators invite operators to join their schemes. The timing for new entrants varies between schemes; however, Arriva told us that this does not usually take more than three months.[42] Multi-modal/multi-operator ticketing schemes can therefore help to keep barriers to entry or expansion low for smaller operators.

53. One of the main duties of LTAs is to protect passengers' interests. They are committed to working with operators to ensure better connections between modes and integration at rail stations. As PTEs generally consider that the introduction of multi-modal tickets which are restricted to the services of the lead operator could be harmful for competition and ultimately passengers, they would not welcome such an initiative by Arriva. Although local authorities have limited formal powers to intervene in operators' own commercial decisions, they are generally able to informally influence them because of the importance to transport operators of keeping good relationships with local PTEs.[43]

54. Furthermore, the CMA notes that Schedule 2.5 and Schedule 6 of the franchise agreement provides for local authorities, in conjunction with the DfT, to exercise a degree of control over ARN's participation in multi-operator multi-modal ticket offerings. Finally, the Public Transport Ticketing Schemes Block Exemption regulation mandates that any public transport ticketing scheme must be accessible to any local transport operator, or potential operator, wishing to join it.

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[41] [✂]
[42] [✂]
[43] In their submission [✂].

55. In summary, given the franchise commitments and block exemption regulation, the role of LTAs and multi-operator tickets and the fact that no substantial concern was raised by third parties, we find it difficult to conclude that the Merger may result in network effects, which would hinder bus competition and adversely affect the prospect for integrated ticketing schemes.

Assessment of other theories of harm

Theory of harm 3: Incumbency advantage at PTEs

56. After the award of the franchise, the joint operator may enjoy significant incumbency advantage when dealing with the PTE responsible for the transport network in the region. This can happen if having a significant proportion of the network could influence the operator's bargaining power in the negotiations. Alternatively, incumbency advantages could materialise if LTAs have a preference for dealing with a smaller number of operators and tend to award contracts to existing competitors.

Third party submissions

57. No third party expressed concerns about the possibility that the Merger could result in incumbency advantages favouring the joint operator.

58. LTAs submitted that the scale of an operator has little or no effect on negotiations with individual PTEs. This is because they generally procure transport services (eg routes) through competitive tenders which are awarded on a set of rigorous criteria relating to costs and quality. For example, one PTE submitted that '[✂]'.[44]

59. Similarly, Arriva's competitors raised no competitive concern regarding this theory of harm and they generally confirmed that price is often the key determinant of bus contract awards. Go North East's responses are representative of the submissions made by other Arriva competitors:

'We do not see the franchise being awarded to Arriva having any significant impact on our relationship with transport authorities' [45] and, stressing the role of multi-operator multi-modal tickets, 'we consider that this advantage is unlikely to crystalize. Also, […] the key

[44] [✂]
[45] [✂]

determinant of bus contract award tends to be price as opposed to bus/rail integration […]'.[46]

This is representative of submissions made by other Arriva competitors.

Theory of harm 4: Information sharing and advertising at rail stations

60. After the award of the franchise, the joint operator might have an incentive not to provide passengers with information about other operators' services at the rail stations it operates. Similarly, Arriva might also have incentives not to accept advertising of competing bus services at stations.

61. Both strategies could represent an attempt to foreclose competing bus operators from the market by leveraging the Northern Franchise's position into the adjacent bus market. An information sharing theory of harm had been considered in (at least) a couple of past rail franchise cases (eg FirstGroup/ScotRail and FirstGroup/Greater Western).

Third party submissions

62. No concerns have been raised by either LTAs or competitors in relation to this theory of harm.

63. PTEs' role of protecting passengers' interests and monitoring the correct functioning of the transport network in their area typically also includes ensuring that information is available to passengers. Several LTAs clearly mentioned this responsibility when describing their role. By way of example, the West Yorkshire Combined Authority included among their duties: 'Provides travel information at stops, stations, online and over the phone (…)'.[47]

Conclusions

64. We identified the ways in which the Merger could result in an SLC in the context of horizontal effects at network level.

65. We first considered the possibility that the Merger would give the ability and incentive for Arriva to profitably degrade its offer of bus network tickets to divert passengers to either rail network tickets or specific rail flows (ie theory of harm 1). The key feature underpinning this theory of harm is that

[46] [✂]
[47] [✂]

passengers buying network tickets are willing to substitute between bus and rail. The limited geographical overlap, significant price difference as well as the different network density offered by bus and rail network tickets suggest that bus and rail network tickets serve different segments and passengers are unlikely to substitute between them. Furthermore, the wide availability of alternative bus network tickets offered by Arriva's competitors and the increasing role of multi-operator ticketing schemes in the Northern Franchise area exert a competitive constraint on Arriva's ability and incentive to flex its offer of bus network tickets.

66. In relation to theory of harm 2, we considered the possibility that the Merger would enable the joint operator to take advantage of wider network effects and leverage its acquired position in rail onto the bus market by introducing multi-modal tickets restricted to its own services. In light of the different factors considered, including the franchise commitments, the role of PTEs and the increasing importance of multi-operator tickets, it is unlikely that the Merger has resulted in or may be expected to result in an SLC in this respect.

67. Finally, we assessed the possibility that the Merger would give Arriva some incumbent advantages with the LTAs (ie theory of harm 3) and that it would provide Arriva with the incentive to engage in anti-competitive behaviours, such as selecting bus information available at rail stations or engaging in selective advertising (ie theory of harm 4). During this investigation, LTAs consistently confirmed that the scale of an operator has no effect on an operator's dealings or negotiations with PTEs, tenders are widely used to award specific routes to operators and tender specifications are designed to maximise market contestability. We also found confirmation that LTAs have a role in ensuring that travel information is widely available at rail stations and are proactive in this sense.

68. Third parties did not raise concerns in relation to any of the network theories of harm identified.

Glossary

Act	Enterprise Act 2002.
ARN	Arriva Rail North Limited is a wholly-owned subsidiary of Arriva created for, and operating, the **Northern Franchise**.
Arriva	Arriva plc is a multinational public transport company. In 2010 it became a subsidiary of Deutche Bahn. Arriva operates bus, coach, train, tram and waterbus services across Europe. It operates three divisions: **Arriva UK Bus, Arriva UK Rail** and Mainland Europe
Arriva UK Bus	Arriva UK Bus is a major bus operator in the **UK**. It is a subsidiary of **Arriva.**
Arriva UK Rail	Arriva UK Rail is the company that oversees **Arriva**'s train operating companies in the **UK.**
ATOC	Association of Train Operating Companies: a body that represents the **TOCs** that provide passenger services on the privatised British railway system. It is an unincorporated association owned by its members.
BSOG	The Bus Service Operators' Grant allows operators of local bus services and community transport schemes to reclaim some of their fuel costs.
Bus Services Bill	A Bill to make provisions about bus services; and for connected purposes.
CAGR	Compound annual growth rate.
CC	Competition Commission.
CMA	Competition and Markets Authority.
CrossCountry	CrossCountry Trains Limited.
Deutsche Bahn	One of the largest providers of passenger transport in Europe.
DfT	Department for Transport.
EC Merger Regulation	Council Regulation (EU) 139/2004.

EBIT	Earnings before interest and tax
Franchise Agreement	Franchise Agreements are legally binding contracts between the **Secretary of State**, the franchisee (the owning group) and the franchisee operator (the **TOC**).
Franchised TOCs	Franchised train operating companies operating passenger trains on a railway system in the **UK.**
Grand Central	Grand Central Railway Company Limited.
Inquiry group	A group of **CMA** panel members constituted to decide the questions set out in section 35 of the **Act** in respect of the **transaction.**
Inter-available fares	Inter-available fares allow passengers to use services by any **TOC**, including both **franchised TOCs** and **OAO**s.
LTA	Local transport authority.
Merger Assessment Guidelines	**CMA** Merger Assessment Guidelines (CC2/OFT1254) reflecting previous decisions of the **CC** and **OFT.**
Network Rail	Authority responsible for the **UK's** rail network infrastructure.
Northern Franchise	Northern Rail franchise, which is currently the largest rail franchise in Great Britain serving 526 stations and operating over 15,000 local and regional services per week.
Northern Powerhouse	The Northern Powerhouse programme aims to close the north-south economic divide by investing in infrastructure, including major transport projects.
NPA	Not primarily abstractive test, under which **ORR** would not expect to approve open access applications unless they generate at least 30 pence of new revenue for every £1 abstracted from existing operators.
OAOs	Open access operators operating passenger rail services on a commercial basis.
OFT	Office of Fair Trading.
ORCATS	Operational Research Computerised Allocation of Tickets to Services is an **ATOC** operated estimation system that is

	used to allocate revenue on **inter-available fares** between **TOCs.**
ORR	Office of Rail and Road.
Parties	**Arriva**, **ARN** and **Northern Franchise**.
PSV	Public service vehicle licence.
PTEs	Passenger transport executives are local government bodies in the **UK** which are responsible for public transport within large urban areas.
QCS	Quality contract scheme.
QPS	Quality partnership schemes.
Rail North	Government body which was established to support rail in the North of England, and represents 29 **LTAs.**
Regulated fares	Regulated fares are set by a formula based on the Retail Price Index figure for the previous July and for many years, with a degree of flexibility (called the 'fares basket' or 'flex').
ROSCOs	Rolling stock leasing companies own fleets of trains and lease them to **franchised TOCs**, **OAOs**, freight operators and train building companies.
RSP	Retail Settlement Plan is a company owned by the franchised passenger rail operators
Secretary of State	The Secretary of State for Transport, is responsible for the government's long-term strategy for the rail industry, defining the level of passenger services and level of funding.
SLC	Substantial lessening of competition within the meaning of section 36 of the **Act.**
The Commission	European Commission.
TOC	Train Operating Companies

Traffic Commissioners	Traffic Commissioners are responsible for the licensing and regulation of heavy goods vehicles, **PSVs** and local bus services.
Transaction	On 9 December 2015, **DfT** announced that **ARN** had successfully bid for the **Northern Franchise**. The **Secretary of State** and ARN entered into a franchise agreement and associated agreements confirming the award of the Northern Franchise to ARN.
TSA	Ticketing and Settlement Agreement.
TSR	Train Service Requirement.
TUPE	Transfer of undertakings (protection of employment).
Tyne and Wear Metro	Tyne and Wear Metro Limited.
UK	United Kingdom.
VPA	Voluntary partnership agreements.