

# OXFORD ECONOMICS

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## The economic impact of the UK Maritime Services Sector: Ports

**Maritime UK**  
One voice for shipping, ports and maritime business



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# 1 Executive summary

## The UK ports sector's overall economic impact

### Direct contribution to employment

- In 2013, the ports sector is estimated to employ 118,200. Of these, 43% worked in either transport or a transport-related activity, with a further 18% employed in cargo handling.
- The workers in the sector are highly productive. The sector's labour productivity (measured as gross value added divided by employment) is £65,400 per worker. This is 1.3 times the UK economy's average.

### Direct contribution to GDP

- It is estimated that the ports sector made a £7.7 billion value-added contribution to UK GDP. To put the sector's contribution to economic output into context, the value added it creates is greater than plastic products manufacture and repair of motor vehicles industries and nearly as large as the UK's advertising industry.

### Direct contribution to UK Exchequer

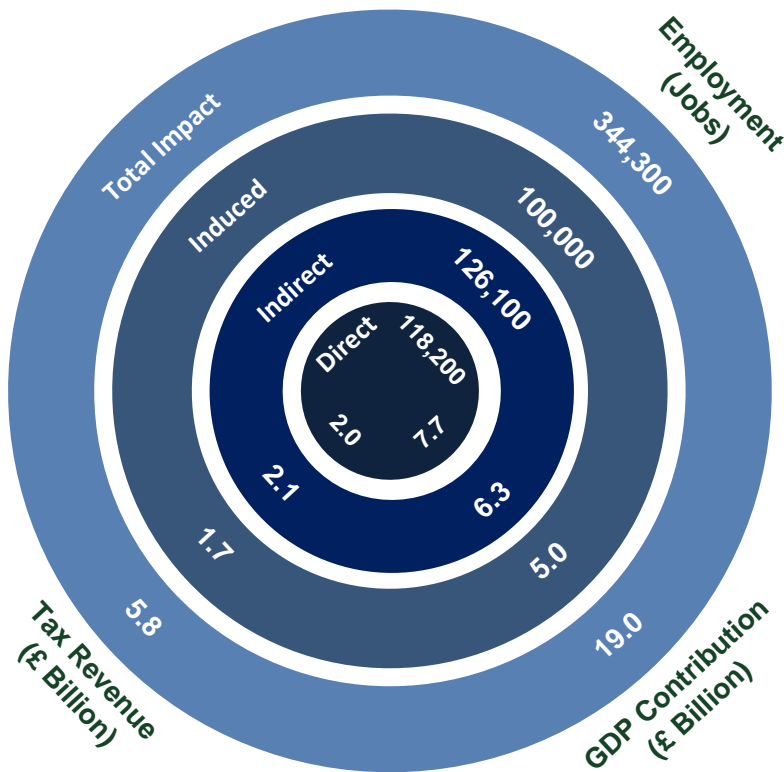
- The ports sector pays £2.0 billion in taxes, through a combination of corporation, labour and other indirect taxes such as VAT and council tax. Nearly two thirds (63%) of this revenue was generated through employee related income tax and National Insurance Contributions (NICs).

### Multiplier effects

- Ports source a significant proportion of the inputs of goods and services that they procure from UK suppliers, which, in turn, have their own domestic supply chains. In addition, people employed either by the ports sector or by its suppliers will spend their wages and salaries on consumer goods and services in the wider UK economy. Such effects are typically referred to as the 'indirect' and 'induced' impacts.
- Including the direct, indirect and induced impacts, the ports sector is estimated to have supported 344,300 jobs in 2013, equivalent to 1 in every 94 jobs in the UK. Moreover, once these multiplier effects are accounted for, the sector supported a £19.0 billion gross value added contribution to UK GDP, equivalent to 1.2% of the economy's output.
- Inclusive of these multiplier impacts, the ports sector's total tax contribution to the UK Exchequer was approximately £5.8 billion.

The full economic impact of the ports sector, in terms of employment, gross value added contribution to GDP contribution and tax revenue generated for the Exchequer, through each channel of impact, is summarised in Figure 1.1.

**Figure 1.1: Summary of the economic contribution of the UK ports sector in 2013<sup>1</sup>**



## Regional impacts

- Of the 118,200 people estimated to be employed in the ports industry in 2013, more than one-quarter were based in Scotland. Five other nations and regions each benefitted from having for more than 10,000 people employed by the ports industry: London, South East, North West, Yorkshire & the Humber and Northern Ireland. The ports industry made its largest gross value added contribution to GDP in Scotland at nearly £2.0 billion in 2013.
- When including the wider multiplier impacts, the South East accounted for over 15% the total gross value added contribution to GDP supported by the ports industry. Other nations and regions where the port sector made a significant contribution were Scotland, London, North West and East of England.

<sup>1</sup> Figures may not sum due to rounding.

## 2 Introduction

The objective of this report is to evaluate the economic contribution the ports sector makes to the UK economy in 2013, providing an update on previous research<sup>2</sup>. For the purposes of this research, the ports sector is defined to include a range of activities such as warehousing and storage, transport services and shipbuilding and repair, undertaken within UK ports. This study was done in conjunction with economic impact assessments of the UK shipping and maritime business services sectors. The results from this trio of sectors were then combined, with adjustments made to eliminate 'double counting', in order to generate an estimate of the economic impact of the combined UK maritime services sector.

### 2.1 The channels of economic impact

The ports sector supports employment, gross value added and tax revenues in the UK through three distinct channels. These channels are:

- **Direct** – the employment, output and taxes paid by the UK ports sector itself, including cargo handling, storage and warehousing, the construction of related-infrastructure and support services.
- **Indirect** – the employment, output and tax receipts supported through the ports sector's procurement of inputs of goods and services from its UK-based supply chain.
- **Induced** – the employment, output and tax receipts supported by the spending of those directly or indirectly employed in the UK ports sector spending their wages. This helps to support jobs in retail and leisure outlets, companies producing consumer goods and in a range of service industries.

### 2.2 Report structure

The report is structured as follows:

- **Chapter 3** details UK ports sector's direct impact in terms of employment, contribution to GDP and tax receipts generated for the Exchequer.
- **Chapter 4** explores the wider multiplier impacts of the UK ports sector on the economy.
- **Chapter 5** evaluates the distribution of the total impact of the ports across the UK's nations and regions.
- **Chapter 6** concludes.

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<sup>2</sup> Oxford Economics, (2013), 'The economic impact of the UK Maritime Services Sector: Ports', February.

## 3 Direct impact

This chapter highlights the employment, gross value added contribution to GDP and tax receipts generated by the UK ports sector, here defined to include a range of activities such as warehousing and storage, transport services and shipbuilding and repair, undertaken within UK ports<sup>3</sup>.

### KEY POINTS

- It is estimated that the ports sector employed 118,200 people to deliver its services in 2013. This makes the sector a larger employer than the UK's air transport industry and cultural activities sector.
- The ports sector generated £7.7 billion in gross value added for the UK economy. This was a greater contribution than the manufacture of plastic products and motor vehicles repair industries and nearly as large as the UK's advertising industry.
- It is estimated that the sector paid a total of £2.0 billion in taxes to the Exchequer in 2013.

### 3.1 Direct contribution to employment

In line with previous research, Oxford Economics adopt a hybrid approach to estimating the contribution to employment of the UK ports sector. Using the ONS Business Register and Employment Survey (BRES), Oxford Economics have selected SIC codes that reflect the type of activities that occur in ports<sup>4</sup>. This was mapped to wards containing ports as shown by maps on the websites of major port groups and in hard copy. From this, an estimate was derived for the employment at 18 major UK ports<sup>5</sup>. In 2013 these 18 ports jointly dealt with 405 million tonnes of freight and handled around 18 million international sea passengers, as shown in Table 3.1. These represented 80.6% and 87.8% of UK freight and passengers, respectively. In order to account for the remainder of UK ports this total was then grossed up by their share of all

<sup>3</sup> This represents a wider definition than that used by the Department for Transport (2010), 'Port Employment and Accident Rates: 2009/10', Statistical Release, October. As such, estimates contained herein include a wider selection of industries than the Department for Transport study, which focussed on jobs 'directly related' to port operations (i.e. the mode switch process of moving freight or passengers between land and water, but including the administrative and regulatory jobs as well as operational ones), and only included other employment on port estates (such as ship repair, other industry, or supporting services such as catering) as 'indirectly related', 'partially related' or 'unrelated' activities. There are also significant geographical differences reflecting the use of ONS BRES council ward data to represent proximity to ports. In addition, this study calculates employment on a headcount rather than a full-time equivalent basis.

<sup>4</sup> The BRES covers all UK businesses registered for Value Added Tax (VAT) and/or Pay as you Earn (PAYE). Focusing on employment and financial information, its data is disaggregated by industry and geography. The Standard Industrial Classification of Economic Activities (SIC) is used by the Office for National Statistics to classify businesses by the type of economic activity in which they are engaged. It provides a framework for the collection, tabulation, presentation and analysis of data.

<sup>5</sup> The data collected from the BRES are for ports which dealt with in excess of 10 million tonnes of freight or handled over 1 million international sea passengers in 2007. Data was used for 2007 to maintain continuity with previous research. For Belfast, employment data was projected forward from 2009 using the growth in employment in Belfast by broad industrial sector, sourced from the Department of Enterprise, Trade and Investment.

freight passing through UK ports. This gives a scaling factor of 1.24<sup>6</sup>. This is a small grossing factor, which should lead to a relatively accurate estimate for employment of the total sector.

**Table 3.1: Freight and passenger data in 2013**

Port	Freight (000 tonnes)	Share of total	International pax (000) - excluding cruises	Share of total
Belfast	16,783	3.3%	0	0.0%
Bristol	10,633	2.1%	0	0.0%
Clyde	14,783	2.9%	0	0.0%
Dover	25,295	5.0%	12,740	62.2%
Felixstowe	26,214	5.2%	7	0.0%
Forth	26,365	5.2%	1	0.0%
Grimsby & Immingham	62,614	12.4%	83	0.4%
Holyhead	3,212	0.6%	1,954	9.5%
Hull	10,910	2.2%	876	4.3%
Liverpool	31,149	6.2%	120	0.6%
London	43,206	8.6%	14	0.1%
Medway	8,384	1.7%	0	0.0%
Milford Haven	41,105	8.2%	328	1.6%
Orkney	1,054	0.2%	0	0.0%
Portsmouth	3,613	0.7%	1,871	9.1%
Southampton	35,797	7.1%	0	0.0%
Sullom Voe	6,394	1.3%	0	0.0%
Tees and Hartlepool	37,641	7.5%	0	0.0%
<b>Total of 18 ports</b>	<b>405,151</b>	<b>80.6%</b>	<b>17,994</b>	<b>87.8%</b>
<b>UK Total</b>	<b>502,971</b>		<b>20,490</b>	

Source: Department for Transport, 2013

Grossing up the total for the UK ports sector from a sample of major ports has one potential disadvantage. It may misrepresent the non-sampled ports if there are marked differences in the type of activities that large and small ports undertake. This may occur if large ports focus on freight and passenger services, while smaller ones focus more on recreational activities and maintaining smaller scale but nonetheless important services such as ferry links to island communities.

For some of the public sector occupations in ports it is possible to obtain more accurate information from other government sources. The National Audit Office (2008) reports that in 2007, HM Revenue and Customs (HMRC) had 4,500 staff working for the UK Border Agency on

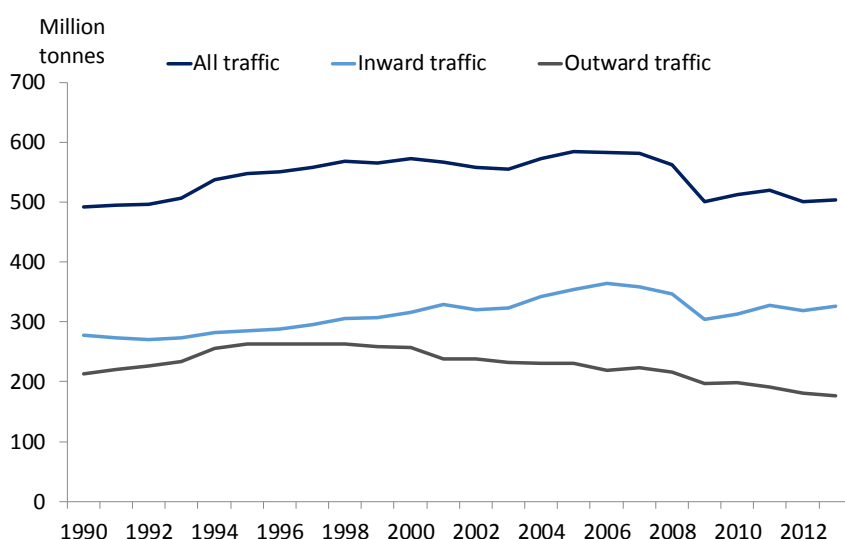
<sup>6</sup> The scaling factor was calculated by dividing total freight tonnage in the UK taken from the Department for Transport's Maritime Statistics for 2011 by the total freight tonnage handled by these 18 ports. The equivalent scaling factor used in the last report was 1.24.



detection<sup>7</sup>. Assigning a share of this total to ports using the share of imports (in volume terms) to the UK that arrive via ports suggests that there were approximately 3,375 people working as custom officers at UK ports in 2007. In order to extrapolate to 2013, this figure has been adjusted to account for the growth of freight volumes handled at UK ports, which has fallen by over 14% since 2007. This suggests there is currently 2,919 HMRC staff working on detection at UK ports. Moreover, the National Audit Office (2013) reports a total of 7,600 staff were employed by the Border Force in March 2013<sup>8</sup>. ONS (2013) tourism data shows just under 15% of foreign visitors to the UK arrived by sea<sup>9</sup>. Using this proportion, it is estimated that nearly 1,100 of the Border Force's staff are employed in UK ports.

Combining the different approaches suggests that in 2013 the ports sector directly employed an estimated 118,200 people, equivalent to 0.4% of total employment in the UK. The employment estimate for 2013 is just 1% above its level in 2011, suggesting the ports sector has created 1,000 jobs in the last two years<sup>10</sup>. This compares to a 3% decrease in freight traffic (Chart 3.1) and a 3% decline in international passenger volumes since 2011. In the wider UK economy, employment levels increased by 3% over the same period.

**Chart 3.1: All UK ports freight traffic**



Source : Department for Transport (2013)

To put the scale of the sector's contribution to employment into context, it is helpful to compare it to other industries.<sup>11</sup> As shown in Chart 3.2, the employment it creates is greater than air

<sup>7</sup> National Audit Office, (2008), 'HM Revenue & Customs: The control and facilitation of imports', 7 November.

<sup>8</sup> House of Commons, (2013), 'The Border Force: securing the border', Session 2013-14, 4 September 2013.

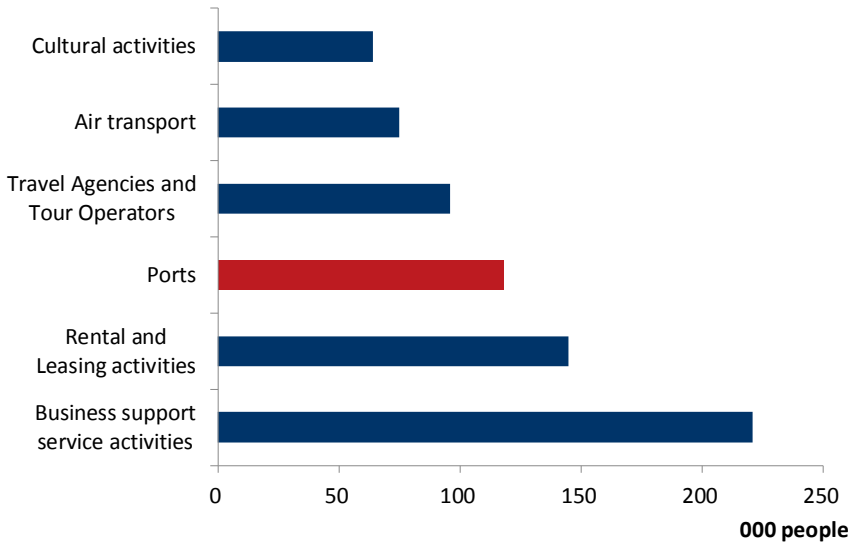
<sup>9</sup> ONS, (2014), 'Travel trends 2013', 8 May 2014.

<sup>10</sup> Figures are compared to those presented in the previous research on the UK ports industry. Oxford Economics, (2013), 'The economic impact of the UK Maritime Services Sector: Ports'. February

<sup>11</sup> Data on the size of employment in other industries is sourced from the ONS' Annual Business Survey, 2012.

transport and cultural activities/industries and nearly as large as the UK's rental and leasing industry.

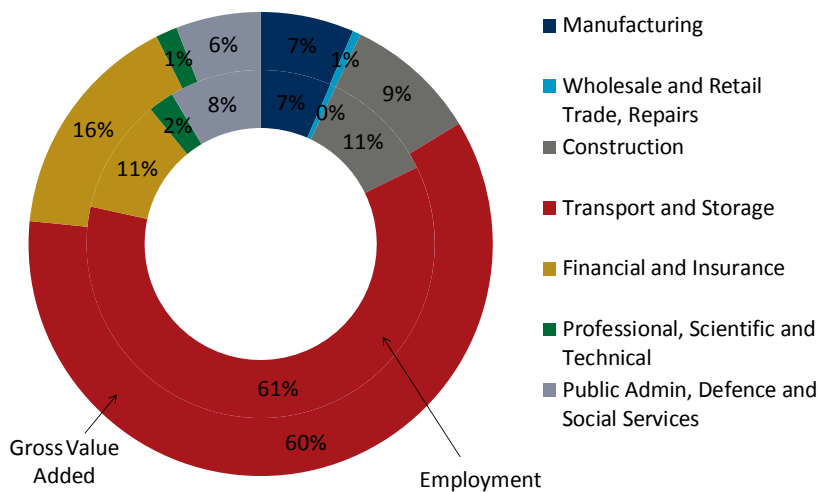
**Chart 3.2: Comparison of employment contribution to other industries in 2013**



Source : ONS, Oxford Economics

The breakdown of jobs within the ports sector shows over 43% of staff were employed in either transport or transport-related activities (Chart 3.3). Cargo handling and storage accounts for a further 18%, equivalent to 21,300 people in employment. Maritime insurance and related activities employed a further 12,600 people, equivalent to 11% of total employment.

**Chart 3.3: Employment in ports by industry in 2013**



Source : ONS, Oxford Economics

## 3.2 Direct contribution to GDP

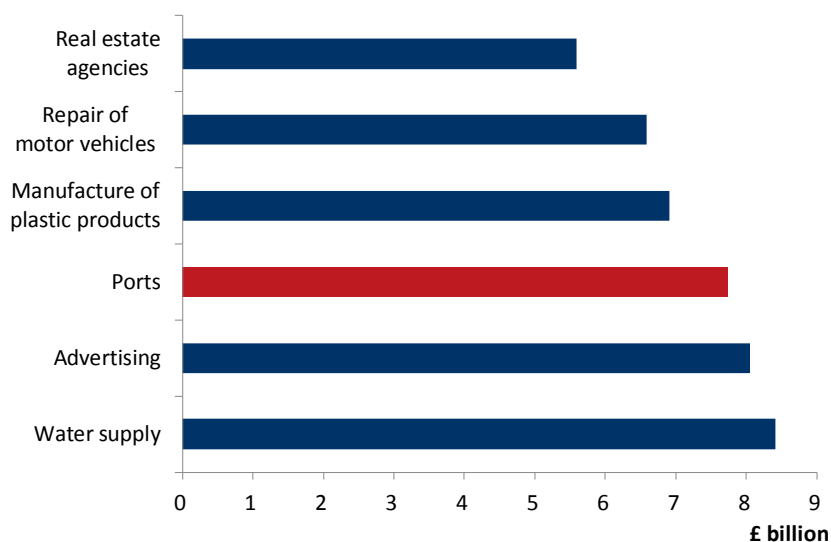
The contribution of any industry to a country's economic output is measured by its gross value added contribution to Gross Domestic Product (GDP). GDP is the main 'summary indicator' of economic activity and is used by economists to determine the rate of growth of the economy and when it enters recession. Gross value added is commonly calculated as the value of the output created by a sector less the cost of inputs, used up in its production. By adding the value added of all firms in the economy, one derives an estimate for the economy's GDP.<sup>12</sup>

To calculate the gross value added contribution, the number of employees operating within the ports sector was multiplied by the average productivity of employees working in that industry. The calculation is undertaken at the 4 digit SIC level. The labour productivity estimates are sourced from the ONS Annual Business Survey (ABS).

In 2013 the UK ports sector contributed around £7.7 billion to UK economy. This is equivalent to 0.5% of the UK economy's total economic output. In real terms, the gross value added contribution in 2013 was just 7% below its level in 2011. In comparison, the UK economy grew by 1% over the same period<sup>13</sup>. The implied level of productivity of those employed in the ports sector is £65,400, more than 30% higher than the whole economy average.

Again, in order to provide context, it is useful to compare the ports sector's economic output to other industries<sup>14</sup>. This indicates that, in 2013, the ports sector's contribution to GDP was larger than the plastic products manufacture, motor vehicles repair and real estate agencies industries, while only slightly smaller than the advertising industry and water supply sector (Chart 3.4).

**Chart 3.4: Comparison of GDP contribution to other industries in 2013**



Source: ONS, Oxford Economics.

<sup>12</sup> Plus taxes on products less subsidies on products.

<sup>13</sup> Haver, UK Gross Domestic Product Nominal Local Currency 2013

<sup>14</sup> Data on the size of other industries contribution to GDP is sourced from the ONS' Annual Business Survey, 2012

### 3.3 Direct contribution to Exchequer revenues

The ports sector makes a substantial contribution to the public finances through a number of different channels. It directly pays corporation tax on its profits, National Insurance contributions (NICs) for its staff and council tax on the buildings within the port estate. Its employees also pay income tax and NICs. These reflect the direct tax payments by the ports sector. Staff employed at ports pays VAT and other indirect taxes through induced spending channels, including council tax on any domestic property they may own or rent.

To estimate the amount of employment taxes (income and employee/employer NICs) contributed by UK ports, data on the average gross earnings of employees in each industry in the ports sector in 2013 have been sourced from the ONS' Annual Survey of Hours and Earnings (ASHE). This is combined with income tax and NIC allowances and tax bands for 2013/14, sourced from HMRC. In addition, the ONS has estimated the proportion of indirect taxes by UK households in 2012/13 by income quintile<sup>15</sup>. Using this, VAT contributions and other indirect taxes are calculated by matching port workers' disposable income to the relevant average tax rate. The corporation tax estimates are constructed by estimating the profitability of each industry of the ports sector by applying the relevant ratio of profits to GVA from ONS analytical input-output tables<sup>16</sup>, to the industry estimates of GVA, and then applying the 2012/13 average tax rate applicable to that industry, based on statistics published by HMRC<sup>17</sup>.

The ports sector is estimated to contribute £2.0 billion in taxes through corporation, income, social security and indirect tax. The highest component was that of NICs (nearly £742 million), followed by employee income tax receipts which totalled an estimated £535 million. The majority of the remainder came from indirect tax receipts, such as VAT and council tax. Table 3.5 illustrates the direct tax contribution to the Exchequer by type of tax.

**Table 3.5: Direct contribution to the Exchequer by type of tax in 2013**

Direct Tax (£mns)	2013
NICs	742
Income Tax	535
Indirect	535
Corporation	208
<b>Total</b>	<b>2,020</b>

Source : ONS, HMRC, Oxford Economics

<sup>15</sup> ONS (2014), 'The Effects of Taxes and Benefits on Household Income, 2012/13'. June

<sup>16</sup> ONS (2014), 'Input-Output Supply and Use Tables, 2014 Edition', 31 October.

<sup>17</sup> HMRC (2014), 'Corporation Tax Statistics', August.

## 4 Multiplier effects – indirect and induced impacts

The UK ports sector also contributes to the UK economy through its expenditure on inputs of goods and services. These purchases generate economic activity in the sector's supply chain. In addition, staff working in ports and in their direct supply chain are paid wages which they spend at retail and leisure outlets, stimulating further economic activity. This chapter will summarise the key findings focusing on the same three metrics: employment; contribution to GDP and tax receipts.

### KEY POINTS

- It is estimated the port sector's expenditure on inputs supports 126,100 people in employment. Its payment of wages which are spent at retail and leisure outlets support a further 100,000 jobs. In total, through its own activities, its procurement and payment of wages the ports sector supported an estimated **344,300 people in employment in 2013**.
- The port sector's expenditure on inputs of goods and services generated an additional £6.3 billion of gross value added in its supply chain, with a further £5.0 billion created by those employed directly and indirectly spending their wage income. This implies that the ports sector supported a **£19.0 billion gross value added contribution to UK GDP in 2013**.
- It is estimated that in 2013 the sector supported **£5.8 billion in tax revenues**.

### 4.1 Indirect and induced impact on employment

To calculate the size of the indirect effects, the direct value added of each industry in the port sector is multiplied by a supply chain (or Type I) multiplier derived from the ONS analytical input-output tables<sup>18</sup>. Where there is not a direct match between a multiplier and an industrial sector, the most applicable broad industry multiplier has been used. The results for the individual industries are then aggregated to estimate the value added contribution to GDP that the port sector's purchases of inputs generates in its UK-based supply chain. To calculate the number of people employed in the ports' supply chain the estimate of indirect gross value added is divided by whole economy productivity (nearly £50,000 per person in 2013), again sourced from ONS data. Meanwhile, the induced impact was calculated using consumption (or Type II) multipliers derived from the ONS analytical input-output tables, in a similar procedure to that

<sup>18</sup> ONS (2014), 'Input-Output Analytical Tables, 2014 Edition' 31 October. A Type I multiplier shows the activity generated by the sectors spending on inputs of goods and services. It measures the size of the direct and indirect effects divided by direct effects. An input-output model gives a snapshot of an economy at any point in time, showing the major spending flows from 'final demand' (i.e. consumer spending, government spending and exports to the rest of the world); intermediate spending patterns (i.e. what each sector buys from every other sector – the supply chain in other words); how much of that spending stays within the economy; and the distribution of income between employment income and other income (mainly profits). In essence an input-output model is a table which shows who buys what from whom in the economy. The latest available domestic use input-output table for the UK, published by the ONS, was for calendar year 2010.

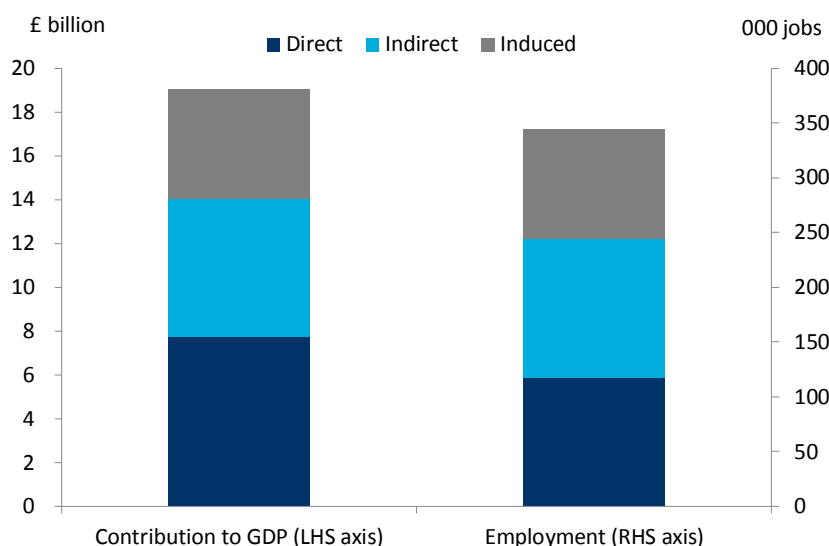
used to calculate the indirect impact<sup>19</sup>.

The results suggest the ports sector's procurement of inputs from UK suppliers supports an estimated 126,100 jobs. A further 100,000 jobs are supported through the 244,300 people who work in the port sector or its supply chain spending their wage income. Taking all three channels into account, the ports sector supported a total of 344,300 jobs, around 1.1% of UK employment.

## 4.2 Indirect and induced impact on GDP contribution

It is estimated the ports sector's expenditure on inputs of goods and services generated a £6.3 billion gross value added contribution to GDP in its supply chain. A further £5.0 billion was supported by the wage-financed spending of those employed by the ports sector and its direct supply chain. Overall, the sector supports a £19.0 billion contribution to the economy, which represents 1.2% of total UK GDP<sup>20</sup>. Chart 4.1 compares the breakdown of the port sector's total economic impact on both GDP and jobs.

**Chart 4.1: Total economic impact of the ports sector in 2013**



Source : ONS, Oxford Economics

## 4.3 Indirect and induced contribution to the Exchequer

The port sector's procurement and payment of wages generates additional tax receipts for the government. In general, the same methodology employed to estimate the tax revenues for the

<sup>19</sup> A Type II multiplier shows the activity generated by spending on inputs of goods and services and by the spending of households. It measures the size of the direct, indirect and induced effects divided by direct effects.

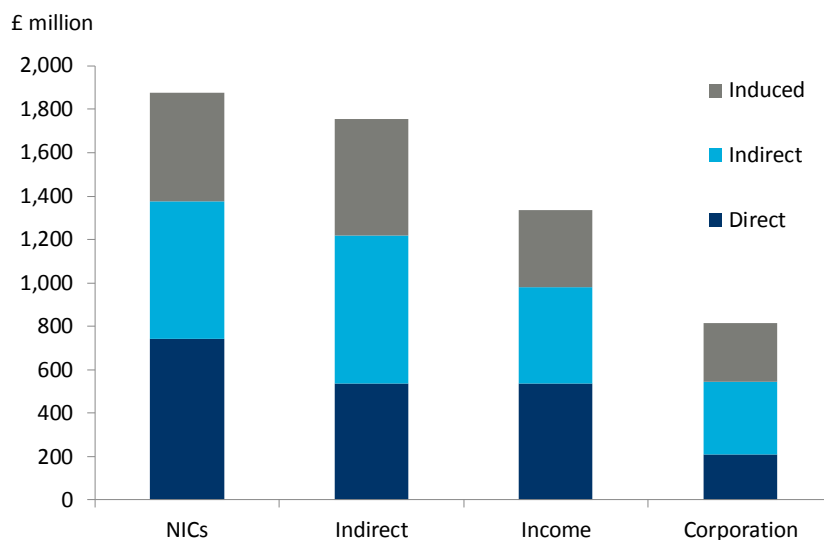
<sup>20</sup> The indirect and induced impacts are calculated using the most recently published domestic use input-output table published by the ONS. Analysis of this suggests that the UK ports industry has a smaller multiplier impacts on the wider UK economy compared to the 2011 report. This explains how the total impact has decreased in real terms by 14.8% when the direct impact has only decreased by 7.1%.

direct impact is used to estimate these multiplier impacts. However, for income tax data we used on the average gross earnings of employees in wider economy in 2013, sourced from the ONS' ASHE, to which were applied the income tax and NIC allowances and rates for 2012/13 from HMRC. The results indicated that:

- the sector's procurement of inputs of goods and services is estimated to have raised £2.1 billion in tax receipts for the Exchequer; and,
- wage-financed expenditure supported by the ports sector, and companies in its direct supply chain is estimated to have delivered £1.7 billion in tax revenues for the Exchequer.

Therefore, across all three channels of impact, the sector supported an estimated £5.8 billion in tax receipts in 2013, which was equivalent to £90 for every person in the UK. Chart 4.2 summarises the results.

**Chart 4.2: Breakdown of total impact on tax revenues in 2013**



Source : ONS, HMRC, Oxford Economics

## 5 Regional impact of the Ports sector

This chapter summarises the contribution of the ports sector to the UK's nations and regions, in terms of its value added contribution to GDP and employment. It also presents the findings in terms of the direct, indirect and induced effects, illustrating how the total impact presented in Chapter 4 is distributed geographically.

### KEY POINTS

- Around 1 in every 4 people (or 31,500) employed by the ports sector in the UK were based in Scotland in 2013, with London (16%) and the South East of England (13%) also accounting for large shares of the 118,200 strong workforce. The largest gross value added contribution to GDP also occurred in Scotland, with ports generating an estimated £2.0 billion in the economy north of the border.
- When including the wider multiplier effects, the ports sector supported the largest gross value added contribution to GDP in the South East of £2.9 billion. The sector also supported a sizeable contribution in a number of other nations and regions, such as London and Scotland, where the activity of ports supports in excess of £2.6 billion in gross value added.

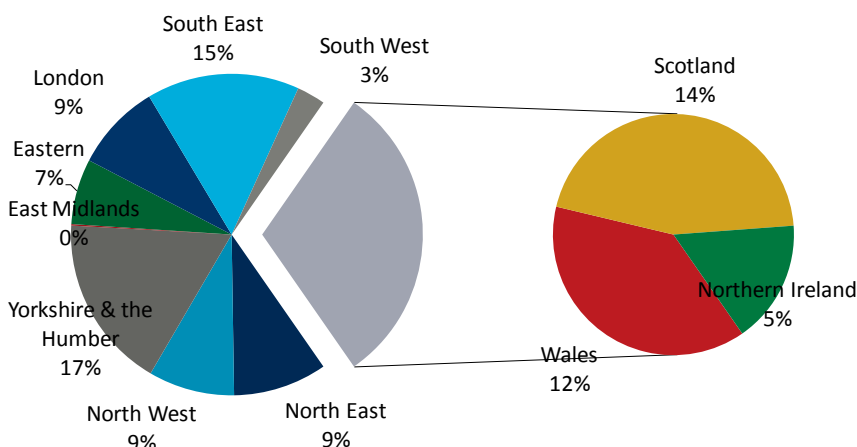
### 5.1 Direct impact on regional employment

To calculate the contribution to employment of the ports sector around the UK, the estimates for direct employment at the 18 major ports, estimated in section 3.1, were mapped to the appropriate nations and regions in which the ports were located. Recalling that this sample represented over 80% of all freight handled at UK ports (Table 3.1), the employment figures were then grossed up by the share of those ports in total freight passing through each geography (Chart 5.1). In a similar fashion, public sector employment working in customs and detection were split according to the distribution of total freight, while public sector jobs in border control were split according to the distribution of international passengers.

The results indicate that 27% of the jobs in the ports sector are based in Scotland (Chart 5.2), despite only accounting for 14% of freight in the UK. By contrast, in the largest region in terms of freight handled, Yorkshire & the Humber, direct employment in ports was an estimated 11,100 people.

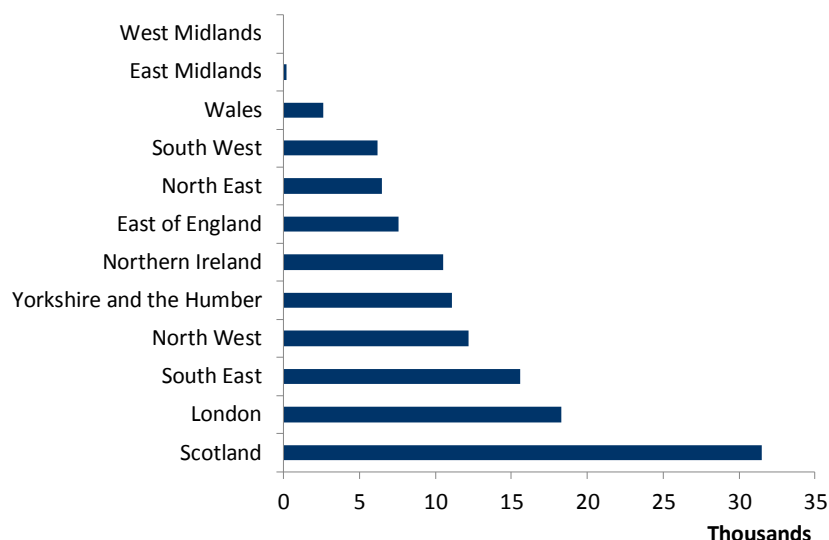


Chart 5.1: Distribution of regional freight by tonnage in 2013<sup>21</sup>



Source : DfT, Oxford Economics

Chart 5.2: Regional breakdown of employment in 2013<sup>22</sup>



Source : ONS, Oxford Economics

<sup>21</sup> Of the total freight handled at the Port of London, the Department for Transport attributes 76.7% to the East of England, a further 8.5% to the South East region, with the remainder (14.8%) attributed to London (unchanged since previous study).

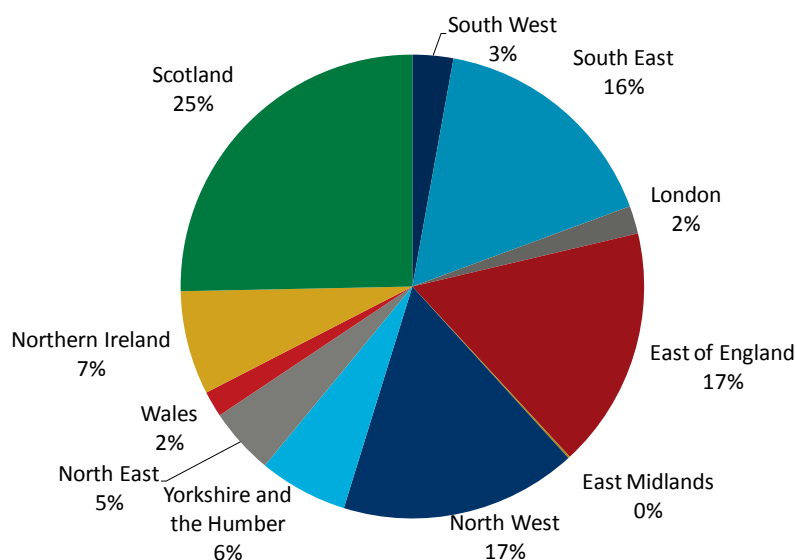
<sup>22</sup> In 2012, Cardiff University undertook an analysis of economic activity dependant on the Milford Haven Waterway (available at <http://www.mhpa.co.uk/economic-impact>), in which they estimate direct employment to be over 3,800 for Milford Haven alone. In comparison, this study estimates that the Ports sector supported around 3,000 direct jobs in the whole of Wales. The difference can largely be explained by the contrasting definitions of port-related activities employed by the two studies. For example, the Cardiff University report uses a wider definition of the sector including employment in the Energy sector (oil refining, gas processing and power generation), which alone accounts for nearly one-third of employment at the Milford Haven Waterway, as well as other tourism-related activities accounting for a further 9% of employment,

## 5.2 Direct impact on regional GDP

The gross value added contribution of the ports sector to the UK's nations and regions was estimated by using the same method as that used to calculate the impact on the whole economy (see Section 3.2). As such, regional employment figures were multiplied by the relevant average productivity of employees working in each industry.

The results, illustrated in Chart 5.3, suggest that as with employment, a quarter of the total direct contribution of the ports sector is concentrated in Scotland. The ports sector in Scotland contributed an estimated £2.0 billion in gross value added to the nation in 2013, equivalent to 1.8% of its economic output. Other notable contributions include those in the East of England (£1.3 billion), South East (£1.3 billion) and North West (£1.3 billion), which between them account for 31% of all freight handled at UK ports.

**Chart 5.3: The port sector's gross value added contribution to GDP in the UK's nations and regions in 2013**



Source : ONS, Oxford Economics

## 5.3 Multiplier impacts on the UK's nations and regions

In addition, to the ports sector's direct contribution to employment and gross value added, the UK's nations and regions will also benefit from the indirect and induced impacts. Not only will this will include demand from ports activity located in the same region as their suppliers, but it will also include demand from port firms located in other parts of the UK.

In order to calculate the geographical breakdown of the indirect impact, data was sourced from the ONS' Annual Business Survey on the regional breakdown of gross value added by broad industrial sector. This was combined with the indirect contribution to GDP, calculated in section 4.2, which was then split into broad industrial sectors according to the breakdown of intermediate consumption of the relevant industries that together comprise the ports sector.

The resulting model apportions the indirect impact of the ports sector to the different regions for each broad industrial sector based on the distribution of total UK output for that industry. A similar method was used to estimate the regional induced impacts, but rather the induced contribution to GDP of the UK ports sector was split into broad industrial sectors according to the distribution of household consumer expenditure, again sourced from ONS analytical input-output tables<sup>23</sup>.

In both cases, the level of supported employment was estimated by dividing the estimates of indirect and induced contribution to GDP for each region by data on average whole economy productivity. Table 5.1 illustrates the full breakdown of the regional impact of the ports sector, splitting the direct, indirect and induced impacts for both employment and gross value added.

The results show that, when including the wider multiplier impacts of the indirect and induced channels of impact, nearly half of the total impact of the UK ports sector is concentrated in the South East, London and Scotland. While Scotland and the South East are two of the largest in terms of the freight handled at ports, the impact in London is primarily driven through the indirect and induced channels, suggesting that a large proportion of the UK port sector's supply chain is located there. This is certainly true of maritime business services, which is heavily clustered in London<sup>24</sup>. The multiplier effects also help to support tangible activity in both the East and West Midlands; two regions that see very little or no direct ports impact. Between them, an estimated 31,700 jobs are supported as a result of the UK ports sector. It is in Northern Ireland however where the ports sector is of most importance relative to the size of the economy. Including the wider impacts on regional GDP, the ports sector in Northern Ireland accounts for approximately 2.7% of the local economy.

**Table 5.1: Regional impact of the UK ports industry in 2013<sup>25</sup>**

	GVA (£million)					Employment				
	Direct	Indirect	Induced	Total	% of GVA	Direct	Indirect	Induced	Total	% of Employment
South West	220	470	380	1,080	1.1%	6,200	9,400	7,700	23,300	1.0%
South East	1,280	1,010	650	2,930	1.5%	15,600	20,100	12,900	48,700	1.3%
London	150	1,370	1,040	2,560	0.9%	18,300	27,300	20,900	66,500	1.5%
East of England	1,300	580	420	2,300	1.9%	7,600	11,500	8,400	27,500	1.1%
East Midlands	10	380	340	720	0.8%	200	7,600	6,700	14,500	0.8%
West Midlands	0	470	390	860	0.9%	0	9,400	7,800	17,200	0.7%
North West	1,280	610	510	2,400	1.9%	12,200	12,200	10,300	34,600	1.1%
Yorkshire and the Humber	480	420	390	1,280	1.3%	11,100	8,400	7,700	27,200	1.2%
North East	360	180	170	710	1.7%	6,500	3,600	3,400	13,500	1.3%
<b>England</b>	<b>5,080</b>	<b>5,490</b>	<b>4,290</b>	<b>14,840</b>	<b>1.3%</b>	<b>77,700</b>	<b>109,500</b>	<b>85,800</b>	<b>273,000</b>	<b>1.2%</b>
Wales	140	220	190	560	1.2%	2,600	4,500	3,800	10,900	0.9%
Northern Ireland	560	130	110	800	2.7%	10,500	2,600	2,200	15,300	2.2%
Scotland	1,960	470	400	2,830	2.6%	31,500	9,400	8,000	48,900	2.1%
<b>United Kingdom</b>	<b>7,740</b>	<b>6,300</b>	<b>5,000</b>	<b>19,040</b>		<b>118,200</b>	<b>126,100</b>	<b>100,000</b>	<b>344,300</b>	

Source: ONS, Oxford Economics

<sup>23</sup> ONS (2014), 'Input-Output Supply and Use Tables, 2014 Edition', 31 October.

<sup>24</sup> Oxford Economics (2015), 'The economic impact of the UK maritime services sector: business services', January

<sup>25</sup> Figures may not sum due to rounding

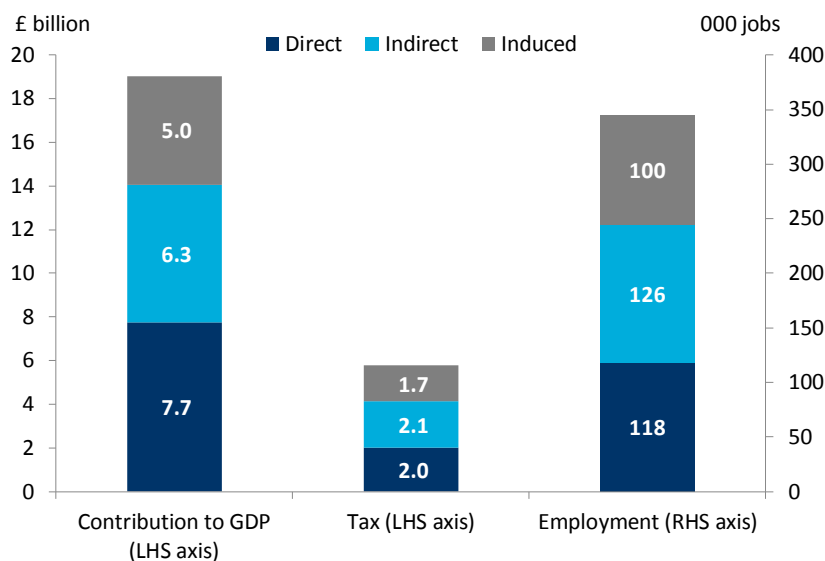
## 6 Conclusion

This report has described and quantified the three expenditure channels through which the ports sector generates important economic benefits for the UK economy. The study provides an update on previous research by Oxford Economics. Results are presented in terms of three standard metrics (jobs, gross value added contribution to GDP and tax receipts) for 2013. Chart 6.1 illustrates the make-up of the sector’s total impact on the economy.

The ports sector has a significant footprint in the UK economy, supporting 0.5% of UK GDP and 118,200 jobs, or 0.4% of UK workforce and £5.8 billion in tax receipts. Analysis of where the contribution to GDP was generated suggested that the ports sector has a GDP multiplier of 2.5. Put more simply, for every £1 the sector itself contributes to the economy in value added, £1.5 is created elsewhere in the economy.

The report also looks at the regional impact of ports’ activity in the UK, suggesting that the regional distribution of GDP contribution and employment is predominantly concentrated in Scotland, the East of England, South East and the North West, jointly accounting for three-quarters of direct gross value added. However when including the wider multiplier impacts, a good proportion of supply chain activity is located a number of other regions such as London and the Midlands, that see lower levels of direct ports activity.

**Chart 6.1: Summary of the economic impact of the ports sector in 2013**



Source : ONS, HMRC, Oxford Economics

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