

Article

Estimating the value of service exports abroad from different parts of the UK: 2011 to 2014

This article presents the results of an ONS project to estimate the value of services exports abroad from the English regions, Scotland, Wales and Northern Ireland. It presents experimental estimates of the value of these exports for 2011, 2012, 2013 and 2014 (the latest year available). The estimates by region and country of the UK are broadly consistent with the UK totals shown in the Balance of Payments.

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1. Introduction

The [United Kingdom Balance of Payments](#), known as The Pink Book, is published annually by the Office for National Statistics. It shows, separately, the value of goods exports and of services exports from the UK to other countries. However, it does not include figures on where these exports come from within the UK. HM Revenue and Customs' [Regional Trade Statistics](#) provides estimates of the value of goods exports for the NUTS1¹ areas of the UK: the English regions, Scotland, Wales and Northern Ireland. At present, however, there are no consistent sub-UK estimates for the value of services exports, although the Scottish government publishes estimates for Scotland. This article aims to fill this gap.

The context for this work is, firstly, the increasing need for information at sub-UK level from the devolved administrations (Scotland, Wales and Northern Ireland), the Greater London Authority and the new English "city regions"; and secondly, the increasing importance of the service industries for economic growth, including trade. In this context, there is demand for more detailed information about where the exports of the UK's services are coming from within the UK.

In response to this demand, we set up a project last year to produce regional² estimates for exports of services from the UK. The first result was the publication of regional counts of Great Britain "exporters" (exporting businesses) from the [Annual Business Survey](#) (ABS). The second stage of the work, to develop a method for estimating regional values of services exports, is presented in this article. The methodology is described in Section 2. The results from this project, which are considered experimental, are presented in Section 3.

Notes for Introduction

1. The Nomenclature of Units for Territorial Statistics (NUTS) is a hierarchical classification of administrative areas, used across the EU for statistical purposes. There are 12 NUTS1 areas in the UK: the 9 former English Government Office Regions, Scotland, Wales and Northern Ireland. For more information, see our [overview of the 3 NUTS and 2 LAU layers in the UK](#).
2. In the remainder of this article, we use "regional" as shorthand for the 12 NUTS1 areas.

2. Methodology

The conceptual choices

A key decision that had to be made for this work was defining what we mean exactly when we ask "where the exports of services come from within the UK?" We could measure exports by looking at where the company responsible is located (the registered company address), but this would tend to skew results towards head office locations, which would overestimate export values for London and underestimate them for the rest of the UK. Alternatively, we could try to measure exports at the location where exporting takes place, which has advantages in terms of simplicity of concept but disadvantages in terms of the lack of good data sources; also, this method focuses only on the final point in the chain of production and distribution and therefore underestimates contributions from other parts of the exporting organisation. A third option (what we chose for this project) assumes that all parts of an organisation contribute to exporting.

Having chosen our overall approach, we had to decide how to allocate total values of services exported abroad to different parts of the UK. This is because information on companies' activities, including trade, is usually reported at UK level, not at regional level. Indicators such as employment can be used to apportion these totals to regions. In this project, we used several different indicators for this purpose (see Detailed description of methods).

The framework

The framework for this work was the [trade in services tables](#) of the Pink Book. The regional estimates were designed to match the Pink Book exports figures as closely as possible. Two main types of data source are used to compile the trade in services tables: administrative data and survey data. In Table 1, the rows labelled "transport", "insurance and pension services" and "financial" are based mainly on administrative data sources¹, while the other rows are based on survey sources. "Travel" comes mainly from the [International Passenger Survey](#) (IPS), while the main source for all other rows is the [International Trade in Services](#) survey (ITIS).

Table 1: Trade in services presentation – commodity (product) categories

Manufacturing on physical inputs owned by others
Maintenance and repair
Transport
Travel
Construction
Insurance and pension services
Financial
Intellectual property
Telecommunication, computer and information services
Other business
Personal, cultural and recreational services
Government

Source: Office for National Statistics, United Kingdom Balance of Payments - The Pink Book

By analysing the ITIS microdata and merging it with microdata from the Inter-Departmental Business Register (IDBR), we were able to create regional estimates of services exports in Great Britain for all the rows in Table 1 except transport, travel, insurance and pension services, and financial services. Working in collaboration with colleagues at the Northern Ireland Statistics and Research Agency (NISRA), we were able to produce similar results for Northern Ireland using the [Annual Business Inquiry](#) (ABI). The analysis of ITIS and ABI data was broken down by industry using the [UK Standard Industrial Classification 2007 \(SIC07\)](#) rather than the commodity categories shown in Table 1 (see Detailed description of methods).

For travel, we apportioned the Pink Book UK figure using the information on overseas visitors' spending by region from the IPS. For transport, insurance and pensions and financial services we apportioned the Pink Book figures using a series of indicators (see Detailed description of methods). The results for rows where a UK-level figure has been regionalised using an indirect indicator are likely to be less well aligned with our aim of reflecting the contribution of all parts of an organisation to the export effort than those based on survey data..

Our intention was to match as closely as possible the figures from the Pink Book when the estimates were aggregated to UK level. Table 2 shows some differences with the Pink Book figures, but by no more than 2%. It would be possible to constrain the results from ITIS and the ABI to match their Pink Book equivalents, but we have decided not to do this in this article. By leaving the survey results unconstrained, users can judge how closely they match the Pink Book and see where there are differences. Depending on the feedback we receive from users of these statistics, we may decide to constrain the results to the Pink Book in future.

Table 2: Comparison of our estimates with Pink Book figures

figures in £ million or percentages

	2011	2012	2013	2014
Our estimates (aggregated), £m:				
Great Britain	188,268	199,182	211,748	213,475
Northern Ireland	1,653	1,868	2,557	2,439
UK	189,921	201,050	214,305	215,914
Pink Book UK total, £m	188,816	197,520	214,495	218,760
Comparison of our estimate against Pink Book estimate	100.6%	101.8%	99.9%	98.7%

Sources: Office for National Statistics, United Kingdom Balance of Payments - The Pink Book; our estimates

Detailed description of methods

Estimates based on survey sources

The first stage of this project involved a careful examination of the main survey sources that could be used to produce regional estimates of the value of service exports abroad from the UK. We explored in detail the coverage and quality of International Trade in Services survey (ITIS) and the Annual Business Survey (ABS), our two main surveys which collect data on the value of service exports. We also examined whether they could be linked to Inter-Departmental Business Register (IDBR) data, which was an essential requirement for regionalisation of the estimates. The conclusion from this stage of the work was that both ITIS and the ABS could be linked to the IDBR but ITIS was better for our purposes than ABS, firstly because it is the main survey source used for producing the Pink Book and therefore undergoes rigorous quality assurance and data validation checks; and secondly because ITIS incorporates ABS data where necessary (whereas the ABS does not take on ITIS data).

Although we decided to use ITIS as the main survey source for Great Britain, the methods are consistent with the approach used by ONS to produce regional counts of "exporters" (businesses exporting from Great Britain) using ABS data, for which estimates were first published in November 2015. In both cases, the work involved building a time series starting in 2011². We also used the same method for regional apportionment of data. This involved dividing up the export values provided at the level of the organisation as a whole (or reporting unit within it) to their component parts (the local units, which are the physical locations which make up the organisation) using information from the IDBR. We used the local unit employment proportions within each reporting unit from the IDBR to apportion ITIS export values, and assigned a geographical location and industrial sector to those values using the local unit information from the IDBR. This is consistent with the approach which assumes that all parts of an organisation contribute to exporting (rather than one based on head offices).

Northern Ireland was treated as a separate case because ABS does not cover Northern Ireland (the equivalent there being the ABI) and, although ITIS does cover Northern Ireland, its sample size is not big enough to produce reliable breakdowns. Therefore we used ABI data, which is considered to be the best source for detailed analysis of exports from Northern Ireland.

The final survey source used for this project was the IPS. The IPS is used to compile the Pink Book line "travel" (see Table 1). For this project, we took the UK total from the Pink Book and apportioned it to regions using the IPS data on regional spend of overseas visitors.

Estimates based on administrative data

The regional estimates for transport services, insurance and pension services, and financial services were produced by apportioning the Pink Book totals for these lines, which are based on administrative data sources, to different parts of the UK.

For transport services we had to find a way of regionalising the Pink Book UK totals. First, we used ABI data to estimate transport for Northern Ireland and, by subtracting Northern Ireland from the UK, generated figures for Great Britain. Then we used data from the Business Register and Employment Survey (BRES) to calculate the proportion of employees in each transport type (sea, air, road, rail, pipeline, postal and courier) working in each English region and in Scotland and Wales. These were then used to apportion the Pink Book transport totals to each part of Great Britain. We would like to find better regional indicators in the future, and would welcome advice from experts in the transport field.

For financial services, we also needed to regionalise the Pink Book UK total. We considered using BRES-based apportionment but decided in favour of an approach based on indicators of regional economic activity in the financial sector from the Bank of England, combined with information on regional export shares for SIC07 Division 66 from ITIS, apportioned using the IDBR (as described above). This is because economic activity is likely to be a better proxy for export values in the financial services sector than numbers of employees.

For insurance and pension services, we estimated a figure for Northern Ireland in line with the Northern Ireland proportion for financial services. Then we followed the BRES-based approach for regionalising Great Britain (the Pink Book UK total minus Northern Ireland). We would like to find better regional indicators for insurance and pension services in the future, and would welcome advice from experts in the field.

Presentation of results

The Pink Book is compiled on a commodity (product) basis, and at UK level the breakdowns are presented on this basis (see Table 1). However, the ITIS and ABI data used in this project were analysed on an industry basis. As users interested in regional growth and trade analysis usually require breakdowns on an industry basis, we decided to present results broken down by the "functional categories" shown in Table 3, which are a combination of i) commodity categories for the estimates produced by regionalising UK figures from the Pink Book, and ii) SIC07-based industries for the estimates produced using ITIS and ABI data.

The functional categories shown in Table 3 are a mixture of the industry-based and commodity-based approaches, so this decision may have introduced some inconsistency. However, we believe that the benefits of presenting the results in this way outweigh the cost in terms of inconsistencies.

Alternatives to the "functional category" approach were also considered. These were to produce all breakdowns on either an industry basis or a commodity basis. However, it is impossible to produce them all on an industry basis because Pink Book data is not available on this basis. On the other hand, it would have been possible to produce all breakdowns on a commodity basis because the ITIS data includes product information. However, the product information in ITIS is only available at the reporting unit level, so this would have meant defining the exporting location of companies on the basis of their head offices rather than assuming that all parts of the organisation contribute to exporting. This option was rejected at the beginning of the project.

Table 3: Functional categories used in this project

Functional category	SIC07 section
Primary and utilities (agriculture, mining, utilities)	A, B, D, E
Manufacturing	C
Transport*	-
Travel*	-
Construction	F
Wholesale and motor trades	G (divisions 45 and 46)
Retail excl motor trades	G (division 47)
Information and communications	J
Real estate, professional, scientific and technical services	L, M
Insurance and pension services*	-
Financial*	-
Administrative and support services	N
Public admin, health and education; arts, entertainment and recreation; other services	O, P, Q, R, S

Sources: Office for National Statistics, United Kingdom Balance of Payments - The Pink Book; UK Standard Industrial Classification 2007 (SIC07)

Note:

1. The categories indicated by an asterisk (*) symbol are compiled on a product basis from the United Kingdom Balance of Payments - The Pink Book, and therefore do not align with any SIC07 sections.

Service exports tend to be concentrated in the SIC07 sections in the "services" part of the economy. SIC07 sections in the "production" part of the economy are more likely to be exporters of goods, but they also export some services. For example, manufacturers export services when they process, assemble, label or pack goods owned by a foreign business.

Notes for Methodology

1. Administrative data is data which is collected mainly for administrative purposes rather than for research. The sources of such data include government departments, industry bodies and private companies.
2. In our case, 2011 was chosen because it was the first year for which data linking (ITIS to IDBR) was feasible.

3. Experimental results

The results from this project are considered experimental because we are presenting new methods for regionalising UK information on exports of services. We are conscious that there is some inconsistency between the methods used for different lines and between the approaches for Great Britain and Northern Ireland. This is inevitable given the data sources that we are using.

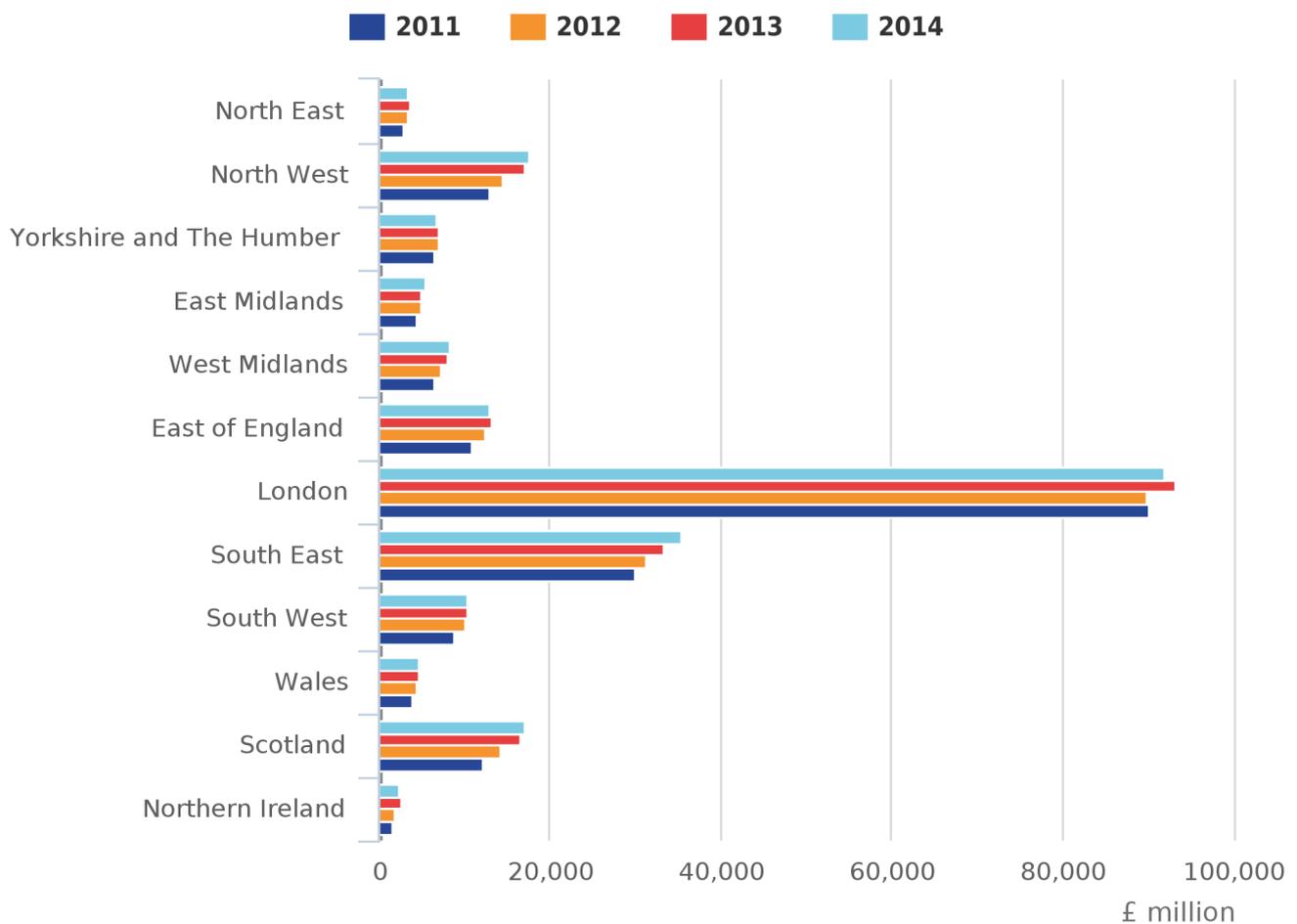
UK exports of services abroad

According to the official estimates from the Pink Book, the UK exported services worth £218.8 billion in 2014, up from £188.8 billion in 2011. In the remainder of this section we use the estimates from this project, which are £215.9 billion in 2014 up from £189.9 billion in 2011.

Figures 1 and 2 show that exports of services (valued in pounds sterling at current prices) rose in all parts of the UK between 2011 and 2014 (the earliest and latest years available). The strongest increases were in Northern Ireland (up 48%), Scotland¹ (up 39%) and the North West (up 36%). However, it should be noted that questions have been raised about the quality of the estimates for financial, insurance and pension services in Northern Ireland, which are the main drivers of growth between 2011 and 2014, so the 48% figure may be an overestimate.

Figure 1: Total value of service exports from the UK by region

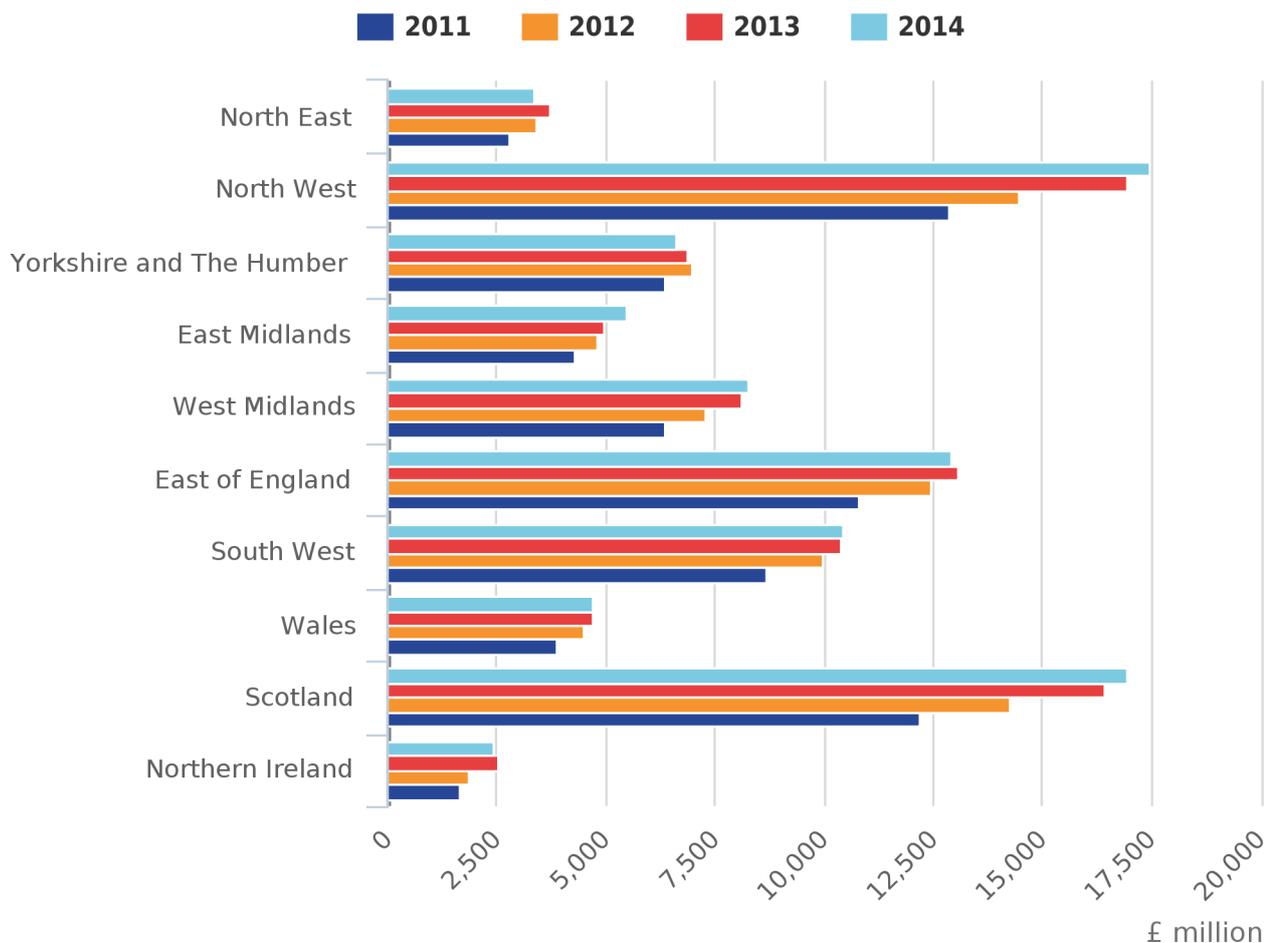
2011 to 2014



Source: Office for National Statistics, United Kingdom Balance of Payments - The Pink Book; International Trade in Services; Northern Ireland Annual Business Inquiry

Figure 2: Value of service exports from the UK by region excluding London and the South East

2011 to 2014



Source: Office for National Statistics, United Kingdom Balance of Payments - The Pink Book; International Trade in Services; Northern Ireland Annual Business Inquiry

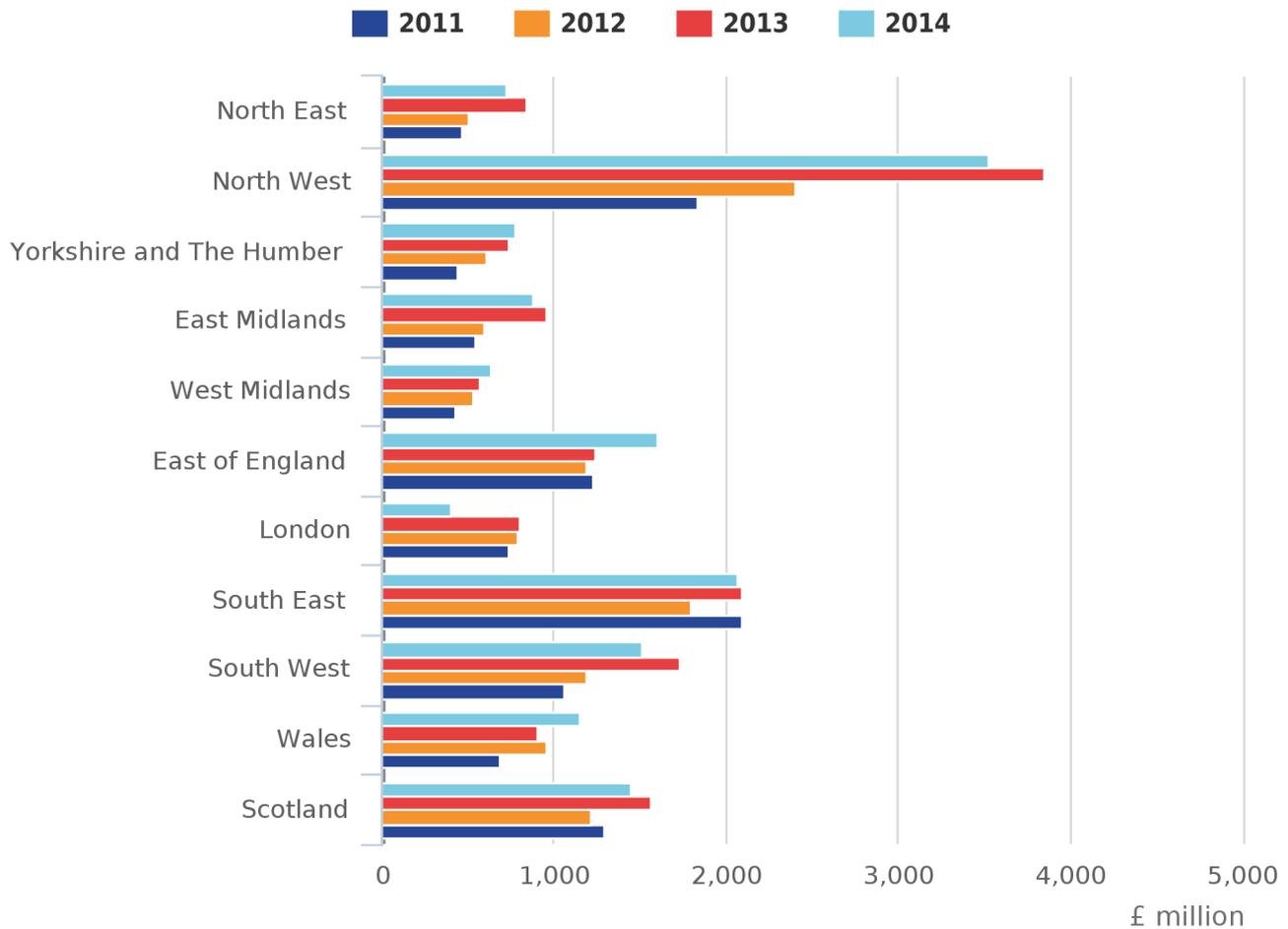
London accounts for a far bigger share of service exports from the UK than any other region, accounting for nearly half of the UK total at the start of the period, despite the regionalisation methods used for this project, which were designed to reduce the "head office effect" (see The conceptual choices). This is because London's economy is more service-based than the rest of the UK. However, London saw the slowest rate of growth in services exports between 2011 and 2014 (up 2%). As a result, although the estimated value of service exports from London rose from £90 billion in 2011 to £92 billion in 2014, London's share of the UK total fell from 47% to 43%.

In the rest of this section, we highlight some of the trends in service exports from different parts of Great Britain by industry or commodity category. Northern Ireland is excluded from this analysis both because of the concerns about the quality of the estimates for financial, insurance and pension services (as previously mentioned) and because some of the estimates for Northern Ireland are compiled using different sources and methods from those for Great Britain (see Detailed description of the methods)².

Figure 3 shows that the growth of service exports from the manufacturing industry has been strong in all parts of England except London and the South East. In the North West, service exports almost doubled between 2011 and 2014. In Wales, manufacturing services exports abroad rose by 68% over this period, and in Scotland they rose by 12%.

Figure 3: Value of service exports from the manufacturing sector by region in Great Britain

2011 to 2014

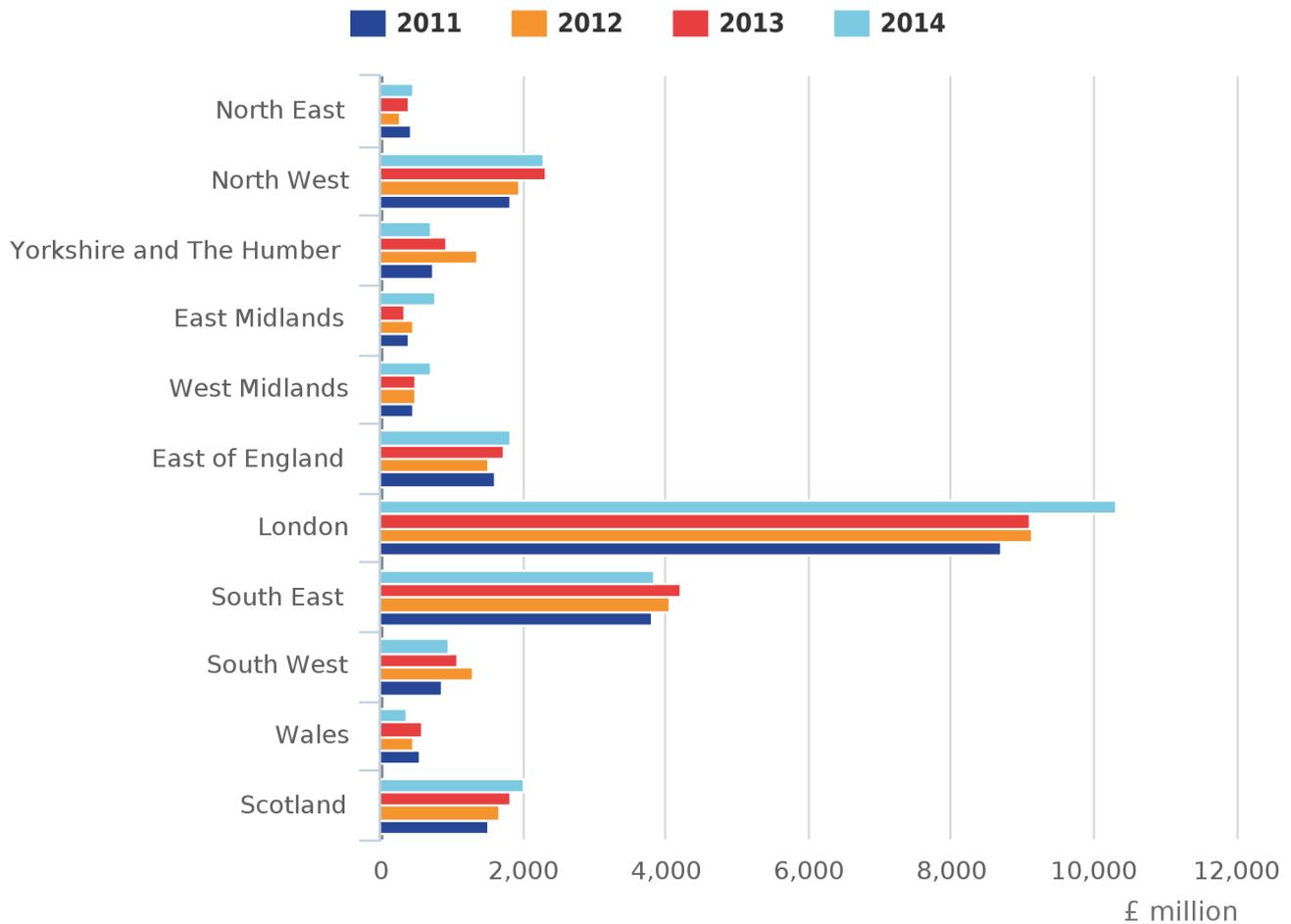


Source: Office for National Statistics, International Trade in Services

Figure 4 shows that London and the South East dominate transport services exports. Scotland saw an increase of 33% between 2011 and 2014 while the North West saw an increase of 25%. The East and West Midlands also experienced growth in exports of transport services over this period (from a low base), but in Wales the value of these exports fell by around one-third.

Figure 4: Value of transport service exports by region in Great Britain

2011 to 2014

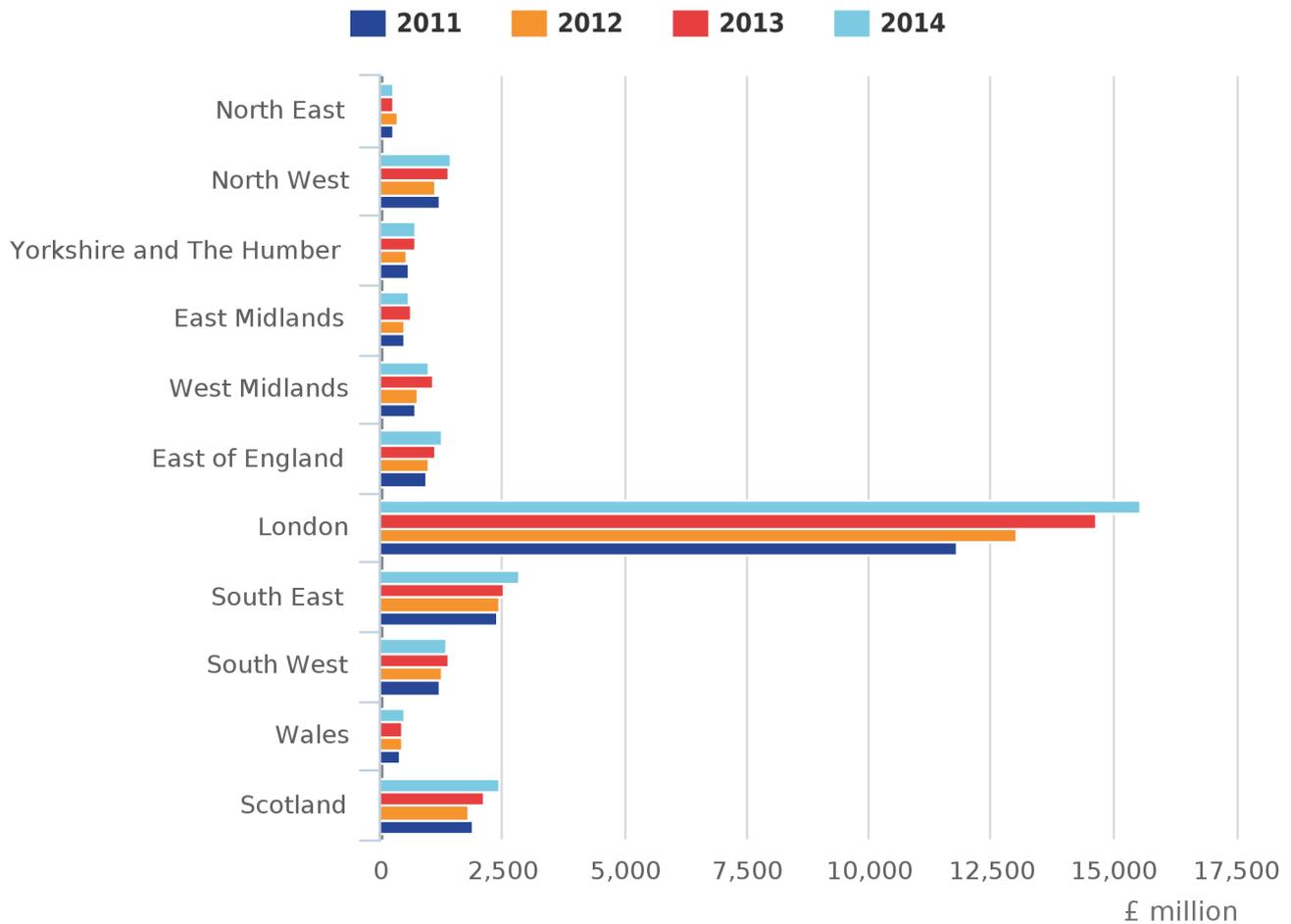


Source: Office for National Statistics, United Kingdom Balance of Payments - The Pink Book

London also dominates travel services exports, as the main tourist centre in Great Britain. Figure 5 shows that it saw strong growth in exports of travel services from 2011 to 2014, up by 32%. Although the rest of Great Britain accounts for less than half of the Great Britain total, many areas saw increases in travel services exports over this period.

Figure 5: Value of travel service exports by region in Great Britain

2011 to 2014

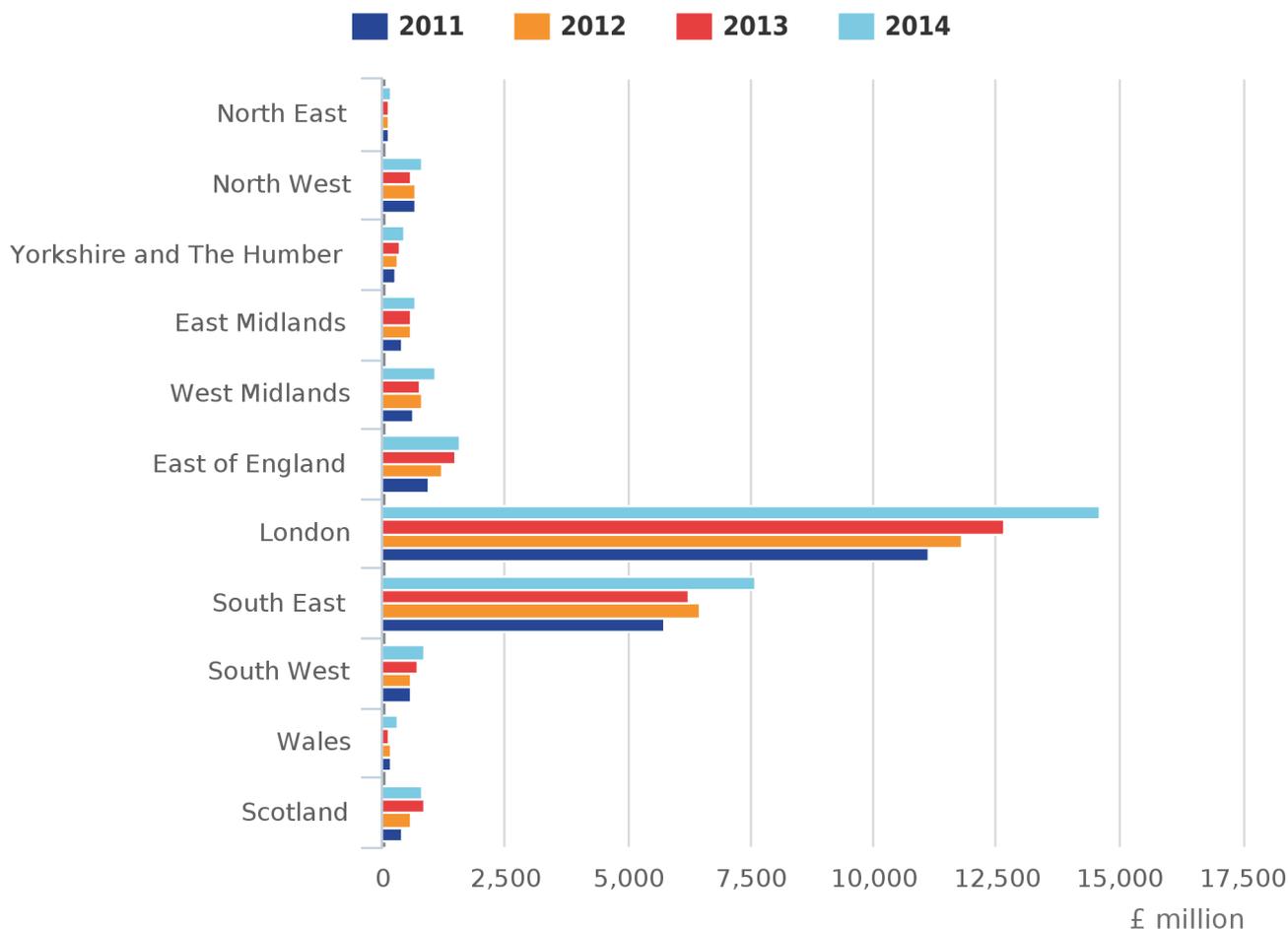


Source: Office for National Statistics, United Kingdom Balance of Payments - The Pink Book

London and the South East are the main exporters of information and communications services (Figure 6), but growth was strong (from relatively low bases) in all parts of the UK between 2011 and 2014. The increase in value exported was highest in Scotland, where it doubled between 2011 and 2014, followed by Yorkshire and The Humber (up 77%) and the East of England (up 71%).

Figure 6: Value of service exports from the information and communications sector by region in Great Britain

2011 to 2014

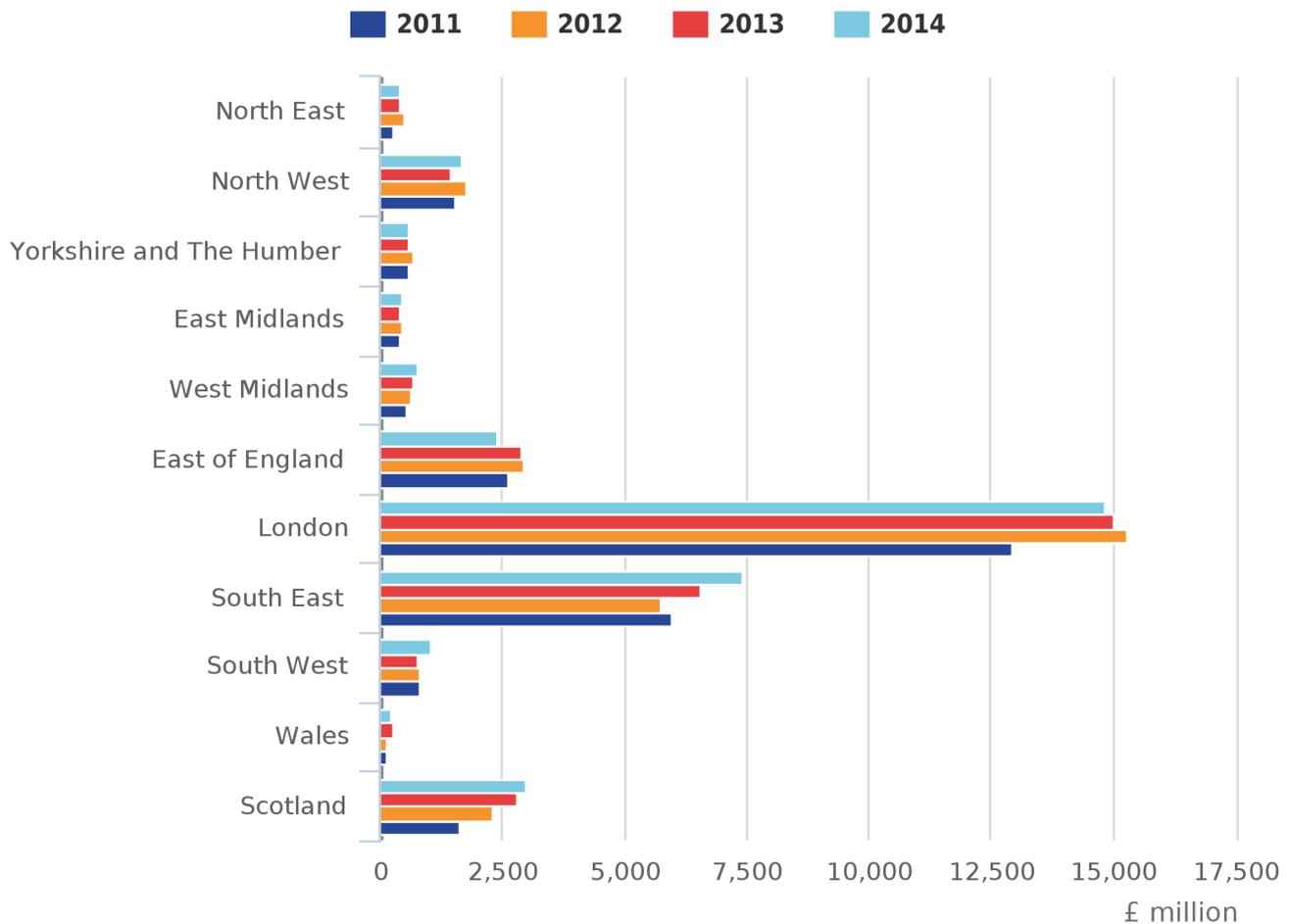


Source: Office for National Statistics, International Trade in Services

Figure 7 shows exports of services from the real estate sector and from the professional, scientific and technical sector which includes legal activities, accounting, management consultancy, advertising, market research, architectural and engineering services and scientific R&D. Although London and the South East of England are dominant in these fields, Scotland is also an important and growing player, with £3.0bn of export value in 2014, up from £1.6bn in 2011. Other parts of England (the North East, West Midlands and South West) and Wales also saw strong growth from 2011 to 2014.

Figure 7: Value of service exports from the real estate and professional, scientific and technical sectors by region in Great Britain

2011 to 2014

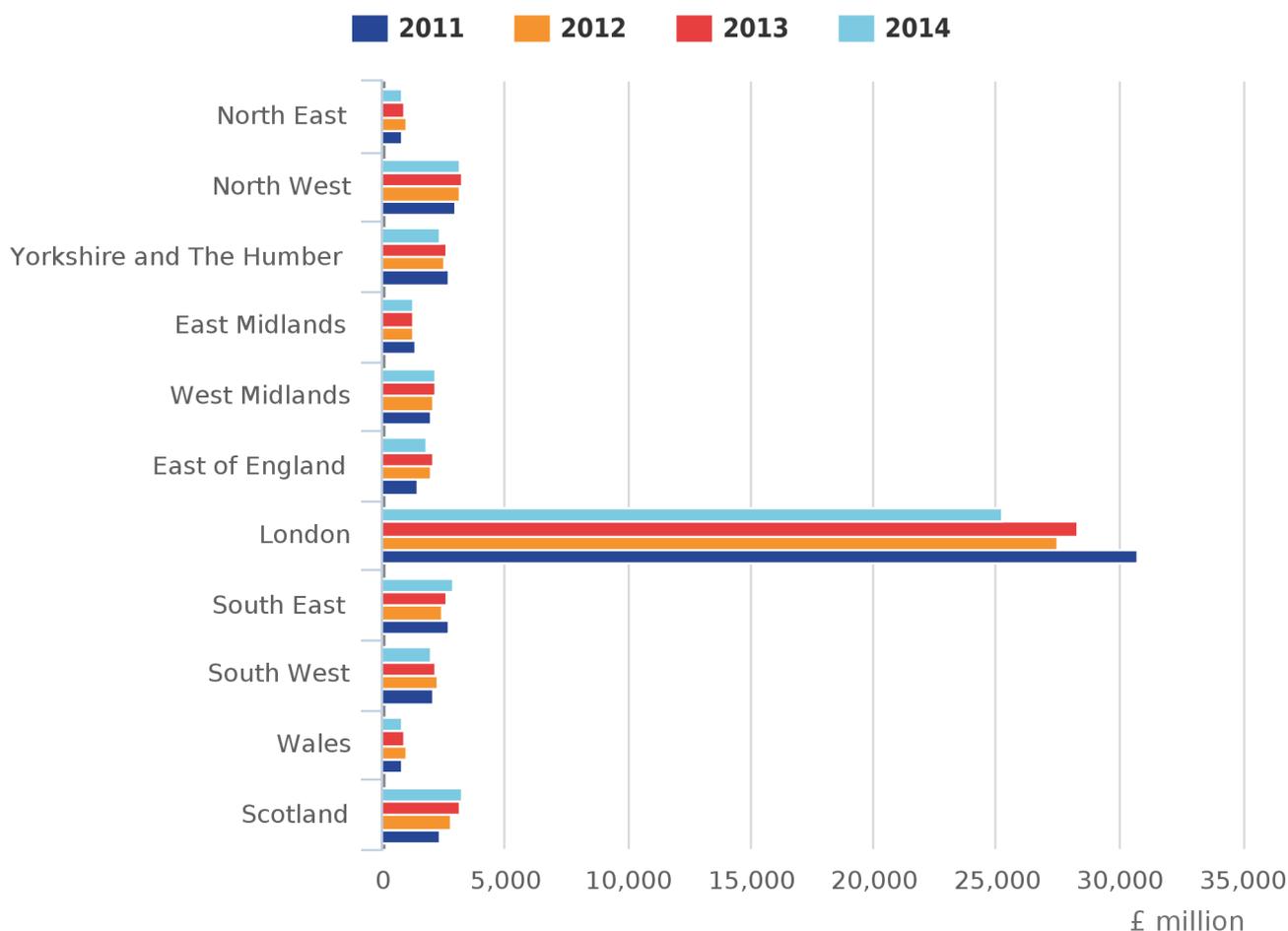


Source: Office for National Statistics, International Trade in Services

Figure 8 shows that there was a lacklustre performance from financial services exports from most parts of Great Britain over this period, with only Scotland seeing strong and sustained increases. Exports of financial services from London fell from £30.7bn to £25.2bn between 2011 and 2014. It should be noted that financial services do not include pensions and insurance, which are shown separately.

Figure 8: Value of financial service exports by region in Great Britain

2011 to 2014



Source: Office for National Statistics, United Kingdom Balance of Payments - The Pink Book

The data table which is available to download with this article includes the full set of results for the NUTS1 countries and regions of the UK, with breakdowns by functional category.

On 8 July 2016, the Northern Ireland Statistics and Research Agency (NISRA) is publishing a paper online entitled "Northern Ireland Broad Economy Sales and Exports Statistics: Goods and Services Results 2014" which gives more detail about the Northern Irish trade statistics presented in this paper. The NISRA publication is available through their [website](#).

Notes for Experimental results

1. The Scottish government produces its own estimates of the value of services exports abroad, known as "international services exports". These show more modest growth between 2011 and 2014, see the [Export Statistics Scotland \(ESS\)](#) website for more information. Exports from the service sector industries in 2014 in ESS were valued at £10.5 billion, compared with the estimate of £17.0 billion in this article. The differences are due to the different sources and methods used.
2. This makes it difficult to do like-for-like comparison between Northern Ireland and Great Britain regions by "functional category". However, Northern Ireland results are available for most functional categories in the data table which is available to download with this article, allowing readers to construct their own comparisons if desired.

4. Looking ahead

These estimates are experimental, and we hope to continue developing them in the future. We welcome your feedback on whether there are any alternative data sources which might be used to improve our estimates, particularly for regionalisation of exports of transport services and insurance and pension services. More broadly, we welcome comments on whether our approach meets your needs. To provide feedback, please get in touch with the statistical contact for this release (contact details at the top).

HM Revenue and Customs (HMRC) is also improving its Regional Trade Statistics estimates of the value of goods exports by constituent country and region of the UK. Users may wish to put together results from HMRC for the value of goods exports and from us for the value of services exports. However, they should be aware that the Regional Trade Statistics methodology currently uses a different regional apportionment method from the one presented in this article: it allocates goods to the registered location of the trading business, which is often the head office. Readers are advised to proceed with caution in any attempt to combine the two sets of statistics for goods and services exports, given the different regionalisation methods.

Users can look at these results in conjunction with estimates of the numbers of exporters from the Annual Business Survey (ABS), which will be published every year on our website alongside the ABS annual release.