
Secretariat memorandum

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Agenda item 10
FT24
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Comparison between Fares and Ticketing in Great Britain and Continental Europe

1 Purpose of report

- 1.1. As background paper for a briefing from Guy Dangerfield, Passenger Focus Passenger Link Manager, on the recent Fares and Ticketing Study research report.

2 Information

- 2.1. The briefing will refer in particular reference to Annex B of the report which compares fares and ticketing in Great Britain and continental Europe, which is reproduced below. Members' attention is drawn to the Executive Summary on page 15, which refers specifically to rail fares to London.
- 2.2. Due to its length, copies of this paper have not been distributed as a matter of course, but one copy will be available to view at the meeting.
- 2.3. The report may be found in full at: <http://www.passengerfocus.org.uk/news-and-publications/document-search/default.asp?keywords=fares+and+ticketing+study&topic=&year=&type=&sdocsearch.x=0&sdocsearch.y=0>

3 Equalities and inclusion implications

- 3.1 Not applicable – report is for information only.

4 Financial implications

- 4.1 Not applicable – report is for information only

5 Legal powers

- 5.1 Section 252A of the Greater London Authority Act 1999 places a duty upon London TravelWatch (as the London Transport Users Committee) to keep under review matters affecting the interests of the public in relation to railway passenger and station services provided wholly or partly within the London railway area, and to make representations about them to such persons as it thinks appropriate.

6 Recommendation

- 6.1 That the report is received for information.



APPENDIX B

Research report

**Comparisons between fares
and ticketing in Great Britain
and continental Europe**

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Comparisons between fares and ticketing in Britain and continental Europe

Final Report

February 2009

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1 Introduction

Purpose

- 1.1 In 2008 following continuing low passenger satisfaction with the value for money of rail tickets, Passenger Focus was asked by the Secretary of State for Transport, Ruth Kelly, to carry out a study of fares and ticketing. This is as a result of ongoing low passenger satisfaction with the value for money of rail tickets.
- 1.2 Passenger Focus commissioned Steer Davies Gleave to produce a study comparing fares and ticketing in Britain with those in continental Europe. As part of this we have examined journey speed and the frequency of trains, however without extensive field research meaningful comparison of other quality factors, most importantly crowding, has not been possible. This study compares fares from the point of view of a passenger and does not take into account the way in which rail subsidies and VAT rates differ across Europe.
- 1.3 This report compares commuter and long distance trips in Great Britain with those in seven countries in Europe - France, Germany, Italy, the Netherlands, Spain, Sweden and Switzerland. These seven countries, with Great Britain, are the eight largest economies in Europe measured by GDP and all have a significant rail network.

Principal cities

- 1.4 Passenger Focus asked us to examine travel in each country to the principal cities for commuter travel and the principal and second cities for long distance travel - defined as travelling over 160km. We recommended the following cities as those with the largest or most relevant commuter networks in each country.

TABLE 1.1 PRINCIPAL CITIES REFERRED TO IN THIS REPORT

Country	Principal city	Second city
Great Britain	London	Birmingham
France	Paris	Marseille
Germany	Hamburg	Berlin
Italy	Milan	Rome
Netherlands	Amsterdam	Rotterdam
Spain	Madrid	Barcelona
Sweden	Stockholm	Göteborg
Switzerland	Zurich	Geneva

- 1.5 In Italy, the Netherlands and Switzerland the cities of Milan, Amsterdam and Zurich are much larger commuter destinations than the capitals Rome, The Hague and Bern. In Germany, we studied Hamburg, rather than Berlin, which has until recently been isolated from its hinterland and from which there is as a result little commuting.

Sample size

- 1.6 All our findings are based on a limited sample of journeys to and from these cities, rather than an exhaustive analysis of fares and journeys throughout each network. For commuter journeys on networks where we could obtain statistics on station use, we used the five busiest stations in each category, but elsewhere we have selected stations serving the largest settlements or cities. As a result, values quoted throughout this report are intended to be indicative and broadly representative but should not be taken as exact mean, maximum or minimum values.

Fares

- 1.7 All fares in this report were collated in Autumn 2008. Some fares may have changed since.
- 1.8 The methodology for taking into account currency and income variations used in this study is detailed below. The methodology was designed to ensure comparability between the countries on the basis of a passenger earning and travelling in that country.

Currency conversion

- 1.9 In order to compare fares our first step was to convert fares from local currencies to GBP. To convert from local currencies we agreed with Passenger Focus to use average exchange rates for the period 31st August 2007 to 31st August 2008 (source oanda.com). Using these conversions all fares were converted to GBP. These rates are summarised in the table which follows.

TABLE 1.2 EXCHANGE RATES USED IN THIS REPORT

Country	Unit of currency	Sterling value At average exchange rate	Fare corrections for disposable income
Great Britain	£ sterling	£1	None
France	€ (euro)	£0.75	+6%
Germany			+7%
Italy			+27%
Netherlands			-10%
Spain			+44%
Sweden	SEK (Swedish Krona)	£0.08	-15%
Switzerland	SFR (Swiss Franc)	£0.46	-25%

Cost of living adjustments

- 1.10 In order to ensure that we were considering fares on a comparable basis taking account of spending power in each country we adjusted fares to reflect variations in national disposable income. To compare disposable income we first converted disposable income from local currencies to GBP using the exchange rates in the table above. The variations in disposable income compared with Great Britain were then applied to fares on a country by country basis. Our source for national disposable income was Eurostat (2007 is the latest available data).
- 1.11 The adjustment for disposable income had the effect of increasing fares in countries where disposable income was lower than in Great Britain and reducing fares where countries had higher levels of disposable income than in Great Britain.
- 1.12 Below is an example this methodology for a €100 fare in France:

Exchange rate (average 31st August 2007 to 31st August 2008) €1.33 to £1

€100 fare = £75.16

French disposable income €25,500 = £19,165

GB disposable income £20,440

Adjustment for disposable income £20,440 / £19,165 = 1.06

Multiply £75.16 fare by 1.06

French fare adjusted by disposable income = £80.00

Note - Values are rounded to two decimal places

Recent changes to exchange rates

- 1.13 Because both fares and levels of disposable income are affected by the exchange rate, variations do not affect fare levels we found in this study. For example, if the Euro is stronger, fares in France are higher when expressed in GBP. However, as disposable income is also higher, the comparable fare in GBP adjusted for disposable income is unchanged. The example below shows exchange rate as on 31st January 2009.

Exchange rate (31st January 2009) €1.11 to £1
€100 fare = £89.98
French disposable income €25,500 = £22,944
GB disposable income £20,440
Adjustment for disposable income £20,440 / £22,944 = 0.89
Multiply £89.98 fare by 0.89
French fare adjusted by disposable income = £80.00
Note - Values are rounded to two decimal places

Comparison of fares by average trip distance

- 1.14 One consequence of our approach based on sample journeys and fares was that the average journey length of each type of journey we examined varied between countries (see Figures 3.1 to 3.3 and 4.1 to 4.2). To allow comparison of fares between countries, we calculated - from the fares data collected - the fare which would apply in each country at a standardised distance. Average trip distances used are shown in the table below.

TABLE 1.3 AVERAGE TRIP DISTANCE BY TRIP TYPE

Trip type	Trip length band	Average trip length
Commuter short distance	5-16km	11km
Commuter medium distance	17-40km	27km
Commuter long distance	41-80km	61km
Long distance to principal city	Over 160km	427km
Long distance to second city	Over 160km	388km

Railcards

- 1.15 Throughout this report we have collected fares without discounts for railcards. In many countries national railcards are available for all rail travellers which provide a reduction in price for many fares. This type of railcard is not available in Great Britain. If fares were to be compared discounted using a universally-available railcard, fares in Great Britain would be more expensive compared with many other countries.

Weekday time periods

- 1.16 Typical hours of work vary across Europe, and in Italy, Spain and Sweden the definition of peak periods differs from that in Great Britain. For other countries we have used time periods as in Great Britain, shown in the following table.

TABLE 1.4 WEEKDAY TIME PERIODS USE IN THIS REPORT

Countries	AM peak	inter-peak	PM peak
Great Britain, France, Germany, Netherlands, Switzerland	07:01-10:00	10:01-16:00	16:01-19:00
Italy, Spain		10:01-17:30	17:31-20:30
Sweden	06:01-08:59	09:00-15:00	15:01-18:00

Report format

- 1.17 The report takes the following form:
- Section 2 is an Executive Summary highlighting our findings on service frequencies, train speed and fares for commuter and long distance trips
 - Section 3, Commuter journeys, provides greater detail on fares and services in three distance bands up to 80km on the principal commuter network in each country
 - Section 4, Long distance journeys, provides greater details on journeys over 160km to major cities in each country
 - Sections 5 to 13, General overviews, including a short report for each country on the railway system's structure, services and fares highlighting differences between them
 - Appendix A, we have also collated information about crowding on commuter routes for each country (where data is available). In some locations more detailed data was available than in others.
 - Appendix B, data sources for General overviews

2 Executive Summary

Main findings

Commuter journeys

- 2.1 Fully flexible day return fares to London are among the highest in Europe but “walk-up” (available on demand at the time of travel) tickets which allow travel with some restrictions are more competitively priced when compared with similar journeys in other European countries.
- 2.2 Season tickets of all lengths are significantly more expensive to London than to other European cities. However, commuters travelling to London benefit from among
 - the highest frequency of trains per hour in Europe
 - the earliest running services in the morning
 - the latest running services in the evening

Long distance journeys

- 2.3 Walk-up fares long distance fares in Great Britain are significantly more expensive than any other country.
- 2.4 The variation in long distance fares is greater in Great Britain than all the other countries studied. For example, for London to Manchester journeys the most expensive walk-up fare, an anytime return (formerly standard open return) is 3.5 times the cost of an off-peak return (formerly saver return).
- 2.5 The price of tickets in Great Britain can vary even more if they are purchased in advance. The walk-up fare from London to Leeds is ten times more expensive than the cheapest theoretically-available advance purchase fare for the same journey. Other countries, notably France, Spain and Sweden, also have a variation in fares based on when the ticket is purchased, but none to the same extent as in Great Britain.
- 2.6 Long distance services in Great Britain are the most frequent in Europe, offering the passenger a greater choice of journey options. While France, Spain and Germany’s long distance services use high speed lines and can be faster than those in Great Britain, travellers to London can arrive earlier, and depart later during the working week than travellers to many comparator cities.
- 2.7 In Great Britain the pricing differential between peak and off-peak travel means that off-peak travel fares are often comparable or better value than some other European countries. Rail passengers in Great Britain also have amongst the lowest theoretically-available off-peak advanced purchase fares, particularly for travel to London.

2.8 *It should be noted that these data represent prices, speed and frequency that existed during Autumn 2008. All may have changed since. For example, the frequency and speed of long distance trains in Great Britain was significantly enhanced from 14 December 2008 with the introduction of a new timetable on the West Coast Main Line.*

Commuter journeys

The commuter journeys we analysed

- 2.9 We analysed commuter journeys in three different distance bands: short (5-16km), medium (17-40km) and longer (41-80km). The table below shows which commuter stations we included in each country.

TABLE 2.1 COMMUTER STATIONS BY COUNTRY AND DISTANCE BAND

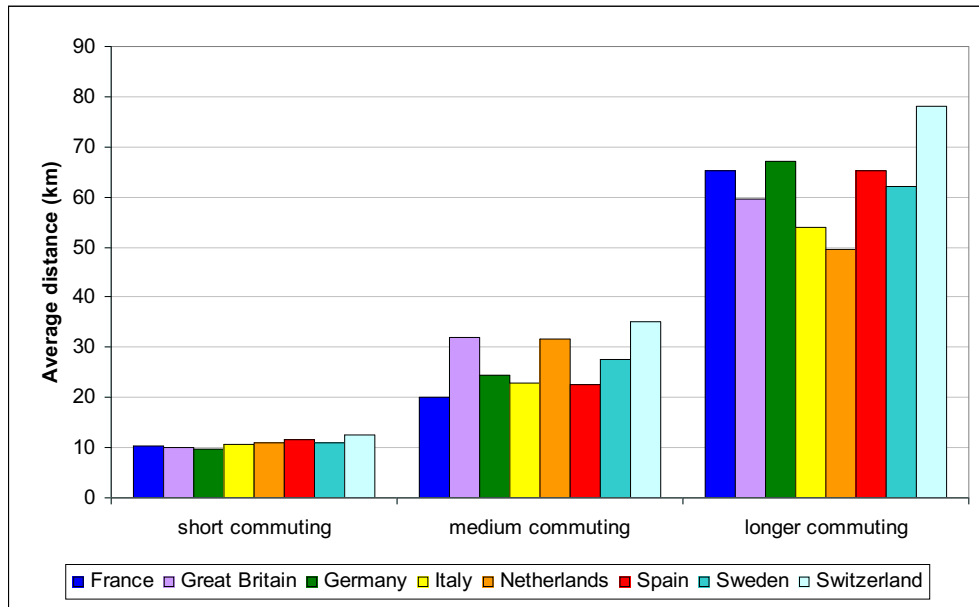
Country and principal city	Distance Band	Stations
Great Britain (London)	Short commuter	East Croydon, Clapham Junction, Wimbledon, Stratford, Putney
	Medium commuter	Woking, Slough, Watford Junction, Maidenhead, Epsom
	Longer commuter	Reading, Guildford, Chelmsford, Basingstoke, Southend Victoria
France (Paris)	Short commuter	La Defense, Bourg la Reine, Becon les Bruyere, Noisy le Sec, Saint-Denis
	Medium commuter	Juvisy, Aulnay-Sous-Bois, Sartrouville, Versailles-Chantiers, Massy-Palaiseau
	Longer commuter	Meaux, Beauvais, Vernon, Malesherbes, Rambouillet
Germany (Hamburg)	Short commuter	Hamburg Harburg, Hamburg-Rahlstedt, Ohlsdorf, Blankenese, Eidelstedt
	Medium commuter	Wohltorf, Hamburg-Bergedorf, Elmshorn, Wedel (Holst), Buchholz
	Longer commuter	Lüneburg, Neumünster, Uelzen, Itzehoe, Lübeck
Italy (Milan)	Short commuter	Monza, Sesto San Giovanni, Bollate Centro, Garbagnate, Novate Milanese
	Medium commuter	Saronno, Pavia, Rho, Carnate Usamate, Cesano Maderno
	Longer commuter	Bergamo, Lecco (via Carnate only), Varese FNM, Varese RFI, Voghera

Country and principal city	Distance Band	Stations
The Netherlands (<i>Amsterdam</i>)	Short commuter	Zaandam, Haarlem, Weesp, Schipol, Diemen
	Medium commuter	Utrecht Centraal, Almere Centrum, Hilversum, Naarden-Bussum, Leiden Centraal
	Longer commuter	Den Haag Centraal, Alkmaar, Hoorn, Amersfoort, Lelystad Centrum
Spain (<i>Madrid</i>)	Short commuter	Leganes, Getafe, Vilcalvaro, Puente Alcocer, Villaverde Alto
	Medium commuter	Mostoles, Fuenlabrada, Parla, Alcala de Henares, Alcorcon
	Longer commuter	Aranjuez, Guadalajara, Villalba, Toledo, Segovia
Sweden (<i>Stockholm</i>)	Short commuter	Stockholm Södra, Älvsjö, Karlberg , Flemingsberg, Sundbyberg
	Medium commuter	Tumba, Södertälje Centrum, Upplands Väsby, Västerhaninge, Haninge Centrum (Handen)
	Longer commuter	Uppsala, Märsta, Enköping, Stragnas, Bålsta
Switzerland (<i>Zurich</i>)	Short commuter	Bülach, Thalwil, Kloten, Dietikon, Küsnacht
	Medium commuter	Winterthur, Schlaffhausen, Zug, Frauenfeld, Baden
	Longer commuter	Luzern, St. Gallen, Basel, Olten, Solothurn

Average distance by distance bands

- 2.10 The chart below shows the average distances from the principal city to the commuter stations sampled in each country.

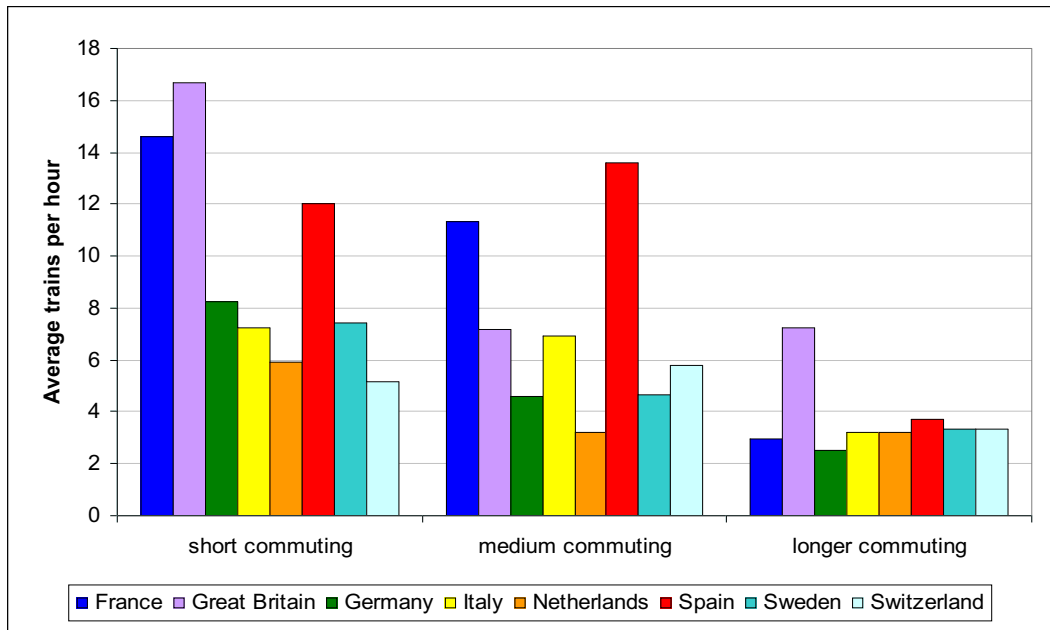
FIGURE 2.1 AVERAGE DISTANCES TO COMMUTER STATIONS



Trains per hour

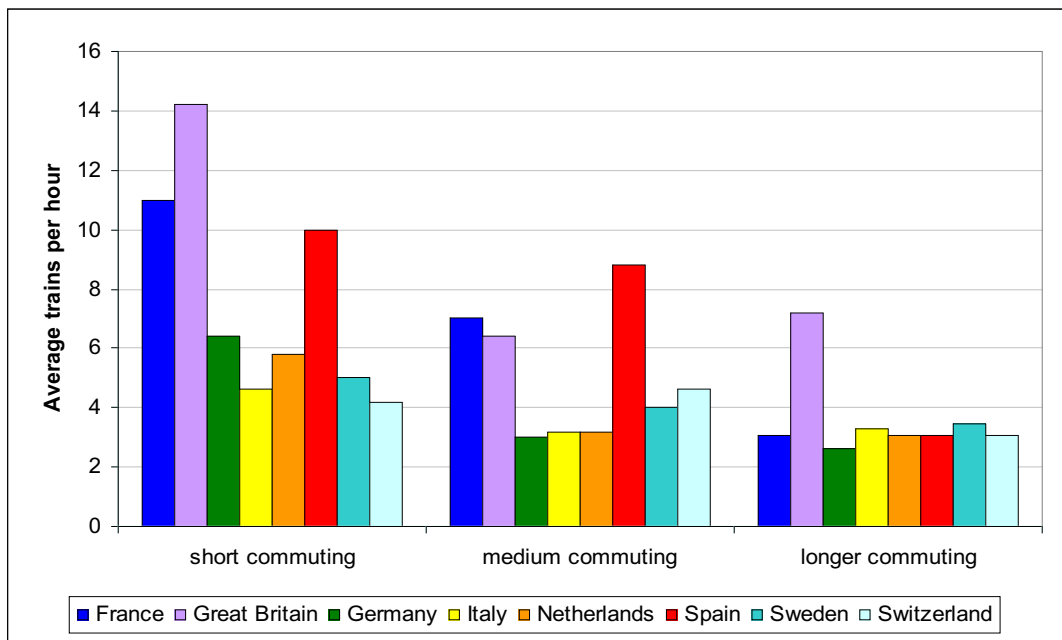
- 2.11 This section summarises services in each country's principal commuter network in each weekday time period. In the AM peak in the short commuting distance from London the number of trains per hour is significantly greater than for most other European countries. Only in Paris and Madrid do frequencies approach those of London.
- 2.12 Paris and Madrid also have high numbers of services per hour in the 17-40km distance band, with London and Milan offering the next most frequent services at almost 8 trains per hour (tph) on average. In the 41-80km distance band London has around twice the service frequency of other countries, with an average of 7 tph over the 3-hour AM peak. This is likely to reflect demand for long distance commuting into London.

FIGURE 2.2 AVERAGE TRAINS PER HOUR AM PEAK



- 2.13 The graph below shows the average number of services in the inter-peak period. For commuter stations up to 40km from the principal city there are less frequent services than in the AM peak everywhere except to Amsterdam in the Netherlands. The reduction of services is generally less for the longer commuting distance band.

FIGURE 2.3 AVERAGE TRAINS PER HOUR INTER-PEAK



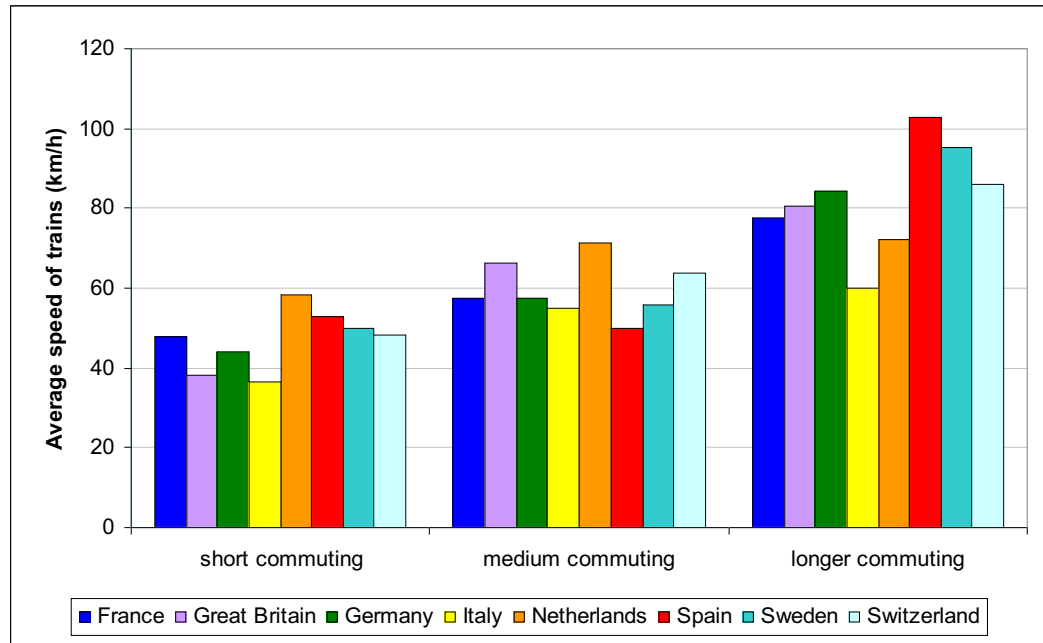
- 2.14 PM peak service frequencies are generally similar to those in the AM peak, with the exception of Madrid where PM peak frequencies are consistently lower.

Average speed

- 2.15 The graph below shows the average speed in km/h from stations in the three distance bands to the principal city. There is a general correlation between the

distance travelled and the speed of trains, with shorter distances being slower and longer distances being faster. There is greatest variation in the longer commuting band, with Madrid and Stockholm offering the fastest services. In the shorter distance band, average speeds are low in London, probably reflecting the fact that this band is almost wholly within the urban area, requiring frequent stops.

FIGURE 2.4 AVERAGE SPEED OF TRAINS AM PEAK



2.16 Unlike service frequency, which is lower in the inter-peak, speeds in the inter-peak do not differ significantly from AM peak speeds.

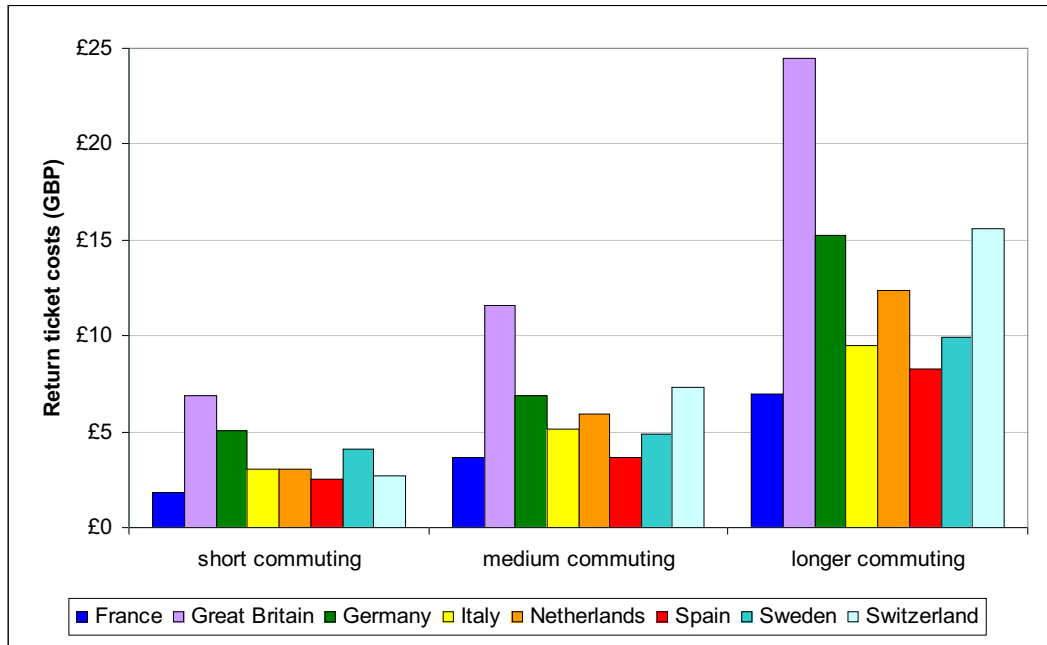
2.17 Average train speeds in the PM peak are overall similar to the AM peak. In London trains are marginally faster in the PM peak, but this may reflect that pathing and recovery time is added to schedules on the approach to terminal stations in Great Britain, which affects the AM peak, but not the PM peak.

Fares

2.18 The charts which follow show the average of the five fares examined in each of the three distance bands in each country, standardised for comparison at distances of 11km (short commuting), 27km (medium commuting) and 61km (longer commuting), converted to sterling and adjusted to reflect disposable income using the factors set out in Table 1.2.

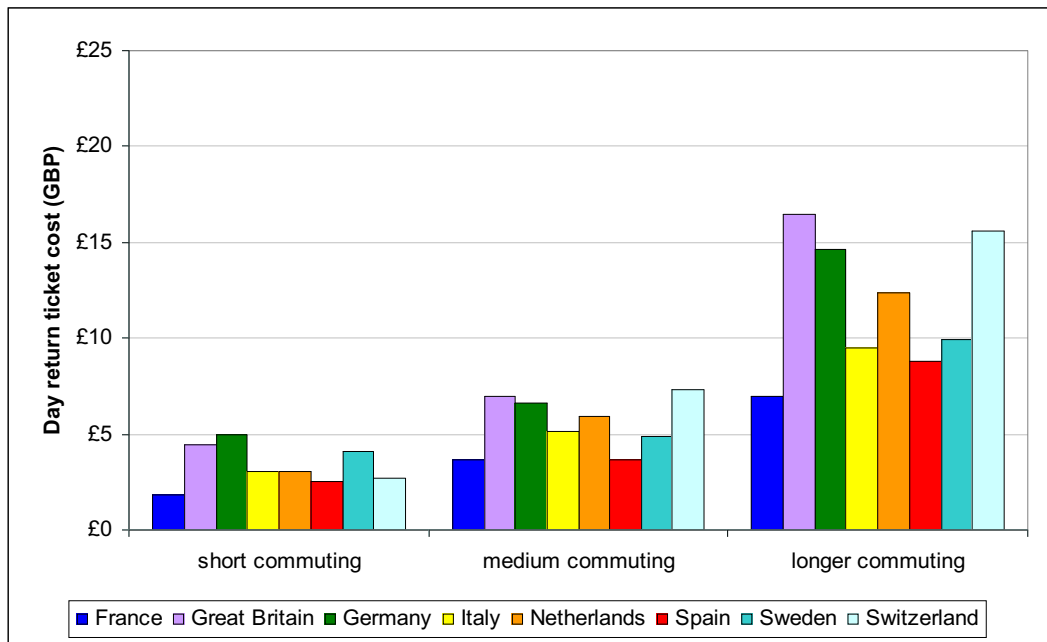
2.19 The first chart shows the average fully flexible unrestricted day return fare from locations within each distance band to the principal commuter city. There are considerable variations in fare. In each distance band Great Britain is the most expensive for an unrestricted return fare. In the medium distance commuting band fares to London are around 60% more than to Zürich, the second most expensive destination. Hamburg and Stockholm also have higher than average fares, while Paris and Madrid have some of the lowest fares.

FIGURE 2.5 UNRESTRICTED RETURN FARES



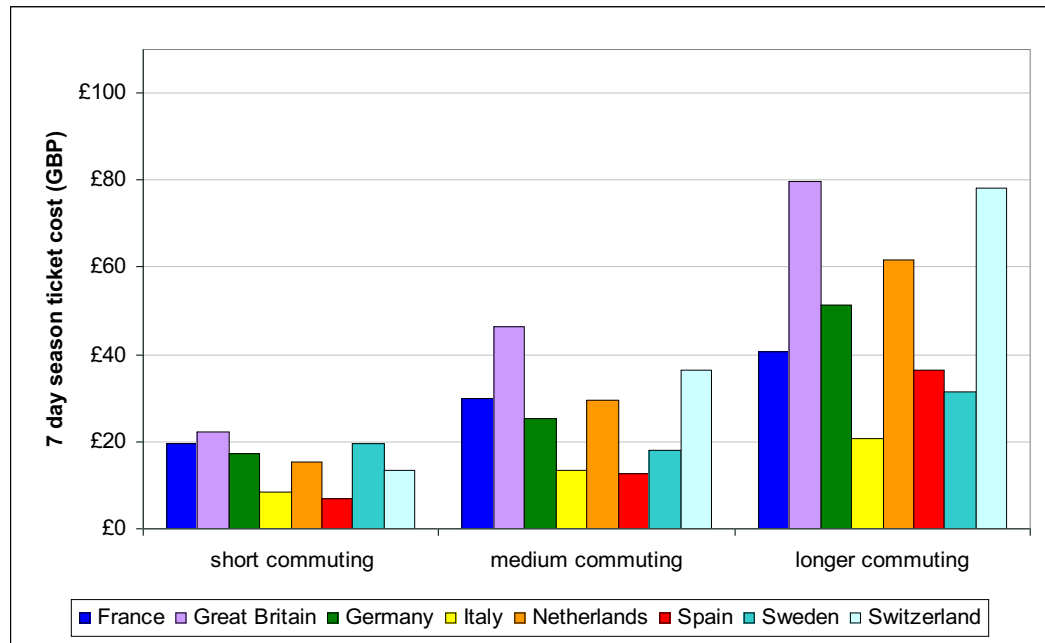
- 2.20 Day return fares to London are considerably cheaper if restricted to arrival after 1000, the end of the AM peak, but London still has the most expensive or second most expensive fares in all distance bands. In the medium distance commuting band and longer distance commuting band Hamburg and Zürich also have high fares, with lower fares in Paris and Madrid.

FIGURE 2.6 RESTRICTED RETURN FARES



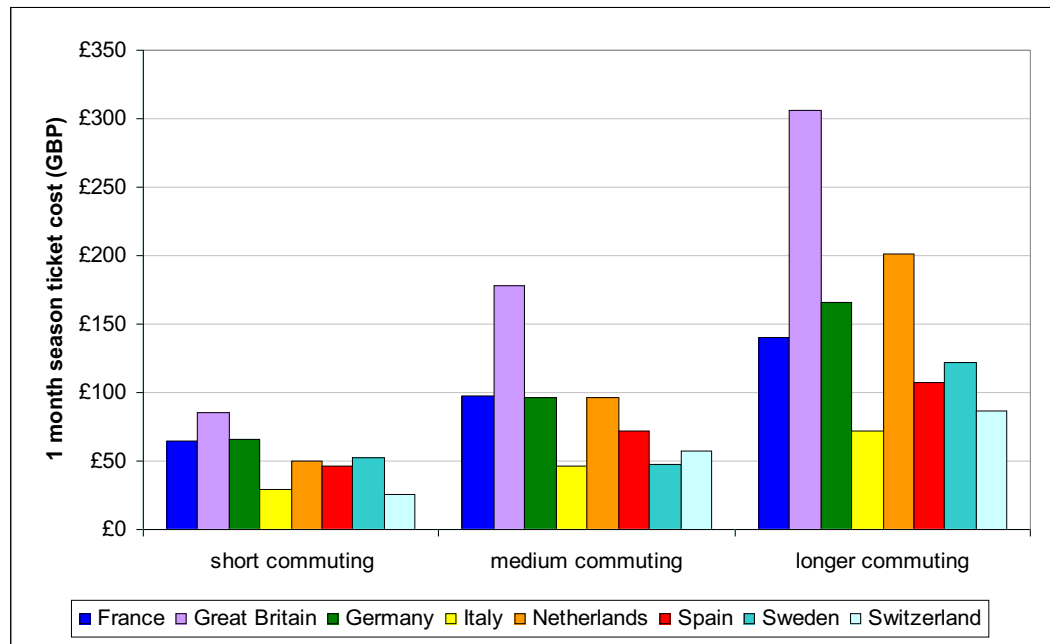
- 2.21 Commuters making five return trips a week can buy a 7-day season ticket except in Zurich and Amsterdam, where it is necessary to buy five return tickets. Fares are lowest in Milan and Madrid. At longer distances, fares to London and Zurich are more expensive than in other cities.

FIGURE 2.7 7-DAY SEASON TICKETS



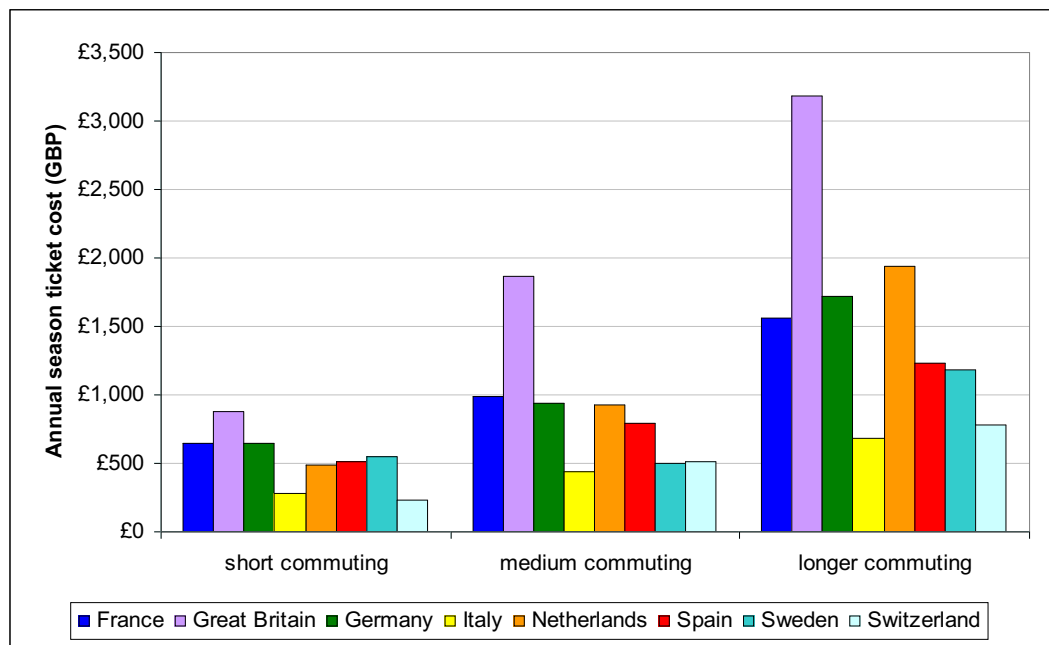
- 2.22 Monthly season tickets cost more in London than in all the other cities considered and around 50% more than in any other city in the longer distance commuting band.

FIGURE 2.8 1-MONTH SEASON TICKET



- 2.23 The pattern shown in monthly season tickets is broadly repeated for annual season tickets, as shown below.

FIGURE 2.9 ANNUAL SEASON TICKETS



Long distance journeys

The long distance journeys we analysed

2.24 We analysed journeys to the principal and second city in each country from the five cities over 160km away with the largest populations. The table below shows which long distance journeys we included for each country.

TABLE 2.2 LONG DISTANCE STATIONS (OVER 160KM) BY COUNTRY

Country	Destination City	Stations
Great Britain	London	Birmingham New Street, Manchester Piccadilly, Leeds, Glasgow Central, Newcastle
	Birmingham	London Euston, Glasgow Central, Newcastle, Edinburgh Waverley, Bournemouth
France	Paris	Marseille, Lyon, Toulouse, Nice, Nantes
	Marseille	Paris, Lyon, Toulouse, Nice, Nantes
Germany	Berlin	Hamburg, Munich, Cologne, Frankfurt am Main, Stuttgart
	Hamburg	Berlin, Munich, Cologne, Frankfurt am Main, Stuttgart
Italy	Rome	Milano Centrale, Napoli Centrale/Porta Garibaldi, Torino Porta Nuova, Genova Piazza Principe, Bologna Centrale
	Milan	Roma Termini, Napoli Centrale, Bologna Centrale, Firenze Santa Maria Novella, Bari Centrale
The Netherlands	Amsterdam	Heerlen, Kerkrade, Maastricht, Geleen, Sittard
	Rotterdam	Heerlen, Groningen, Enschede, Leeuwarden (Ljouwert), Almelo
Spain	Madrid	Barcelona, Valencia, Seville, Zaragoza, Malaga
	Barcelona	Madrid, Valencia, Seville, Zaragoza, Malaga
Sweden	Stockholm	Göteborg, Malmö, Linköping, Örebro, Lund
	Göteborg	Stockholm, Malmö, Örebro, Helsingborg, Västerås
Switzerland	Zürich	Genève, Lausanne, Lugano
	Genève	Zürich, Basel

- 2.25 For long distance journeys the number of trains in the AM peak tends to be lower than in the inter-peak period. This is because the long distances involved mean that few trains have arrived at the largest or second largest city before the end of the AM peak (to do so, they would have been starting in the middle of the night). For most cities there are more trains arriving in the inter-peak period than the AM peak. In all cases Great Britain has amongst the most frequent services.

FIGURE 2.10 AVERAGE TRAINS PER HOUR AM PEAK

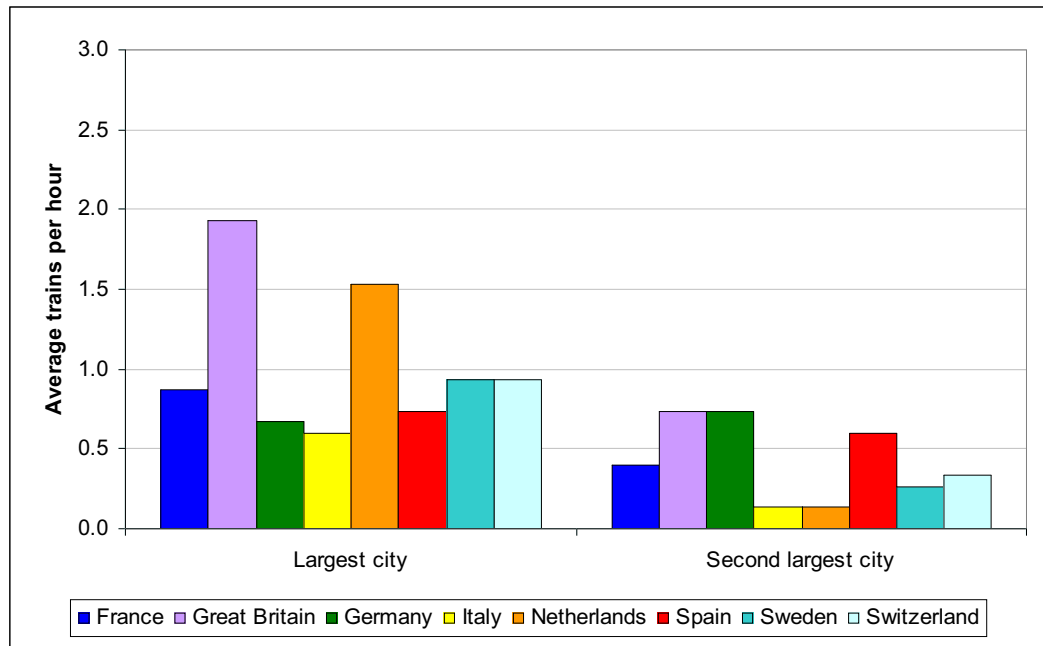


FIGURE 2.11 AVERAGE TRAINS PER HOUR INTER-PEAK

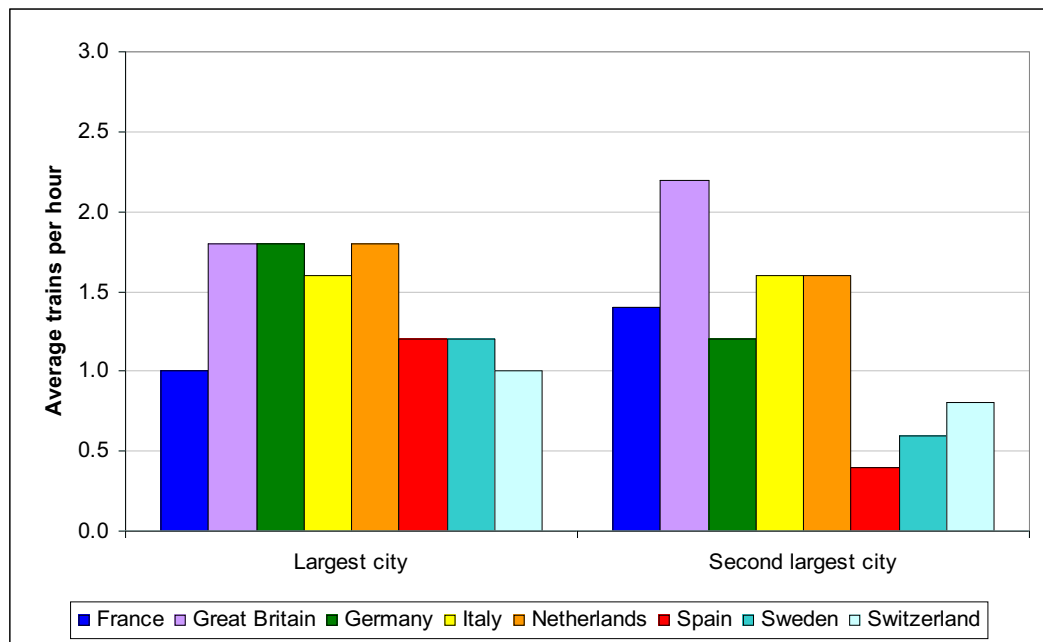
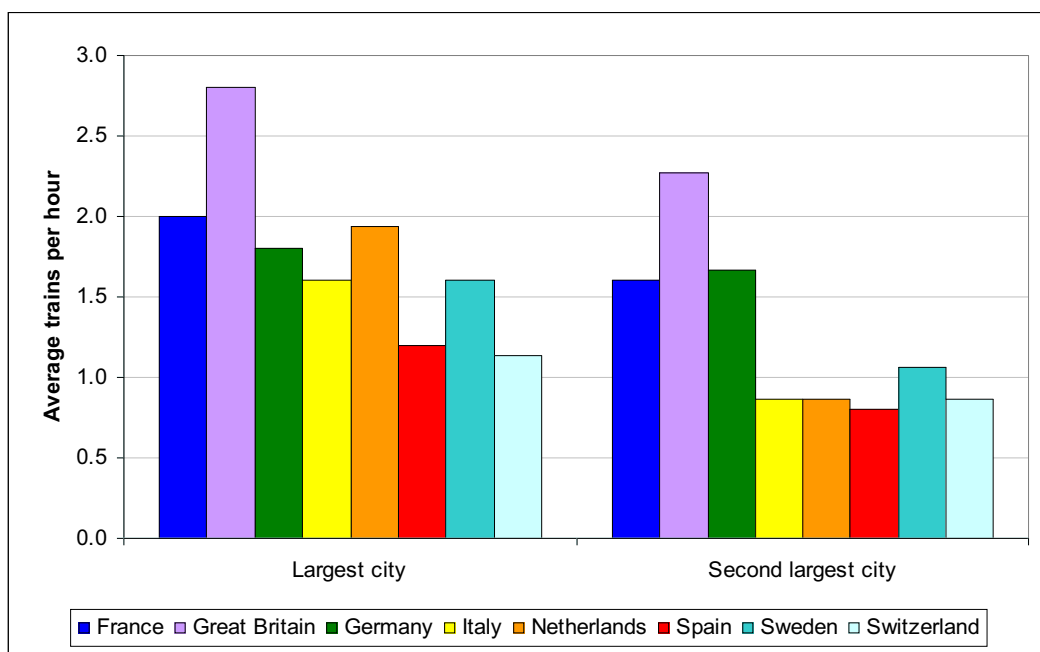
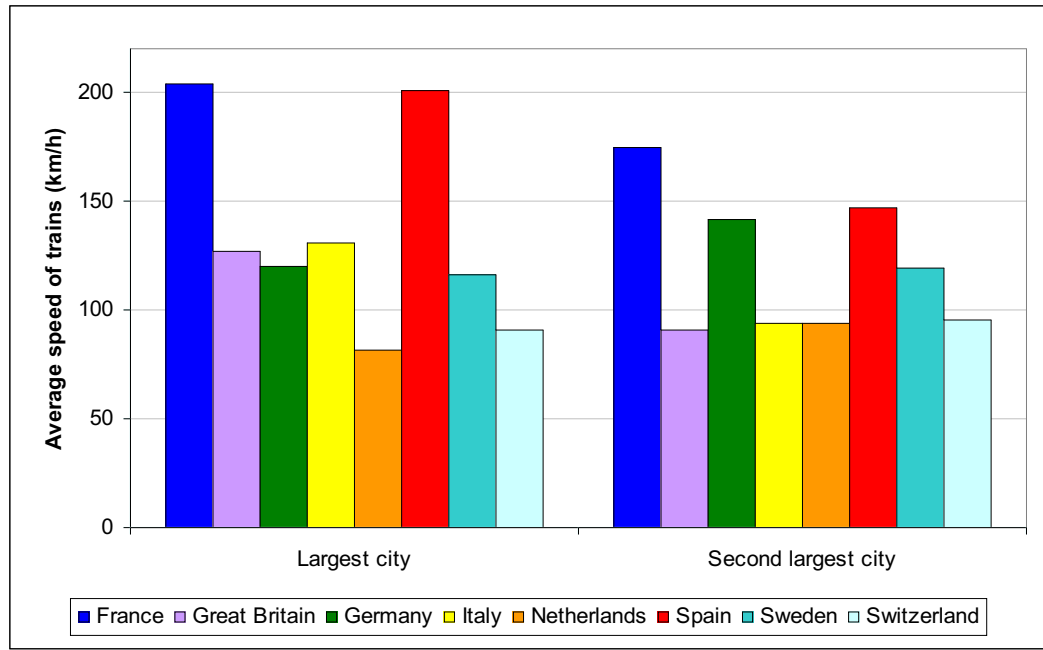


FIGURE 2.12 AVERAGE TRAINS PER HOUR PM PEAK



- 2.26 Comparing speeds for longer distance journeys, France and Spain have the fastest services overall (both countries have high speed rail lines linking key cities). Speeds are similar in the AM peak, inter-peak and PM peak. Trains to London are competitive in terms of speed; however trains to Birmingham are on average amongst the slowest to a second largest city.

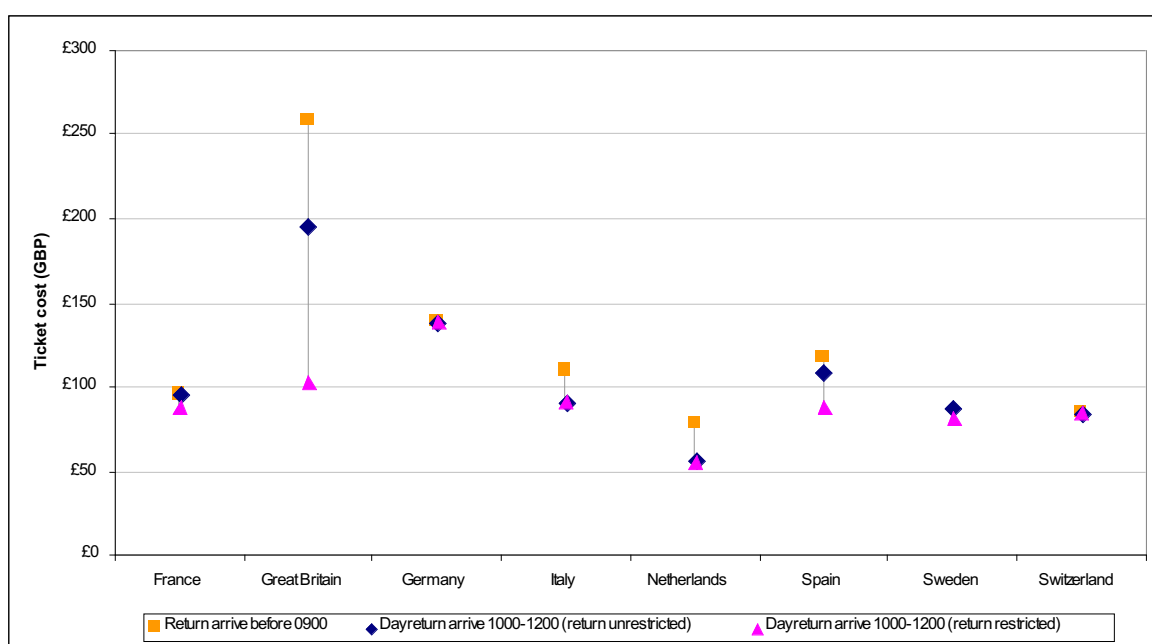
FIGURE 2.13 AVERAGE SPEED OF TRAINS AM PEAK



Fares

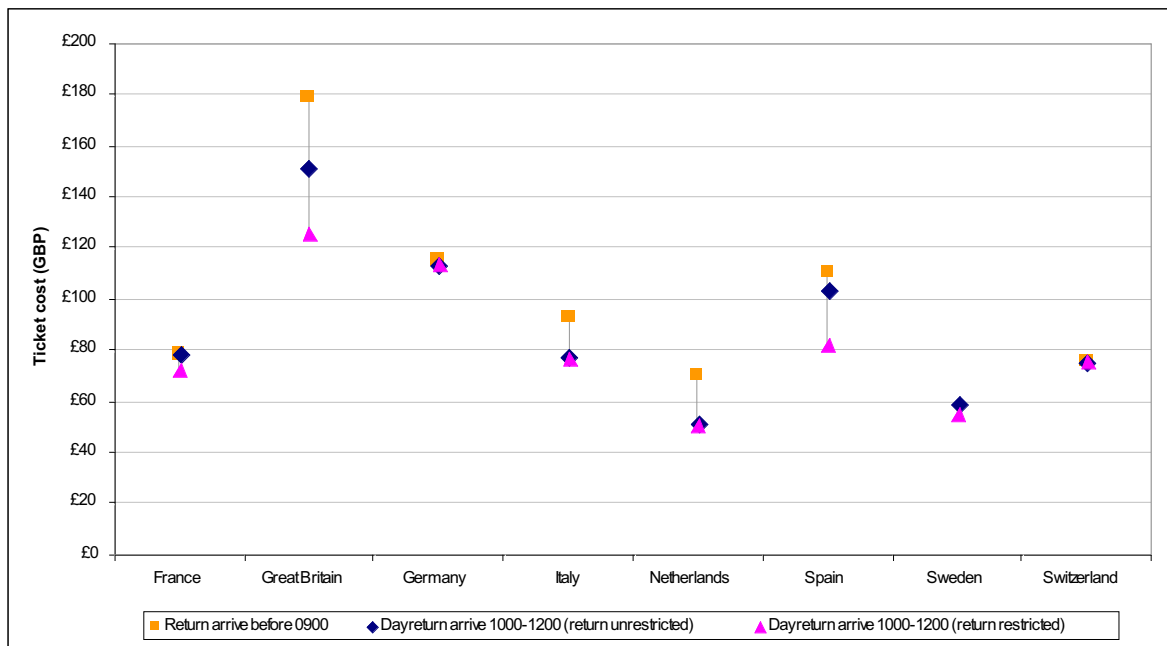
- 2.27 The graphs below show the average of the five fares examined for travel to the principal and to the second city in each country, standardised for comparison at distances of 430km (journeys to principal cities) and 390km (journeys to second cities) converted to sterling and adjusted to reflect disposable income using the factors set out in Table 1.2.
- 2.28 With some principal cities there is little or no variation in walk-up fare by time of arrival or length of stay. Walk-up fares to London are similar to elsewhere for a day trip arriving after 1000 and with return restrictions, more expensive for a ticket to arrive after 1000 but without return restrictions and more expensive still for an unrestricted ticket to arrive before 0900.

FIGURE 2.14 LONG DISTANCE PRINCIPAL CITY AVERAGE WALK UP DAY RETURN FARE



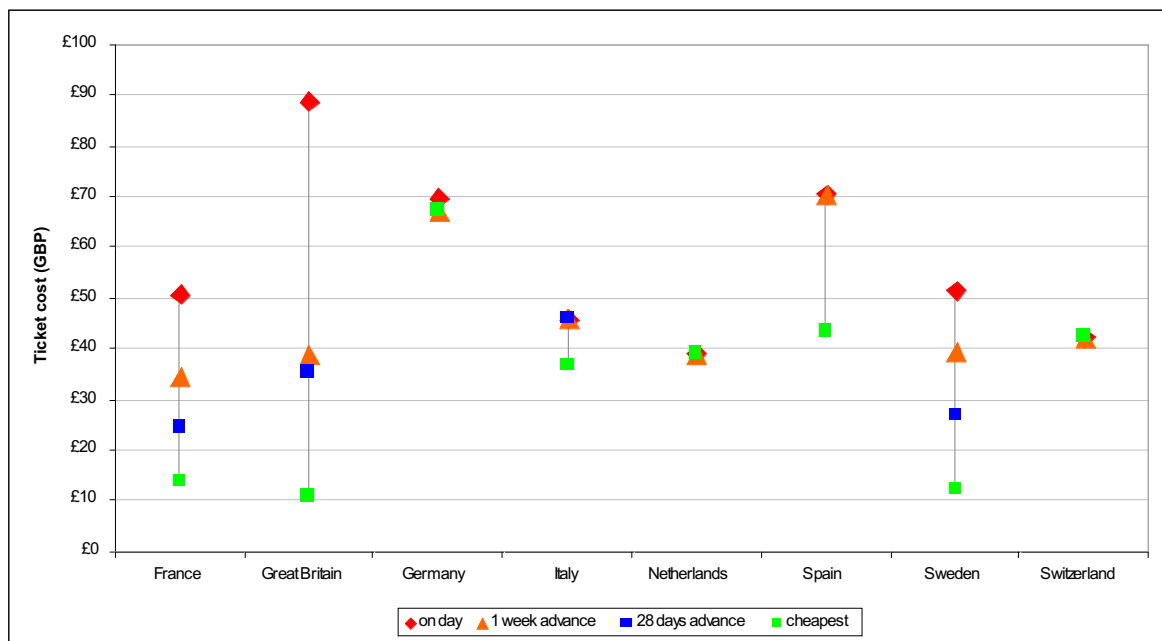
2.29 The pattern of walk-up fares to Birmingham is broadly similar to that for London.

FIGURE 2.15 LONG DISTANCE SECOND CITY AVERAGE WALK UP DAY RETURN FARE



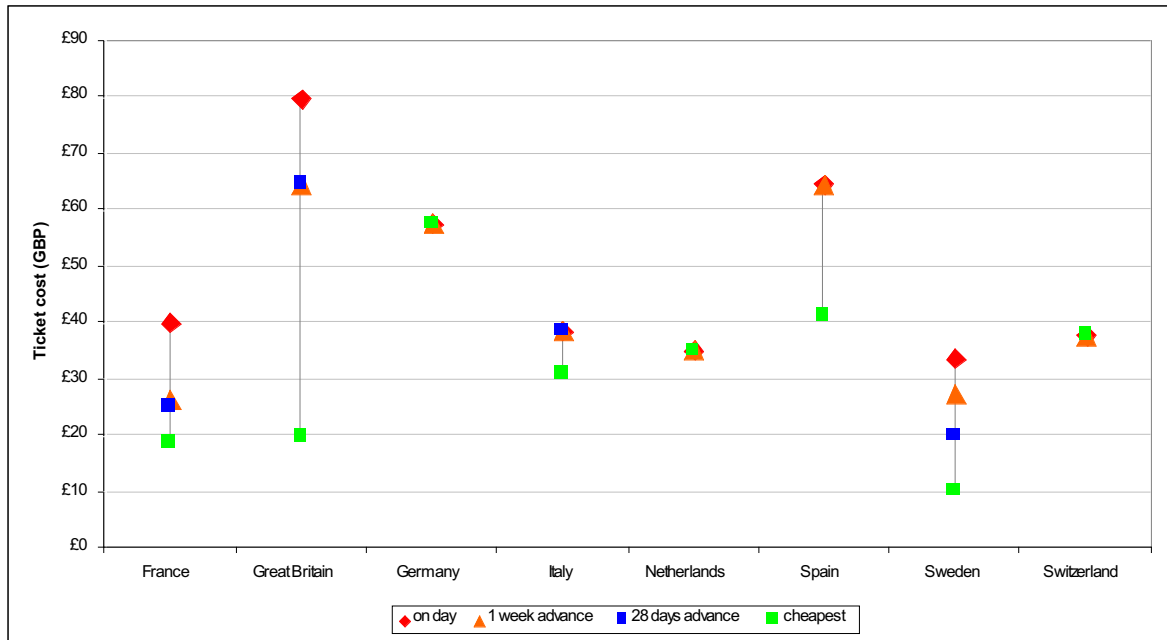
- 2.30 The graphs below shows a range of single fares for a long distance journey to the principal and second cities arriving between 1100 and 1200 on a Wednesday.
- 2.31 Single fares to London vary most and, while more expensive than elsewhere if bought on the day of travel, can be the cheapest if booked well in advance (assuming that the cheapest fares are available at the time of booking). Madrid and Hamburg have the next highest fares, but there is little or no discount for advanced booking to Hamburg (or Amsterdam and Zurich) and as a result the minimum fare is much higher than elsewhere.

FIGURE 2.16 LONG DISTANCE PRINCIPAL CITY AVERAGE SINGLE ADVANCED PURCHASE FARE



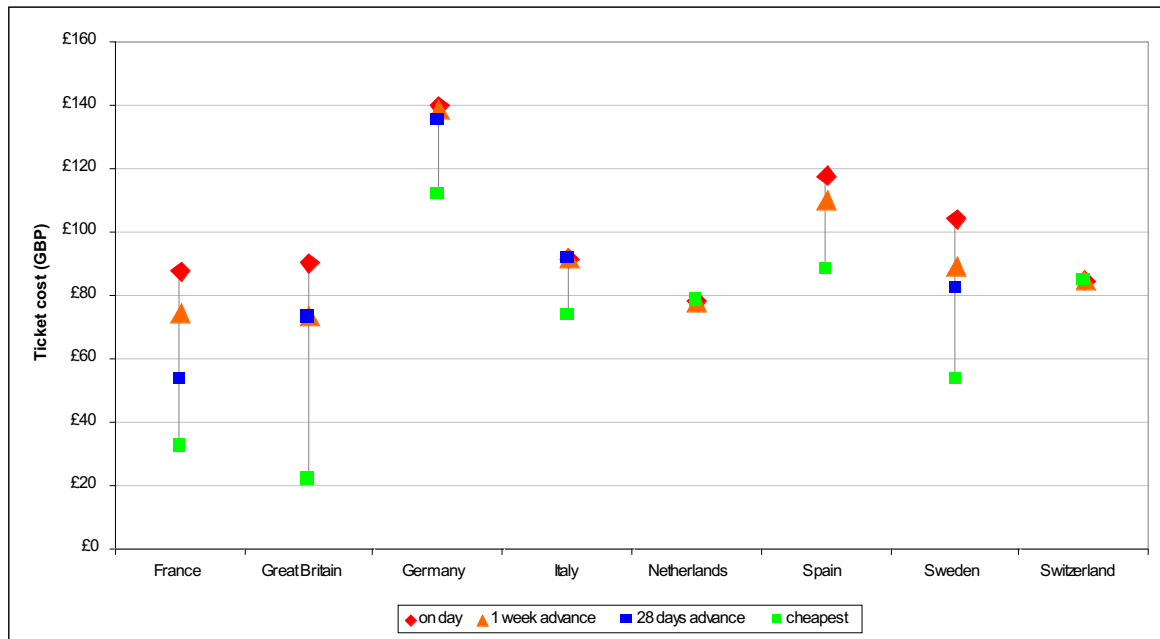
- 2.32 Patterns of fares are slightly different for the second cities. Fares to Gothenburg in Sweden are all generally low, while in Great Britain all but the cheapest fares to Birmingham are higher than elsewhere. Fares to Barcelona are amongst the most expensive of the countries we considered.

FIGURE 2.17 LONG DISTANCE SECOND CITY AVERAGE SINGLE ADVANCED PURCHASE FARE



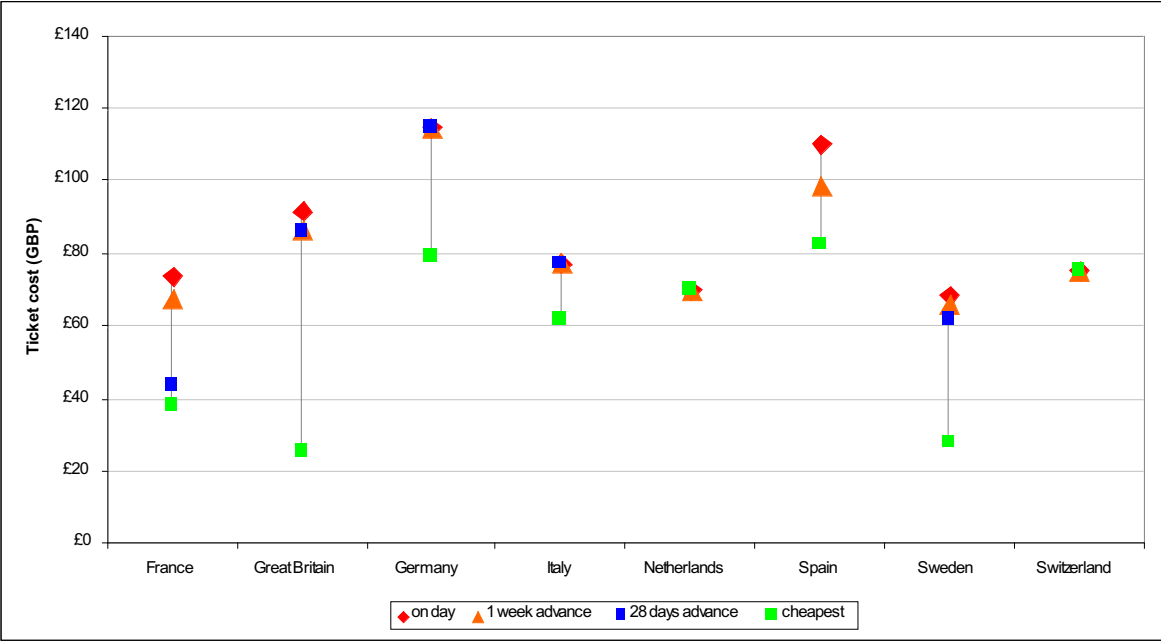
- 2.33 We also examined fares to the principal and second cities for a weekend leisure trip, setting out for the city between 1600 and 1700 on Friday and returning between 1500 and 1600 on Sunday. The cheapest theoretically-available fares to London are cheaper than to any other city, and walk-up fares to London are cheaper than those to all other cities except Paris, Amsterdam and Zurich.

FIGURE 2.18 LONG DISTANCE PRINCIPAL CITY AVERAGE RETURN ADVANCED PURCHASE FARE



2.34 Among second cities, the cheapest fares are those to Birmingham, although low fares are also available to Gothenburg.

FIGURE 2.19 LONG DISTANCE SECOND CITY AVERAGE RETURN ADVANCED PURCHASE FARE



2.35 The graphs below show a range of return fares for a family of four (two adults and two children) for a long distance journey to the largest and second largest city departing between 1600 and 1700 on a Friday and returning between 3pm and 4pm on a Sunday. Fares were consistently highest in Spain and Switzerland, where few reductions in fares are available, with the cheapest fares being available in Great Britain and Sweden.

FIGURE 2.20 LONG DISTANCE AVERAGE FAMILY RETURN FARES TO PRINCIPAL CITY

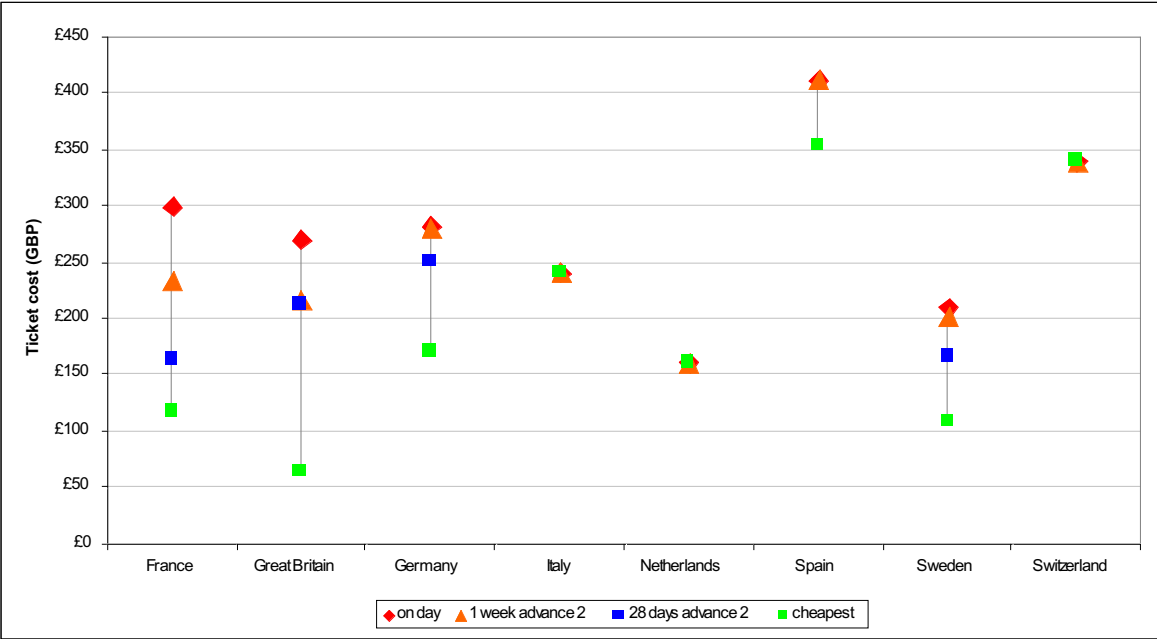
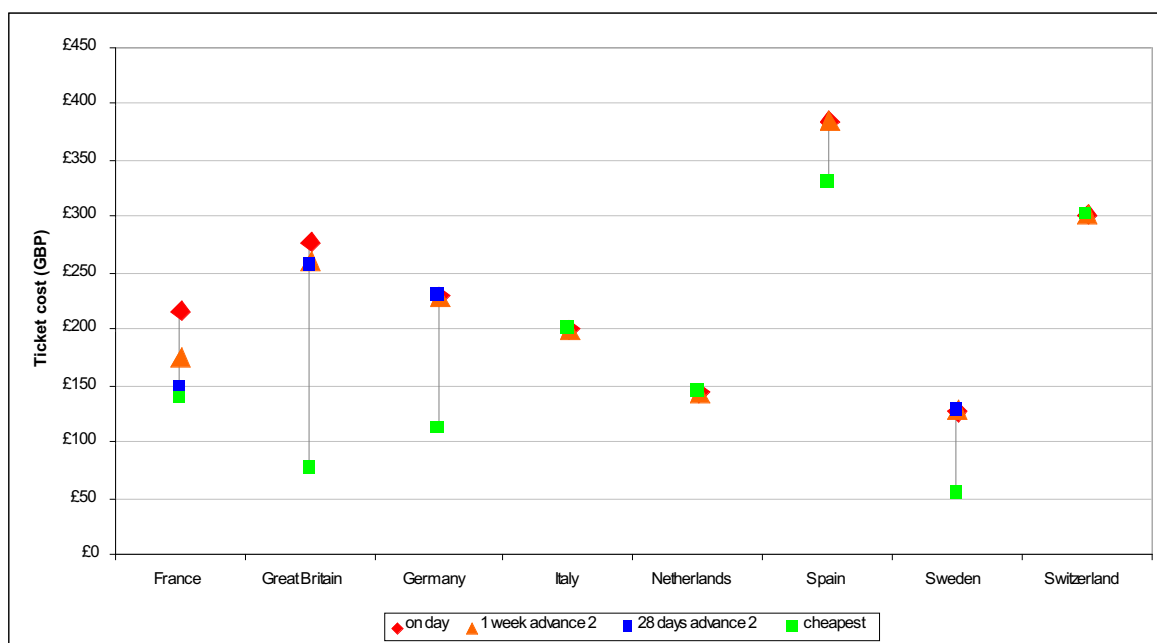


FIGURE 2.21 LONG DISTANCE AVERAGE FAMILY RETURN FARES TO SECOND CITY



3 Commuter journeys

Introduction

- 3.1 In this chapter we compare commuter journeys in the eight countries considered in this study. For the principal city in each country we selected five stations in the short (5-16km), medium (17-40km) and long distance (41-80km) bands described in Table 1.3.
- 3.2 For commuter journeys on networks where we could obtain statistics on station use, we used the five busiest stations in each category. Elsewhere we have selected stations serving the largest settlements or cities. As a result, values quoted throughout this report are intended to be indicative and broadly representative but should not be taken as exact mean, maximum or minimum values. The table below shows the stations selected for each country.

TABLE 3.1 COMMUTER STATIONS BY COUNTRY AND DISTANCE BAND

Country and principal city	Distance Band	Stations	Source
Great Britain (London)	Short commuter	East Croydon, Clapham Junction, Wimbledon, Stratford, Putney	ORR Station Entries and Exits data from 2006/7
	Medium commuter	Woking, Slough, Watford Junction, Maidenhead, Epsom	
	Longer commuter	Reading, Guildford, Chelmsford, Basingstoke, Southend Victoria	
France (Paris)	Short commuter	La Defense, Bourg la Reine, Becon les Bruyere, Noisy le Sec, Saint-Denis	STIF (Syndicat des transports d'Ile-de-France) 2005
	Medium commuter	Juvisy, Aulnay-Sous-Bois, Sartrouville, Versailles-Chantiers, Massy-Palaiseau	
	Longer commuter	Meaux, Beauvais, Vernon, Malesherbes, Rambouillet	
Germany (Hamburg)	Short commuter	Hamburg Harburg, Hamburg-Rahlstedt, Ohlsdorf, Blankenese, Eidelstedt	Deutsche Bahn station classification plus populations from Statistisches Bundesamt Deutschland: Gemeindeverzeichnis (2006)
	Medium commuter	Wohltorf, Hamburg-Bergedorf, Elmshorn, Wedel (Holst), Buchholz	
	Longer commuter	Lüneburg, Neumünster, Uelzen, Itzehoe, Lübeck	

Country and principal city	Distance Band	Stations	Source
Italy (<i>Milan</i>)	Short commuter	Monza, Sesto San Giovanni, Bollate Centro, Garbagnate, Novate Milanese	Project Stations: characterisation of railway stations and interchange areas according to Regional Law 1/2002 www.trasporti.regione.lombardia.it
	Medium commuter	Saronno, Pavia, Rho, Carnate Usamate, Cesano Maderno	
	Longer commuter	Bergamo, Lecco (via Carnate only), Varese FNM, Varese RFI, Voghera	
The Netherlands (<i>Amsterdam</i>)	Short commuter	Zaandam, Haarlem, Weesp, Schipol, Diemen	Station usage data from NS (2006)
	Medium commuter	Utrecht Centraal, Almere Centrum, Hilversum, Naarden-Bussum, Leiden Centraal	
	Longer commuter	Den Haag Centraal, Alkmaar, Hoorn, Amersfoort, Lelystad Centrum	
Spain (<i>Madrid</i>)	Short commuter	Leganes, Getafe, Vilcalvaro, Puente Alcocer, Villaverde Alto	Renfe Commuter Service data (2007)
	Medium commuter	Mostoles, Fuenlabrada, Parla, Alcala de Henares, Alcorcon	
	Longer commuter	Aranjuez, Guadalajara, Villalba, Toledo, Segovia	
Sweden (<i>Stockholm</i>)	Short commuter	Stockholm Södra, Älvsjö, Karlberg, Flemingsberg, Sundbyberg	Short commuter and Medium commuter rail usage data from SL (2007). Longer distance commuter band selected based on highest population
	Medium commuter	Tumba, Södertälje Centrum, Upplands Väsby, Västerhaninge, Haninge Centrum (Handen)	
	Longer commuter	Uppsala, Märsta, Enköping, Stragnas, Bålsta	
Switzerland (<i>Zurich</i>)	Short commuter	Bülach, Thalwil, Kloten, Dietikon, Küsnacht	No rail usage data available. Locations selected based on highest population
	Medium commuter	Winterthur, Schlaffhausen, Zug, Frauenfeld, Baden	
	Longer commuter	Luzern, St. Gallen, Basel, Olten, Solothurn	

3.3 The graphs which follow show the distance between each station and the relevant principal city. Note that we have allocated stations to distance bands according to the straight line distance from the principal city, and in some cases the distance by rail differs slightly from the notional distance range for that band.

FIGURE 3.1 DISTANCE FROM PRINCIPAL CITY TO SELECTED STATIONS (SHORT DISTANCE COMMUTER BAND)

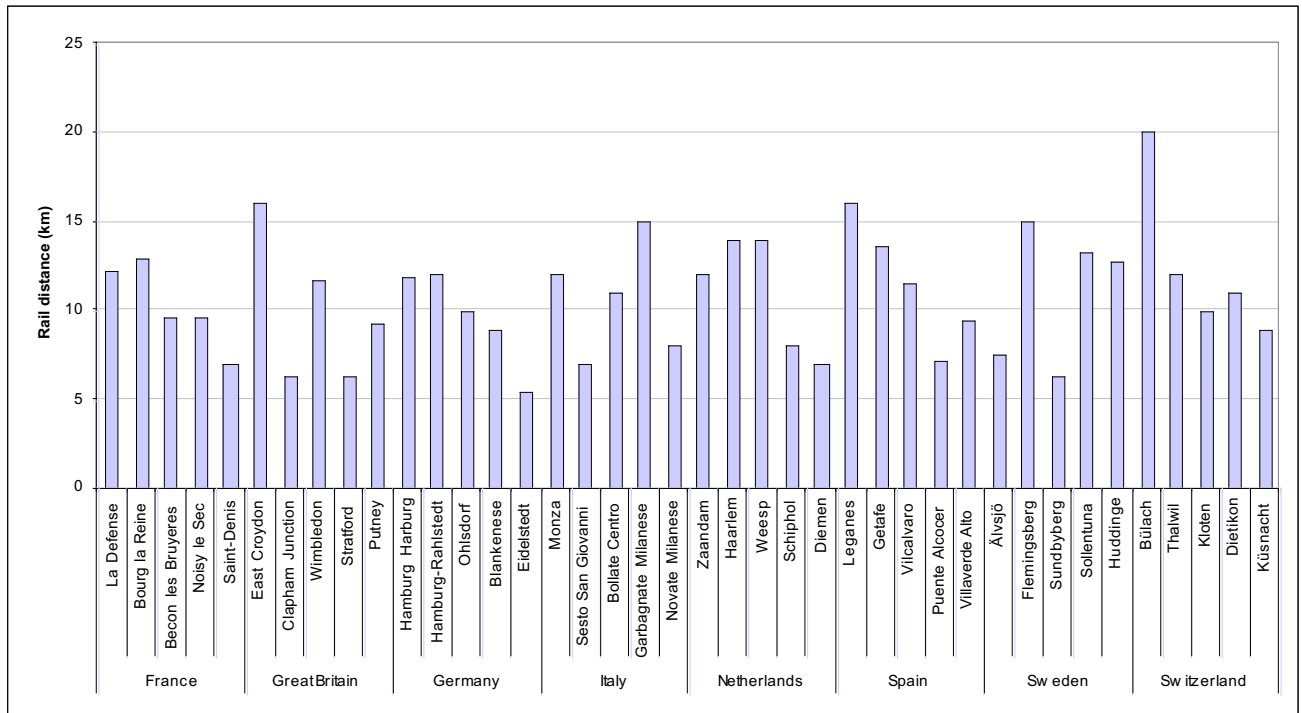


FIGURE 3.2 DISTANCE FROM PRINCIPAL CITY TO SELECTED STATIONS (MEDIUM DISTANCE COMMUTER BAND)

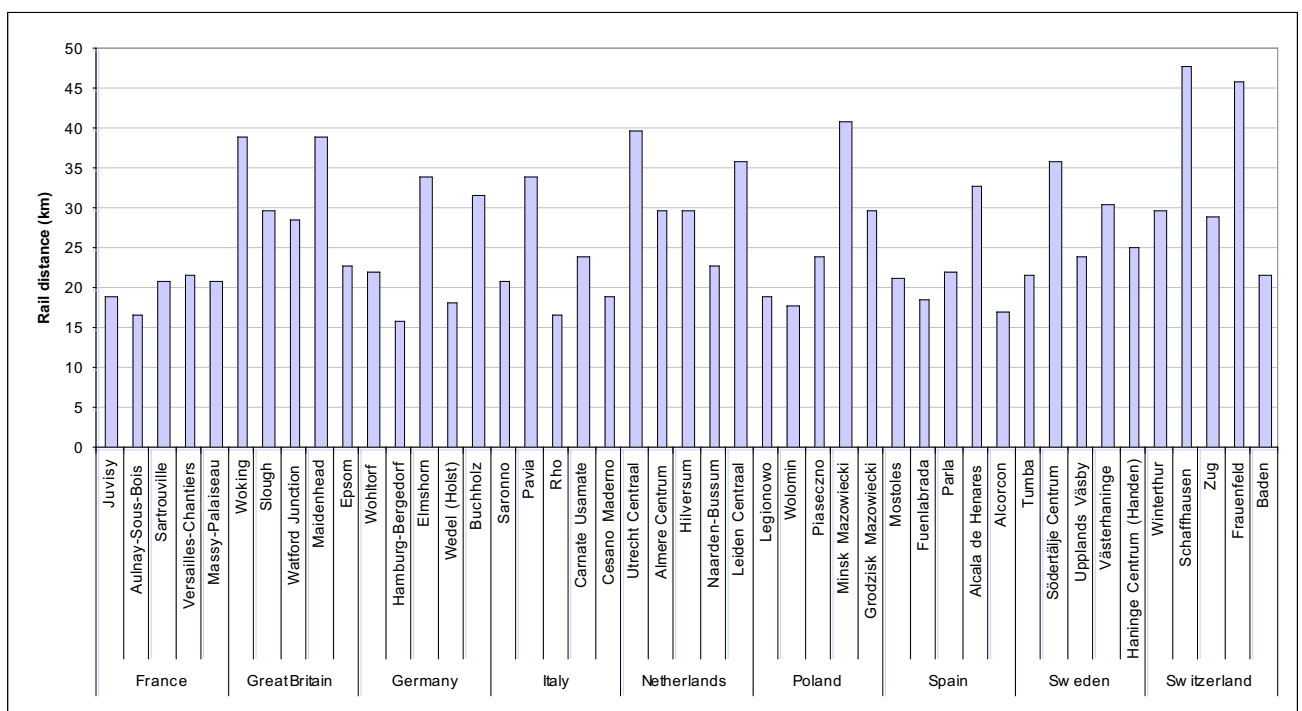
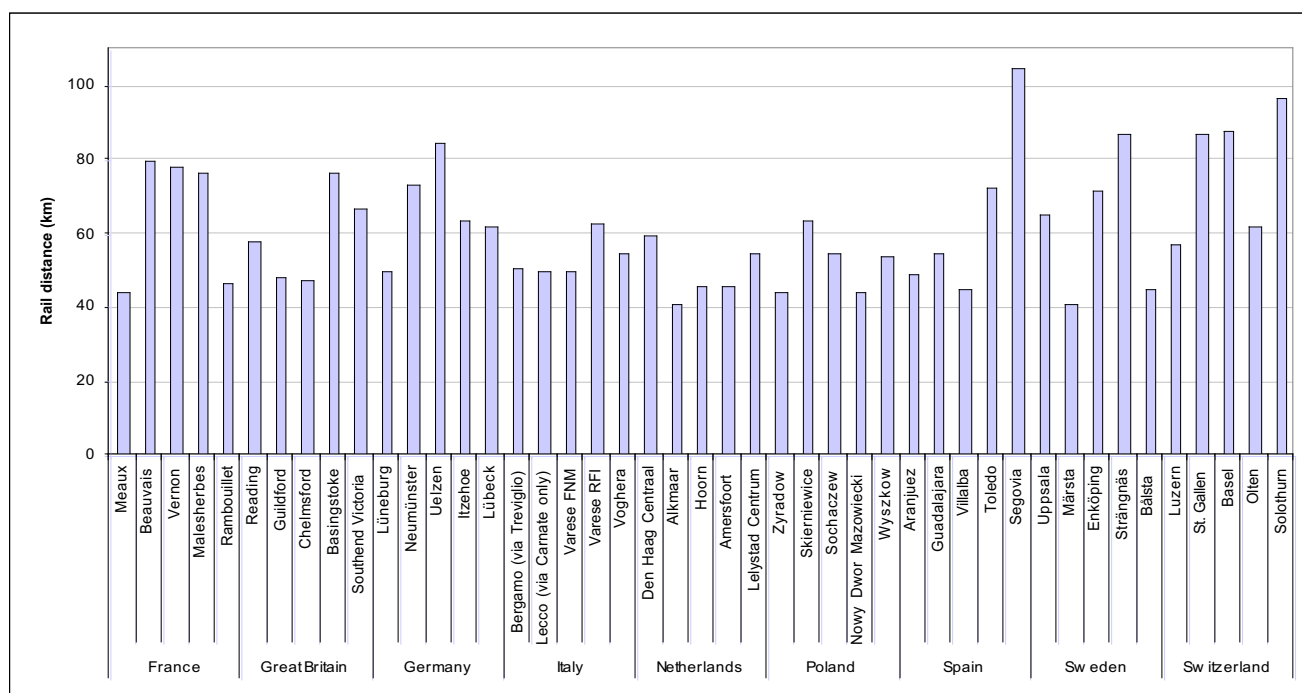


FIGURE 3.3 DISTANCE FROM PRINCIPAL CITY TO SELECTED STATIONS (LONGER DISTANCE COMMUTER BAND)



Data collection

3.4 For each origin-destination pair we collected the following information:

- Straight line and rail distance between stations in km
- Average speed of trains during the AM peak, inter-peak and PM peak periods set out in Table 1.4.
- Average number of trains per hour during the AM peak, a typical inter-peak period, and the PM peak
- The earliest possible arrival time and latest possible departure time from the principal city for midweek travel
- Price of 7 day season ticket, monthly season ticket and annual season ticket or nearest equivalents permitting weekly, monthly or annual commuter travel
- Price of walk-up journey fully flexible valid Monday to Friday to the principal city and return without restriction
- Price of walk-up journey Monday to Friday arriving in the principal city between 1001 and 1200 and returning the same day without restriction.

Notes for commuter data

Germany

3.5 For a fully flexible ticket to arrive before 0900 and return without restriction, the price of 2 singles was used. For a ticket to arrive between 1000 and 1200 and return without restriction a '9am' unlimited ticket price was used.

The Netherlands

- 3.6 7 day season tickets for commuter journeys are not available. We have therefore used fares for a book of five return commuter tickets.

Spain

- 3.7 7 day season tickets are not available. Therefore we have used the closest alternative, a 10 journey ticket which allows 2 journeys per working day with no time restrictions.

Sweden

- 3.8 For seven day commuter trips in Sweden we have recorded fares based on a ticket where 10 single trips can be made for the price of seven. Monthly travel is based on a 30 day unlimited use 'travelcard' for all zones in Stockholm. For some longer distance commuter fares where the origin station is outside the Stockholm zoning area, the monthly cost is the price of a conventional origin station to destination station season ticket.

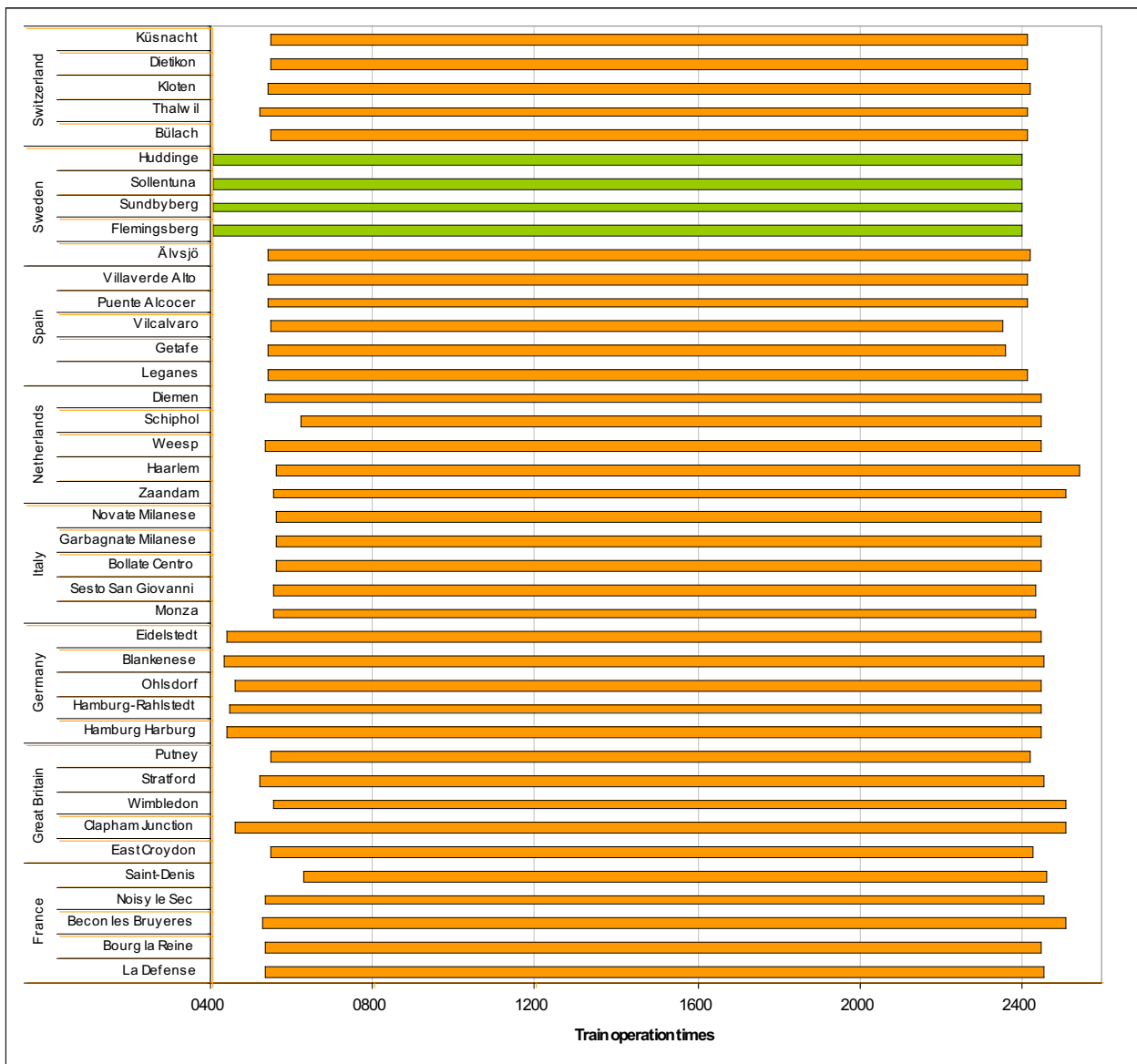
Data analysis

- 3.9 This section of the report presents analysis of commuter journey data collated for each of our study countries.

First train and last train

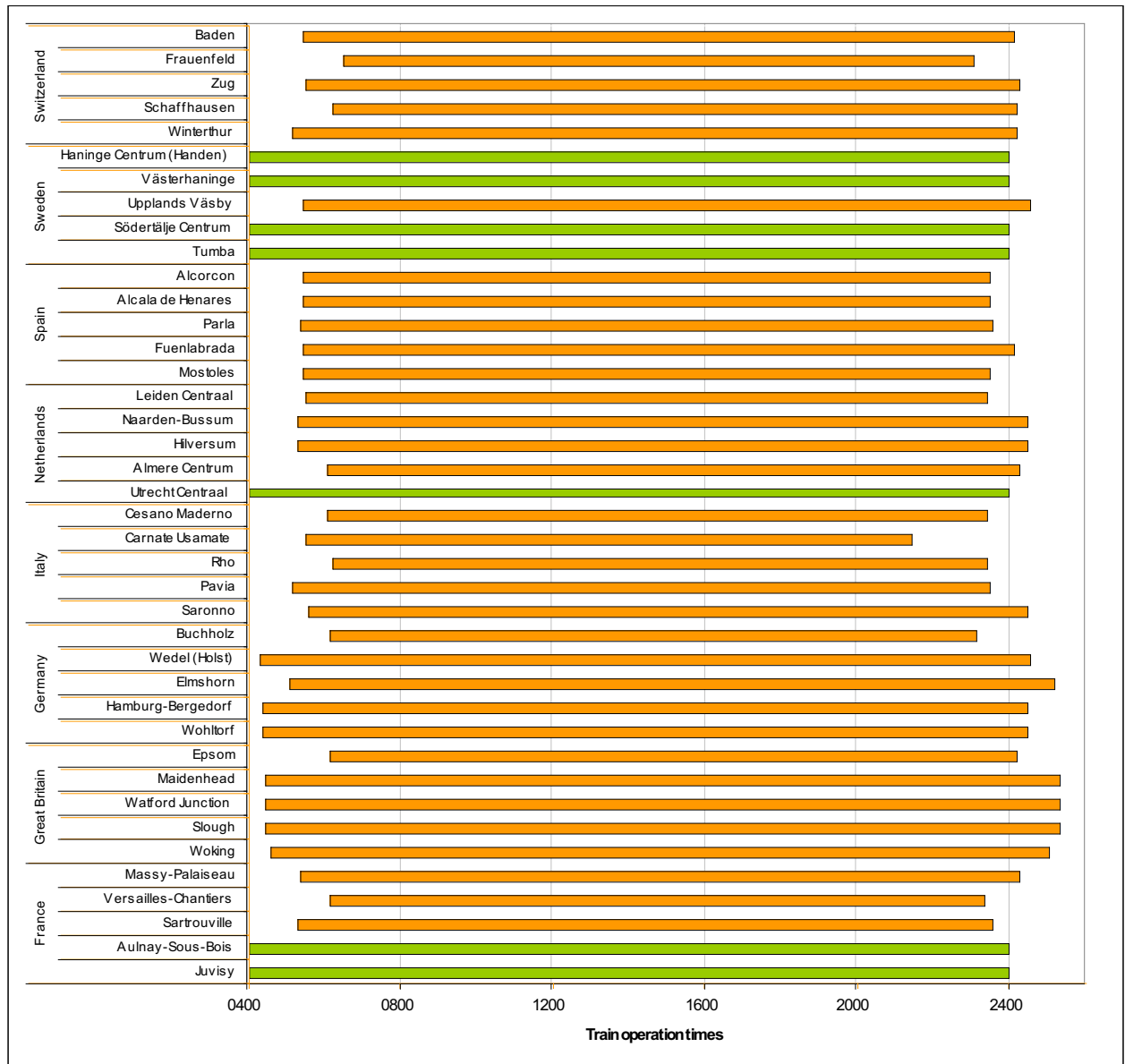
- 3.10 The three graphs below show the first and last trains for each distance band from the principal city in each country. Where bars are coloured green, train services operate 24 hours.
- 3.11 In the short distance commuter band the country with the earliest trains is Germany, with trains arriving in Hamburg from 0430. The Netherlands has the latest running train, departing Amsterdam to Haarlem at 0139. Overall the variation between countries for this distance band is relatively low. In our sample Sweden is the only country that operates some services 24 hours a day.

FIGURE 3.4 SHORT DISTANCE COMMUTER BAND FIRST TRAIN AND LAST TRAIN



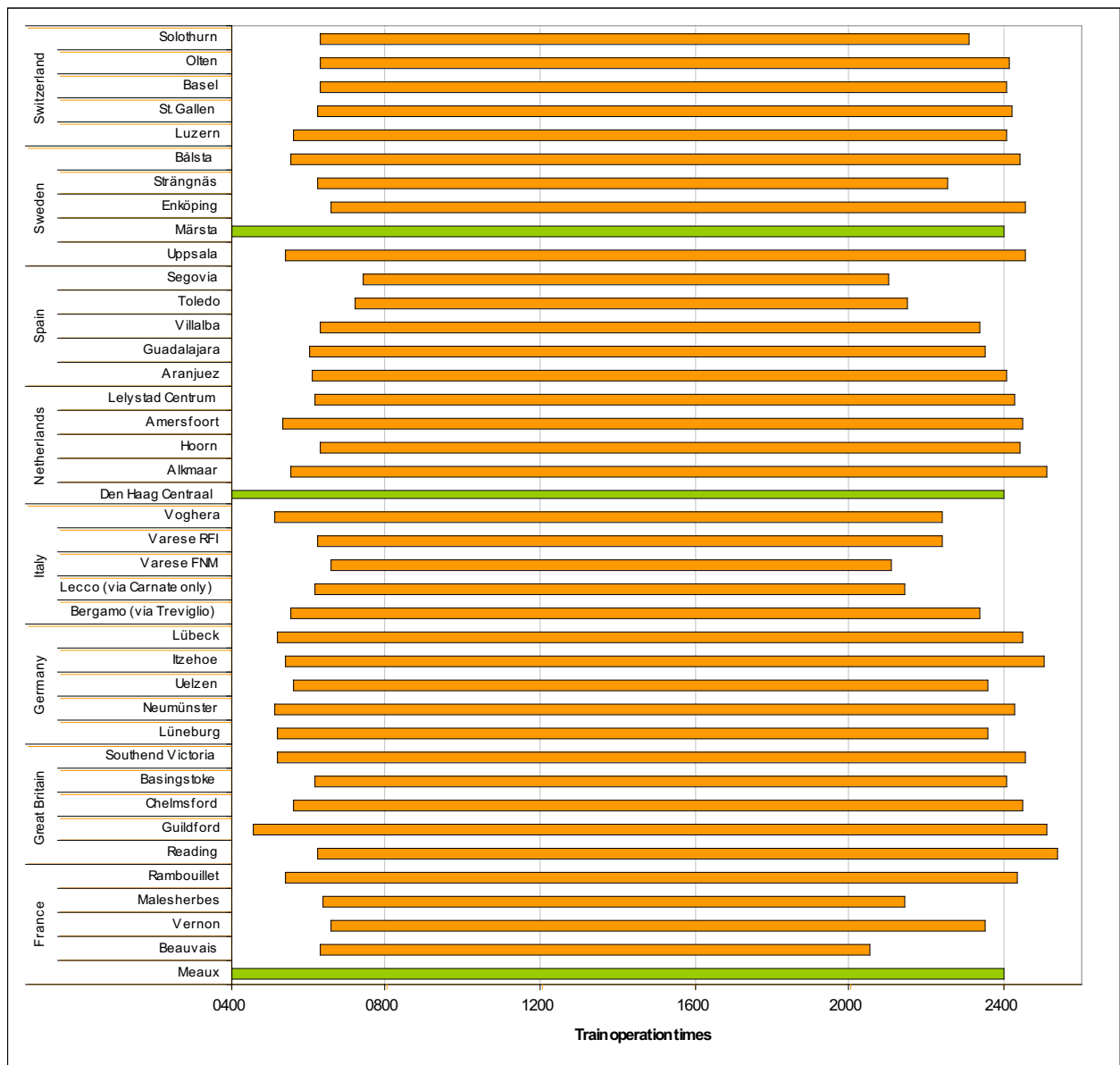
- 3.12 In the medium distance commuter band there is more variation in the first and last trains. With the exception of trains which run 24 hours, Great Britain and Germany have the earliest and also latest running train services. Some Spanish and Italian train services do not run as late as in other countries. For example, one of the last trains from Milan is at 2141.

FIGURE 3.5 MEDIUM DISTANCE COMMUTER BAND FIRST TRAIN AND LAST TRAIN



- 3.13 The first and last trains in the longer distance commuter band have the greatest variation by service and country. Countries which have the earliest and latest services are Great Britain and Germany. The Netherlands offers late services, but fewer earlier services.

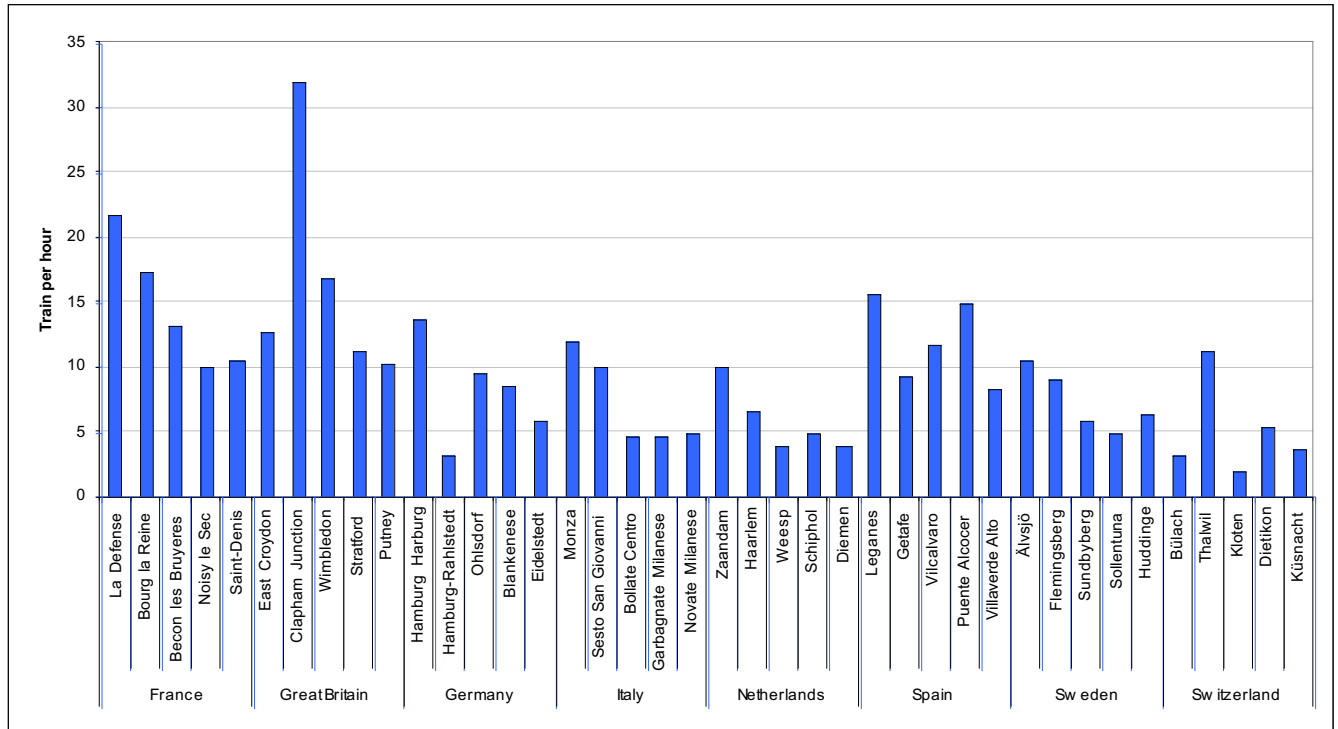
FIGURE 3.6 LONGER DISTANCE COMMUTER BAND FIRST TRAIN AND LAST TRAIN



Trains per hour and speed (AM peak)

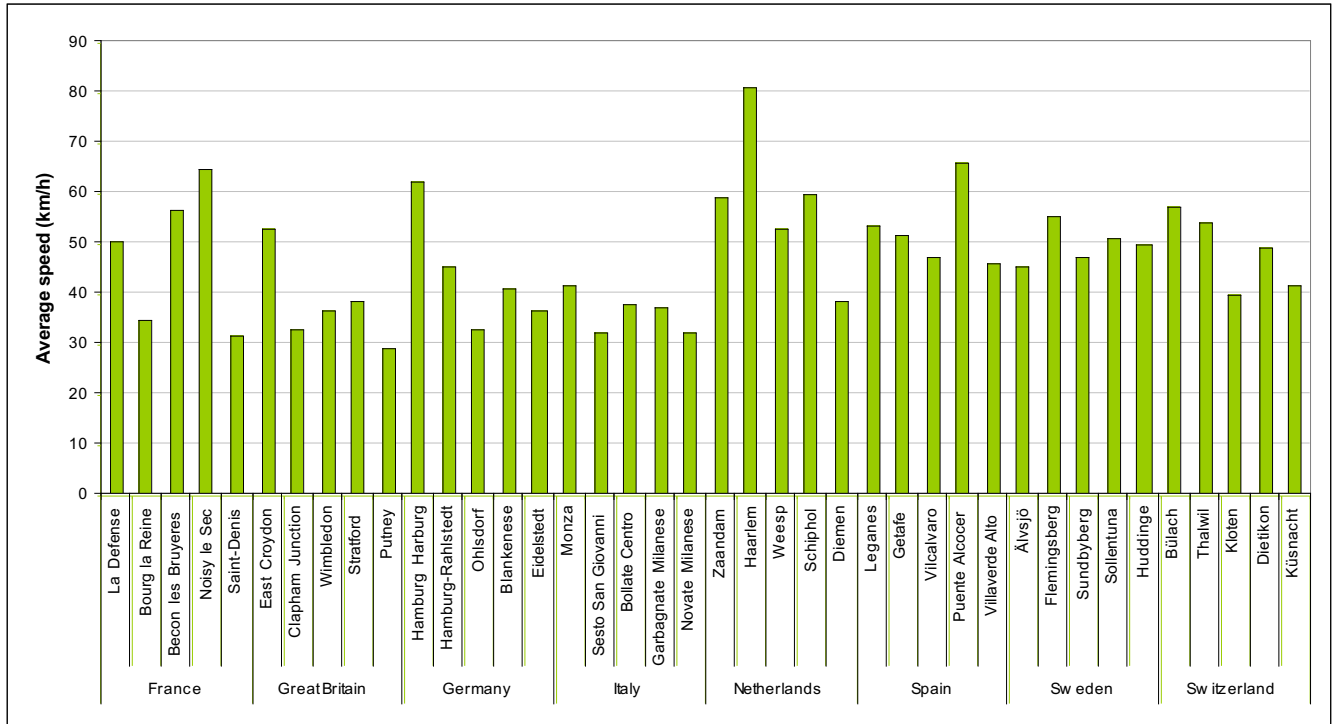
- 3.14 Within the 5-16km commuter band the number of trains per hour varies considerably by country in the AM peak. Average trains per hour are highest in Great Britain (16+tph) and France (15+tph). Average trains per hour are fewest in Switzerland (5tph).

FIGURE 3.7 SHORT DISTANCE COMMUTER BAND TRAINS PER HOUR AM PEAK



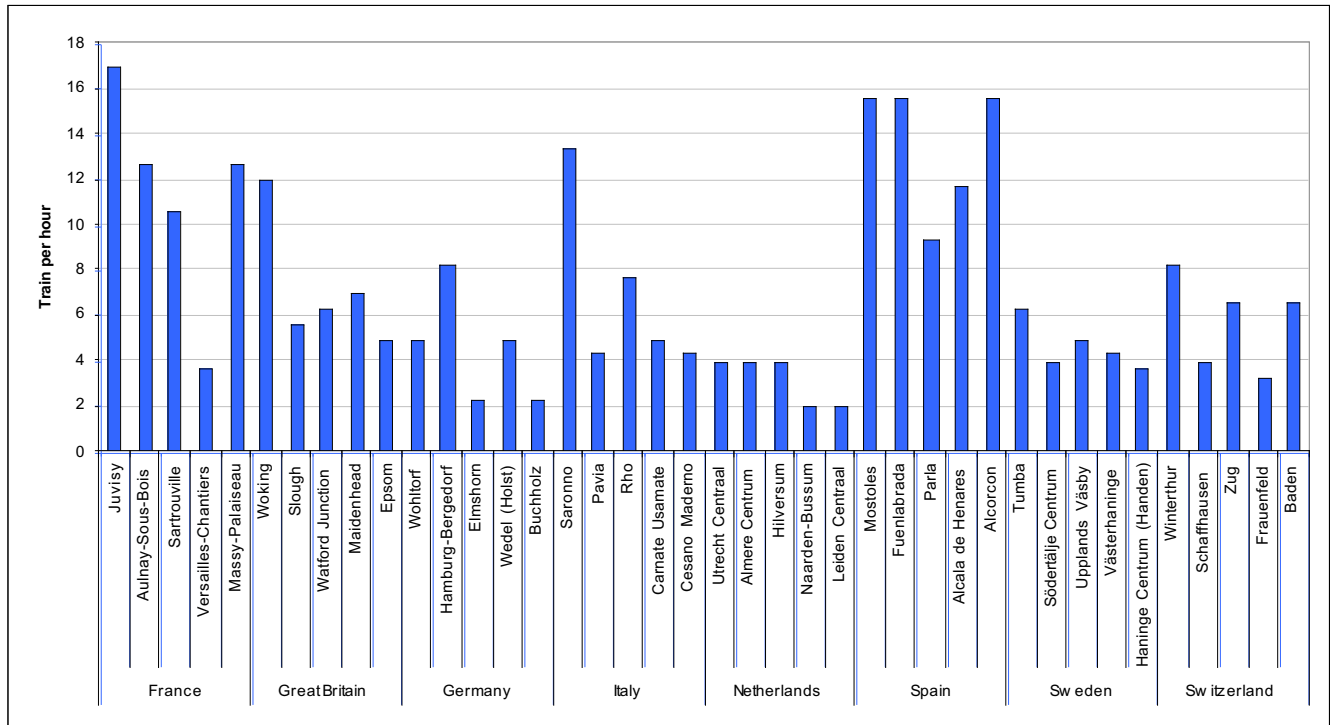
- 3.15 In the 5-16km commuter band in the AM peak the Netherlands has on average the fastest trains. Great Britain has the slowest service of those examined, from Putney to Waterloo, while the Netherlands has the fastest service from Haarlem to Amsterdam.

FIGURE 3.8 SHORT DISTANCE COMMUTER BAND AVERAGE SPEED OF TRAINS (KM/H) AM PEAK



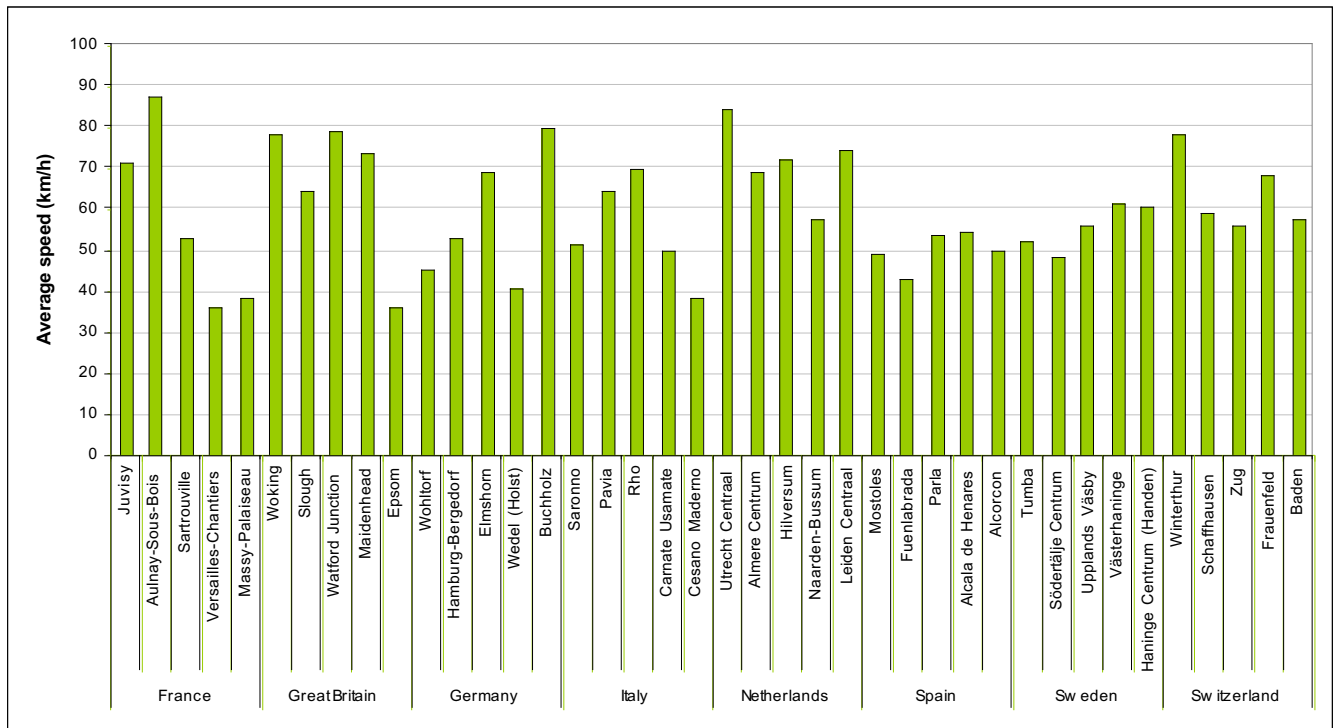
- 3.16 Within the 17-40km commuter band Spain has the most trains per hour in the AM peak with an average of over 13tph. Great Britain and France have the second highest frequency at just over 7tph on average. The Netherlands has the fewest trains per hour with less than 4tph on average.

FIGURE 3.9 MEDIUM DISTANCE COMMUTER BAND TRAINS PER HOUR AM PEAK



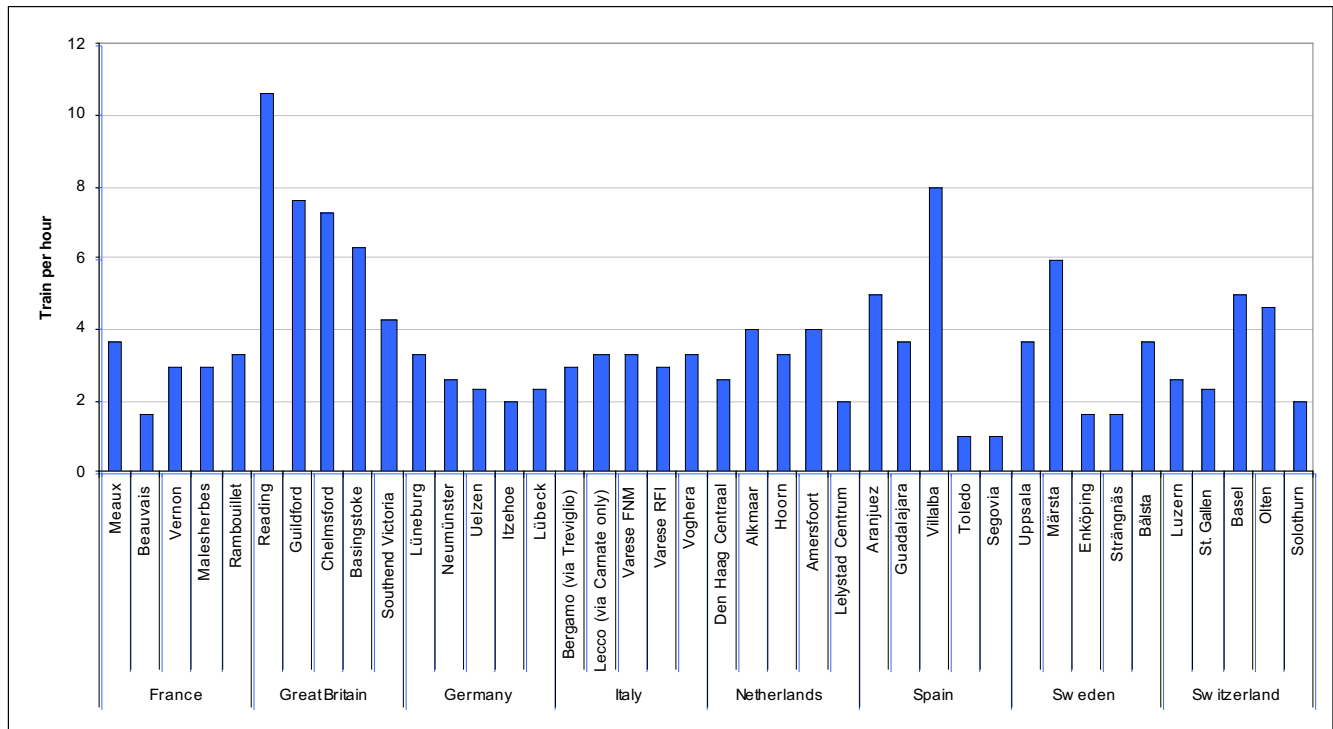
- 3.17 Within the 17-40km commuter band there is some variation in speed by origin and destination and by country. France has the greatest variation in speed from 24km/h to 75km/h.

FIGURE 3.10 MEDIUM DISTANCE COMMUTER BAND AVERAGE SPEED OF TRAINS (KM/H) AM PEAK



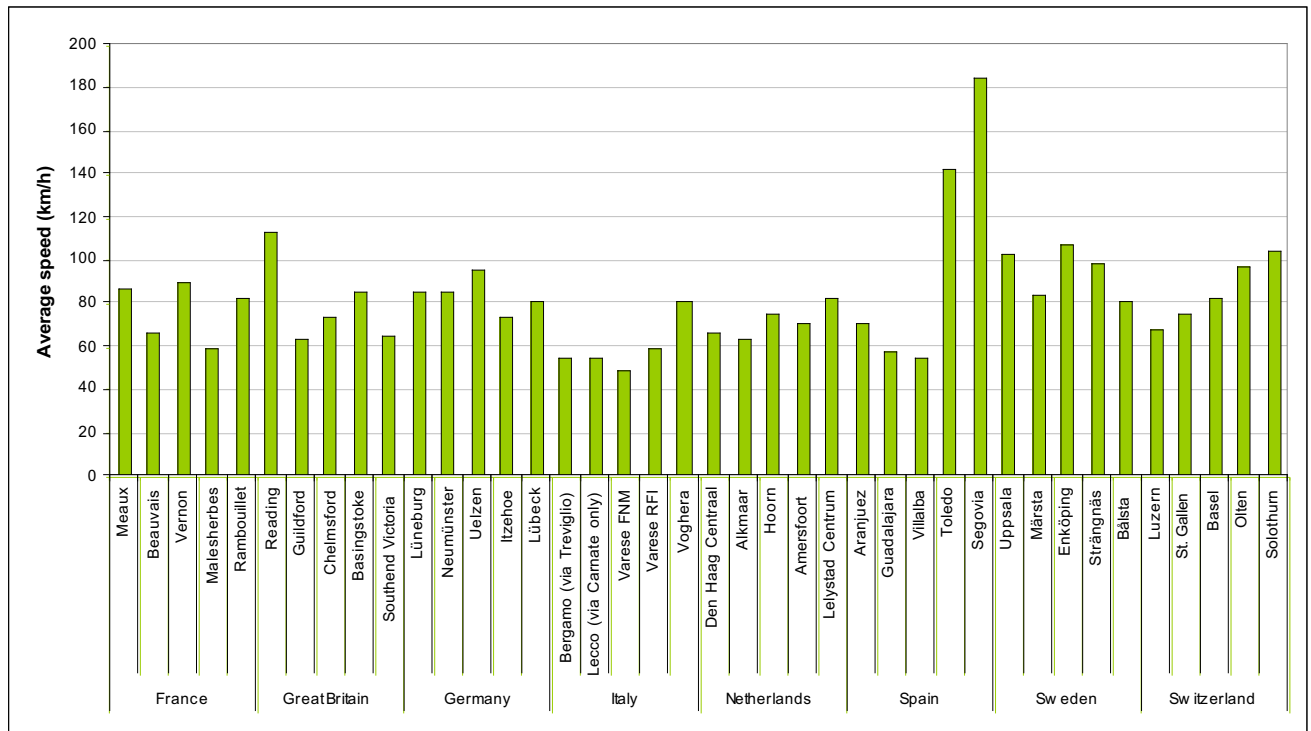
- 3.18 The 41-80km commuter band has a lower frequency of trains in most countries, compared with the short and medium distance commuter bands. In Great Britain, with over 7 trains per hour, services are twice as frequent in this band than in most other countries. This is likely to reflect the trend for longer distance commuting into London.

FIGURE 3.11 LONGER DISTANCE COMMUTER BAND TRAINS PER HOUR AM PEAK



- 3.19 The longer distance commuter band highlights a number of particularly fast services in Spain, reflecting the high speed lines from Toledo and Segovia to Madrid. Other fast services include those from Reading to London.

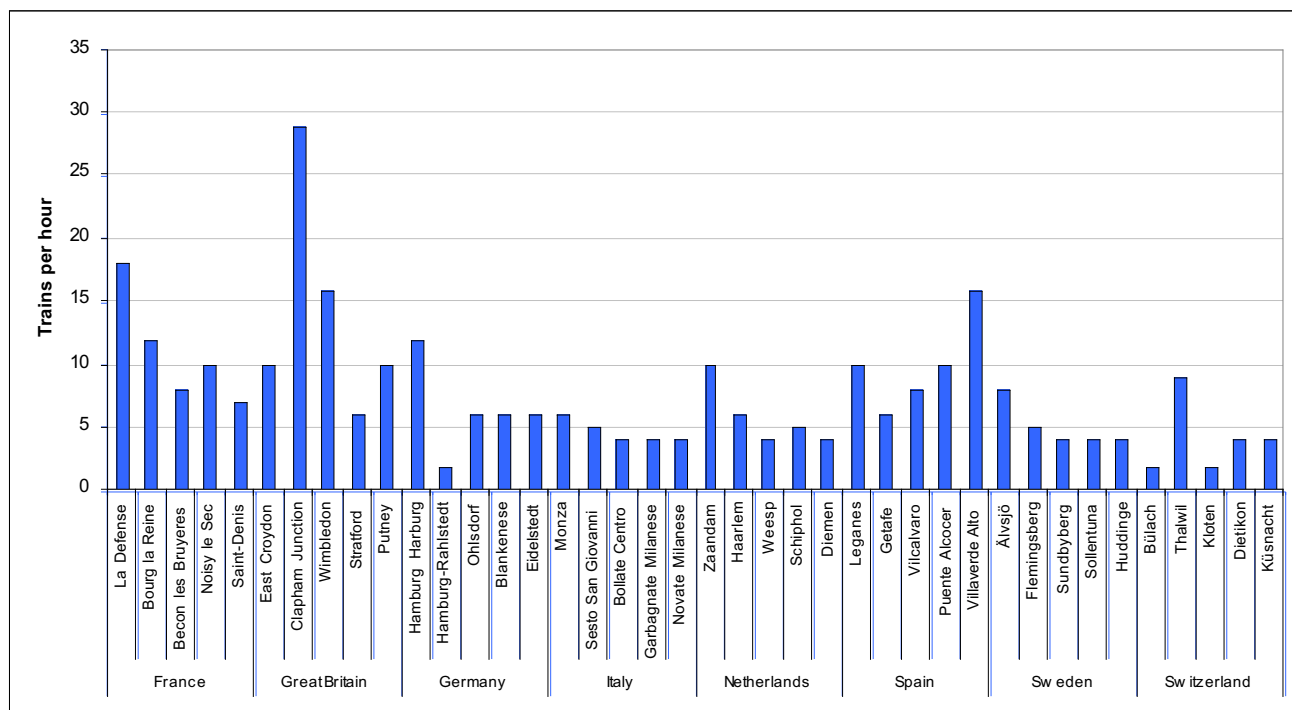
FIGURE 3.12 LONGER DISTANCE COMMUTER BAND AVERAGE SPEED OF TRAINS (KM/H) AM PEAK



Trains per hour and speed (Inter-peak)

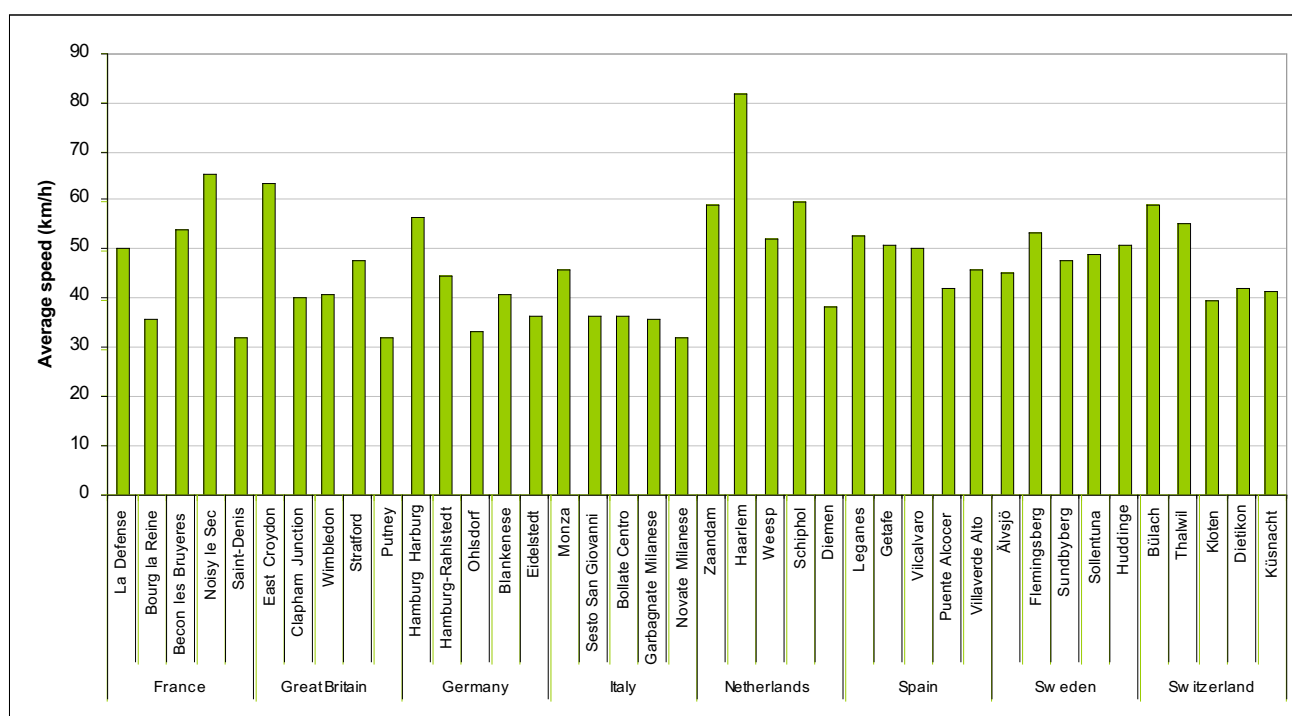
- 3.20 Similarly to the AM peak, in the inter-peak period in the 5-16km commuter band Great Britain and France have, on average, the greatest frequency of trains.

FIGURE 3.13 SHORT DISTANCE COMMUTER BAND TRAINS PER HOUR INTER-PEAK



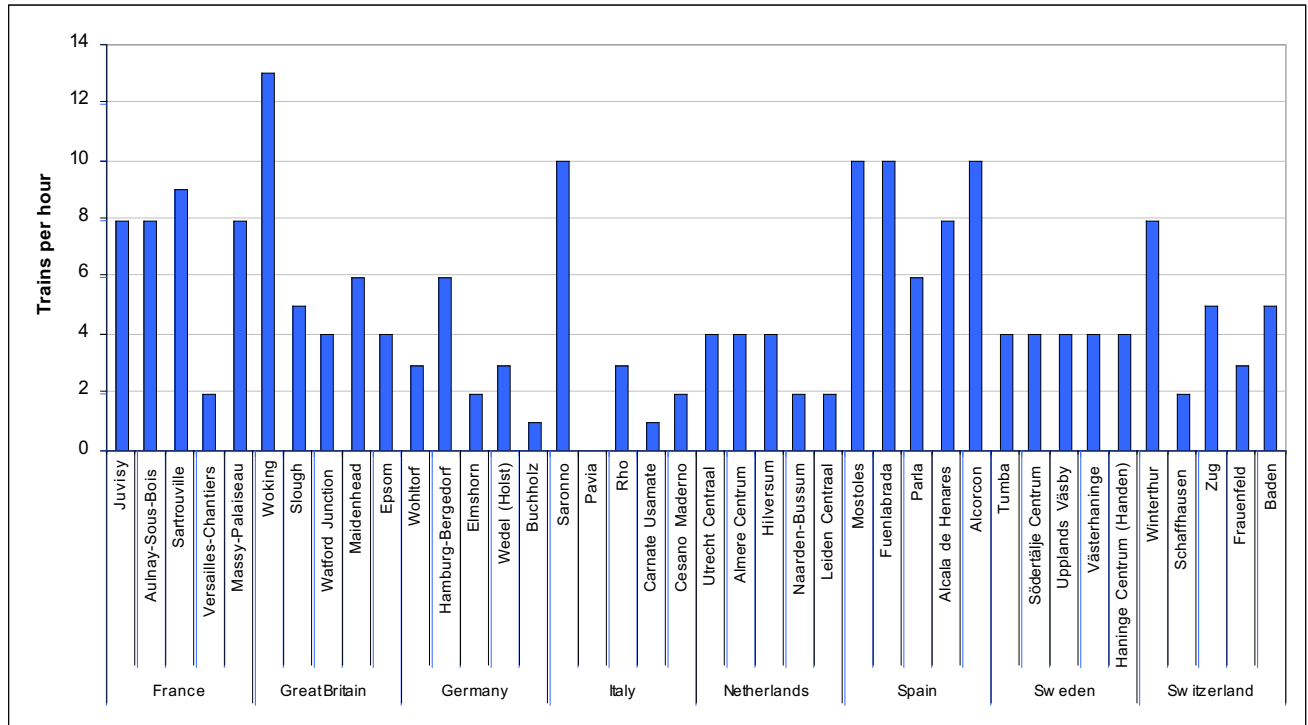
- 3.21 In the inter-peak speeds are generally similar to the AM peak. In Great Britain some services are slightly faster in the inter-peak period than in the AM peak.

FIGURE 3.14 SHORT DISTANCE COMMUTER BAND AVERAGE SPEED OF TRAINS (KM/H) INTER-PEAK



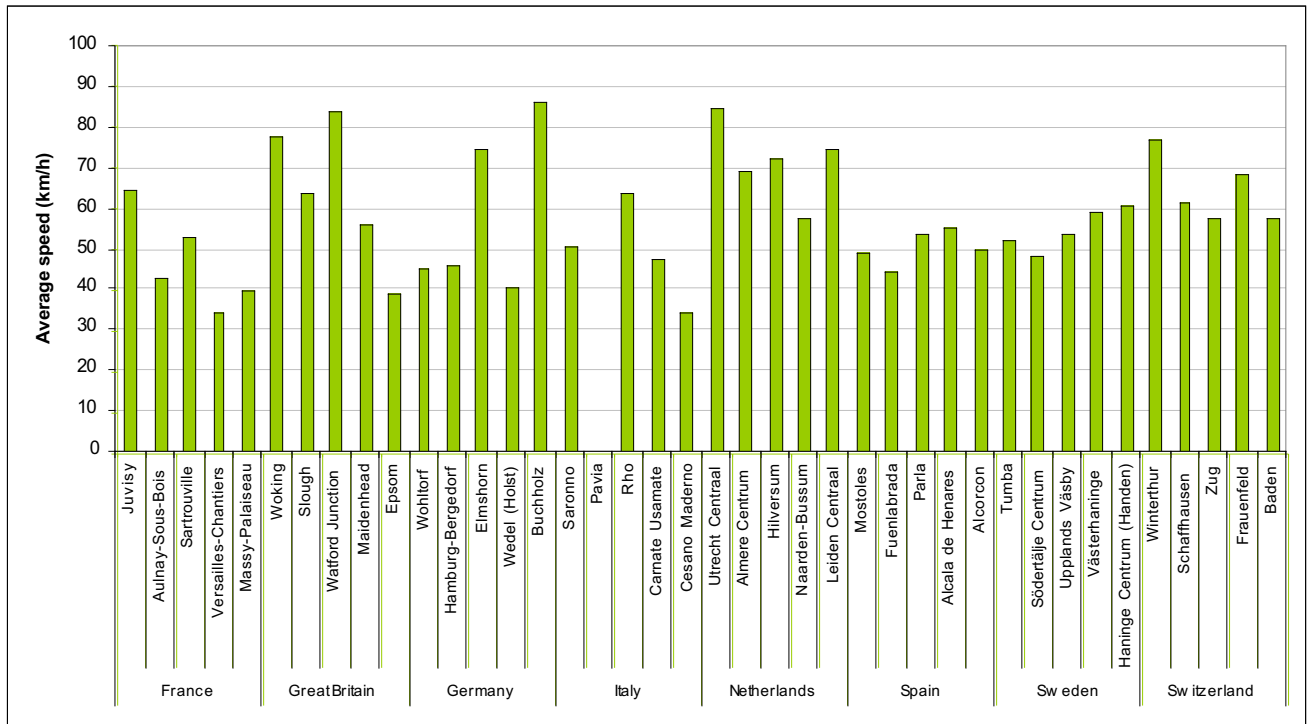
- 3.22 In the medium distance commuter band in the inter-peak France, GB and Spain maintain the highest service frequencies. In the one hour period we considered (1200 to 1300) Pavia in Italy does not have any services.

FIGURE 3.15 MEDIUM DISTANCE COMMUTER BAND TRAINS PER HOUR INTER-PEAK



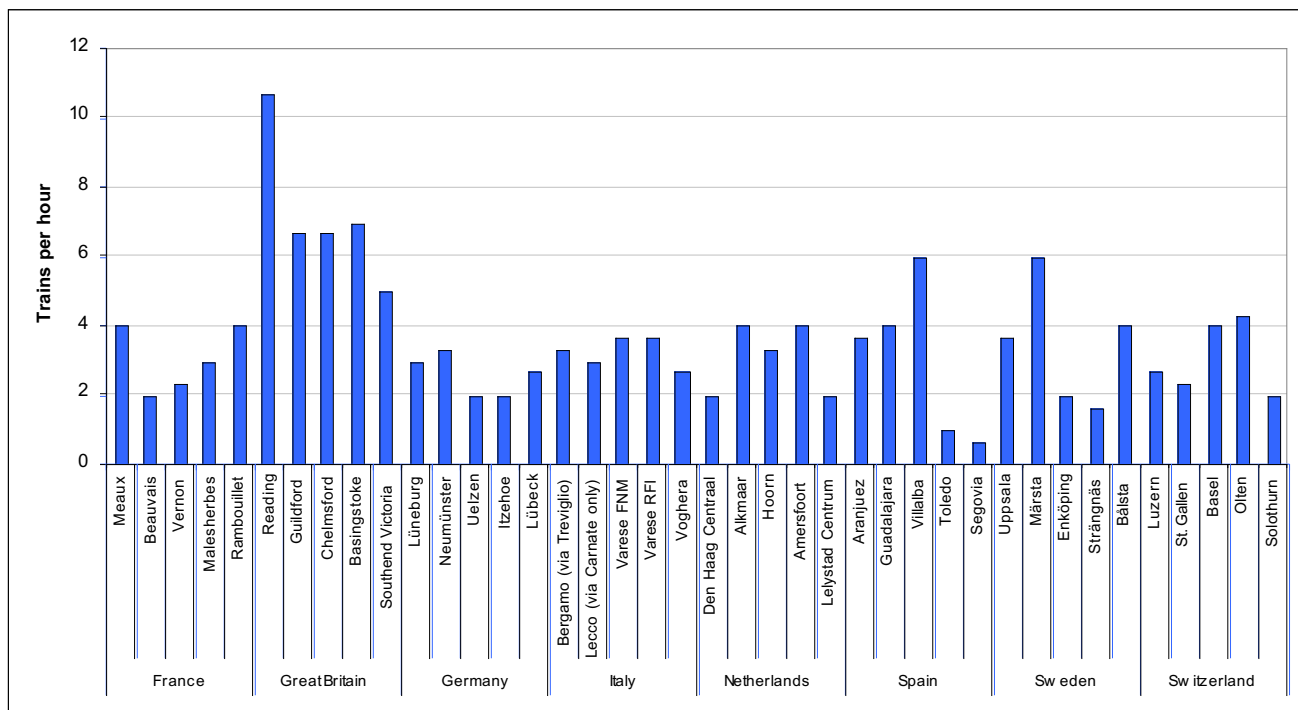
- 3.23 In the inter-peak in the medium distance commuter band speeds are generally similar to the AM peak, with the exception of services in France which are slightly slower. In the one hour period we considered (1200 to 1300) Pavia in Italy does not have any services.

FIGURE 3.16 MEDIUM DISTANCE COMMUTER BAND AVERAGE SPEED OF TRAINS (KM/H) INTER-PEAK



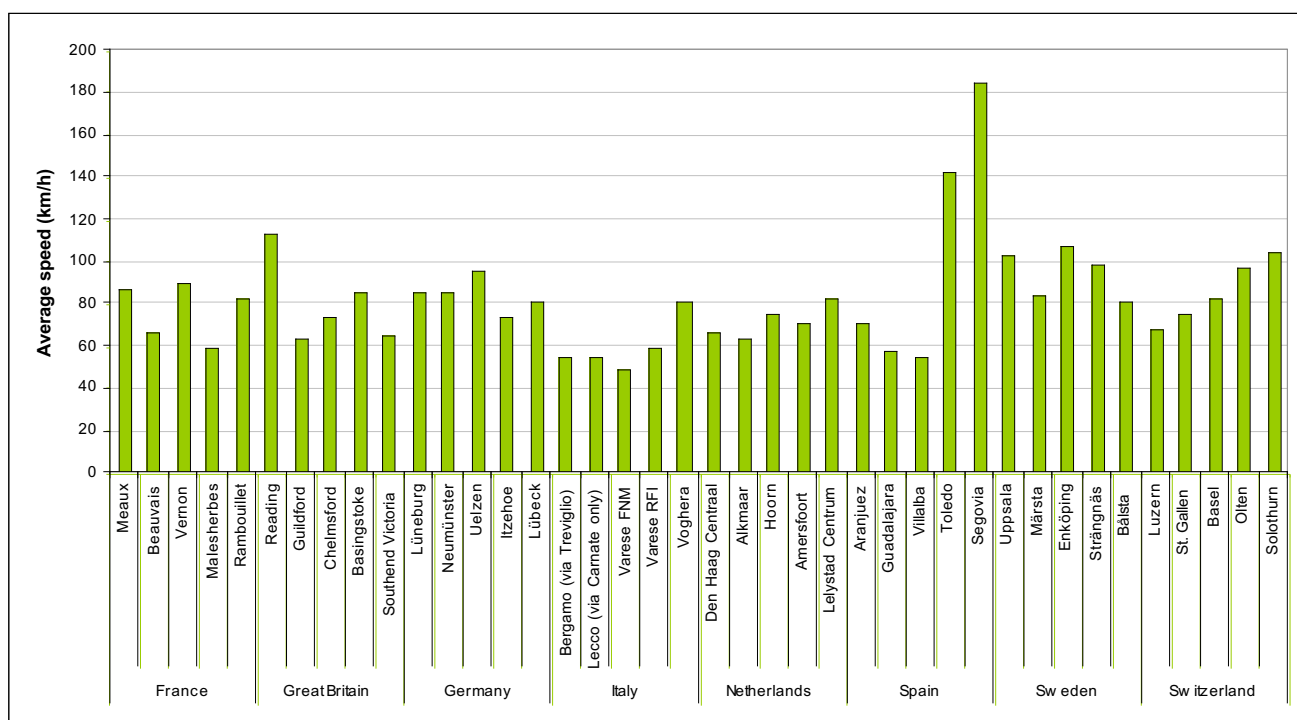
- 3.24 In the longer distance commuter band most countries have similar numbers of trains per hour as in the AM peak. Spain has slightly fewer trains per hour in the PM peak than in the AM peak, with some services with less than one train per hour.

FIGURE 3.17 LONGER DISTANCE COMMUTER BAND TRAINS PER HOUR INTER-PEAK



- 3.25 The speed of trains in the longer distance commuter band does not generally vary significantly between the AM and inter-peak.

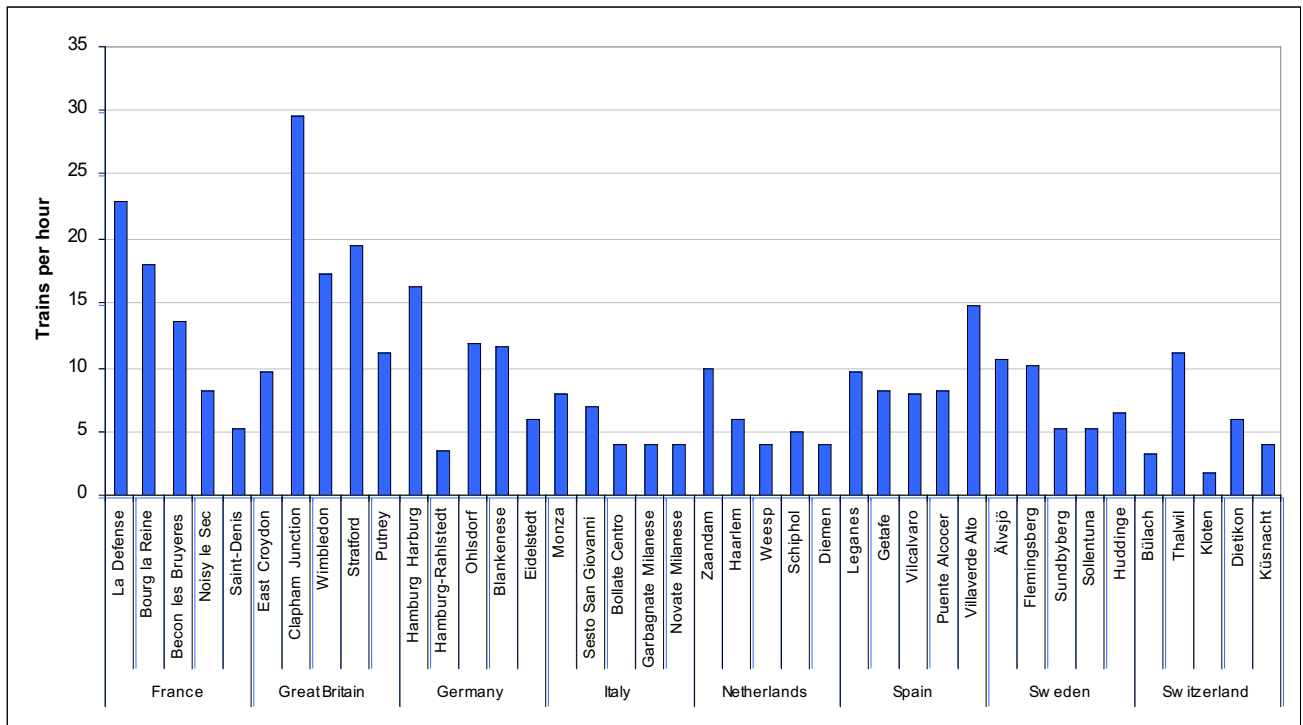
FIGURE 3.18 LONGER DISTANCE COMMUTER BAND AVERAGE SPEED OF TRAINS (KM/H) INTER-PEAK



Trains per hour and speed (PM peak)

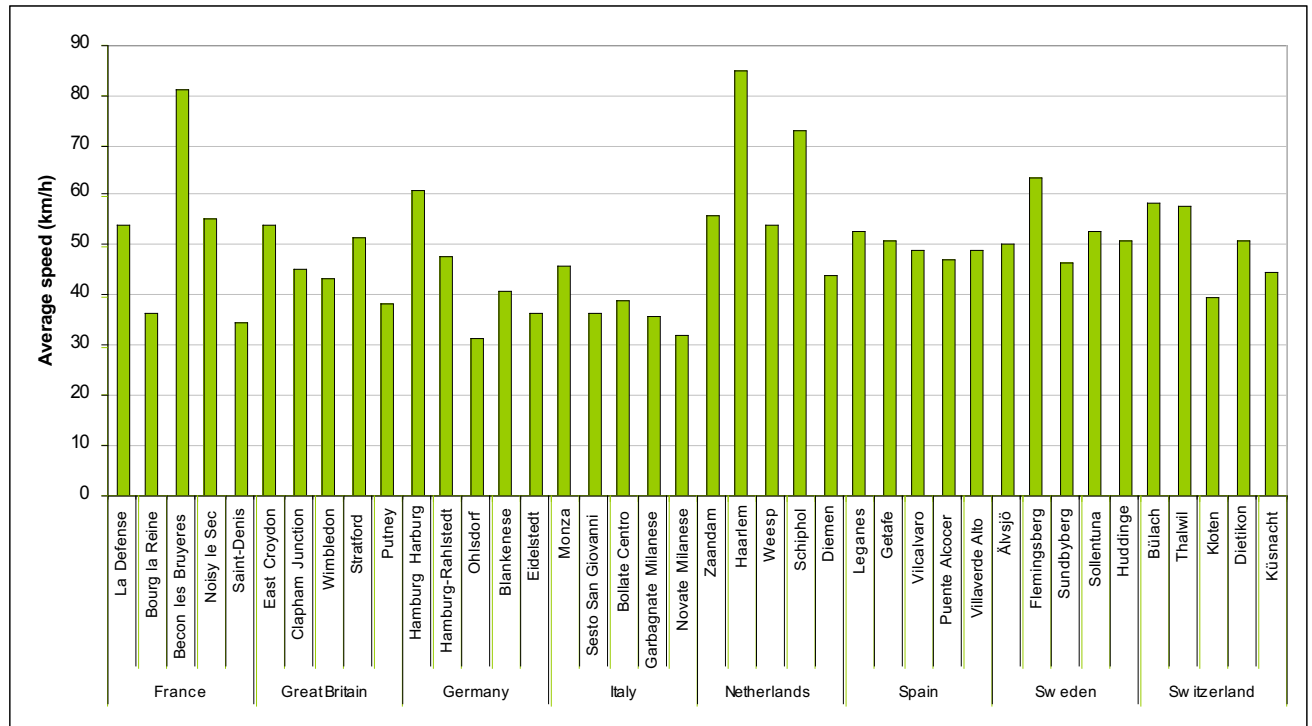
- 3.26 In the PM peak train frequencies tend to be similar to the AM peak. However in France, Italy and Spain on average there are fewer trains per hour in the PM peak than the AM peak. This may reflect travel being spread over a longer evening peak period.

FIGURE 3.19 SHORT DISTANCE COMMUTER BAND TRAINS PER HOUR PM PEAK



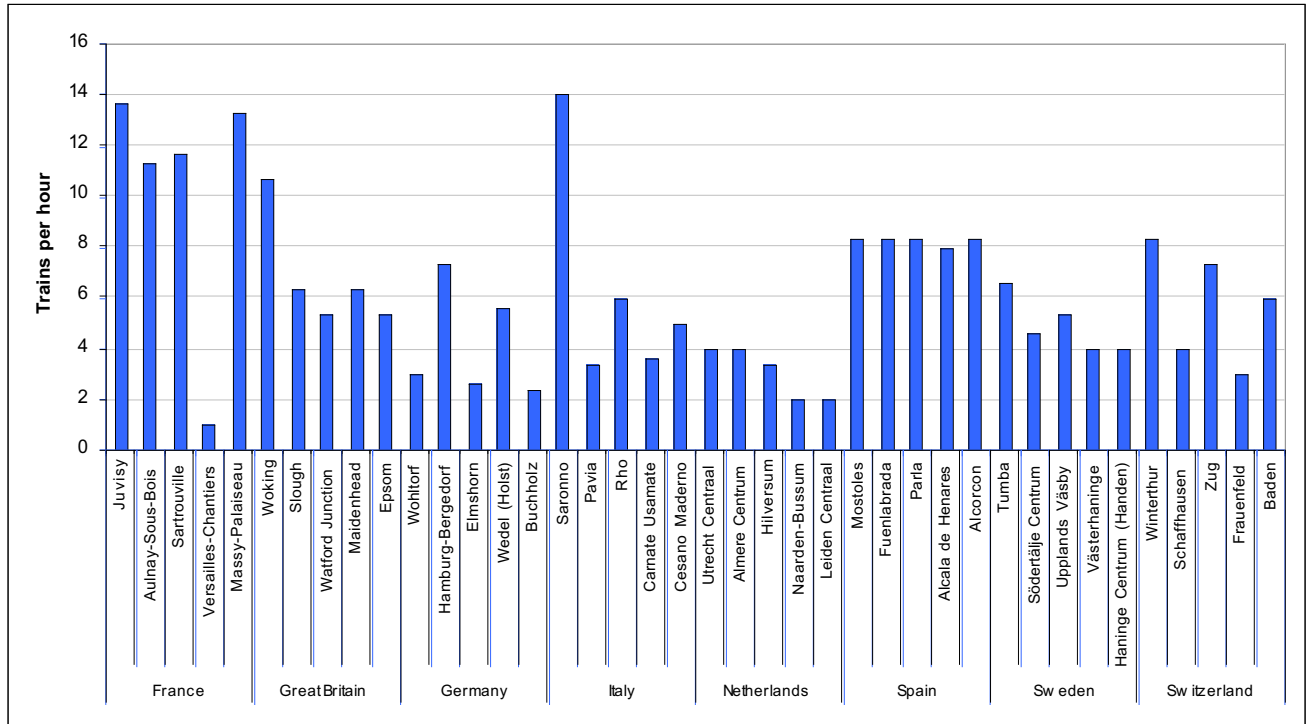
3.27 The speed of trains in the PM peak for the short distance commuter band is generally similar or slightly faster than in the AM peak. Trains in Great Britain are on average around 20% faster in the PM peak compared with the AM peak. This may reflect that pathing and recovery time is added to schedules on the approach to terminal stations in Great Britain, which affects the AM peak, but not the PM peak.

**FIGURE 3.20 SHORT DISTANCE COMMUTER BAND AVERAGE SPEED OF TRAINS (KM/H)
PM PEAK**



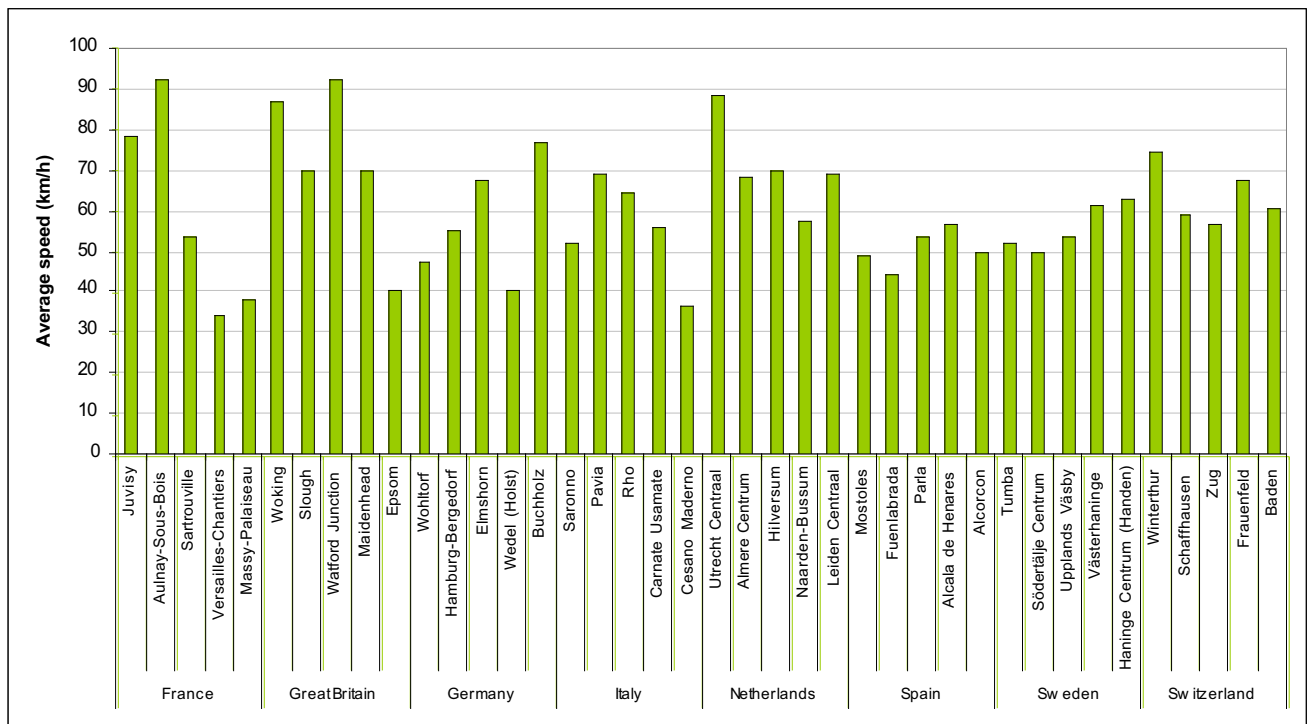
- 3.28 In the medium distance commuter band the average number of trains per hour in the PM peak generally follow a similar pattern to the AM peak, apart from in Spain where there is a less frequent service in the PM peak than in the AM peak.

FIGURE 3.21 MEDIUM DISTANCE COMMUTER BAND TRAINS PER HOUR PM PEAK



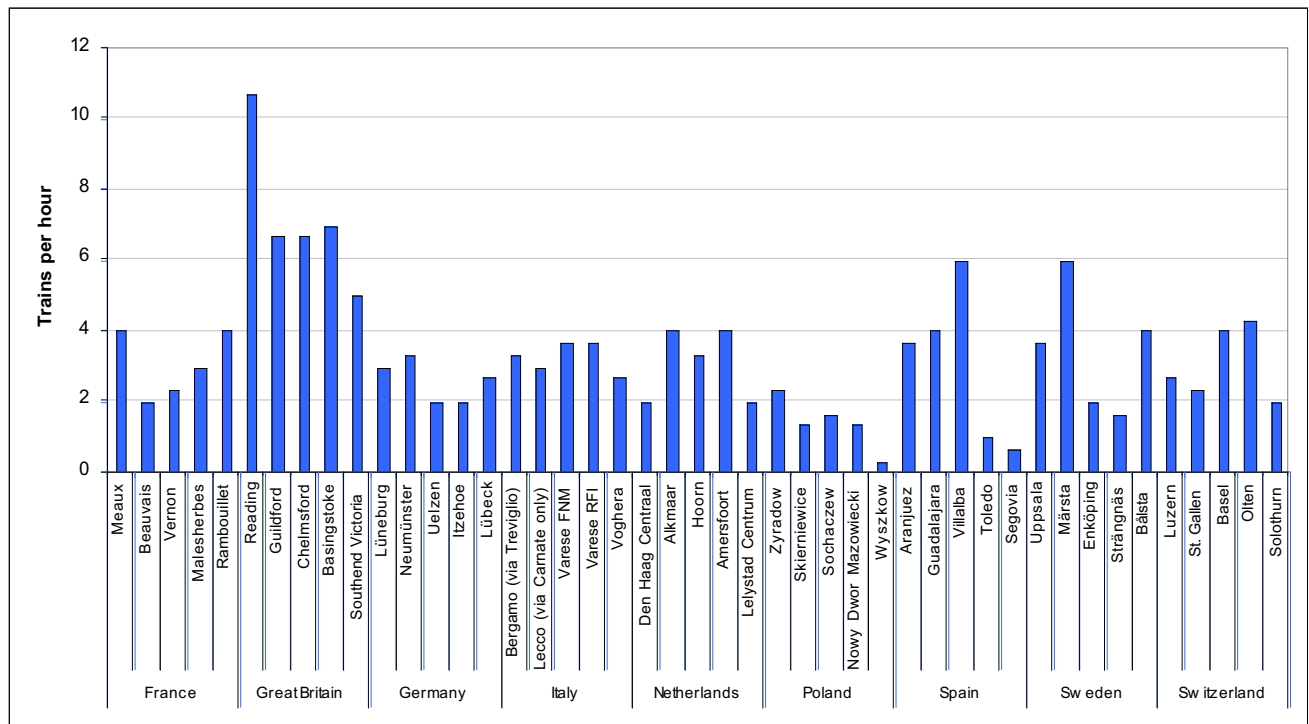
- 3.29 Overall the speed of trains in the PM peak is similar to the AM peak.

FIGURE 3.22 MEDIUM DISTANCE COMMUTER BAND AVERAGE SPEED OF TRAINS (KM/H) PM PEAK



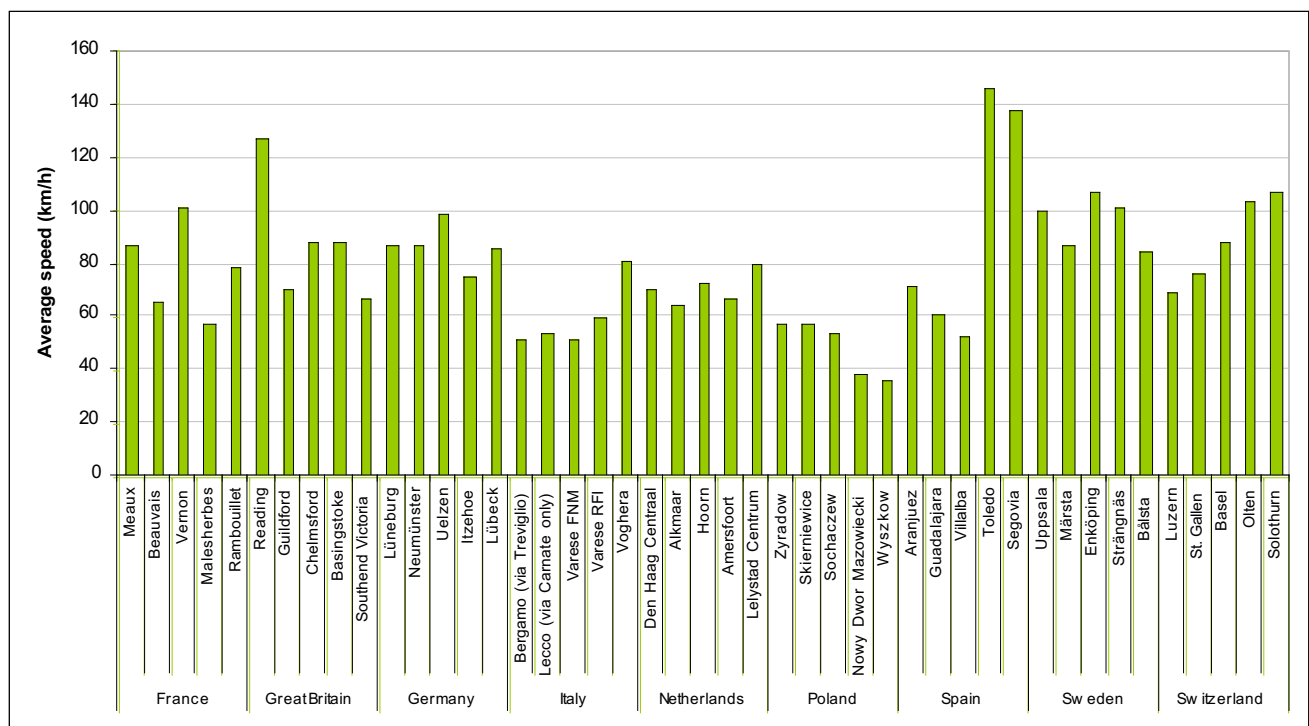
- 3.30 In the longer distance commuter band, as with the shorter distance commuter bands, Spain has fewer trains per hour in the PM peak than in the AM peak.

FIGURE 3.23 LONGER DISTANCE COMMUTER BAND TRAINS PER HOUR PM PEAK



- 3.31 The speed of trains in the longer distance commuter band does not vary considerably between the AM and PM peak.

FIGURE 3.24 LONGER DISTANCE COMMUTER BAND AVERAGE SPEED OF TRAINS (KM/H) PM PEAK



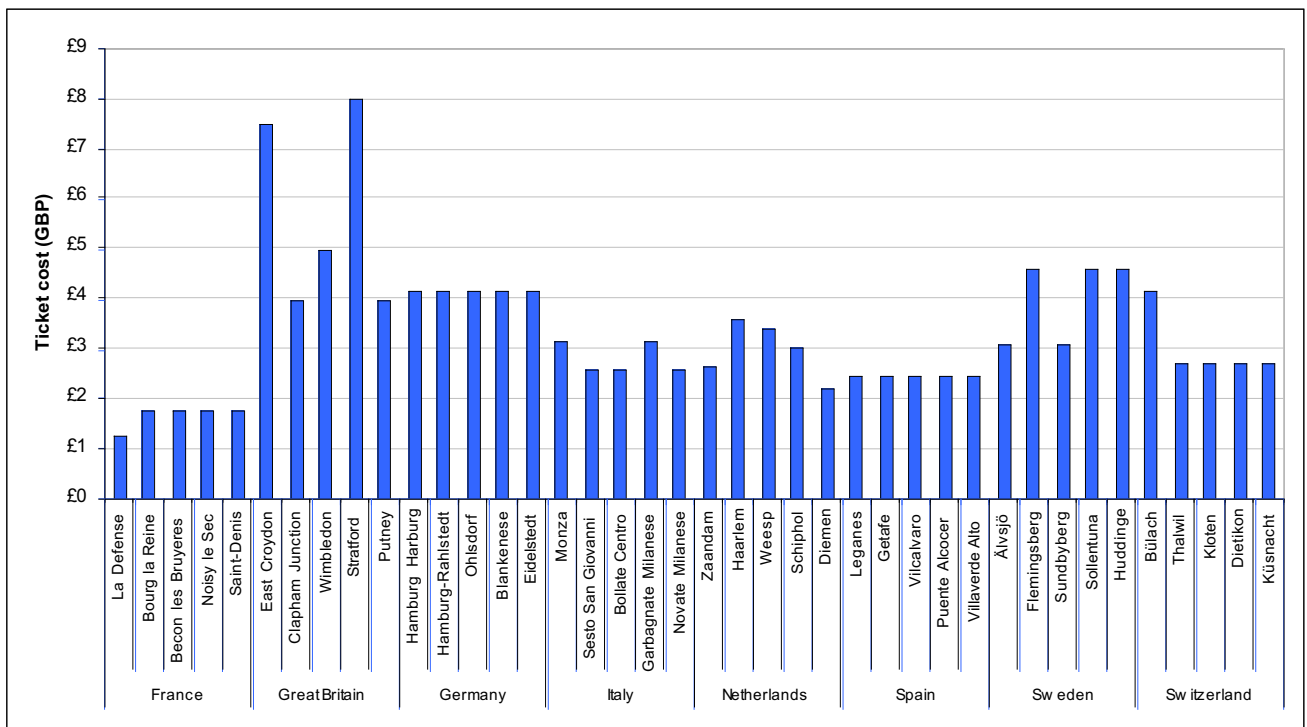
Fares

- 3.32 All fares have been converted to GB pounds and normalised to reflect differing levels of disposable income in each country (see page 2 for more details). However, unlike the charts given in the Executive Summary, the fares below for individual flows have not been adjusted to represent an average distance.

Walk-up Fares

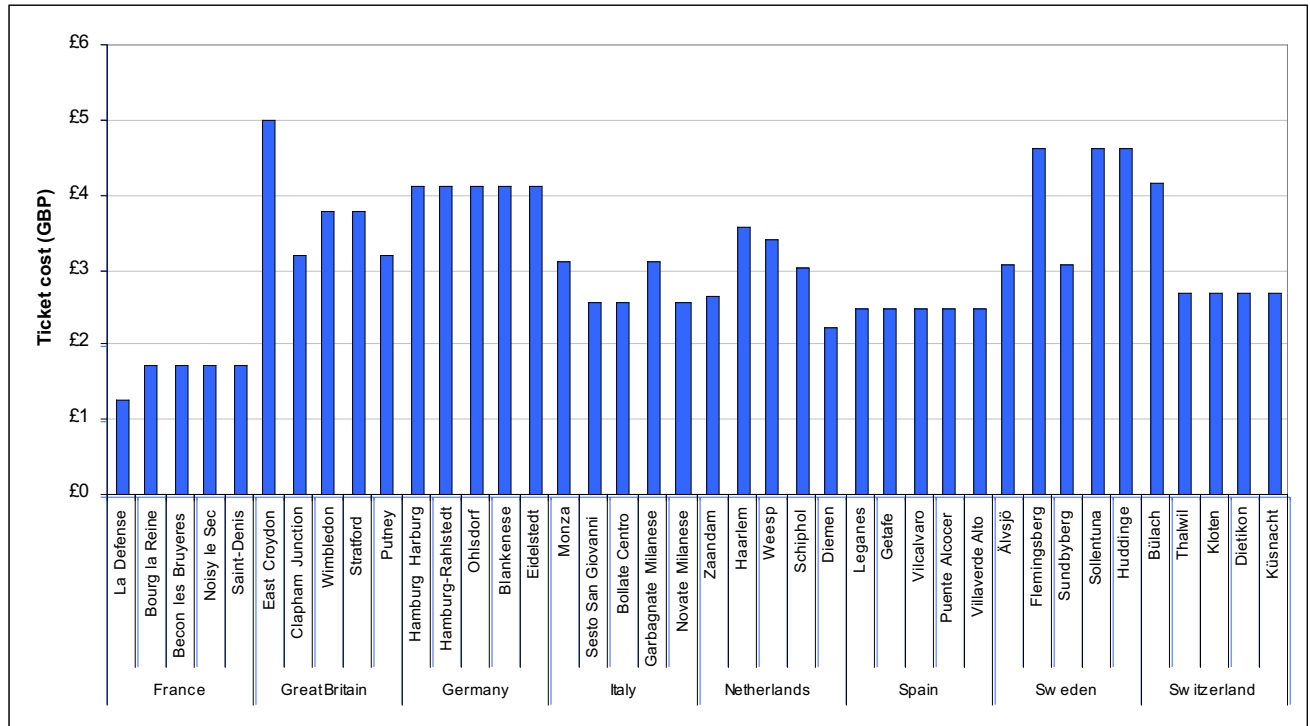
- 3.33 Within the short distance commuter band the two most expensive unrestricted day return fares are in Great Britain, from East Croydon to London Bridge and Stratford to Liverpool Street. Countries with variable fares in this distance band include Great Britain, Italy, the Netherlands and Sweden. In Germany and Spain the fares are identical for the five origin and destination pairs examined in this distance band.

FIGURE 3.25 SHORT DISTANCE COMMUTER BAND UNRESTRICTED RETURN FARE



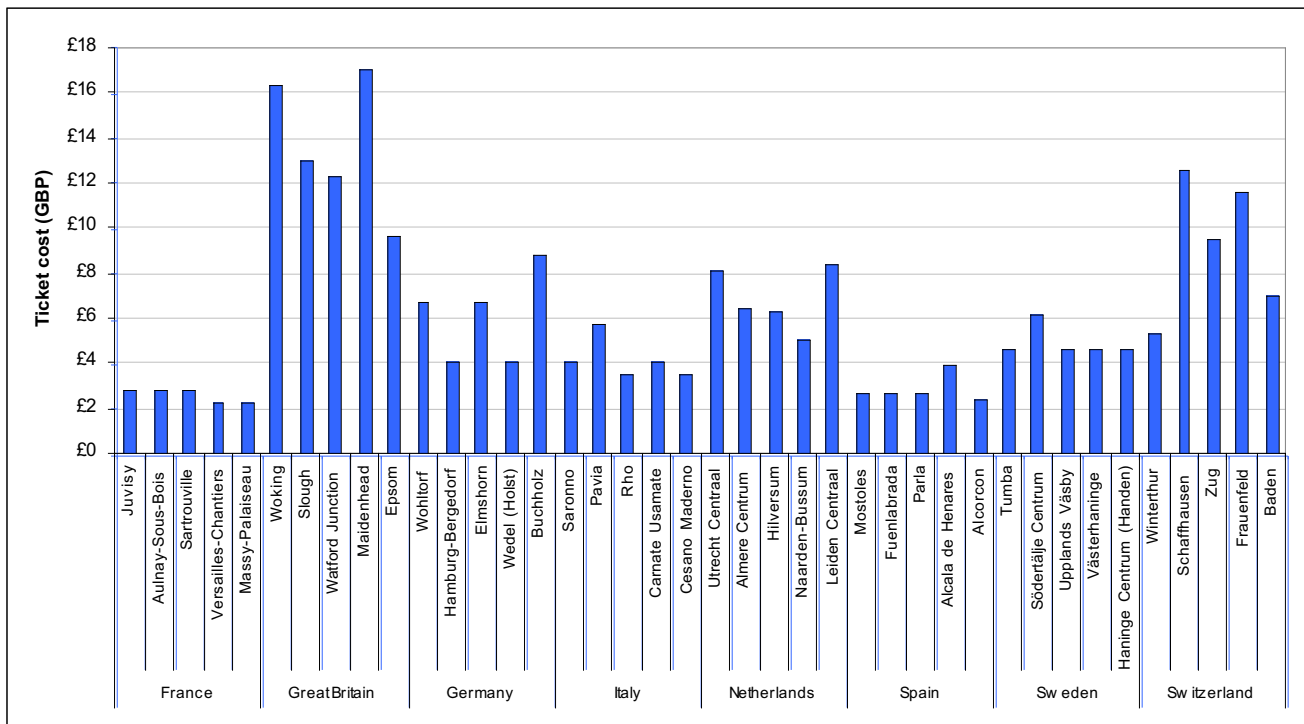
- 3.34 When considering restricted return fares, i.e. arriving later in the morning, fares in Great Britain are more comparable with other countries across Europe, although still notably more expensive than in France, Italy and Spain. Great Britain is the only country in the short distance commuter band where fares are lowered after the morning peak (i.e. in other countries there is an 'all day' price).

FIGURE 3.26 SHORT DISTANCE COMMUTER BAND DAY RETURN FARE ARRIVING BETWEEN 1001 AND 1200



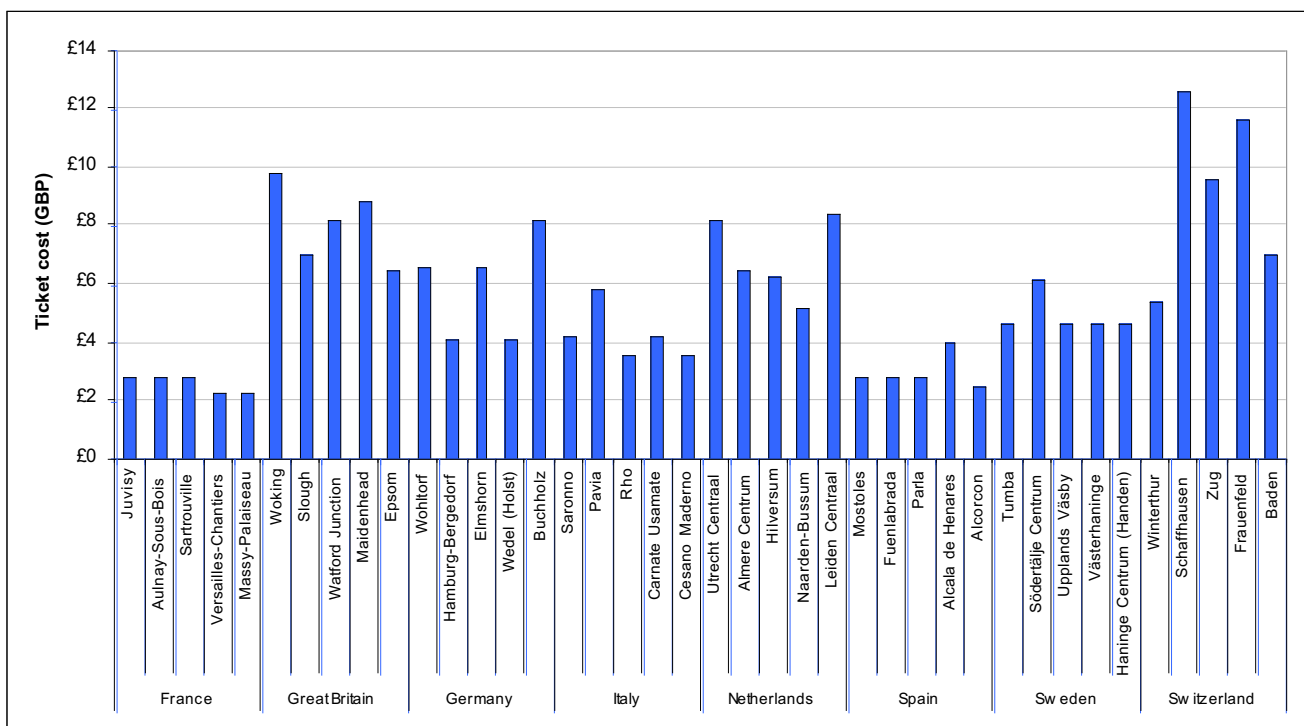
- 3.35 Within the medium distance commuter band fares are highest in Great Britain and Switzerland. Fares are lowest in France and Spain.

FIGURE 3.27 MEDIUM DISTANCE COMMUTER BAND UNRESTRICTED RETURN FARE



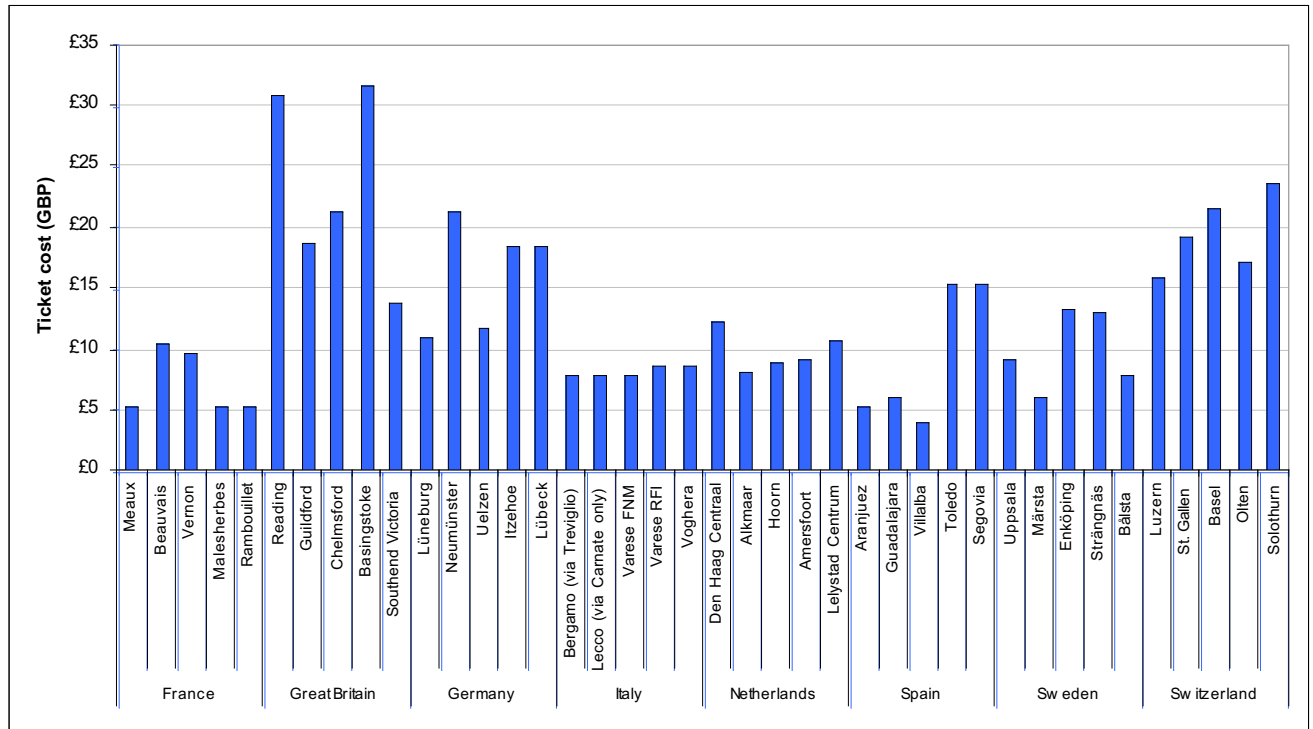
- 3.36 Restricted day return fares for the medium distance commuter band in Great Britain are comparable with the Netherlands and generally cheaper than in Switzerland.

FIGURE 3.28 MEDIUM DISTANCE COMMUTER BAND DAY RETURN FARE ARRIVING BETWEEN 1001 AND 1200



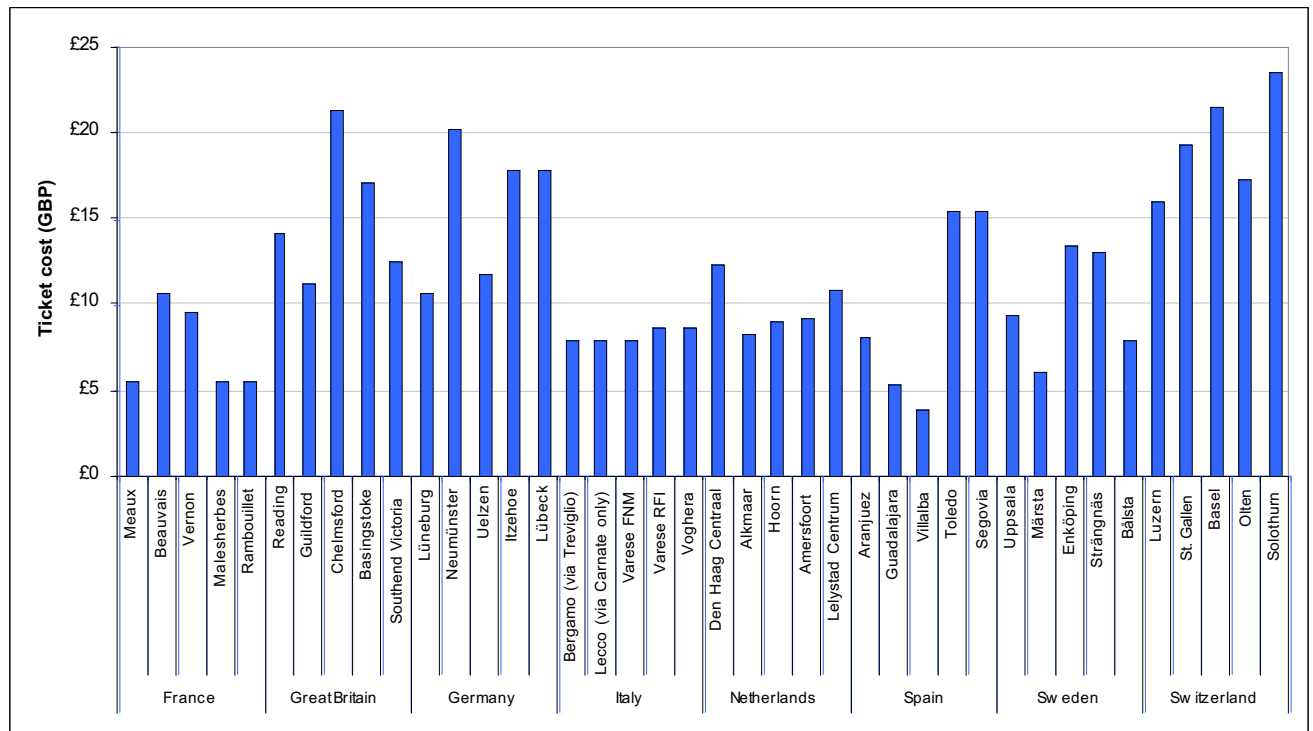
- 3.37 There is considerable variation in unrestricted return fares in the longer distance commuter band. As in the medium distance commuter band, Switzerland and Great Britain are the most expensive. Fares in France, Italy, the Netherlands and Spain are typically a fraction of those in Great Britain.

FIGURE 3.29 LONGER DISTANCE COMMUTER BAND UNRESTRICTED RETURN FARE



- 3.38 In the longer distance commuter band off-peak fares in Great Britain are more comparable with fares in Germany, Sweden and Switzerland. Fares in France, Italy, and the Netherlands are all considerably cheaper.

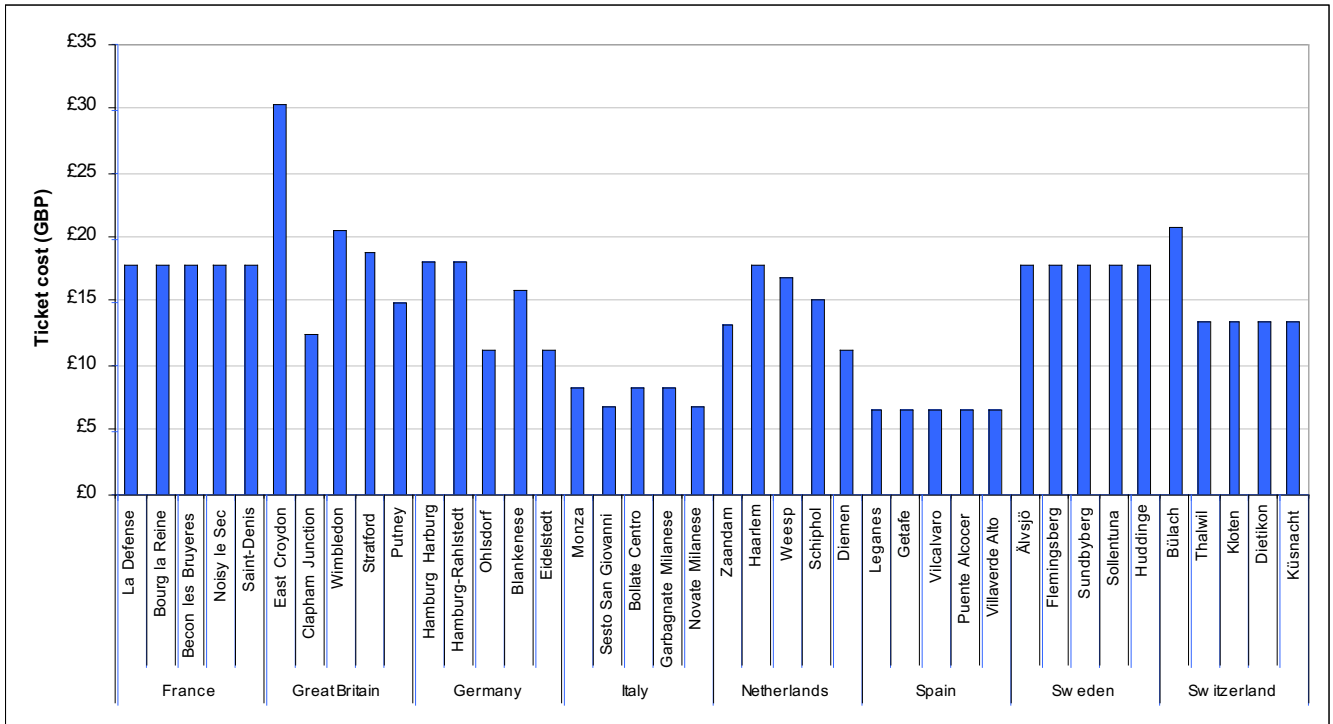
FIGURE 3.30 LONGER DISTANCE COMMUTER BAND DAY RETURN FARE ARRIVING BETWEEN 1001 AND 1200



Season tickets

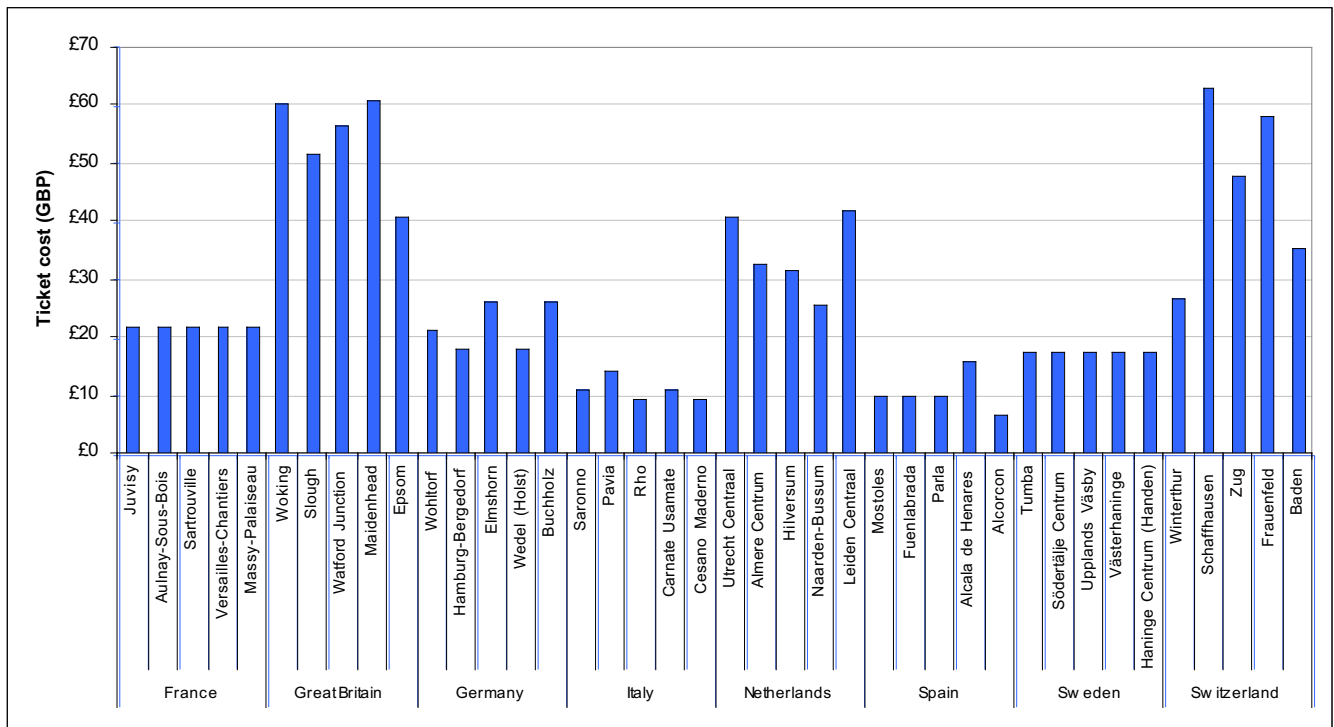
- 3.39 Seven day season tickets are not available in Switzerland. To provide a comparable fare we have multiplied a fully flexible return fare by five, to represent a daily commute. With the exception of East Croydon, which is amongst the furthest distances in this band, seven day season ticket fares in Great Britain are at a similar level to the Netherlands, France and Sweden. Italy and Spain have the cheapest seven day season tickets within this distance band.

FIGURE 3.31 SHORT DISTANCE COMMUTER BAND 7 DAY SEASON TICKET



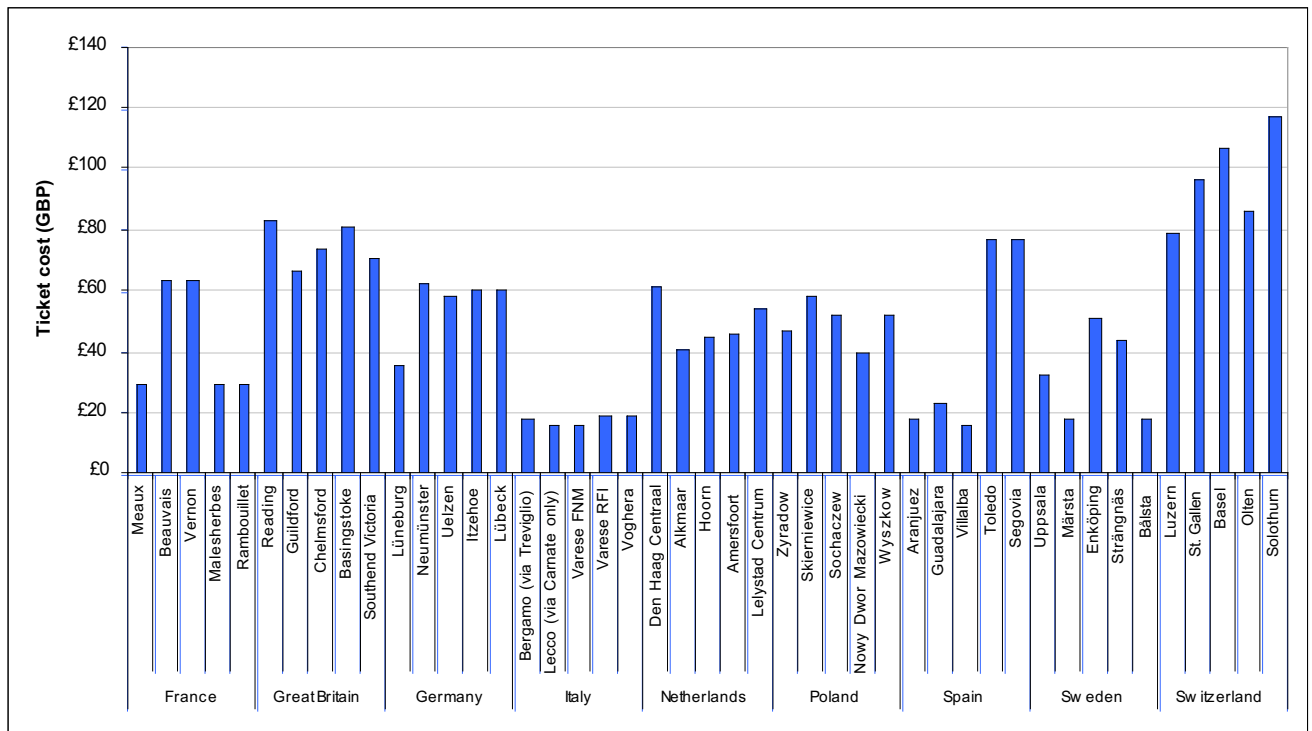
3.40 For the 17-40km commuter band seven day season ticket fares in Great Britain and Switzerland are amongst the highest. There is a significant difference in fares in this distance band, with fares in Great Britain up to three times higher than in France (it should be noted that the French stations considered are on average a shorter distance from Paris than the British equivalents are from London). Medium distance seven day commuting fares are lowest in Italy and Spain.

FIGURE 3.32 MEDIUM DISTANCE COMMUTER BAND 7 DAY SEASON TICKET



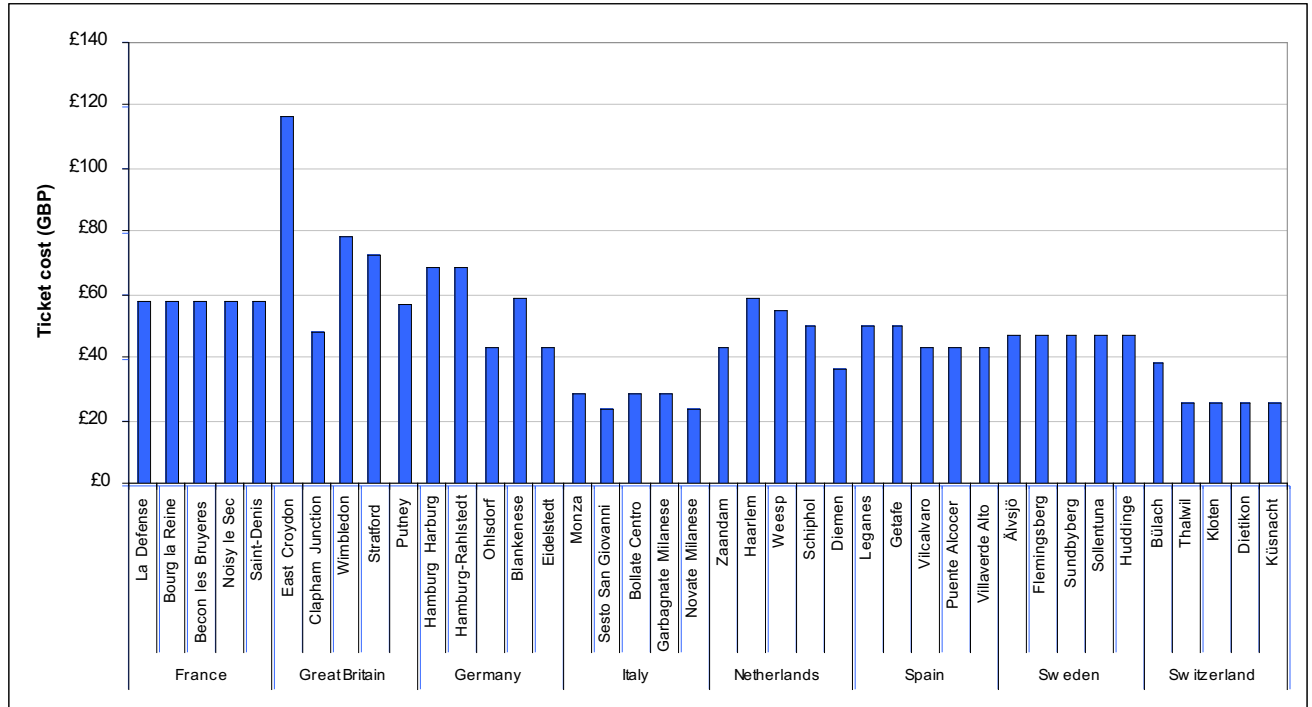
- 3.41 Fares for 7 day longer distance season tickets in Great Britain are cheaper than in Switzerland, but dearer than the other European countries considered in this study. Fares in Italy and Spain are considerably lower than other countries, with the exception of fares to Toledo and Segovia in Spain (7 day season tickets are not available on these high speed lines, the graph below shows fares based on five daily return tickets).

FIGURE 3.33 LONGER DISTANCE COMMUTER BAND 7 DAY SEASON TICKET



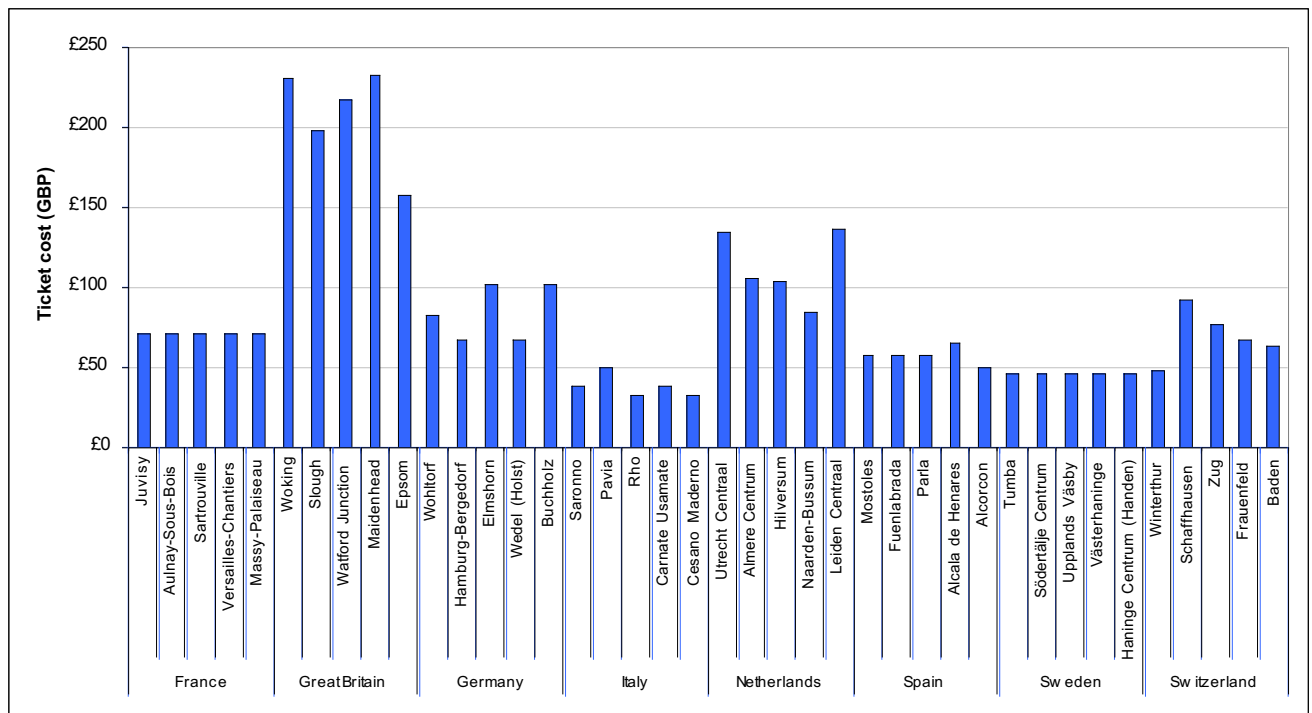
- 3.42 Within the short distance commuter band Great Britain and Germany generally have amongst the most expensive one month season ticket fares. Italy has particularly low fares for one month season tickets.

FIGURE 3.34 SHORT DISTANCE COMMUTER BAND 1 MONTH SEASON TICKET



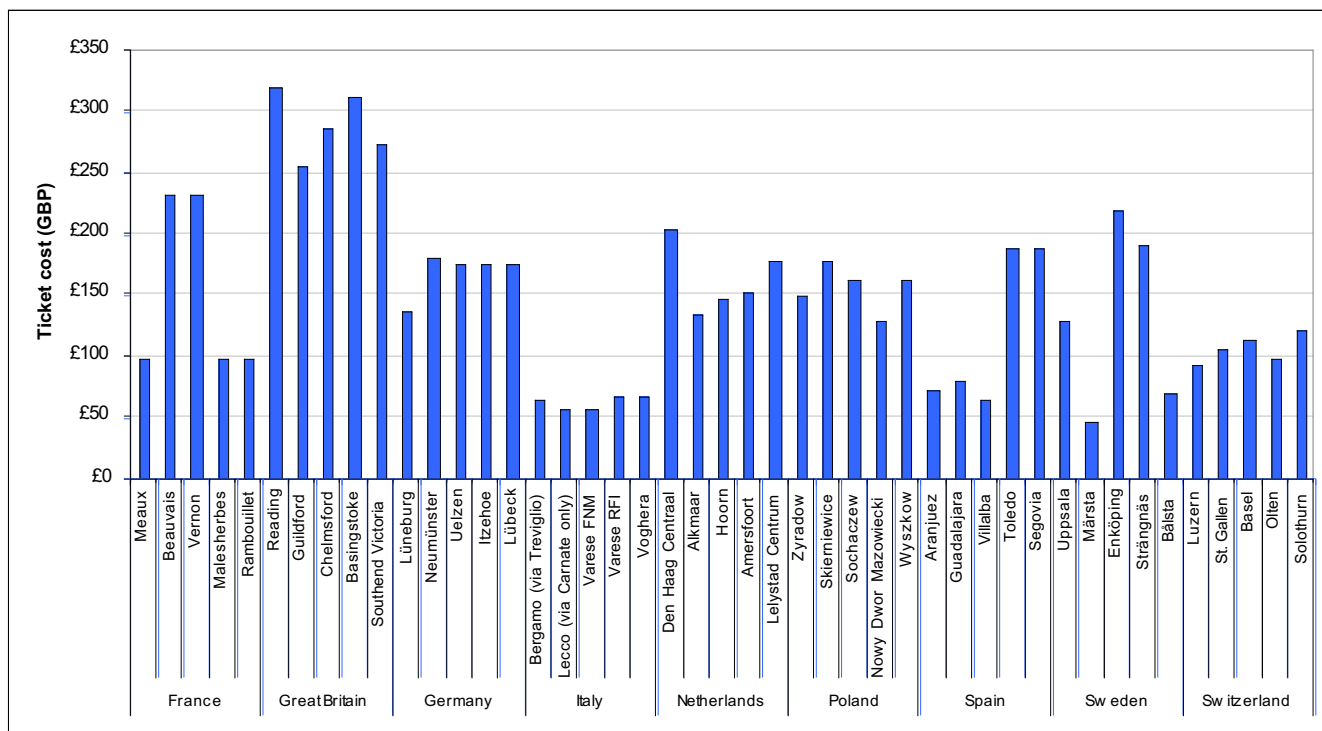
- 3.43 Great Britain is notably the most expensive country for one month season tickets in the medium distance commuter band.

FIGURE 3.35 MEDIUM DISTANCE COMMUTER BAND 1 MONTH SEASON TICKET



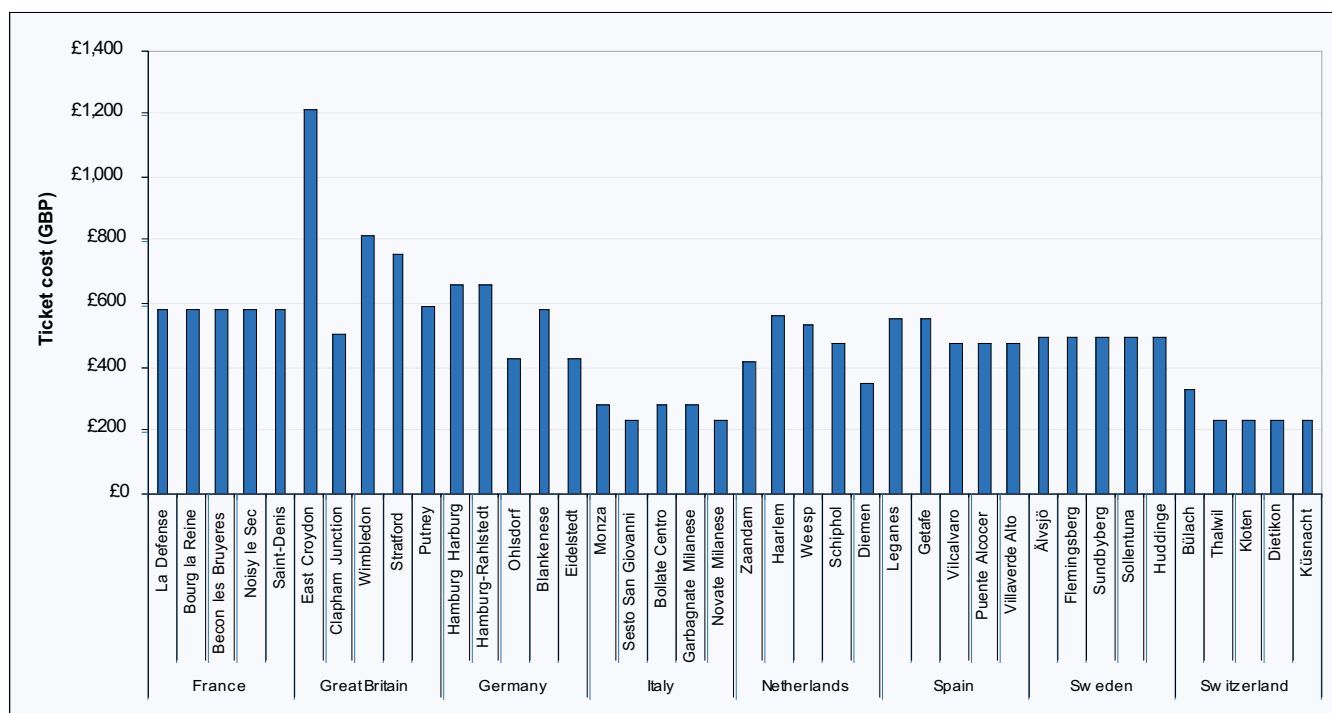
- 3.44 Great Britain has the five most expensive one month season tickets in the longer distance commuter band. Monthly or weekly fares are not available from Beauvais and Vernon in France. We have calculated these fares based on twenty five fully flexible day return fares.

FIGURE 3.36 LONGER DISTANCE COMMUTER BAND 1 MONTH SEASON TICKET



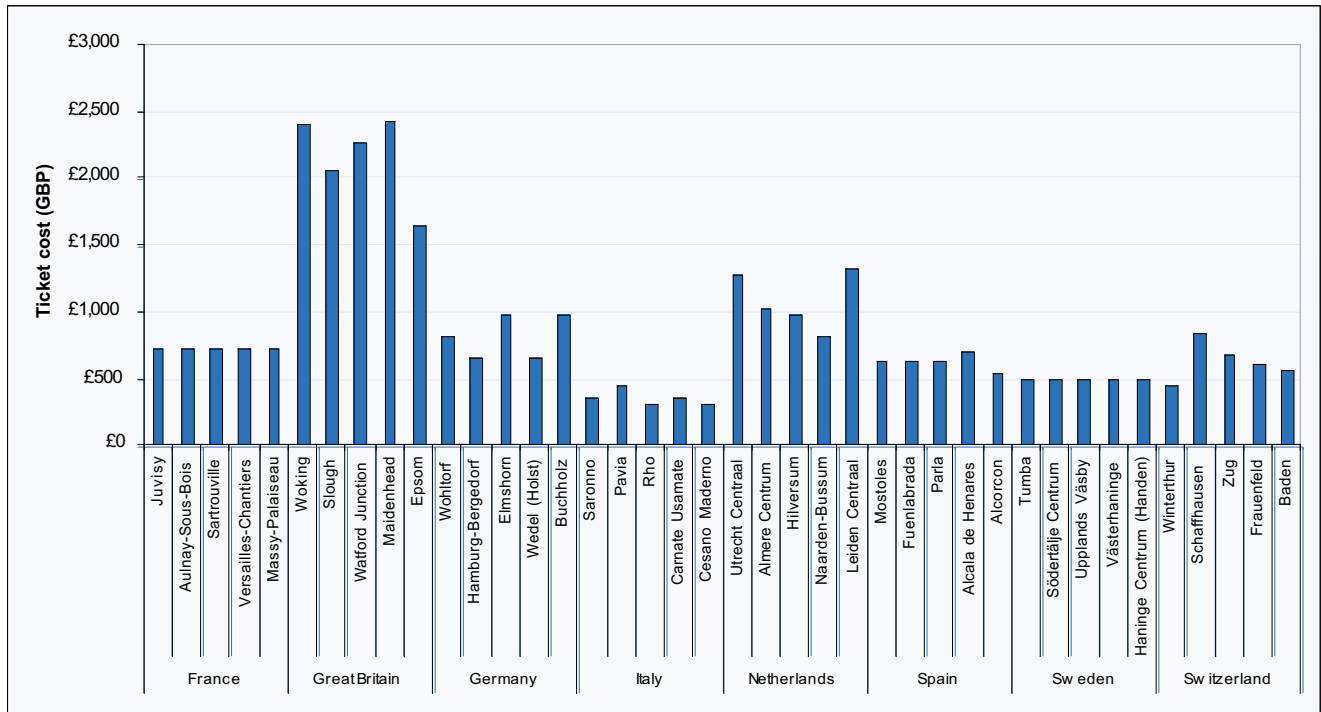
- 3.45 Great Britain has the top three most expensive season tickets in the short distance commuter band.

FIGURE 3.37 SHORT DISTANCE COMMUTER BAND ANNUAL SEASON TICKET



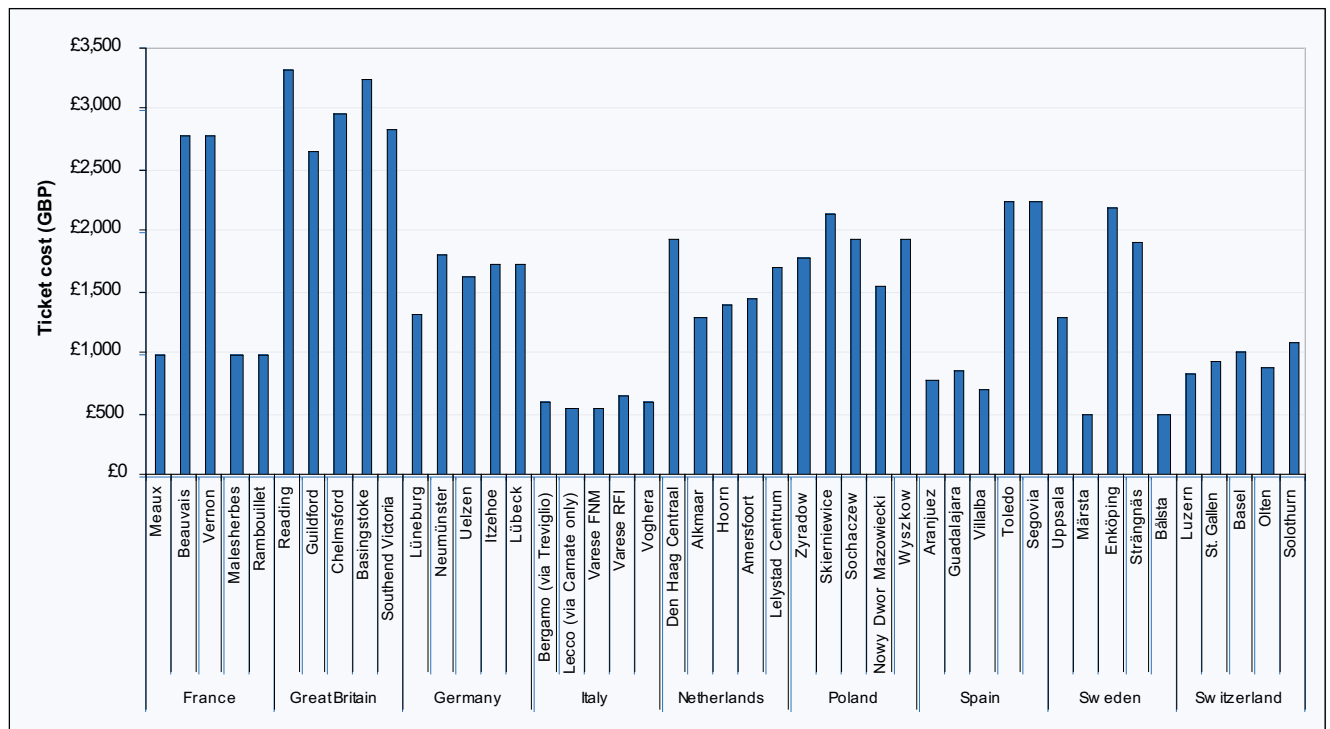
3.46 In the medium distance commuter band and longer distance commuter band Great Britain is consistently the most expensive country for annual season tickets.

FIGURE 3.38 MEDIUM DISTANCE COMMUTER BAND ANNUAL SEASON TICKET



- 3.47 For some locations annual season tickets are not available. In this case we have multiplied the monthly season ticket fare by twelve. This applies to Beauvais and Vernon in France and Toledo and Segovia in Spain. In practice, the effect of public holidays and annual leave mean that commuters would be unlikely to require twelve monthly tickets in a year and the effective price of travel would be slightly lower.

FIGURE 3.39 LONGER DISTANCE COMMUTER BAND ANNUAL SEASON TICKET



4 Long distance journeys

Introduction

- 4.1 In this chapter we compare long distance journeys in the eight countries considered in this study. For the principal and second cities in each country we examined journeys from the five largest cities, by population, more than 160km away, as shown below.

TABLE 4.1 LONG DISTANCE STATIONS (OVER 160KM) BY COUNTRY

Country	Destination City	Stations
Great Britain	London	Birmingham New Street, Manchester Piccadilly, Leeds, Glasgow Central, Newcastle
	Birmingham	London Euston, Glasgow Central, Newcastle, Edinburgh Waverley, Bournemouth
France	Paris	Marseille, Lyon, Toulouse, Nice, Nantes
	Marseille	Paris, Lyon, Toulouse, Nice, Nantes
Germany	Berlin	Hamburg, Munich, Cologne, Frankfurt am Main, Stuttgart
	Hamburg	Berlin, Munich, Cologne, Frankfurt am Main, Stuttgart
Italy	Rome	Milano Centrale, Napoli Centrale/Porta Garibaldi, Torino Porta Nuova, Genova Piazza Principe, Bologna Centrale
	Milan	Roma Termini, Napoli Centrale, Bologna Centrale, Firenze Santa Maria Novella, Bari Centrale
The Netherlands	Amsterdam	Heerlen, Kerkrade, Maastricht, Geleen, Sittard
	Rotterdam	Heerlen, Groningen, Enschede, Leeuwarden (Ljouwert), Almelo
Spain	Madrid	Barcelona, Valencia, Seville, Zaragoza, Malaga
	Barcelona	Madrid, Valencia, Seville, Zaragoza, Malaga
Sweden	Stockholm	Göteborg, Malmö, Linköping, Örebro, Lund
	Göteborg	Stockholm, Malmö, Örebro, Helsingborg, Västerås
Switzerland	Zürich	Genève, Lausanne, Lugano
	Genève	Zürich, Basel

4.2 The graphs which follow show the distance between each station and the principal and second cities. All stations are over 160km from the destination, but there are some considerable distance variations.

FIGURE 4.1 PRINCIPAL CITY DISTANCES TO STATIONS

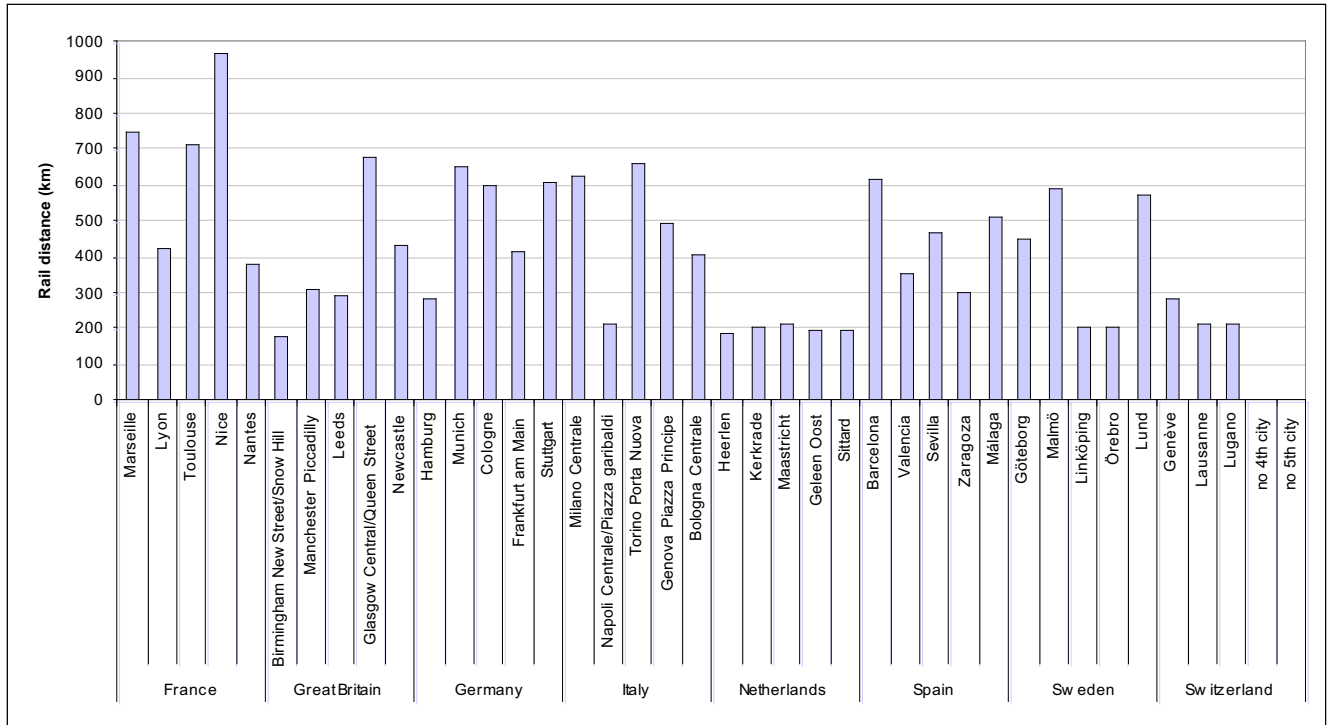


FIGURE 4.2 SECOND CITY DISTANCES TO STATIONS

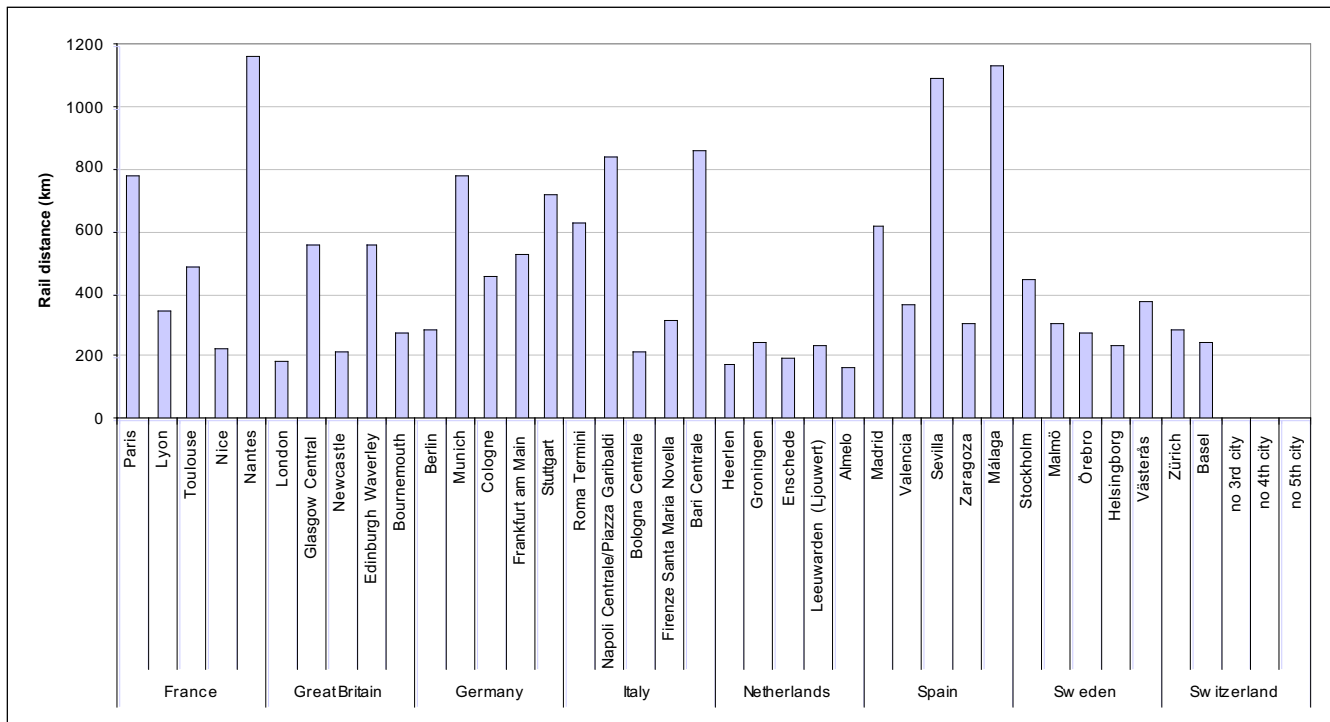


FIGURE 4.3 MAP OF SELECTED CITIES FOR LONG DISTANCE JOURNEYS TO THE PRINCIPAL CITY



FIGURE 4.4 MAP OF SELECTED CITIES FOR LONG DISTANCE JOURNEYS TO THE SECOND CITY



Data collection

- 4.3 For each origin-destination pair we collected the following information:
- Distance between stations in km
 - Average speed of trains during AM peak, inter-peak, PM peak (see Table 1.4)
 - Average number of trains during AM peak, inter-peak, PM peak
 - Time of first train arriving in principal and second city, time of last train departing principal and second city
 - Price of walk-up fully flexible ticket valid Monday to Friday to principal and second city and return within one month without restriction
 - Price of walk-up ticket valid Monday to Friday to arrive in the principal and second city between 1001 and 1200 and return the same day without restriction.
 - Price of walk-up ticket valid Monday to Friday to arrive in the principal and second city between 1001 and 1200 and return the same day but with restrictions.
 - Cheapest theoretically-available ticket to make a single journey to the principal and second city arriving on a weekday between 1100 and 1200.
 - Cheapest theoretically-available ticket to make a return journey from the principal and second city departing on a Friday between 1600 and 1700 and returning between 1500 and 1600 on a Sunday
 - Cheapest theoretically-available ticket for two adults and two children to make a return journey from the principal and second city departing on a Friday between 1600 and 1700 and returning between 1500 and 1600 on a Sunday
 - The same last three journeys for 'on the day', 1 week in advance and 28 days in advance

Notes for long distance data

- 4.4 Some services are not available across all time periods. For example in the inter-peak period in Spain some long distance services have no departures in the time period considered (1200 to 1300). This means that in some graphs data for individual origins is missing.

France

- 4.5 Open returns are not available. To provide a comparable price for an open return prices were calculated on the basis of booking a return ticket with compulsory reservations for particular trains and adding the fee to change the date and time of the return journey.

The Netherlands

- 4.6 Family tickets and open returns for long distance journeys were calculated by multiplying single ticket prices, as return fares are not available.

Sweden

- 4.7 Open returns are not available. To provide a comparable price for an open return prices were calculated on the basis of booking a return ticket with compulsory reservations for particular trains and adding the fee to change the date and time of the return journey.

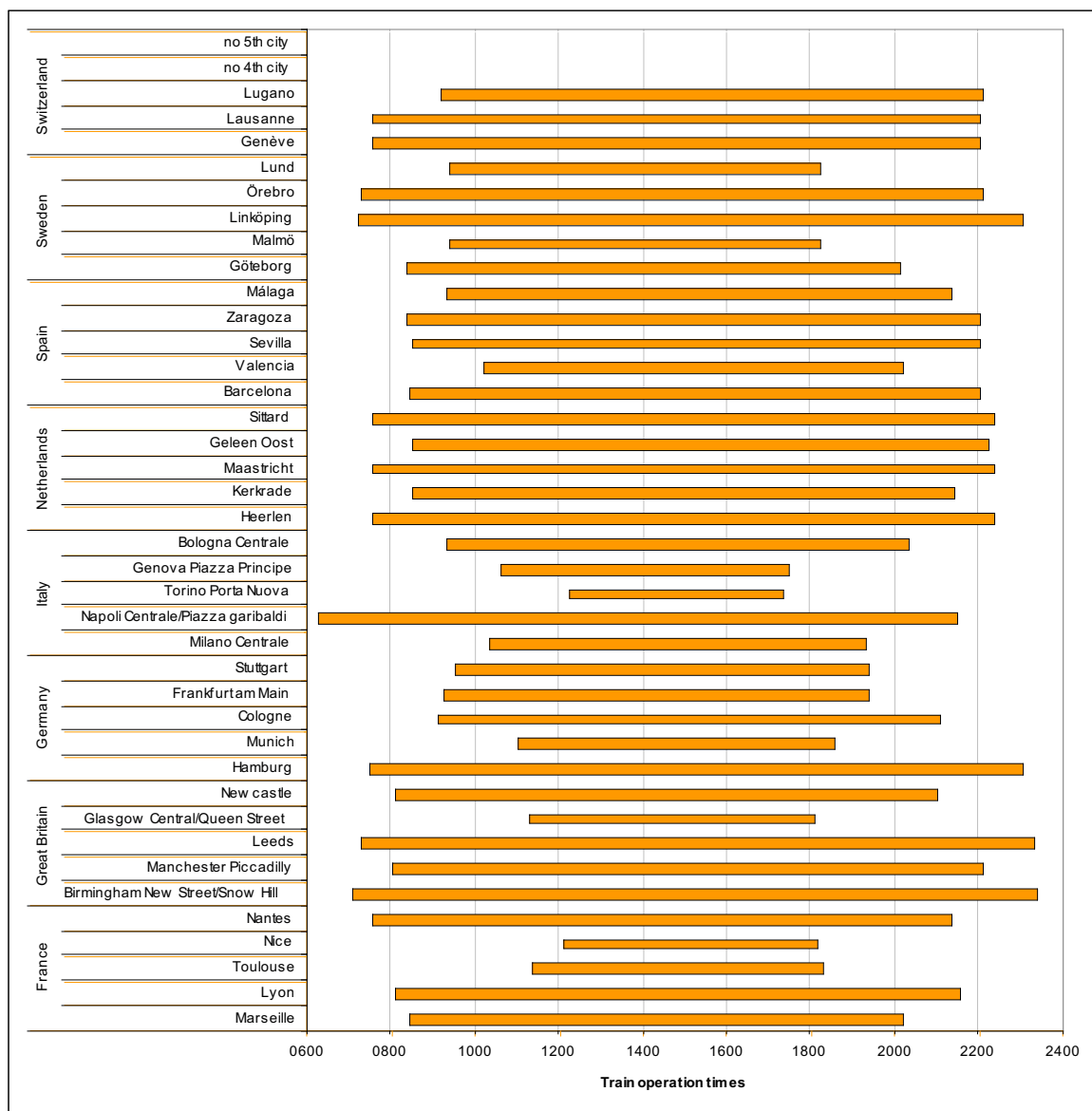
Data analysis

- 4.8 This section of the report presents analysis of long distance journey data collated for each of our study countries.

First train and last train

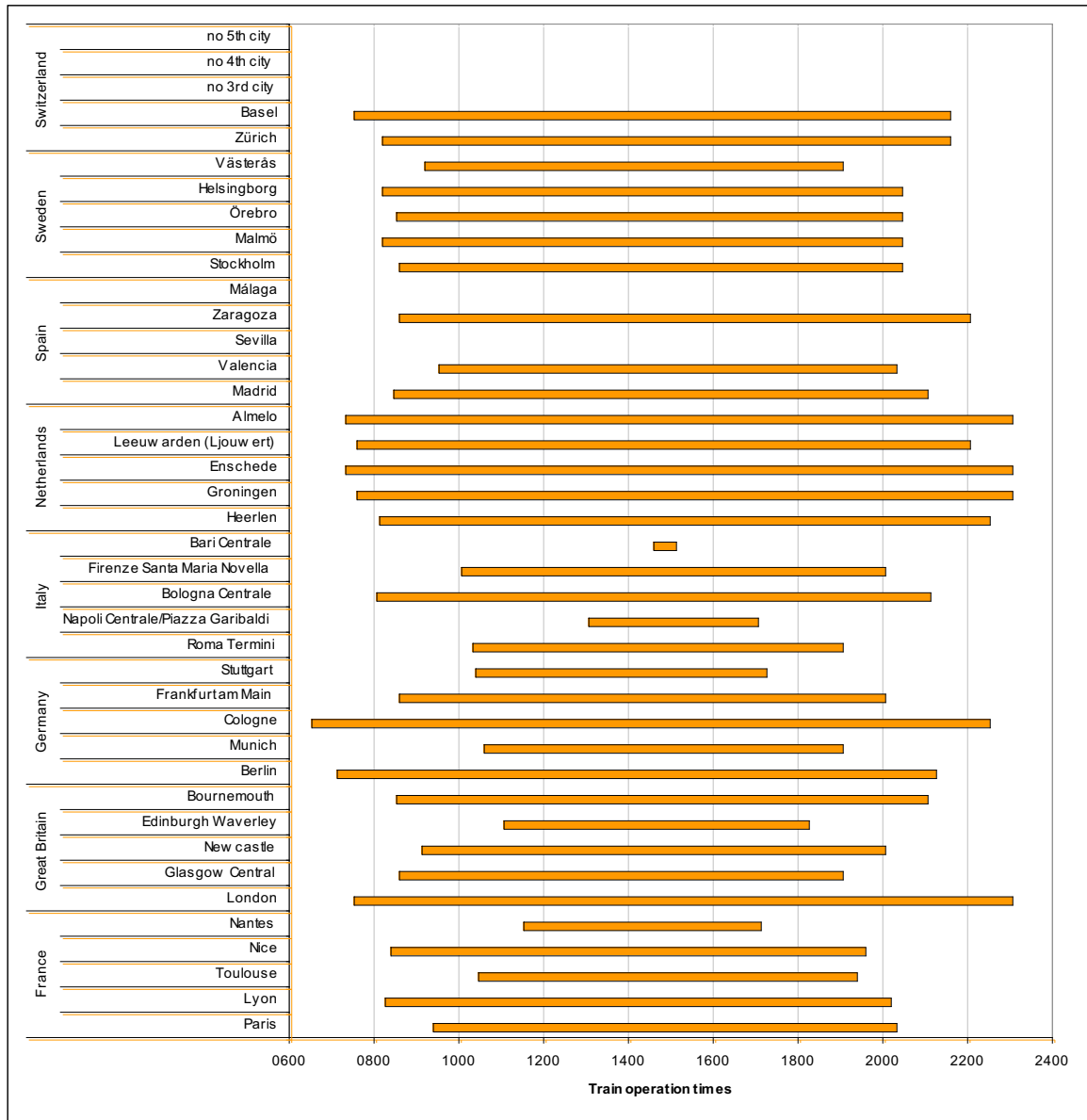
- 4.9 The three graphs below show the first and last trains for each distance band from the principal city in each country. There is considerable variation in the first arrival and last departure by origin and destination. There is a direct relationship between the distance between the locations and the service offered. For each country the longer distance services offer the latest first arrival in the morning and earliest last departure in the evening or afternoon.

FIGURE 4.5 PRINCIPAL CITY FIRST TRAIN AND LAST TRAIN



- 4.10 Train services to the second city generally offer a shorter period of travel during the day. The Netherlands and Sweden offer some of the earliest and latest trains, these are also over some of the shortest distances. Malaga and Seville in Spain are excluded from the graph below as each location is served by only three trains per day (one of which is a sleeper service).

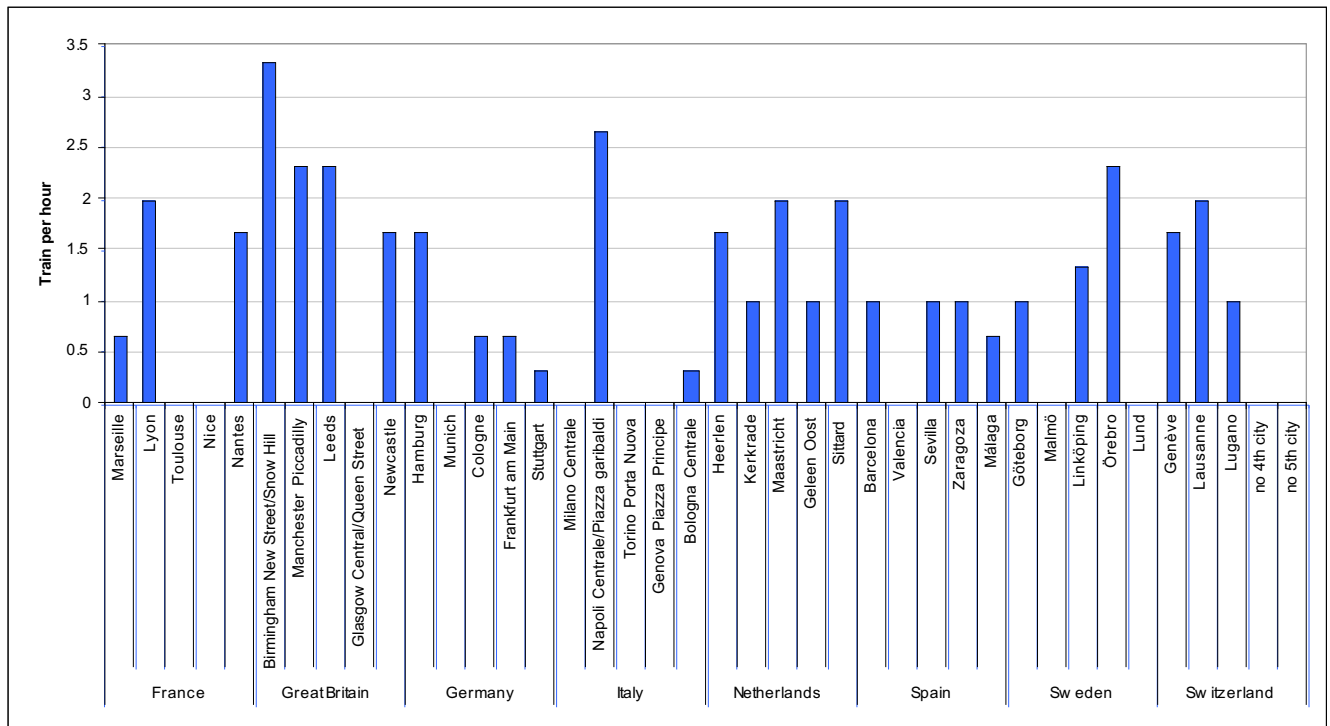
FIGURE 4.6 SECOND CITY FIRST TRAIN AND LAST TRAIN



Trains per hour and speed (AM peak)

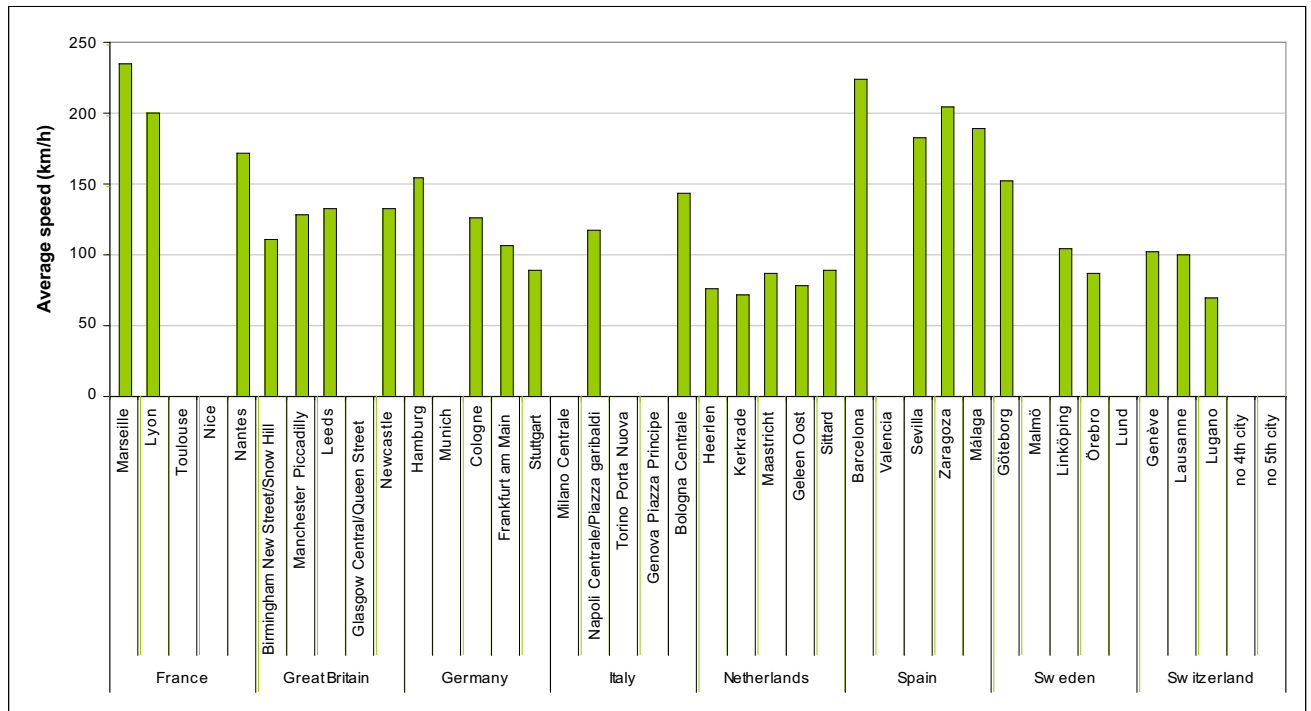
- 4.11 There are several services which do not have any arrivals in the principal city in the AM peak. This is because the long distances involved mean that no trains have arrived before the end of the AM peak (to do so they would have to have been starting in the middle of the night). We have excluded sleeper services in this analysis, as fares and running times tend to differ from regular services. Countries with the highest frequency services tend to be those with the shortest distances. The Netherlands has high frequency services, and most distances are short at around 200km. Service frequency in Great Britain is generally better than average and London-Birmingham/London-Manchester were enhanced further from 14 December 2008 on introduction of the new West Coast Main Line timetable.

FIGURE 4.7 PRINCIPAL CITY TRAINS PER HOUR AM PEAK



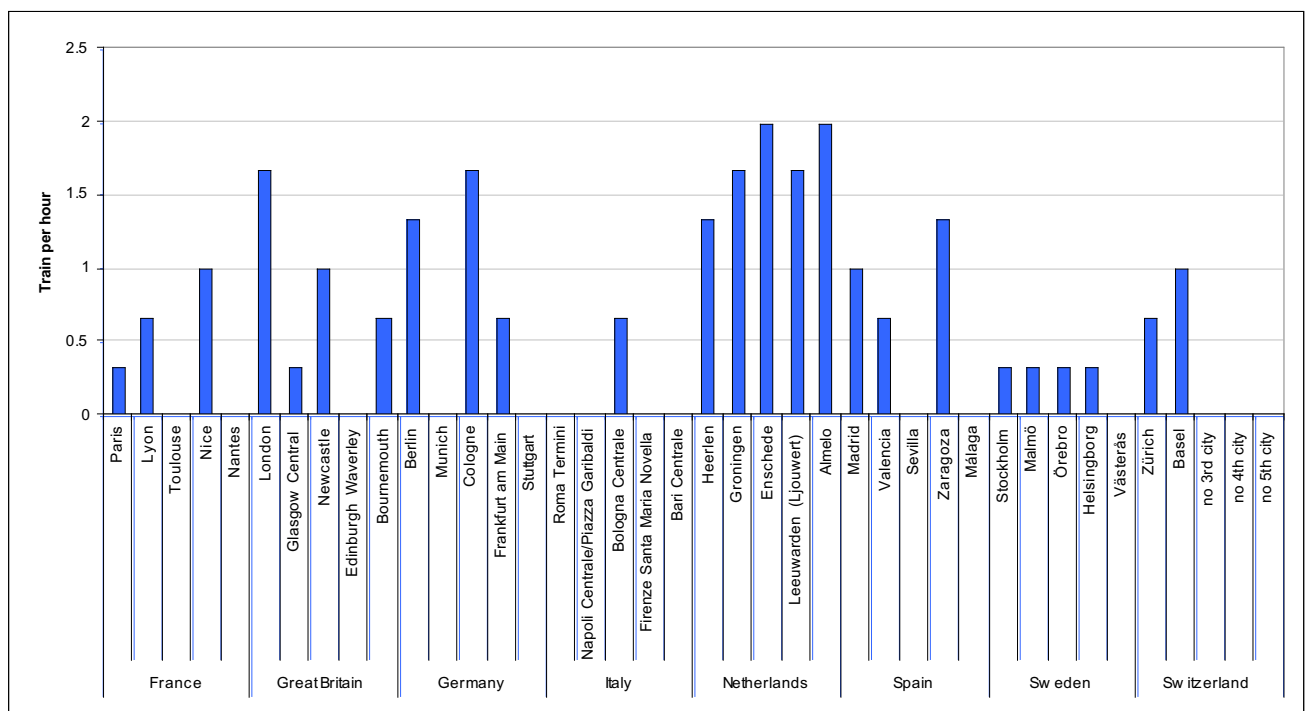
- 4.12 France and Spain have the fastest average speed for long distance trains. Services in Great Britain are slightly faster than in the Netherlands and Switzerland, and London-Birmingham/London-Manchester were enhanced further from 14 December 2008 on introduction of the new West Coast Main Line timetable.

FIGURE 4.8 PRINCIPAL CITY AVERAGE SPEED OF TRAINS (KM/H) AM PEAK



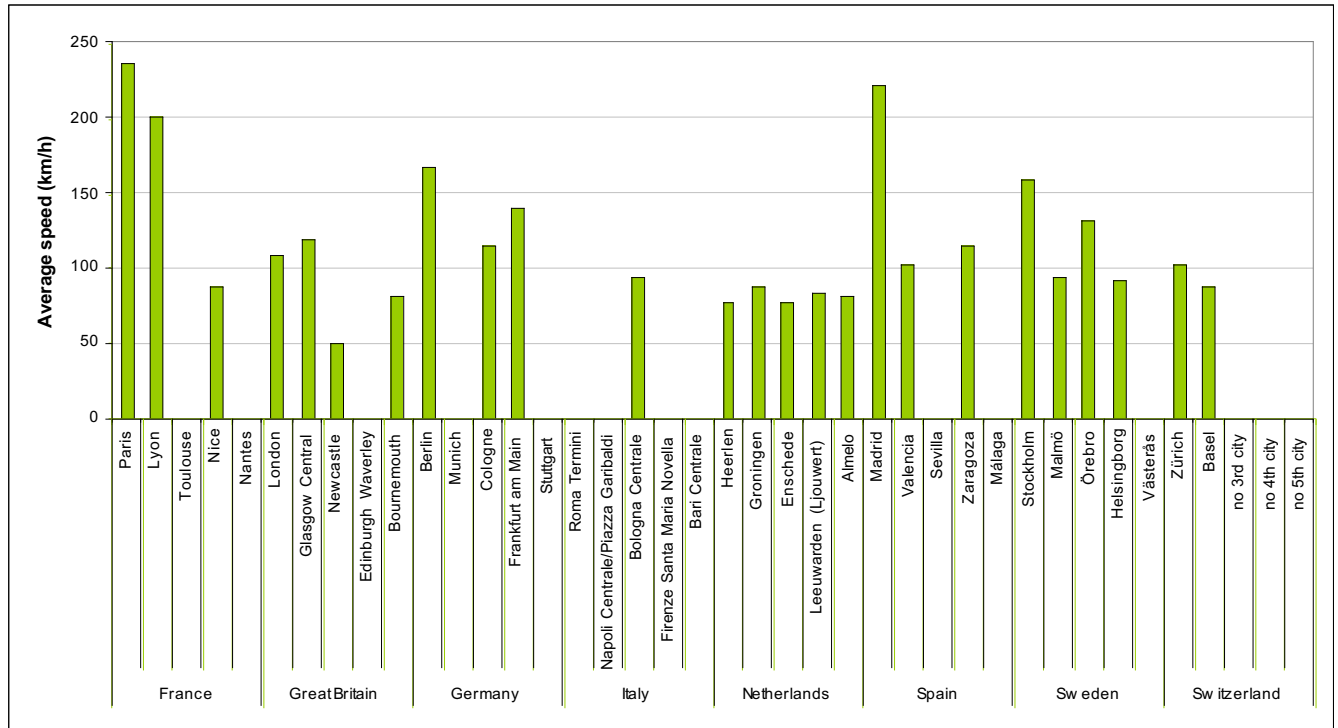
- 4.13 Long distance services to the second city are more limited in the AM peak. In the Netherlands, service frequencies are high, but distances are short.

FIGURE 4.9 SECOND CITY TRAINS PER HOUR AM PEAK



- 4.14 Taking the second city in the AM peak, France, Spain, Germany and Sweden have some of the faster trains. Speeds of trains in Great Britain are generally slower and more comparable with speeds in the Netherlands.

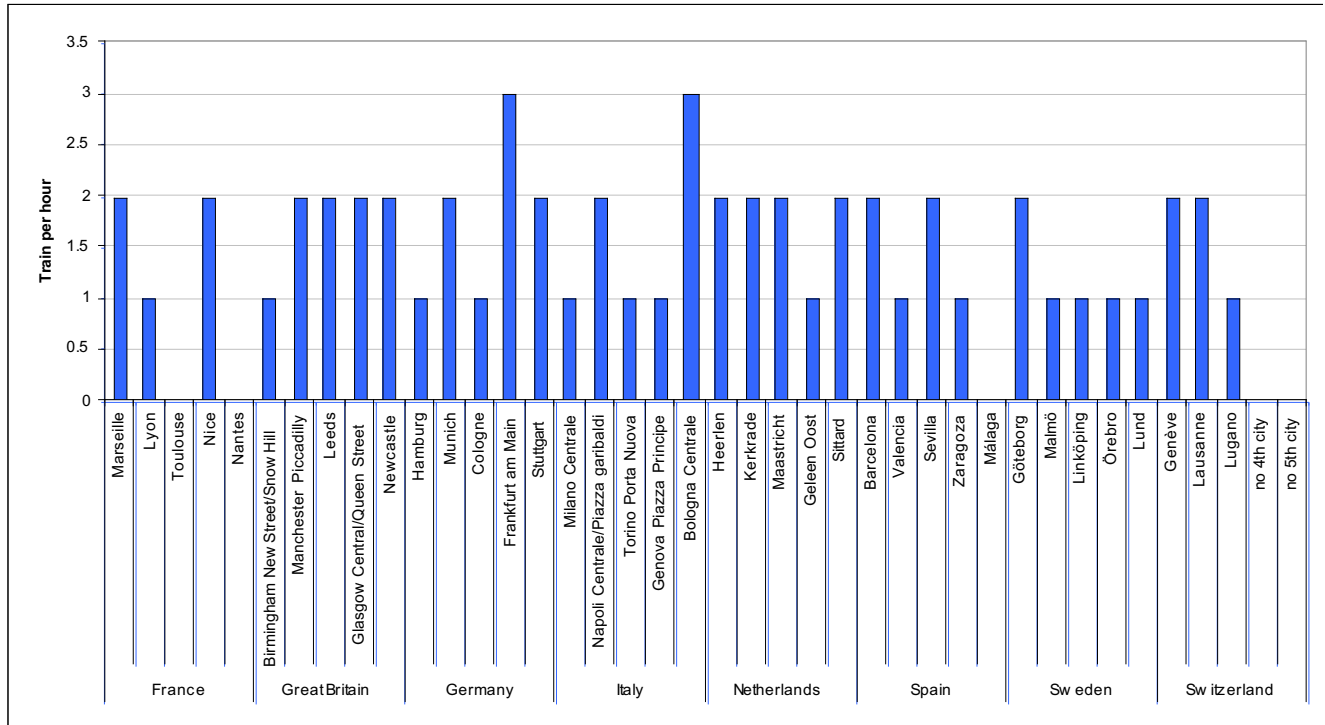
FIGURE 4.10 SECOND CITY AVERAGE SPEED OF TRAINS (KM/H) AM PEAK



Trains per hour and speed (inter-peak)

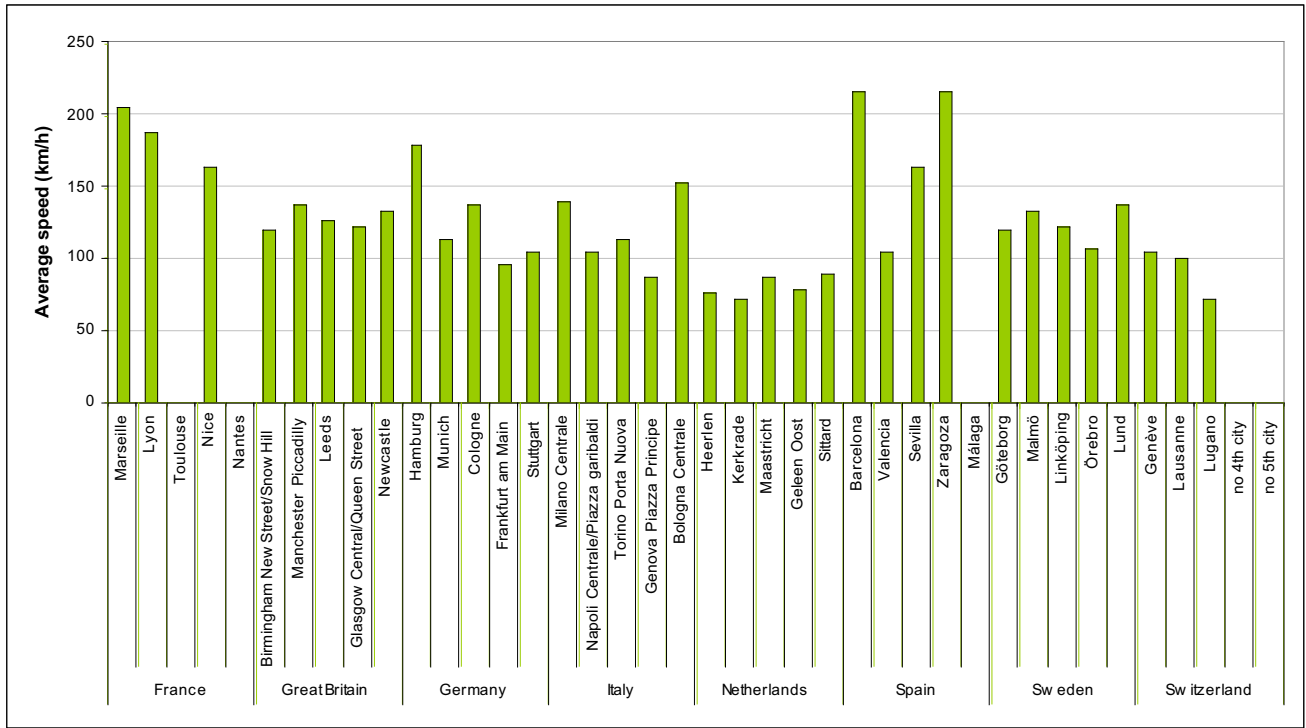
- 4.15 In the inter-peak long distance trains tend to offer a more regular service, except in France where some routes offer few inter-peak services in this time period considered (1200 to 1300). There are generally one or two trains per hour on all the routes sampled.

FIGURE 4.11 PRINCIPAL CITY TRAINS PER HOUR INTER-PEAK



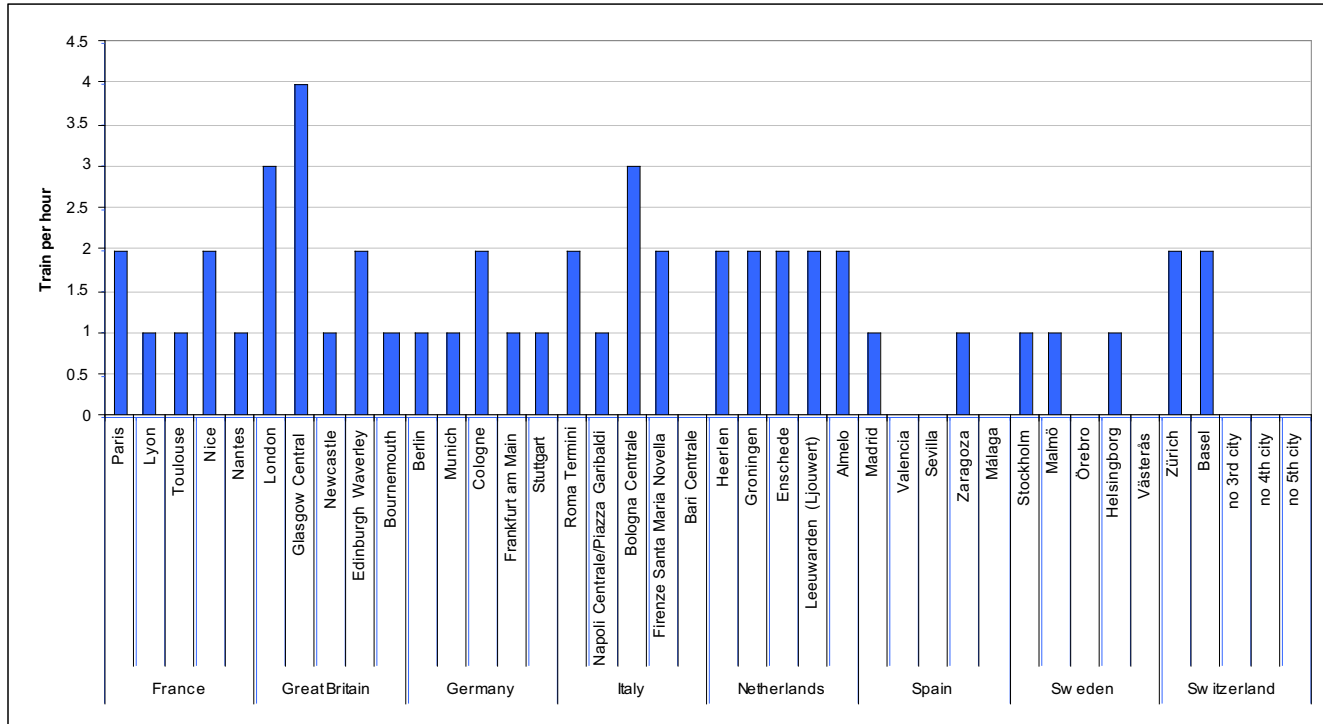
- 4.16 Average speeds in the inter-peak again show faster than average trains in France and Spain, although London-Birmingham/London-Manchester were enhanced further from 14 December 2008 on introduction of the new West Coast Main Line timetable.

FIGURE 4.12 PRINCIPAL CITY AVERAGE SPEED OF TRAINS (KM/H) INTER-PEAK



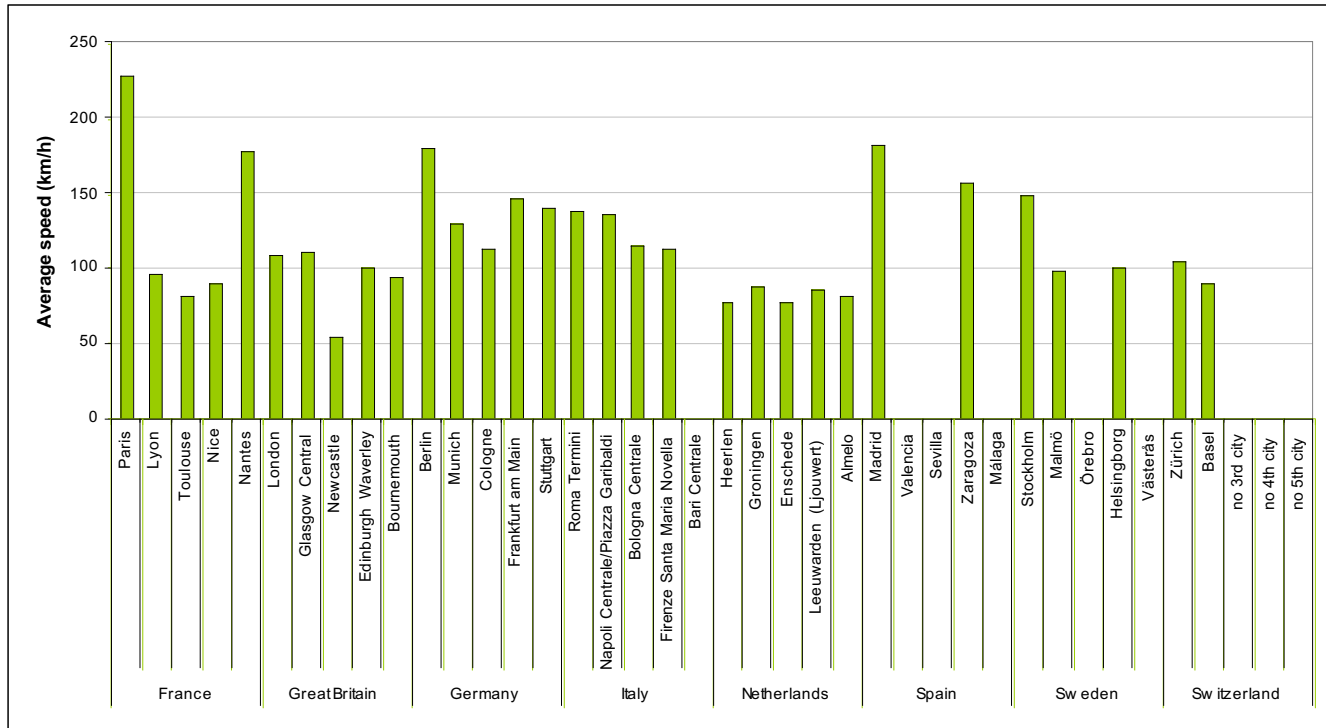
- 4.17 Trains per hour in the inter-peak to the second city also average between one and two trains per hour in most countries, with the exception of Great Britain, which has some more regular services - up to four trains per hour between Birmingham and Glasgow.

FIGURE 4.13 SECOND CITY TRAINS PER HOUR INTER-PEAK



- 4.18 For journeys to the second city in the inter-peak Great Britain and the Netherlands have some of the slowest services. The train from Birmingham to Newcastle is the slowest train service of those in this sample.

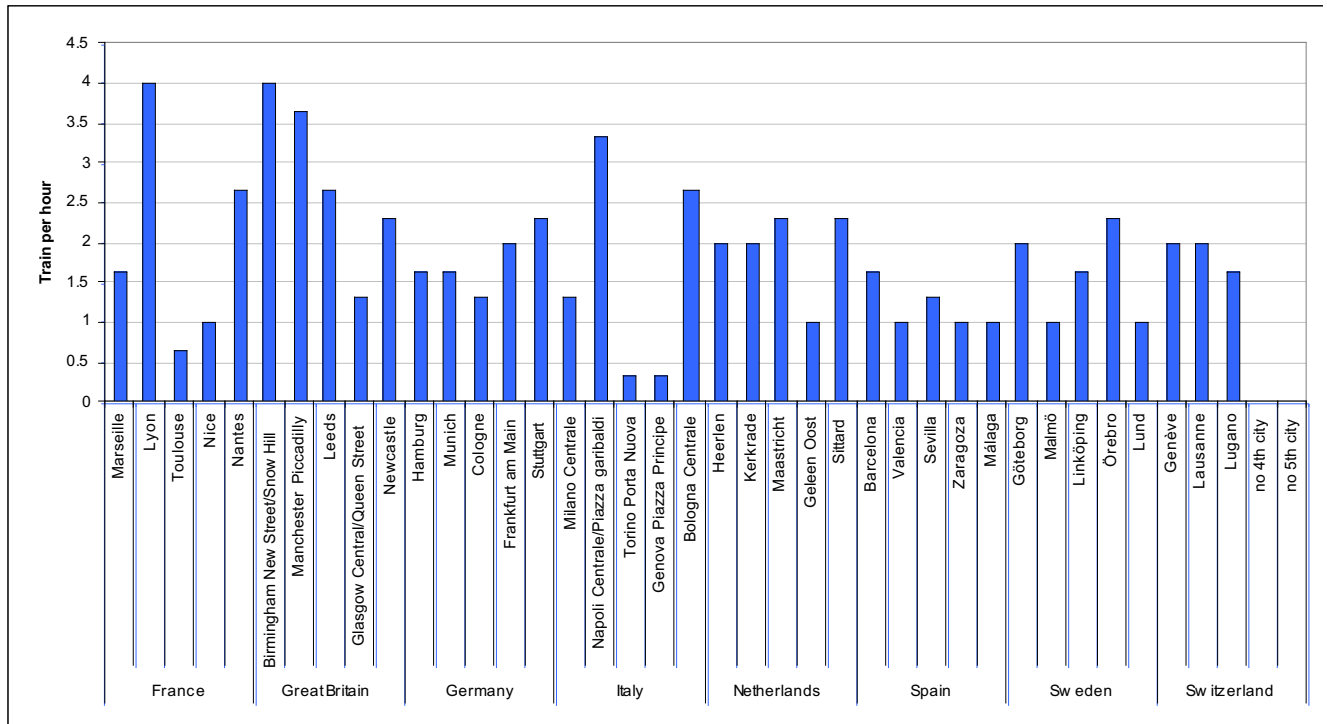
FIGURE 4.14 SECOND CITY AVERAGE SPEED OF TRAINS (KM/H) INTER-PEAK



Trains per hour and speed (PM peak)

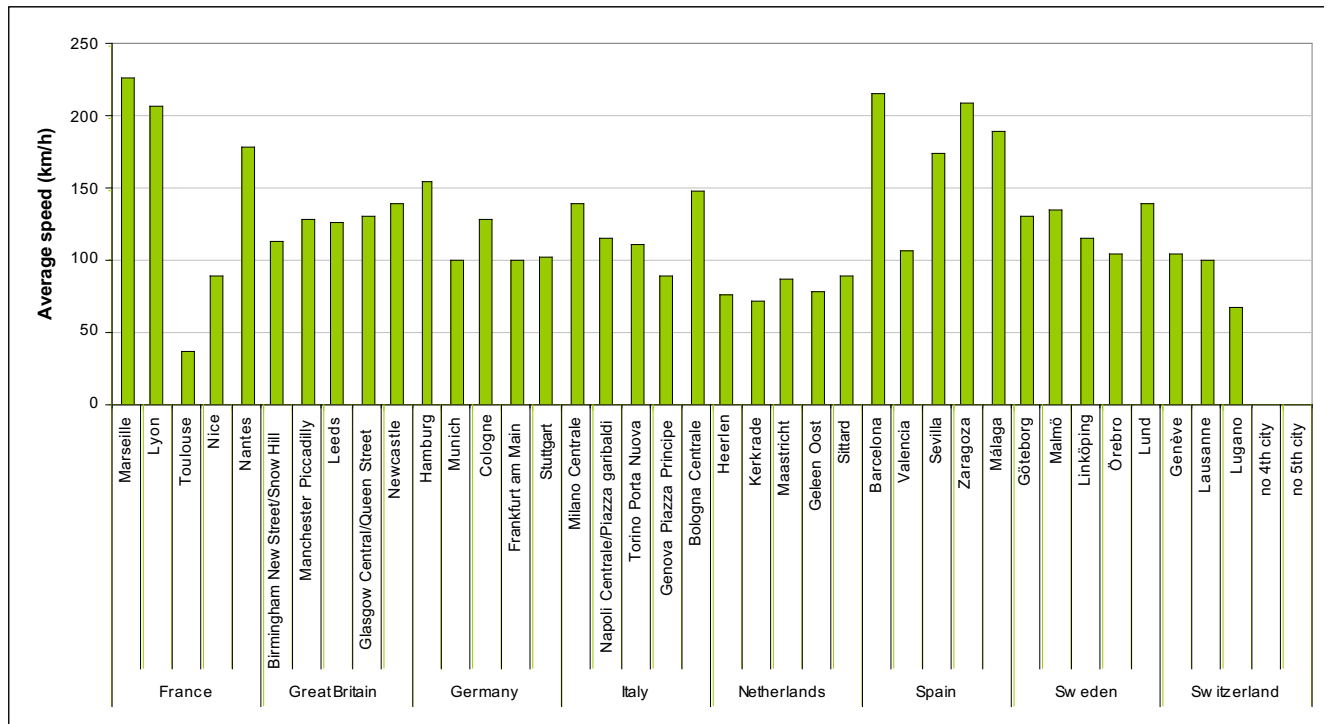
- 4.19 There is a greater provision of services in the PM peak from the principal city than arrive in the AM peak. Great Britain has amongst the most frequent services - particularly from London to Birmingham and Manchester, which were enhanced further from 14 December 2008 on introduction of the new West Coast Main Line timetable. Some services such as those to Toulouse in France and Turin in Italy have very few trains per hour, although these are all relatively long journeys, each over 500km.

FIGURE 4.15 PRINCIPAL CITY TRAINS PER HOUR PM PEAK



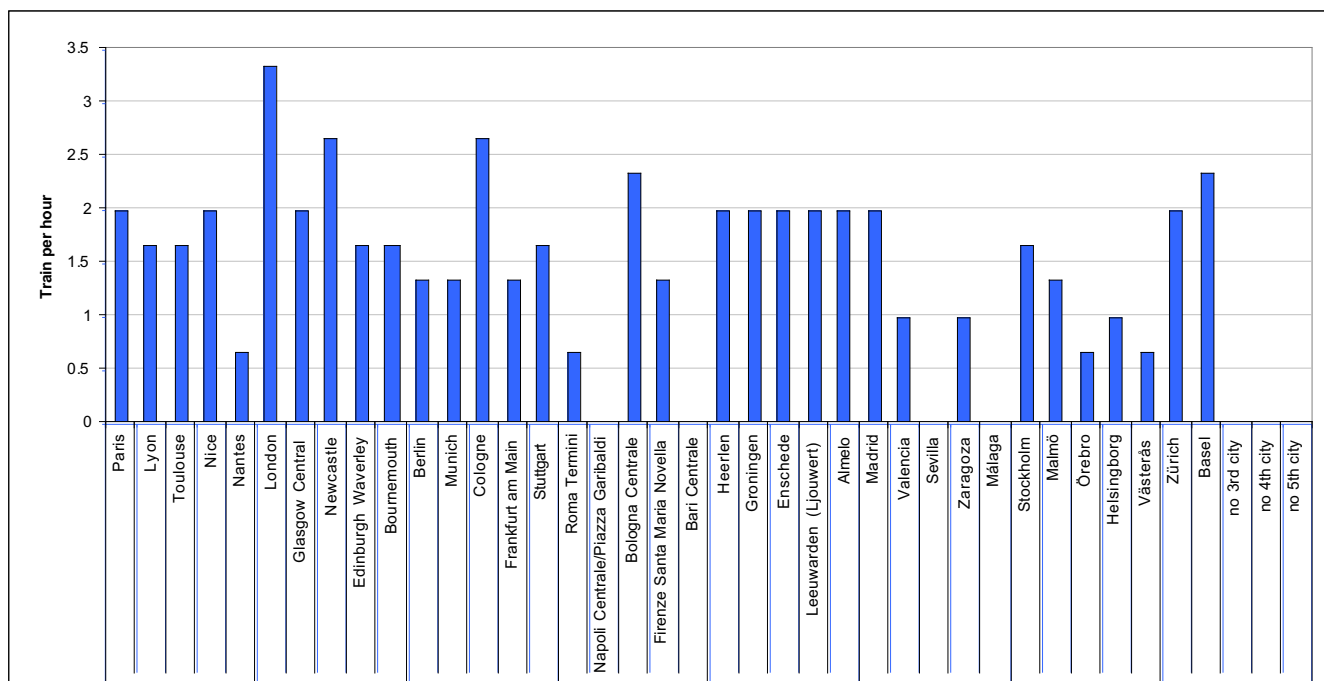
4.20 In the PM peak, between most origin and destination pairs trains run at similar speeds to the AM peak.

FIGURE 4.16 PRINCIPAL CITY AVERAGE SPEED OF TRAINS (KM/H) PM PEAK



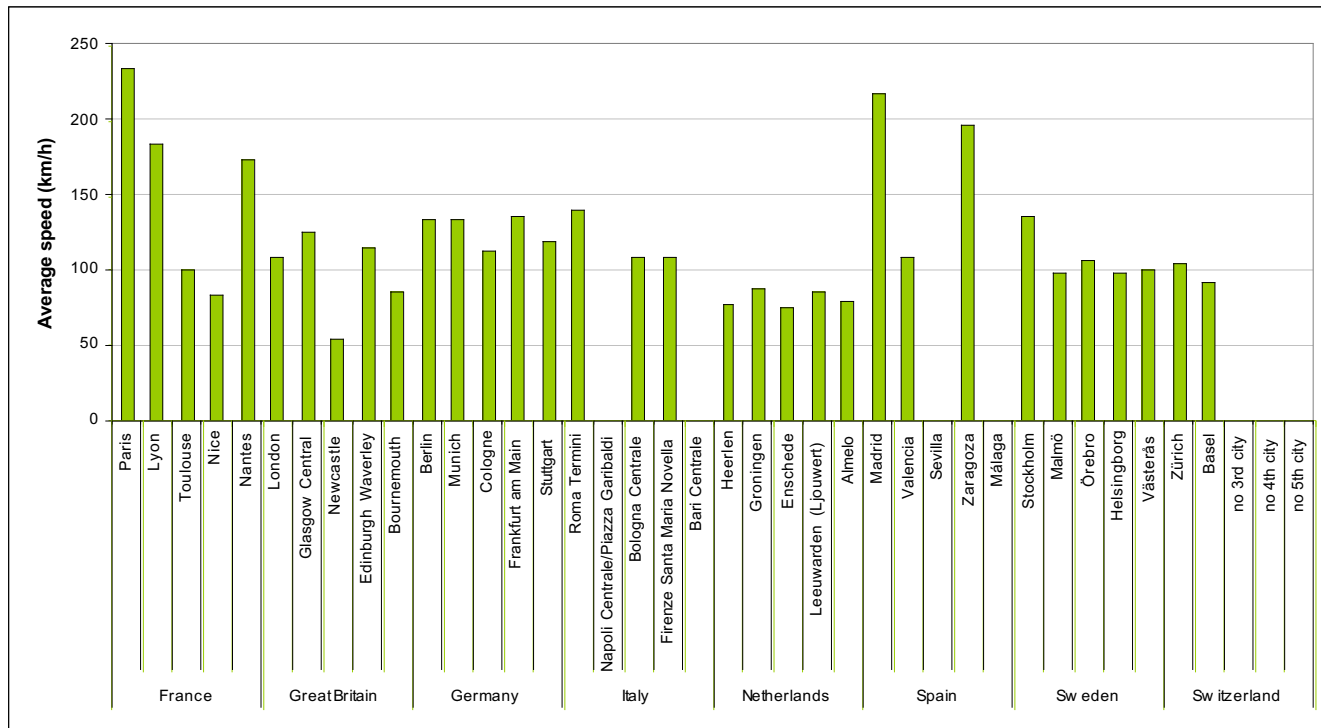
4.21 From the second city in the PM peak, the average number of trains per hour ranges between one and two, except to remote destinations where the last trains depart before or during the PM peak. In Great Britain the frequency is higher than average from Birmingham to London and Birmingham to Newcastle.

FIGURE 4.17 SECOND CITY TRAINS PER HOUR PM PEAK



- 4.22 Generally trains in the PM peak run at the same speed as in the AM peak, although some Italian and Dutch services are slightly faster.

FIGURE 4.18 SECOND CITY AVERAGE SPEED OF TRAINS (KM/H) PM PEAK



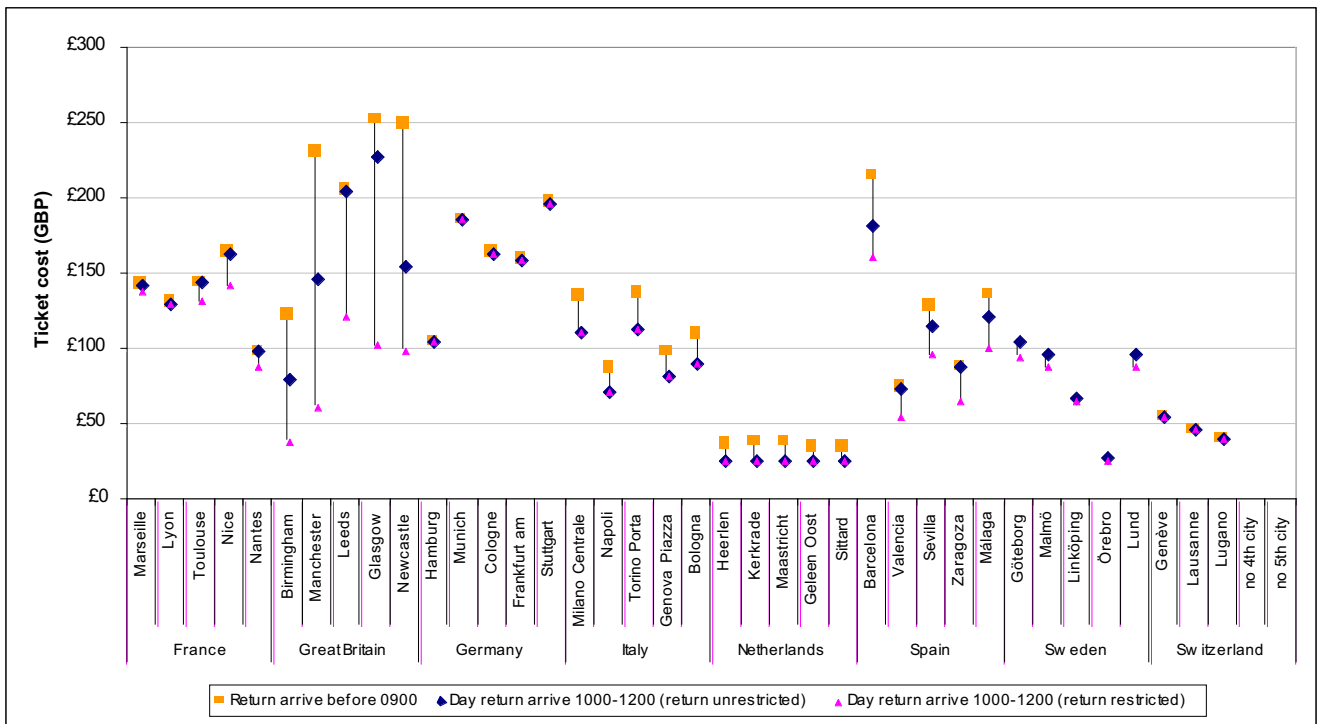
Fares

- 4.23 All fares have been converted to GB pounds and normalised to reflect differing levels of disposable income in each country (see page 2 for more details). However, unlike the charts given in the Executive Summary, the fares below for individual flows have not been adjusted to represent an average distance.

Walk up fares

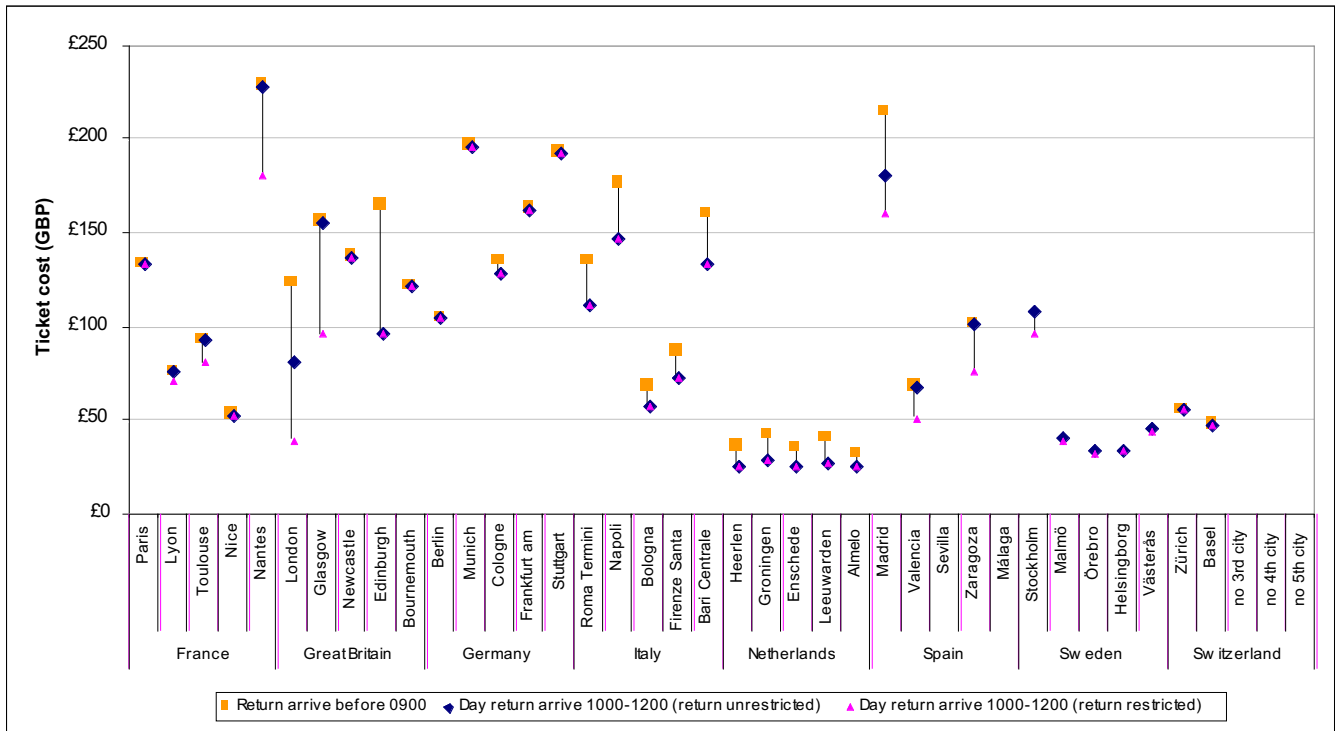
- 4.24 The graphs in this section show the range of fares available depending on the restrictions on tickets and the time that the ticket was purchased.
- 4.25 Comparing the price of return tickets to longer distance locations in the graph below it is clear that fares for a particular origin and destination pair in Great Britain have the greatest variation of all the countries we have considered. The most expensive fare is 3.5 times the cheapest theoretically-available fare, in the case of a trip from London to Manchester.
- 4.26 In Great Britain day return tickets arriving at the destination between 1000 and 1200 are considerably cheaper than open tickets. Other countries, such as Italy and Spain also offer cheaper tickets for day returns travelling after the morning peak, but the variation is much less than in Great Britain.

FIGURE 4.19 PRINCIPAL CITY WALK UP RETURN FARES



- 4.27 As with travel to London, fares for travel to Birmingham also have some of the greatest variation of all countries considered, depending on time of day. With the exception of travel from Birmingham to Newcastle, fares in Great Britain have the greatest variation by ticket type.

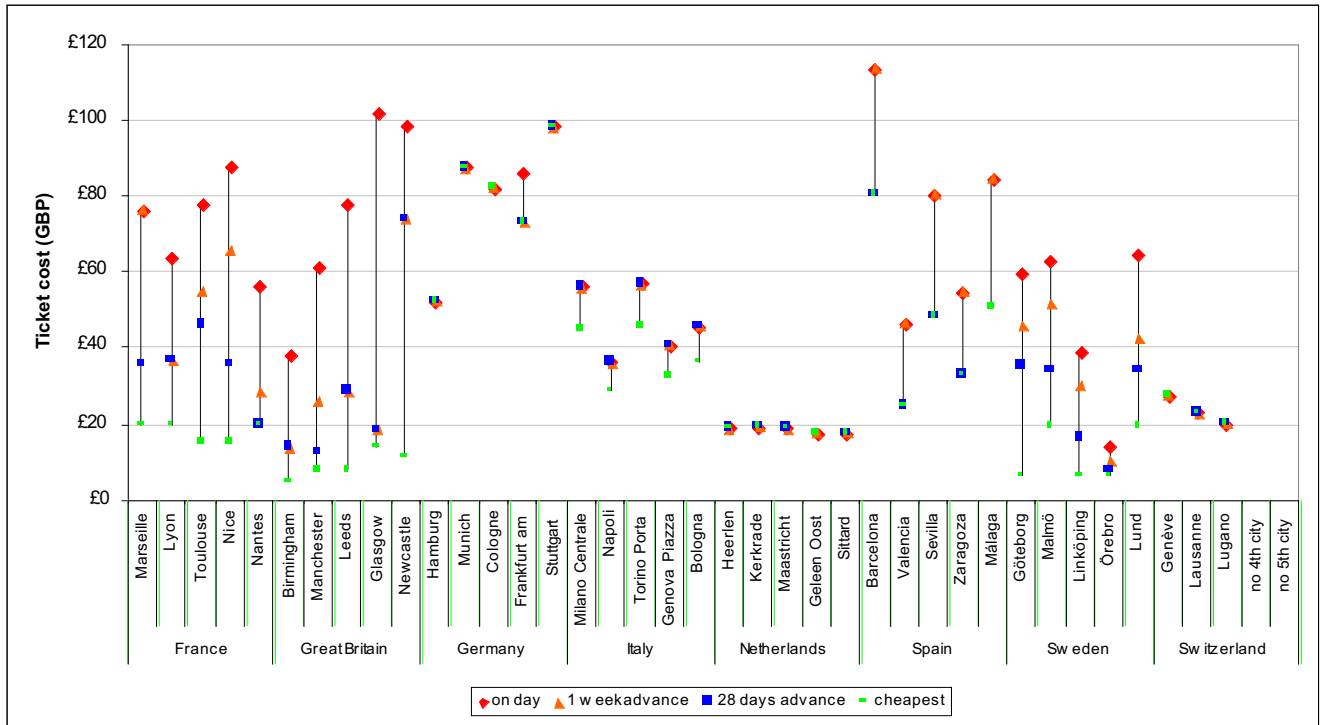
FIGURE 4.20 SECOND CITY WALK-UP RETURN FARES



Advance purchase fares

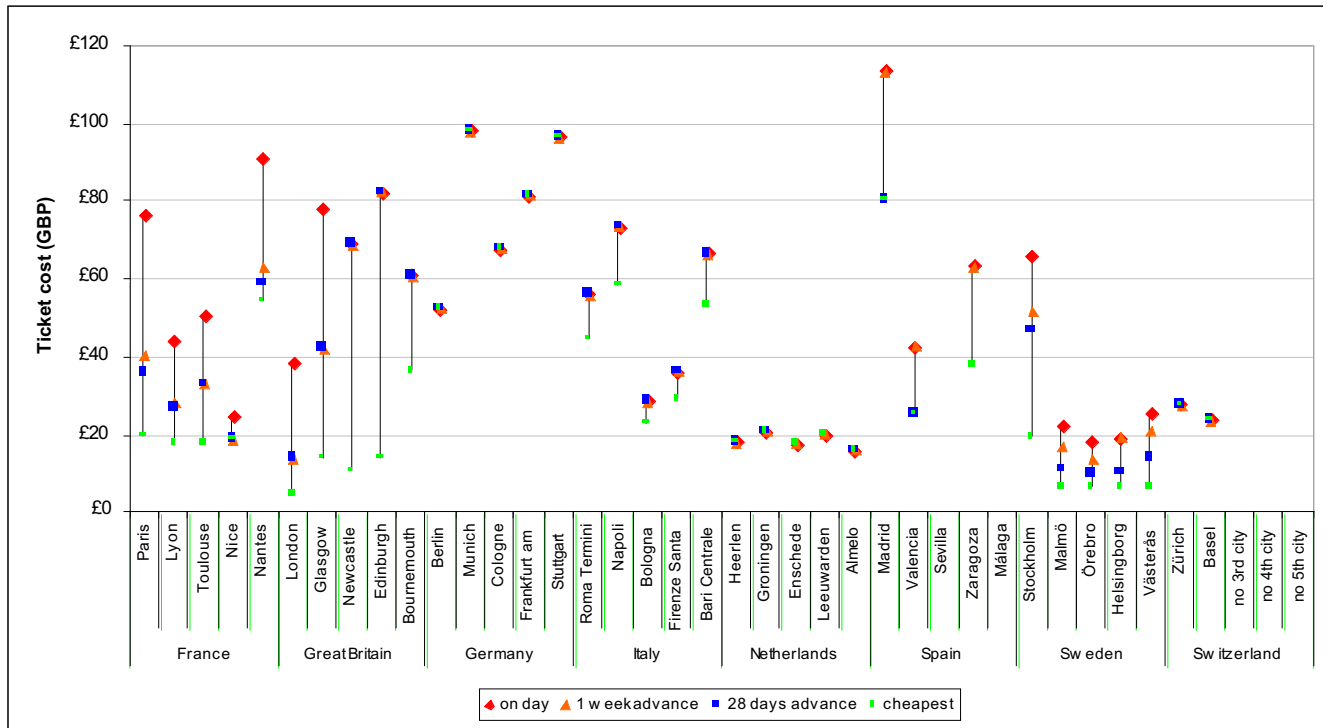
- 4.28 Advance purchase fares can be as low as one-tenth of the walk-up fare available on the day of travel in France, Great Britain and Sweden. However there is no reduction for advanced purchase in the Netherlands or Switzerland.

FIGURE 4.21 PRINCIPAL CITY SINGLE FARES



4.29 Analysis of single fares to the second city also shows a diverse range of fares in France, Great Britain and to a lesser extent Spain and Sweden. We have, however, no information about the availability of the cheapest tickets and the proportion of passengers who travel on each fare.

FIGURE 4.22 SECOND CITY SINGLE FARES



4.30 Return fares also have similar variations by country. The greatest variation between the cheapest and most expensive fare is from London to Leeds where the walk-up fare is almost five times the cheapest theoretically-available fare. Outside Great Britain the greatest fare variation is from Paris to Toulouse where the walk up fare is 3.5 times the cheapest fare.

FIGURE 4.23 PRINCIPAL CITY RETURN FARES

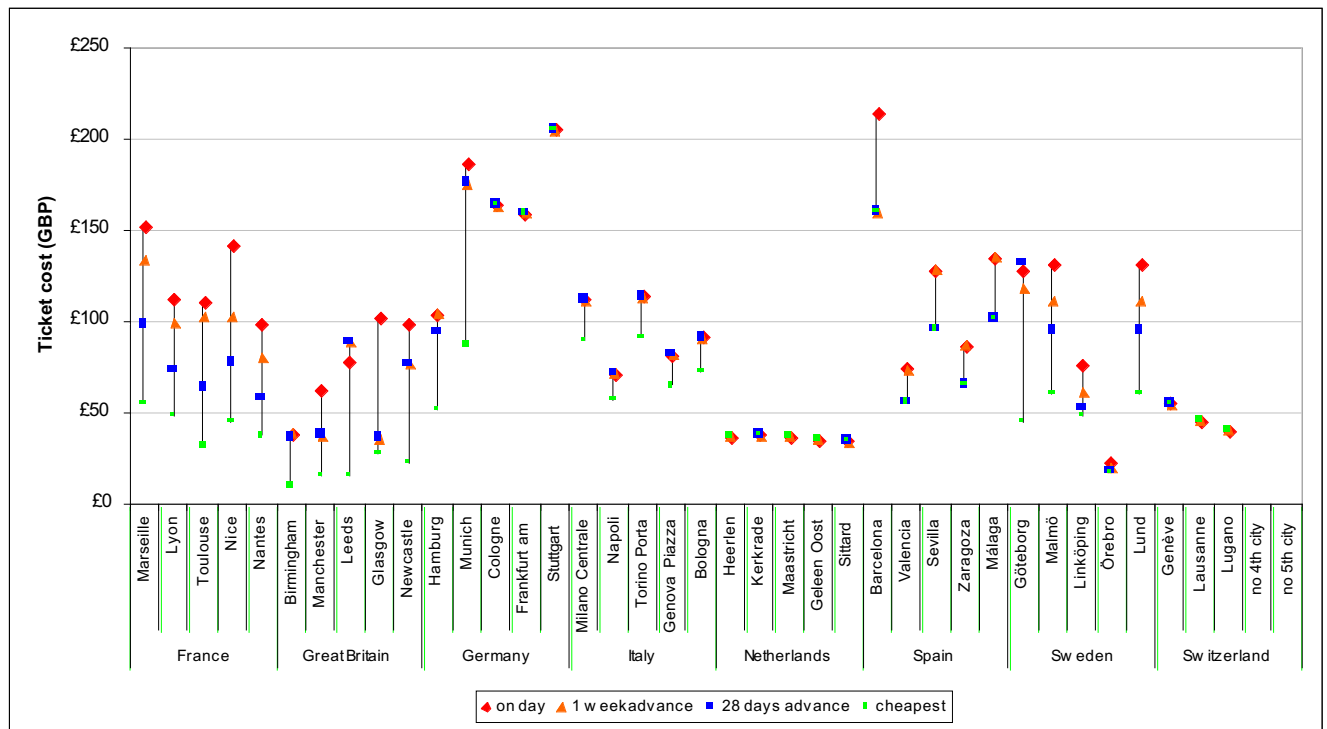
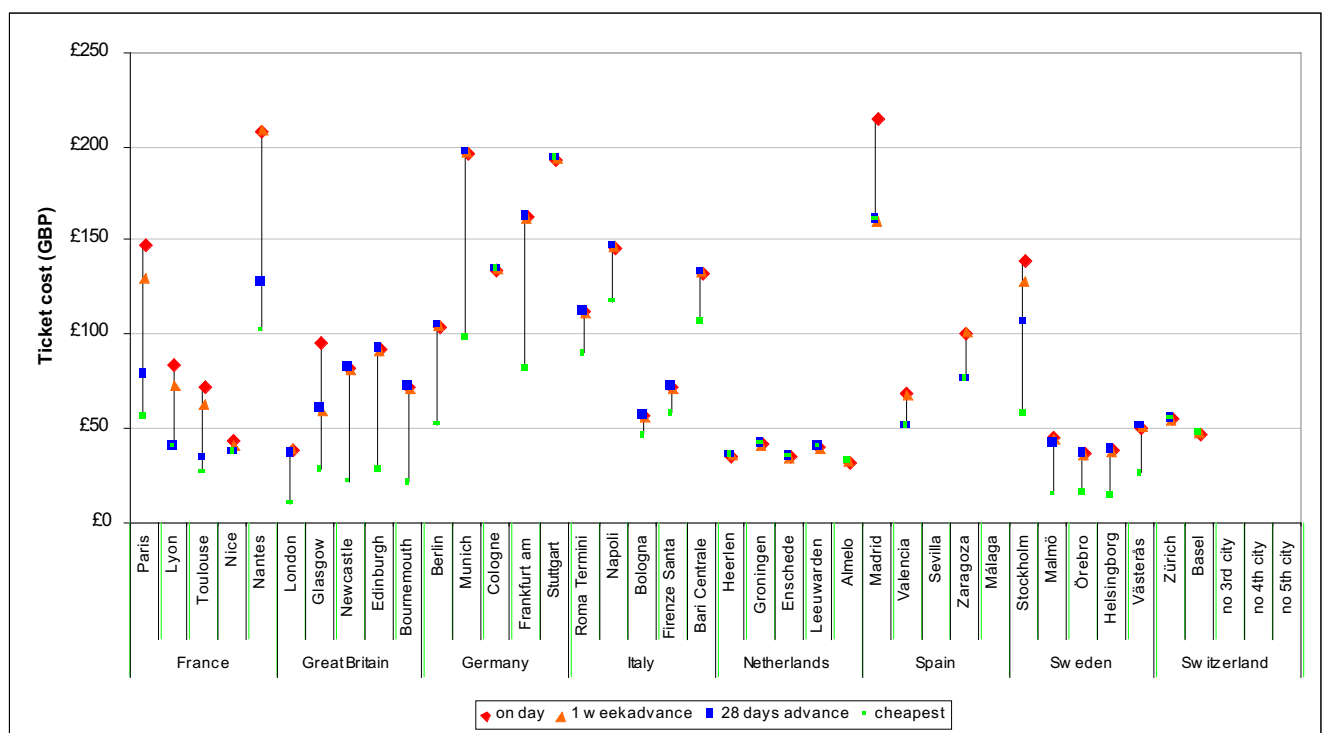


FIGURE 4.24 SECOND CITY RETURN FARES



- 4.31 The following graphs consider fares for a family of two adults and two children travelling outward on a Friday evening between 1600 and 1700 and returning on a Sunday afternoon between 1500 and 1600. Railcard discounts are not included in these fares. France has amongst the highest walk up fares for families, although the distances travelled are also amongst the longest. As for single fares, there is considerable variation in France, Great Britain and Sweden, depending on how far in advance of travel the tickets are purchased.
- 4.32 In the Netherlands discounted weekend tickets leaving the origin after 1900 on a Friday are available. Fares presented in this report do not include this discount because it is not available between 1600 and 1700.

FIGURE 4.25 FAMILY RETURN FARES TO PRINCIPAL CITY

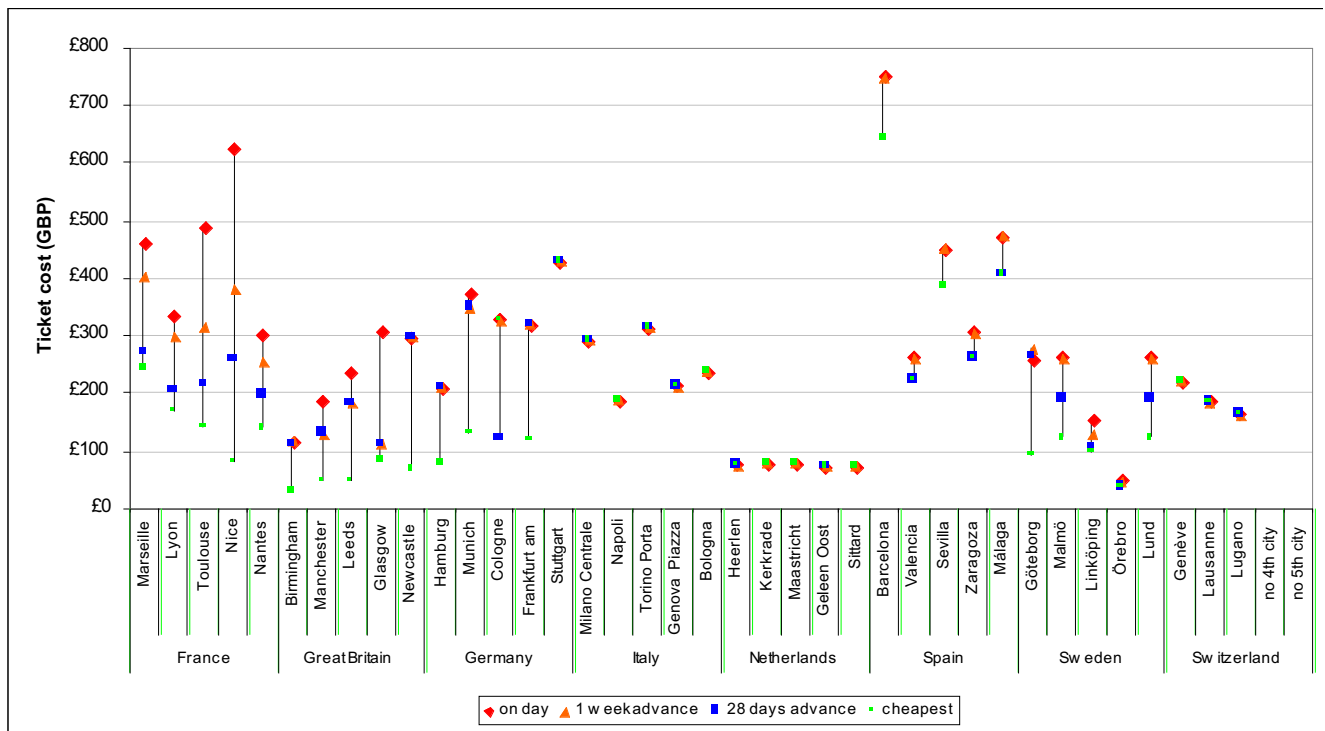
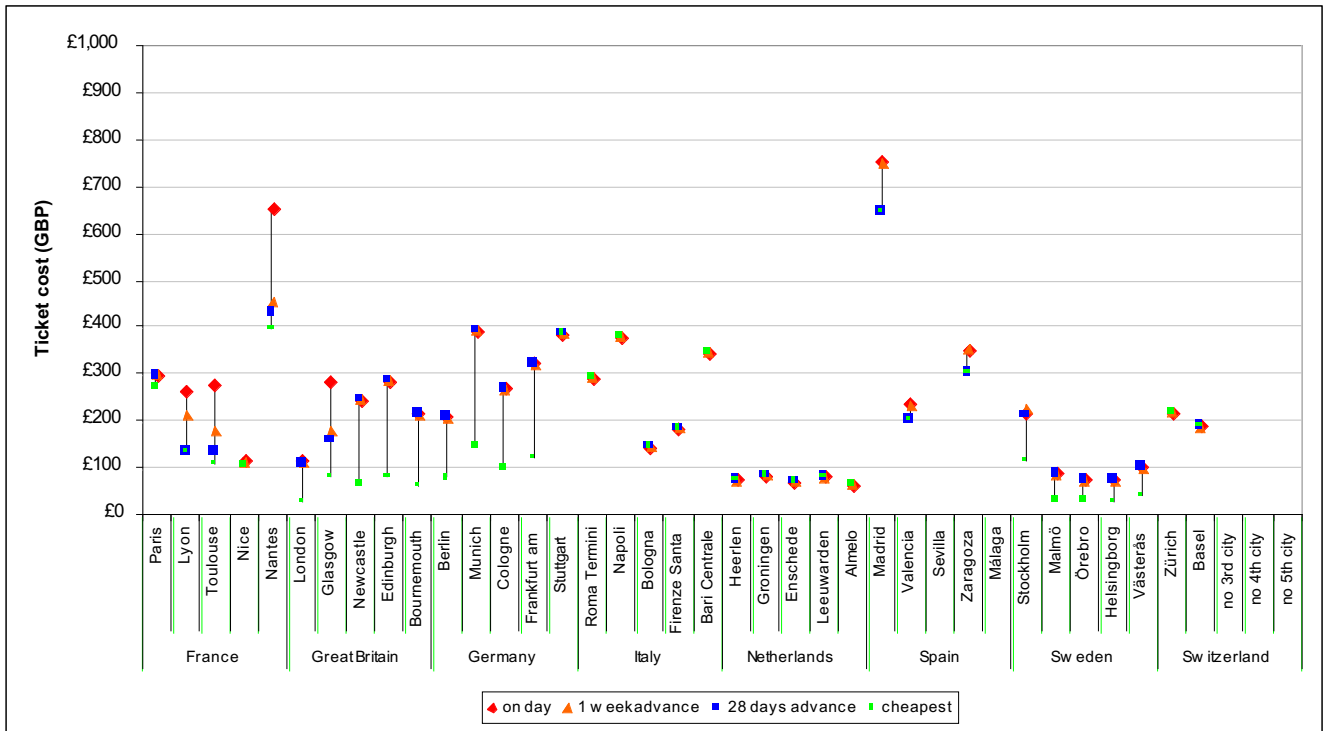


FIGURE 4.26 FAMILY RETURN FARES TO SECOND CITY



5 General overview

- 5.1 In the following chapters of the report we consider a general overview of the rail service in each country. Appendix B details sources used in the general overviews.
- 5.2 As a summary the table below highlights some key facts about the differences between each country.

TABLE 5-1 GENERAL OVERVIEW SUMMARY

Country	Operators on main national network				Interurban pricing and yield management			Reservations on long distance journeys		
	State-owned only	Mixed	All private/franchised		Kilometric fares	Market fares	Yield management	Not available	Not required	Sometimes required
Great Britain			✓	✓		✓	✓		✓	
France	✓			✓		✓	✓			✓
Germany		✓		✓	✓	✓	✓		✓	
Italy	✓			✓	✓	✓				✓
Netherlands		✓		✓	✓			✓		
Spain	✓			✓		✓	✓			✓
Sweden		✓		✓		✓	✓			✓
Switzerland		✓		✓	✓				✓	

6 Overview of Great Britain

Rail company ownership

- 6.1 Under the Railways Act 1993 the rail industry of Great Britain was restructured to create an infrastructure manager, originally Railtrack but now Network Rail, on which Public Service Obligation (PSO) passenger operations were to be provided under a series of 25 franchises let to private sector operators by central government. Open access passenger operations were permitted in addition, subject to the independent regulator's approval.
- 6.2 Franchises are awarded on the basis of open competition, generally for terms of between 7 and 10 years (although some are shorter and some longer). Generally, those franchises without major routes to/from London that generate large passenger volumes receive subsidy from central government, while others agree to pay "premium" to government. Franchisees typically agree to receive less subsidy and/or pay more premium over time during the life of the franchise.
- 6.3 There are now a total of 19 franchises, typically serving a region or major line of route, awarded to groups including Arriva, FirstGroup, Go-ahead, National Express and Stagecoach. Responsibility for four franchises has been devolved wholly or partly away from central government - these are in Scotland, Wales, London and Merseyside.

Kilometric pricing

- 6.4 Passenger fares in Great Britain are no longer directly-related to distance travelled.

Off-peak pricing

- 6.5 Passengers in Great Britain have long been offered discounts for off-peak travel, typically in the form of "Cheap Day Returns" for local travel and "Saver Returns" for longer distances. In September 2008 the names of tickets were simplified so that all fare names begin with:
- Anytime tickets valid at all time
 - Off-Peak (and Super Off-Peak) tickets valid only at certain times, which vary by route, and subsuming "Cheap Day Return" and "Saver Return" products
 - Advance tickets for travel booked in advance, each valid for a single journey on a specific train, and subject to quota-controlled availability

Price regulation

- 6.6 Formal fares regulation, introduced as part of the programme of passenger rail franchising in the 1990s, applies to some Standard ("Second Class" in other countries) fares set by franchisees where they are considered to have market power. Regulation is through setting a price cap, indexed at $RPI \pm X$, on a basket of

fares, which include virtually all Standard season tickets and most long-distance off peak returns (formerly saver return).

- 6.7 X is currently set at +1 allowing fares to rise by 1% per annum more than inflation (the exception is Southeastern, where the regime is RPI+3%), but individual fares may rise by 5% above that so long as the basket remains within the overall cap.

Reservations

- 6.8 A seat reservation on long-distance services is generally included within Advance fares, validity of which is limited to a specific train, and reservations are generally available for no or a small charge in conjunction with Off-Peak and Anytime fares. Reservation is compulsory only on a limited number of overnight sleeper trains. On all other trains standing is allowed and there is no direct control of loading or guarantee of a seat without a reservation. Seat reservations are not normally available on commuter services.
- 6.9 Some operators restrict and/or require reservations for the carriage of bicycles, particularly on trains at times where space is restricted relative to demand.

Discounts / Railcards / season tickets

- 6.10 Season tickets are generally available for most journeys, except at long distances. Fares are set for periods of 7 days, a month and a year, or any period between a month and a year. Season tickets offer greater discounts the longer the period of travel, with the annual fare normally priced at 40 times the weekly fare.
- 6.11 The industry also offers a range of Railcards as summarised below.
- Disabled Persons Railcard costing £18 per year (or £48 for 3 years) and available to those with specific disabilities. It offers a discount of 50% on Anytime tickets and 34% on other tickets for the holder and a companion, or 100% for the companion on a season ticket.
 - 16-25 Railcard costing £24 per year (or £65 for 3 years) and available to those aged 16 to 25 or in full time education. It offers a discount of 34% to the holder. It is not valid for the purchase of season tickets and is normally subject to a £10 minimum fare before 1000 on weekdays.
 - Senior Railcard costing £24 per year and available to those over 60. It offers a discount of 34% to the holder. It is not valid for the purchase of season tickets, for journeys wholly within London, or within London and South East England on morning peak period services.
 - Friends and Family Railcard costing £24 per year (or £65 for 3 years). Provided that at least one child travels with the holder, it offers a 34% discount to the holder and up to 3 adults and a 60% discount to up to 4 children aged between 5 and 16. It is not valid for the purchase of season tickets or within London and South East England on morning peak period services.
 - Network Railcard costing £20 per year. On most services in London and South East England it offers a 34% discount to the holder and up to 3 adults, subject to a £10 minimum adult fare on weekdays, and a 60% discount for up to 4 children aged between 5 and 15, subject to a £1 minimum child fare. It is not valid for

the purchase of season tickets for travel before 1000 on weekdays, or for First Class travel.

- HM Forces Railcard costing £15 per year and available to serving and retired military personnel and their spouses and dependents. It offers discounts of 34% or 10% on various fares subject to a number of conditions.

- 6.12 In addition, a number of operators have loyalty schemes for high value customers such as season ticket holders.

VAT

- 6.13 VAT is applied at zero rate for domestic rail travel.

Retail channels

- 6.14 Retail channels vary by operator, but in addition to station ticket offices and ticket machines and, on some routes, on-train purchase, include:

- Travel agents
- Telephone, with delivery by post or collection at a station
- Internet, with delivery by post or collection at a station

- 6.15 The “Oyster” smart card, serving London’s zonal fare area, can be loaded with season tickets and/or stored value cash accepted as payment for some rail journeys.

Terms and conditions

Refunds and changes to bookings

- 6.16 Refunds of Advance tickets are not permitted but changes are permitted before the departure of the first reserved train, subject to an administrative fee of £10 per single ticket plus any difference in fare.
- 6.17 Refunds of Anytime, Off-Peak and Super Off-Peak tickets are subject to an administrative fee. Return travel is permitted on any date within the period of validity, usually up to one calendar month, but outward travel is permitted only on the date printed on the ticket.

Compensation for delays

- 6.18 Compensation arrangements generally fall under one of two headings: ‘delay repay’ or ‘derived from British Rail’. The “delay repay” regimes generally allow passengers to receive compensation for delays over 30 minutes, irrespective of cause or the type of ticket held, in the form of a percentage of the price paid for the ticket. The regimes derived from the British Rail Passenger’s Charter have two elements. Season ticket holders receive discount on renewal of their ticket if train performance has been poor in the preceding year (but receive no compensation for individual delays). Holders of other types of tickets receive compensation for delays over a set threshold as a percentage of the price they paid, with both the threshold and the percentage varying between train operators.

Buying tickets from outside Great Britain

- 6.19 Fares are generally the same elsewhere as in Great Britain, but a range of BritRail passes, offering extensive rail travel, is available to some passengers who are not residents of the United Kingdom.

Average employee earnings in Great Britain

- 6.20 £24,124 average full time earnings in 2007.

Annual statistics

TABLE 6-1 ANNUAL RAIL STATISTICS FOR GREAT BRITAIN IN 2007/8

	Over 50 kilometres
Passenger-kilometres (billion)	49
Passenger journeys (million)	1.2
Train-kilometres (million)	463.5

Rolling stock fleet

- 6.21 The ORR reported in the National Rail Trends 2007-08 yearbook that the average age of rolling stock as of March 2008 was 14.69 years old.

Customer satisfaction

- 6.22 Passenger Focus's own Spring 2008 National Passenger Survey reported that:
- 80% of passengers were satisfied with their journey overall
 - 79% of passengers were satisfied with punctuality/reliability
 - 40% of passengers were satisfied with the value for money of their journey

Competitive modes and market share

- 6.23 Rail's mode share is 6.3% of trips of 10 to 50 miles and 10.3% of trips over 50 miles.
- 6.24 London is the largest commuting market in Great Britain with 491,000 passengers entering central London on a weekday by rail in the 2006 AM peak. This represents a mode share of 44%, with a further 34% using London Underground or Docklands Light Railway.

7 Overview of France

Rail company ownership

- 7.1 Société Nationale des Chemins de fer Français (SNCF) provides all domestic passenger rail services in France and is state-owned. National long distance high speed services are branded Train à Grande Vitesse (TGV). International services have individual brands including Thalys, Eurostar and Artesia. Regional services are branded Transport Express Régional (TER). In Paris commuter Réseau Express Régional (RER) services are managed by SNCF and Régie Autonome des Transports Parisiens (RATP), the regional transport authority responsible for public transport in Paris. Track is owned and maintenance is paid for by the state-owned Réseau Ferré de France (RFF), although maintenance is carried out by SNCF.

Kilometric pricing

- 7.2 Fares for regional and non-TGV services are based on distance travelled, although not explicitly on a euro per km basis. Fares for TGV services are market-based and are not calculated by the km.

Off-peak pricing

- 7.3 Regional fares do not vary by time of travel or day of travel, although non-TGV long distance fares vary slightly. TGV fares vary by day of travel, route and time. Discounts are available for advance purchase TGV tickets, while flexible tickets are more expensive than tickets restricted to a particular time with no flexibility.

Price regulation

- 7.4 All French rail fares are subject to government approval.

Reservations

- 7.5 Reservations are not normally available for commuter and local train services. Reservations are available for all long distance services and are compulsory for TGV services. Reservations can be made in advance or on the day of travel, with the cost included in the fare. On commuter and most non-TGV long distance services standing is permitted. On TGV services standing is not generally permitted, although at peak periods trains can be booked in excess of seat capacity, resulting in some standing.

Discounts / Railcards / season tickets

- 7.6 The following annual railcards allow a discount of 25% on walk-up fares for all rail travellers, in addition differing discounts are available for advanced purchase fares:

- The €70 a year “Carte Enfant Plus”, for children aged up to 12, offers up to 50% discount on advance purchase fares.
 - The €49 a year “Carte 12-25”, for young people aged between 12 and 25, offers up to 60% discount on advance purchase fares.
 - The €85 a year “Carte Escapades”, for those aged between 26 and 59, offers up to 40% discount on advance purchase fares.
 - The €56 a year “Carte Senior”, for those aged 60 and over, offers up to 50% discount on advance purchase fares.
- 7.7 Discounted fares are also available for families with 3 or more children, students, leisure and business groups and military personnel.
- 7.8 An annual season ticket costs the equivalent of ten monthly season tickets.

VAT

- 7.9 VAT of 5.5% applies to rail tickets in France. This is lower than the standard rate of VAT and it is not possible for businesses to reclaim VAT on rail tickets.

Retail channels

- 7.10 SNCF’s ticketing channels include:
- Station ticket offices and ticket machines
 - Travel agents
 - The internet, tickets sent by post or collected from station
 - Telephone, tickets sent by post or collected from station
 - Ticket machines at some banks and supermarkets
 - SNCF shops

Terms and conditions

Refunds and changes to bookings

- 7.11 Refunds for TGV services depend on the type of ticket purchased. With the exception of some advance purchase tickets, which cannot be refunded, all tickets can be refunded free of charge before the day of travel. On the day of travel a fee of between €3 and €10 is charged for refunding leisure tickets. TGV Pro tickets, which are more flexible, can be refunded free of charge up until departure. No refunds are available for commuter tickets.
- 7.12 Rules which apply to changing TGV bookings also vary by ticket type. With the exception of some advance purchase tickets, which cannot be changed, all tickets can be changed free of charge before the day of travel. On the day of travel a fee of between €3 and €10 is charged for changing leisure tickets. TGV Pro tickets can be changed free of charge up until departure (and until one hour after departure).

Compensation for delays

- 7.13 On long distance and TGV trains, SNCF offers compensation if a service is cancelled or a delay is longer than half an hour and SNCF is responsible for the problem. Compensation is in the form of a voucher for rail tickets equivalent to one third of the cost of a replacement ticket. Compensation is not available for delays to commuter train services, except in exceptional circumstances.

Buying tickets from outside France

- 7.14 Fares are the same elsewhere as in France.

Average employee earnings in France

- 7.15 €31,150 in 2007

Annual statistics

TABLE 7-1 ANNUAL RAIL STATISTICS FOR FRANCE IN 2007

	TGV	TER Regional	TER Paris	Total
Passenger-kilometres (billion)	42.7	10.2	10.2	76.5
Passenger journeys (million)	94	270	633	976
Train-kilometres (million)	n/a	n/a	n/a	393 (2005)

Rolling stock age

Since their introduction in 1981 SNCF has developed a fleet of over 550 TGV passenger trains. The most recent TGV trains are double-decker with a maximum capacity of 512 passengers, 60% more than earlier TGV models. Many regional TER services use older stock, with the age of trains varying from less than 10 years old to over 40 years old.

Customer satisfaction

Information regarding customer satisfaction is not publicly available. SNCF conduct research in the form of customer surveys, but do not share this information readily.

Competitive modes and market share

- 7.16 In 2007 rail carried 15% of passengers, car 72% of passengers and air 6% of passengers for trips over 100km. This compares to 11% of km travelled by rail, 48% of km travelled by car and 35% of km travelled by air.

8 Overview of Germany

Rail company ownership

- 8.1 Germany's federal structure means that responsibility for transport is divided between the federal government (Bund) and the States (Länder). In addition to the national rail infrastructure there are a number of smaller networks and lines owned by the Länder or privately.
- 8.2 Deutsche Bahn (DB), the integrated national rail company, was restructured in 1994 to become a public limited company which is currently wholly state-owned, although partial privatisation is being considered. Since 1999, DB has been restructured with the following principal subsidiaries:
- DB Netz, the manager of the national rail infrastructure
 - DB Fernverkehr, operator of long-distance services
 - DB Regio, operator of regional and local services
- 8.3 In practice Germany's geography, with clusters of cities within commuting distance of each other, means that even long-distance services may serve local and commuter travel.
- 8.4 At a local level, the Länder have since 1999 had the power to procure local services by competitive tender, either through their PTAs ("Verkehrsverbunde") or through a separate tendering authority. However, DB retains ownership of most of the rolling stock fleet, with the exception of a rolling stock pool established by the Lower Saxony Länder, making it difficult for new entrants to compete unless they buy new stock. Nonetheless, some Länder have actively sought alternatives to DB and groups such as Veolia and Keolis now provide many local services under contract.
- 8.5 DB Fernverkehr's services across PTA borders are in principle commercial and subject to open access competition but, partly because of the difficulties of obtaining suitable rolling stock, this has not yet emerged in practice.

Kilometric pricing

- 8.6 For long-distance travel DB has a nationwide tariff based on a matrix of origin-destination distances with fares per kilometre gradually reducing with distance. In addition, DB offers yield-managed advance purchase fares on long distance services and flat-rate weekend rates for its regional services.
- 8.7 For local travel within a PTA or tendering authority area, fares are normally zonal, on one of two patterns:
- Around a single dominant city, such as Munich, from 3 to 6 concentric zones
 - In polycentric regions, such as the Rhine-Ruhr area, up to 200 zones

Off-peak pricing

- 8.8 Variation of fare with time of travel is limited to:
- Yield-managed travel on long-distance services, as described above
 - Weekend travel at flat rates on some regional services, as described above
 - In some PTA or tendering authority areas, monthly travel cards valid only on off-peak services
- 8.9 Otherwise neither national tariff fares nor local zonal fares vary specifically with time of travel. Railcard discounts, discussed below, are available at any time.

Price regulation

- 8.10 Regional and local fares are set locally by the municipal or local authorities, which normally delegate this power to the relevant PTA or tendering authority where one has been established.
- 8.11 Long-distance fares policy, set by the federal government, is that fares should not be regulated, although in practice DB's fares policy remains controlled informally by the federal government as its only shareholder.

Reservations

- 8.12 On long-distance services, compulsory reservation is limited to night and international services. Other long-distance fares do not include a seat reservation, even on yield-managed tickets which must be booked in advance. Reservations are generally possible on long-distance services branded Intercity, Intercity Express and Eurocity and can be made up to three months before departure. In addition, some seats are marked "last minute reservation" and must in principle be vacated in favour of a passenger who has made a reservation up to 5 minutes before departure. Reservation costs €2 to €5 depending on distribution channel and class of travel.
- 8.13 On regional and urban services, reservations are possible only for large groups.

Discounts / Railcards / season tickets

Discounts

- 8.14 Yield-managed Saver Fares are available at discounts of 25% or 50% to the base fare, subject to limited availability and various other restrictions described below, including a "Saturday night away" restriction for the 50% reduction.
- 8.15 Other (and more restricted) "special" yield managed fares are also available, as described in Table 6.1.

Railcards

- 8.16 The Bahncard annual railcard range is as follows:
- Bahncard 100, unlimited travel, €3,500 Second Class/€5,900 First Class
 - Bahncard 50, 50% discount on base fares:
 - €10 Second Class for children up to 19 years old
 - €110 Second Class/€220 First Class for students under 27 and all over 60
 - €220 Second Class/€440 First Class for all other age groups
 - Bahncard 25, 25% discount on base and saver fares, €55 Second Class/€110 First Class
- 8.17 Bahncards for additional family members are available at further discounts.
- 8.18 In addition, DB and the PTAs offer a range of discounts for groups and frequent travellers.

Season tickets

- 8.19 Season tickets are available and annual season tickets normally cost slightly less than 10 monthly season tickets.

VAT

- 8.20 VAT rates are:
- 7% on all regional and urban services
 - 19% on all long-distance services

Retail channels

- 8.21 DB's distribution channels for long distance tickets include ticket offices, ticket machines and the internet. Internet tickets can be:
- Collected at a ticket office or ticket machine
 - Posted to a customer
 - Printed at home
 - Sent to a mobile phone
- 8.22 DB is trying to encourage use of the internet through discounts such as a €5 discount on yield-managed tickets.
- 8.23 Commuter tickets are normally bought through ticket machines and ticket offices.

Terms and conditions

Refunds and changes to bookings

- 8.24 The national Passenger Transport Act sets a framework of terms and conditions for long distance travel, although local rules for refunds and unused tickets are set by each PTA within this framework.
- 8.25 Advance booking is required for discounted saver and special tickets but, as noted above, does not include a seat reservation, which costs from €2 to €5. Cancellation or changes are often expensive, as shown in the table below.

TABLE 8-1 SUMMARY OF DB FARES, DISCOUNTS, RAILCARDS AND CONDITIONS

	“Walk-up” base fare	“Sparpreis 25” saver fare	“Sparpreis 50” saver fare	“Spezial Preise” special fares
Level	Kilometric with distance “taper”	25% discount on kilometric fare	50% discount on kilometric fare	“Lead in” prices of €19- 69 based on distance and demand
Regulation	Indirect, through federal ownership			None
Railcard discounts available	Bahncard 25, Bahncard 50	Bahncard 25 only		None
Restrictions	None	Limited availability		
		Return, booked 3 days ahead		One-way, specific to one train
		No time restriction	Saturday night away	
Fee for change before validity	Free	€15		Cancellation or change not possible
Fee for later change	€15	Cancellation or change not possible		
Compensation	25% of fare if delayed more than 60 minutes			

Compensation for delays

- 8.26 Terms and conditions must be in line with the national Passenger Transport Act. Compensation arrangements are currently defined by PTAs, by bilateral agreements between them and operators. Legislation currently under consideration would set national minimum standards of compensation which might involve a higher refund and/or a lower delay threshold than DB's current arrangements.

Buying tickets from outside Germany

- 8.27 Fares are the same elsewhere as in Germany.

Average employee earnings in Germany

- 8.28 €27,083 in 2007

Annual statistics

TABLE 8-2 ANNUAL RAIL STATISTICS FOR GERMANY IN 2007

	Under 50 kilometres	Over 50 kilometres	Total
Passenger-kilometres (billion)	44.3	34.5	78.7
Passenger journeys (million)	2,100	120	2,220
Train-kilometres (million)	Not available		

Rolling stock fleet

- 8.29 We have found no reliable statistics on the age of the fleets operated by DB, regional and private operators.

Customer satisfaction

- 8.30 Customer satisfaction surveys are carried out by PTAs but are not publicly available.

Competitive modes and market share

- 8.31 Germany's national travel survey shows shares of 7.1% by rail, 7.5% by road-based public transport, 4.8% by air and 80.6% by car.

9 Overview of Italy

Rail company ownership

- 9.1 In Italy, state-owned FS Holding owns national infrastructure manager RFI and incumbent rail operator Trenitalia, which provides three principal categories of rail services on the RFI network:
- Long-distance services, including the current Intercity, Intercity Plus, EurostarCity Italia, Eurostar Italia, Eurostar AV Italia (high speed) and T-Biz brands, are in principal commercially viable and run at Trenitalia's discretion and to its own timetables. However, some of these services receive indirect grants from government and the regions.
 - Long distance Public Service Obligation (PSO) overnight services operated under the Espresso and Intercity Notte brands, are funded by government. At present Trenitalia operates all these services, although there is provision for public tender.
 - Regional services procured by regional governments through negotiation or, in some cases, by public tender.
- 9.2 Italy has a number of regional operators, often owned by the regions, of which the largest are LeNord (Milan), FSE (Puglia), FER (Emilia Romagna), Circumvesuviana (Naples) and GTT (Turin). These services do not normally use the national network, except for some services provided for Trenitalia around Milan and Turin.
- 9.3 Finally, some international services between Italy and Switzerland are operated by Cisalpino, a joint venture between Trenitalia and Switzerland's SBB, although within Italy these services have the same fares and ticketing regime as EurostarCity Italy and Intercity Plus services.

Kilometric pricing

- 9.4 Historically, Italy had a kilometric fare as a base price to which supplements were added for premium services, but market pricing is now becoming more common. Trenitalia still generally uses pricing based on distance bands for local, regional and Espresso PSO and some Intercity, Intercity Plus and EurostarCity Italia services. Regional operators' fares generally follow the same structure, but with zonal fares in urban areas. The remaining services are generally market-priced with no strict relationship between fare and distance.

Off-peak pricing

- 9.5 Kilometric fares do not vary by time of travel and no market-priced fares are specifically linked to time of travel.

Price regulation

- 9.6 In principal, regional fares are regulated by the regions and long-distance PSO fares are regulated by the government, but in practice both are influenced by political issues and financial constraints.
- 9.7 Until 2002, Trenitalia's fares on commercial long-distance services were formally regulated by the Ministry of Transport on a "CPI - X + Q" basis (where CPI is the consumer price index, X is a productivity factor and Q is a quality factor). Since 2002, fares have supposedly been set commercially by Trenitalia, although in practice it did not increase these fares at all until 2007.

Reservations

- 9.8 For long distance services, reservations are compulsory and are included in the fares except for on:
- Those Intercity services which do not yet require a compulsory reservation
 - Long-distance PSO services other than couchettes/sleeper berths
- 9.9 For these services, optional reservation is available for €3, or €1.50 per person in a group.
- 9.10 Regional services do not have a reservations facility.

Discounts / Railcards / season tickets

- 9.11 Unless otherwise stated, the following discounts and railcards are available on Trenitalia's long distance services.
- 9.12 Discounts are available for:
- Children under 4, who travel free, and children between 4 and 12 who receive a 50% discount, reduced to 30% on sleeper trains.
 - Families of at least three, who can buy a "Familia" ticket on which children travel at the above rates and adults receive a 20% discount.
 - The blind and war wounded, who received a 20-30% discount if travelling alone and may also take a guide free by buying a €5 "Carte Blu" described below.
 - Groups of 10 or more, who receive a discount of 10%, rising to 20% for long distance travel Monday to Thursday and Saturday and 30% for groups of 50 or more.
 - "Amica" tickets, sold in limited numbers for each train until the day before travel, offering a 20% discount subject to a minimum fare of €20.
 - Internet sales, where there is a 5% discount for some premium services such as Eurostar Italia.
- 9.13 Railcards available include:
- The free "Cartavaggio", allowing collection of points which can be used for free travel or prizes, and entitling the holder to discounts with Trenitalia partners such as hotels and car rental.

- The €89 a year “Cartavaggio Executive”, offering additional benefits including access to lounges and dedicated ticket offices.
 - The €40 a year “Carta Verde”, for those between 12 and 26, offering a 10-15% discount on domestic journeys and 25% discount on international journeys.
 - The “Carta Argento”, €30 a year to those over 60 and free to those over 75, offering the same benefits as the “Carta Verde”.
 - The €5 for 5 years “Carte Blu” for people of reduced mobility, allowing a guide or helper to travel with them free.
- 9.14 The validity of season tickets is generally limited to specific types of train, with two principal ranges offered:
- Weekly tickets beginning on Monday and monthly and annual tickets beginning on the first day of a month. The least expensive tickets are valid only on commuter trains but more expensive ones are also valid on Espresso, Intercity and Intercity Plus services.
 - Monthly tickets beginning on the first day of a month, valid only on InterCity, InterCity Plus, EurostarCity Italia, Eurostar Italia, Eurostar AV Italia (high speed) services. These monthly tickets are priced at 10 times the single fare but do not include a seat reservation, which must be bought separately for €3 per journey. Since 1 December 2008 a further 5% discount on these fares is available on the internet.

VAT

- 9.15 VAT is applied at 10% for domestic rail travel.

Retail channels

- 9.16 Trenitalia’s ticketing channels include:
- Station ticket offices and ticket machines
 - Dedicated offices for “Cartaviaggio Executive” card holders
 - Travel agents, principally used for business travel
 - Tobacconists, for regional services
 - Internet, offering e-tickets (a six-digit code which must be quoted to inspectors, for long-distance travel) and “print-at-home” regional tickets
 - Telephone, offering e-tickets and conventional tickets (by post or for collection from station ticket machines)
 - On board sales, at a supplement of up to €25 on commuter services and €50 on long distance services, except for travel from stations with no working ticket office or ticket machines
- 9.17 Other operators offer station ticket offices and machines and tobacconists and, in some cases, on-board sales.

Terms and conditions

- 9.18 Trenitalia's terms and conditions, generally set by Trenitalia for long-distance services and jointly with the region for regional services, are as below unless otherwise stated.

Refunds and changes to bookings

- 9.19 Reservations for full-fare tickets can be changed up to twice before departure for no charge and up to 3 hours after departure. Refunds, available only at the point of origin, are subject to a penalty of 20% of the original fare, up to a maximum of €3, before departure and 50% of the original fare up to 3 hours after departure. The rules for discounted tickets are more strict but all tickets can be changed, for a maximum of €3 and the difference in the fare, or refunded, before departure for a 20% penalty.

Compensation for delays

- 9.20 On regional trains, compensation is set by the public service contracts between the regions and the operators, which in some regions oblige the operator to offer free replacements to monthly passes after serious delays.
- 9.21 On long distance trains, Trenitalia offers different compensation systems on each brand:
- Eurostar Italia, Eurostar AV, T-Biz Italia: 50% refund if no heating/air-conditioning or delayed more than 25 minutes for reasons within Trenitalia's control
 - Eurostar City, Intercity and Intercity Plus: 30% refund if no heating/air-conditioning or delayed more than 30 minutes for reasons within Trenitalia's control
 - PSO services: 30% refund for seats, and 20% refund for sleeper carriages and couchettes, if delayed more than 60 minutes for reasons within Trenitalia's control
- 9.22 Refunds, which must be applied for at Trenitalia ticket offices or over the internet, take the form of a voucher for replacement tickets.

Buying tickets from outside Italy

- 9.23 Fares are the same elsewhere as in Italy.

Average employee earnings in Italy

- 9.24 €25,701 in 2007

Annual statistics

TABLE 9-1 ANNUAL RAIL STATISTICS FOR ITALY IN 2006

	Trenitalia	Other	Total
Passenger-kilometres (billion)	47.0	3.7	50.7
Passenger journeys (million)	540.3	213.2	753.5
Train-kilometres (million)	269	39.5	308.5

Rolling stock fleet

- 9.25 Trenitalia has a fleet of around 8,600 standard gauge passenger coaches and the regional operators have around 1,600 standard and narrow gauge coaches and multiple unit vehicles, but we have found no reliable statistics on the age of these fleets.

Customer satisfaction

- 9.26 In a 2006 satisfaction survey, on a score of 1 to 10, respondents rated Eurostar and Intercity trains 6.69 (77.1% satisfied) and regional trains 5.94 (63.6% satisfied).

Competitive modes and market share

- 9.27 The national transport statistics for 2006 show that 5.1% of passenger-kilometres were carried by rail and 73.5% by car.
- 9.28 The Lombardy region's Origin Destination Survey of 2001 reported that, of Milan's 800,000 daily commuters, 60% use car, 21% train, 8% bus and 11% other modes.

10 Overview of the Netherlands

Rail company ownership

- 10.1 In the Netherlands rail services are divided into two categories; the core network and secondary routes. Core services are provided by Nederlandse Spoorwegen (NS). NS is a commercial company, although 100% of shares are held by the government. NS have been awarded an exclusive concession by the government to run inter-city services until 2015. Secondary routes have been awarded to commercial companies on a competitive tender basis. Operators of secondary routes include Connexxion, Arriva, Syntus and Veolia.
- 10.2 Track is managed by ProRail, a government agency. ProRail's responsibility includes timetable planning and infrastructure maintenance.

Kilometric pricing

- 10.3 The NS fares structure is relatively simple. Fares are normally based on the distance travelled. The price per km reduces the further travelled. This NS fare structure applies to all rail services in the Netherlands, including those provided by other operators.

Off-peak pricing

- 10.4 Kilometric fares do not vary by time of travel or day of the week, although off-peak discounts are available with a VDU railcard (this is described in the railcard section which follows).

Price regulation

- 10.5 Fare increases are dependent on meeting performance and operational targets. These targets and associated fare increases are detailed in franchise agreements between the operator and the Ministry of Transport.

Reservations

- 10.6 Reservations are not available on domestic services.

Discounts / Railcards / season tickets

- 10.7 Discounts are available for:
- Children under 4, who travel free.
 - Accompanied children between 4 and 11, who travel for €2 provided they are accompanied by an adult (up to 3 children per adult).
 - Unaccompanied children between 4 and 11, who receive a 40% discount.

- Full-time students over 18, who receive a free second class network pass (most students take up the option giving free travel Monday to Friday and over the summer).
- 10.8 Universally available railcards available include:
- The €55 a year “VDU Card 60-”, offering a 40% discount on all single and return tickets after 0900 Monday to Friday and all day at weekends and during July and August.
 - The €55 a year “VDU Card 60+”, designed for those aged over 60. In addition to the benefits of the 60- railcard this railcard allows purchase of seven day unlimited travel tickets for €14 (second class), €39 (first class).
- 10.9 Season tickets are available for all services. Season tickets can be purchased for monthly and annual travel. A five return ticket book is available for weekly commuting, each ticket is valid for one day and is route specific. Annual fares are based on 260 daily return fares and a discount of 4% is given for upfront payment. Season tickets can be paid by direct debit in ten instalments over a year.

VAT

- 10.10 VAT is applied at 6%.

Retail channels

- 10.11 Ticketing channels include:
- Ticket offices at large stations
 - Ticket machines at rail stations
 - Ticket agents, in locations with small stations
- 10.12 Tickets cannot currently be purchased on the internet.

Terms and conditions

- 10.13 NS’s terms and conditions are described below and are set by NS for long-distance services. Terms and conditions vary between regional operators.

Refunds and changes to bookings

- 10.14 Refunds must be applied for at NS ticket offices where a refund form must be completed.
- 10.15 Tickets can be purchased without a date of travel. These tickets must be validated on the platform before travel. With this ticketing system changes to dates of travel are not required.

Compensation for delays

When a delay is over 30 minutes a refund can be claimed. For delays between 31 and 59 minutes 50% of the single fare is refunded. For delays over 60 minutes 100% of the single fare is refunded. A form must be completed for compensation, which

is transferred to the passengers' bank account. Compensation is available for season ticket-holders, based on average delays over the period of the season ticket.

Buying tickets from outside the Netherlands

- 10.16 We are not aware of any discounted fares available to foreign travellers.

Average employee earnings in the Netherlands

- 10.17 €30,000 in 2007

Annual statistics

TABLE 10-1 ANNUAL RAIL STATISTICS FOR THE NETHERLANDS IN 2007

	Total
Passenger-kilometres (million)	15.5
Passenger journeys (million per day)	1.1
Train-kilometres (million)	54.8

Rolling stock age

- 10.18 NS has 1,835 Electric Multiple Units, 84 Diesel Multiple Units and 833 Locomotives. There are a total of 2,886 coaches, of which 1,050 are double-decker. No comprehensive data exists on rolling stock age, the majority of rolling stock was built in the 1980s and 1990s.

Customer satisfaction

In a 2007 satisfaction survey, the following information was recorded:

- 70% satisfied with general travel by train
- 45% satisfied by punctuality
- 50% satisfied by information on the train during delays or disruption
- 50% satisfied by information at the station during delays or disruption
- 76% satisfied with security
- 68% satisfied with the ability to find a seat at peak times
- 54% satisfied with the cleanliness of trains
- 55% satisfied with the cleanliness of stations
- 57% satisfied with the availability of staff

Competitive modes and market share

- 10.19 Car is the primary competitive mode. Other public transport modes are well integrated with the rail system and don't generally compete. Air is not a competitive mode in the Netherlands.

11 Overview of Spain

Rail company ownership

- 11.1 Rail services on the national network are presently provided by the state-owned operator Renfe Operadora (there are no privately-operated passenger services currently, although there are some private freight operators). Renfe operates the following passenger rail services:
- Commuter and regional services
 - Long distance and high speed (HS) services
- 11.2 Renfe is also responsible for maintenance of its rolling stock. Some suburban railway services currently operated by Renfe are expected to be transferred to regional governments to manage in the future.
- 11.3 Administrador de Infraestructuras Ferroviarias (ADIF), a public body, is responsible for the infrastructure management of most of the rail network in Spain (over 95% of the network). ADIF maintains lines and stations and charges rail companies for running services on the network and providing services such as ticket offices.
- 11.4 Some routes not part of the national network have services provided by other operators, including the following public-owned companies (managed by regional governments):
- Ferrocarrils de la Generalitat de Catalunya (FGC) who run services in Catalonia
 - Ferrocarrils de la Generalitat Valenciana (FGV) who run services in Valencia
 - Feve and EuskoTren who run services in the Basque region

These operators also manage the track on which their services run.

Kilometric pricing

- 11.5 Kilometric pricing does not apply in Spain. Pricing is based on distance and quality of the service. Commuter fares in urban areas are based on a zonal system, which takes distance into account.

Off-peak pricing

- 11.6 For commuter and regional services fares do not vary by time of day or day of the week. For long distance services off-peak pricing is not generally available. For a limited number of services, for example high speed services from Seville to Madrid, reduced fares are available for travel at times when demand is low.

Price regulation

- 11.7 All standard rail fares are approved by the government. Renfe intend to develop market pricing for long distance services in the future, where the price of tickets is related to the demand for travel.
- 11.8 In some urban areas season ticket fares are integrated into local zonal pricing systems involving other modes of public transport. In these locations Renfe continue to set single rail fares.

Reservations

- 11.9 For long distance services reservations are compulsory for which there is no charge. Standing on long distance services is not permitted. Reservations can be made up to 60 days before travel until departure.
- 11.10 For commuter and regional services reservations are not generally available. Standing is allowed and tickets are valid for a single journey with no time restriction.

Discounts / Railcards / season tickets

- 11.11 The following discounts are available for long distance travel:
- Return fares offer a 20% discount on two single fares.
 - Children between 4 and 14 receive a 40% discount, children under 4 travel for free provided they don't require their own seat.
 - Groups of more than 10 people receive a 10 to 15% discount.
- 11.12 The following discounts are available for regional travel:
- Return fares offer a 10% discount on two single fares.
 - Children between 6 and 14 receive a 40% discount on commuter services, children under 6 travel for free.
 - Groups of more than 10 people receive a 15 to 40% discount.
- 11.13 On all services a large family (3+ children) receives a 20% discount. A family with 5 or more children receives a 50% discount (this also applies if family members are not travelling together, although a government-issued certificate is required).
- 11.14 Railcards available include:
- The €6 a year "youth card", offering a 20 to 25% discount on long distance and a 20% discount on regional services. This is issued by the government and is not strictly a railcard, offering a variety of other discounts for cinemas, museums etc.
 - The €5 a year "senior railcard", available for those aged over 60. This railcard offers discounts of 40% (Monday to Thursday) and 25% (Friday to Sunday) on long distance services and a discount of 40% on all regional services. This card is also available for some disabled people.

- 11.15 The discounts described are applied to the base tariff, and cannot be used in conjunction with other offers.
- 11.16 In urban areas monthly passes for rail are often integrated into zonal public transport ticketing, for which season tickets are available. Season tickets can be purchased for ten journeys, monthly and annual travel. Annual season tickets cost the equivalent of eleven monthly season tickets.

VAT

- 11.17 VAT is applied at 7%.

Retail channels

- 11.18 Ticketing channels include:

- Ticket offices at stations
- Ticket machines at stations

For long distance journeys the following ticketing channels are also available:

- Travel agents
- Internet, tickets sent by post, collected from the station or printed at home

Terms and conditions

Refunds and changes to bookings

- 11.19 For long distance services base price tickets are refundable for a 15% charge. Estrella fares (discounted tickets) can be refunded for a 30% charge, while discounted internet fares can be refunded for a 50% charge. Regional and commuter services can also be refunded for a 15% charge, although they must be refunded within two hours of purchase.
- 11.20 For long distance services base tickets can be changed up to 5 minutes before departure for a 10% charge. Estrella fares (discounted tickets) can be changed for a 15-20% charge, while discounted internet fare tickets cannot be changed. Regional and commuter tickets are not for a specific departure time, so changes are not required. Regional and commuter tickets are valid for travel within 60 days of purchase.

Compensation for delays

- 11.21 For high speed long distance services compensation levels are high. For high speed services from Madrid to Seville a 5 minute delay entitles passengers to a 100% refund on the single fare. For other high speed long distance services a 50% refund is available for a 15 minute delay, with a 100% refund for a delay of 30 minutes or more.
- 11.22 Other long distance services have lower levels of compensation. Where a delay is over 20 minutes a refund of 25% can be claimed. For delays over 40 minutes a refund of 50% is available. For delays over 60 minutes a refund of 100% is available.

- 11.23 For regional and commuter services compensation is available if delays are over 40 minutes (50% refund) or over 90 minutes (100% refund).
- 11.24 If a train is cancelled compensation is available in the form of a full refund or ticket for a similar service. If a train is cancelled within four hours of departure a refund of twice the fare is available.

Buying tickets from outside Spain

- 11.25 Fares are the same elsewhere as in Spain.

Average employee earnings in Spain

- 11.26 €20,157 in 2007

Annual statistics

TABLE 11-1 ANNUAL RAIL STATISTICS FOR SPAIN IN 2006

	Long distance	Regional	Commuter	Total
Passenger-kilometres (billion)	8.9	2.9	10.4	22.2
Passenger journeys (million)	20.5	28.7	650.3	700.5
Train-kilometres (million)	46.4	35.3	59.0	140.7

Rolling stock age

- 11.27 In 2006 Renfe operated 2,552 trains and 13,817 carriages. Other operators ran 206 trains and 602 carriages. No official data is available about the average age of rolling stock. From our local sources we understand that in 2006 commuter trains were on average 15 years old, whilst regional trains were older, with around 70% of trains over 20 years old.

Customer satisfaction

- 11.28 In a 2006 Renfe customer survey, the following information on customer satisfaction was recorded (on a scale of 1 to 10):

- Commuter services 7.18
- Regional services 6.61
- Long distance services 7.25
- High speed long distance services 7.7

Competitive modes and market share

11.29 In 2007 mode shares for trips over 50km in length were 5.4% for rail, 6.3% for air, 8.4% for bus and 78.0% for car. In some locations rail mode share is considerably higher, for example rail mode share from Madrid to Seville (a high speed route) is 50%.

12 Overview of Sweden

Rail company ownership

- 12.1 Sweden was a pioneer of rail restructuring and in 1988 the ownership and management of the national railway infrastructure was transferred to a new organisation, Banverket, which remained in the public sector as a supplier of infrastructure services to operators including the national incumbent Statens Järnvägar (SJ). The legislation also created Public Transport Authorities (PTAs) in each of Sweden's counties and transferred to them the former SJ rolling stock used for local services, over which they also have control and set fares.
- 12.2 PTAs were free to operate these services themselves or to procure them from SJ or other operators. All the infrastructure continued to be managed by Banverket, except in Stockholm where Storstockholms Lokaltrafik (SL), the PTA for Stockholm county, was given control of the Roslagsbanan and Saltsjöbanan local lines and three light rail lines. SL and several other PTAs have since established a company, Transitio, to procure rolling stock, for which central government grants are available, which can then be made available to franchisees such as Arriva, First Group, Keolis and Veolia.
- 12.3 In 2001, SJ was restructured into a number of supply companies selling services to all railway operators and an operator "new SJ" which was granted a monopoly on all inter-regional services crossing county boundaries. SJ faces no fares regulation and is free to withdraw from unprofitable services, in which case any replacement services required are procured by Rikstrafiken, the national procurement authority, by competitive tender. Despite a policy favouring competition in principle, SJ's monopoly on inter-regional services has been allowed to continue in practice.
- 12.4 SJ has stock capable of 200kph which can maintain this speed over long distances on main lines, enabling some station-to-station runs at speeds broadly comparable with those on Great Britain's East Coast Main Line. There are, however, no purpose-built high speed lines and 74% of the route network is single track, with the need for trains to stop and pass, reducing average speeds.
- 12.5 Since 1999 the Arlanda Express concession has provided 200 kph (125 mph) non-stop services between Stockholm Central and Arlanda airport using its own and Banverket infrastructure. Since 2000, Skåne county has had cross-border "regional" services across the Øresund link between Malmö and Copenhagen in Denmark. With these exceptions, passenger rail services on the Banverket infrastructure are therefore either:
- Intra-regional, and either operated by the local PTA or procured from SJ or the private sector
 - Inter-regional, and provided by SJ, publicly-owned but operating on a commercial basis

12.6 Except where otherwise stated, the remainder of this analysis is limited to the discussion of rail services operated exclusively on Banverket infrastructure and excludes:

- The Roslagsbanan and Saltsjöbanan local lines in Stockholm
- Arlanda Express
- Øresund link services between Skåne and Denmark

Kilometric pricing

12.7 Intra-regional fares are set by the local PTA on the basis of a number of factors.

12.8 In Stockholm, SL fares on commuter services are set on a zonal basis. Zone A extends from central Stockholm around 10 kilometres and includes 10 stations, Zone B extends around 25 kilometres and includes 23 stations, and Zone C covers the rest of the county. Two stations are just outside the county: Bålsta in Uppsala, to which higher fares apply, and Gnesta in Södermanlands.

12.9 In and around Gothenburg, local fares are set by Västtrafik but inter-regional fares set by SJ are not regulated or distance-based and are increasingly subject to market pricing and yield management.

Off-peak pricing

12.10 In Stockholm there is no explicit off-peak pricing, although:

- Adult season tickets are priced at different rates for January-April, May-August and September-December
- School and Student Travelcards are priced at different rates for each term
- School Travelcards are only valid Monday to Friday from 0430 to 1900, separate "After School and Weekend Travelcards" are valid Monday to Friday from 1600 to 0430 and all weekend, and a separate "Summer Holiday Travelcard" is also available from June-August.

12.11 Gothenburg operates a similar system and fare structure to Stockholm, with no off peak pricing.

12.12 Inter-regional fares set by SJ are increasingly subject to market pricing and yield management and are generally priced by train rather than by simple peak/off-peak rules. For an illustrative journey from Stockholm to Örebro within one midweek morning we were offered adult fares from SEK 146 to 527 in Second Class and SEK 195 to 768 in First Class on different trains. Higher fares apply for tickets which can be refunded or rebooked.

Price regulation

12.13 Intra-regional fares set by the PTAs are not formally regulated but are controlled indirectly through the local political process. In Stockholm, for example, there is a political consensus that public transport fares remain at a level which covers less than half of their operating costs. SL's annual report does not allocate mainly

multimodal ticket revenue to specific modes, but Jane's Urban Transport Systems 2008-2009 records that 49% of costs were met by fares, 2% by other commercial revenue and 49% by subsidies and grants in 2005.

- 12.14 Inter-regional fares set by SJ are not regulated. SJ is explicitly set an objective of obtaining a financial rate of return on its assets (although its ability to do so depends on Sweden's policy that Banverket's access charges should reflect only marginal costs) and has taken advantage of its freedom to offer a range of discounted and advance purchase fares. Previous Steer Davies Gleave research has shown that fares for any individual journey can vary by a factor of around 7:1, broadly comparable with the range offered in Great Britain on interurban services.
- 12.15 SJ's ability to charge higher fares is limited for long distances by active competition from air, and for shorter distances by the obligation also to accept local tickets sold by the PTAs. Revenue from these inter-available tickets is allocated on the basis of an annual two-week passenger survey.

Reservations

- 12.16 On intra-county services, reservations are not generally available except on SJ trains.
- 12.17 On inter-regional services operated by SJ, the pricing and yield management system, with tickets tied to a specific train, means that reservations are generally required and can be made up to 310 days in advance, although the cheapest tickets are released only 90 days in advance. "Sista Minuten" ("Last minute") fares, available within 24 hours of travel, can be bought by youths, students with a valid student card and pensioners.

Discounts / Railcards / season tickets

- 12.18 In Stockholm, specific tickets are available for School Children and Students. Almost all other tickets are available at a reduced price to those under 20 or over 65 and travellers carrying a special certificate of early retirement. The discount varies with each type of ticket but is typically around one-third of the full price.
- 12.19 On inter-regional trains operated by SJ, tickets are priced separately for adults over 26, youths under 26, youths under 20, children under 16, and students with an SJ or international student card. Discounts are also available for groups of more than ten travelling together. Passengers from companies with corporate agreements with SJ can obtain the corporate rate when booking through the website.
- 12.20 In addition to 30-day and annual paper season tickets, SJ offers a "commuter pass" (SJ Pendlarkort), a stored value ticket for regular travellers in Mälardalen, the area around Stockholm. The commuter pass can be topped up at self-service machines, and offers a range of discounts between chosen origin and destination locations for specified travel periods. Options include:
- Unlimited travel for 30 days within origin and destination travel zones. The pass is valid for one passenger per train trip.
 - Discount when buying 10 trips valid for a period of 30 days. The pre-pay price is equivalent to 7 trips.

- ‘Travel wallet’ option. The ‘wallet’ can be topped up with credit between 300 and 3000 SEK and gives a 3% discount for single trips to Mälardalen.
 - 2 children up to the age of 15 travel free when accompanied by an adult with a valid commuter pass.
- 12.21 Annual cards allow unlimited travel across all routes within the Swedish rail network. Prices are determined according to travel class and choice of add-on service.
- Silver: 35,000 SEK. Second class travel on all trains.
 - Silver plus: 55,000 SEK. First class travel on all trains.
 - Gold: 70,000 SEK. First class travel on all trains and buses, luggage insurance and lounge access.
- 12.22 Annual season tickets are priced at the equivalent of 28 weekly season tickets.

VAT

- 12.23 All tickets include 5.56% VAT.

Retail channels

- 12.24 In Stockholm, Travelcards, prepaid single tickets in advance and single tickets can be bought at “SL Centers” or ticket agents:
- SL Centers are located in the ticket halls every SL station.
 - Ticket agents, most of which are newsagents, display the SL logo.
 - Single tickets can be bought from machines or via an SMS text message.
- 12.25 In Gothenburg, local tickets can be brought at a similar range of locations. For inter-regional travel, tickets can be bought at most stations, on the internet, or through an agency, Sweden Booking, by phone, fax, email and post. In addition to 30-day and annual paper season tickets, SJ offers a “commuter pass” (SJ Pendlarkort) - a stored value ticket for regular travellers in Mälardalen, the area around Stockholm.

Terms and conditions

- 12.26 In Stockholm:
- Travelcards are valid for specific periods, but may be restricted to certain times of day (see above)
 - Single tickets for 1, 2 or 3 zones bought at ticket machines or via a text message are valid for 75 minutes after purchase
 - Strip tickets bought in advance are valid for 60 minutes after cancellation

Refunds and changes to bookings

12.27 All tickets for inter-regional travel booked more than 90 days in advance can be refunded or rebooked. Within 90 days of travel, passengers can choose to pay extra for:

- Refundable tickets, which can be cancelled up to the time of departure, less the booking fee and any billing fee.
- Rebookable tickets, which can be rebooked up to the time of departure and credited, less the booking fee, to a new journey within 90 days.

Compensation for delays

12.28 In the event of delays or cancellations, passengers are entitled to compensation. Full refunds are given if the delay is 20 minutes or greater for an hour long journey. Where a service has been delayed or cancelled and onward travel has been missed, passengers are entitled to further compensation or refunds. Passengers arriving late at their destination may be entitled to hotel accommodation or taxi travel.

12.29 Note also that Arlanda Express, operating largely on dedicated infrastructure between Stockholm Central and Arlanda Airport, offers a replacement ticket for any journey delayed by more than 2 minutes, regardless of the cause of delay.

Buying tickets from outside Sweden

12.30 Passengers booking on the internet pay the same price, whatever their location. The Sweden Booking agency, mentioned above, provides sales and information by phone, fax and email and can post tickets overseas.

Average employee earnings in Sweden

12.31 309,600 Swedish Krona (2007)

Annual statistics

TABLE 12-1 ANNUAL RAIL STATISTICS FOR SWEDEN IN 2007

	Inter-regional	Stockholm	Total
Passenger-kilometres (billion)			6.5
Passenger journeys (million)	38	88	126
Train-kilometres (million)			43.3

12.32 Statistics for “inter-regional” services relate to SJ services across regional borders and “Stockholm” services related to commuter services operated by SJ’s Stockholmståg subsidiary for SL. We have not been able to identify comprehensive and consistent statistics on services procured by and operated within other counties.

Rolling stock fleet

- 12.33 Around two-thirds of Sweden's rail network, including the principal main lines and the SL's commuter lines in Stockholm, are electrified.
- 12.34 SL has just replaced 25 year old stock with a fleet of 71 new X60 6-car articulated commuter trains providing a total of 426 vehicles.
- 12.35 SJ's fleet of nearly 600 passenger vehicles includes 43 high speed train sets and has an average age of around 10 years.

Customer satisfaction

- 12.36 In Stockholm, SL reports customer satisfaction among both residents of Stockholm county and public transport users on an annual basis from 2001 to 2007. Among residents, the average proportion satisfied measured throughout the year has ranged from 49% to 56% (55% in 2007). Among passengers, the average proportion satisfied throughout the year has varied between 53% and 62% (in 2007) and in the more detailed Autumn survey varied between 59% and 69% (in 2007), but this is an average across all modes and is not specific to rail.

Competitive modes and market share

- 12.37 For journeys over 100 kilometres, SJ has a 15% market share. However, there is no high speed interurban road network and a strictly enforced 90kph (56mph) speed limit. The dominant competitor for many longer journeys is domestic air services.
- 12.38 In Stockholm, SL collects detailed statistics on car and public transport share of travel by community, but does not identify rail share specifically. SL's commuter rail services carry around 242,000 passengers a day, or around 10% of the 2,434,000 public transport journeys (2007).

13 Overview of Switzerland

Rail company ownership

- 13.1 The ownership of rail companies in Switzerland is split between the state, local government and private companies. The largest company, which runs 90% of services and carries 80% of passengers is the state-owned Schweizerische Bundesbahnen (SBB). SBB runs regional, commuter and inter-city services. The second largest rail operator is Bern-Lötschberg-Simplon (BLS). BLS is a private operator, although a large proportion of the company is owned by Bern local government. There are also a small number of private companies operating a limited number of services.
- 13.2 Three quarters of Swiss track is standard gauge and is managed by SBB and BLS. The remainder of Swiss track is narrow gauge and managed by the companies which operate on the track.

Kilometric pricing

- 13.3 The fares structure in Switzerland is based on the distance travelled. The price per km reduces the further travelled. Fares are set across the rail and bus network. Commuter fares in urban areas are based on a zonal system, which takes into account distance.

Off-peak pricing

- 13.4 Fares do not vary by time of day or day of the week. For long-distance services off-peak pricing is not generally available. Some urban areas offer off-peak tickets but only for particular passengers, such as students or groups.

Price regulation

- 13.5 Until 2006 all standard rail fares were approved by the government. Since 2006 train operators have been able to set ticket prices. However, if fare increases are deemed to be too high the regulatory body can intervene. In reality fare increases are indirectly regulated as SBB and BLS are substantially state-owned.

Reservations

- 13.6 Reservations can be made on the majority of regional and long distance services. Reservations are compulsory on some international and overnight trains.

Discounts / Railcards / season tickets

- 13.7 Discounts in Switzerland are generally given for holders of railcards, as described below. A web fare called 'click and rail' is available for purchase online offering discounts on selected routes.
- 13.8 The following universally-available railcards exist:
- The "Halb Tax Abo" costs CHF 150 per year (around £80) and offers 50% discount on all rail fares, with no time restrictions.
 - The "General Abo" varies in cost depending on class of travel and age of passenger. A second class "General Abo" for an adult ages 24 to 65 costs CHF 3,100 per year (around £1,650). This railcard allows unlimited travel, with no time restrictions. The "General Abo" is available for individuals, couples and families, with special fares for children, students, those aged over 65 and disabled passengers.
- 13.9 If a railcard is purchased for two or three years the cost per year is reduced. A discount is also available if the railcard is combined with a Visa credit card.
- 13.10 Season tickets are available for most services. Season tickets can be purchased for weekly, monthly and annual travel. It is possible to pay for an annual season ticket in monthly instalments. Annual season tickets cost the equivalent of nine monthly season tickets.

VAT

- 13.11 VAT is applied at 7.6%.

Retail channels

- 13.12 Ticketing channels include:
- Ticket offices at stations
 - Ticket machines at stations
 - Internet: tickets sent by post, collected from station, printed at home or received as a mobile phone text message.

Terms and conditions

- 13.13 Terms and conditions vary by rail operator. Rules governing refunds are regulated by national legislation.

Refunds and changes to bookings

- 13.14 Generally tickets can be returned for a fee of CHF 5. As most tickets are walk-up changes to bookings are not normally necessary.

Compensation for delays

Generally speaking the need for compensation in Switzerland is limited. The rail system has an excellent punctuality record and timetables are set with a high

frequency of services. Should a passenger miss the last connecting train of the day they can either claim a refund for that leg of the journey, travel back to their origin station and receive a full refund or be compensated for the costs associated with the delay (for example hotel accommodation).

In addition, SBB offers further compensation of up to CHF 40 to cover taxi fares should a train be disrupted or delayed. If a passenger is travelling to an airport this compensation is increased to CHF 70.

Buying tickets from outside Switzerland

- 13.15 Some discounted fares are available to foreign passengers. These fares must have been booked through a foreign distributor or sent to a foreign address.

Average employee earnings in Switzerland

- 13.16 CHF 44,789 in 2006

Annual statistics

TABLE 13-1 ANNUAL RAIL STATISTICS FOR SWITZERLAND IN 2005

	Total
Passenger-kilometres (billion)	16.14
Passenger journeys (million)	364
Train-kilometres (million)	n.a.

Rolling stock age

- 13.17 In Switzerland the majority of Electric Multiple Units were built in the mid 1980s or 2000s, although there is older rolling stock built in the 1960s and 1970s. One third of the electric locomotives were built in the 1960s, one third in the 1980s and the remaining third in the 1990s.

Customer satisfaction

- 13.18 Customer satisfaction data is not available in Switzerland.

Competitive modes and market share

- 13.19 In 2005 mode shares for all trips were 14.8% for rail, 4.5% for bus and 80.6% for car.

A1.1 General overview sources

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The Netherlands

Average earnings, www.meesterbrein.com/view.php/gemiddeld-inkomen-nederland.html

Spain

Modal share, Movilia, Ministerio de Fomento 2007

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Sweden

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