



The economic contribution of the Maritime Sector in the Solent LEP

A report for the Solent LEP and Maritime UK

September 2019

Cebr

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Authorship and acknowledgements

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The industry figures making up the broad Maritime sector are not always additive because some of the reports have been customised to cater for the overlap between certain industries. Simply adding together the industries would therefore produce a degree of double counting. Nonetheless, the broad Maritime report has had this double counting stripped out. Cebr believes fundamentally in the thoroughness and robustness of its approach and, as such, we stand by our own unbiased and fresh examination of the role of the Maritime sector and its constituent industries in the UK.

The report does not necessarily reflect the views of Maritime UK. The report does not necessarily reflect the views of Maritime UK.

London, September 2019

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Executive Summary

Report purpose and scope

- The Centre for Economics and Business Research (Cebr) has been commissioned by the Solent Local Enterprise Partnership (LEP) and Maritime UK to quantify the **economic contribution of the Maritime Sector and Portsmouth Naval Base within the Solent LEP region**. This report forms one of ten reports assessing the contribution of the Maritime Sector, as a whole, at industry-level and in Scotland, Wales and Liverpool City Region.
- The report assesses the economic importance of the Solent-based Maritime Sector and Portsmouth Naval base from two perspectives:
 - I. The role that it plays as a gateway for trade with the rest of the world.
 - II. The economic impact of the Solent-based Maritime Sector and Portsmouth Naval base in terms of the key macroeconomic indicators: gross value added (GVA), turnover, employment and the compensation of employees.
- The first perspective serves to capture downstream relationships, whilst the second perspective captures the conventional upstream relationships and direct impacts. These broader impacts are critically important for a specialised regional economy such as Solent LEP.

Providing a vital international gateway and broad downstream impacts

- The Maritime Sector in the Solent LEP plays an important role in facilitating UK trade with the rest of the world. International trade drives economic growth and better living standards.

Importance in facilitating exports

- In 2017 the Solent-based maritime sector facilitated 13% of the volume of total UK exports with non-EU countries, and 13% of the total value of these exports. This is highly significant in light of the UK's ongoing Brexit process and the emphasis on non-EU trade.
- The Solent is particularly important for the export of "machinery and transport equipment". The region facilitates £17 billion of exports, or 22% of the value of the UK total. The vast majority of exports falling under this category were road vehicles (£12 billion).

Importance in facilitating imports

- In 2017 the Solent maritime sector facilitated 10% of the volume of UK imports with non-EU countries, and 11% of the value total UK imports.
- In particular, it facilitates 21% of the total value of UK imports of petroleum products, and 24% of the value of road vehicles. Furthermore, it accounts for 31% of the value of UK imports of parts and accessories for motor vehicles. This confirms the region's role in facilitating the supply chain needs of UK manufacturers of machinery and transport equipment.

Additional gateway functions: tourism

- The Solent-based Maritime Sector also acts as an important gateway for **international tourism, with its share of UK international passenger movements at ports increasing by 5 percentage points over the period 2006 to 2017**.
- Overall, the Maritime Sector in the Solent provides **a vital cog in the wheel of UK manufacturing**. This role comes in various guises from ensuring the movement of vital imported inputs to UK manufacturers, of valuable exports to our trading partners or in moving imported final goods that provide a competitive discipline for UK manufacturers looking to maintain global market share.

The economic footprint of the Solent-based Maritime sector

- **For the economic impact analysis, the Maritime sector has been defined as consisting of the shipping, ports, leisure marine, marine engineering and maritime business services industries, which have been considered alongside Portsmouth Naval Base in this study.** Each of these entities comprises a multitude of different activities, data for which has been aligned against the national accounts framework. A largely “top-down” approach has been used to quantify the size and value of each industries’ activities exclusively within the Solent LEP.
- The Solent-based Maritime Sector and Portsmouth Naval Base make a significant macroeconomic contribution through turnover, Gross Value Added (GVA), employment and the compensation of employees.
- After accounting for the wider economic impacts that occur through industry supply chains and induced effects of expenditure, in 2017 the **Solent-based Maritime sector and Portsmouth Naval Base supported £12 billion in turnover, £5.8 billion in GVA, 152,000 jobs and £2.5 billion in employee compensation** (wages and salaries), as summarised in the following table:

Summary of the total economic impacts of the Solent-based Maritime Sector and Portsmouth Naval Base, 2017

Turnover (£m)	GVA (£m)	Employment (thousands)	Compensation of employees (£m)
12,026	5,779	152,000	2,517

- The Solent-based Maritime sector and Portsmouth Naval base contributed significantly to tax revenues in 2017, **with a direct exchequer impact of approximately £524 million.** Of this, the five maritime industries (ports, shipping, leisure marine, marine engineering and maritime business services) accounted for over 8% of the total tax contribution of the UK Maritime sector, spread across Income Tax, National Insurance Contributions (NICs), VAT, Corporation Tax and Business Rates.
- The Solent economy as a whole makes a substantive macroeconomic contribution to both the South East and the UK. **It is estimated that Solent directly generated just under 534,000 jobs in 2017; this equates to 12.6% of total employment in the South East, or 1.7% of the UK workforce.** In the same year, Solent is estimated to have contributed £24.1 billion in Gross Value Added (GVA), representing 9.0% of GVA in the South East and 1.3% of the UK as a whole.
- The GVA of the Solent region is most heavily concentrated in the defence, public administration, education and health. This subsector contributed around 22% of the total GVA produced in Solent LEP.
- Our forecast indicates that **Solent-based maritime turnover and GVA are set to grow at a Compounded Annual Growth rate (CAGR) of 3.1%** over the considered period. This translates into a cumulative nominal growth of 16% for 2019-2023, which, when considered alongside projected inflation, is about 6%. Although the projected growth is lower than what experienced over the period from 2010 to 2017, maritime sector in the Solent LEP region is set to grow at a faster rate than in the UK

1 Introduction

Cebr is pleased to present this report to the Solent LEP and Maritime UK on the economic impact of the Maritime Sector and Portsmouth Naval Base on the Solent economy. In this context and henceforth, the “Maritime Sector” is defined as comprising the shipping, ports, leisure marine, marine engineering, and maritime business services industries. In order to capture the importance of defence and shipbuilding activities within the Solent, the economic impact of Portsmouth Naval Base has also been considered.

Our examination spans the period from 2010 to 2017 (inclusive), with the latter being the latest year for which full data are available, and endeavours to capture the full economic ‘footprint’ of the Maritime Sector and Portsmouth Naval Base within the Solent LEP region. As such, our report is not confined to direct ongoing contributions to GDP and employment through operations and activity in the Solent LEP region, but also provides assessments of the associated indirect and induced multiplier impacts.

1.1 About the Solent LEP

Local Enterprise Partnerships (LEP) are partnerships between local authorities and businesses, set up by the former Department for Business, Innovation and Skills (BIS, now the Department for Business, Energy and Industrial Strategy, BEIS) in 2011. LEPs decide what the priorities should be for investment in roads, buildings and facilities in the area; they can take advantage of tax incentives and simplified local planning regulations. The Solent LEP is one of the 38 LEPs currently in operation across the English regions.

The Solent LEP is “a partnership organisation between the business community, the Further Education and Higher Education sector, three unitary authorities, five district councils and one county council, all of whom are actively working together to secure a more prosperous and sustainable future for the Solent area”.¹ Its purpose is to combine the voices of key stakeholders within the specified region of the Solent to create an environment in which businesses can prosper and fulfil its economic potential.

1.2 About Maritime UK

Maritime UK is the promotional body for the UK’s Maritime Sector, representing companies and partner organisations in the shipping, ports, marine and maritime business services industries. It acts to promote the sector, influence government and drive growth.

1.3 Purpose of this report

This report provides an in-depth assessment of the economic contribution that the Maritime Sector makes to the economy of the Solent LEP region. The Solent LEP is a key region for the UK Maritime Sector, hosting the two major ports of Portsmouth and Southampton, with additional economic activity located around the Isle of Wight, the M27 corridor and the Solent waterway. Furthermore, the geography of the UK as an island nation means that the Solent is a natural ‘gateway’ to the world, and as such naturally lends itself to a thriving Maritime Sector.

1.4 Overview of the study and methodology

Purpose of the study

This report provides a thorough and comprehensive examination of the role of the Maritime Sector in the Solent LEP region. To get the full picture of the importance of the Solent based Maritime Sector, the report first analyses the role of the Solent LEP region as an international gateway for UK trade with the rest of the world, and then subsequently provides an analysis of the economic contribution of the Maritime Sector to the Solent region. These two aims are summarised as follows:

¹ <https://solentlep.org.uk/>

- **Role of the Solent LEP as an international Gateway.**

Section 3 of the report analyses the important role that the Solent LEP performs as an international gateway for UK trade with the rest of the world. It examines the magnitude of this role – in both volume and trade terms – though a detailed examination of the HMRC’s overseas trade statistics.

It is clear that the Solent Maritime sector provides a vital link in the integrated chain of globalised supply and demand. For example, industries such as motor manufacturing are composed of businesses across the UK that are, in summary, dependent on the ports in the Solent LEP and its Maritime Sector to get their final goods to the market, but also to get their essential inputs from abroad.

- **Economic impact of the Maritime Sector in the Solent LEP.**

Having established the important role that the Solent LEP plays as an international gateway for UK trade, the remainder of the report - Sections 5, 6 and 7 - presents a range of analyses demonstrating the different aspects of the value contributed by the Solent-based Maritime Sector, including direct contributions to GDP and employment, indirect and induced multiplier impacts and the Solent-based Maritime Sector’s contribution to the UK Exchequer through tax revenues raised.

An important task has been to develop an in-depth understanding of the Maritime Sector both in the UK and in the Solent region. To produce a robust study, it is necessary to interrogate the available data to ensure that it captures the full range of activities that should be included in establishing the total economic ‘footprint’ of the Maritime Sector in the Solent. Following the collation of the necessary data capturing these activities, the values of key economic indicators were established to demonstrate the impact of the Maritime Sector in the Solent LEP region. The key indicators include:

- GVA² contributions to Solent and UK GDP generated by the Maritime Sector and Portsmouth Naval Base, directly and through indirect and induced multiplier impacts.
- Jobs supported by the Maritime Sector and Portsmouth Naval Base, including direct, indirect and induced jobs through local and national multiplier impacts.
- The value of employee compensation generated by the Maritime Sector and Portsmouth Naval Base in the Solent region, representing the total remuneration of employees.
- The Exchequer contribution of the Solent-based Maritime sector and Portsmouth Naval Base through tax revenues raised.
- The direct contribution made through the exports of goods and services.

Mapping the UK Maritime sector

The first stage of the study has involved mapping the activities of the Maritime Sector against the national accounts framework, in order to establish clarity on the precise definition of the Maritime Sector as it maps against the Standard Industrial Classification (SIC) framework.³ For most activities, particularly those of the shipping industry, economic activity can be captured through a particular 3, 4 or 5-digit SIC code.

² GVA, or gross value added, is a measure of the value from production in the national accounts and can be thought of as the value of industrial output less intermediate consumption. That is, the value of what is produced less the value of the intermediate goods and services used as inputs to produce it. GVA is also commonly known as income from production and is distributed in three directions – to employees, to shareholders and to government. GVA is linked as a measurement to GDP – both being a measure of economic output. That relationship is (GVA + Taxes on products - Subsidies on products = GDP). Because taxes and subsidies on individual product categories are only available at the whole economy level (rather than at the sectoral or regional level), GVA tends to be used for measuring things like gross regional domestic product and other measures of economic output of entities that are smaller than the whole economy.

³ The United Kingdom Standard Industrial Classification of Economic Activities (SIC) is used to classify business establishments and other standard units by the type of economic activity in which they are engaged.

In essence therefore, this involves taking each of the five Maritime industries and their constituent activities, and mapping these to the most relevant Standard Industrial Classification (SIC) code in order to identify the activity's economic data. For example, "Transport of Passengers and International Sea Faring", identified as an activity of the shipping industry, can be identified through SIC code 50100 within the National Accounts framework. However, some Maritime Sector activities do not map neatly onto the SIC framework; this has required Cebr to draw upon government or industry sources to quantify the contributions made through these activities.

Data Sources

After completing the mapping of Maritime Sector activities, data for the macroeconomic indicators listed above have been obtained and collated by firstly interrogating the indicators gathered at UK level for the Maritime Sector and disaggregating this at Solent-level using a combination of publicly-available data sources, industry sources and local estimates.

For those Maritime Sector activities which are in alignment with the SIC framework and are available on a disaggregated basis, the main source of information used in this study is Bureau van Dijk's Financial Accounts Made Easy (*FAME*) database. *FAME* provides detailed information on UK and Irish companies as taken from annual reports and other sources up to the latest available year. *FAME* has been used to establish the aggregated contribution of businesses in the Maritime Sector to the UK economy in terms of turnover, employee numbers and estimated GVA. We also evaluate the breakdown of these business contributions by SIC industrial sector, using the primary and secondary five-digit UK SIC (2007) codes associated with for each company in *FAME*.

To capture the contribution of those Maritime Sector activities which do not map neatly across the SIC framework, and in order to disaggregate the economic contribution of the sector at Solent-level, a variety of other sources have been used. For the former, the study draws upon insight from sector bodies included (but not limited to) British Marine, the Society of Maritime Industries (SMI), BEIS and the UK Chamber of Shipping. A full list of identified Maritime Sector activities and sources is set out in Section 3 of the report.

In order to separately quantify the economic contribution of the Portsmouth Naval Base to the Solent LEP region, we draw upon analysis from the University of Portsmouth which quantified the economic contribution of the base in 2011.⁴ We have combined this existing analysis with additional data sources to obtain estimates for following years.

Quantifying the wider economic impacts

After collation and interrogation, Solent-level data have then been embedded within Cebr's regional economic impacts models of the UK economy that we use to assess the kinds of impacts that can be associated with an entity such as the Solent-based Maritime Sector.

Cebr's models establish the relationships between industries through supply chain linkages, as well as industries' linkages with government, capital investors and the rest of the world (through trade). The models produce three types of impact for four indicators – turnover, GVA, the compensation of employees, and employment. The three types of impact are:

- Direct impact: this is the value generated and jobs supported directly by the economic activities of the Maritime Sector in the Solent.
- Indirect impact: this is the value generated and jobs supported in industries that supply inputs to the Solent-based Maritime Sector.

⁴ University of Portsmouth, Centre for Economic Analysis and Policy (June 2012). "Socio-Economic Impact Assessment of Portsmouth Naval Base"

- Induced: this is the value generated and jobs supported in the wider economy when the direct and indirect employees of the Solent-based Maritime Sector spend their wages and salaries on final goods and services.

These three impacts are then combined to convey the total footprint associated with each Maritime industry and Portsmouth Naval Base in terms of GVA, employment and the compensation of employees.

Cebr has taken a 'top-down' approach to estimate the direct impacts of the five Maritime industries within the Solent region. In effect, this involves taking the UK direct impacts of each defined Maritime industry and applying relevant ratios from publicly-available data sources such as the UK Business Register and Employment Survey (BRES) – as well as private data sources such as Bureau Van Dijk's *Financial Accounts Made Easy* (FAME) database – in order to attribute the contribution from the Solent LEP region.

For each of the five industries and Portsmouth Naval Base, the direct impacts are then combined with the regional economic multipliers provided by Cebr's suite of regional input-output models for the Solent, in order to then generate indirect, induced and subsequently aggregate impacts.

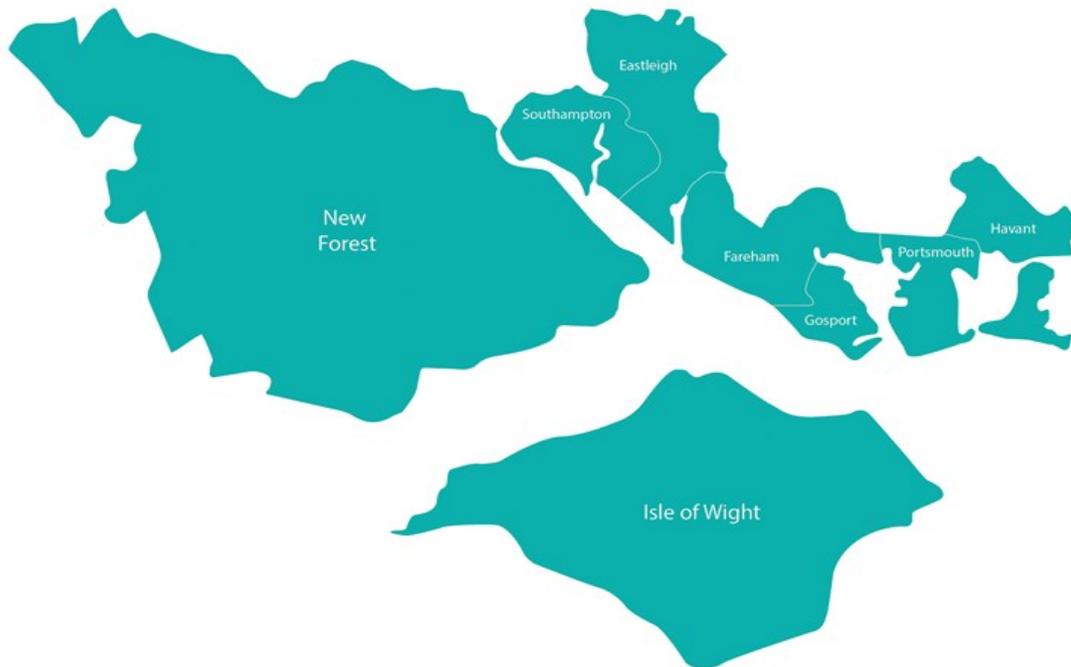
2 Macroeconomic trends in the Solent LEP region

The purpose of this section is to identify the scope of the study, in terms of geographical coverage (in other words, identifying the Solent LEP region).

2.1 Geographical location of the Solent LEP region

Located in the South-East of England, the Solent LEP has a population exceeding 1.25 million, and over 42,000 businesses operating in the region.⁵ The geography of the Solent region, disaggregated by local authority, is shown in Figure 1 below. In all, eight local authorities, as well as most of the New Forest National Park Authority and part of Hampshire County Council combine to form the Solent LEP.

Figure 1: The constituent geographic regions of the Solent LEP region



Source: Solent LEP

2.2 Macroeconomic trends in the Solent LEP region

Before undertaking a comparison of the Solent-based Maritime sector against the wider UK sector, we compare the entire economy of the Solent LEP region against those of the South-East region, and the wider UK. With the Solent LEP region boasting a significant maritime presence, the constituent breakdown of economic activity by industrial sector is markedly different in the Solent.

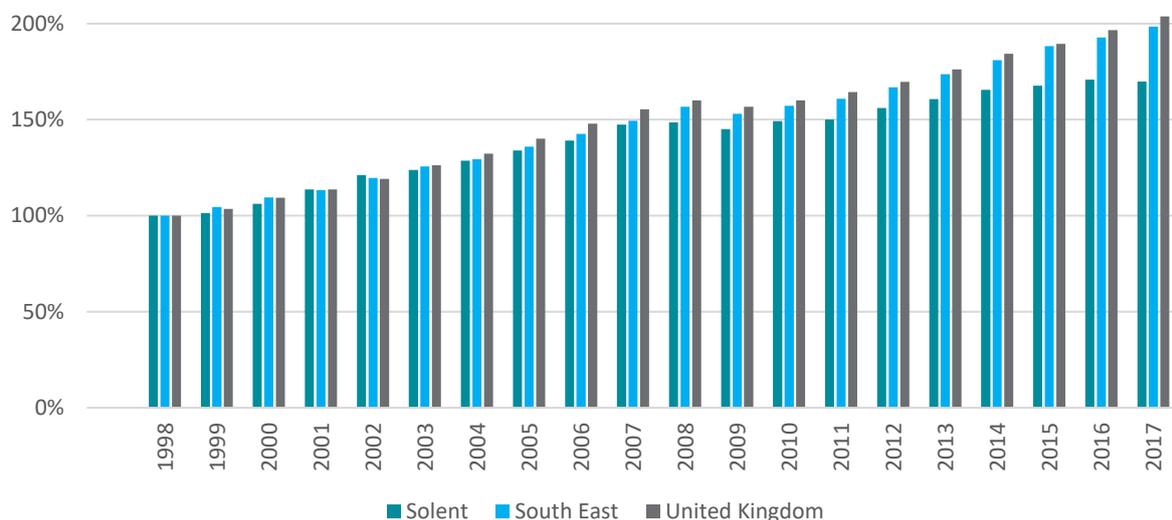
⁵ <https://solentlep.org.uk/the-solent/map>

The Solent LEP region had a GVA of £30.5 billion in 2017,⁶ accounting for 11.4% of the South East and 1.7% of the UK. The Solent LEP's GVA has experienced a growth of 19% since 2010, increasing by £4.8 billion over the period.⁷

Employment in the region in 2018 was approximately 588,300, accounting for 13.9% of South East and 1.9% of total UK employment. The region's employment has also grown significantly with 13,400 additional employees since 2010, equivalent to a 2.3% increase.⁸

Figure 2 shows the growth in Solent LEP GVA in nominal terms since 1998 compared to the GVA growth performance of the wider South East region and the United Kingdom. In 2017, the GVA of the Solent LEP region was 70% higher in nominal terms than in 1998, compared to 99% across the wider South East region, and 104% for the UK as a whole. Therefore, in terms of GVA growth, the Solent LEP has lagged behind the wider region and UK average.

Figure 2: GVA in the Solent LEP, South East and United Kingdom expressed at 1997 levels, 1998 to 2017 (1998 = 100%)



Source: ONS, Cebr analysis

Table 2 shows the breakdown of employment across each broad category of industrial sector in 2017. We find that Solent LEP has a higher than average concentration in three of our defined sectors. These sectors have been highlighted in bold. For example, the proportion of employment in Public Administration and Defence, Education and Health is 2.5 percentage-points higher than the South East and UK in general. As many of the Maritime Sector activities are found within these broader industry categories, this provides initial evidence of the importance of Solent LEP to the UK maritime sector.

⁶ Lichfields. (2019). 'Solent Economic Profile Final Report'.

⁷ Ibid.

⁸ Ibid

Table 1: Breakdown of employment in 2017 by industrial sector: Solent LEP, South East and the UK

Sector	Solent LEP	South East	United Kingdom ⁹
Agriculture, forestry and fishing	0.5%	1.1%	1.6%
Mining; Energy and Water	0.8%	1.2%	1.2%
Manufacturing	8.2%	6.2%	7.9%
Construction	5.0%	5.2%	4.7%
Wholesale and repair; transportation; accommodation and food	29.1%	28.0%	27.4%
Information and communication	5.0%	6.0%	4.1%
Financial and insurance activities	2.6%	2.8%	3.5%
Real estate activities	1.7%	2.0%	1.7%
Professional, scientific and technical, Administrative	15.8%	18.0%	17.5%
Public Administration and Defence, Education and Health	27.2%	24.7%	25.7%
Arts, entertainment and recreation, household and other services	4.1%	4.9%	4.6%

Note: Sector U has been excluded. Source: ONS NOMIS and Workforce Jobs, Cebr analysis

Table 2 below shows the same industrial sector breakdown for GVA in 2017¹⁰. In contrast to the employment breakdown shown in Table 1 above the proportion of GVA attributed to combined Wholesale and repair, transportation and accommodation and food sector is slightly lower than that of the South East and UK.

Table 2: Breakdown of GVA in 2017 by industrial sector: Solent LEP, South East and the UK

Sector	Solent LEP	South East	United Kingdom ¹¹
Agriculture, forestry and fishing	0.7%	0.6%	0.7%
Mining; Energy and Water	2.2%	3.3%	3.9%
Manufacturing	11.3%	7.8%	10.1%
Construction	6.8%	6.8%	6.1%
Wholesale and repair; transportation; accommodation and food	19.4%	19.7%	17.7%
Information and communication	6.5%	8.6%	6.4%
Financial and insurance activities	3.7%	4.5%	7.1%
Real estate activities	12.5%	15.2%	13.6%
Professional, scientific and technical, Administrative	11.5%	12.8%	12.4%
Public Administration and Defence, Education and Health	21.9%	16.1%	17.6%
Arts, entertainment and recreation, household and other services	3.7%	4.6%	4.2%

Note: Sector U has been excluded. Source: ONS, Cebr analysis

⁹ Based on the employment distribution in Great Britain.

¹⁰ The data for Solent is based on the GVA distribution by industry in 2015 and employment changes since.

¹¹ Based on proportions observed in Great Britain.

3 Providing a vital international gateway

An important lens through which the importance of the maritime sector in the Solent LEP can be understood is the role it plays as an international gateway for UK trade with the rest of the world. This section examines the magnitude of this role – in volume and value terms.

Non-EU trade statistics for the UK and the Solent region are readily available from HMRC Trade Statistics. This gives a detailed breakdown of trade by Standard International Trade Classification (SITC) to five digits by weight and value.¹² No such data exists for UK-EU trade as EU trade does not pass through Customs when entering the UK. As such, we have had to derive total UK-EU and Solent-EU trade value and volume which inhibits our ability to disaggregate the EU trade by SITC codes.

To derive EU trade statistics, Eurostat provides trade volume statistics between UK ports and the EU. From this we derived total UK-EU trade and also Solent-EU trade in tonnage. This was done for the entire time period, 2010 to 2017.

To derive the value of EU trade from the volume statistics, we leveraged results from a study by Transmodal¹³ and coupled this with ONS EU Imports PPI growth figures.¹⁴ The Transmodal study provided an estimate for the value of total trade through Solent in 2014. From HMRC's Trade Statistics, the value of Non-EU trade through Solent is known, thus using the Transmodal and HMRC Trade Statistics we were able to derive a value per unit ton for EU trade through Solent in 2014.

Using ONS EU Import PPIs, we were able to scale up and down the 2014 unit ton value so that we produced an EU trade value for the period 2010 to 2017. However, as stated, this methodology does not allow for disaggregation of EU trade by SITC. It is also too great of an assumption to apply Non-EU SITC proportions to EU trade as given the lack of Customs, integrated supply chains occur and hence will skew proportions compared to Non-EU.

3.1 The importance of trade and enabling role of maritime

International trade drives economic growth and better living standards. The ability to export enables specialisation and increases the potential for businesses to exploit economies of scale by opening up new markets. Exporting is thus, associated with significant productivity benefits. Economies of scale imply falling unit costs and increasing levels of output being generated for each £1 of input. They increase the overall supply potential of the economy.

But, without the ability to import the capital equipment required to deliver investment programmes across all sectors of the economy and the raw materials and sub-components needed by UK manufacturers from a variety of locations around the world according to where they are produced most efficiently, industry would grind to a halt, not least through a lack of competitiveness. Global sourcing, by further reducing the unit costs of production and enabling UK firms to take advantage of foreign know-how, helps UK businesses maintain and improve competitiveness on global markets.

Importing is also of significant benefit to UK consumers, not only as a result of the competitiveness of domestic businesses as a result of global sourcing of inputs, but also more directly from the competition that imports deliver to the market. This can mean lower prices for the same or superior quality and greater choice. Domestic firms must respond and improve efficiency to remain competitive vis-à-vis foreign suppliers.

¹² HMRC. (2019). '[HM Revenue & Customs. Trade Statistics](#)'.

¹³ Transmodal. (2016). 'The value of goods passing through UK ports'.

¹⁴ ONS. (2019). '[Total EU Imports](#)'.

The maritime sector, and the sea transportation it enables, are ultimately a means to an end rather than an end in themselves. Before the explosion in commercial aviation, maritime was about the only means of connecting UK people and goods with the rest of the world. But people and goods travel beyond the UK for a range of different reasons and it is from these activities that the demand for maritime and aviation services is ultimately derived. For example, people travel to holiday, to meet friends and relatives, or to attend a conference or meeting in a business capacity. Goods are sent to and from the UK either as final goods or as inputs to final goods, which are then exported or sold on the domestic market.

Moving people who want to travel beyond the UK in their own car – typically for family holidaymakers – remains an important aspect of the maritime services sector but, in overall terms, it has declined in popularity, especially since the low-cost carrier revolution in aviation. Today, one of the maritime sector's principal functions is to provide an international gateway for the movement of goods between the UK and the rest of the world. The choice between sea and air transport boils down to the relative levels of the value per tonne of goods being moved and the cost per tonne of transporting those goods to or from the UK. Because it's cheaper, sea transport tends to attract goods of relatively low value-to-weight that are less time-critical. As it stands, sea trade accounts for 95% of the UK trade by volume which includes 48% of UK food supplies, illustrating its importance.¹⁵

But not all high-tech manufacturing industries produce high value-to-weight goods like pharmaceuticals or computer chips. Machinery and transport equipment is a key UK export sector and was worth £75 million in export value terms to the UK economy in 2017, equating to 42% of all UK exports with Non-EU countries.¹⁶ The importance of maritime to this high-tech, high-value manufacturing sector is unlikely to be anywhere more clearly reflected than in the statistics on the volume and value share of total UK trade with non-EU countries in these goods that is being handled by the Solent ports.

Given the commonality in the statistics between the top 20 exports from and the top 20 imports to the UK, there seems little doubt that the Solent maritime sector provides a vital link in the integrated chain of globalised supply and demand for the goods of key UK export sectors, such as machinery and transport equipment. In other words, industries like motor manufacturing consist of businesses up and down the UK that are dependent on the Solent LEP ports and its maritime sector both for getting their finished goods to market and getting their essential inputs from abroad. This, along with analysis of other sectors that appear to depend on the maritime sector in the Solent, is the subject of later subsections.

3.2 The Solent's share of freight volumes through seaports

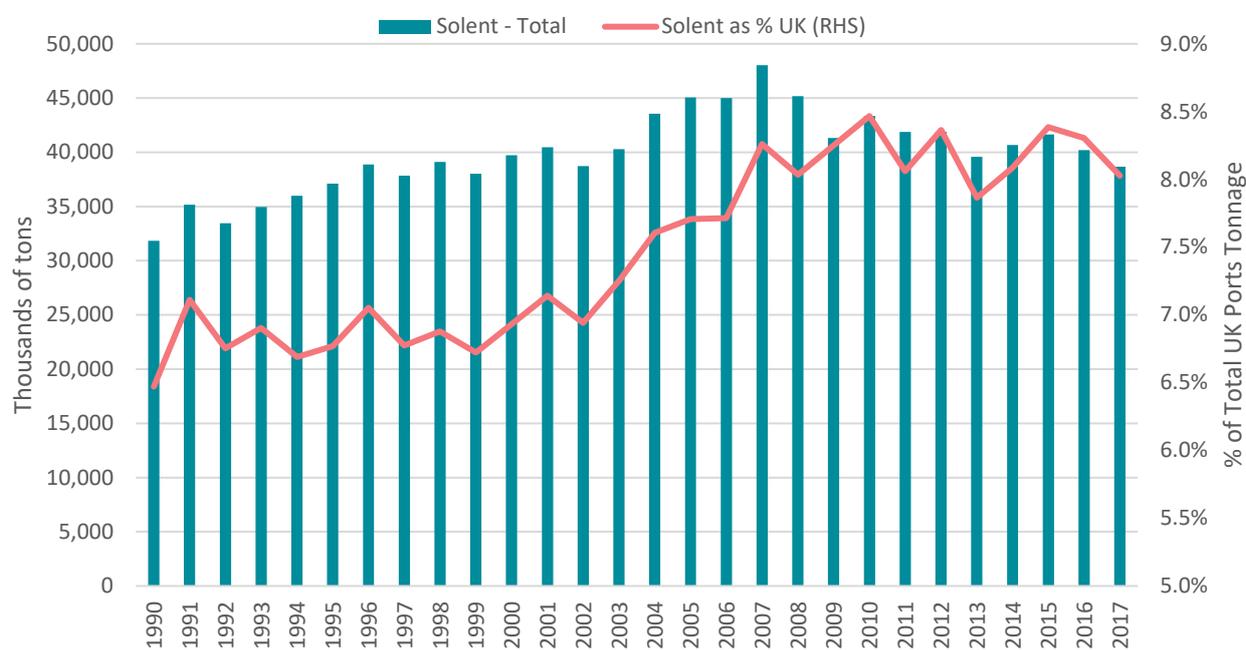
The Solent LEP region contains the major ports of Southampton and Portsmouth, as well the port of Cowes on the Isle of Wight. As such the Solent LEP makes a disproportionately large contribution to the level of freight traffic handled in the UK, both in an inwards and outwards direction.

Figure 3 below shows trends in the total level of freight traffic handled by ports in the Solent LEP region between 1990 and 2017, and expressed as a share of the UK total. This information is taken from the Department of Transport's Port Freight Statistics.

¹⁵ Department for Transport. (2019). 'Maritime 2050'.

¹⁶ HMRC Trade Statistics – SITC code 7 'Machinery & Transport Equipment'.

Figure 3: Total freight traffic in ports in the Solent LEP region, and as a share of the UK total (EU and Non-EU)



Source: Department for Transport, Cebr analysis

Recent trends suggest that the Solent has become increasingly important as a hub for UK port freight traffic. Freight traffic passing through the ports of Portsmouth, Southampton and Cowes steadily increased between 1990 and 2007, rising from 31.8 million to 48.0 million tonnes. The Solent's share of total freight traffic handled in the UK also rose in this period from 6.5% to 8.3%.

However, the recession in 2008-09 has coincided with a fall in freight traffic both in the Solent and at UK-level, although freight traffic in the Solent has stabilised in the last couple of years. Solent freight traffic was 41.7 million tonnes in 2015, recovering beyond the 2009 level of 41.3 million tonnes. Despite this, the Solent share of UK freight traffic remains at historically high levels, peaking at 8.5% in 2010 and reaching 8.4% in 2015. Since 2015, the Solent's share of UK trade has fallen slightly to 8.0% in 2017. So despite the recession, the Solent LEP region has become increasingly important to the UK in terms of freight traffic handled.

3.3 The share of all Non-EU, UK trade facilitated by the Solent Maritime sector

The analysis above is useful in understanding the importance of the Solent LEP Maritime sector in providing a key gateway for international trade. However, it is rather limited in two respects:

- It sets the Solent LEP Maritime sector within the context of freight that is facilitated by seaports only. Airports are also important international gateways and, so, understanding the role of the Solent LEP within the context of total UK trade is also important. This is important given that although 95%¹⁷ of UK trade volume is through shipping, air freight accounts for 40% of the value of UK trade.¹⁸
- The analysis of tonnage alone fails to convey the important gateway role of the Solent LEP Maritime sector in terms of the value of trade that it facilitates.

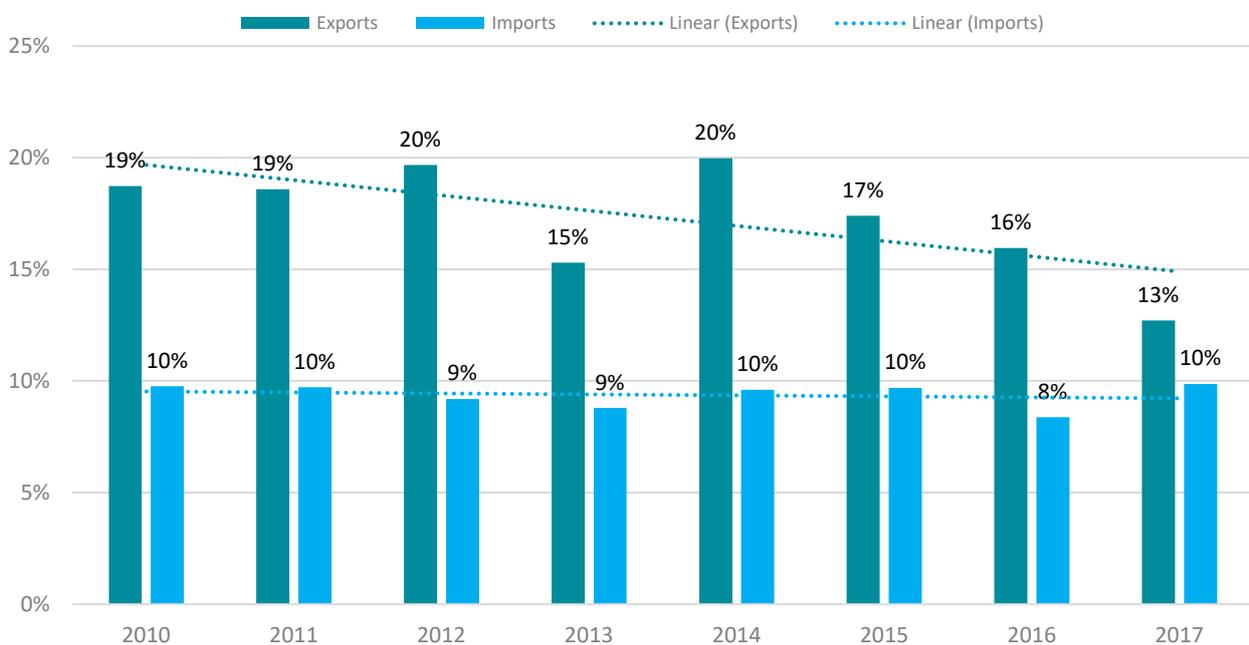
¹⁷ Department for Transport. (2019). 'Maritime 2050'.

¹⁸ Steer. (2018). 'Assessment of the value of air freight services to the UK economy'.

This broader perspective can be gleaned through an examination of the Overseas Trade Statistics produced by Her Majesty's Revenue and Customs (HMRC).

Figure 4 illustrates the Solent LEP share of total UK trade with non-EU countries, in terms of both import and export *volumes*, for each year in the period 2010 to 2017. In 2014, the Solent LEP accounted for 20% of UK exports by volume, and 10% of UK imports by volume, with non-EU countries. While the share of exports by volume fell to 13% in 2017, this is unsurprising as there can be large fluctuations in trade when drilling down to individual products, ports and trading partners. Fluctuations in the Solent percentage shares can be as much driven by changes in total volumes and the volumes passing through other seaports and airports as they are by changes in volumes through the Solent. Given that volume fell to a similar level in 2013 and rebounded in 2014, the decline may simply be a fluctuation rather than indicative of the Solent area becoming less important.

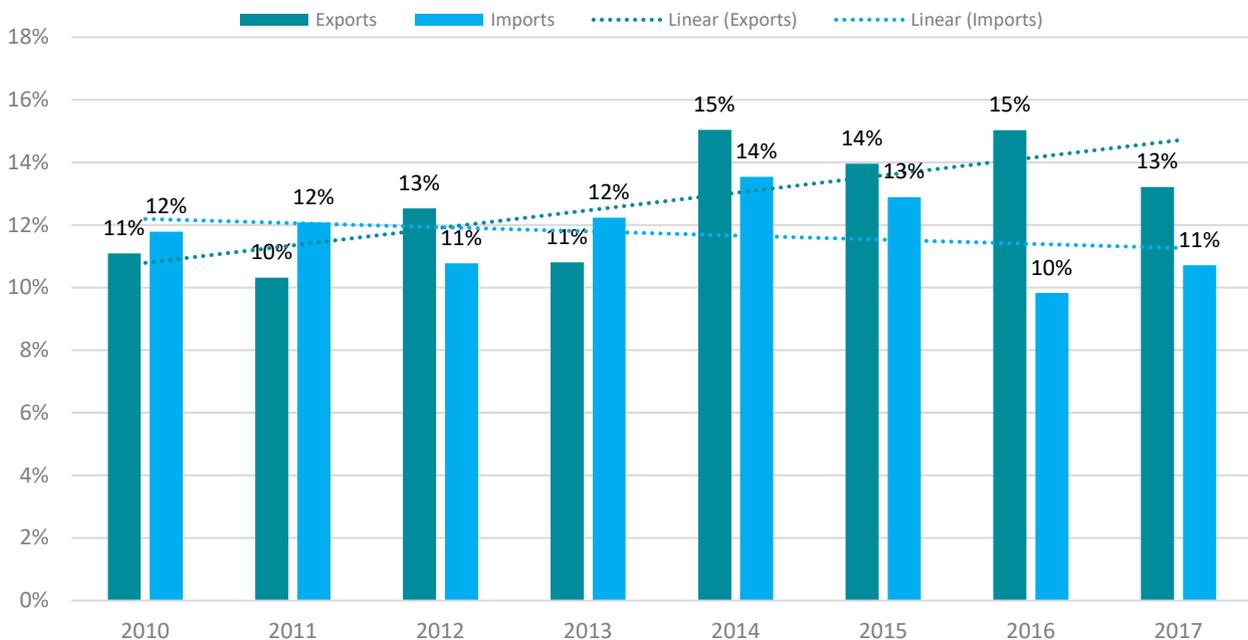
Figure 4: Solent LEP shares of total UK trade with non-EU countries, exports and imports by VOLUME, %, 2010-2017



Source: HMRC Overseas Trade Statistics, Eurostat, Cebr analysis

While Figure 4 provides important information on volumes of international trade that are facilitated by the Solent LEP maritime sector, it is effectively silent on the value of this trade. With this in mind, Figure 5 illustrates the Solent LEP share of total UK trade with non-EU countries by value, for the period 2010 to 2017. In 2017 the Solent LEP share of total UK export value was 13%, while the share of imports by value was 11%. While the Solent export shares were higher in 2015, the same issues around fluctuation apply here. In any case, the overall trend for exports is upwards meaning that the Solent maritime sector has grown in importance in terms of the share of the value of trade being facilitated. However, the trend for imports is slightly negative, suggesting a lesser role for the Solent region for Non-EU imports.

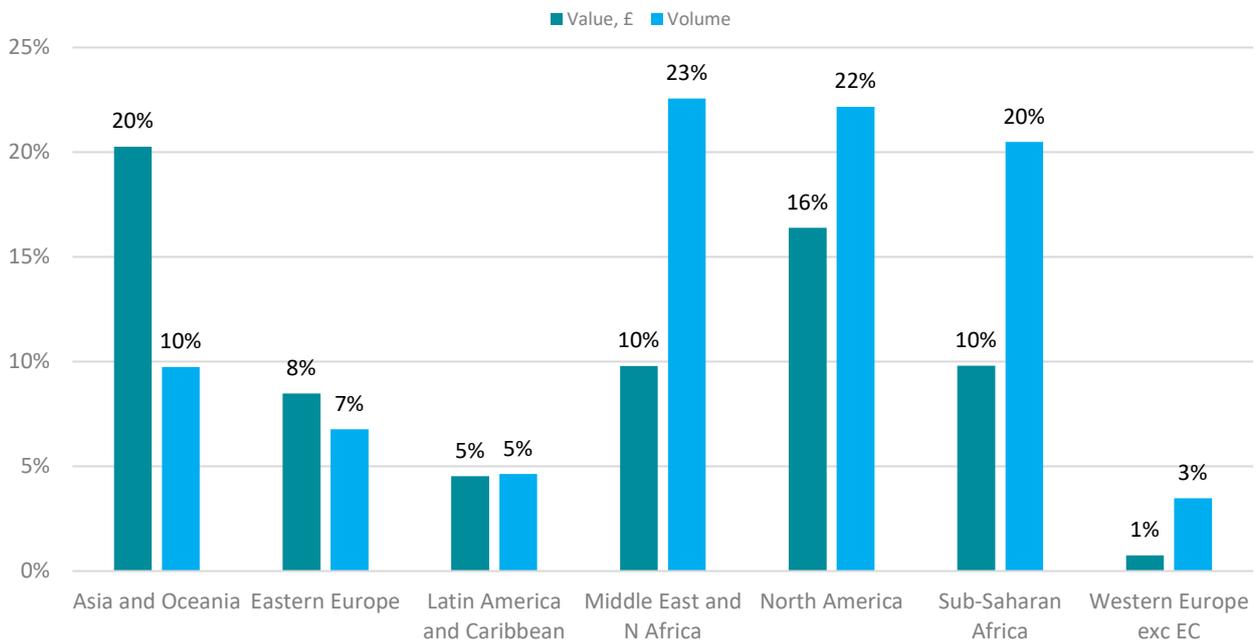
Figure 5: Solent LEP shares of total UK trade with non-EU countries, exports and imports by VALUE, %, 2010-2017



Source: HMRC Overseas Trade Statistics, Eurostat, Cebr analysis

Figure 6 provides a detailed breakdown of how the Solent share of UK exports to non-EU countries was split across continents in 2017, by both value and volume. The continental regions that account most for volume of trade are the Middle East and North Africa (23%), North America (22%) and Sub-Saharan Africa (20%). In terms of value, the most prominent regions are Asia and Oceania (20%), North America (16%) and the Middle East and North Africa and Sub-Saharan Africa (10% each). The fact that trade by volume is high with Sub-Saharan Africa, but the share of value is low (10%), indicates that while the goods being traded are of high volume, they are of low value. The reverse is true with Asia and Oceania; trade volume is low, but value is high.

Figure 6: Solent LEP shares of non-EU exports by continent, value and volume, 2017

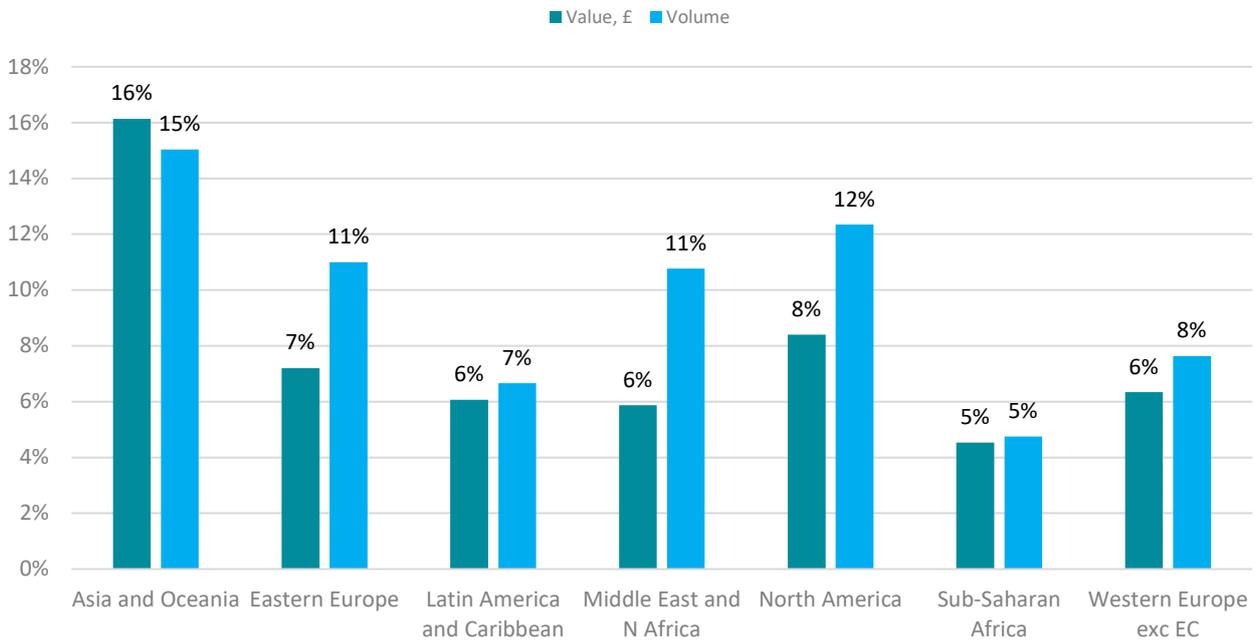


Source: HMRC Overseas Trade Statistics, Eurostat, Cebr analysis

Figure 7 focuses on imports: it provides a detailed breakdown of how the Solent LEP share of total UK imports with non-EU countries is split across continents in 2017, by both value and volume. The continental regions that account for the largest share of imports by volume are Asia and Oceania (15%), North America (12%), the Middle East and North Africa (11%) and Eastern Europe (11%).

In terms of the share of imports by value, Asia and Oceania is by far the largest contributor, with 16%, while North America is the next highest contributor – albeit with a significantly smaller share of 8%. In contrast to the discussion surrounding exports, Asia and Oceania is both a high volume and high value region the UK imports from compared to North America which is high value, lower volume.

Figure 7: Solent LEP shares of non-EU imports by continent, value and volume, 2017



Source: HMRC Overseas Trade Statistics, Eurostat, Cebr analysis

3.4 The key Non-EU exporting sectors that depend on the Solent Maritime sector

This subsection is structured as follows: we first provide a broad overview at the SITC 1-digit level of the products whose exports are most facilitated by the Solent-based Maritime sector. We then proceed to assess the more granular 2-digit and 3-digit SITC codes focusing on the key export and import sectors. It is important to note that very little meaningful insight can be obtained beyond the 3-digit split (particularly for the types of goods being exported) and so for the purposes of tractability we have not gone beyond the 3-digit level.

Table 3 presents results for the SITC 1-digit product categories. For each, the table provides the value of export trade that is facilitated by the Solent-based Maritime sector, and also the Solent percentage share of the value of total UK exports of this product category. As illustrated, products that fall under “Machinery & Transport equipment” account for £16.6 billion of exports through the Solent region: this represents a 22.2% share of the total value of UK exports of this product category in 2017.

Products that fall under “Crude materials, inedible, except fuels” are also particularly dependent on the Solent region, with 17.2% of UK exports of this product depending on the Solent region. The value of this export trade is significantly lower than that of “Machinery & transport equipment” at £0.8 billion. Other sectors that are particularly dependent on the Solent region for exports – by share of UK totals – include those whose products fall under “Food and live animals” (13.8%) and “Mineral fuels, lubricants & related materials” (10.5%).

Table 3: Exports to non-EU countries by SITC 1-digit product category in 2017

SITC 1-digit product categories	£ millions	% share of UK total non-EU trade
0 - Food & live animals	588	13.8%
1 - Beverages & tobacco	267	5.8%
2 - Crude materials, inedible, except fuels	785	17.2%
3 - Mineral fuels, lubricants & related materials	1,019	10.5%
4 - Animal & vegetable oils, fats & waxes	12	14.3%
5 - Chemicals & related products, nes	2,199	8.8%
6 - Manufactured goods classified chiefly by material	1,217	9.3%
7 - Machinery & transport equipment	16,574	22.2%
8 - Miscellaneous manufactured articles	973	4.1%
9 - Commodities/transactions not class'd elsewhere in SITC	42	0.2%
Total	23,677	13.2%

Source: HMRC Overseas Trade Statistics, Eurostat, Cebr analysis

Table 4 provides an additional layer of granularity at the SITC 2-digit level, emphasising sectors where Solent's facilitation is 20% or greater of the UK proportion of trade. This illustrates that, within machinery and transport equipment, road vehicles are the dominant category with 51.7% of UK exports (£12.7 billion) to non-EU countries moved by the maritime sector in the Solent LEP in 2017. Other important categories in terms of the Solent share include specialist industrial machinery (24.6%) and Gas, natural and manufactured (27.2%). The value involved is significantly smaller than that of road vehicles measuring at £1 billion and £94 million respectively.

Table 4: Exports to non-EU countries by SITC 2-digit product category in 2017

SITC 2-digit product categories	£ million	% share of UK total non-EU trade
01 - Meat & meat preparations	78	22.3%
08 - Feeding stuff for animals (not inc.unmilled cereals)	125	20.2%
12 - Tobacco & tobacco manufactures	24	32.7%
23 - Crude rubber (including synthetic & reclaimed)	51	42.3%
27 - Crude fertilizers & crude minerals (exc fuels etc)	58	31.2%
34 - Gas, natural & manufactured	94	27.2%
41 - Animal oils & fats	5	20.0%
52 - Inorganic chemicals	122	21.0%
57 - Plastics in primary forms	245	23.0%
61 - Leather, leather manufactures n.e.s & dressed furskins	29	21.0%
72 - Machinery specialized for particular industries	1,083	24.6%
78 - Road vehicles (including air cushion vehicles)	12,719	57.1%
82 - Furniture & parts thereof; bedding, mattresses etc	277	21.6%

Source: HMRC Overseas Trade Statistics, Eurostat, Cebr analysis

Table 6 drill further down to the SITC 3-digit level, which magnifies even further the important role played by the maritime sector in the Solent LEP. The tables have been separated out to the most important 3-digit SITC sectors; Mineral fuels, lubricants and related materials and Road vehicles.

For instance, of the £12.7 billion exports of road vehicles (SITC 2-digit), £11.9 billion relates to motor cars and motor vehicles for the movement of people (SITC 3-digit). The Solent LEP is recorded as facilitating 61.4% of UK exports of these products to non-EU countries.

The value of exports moved by the Solent LEP maritime sector is not as significant for other goods, but the percentage shares of UK totals to non-EU countries are even higher in some cases. For instance, 61.5% Motor Vehicles for the transport of goods (SITC 781) are facilitated by the Solent region. The shares are also considerable for Liquefied propane and butane (37.6%) and car trailers (23.4%).

Table 5: Exports to non-EU countries by SITC 3-digit product category in 2017 – Mineral fuels, lubricants & related materials (SITC 1-digit disaggregated)

SITC 3-digit product categories	£ millions	% share of UK total non-EU trade
334 - Oils obtained from petroleum or bituminous mnl, prp nes, containing by weight nlt 70%.of these oils	899	25.0%
335 - Residual petroleum products, nes and related materials	25	15.8%
342 - Liquefied propane and butane	93	37.6%

Source: HMRC Overseas Trade Statistics, Eurostat, Cebr analysis

Table 6: Exports to non-EU countries by SITC 3-digit product category in 2017 – Road vehicles (SITC 2-digit disaggregated)

SITC 3-digit product categories	£ millions	% share of UK total non-EU trade
781 - Motor cars & other m/vehicles principally designed for transport of persons (o/t public-transport vehicles)	11,853	61.4%
782 - Motor vehicles for the transport of goods and special purposes motor vehicles	482	61.5%
783 - Road motor vehicles, nes	106	56.0%
784 - Parts and accessories of the motor vehicles of group 722, 781, 782 and 783	204	12.6%
785 - Motorcycles (including mopeds) and cycles, motorized and non-motorized; invalid carriages	24	16.4%
786 - Trailers and semi-trailers; other vehicles, not mch propelled; specially designed & equipped transport ctr	50	23.4%

Source: HMRC Overseas Trade Statistics, Eurostat, Cebr analysis

Note that, in contrast to Table 3, there is no total row in either Table 5 or

Table 6 this is because these tables provide a more granular snapshot of some of the information contained in Table 3 but not the whole picture and so will not sum to the same total value.

The results presented here are clearly illustrative of the vital international gateway role played by the Solent LEP and its maritime sector. In the area of machinery and transport equipment, it is clear that the associated manufacturing industries have a significant dependence on the services offered by the maritime

sector in the Solent LEP. However, it is clear that a very wide range of manufacturing industries up and down the country are dependent on the maritime sector in the Solent LEP to get their finished goods to market.

3.5 The key imports facilitated by the Solent maritime sector from Non-EU countries

This subsection concerns the imports of goods that are facilitated by the Solent maritime sector. It is structured in a manner similar to Section 3.4. We commence with a broad overview of the import product categories that are moving through the Solent with the help of its maritime sector. Imports can be expected to include final goods for consumption and investment and intermediate products that provide vital inputs for UK manufacturers, including those heavily engaged in exporting.

At the SITC 1-digit level, Table 7 illustrates that the Solent moves a 17.8% share of all miscellaneous manufactured articles that are imported to the UK from non-EU countries. This includes goods like:

- Pre-fabricated buildings;
- Furniture;
- Travel goods;
- Clothing and footwear;
- Professional and scientific instruments and apparatus; and
- Photographic and optical goods, including clocks and watches.

Many of these goods can be expected to be dominated by goods in final form to support consumption or investment programmes. As such, the maritime sector in the Solent LEP plays an important role in facilitating competition for domestic manufacturers of the same kinds of product.

In value terms, the highest category is machinery and transport equipment, of which imports to the value of £7.7 billion were moved through the Solent in 2017. This is likely to include final goods and, thus, again a source of competition for UK manufacturers. However, it is also likely to include parts and components that are built into machinery and transport equipment being manufactured in the UK, either for export or for the domestic market.

Table 7: Imports to non-EU countries by SITC 1-digit product category in 2017

SITC 1-digit product categories	£ millions	% share of UK total non-EU trade
0 - Food & live animals	1,440	12.5%
1 - Beverages & tobacco	87	5.5%
2 - Crude materials, inedible, except fuels	596	12.8%
3 - Mineral fuels, lubricants & related materials	3,674	11.7%
4 - Animal & vegetable oils, fats & waxes	12	2.4%
5 - Chemicals & related products, nes	1,422	9.5%
6 - Manufactured goods classified chiefly by material	2,942	12.8%
7 - Machinery & transport equipment	7,766	10.2%
8 - Miscellaneous manufactured articles	7,636	17.8%
9 - Commodities/transactions not class'd elsewhere in SITC	162	0.5%
Total	25,737	10.7%

Source: HMRC Overseas Trade Statistics, Eurostat, Cebr analysis

At the SITC 2-digit level, the picture is somewhat different. Table 8 suggests that, by value, 28.4% of the UK's imports of Furniture from non-EU countries are moved through the Solent ports, amounting to £1.1 billion. Similarly, £2.2 billion worth of road vehicles pass through the Solent, amounting to 23.5% of UK imports.

The machinery and transport equipment categories are much less prominent in the Solent in terms of imports. Indeed, the £2.2 billion of imports from non-EU countries in the road vehicles category pales in comparison to the export numbers. We suspect that parts and components, required by UK manufacturers to produce motor vehicles for the domestic market or for export, accounts for a relatively sizable share of this. Nonetheless, the Solent is responsible for moving a sizeable share of the UK's total imports of products in this category.

Table 8: Imports to non-EU countries by SITC 2-digit product category

SITC 2-digit product categories	£ million	% share of UK total non-EU trade
23 - Crude rubber (including synthetic & reclaimed)	54	40.7%
28 - Metalliferous ores & metal scrap	346	20.9%
61 - Leather, leather manufactures n.e.s & dressed furskins	28	20.4%
62 - Rubber manufactures n.e.s.	351	25.4%
72 - Machinery specialized for particular industries	605	22.4%
73 - Metalworking machinery	105	20.5%
78 - Road vehicles (including air cushion vehicles)	2,235	23.5%
81 - P/fab buildings;sanit.,plumbing,heating &lighting fixt.	335	22.0%
82 - Furniture & parts thereof; bedding, mattresses etc	1,082	28.4%
83 - Travel goods, handbags & similar containers	276	22.8%
85 - Footwear	573	21.6%
89 - Miscellaneous manufactured articles n.e.s.	2,673	20.5%

Source: HMRC Overseas Trade Statistics, Eurostat, Cebr analysis

Table 9 displays results as the SITC 3-digit level; the picture largely mirrors that in Table 8 above. In value terms, petroleum oils and oils obtained from bituminous minerals are dominant at £3.4 billion imports from non-EU countries passing through the Solent, a 21.1% share of the UK total.

It can also be seen from Table 9 that the Solent handles 61.6% of UK imports from non-EU countries in motor vehicles for the transport of goods and other special purposes and 31.0% of the UK's imports of parts and accessories of motor vehicles. This confirms the role of the maritime sector in the Solent LEP in facilitating the supply chain needs of UK manufacturers of machinery and transport equipment, as well as providing the route to market for their exports.

However, it is clear that the maritime sector in the Solent LEP provides a vital cog in the wheel of most, if not all, of the full range of manufacturing sectors in the UK, from food and clothing, to motor cars and goods vehicles to aircraft, spacecraft and satellites. This role comes in various guises from ensuring the movement of vital imported inputs to UK manufacturers from abroad, of valuable exports to our trading partners or in moving imported final goods that provide a competitive discipline for UK manufacturers looking to maintain global market share.

Table 9: Imports to non-EU countries by SITC 3-digit product category in 2017 – Mineral fuels, lubricants & related materials (SITC 1-digit disaggregated)

SITC 3-digit product categories	£ millions	% share of UK total non-EU trade
333 - Petroleum oils and oils obtained from bituminous minerals, crude	3,392	21.1%
334 - Oils obtained from petroleum or bituminous minerals, containing by weight not less than 70% of these oils	273	4.1%
335 - Residual petroleum products, and related materials	6	6.4%
342 - Liquefied propane and butane	3	1.1%

Source: HMRC Overseas Trade Statistics, Eurostat, Cebr analysis

Table 10: Imports to non-EU countries by SITC 3-digit product category in 2017 – Road vehicles (SITC 2-digit disaggregated)

SITC 3-digit product categories	£ millions	% share of UK total non-EU trade
781 - Motor cars & other motor vehicles principally designed for transport of persons (excluding public-transport vehicles)	440	10.0%
782 - Motor vehicles for the transport of goods and special purposes motor vehicles	687	61.6%
783 - Road motor vehicles, and	27	22.9%
784 - Parts and accessories of the motor vehicles of group 722, 781, 782 and 783	838	31.0%
785 - Motorcycles (including mopeds) and cycles, motorized and non-motorized; invalid carriages	139	16.3%
786 - Trailers and semi-trailers; other vehicles, not mechanically propelled; specially designed & equipped transport containers	103	36.6%

Source: HMRC Overseas Trade Statistics, Eurostat, Cebr analysis

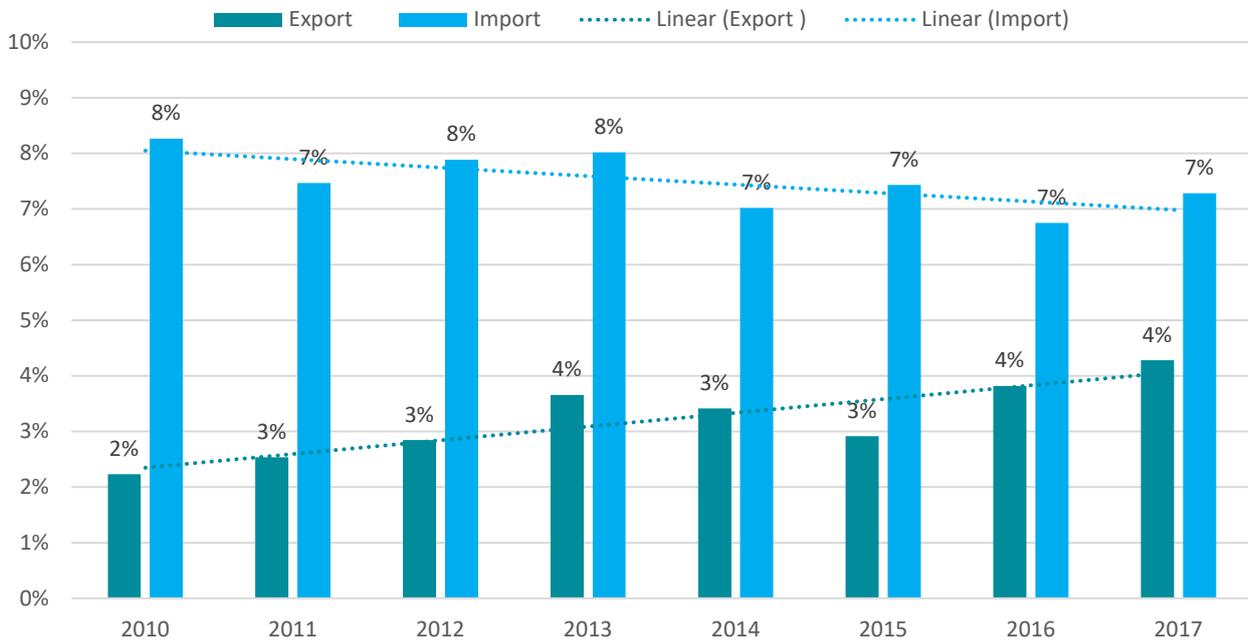
3.6 The Solent's facilitation of EU trade

As explained prior, due to data limitations and the fact that EU traded goods do not (yet) pass through Customs when entering the UK, disaggregated data and SITC code breakdowns found in HMRC Trade Statistics are not available for EU trade. As such, this section will provide an overview of the Solent's facilitation of EU trade by volume and value over the period 2010 to 2017.

Figure 8 below illustrates the Solent LEP share of total UK trade with EU countries in terms of both import and export volumes for each year in the period 2010 to 2017. Throughout the period, the Solent LEP has accounted for between 7 and 8% of total imports, with a slightly declining trend. As explained with regard to Figure 4, fluctuations in shares year to year may simply be a function of changes in total trade volumes and volumes passing through alternative ports rather than a definite trend.

However, the Solent LEP's facilitation of UK exports to the EU has been on a steady rise since 2010, peaking in 2017. This trend appears to be more indicative of the Solent LEP becoming a more important port for EU trade than mere fluctuations as a result of total trade.

Figure 8: Solent LEP shares of total UK trade with EU countries, exports and imports by VOLUME, %, 2010-2017



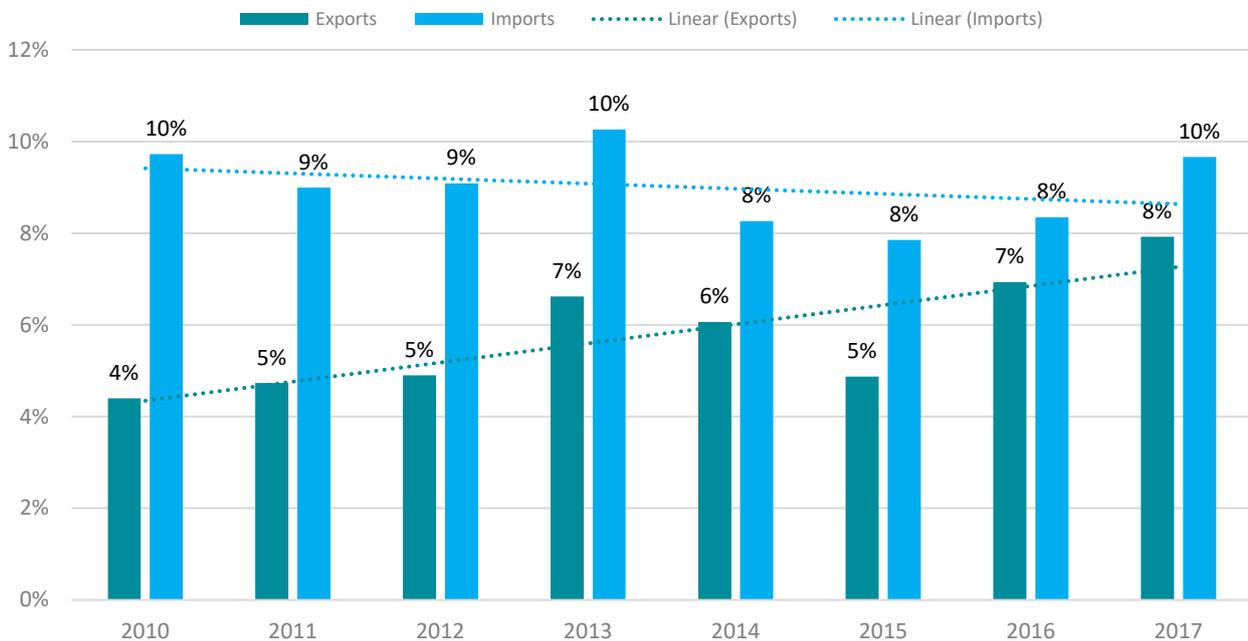
Source: Eurostat, HMRC Overseas Trade Statistics, Transmodal, ONS, Cebr analysis

Figure 9 shows the Solent LEP share of UK trade with the EU by value. It largely mirrors the results seen in Figure 8 but illustrates that the Solent region is more important in terms of value than volume with regards to EU trade. Where, by volume, the Solent LEP facilitated between 7 to 8% of imports from the EU, by value, the facilitation is between 8 and 10%. Value facilitation of imports peaked in 2013 at 10.3% which was followed by a low of 7.9% in 2015. Similarly to volume, it appears the facilitation of imports by value is on a slight decreasing trend.

The value of exports to the EU that is facilitated by the Solent LEP is significant and increasing. In 2017, 8% of the value of exports to the EU passed through the Solent LEP compared to only 4% by volume. This has also grown significantly: the Solent LEP facilitation of exports by value in 2010 was only 4%. Although year to year there is minor fluctuations such as from 2014 (6%) to 2015 (5%) which rose again in 2016 (7%), it appears that the Solent LEP is becoming more important for UK exports to the EU by value.

As stated, due to data limitations we cannot disaggregate this by sector as was done in Section 3.4 and 3.5.

Figure 9: Solent LEP shares of total UK trade with EU countries, exports and imports by VALUE, %, 2010-2017



Source: Eurostat, HMRC Overseas Trade Statistics, Transmodal, ONS, Cebr analysis

3.7 The Solent's facilitation of total UK trade

The previous sections gave a breakdown of the Solent's facilitation of trade with EU and Non-EU countries. For completeness, the section provides an overview of the Solent's total trade facilitation by volume and value.

Figure 10 illustrates the Solent's trade facilitation with both EU and Non-EU countries, by volume. This is, in effect, an average of the previous two depictions of Solent's trade. It is clear that the Solent region is a significant port for UK trade volumes, facilitating 9% of imports on average throughout the period. Likewise, it also shows that the importance of the Solent is increasing with regard to the volume of UK exports passing through its ports.

Similar to the disaggregation, the Solent's importance in trade facilitation by value is greater than that of volume.

Figure 11 illustrates that both import and export facilitation by the Solent is greater by value than in Figure 10 where it shows by volume. Similarly, the Solent ports are shown to becoming increasingly important for exports of UK trade to both EU and Non-EU countries, where in 2010 it facilitated 8% and by 2017 this had grown to 11% of total UK exports by value.

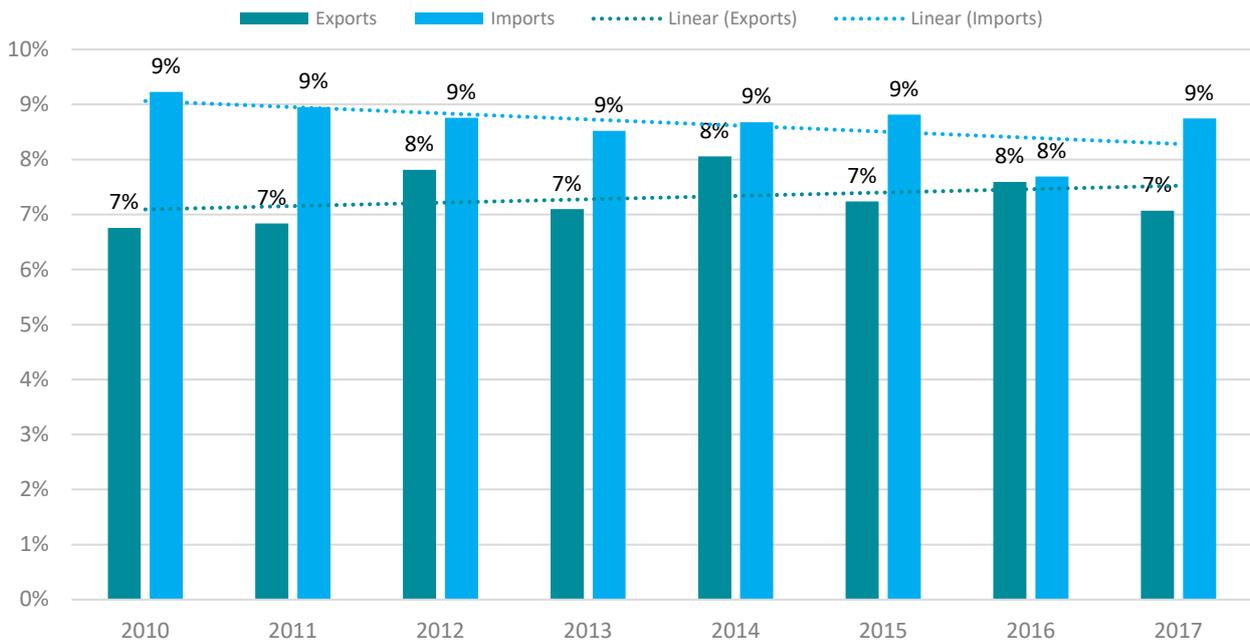
Emphasising the Solent's importance as a trade hub is the value of trade that passes through it. In 2017, Solent's gross trade was £92,728 million (net trade was £-15,846 million). This gross trade is equivalent to 4.6% of the value of UK GDP in 2017, highlighting the sheer value of trade that the ports facilitate.

Interestingly, a study by the OECD¹⁹ found that a 10% increase in trade openness stimulates a 4% increase in GDP per capita. The reason for this tends to be that trade allows for a country's productivity to increase

¹⁹ OECD. (2007). 'The Effects of Globalisation on Labour Markets, Productivity and Inflation'.

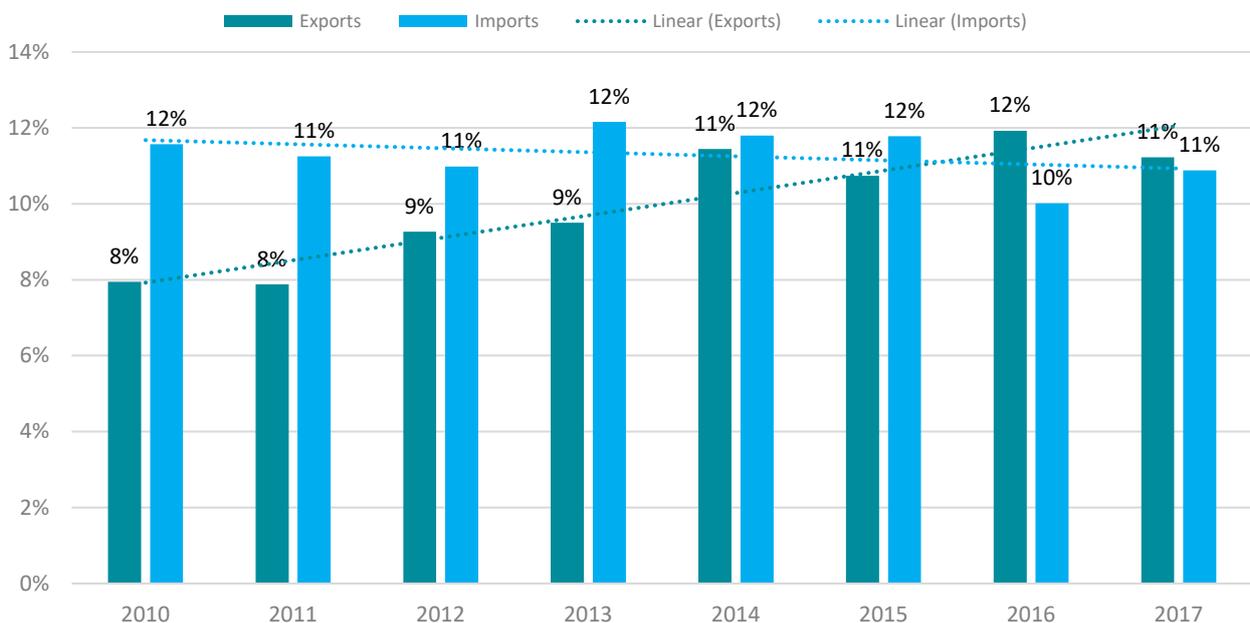
through avenues such as taking advantage of economies of scale, comparative advantages and general spill over effects. As such, a country which opens its trade can benefit through enhanced productivity which ultimately stimulates economic growth. That said, if Solent gross trade increased by £9,273 million, this would increase UK GDP per capita by £1,222. Since 2010, gross trade through the Solent has increased each year by £3,886 million on average thus illustrating how the Solent’s importance as a trade hub is transmitted through the economy.

Figure 10: Solent LEP shares of total UK trade, exports and imports by VOLUME, %, 2010-2017



Source: Eurostat, HMRC Overseas Trade Statistics, Transmodal, ONS, Cebr analysis

Figure 11: Solent LEP shares of total UK trade, exports and imports by VALUE, %, 2010-2017



Source: Eurostat, HMRC Overseas Trade Statistics, Transmodal, ONS, Cebr analysis

3.8 A Gateway for international tourism

It is important to recognise that inbound tourism is a UK export: in the same way that producers of goods exports rely on the Solent maritime sector to get their goods to the international market; the tourism-orientated sectors – including travel, accommodation, arts and culture and so forth – rely on the maritime sector to bring people to the UK and in turn purchase from them.

With the low-cost carrier revolution in aviation and the emergence of rail services to continental Europe via the Channel Tunnel, travel by sea has declined in popularity. But the mode remains important for luxury cruising and when people want to travel to or from the UK with their own cars.

Table 11 illustrates how important the Solent is for inbound tourism – that is foreign individuals who come to the UK via the Solent through Ferries and spend money in the UK. As already stated, the value of inbound tourism is declining year on year, likely due to the rise of aviation and the Channel Tunnel rail crossing. However, the impact is still significant: 2017 saw 1.8 million ferry passengers come to the UK through Portsmouth, who had an average spend of just shy of £300 each, amounting to just under £550 million in expenditure through the UK.

Table 11: Number and value of inbound tourism through the Solent, 2010 to 2017

	Ferry Passengers on Short Sea Routes (000s), Portsmouth	Overseas residents travelling by sea to the UK, average spend per visit, £	Inbound tourism value, £m
2010	2,212	358	791
2011	2,065	352	727
2012	1,880	344	647
2013	1,871	351	657
2014	1,913	353	676
2015	1,896	323	612
2016	1,920	305	586
2017	1,845	297	549

Source: ONS, Department for Transport, Cebr analysis

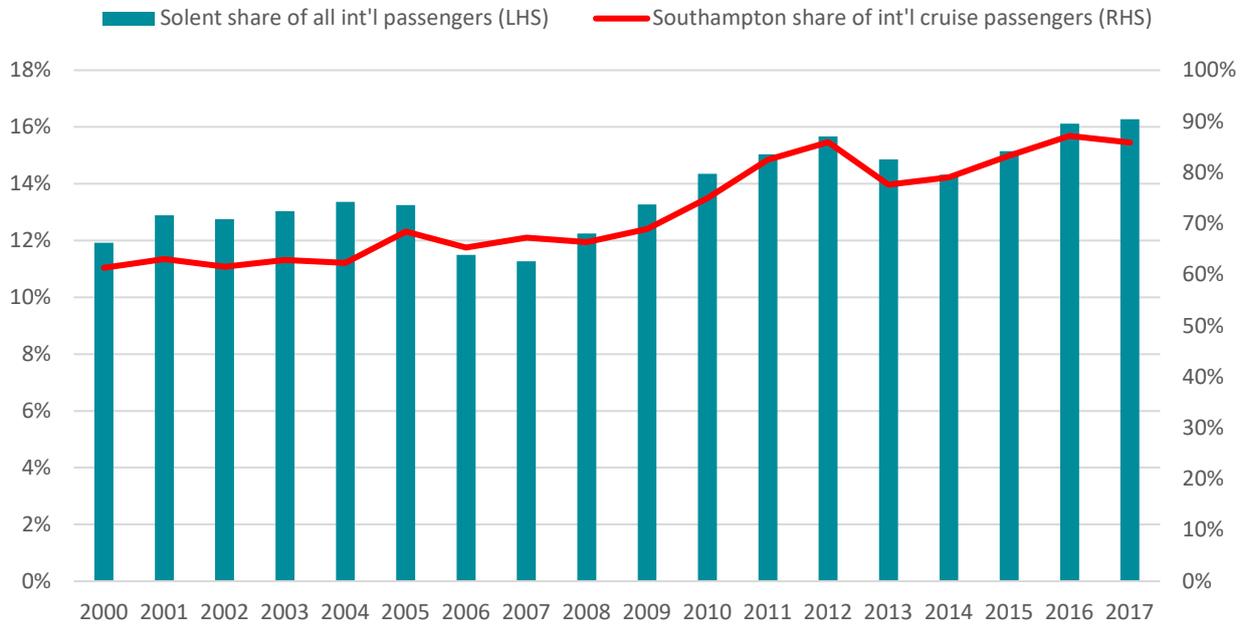
Worth bringing attention to is Southampton's importance as a cruise hub for the UK. The value of this is captured under the 'Shipping' category however, the scale of facilitation is still worth highlighting.

Figure 12 below illustrates both the Solent share of international passenger movements relative to the total level of international passenger movements at UK ports; and the percentage share of total international cruise passengers that can be attributed to Southampton port. As is clearly illustrated, the Solent share of international passengers at UK Ports has increased markedly over the period 2000 to 2017; from 12% to 16%. Similarly, the Southampton share of international cruise passengers has grown from 61% to 86%. These trajectories are indicative of the importance of the Solent maritime sector as a gateway for international tourism.

Part of the reason that Southampton is so important for the UK cruise industry is because Carnival Cruises has their head office in the Solent. As well as this, Southampton is the only port P&O Cruises and Cunard operate out of in the UK – two of the major cruise companies in the UK. Southampton through P&O and

Cunard serve cruises to the Mediterranean, the Caribbean, the Baltic, the Canary Islands and the Norwegian Fjords.²⁰

Figure 12: The Solent’s share of international passenger movements and Southampton’s share of the cruise market



Source: Department for Transport, Cebr analysis

3.9 The Solent’s facilitation of oil refinement

Southampton houses a large oil refinery, owned by Exxon Mobil, which directly benefits from the ports infrastructure. It is the idea that the refinery benefits from being located within the Southampton Port as it minimises the costs associated with transporting the oil to be refined. The refinery effectively can take the product directly off oil tankers for refinement instead of relying on additional transport networks in the UK.

To calculate the Solent’s facilitation of the Standard Industrial Classification (SIC) code 19.2: ‘Manufacture of coke and refined petroleum’, we used a combination of the Office for National Statistics’ (ONS) Annual Business Survey (ABS) data and ONS’ Business Register and Employment Survey (BRES) data. The ABS provides information of GVA of the SIC code 19.2 for the whole UK by year. BRES provides data on employment numbers for the SIC code 19.2 in the UK and also by regions i.e. the Solent.

We have assumed that the number of employees is a good proxy for value creating and activities within the SIC code 19.2. As such, using the proportion of the Solent employees within oil refinement to the UK level, we can derive the GVA for each year for the Solent region. Although attributable to the whole Solent region, it is likely that the vast majority of this value creation is from the Southampton Port given the scale of Exxon Mobil’s operations.

Table 12 outlines both the UK and the Solent GVA for the SIC code 19.2 ‘Manufacture of coke and refined petroleum’. It is clear that the Solent is very important for the UK oil industry given that in 2017, 9% of total GVA was created there. There appears to be a significant declining trend in the Solent’s importance for oil refinement; the Solent in 2010 facilitated 17% of total GVA created for SIC code 19.2, compared to 9% in 2017.

²⁰ P&O Cruises. (2019). ‘Destinations’.

This declining trend is driven by the ONS' BRES data on employment. In 2010, BRES estimated 1,500 employees in the Solent working within the SIC code 19.2. By 2017, this estimate had fallen to only 800 indicating a shrinking industry within the Solent region.

It may be the case that Table 12 understates the true proportion of the oil refinement industry facilitated by the Solent region. Data is only available on the SIC code 19.2 (Manufacture of coke and refined petroleum), whereas 19.201 (Mineral oil refining) would likely be a better metric as it relates closer to activities undertaken at Solent ports. As such, we estimate the Solent's contribution at a broader SIC code level, potentially understating its true proportion of contribution.

ExxonMobil estimates have put the Solent's contribution closer to 20% of the UK oil refinement industry.²¹

Table 12: The Solent's facilitation of oil refinement (SIC code 19.2) in GVA, 2010 to 2017

	19.2 Manufacture of coke and refined petroleum, GVA, £m		
	UK	Solent	Solent refinement as a % of UK
2010	2,248	375	17%
2011	2,232	372	17%
2012	2,226	371	17%
2013	1,321	165	13%
2014	901	113	13%
2015	2,955	369	13%
2016	2,555	319	13%
2017	2,575	229	9%

Source: ONS Business Register and Employment Survey, Cebr analysis

3.10 The Solent's facilitation of the UK automotive industry

As detailed in Section 3.4 and Section 3.5, the Solent facilitates a very significant proportion of the Non-EU automotive trade. The Solent facilitates 61.4% of car exports and 61.6% of automotive vehicles for the transport of goods imports to the UK from Non-EU countries. However, although we cannot disaggregate the SITC codes of EU trade through Solent, it is likely the case that the Solent provides significant trade facilitation for the automotive industry with Europe.

The primary difference between Non-EU trade and European trade with respect to the automotive industry is that European trade is likely highly intertwined with supply chains as there is no Customs barrier between EU countries. That is, products may begin their manufacturing process in the EU and be finalised in the UK for resale back to the EU. This supply chain element is very significant for EU trade and the UK automotive industry as it, through economies of scale, minimises the costs of production.

To estimate the Solent's facilitation of the automotive industry, we can attribute a share of the UK automotive industry's turnover to the trade facilitation that makes the production and final-stage selling possible. As such, we have used the trade facilitation found in HMRC Overseas Trade Statistics augmented

²¹ ExxonMobil. (2019). 'Fawley refinery'.

with Eurostat data (as detailed in Sections 3.4 and 3.5), the ONS' ABS and a previous study by the European Automobile Manufacturers Association²² to derive the Solent's facilitation.

The UK automotive manufacturing industry in 2017 had a turnover of £61 billion.²³ From our calculations, we estimate that the Solent facilitates 52% of the UK automotive industry through it facilitating trade with the EU and Non-EU destinations on such a large scale. As such, the Solent region is estimated to facilitate £32 billion of UK automotive manufacturing turnover in 2017.

²² The European Automobile Manufacturers Association. (2019). 'Brexit and the auto industry: Facts and figures'.

²³ ONS. (2018). 'Annual Business Survey'.

4 Case Study: Carnival and P&O Cruises in Southampton

Carnival Cruise is a large multinational company with its UK headquarters based in Southampton. It is the largest leisure travel company in the world comprising of operations in the UK, USA, Mainland Europe, China and Australia among others. Made up of notable brands such as Carnival Cruise, P&O Cruise (UK and Australia), Princess Cruises, Cunard, Costa Cruises and Holland America Line, their portfolio contains 102 ships that visit more than 700 ports worldwide.²⁴

Carnival Cruise accounts for approximately 50% of the global market, providing service to 12.1 million guests in 2017.²⁵ This amounted to a revenue of \$12.9 billion where 74% came through the sale of tickets alone. The remaining 26% came through on-board purchases which include things like day excursions, souvenirs, select dining and spa treatments.²⁶

Carnival's UK operations in the form of P&O Cruises are significant for the Solent region as they primarily operate out of Southampton: 2017 alone saw 800,000 individuals travel on UK P&O Cruises. This significant activity is supported by approximately 39,000 employees where 87% reside on-board the cruises themselves.²⁷

Southampton has a rich history with P&O Cruises, dating back to 1837 where cruises began with tours to Egypt, expanding to India in 1842.²⁸ The 175th anniversary was celebrated in 2012 which was marked by all seven cruise liners docking in Southampton for the first time.²⁹

Since then, Carnival Cruise has established its 2020 Sustainability Goals stimulating significant investment in Marine Technology to the point where they are market leaders in some maritime environmental technologies.³⁰ The Sustainability Goals revolve around carbon emissions, general efficiency and environmental impact. Carnival Cruise's \$400 million investment into Exhaust Gas Cleaning Systems has led to 59% of their 102 ship fleet being covered, making them a market leader in this technology. They have also invested in reducing waste from ships, producing a 5% reduction relative to the 2010 baseline and increased their water efficiency by 5% through investments in technologies like reverse osmosis. They have also pledged the removal of single use plastics, to be replaced by recyclable or biodegradable alternatives.³¹

These technologies have been particularly effective at reducing the company's carbon footprint. One of the Sustainability Goals was to reduce their CO₂ footprint by 25% relative to 2005 levels by 2020. By 2018, Carnival Cruise had achieved a reduction of 24.8% implying that reductions will exceed target. This is particularly relevant as a key target of the UK Maritime 2050 report is reducing carbon emissions by 50%.³² Cruise Shipping accounts for just over a third of direct revenue of the broader UK shipping industry emphasising the scale of effect investments into greener technologies could produce.

24 Carnival Corporation. (2019). '[Corporate Information](#)'.

25 Carnival PLC. (2018). 'Annual Report' – Companies House.

26 P&O Cruises. (2019). '[What's included in your cruise?](#)'

27 Ibid.

28 Arnott, A. (2010). '*Southampton, Gateway to the World*'. The History Press. p. 68.

29 Cruise. (2012). '[175 years of P&O Cruises in Pictures](#)'.

30 P&O Cruises. (2019). '[Carnival's 2020 Sustainability Goals](#)'.

31 Ibid.

32 Department for Transport. (2019). 'Maritime 2050'.

Cunard, another subsidiary of the Carnival Cruise PLC, has recently announced the introduction of a fourth ship to its fleet. This ship will have a capacity of 3,000 passengers and will be the first time since 1998 that the company has four ships operating simultaneously.³³

Southampton is the only UK port from which Cunard and P&O Cruises operate out of. This highlights the region's importance to the UK cruise tourism industry. This is magnified in the downstream impacts in Section 3.

³³ Cunard. (2019). '[Our fourth ship](#)'.

5 The Solent-based Maritime sector and Portsmouth Naval Base

Here we set out how the Maritime Sector has been defined for the purposes of the study. On a holistic level, the wider sector can be disaggregated into the shipping, ports, leisure marine, marine engineering, and maritime business services industries. To these five industries we also consider the activities of Portsmouth Naval Base.

5.1 The definition of the Maritime sector and its constituent industries

Maritime UK have provided a list of activities which fall under the Maritime Sector; Cebr has subsequently undertaken a mapping exercise using this list to identify how each of these five industries aligns with the national accounts. For most Maritime Sector activities, a corresponding Standard Industrial Classification (SIC) code exists which enables the identification and quantification of the direct economic impacts using publicly-available data sources. A minority of activities do not map neatly against the SIC framework, necessitating the use of industry or local-level data for quantification purposes.

The Maritime Sector in the Solent LEP region has therefore be identified as consisting of the following activities. Each of the sub-sectors have been mapped to their sector by Cebr, in order to attribute Standard Industrial Classification (SIC) codes to the activity to allow their direct impacts to be measured.

- **Shipping industry**
 - International transport of passengers;
 - Transport of passengers on inland waterways;
 - International transport of freight;
 - Transport of freight on inland waterways.
- **Ports industry**
 - Warehousing and storage;
 - Port activities and management;
 - Stevedores, cargo and passenger handling;
 - Border agency, HMRC and public sector employees operating in ports.
- **Leisure Marine**
 - Boatbuilding (marine leisure vessels);
 - Recreational marine activities, marine finance and legal activities and general marine services;
- **Marine Engineering**
 - Shipbuilding
 - Marine renewable energy;
 - Marine support activities for offshore oil and gas, engineering and mining;
 - Marine science and academic activities, including government vessels and technical consulting.
- **Maritime Business Services industry**
 - Shipbroking services;
 - Maritime Insurance services;
 - Maritime Financial services;
 - Maritime Legal Services;
 - Ship Surveying and Classification activities;
 - Maritime Education (including Maritime university courses and cadetships)
 - Maritime Consultancy;
 - Maritime Accountancy.

- **Portsmouth Naval Base**³⁴
 - Shipbuilding, Marine Engineering and the Naval Defence industry;
 - Naval defence activities (MOD and Civilian);
 - Other activities (including heritage and cultural services) and ship services.

5.2 Mapping Maritime Sector activities against the national accounts framework

Here we set out how the direct economic contribution of the industries and activities listed in the previous subsection have been mapped against the national accounts framework. For activities which do not map neatly against this framework – in other words, when SIC codes cannot be used to accurately reflect or capture a particular maritime-related activity – we outline the industry-level sources to separately quantify the economic contribution.

It should be stressed that the Maritime industries as defined here are unlikely to be exhaustive, and that further work may be necessary to fully capture the fullest extent of activities taking place in the Maritime Sector, several of which are often difficult to define within the existing national accounts framework. There may therefore be a greater role for the UK Government to expand the existing definition of the Maritime Sector, in order that the true value of economic activity supported is then measured.

The shipping and ports industries

Table 13 below shows how activities for the shipping and ports industries have been identified, and the data sources used to capture and quantify the associated economic activity.

Table 13: Mapping of Maritime sector activities: Shipping and Ports industries

INDUSTRY	ACTIVITY	MAPPING	SOURCE(S) USED
Shipping	Transport of Passengers International / Sea Faring	Identified through SIC code 50100, "Sea and Coastal Passenger Water Transport".	FAME, BRES
	Transport of Passengers on Inland Waterways	Identified through SIC code 50300, "Inland Passenger Water Transport".	FAME, BRES
	Transport of Freight International/ Sea Faring	Identified through SIC codes 50200 and 77342, "Sea and coastal freight water transport", and "Renting and Leasing of Freight Water Transport Equipment".	FAME, BRES
	Transport of Freight on Inland Waterways	Identified through SIC code 50400, "Inland Freight Water Transport".	FAME, BRES
	Other Shipping activity not captured through SIC codes 50100 - 50400	Identified through Chamber of Shipping statistics for shipping-related employment	CoS Manpower Survey

³⁴ The Portsmouth Naval Base (PNB) is included within our economic impacts of Solent LEP Maritime Sector for presentational purposes. Some of the impacts (for instance shipbuilding and marine engineering) are ordinarily included in other industries of the Maritime Sector. In these cases, the impacts of PNB are stripped out from the rest of the Maritime Sector in order to ensure there is no double counting. Other impacts of the PNB (such as naval defence activities) are not ordinarily included within Cebr's definition of the Maritime Sector. These impacts are included within this report for presentational purposes, but are excluded from the national impacts of the Maritime Sector.

Ports	Warehousing and Storage	Identified through SIC code 52101, "Operation of Warehousing and Storage Facilities for Water Transport activities". Activities are then mapped to council wards containing major and minor UK ports.	FAME, BRES
	Port Authority Management, Security and Marshals, Marine and Vessel Management Services, Marine Pilots, Harbour Support, Engineering and Maintenance	Identified through SIC code 52220, "Service activities incidental to water transportation". Activities are then mapped to council wards containing major and minor UK ports.	FAME, BRES
	Stevedores, cargo and passenger handling including crane/vehicle/plant drivers/operators	Identified through SIC code 52241, "Cargo Handling for Water Transport Activities". Activities are then mapped to council wards containing major and minor UK ports.	FAME, BRES
	Border Agency, Home Office and HMRC staff operating in Ports	Identified as public sector employees operating in UK ports. Activities are then mapped to council wards containing major and minor UK ports.	Institute for Government, Port Freight Statistics, Cebr analysis

Source: Maritime UK, Cebr analysis

For the majority of shipping and ports industry activities, business demography data taken from the FAME database has been used to generate UK-level estimates for the direct economic impacts of each activity. Data taken from the ONS Business Register of Employment Survey (BRES) has then been used to disaggregate national level data at both regional and Solent-level. In the case of activities for the ports industry, only activity taking place in council wards within the Solent LEP which contain a major or minor UK port has been captured, on the assumption that warehousing and storage and other activities taking place in these locations relate to the associated port.

The leisure marine and marine scientific and engineering industries

Table 14 below shows how activities for the marine industry have been identified, and the data sources used to capture and quantify the associated economic activity.

Table 14: Mapping of Maritime sector activities: Marine industry

INDUSTRY	ACTIVITY	MAPPING	SOURCE(S) USED
Leisure Marine	Boatbuilding (marine leisure vessels)	Identified through SIC codes 3012 ("Building of pleasure and sporting boats") as well as the British Marine "Key Performance Indicators for the Leisure, Superyacht and Small Commercial Marine Industry"	British Marine, Cebr analysis
	Recreational marine activities, marine finance and legal activities and general customer and business marine services	Leisure marine activities do not map neatly across the SIC framework, as they are typically bundled together with others within the leisure industries; this precludes the effective use of FAME to gather economic impact data. Cebr have therefore drawn upon the British Marine "Key Performance Indicators for the Leisure, Superyacht and Small Commercial Marine Industry" to derive employment, turnover and GVA estimates.	British Marine, Cebr analysis
Marine Engineering	Shipbuilding and Marine Engineering	Identified in the National Accounts framework through SIC code 3011 ("Building of ships and floating structures") and 3315 ("Repair and maintenance of ships and boats")	ABS, BRES, FAME, Cebr Analysis

	Marine renewable energy	Marine renewable energy activities do not map neatly across the SIC framework. Cebr have therefore drawn upon the BIS report, "The size and performance of the UK-low carbon economy" BIS report (2013) to derive employment, turnover and GVA estimates.	BIS, Cebr analysis
	Marine support activities for offshore oil and gas, engineering and mining	Identified through SIC code 91, "Support activities for petroleum and natural gas extraction".	FAME, Cebr analysis
	Marine science and academic activities, including government vessels and technical consulting	Marine scientific activities do not map neatly across the SIC framework, as they are typically bundled together with other activities within the Manufacturing and "Other Scientific and Professional" sectors; this precludes the effective use of FAME to gather economic impact data. Cebr have therefore drawn upon the Society of Maritime Industries (SMI) "Annual Review of UK Marine Scientific Industries reports to gather data.	SMI, Cebr analysis

Source: Maritime UK, Cebr analysis

The marine industry is defined as encompassing a wide range of activities, ranging from leisure boat manufacturing to renewable energy generation and marine scientific activities. It is important to note that manufacturing and repair of ships is separately defined as falling under the activities of Portsmouth Naval Base (see below) as part of our Solent LEP analysis.

A key source of information used by Cebr to capture marine leisure activities is the Key Performance Indicators (KPI) analysis produced by British Marine. The KPI analysis is produced each year, drawing upon information supplied to British Marine by its membership, such as company turnover and statistics declarations. KPI analysis covering the years 2010 to 2015 (inclusive) has therefore been used as a major source of information for capturing and quantifying leisure boatbuilding as well as business and customer marine activities.

The Maritime Business Services industry

The methodology of the Maritime Business Services industry is unique compared to the other reports of this study into the Maritime Sector. The MBS industry is a fairly abstract concept comprising of, for the purpose of this study, eight sub-industries which are not exclusively maritime related and hence do not map neatly onto SIC codes.

For this analysis Cebr has drawn on a variety of data sources to produce a bottom-up analysis for each of the sub-industries. Data is limited for Maritime Financial services and Maritime Accountancy and as such for these sub-industries, we rely on PwC's 2016 study 'The UK's Global Maritime Professional Services: Contribution and Trends', augmenting it with trends in the broader industry to generate estimates for the entire period, 2010 to 2017. The other sub-industries have been computed through a combination of bottom-up analysis using company and financial accounts, FAME, ONS and insights from representatives of the industry.

For a more detailed description of the individual methodologies, please see 'The economic contribution of the UK Maritime Business Services industry' report.

Portsmouth Naval Base

In addition to the economic contribution supported by the five Maritime industries detailed above, this study also considers the major economic contribution of Portsmouth Naval Base to the Solent LEP region.

As set out in the Introduction, our major source of information is the ‘Socio-Economic Impact Assessment of Portsmouth Naval Base’ report produced by the University of Portsmouth in 2012. This report identifies the direct and indirect contribution in terms of GVA and employment to the Solent LEP region in 2011, with employment distributed across the following identified activities:

- Portsmouth Naval base armed service and civilian staff;
- Shipbuilding;
- Maritime services;
- Ships’ crew;
- BAE Systems Subcontract staff and Other permanent contract staff;
- Heritage (those employed running and maintaining attractions).

It was previously estimated that Portsmouth Naval Base directly contributed £959 million in GVA and 11,900 jobs in 2011;³⁵ the wider contribution was £1,682 million in GVA and just under 19,800 jobs. These estimates feature as part of the economic impact analysis featured in this report. In order to capture the GVA generated and employment supported by Portsmouth Naval Base in the years following 2011, Cebr has projected forward the 2011 estimates by augmenting these with the following two key sources:

- For MOD service and civilian staff, employment estimates for 2010 and 2012-2017 have been estimated by using the MOD Quarterly Location Statistics;³⁶
- For non-MOD staff, statistics for employment have been projected for the years 2010 and 2012-17 using BRES statistics.

³⁵ Ibid.

³⁶ <https://www.gov.uk/government/collections/location-of-all-uk-regular-service-and-civilian-personnel-quarterly-statistics-index>

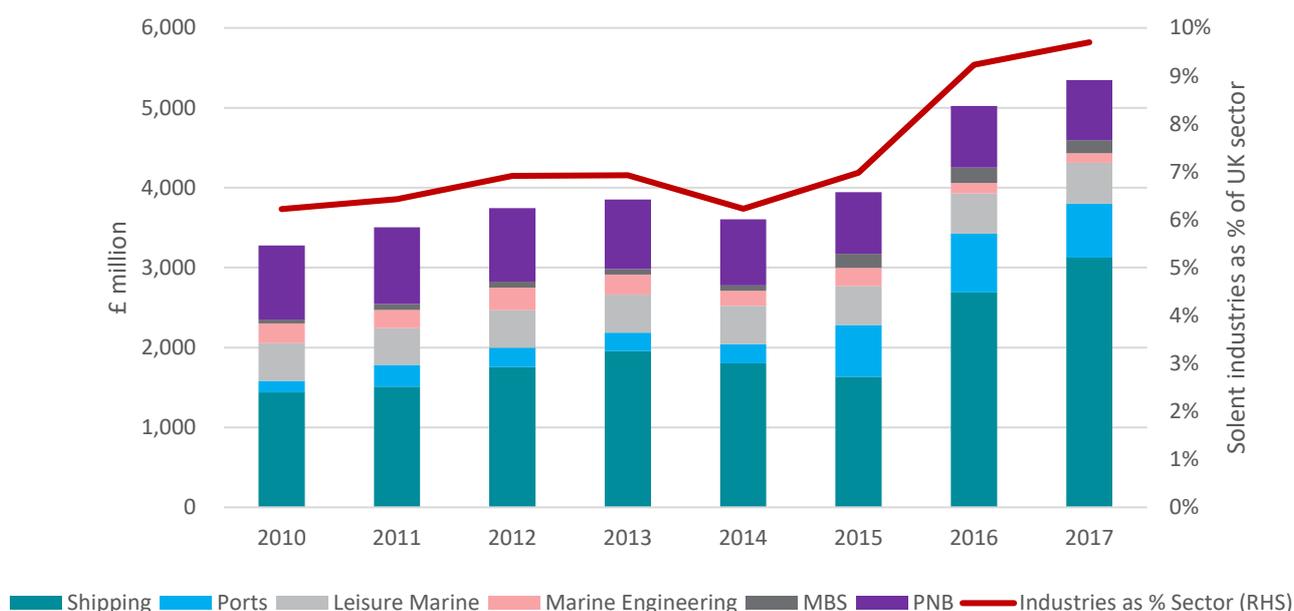
6 The direct impact of the Solent-based Maritime sector and Portsmouth Naval Base

In this section we set out estimates for the direct contribution of the Solent-based Maritime Sector to five key macroeconomic indicators: turnover, GVA, employment, the compensation of employees³⁷, and the Exchequer contribution through tax revenues raised. After quantifying the direct contributions made through these activities, the contribution that the Solent-based Maritime sector makes to the wider UK sector is then examined. Direct economic impacts are separated by Maritime industry (shipping, ports, leisure marine, marine engineering and maritime business services) and from those associated with Portsmouth Naval Base (PNB).

6.1 The direct impact through turnover

This subsection outlines the direct turnover impact from the Solent-based Maritime Sector and Portsmouth Naval Base. Figure 13 below shows the estimated direct turnover impact from the Solent-based shipping, ports, leisure marine, marine engineering and maritime business services industries, as well as the Portsmouth Naval Base, in the years 2010 to 2017.

Figure 13: The direct contribution of the Solent-based Maritime industries and Portsmouth Naval Base to turnover, and the Solent share of the total direct Maritime Sector contribution to UK Turnover, 2010 to 2017



The Solent-based Maritime Sector and Portsmouth Naval Base directly contributed £5.3 billion to turnover in 2017. The direct impact reached its highest level in 2017, increasing by more than 35% from 2015. Most of this increase was driven by the turnover generated in the shipping industry, which increased by 91% in the period 2015-17.

This is consistent with very solid growth in the global cruise industry this decade, with The Cruise Lines International Association reporting growth of over 20% from 2011 to 2016.³⁸ Carnival Cruise, which makes

³⁷ Compensation of employees is the total remuneration, in cash or in kind, payable by an employer to an employee in return for employers' social contributions, mainly consisting of employers' actual social contributions (excluding apprentices), employers' imputed social contributions (excluding apprentices) and employers' social contributions for apprentices.

³⁸ Maritime Executive. (2018). ['Cruise Industry Poised for Growth'](#).

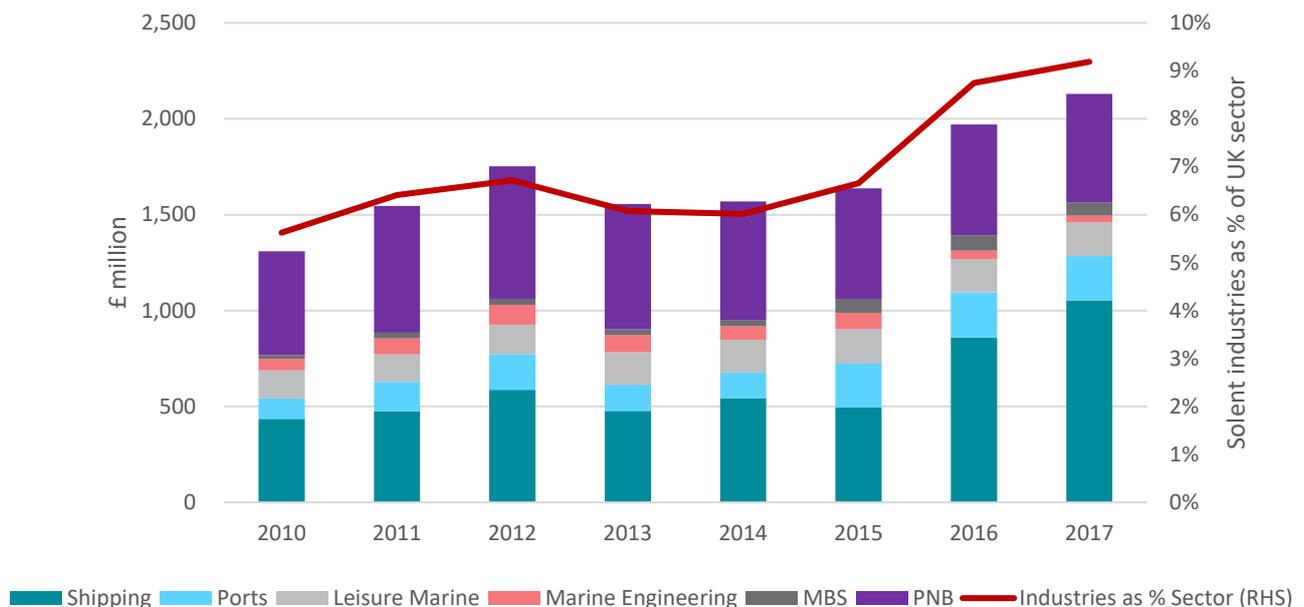
up approximately 50% of the global market³⁹ operates P&O cruises, primarily out of Southampton. 2017 alone saw 800,000 individuals travel on UK P&O cruises⁴⁰, supporting the reported high levels of turnover.

The shipping industry contributed 59% of the total turnover in 2017, contributing £3.1 billion to the direct impacts. The Portsmouth Naval Base and the ports industry represented the second and third highest contributions to turnover, contributing 14.1% and 12.6% respectively. The leisure marine industry contributed £511 million to turnover, equivalent to 9.6% of the direct impact. The marine engineering industry contributed 2.3% whereas Solent's maritime business services contributed 3.0% to the direct impact in 2017.

6.2 The direct impact through GVA

This subsection firstly illustrates the contributions in terms of the GVA from the Maritime Sector to the Solent LEP region and UK GDP. Figure 14 below shows this direct impact, disaggregated by the five Solent-based Maritime industries and the Portsmouth Naval Base in the years 2010 to 2017.

Figure 14: The direct contribution of the Solent-based Maritime industries and Portsmouth Naval Base to GVA, and the Solent share of the total direct Maritime Sector contribution to UK GVA, 2010 to 2017



Source: ONS, FAME, Cebr analysis

It is estimated that Solent-based Maritime sector and Portsmouth Naval Base directly contributed just under £2.2 billion to GVA in 2017. The shipping industry and Portsmouth Naval Base contributed the largest share of GVA in almost all of the years considered, on average around 35% and 37%, respectively. Around £230 million of GVA was directly contributed by the Solent-based ports industry in 2017, representing 11% of the total.

After combining the shipping, ports, leisure marine, marine engineering and maritime business services industries, it is estimated that the direct GVA impact of the Solent-based Maritime Sector represented 9.2% of the direct GVA impact of the entire UK Maritime sector in 2017.

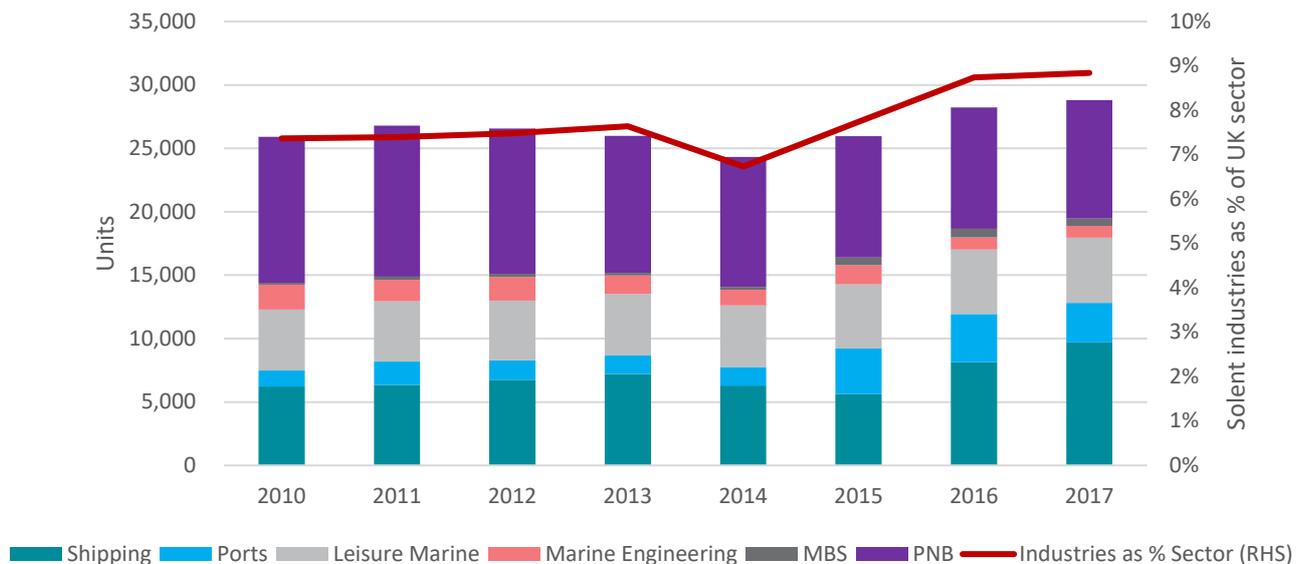
³⁹ Carnival Cruises. (2018). ['2018 Annual Report'](#).

⁴⁰ P&O Cruises. (2019). ['What's included in your cruise?'](#)

6.3 The direct impact through employment

This subsection outlines the direct employment impact from the Solent-based Maritime Sector and Portsmouth Naval Base. Figure 15 below shows the estimated direct employment impact from the Solent-based shipping, ports, leisure marine, marine engineering and maritime business services industries, as well as the Portsmouth Naval Base, in the years 2010 to 2017.

Figure 15: The direct contribution of the Solent-based Maritime industries and Portsmouth Naval Base to employment, and the share of the total direct industry contribution to UK employment, 2010 to 2017



Source: ONS, FAME, Cebr analysis

It is estimated that the Solent-based Maritime sector and Portsmouth Naval Base directly employed 28,800 people in 2017, an increase from 25,900 people in 2010. The largest contributions to the direct employment impact in 2017 came from the Shipping industry (9,700 jobs) and Portsmouth Naval Base (around 9,300 jobs). The overall level of employment directly supported by the marine industry in the Solent LEP region increased by 1.5% during the period 2010 to 2017.

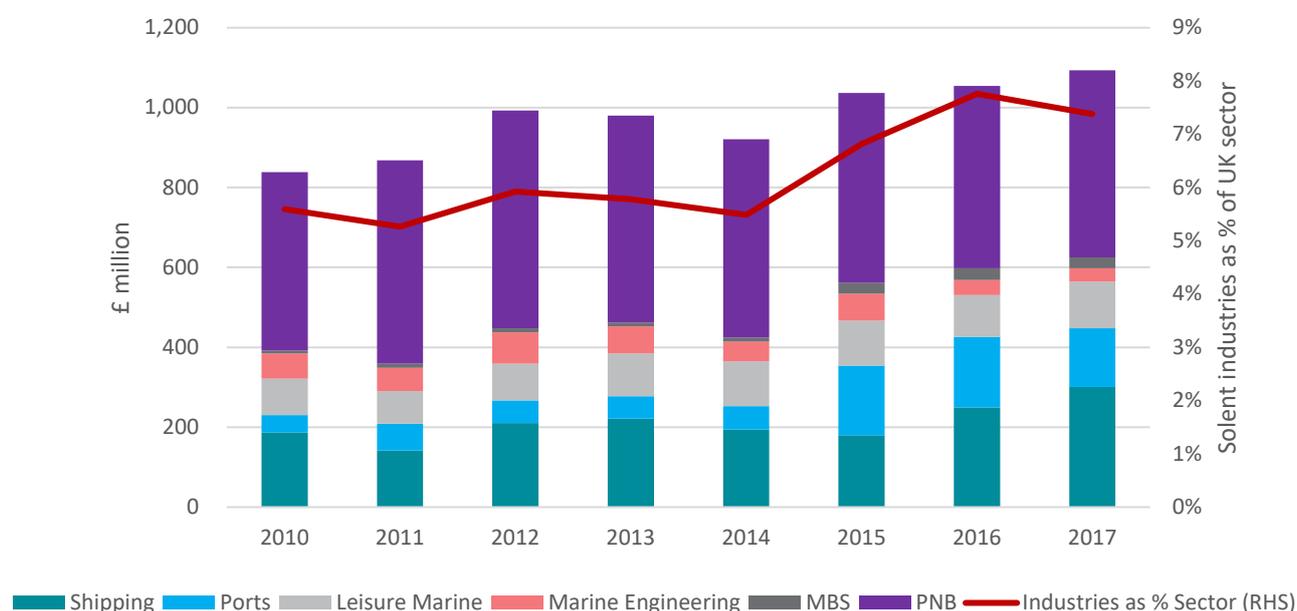
There is estimated to have been a decline in employment at Portsmouth Naval Base of around 35% since 2011 (from 11,900 jobs to 9,353 jobs). The decline in employment directly supported by Portsmouth Naval Base can be attributed to the steady reductions in Shipbuilding activity since 2012, as identified through BRES statistics

6.4 The direct impact through the compensation of employees

This section considers the compensation of employees which is directly supported by the Solent-based Maritime Sector and Portsmouth Naval Base. As noted in Footnote 1 earlier in this report, GVA is commonly known as income from production and that the principal recipients of this income are labour (through employee compensation), capital (shareholders, financiers, depreciation etc.) and government (through taxes on production, chiefly Business Rates). The principal beneficiary in most businesses and in most sectors of the economy are typically employees.

Figure 16 below shows the direct impact through the compensation of employees in the years 2010 to 2017, disaggregated by each Solent-based Maritime industry and Portsmouth Naval Base.

Figure 16: The direct contribution of the Solent-based Maritime industries and Portsmouth Naval Base to the compensation of employees, and the combined industries' share of the total contribution from the UK Maritime sector, 2010 to 2017



Source: ONS, FAME, Cebr analysis

The Solent-based Maritime Sector and Portsmouth Naval Base directly contributed £1.1 billion to the compensation of employees in 2017. The direct impact reached its highest level in 2017, increasing by 3.7% from the previous year.

The direct contribution of Portsmouth Naval Base increased from £456 million in 2016 to £468 million in 2017 and contributed 43% to the overall direct impact in 2017. The ports industry contributed 13.4% of the direct impact in 2017, an increase from 5.2% in 2010. Indeed, the compensation of employees within the Solent's ports industry grew by 350% over this period. The leisure marine industry contributed £117 million to the compensation of employees, equivalent to 10.7% of the direct impact. The shipping industry and marine engineering contributed 27.5% and 3.1%, respectively. Finally, Solent's maritime business services contributed 2.4% to the direct impact in 2017, an increase from 0.8% in 2010.

Overall, the Solent-based Maritime Sector (excluding Portsmouth Naval Base) is estimated to have contributed 7.4% of the compensation of employees directly supported by the UK Maritime Sector in 2017; as with GVA, this proportion has increased, rising from around 5.6% in 2010.

6.5 The direct Exchequer contribution

Here we examine the contribution of the Solent-based Maritime sector and Portsmouth Naval Base to the UK Exchequer, through tax revenues raised from Maritime-related activities. In order to capture the incidence of taxation on the direct activities, (rather than indirect), Cebr has measured the direct contribution through revenues raised from the tax heads listed below:

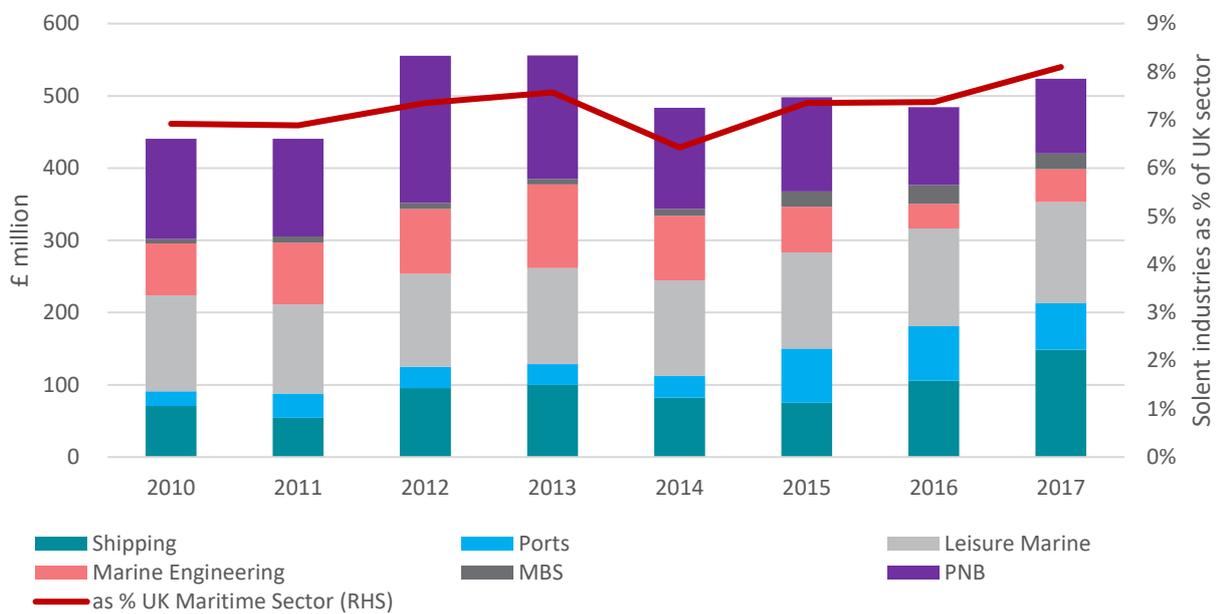
- Income Tax;
- National Insurance Contributions (NICs) – from both Employer and Employee contributions;
- Value-Added Tax (VAT) as paid by businesses operating in the Maritime sector;
- Corporation Tax;
- National Non-Domestic Rates (Business Rates).

For the personal taxes listed above, Income Tax and NICs revenues have been calculated by applying tax rates to the estimated wages and salaries paid to employees operating in the Solent-based maritime sector

and Portsmouth Naval Base; rates and thresholds have been sourced from HMRC for the years 2010 to 2017. Wages and salaries for employees have been sourced from the Annual Survey for Hours and Earnings (ASHE)⁴¹ and adjusted for wage differentials in the Solent region. For the business taxes listed above, Corporation Tax revenues have been estimated by applying HMRC estimates for Average Effective Tax Rates (AETRs) to the estimated Gross Profit of each Maritime industry and the shipbuilding activities taking place at Portsmouth Naval Base. Business Rates have been estimated using the average level of Business Rates paid as a proportion of Maritime sector GVA, drawing upon the ONS Annual Business Survey (ABS).

Figure 17 below shows the direct contribution of the Solent-based Maritime Sector and Portsmouth Naval Base to the UK Exchequer in the years 2010 to 2017, and expressed as a share of the total Exchequer contribution from the UK-wide Maritime Sector.

Figure 17: The direct UK Exchequer contribution of the Solent-based Maritime industries and Portsmouth Naval Base, 2010 to 2017



Source: ONS, FAME, Cebr analysis

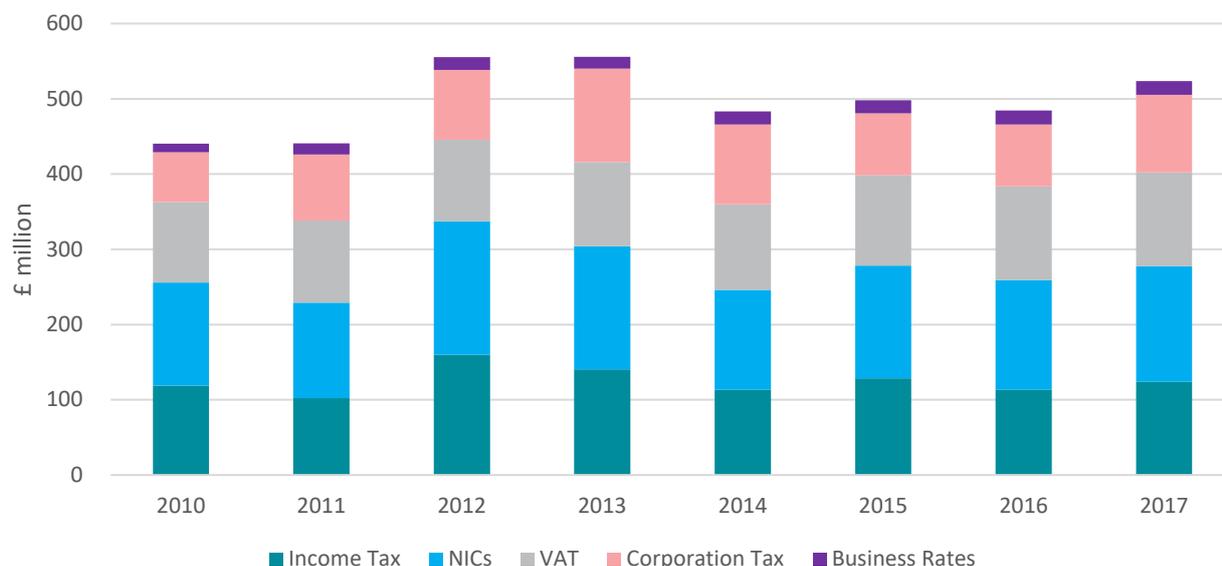
The total Exchequer contribution of the Solent-based Maritime sector and Portsmouth Naval Base is estimated to have been £524 million in 2017. The direct exchequer contribution is estimated to have peaked in 2013 at £556 million.

The Exchequer contribution from the Solent-based Maritime Sector (excluding Portsmouth Naval Base) accounted for almost 8.1% of the direct Exchequer contribution from the UK Maritime sector as a whole.

Figure 18 below disaggregates the direct contribution by tax head across the years 2010 to 2017.

⁴¹ The Annual Survey of Hours and Earnings (ASHE) provides data on the levels, distribution and make-up of earnings and hours worked for UK employees by sex and full-time or part-time status in all industries and occupations.

Figure 18: The direct contribution of the Solent-based Maritime sector and PNB to the UK Exchequer by tax head, 2010 to 2017



Source: ONS, FAME, Cebr analysis

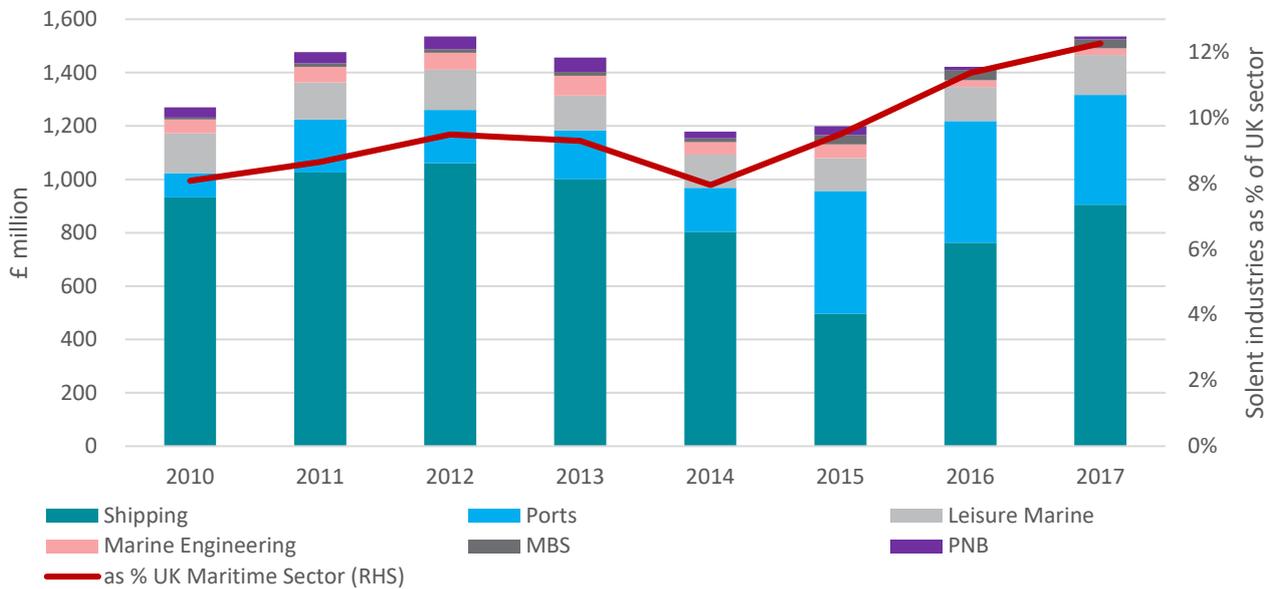
For each of the years 2010 to 2017, the majority of the direct Exchequer contribution was derived from the Personal Taxes: Income Taxes and NICs. However, as the number of employees operating at Portsmouth Naval Base is estimated to have fallen in recent years, the percentage share of tax revenue from these sources fell from 58% (£256 million) in 2010 to 53% (£277 million) in 2017. Contrastingly, the share of exchequer revenue from business taxes, albeit lower, increased from 42% in 2010 (£184 million) to 47% in 2017 (£246 million).

6.6 The direct contribution through exports

Finally, the Solent-based Maritime Sector and Portsmouth Naval Base are also estimated to make a substantive contribution to UK economic activity through the exports of goods and services. These figures are conceptually different to the downstream export figures derived as part of Section 3. While the downstream impacts considered the total value of the goods traded, the figures below estimate the turnover generated by the Maritime Sector by export activities.

Figure 19 below shows the total estimated value of exports between 2010 and 2017; a total value of almost £1.5 billion of goods and services were exported in 2017. This represents an increase of 21% relative to the 2010 level of £1.2 billion.

Figure 19: The direct contribution of the Solent-based Maritime sector and PNB through exports of goods and services



Source: ONS, FAME, Cebr analysis

The exports of the Solent-based Maritime Sector (i.e. excluding Portsmouth Naval Base) accounted for 12.3% of the exports from the UK Maritime sector as a whole in 2017. This compares favourably with the 8.1% estimated share in 2010.

7 The wider impact of the Solent-based Maritime Sector and Portsmouth Naval Base

This final section of the report sets out the wider economic impacts of the Maritime sector and Portsmouth Naval Base within the Solent LEP region, by taking into account the indirect (or supply chain) and induced (employee spending) impacts that arise from the activities of firms operating within the sector.

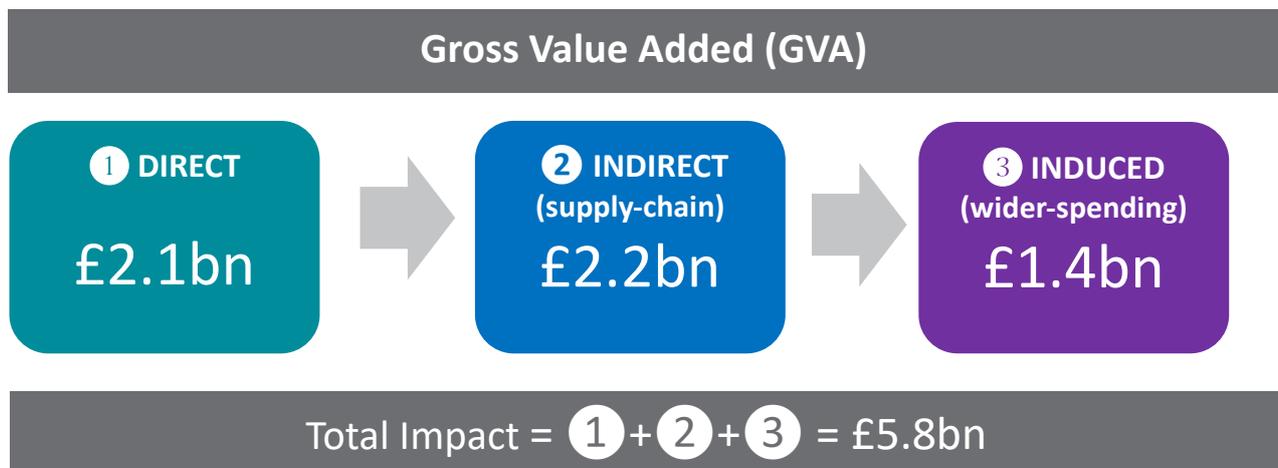
7.1 The wider economic impacts through GVA

Figure 20 below illustrates the GVA multipliers for the Solent-based Maritime Sector, disaggregated by industry, and Portsmouth Naval Base. These estimates have been generated from Cebr's regional economic impact model for the Solent LEP region.

Collectively, the five Solent-based Maritime industries and Portsmouth Naval Base directly contributed £2.1 billion towards the Solent's GDP in 2017; whereas £2.2 billion worth of GVA is supported in the supply chains and £1.4 billion worth of GVA in the wider economy when direct and indirect (supply chain) employees spend their earnings. Once the indirect and induced economic channels are taken into consideration the industries supported approximately £5.7 billion to the local economy.

Alternatively, this can be interpreted as for every £1 of GVA initially generated by these entities in 2017, a total of £2.71 in GVA is contributed across the Solent LEP as a whole.

Figure 20: GVA multiplier impacts of the Solent-based Maritime sector and Portsmouth Naval Base, 2017



Source: ONS, FAME, Cebr analysis

Table 15 overleaf shows the estimated aggregate GVA impacts from the Solent-based maritime industries and Portsmouth Naval Base, taken in isolation. The largest total GVA impact came from the shipping industry, at £2.8 billion. This is followed by Portsmouth Naval base, with a total GVA impact of approximately £1.5 billion.

Table 15: GVA impacts in 2017 disaggregated by industry and Portsmouth Naval Base, £ million

GVA in 2017	Direct Impact (£m)	Indirect Impact (£m)	Induced Impact (£m)	Total Impact (£m)
TOTAL	2,130	2,246	1,403	5,779
Shipping	1,051	1,157	666	2,874
Ports	233	285	170	689
Leisure Marine	177	170	123	471
Marine Engineering	35	17	14	66
Maritime Business Services	68	73	35	176
Portsmouth Naval Base	565	544	393	1,502

Source: ONS, FAME, Cebr analysis

Table 16 below shows the estimated direct and total economic impacts of the Solent-based Maritime Sector and Portsmouth Naval Base across the years 2010 and 2017.

Table 16: Direct and Total GVA impact of the Solent-based Maritime Sector and Portsmouth Naval Base, 2010 to 2017, £ million

Year	Direct Impact (£m)	Composite GVA multiplier	Aggregate GVA impacts
2010	1,309	2.67	3,498
2011	1,546	2.67	4,126
2012	1,752	2.67	4,676
2013	1,556	2.66	4,139
2014	1,570	2.67	4,198
2015	1,637	2.68	4,386
2016	1,971	2.71	5,335
2017	2,130	2.71	5,779

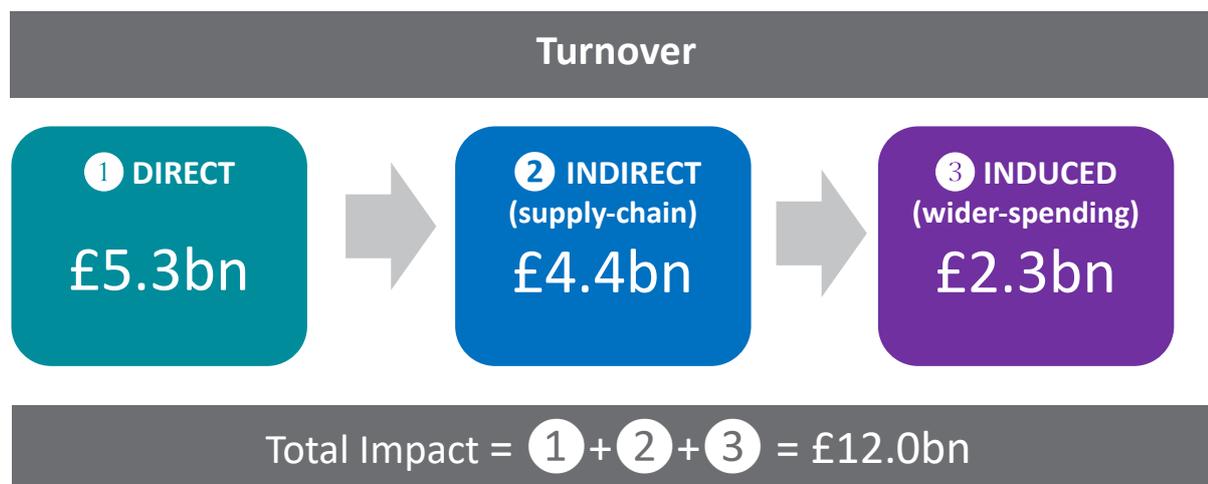
Source: ONS, FAME, Cebr analysis

7.2 The wider economic impacts through turnover

This section sets out the economic impact of the Solent-based Maritime sector and Portsmouth Naval Base through turnover.

Figure 21 below illustrates the direct, indirect and induced turnover impacts associated with the Solent-based Maritime sector. Collectively, the five Solent-based Maritime industries and Portsmouth Naval Base directly contributed £5.3 billion in turnover in 2017; once the indirect and induced economic channels are taken into consideration the industries supported approximately £12.4 billion in turnover to the local economy. **Alternatively, for every £1 of turnover initially generated by these entities in 2017, £2.71 in turnover is contributed across the Solent LEP as a whole.**

Figure 21: Turnover multiplier impacts of the Solent-based Maritime sector and Portsmouth Naval Base, 2017



Source: ONS, FAME, Cebr analysis

Table 17 overleaf shows the estimated aggregate turnover impacts from the Solent-based maritime industries and Portsmouth Naval Base, taken in isolation.

Of this overall total, the largest total turnover footprint came from the Shipping industry, at £6.9 billion. This is followed by Portsmouth Naval base, with a total footprint impact of approximately £1.7 billion.

Table 17: Turnover impacts in 2017 disaggregated by industry and Portsmouth Naval Base, £ million.

Turnover in 2017	Direct Impact (£m)	Indirect Impact (£m)	Induced Impact (£m)	Total Impact (£m)
TOTAL	5,349	4,417	2,261	12,026
Shipping	3,127	2,545	1,268	6,940
Ports	673	633	322	1,627
Leisure Marine	511	424	232	1,167
Marine Engineering	122	62	43	227
Maritime Business Services	163	127	55	346
Portsmouth Naval Base	753	626	342	1,721

Source: ONS, FAME, Cebr analysis

Table 18 below shows the estimated direct and total economic impacts of the Solent-based Maritime sector and Portsmouth Naval Base across the years 2010 and 2017.

Table 18: Direct and Total turnover impact of the Solent-based Maritime sector and Portsmouth Naval Base, 2010 to 2017, £ million

Year	Direct Impact (£m)	Composite Turnover multiplier	Aggregate turnover impacts
2010	3,278	2.28	7,482
2011	3,506	2.29	8,028
2012	3,746	2.29	8,565
2013	3,852	2.29	8,832
2014	3,604	2.30	8,285
2015	3,943	2.30	9,069
2016	5,024	2.32	11,653
2017	5,349	2.25	12,026

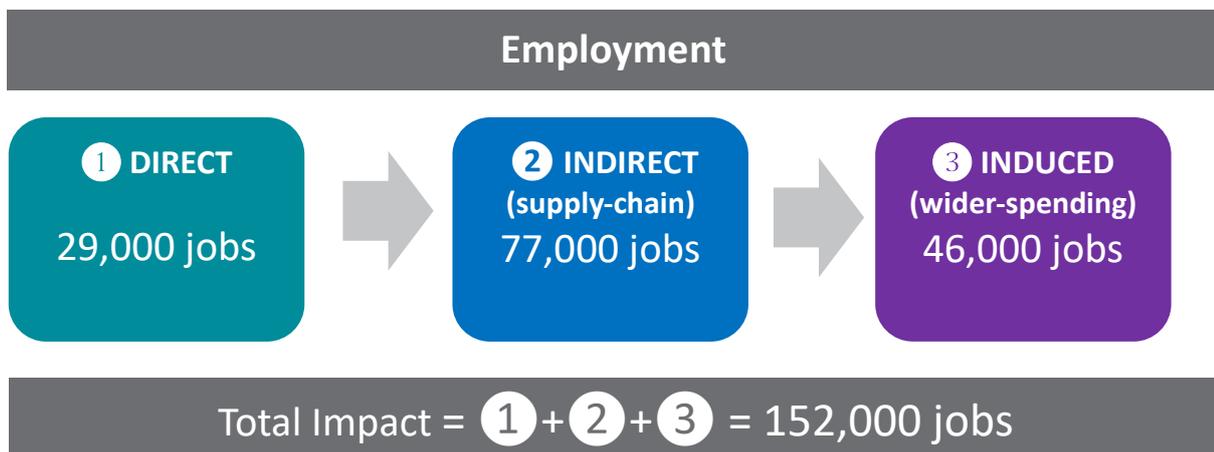
Source: ONS, FAME, Cebr analysis

7.3 The wider economic impacts through employment

In this section, we consider the wider economic impact that the Solent-based Maritime sector and Portsmouth Naval Base make through employment. Figure 18 below illustrates the direct, indirect and induced employment impacts associated with the Solent-based Maritime sector. Collectively, the Solent-based maritime industries and Portsmouth Naval Base directly contributed 28,800 jobs in 2017. Once the indirect and induced economic channels are taken into consideration the industries directly and indirectly supported approximately 152,000 jobs.

Alternatively, for every 1 job initially created by these entities in 2017, a total of 5.27 jobs were contributed in the wider Solent LEP region.

Figure 18: Employment multiplier impacts of the Solent-based Maritime sector and Portsmouth Naval Base, 2017



Source: ONS, FAME, Cebr analysis

Table 19 below shows the estimated aggregate GVA impacts from the Solent-based maritime industries and Portsmouth Naval Base, taken in isolation. The shipping industry contributes the largest total impact with 107,000 jobs.

Table 19: Employment impacts in 2017 disaggregated by industry and Portsmouth Naval Base, thousands of jobs

Employment in 2017	Direct Impact (thousands)	Indirect Impact	Induced Impact	Total Impact (thousands)
TOTAL	29	77	46	152
Shipping	10	60	37	107
Ports	3	3	2	8
Leisure Marine	5	4	2	12
Marine Engineering	1	1	0	2
Maritime Business Services	1	1	0	2
Portsmouth Naval Base	9	8	4	21

Source: ONS, FAME, Cebr analysis

Table 20 overleaf shows how the total employment impact of the industries and Portsmouth Naval Base is estimated to have evolved since 2010. The direct impact through employment increased from around 25,900 jobs to 28,800 jobs between 2010 and 2017. The total footprint of employment in the Solent LEP increased from 136,600 jobs in 2010 to 151,900 jobs in 2017.

Table 20: Direct and Total Employment impact of the Solent-based Maritime Sector and Portsmouth Naval Base, 2010 to 2017, thousands of jobs

Year	Direct Impact (Thousands)	Composite Employment multiplier	Aggregate employment impacts
2010	25,918	4.37	113,373
2011	26,793	4.36	116,847
2012	26,559	4.51	119,731
2013	25,992	4.71	122,475
2014	24,333	4.56	110,896
2015	25,950	4.23	109,757
2016	28,226	4.87	137,380
2017	28,814	5.27	151,901

Source: ONS, FAME, Cebr analysis

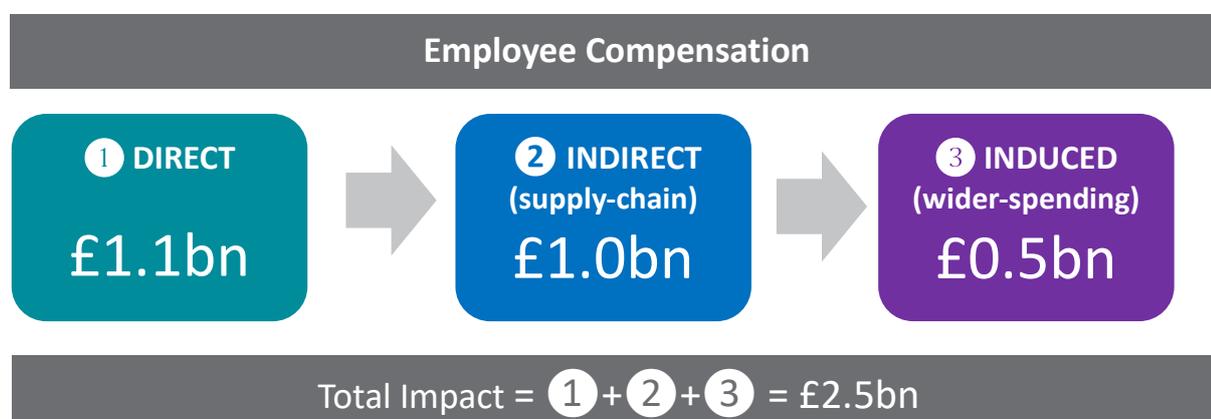
7.4 The wider economic impacts through the compensation of employees

This final subsection sets out the economic impact of the Solent-based Maritime sector and Portsmouth Naval Base through the compensation of employees.

Figure 22 below illustrates the direct, indirect and induced compensation of employee impacts associated with the Solent-based Maritime Sector. Collectively, the Solent-based maritime industries and Portsmouth Naval Base directly contributed £1.1 billion in employee compensation in 2017; once the indirect and induced economic channels are taken into consideration the industries supported £2.5 billion in employee compensation.

Combining each Maritime industry and Portsmouth Naval Base, **for every £1 of employee compensation initially generated by these entities in 2017, a total of £2.30 in employee compensation was contributed in the Solent LEP region.**

Figure 22: Employee compensation multiplier impacts of the Solent-based Maritime Sector and Portsmouth Naval Base, 2017



Source: ONS, FAME, Cebr analysis

Table 21 below disaggregates the direct, indirect, induced and total impacts on the compensation of employees by Maritime industry and Portsmouth Naval Base.

Table 21: Employee compensation impact in 2017, £ million

Compensation of Employees in 2017	Direct Impact (£m)	Indirect Impact (£m)	Induced Impact (£m)	Total Impact (£m)
TOTAL	1,093	973	451	2,517
Shipping	301	316	132	750
Ports	147	148	64	359
Leisure Marine	117	87	45	249
Marine Engineering	34	32	16	82
Maritime Business Services	27	38	14	79
Portsmouth Naval Base	468	350	180	999

Source: ONS, FAME, Cebr analysis

We estimate that the Maritime sector and Portsmouth Naval Base directly and indirectly supported a total of £2.5 billion in employee compensation in 2017, with the majority of this total contribution sourced from Portsmouth Naval Base (39%) and the Shipping industry (30%).

Table 22 illustrates the trajectory of total impacts through the compensation of employees over time, from 2010 to 2017. The total impact on the compensation of employees has increased each year with exceptions in 2013 and 2014 reaching its highest level in 2017 of £2.5 billion.

Table 22: Employee compensation impact of the Solent-based Maritime Sector and Portsmouth Naval Base, £ million

Year	Direct Impact (£m)	Composite Employee Compensation multiplier	Aggregate employee compensation impacts
2010	838	2.26	1,893
2011	868	2.24	1,948
2012	993	2.26	2,242
2013	980	2.26	2,214
2014	921	2.25	2,075
2015	1,036	2.29	2,371
2016	1,054	2.30	2,427
2017	1,093	2.30	2,517

Source: ONS, FAME, Cebr analysis

8 The Solent-based Maritime Sector: A Forward Look

In this final section of the report we present projections of the Maritime Sector and Portsmouth Naval Base within the Solent LEP region for the period 2019-2023. The section starts off by describing the conceptual approach that we have developed to produce projections of the direct economic impacts after 2017 and then present our forecasts of Solent-based Maritime turnover and GVA over the period 2019-2023.

8.1 The Solent-based Maritime Sector Forecast (2019-2023)

Modelling approach

We investigate the relationship between the maritime economy in the Solent LEP region and a number of economic variables through an econometric approach. Our findings show that the maritime economy is primarily linked to Solent LEP GVA. After having established Maritime economy's elasticities to GDP, we project these historical relationships forward to produce a forecast of Solent-based Maritime turnover and GVA. The output of this model constitutes our baseline forecast.

Forecast models rely on macroeconomic variables, for example, GDP, which are generally more suitable for long term horizon while the focus of our analysis is in the short-medium term (5 years). For this reason, we build on the baseline forecast, introducing more sector-specific assumptions which are used to flex the relation to the drivers previously identified. This approach also enables us to address deterministic expectations about the sector.

To identify the sector-specific assumptions, we drew on our knowledge of the sector composition and on UK-wide maritime trends and themes. Each assumption has been assigned a specific weight reflecting its relevance to the Solent-based Maritime sector and a set of adjustment factors have been produced.

Applying the adjustments to the baseline forecast, we obtain our central forecast of the Solent-based Maritime Sector turnover and GVA over the period 2019-2023. To note also that our historical analysis of maritime ends in 2017. This requires us to produce a "now-cast" for the first year (2018) for which we know the actual value of the drivers but not of Solent-based Maritime Turnover and GVA and a forecast for the following period.

Modelling Assumptions

Solent LEP region GVA

Cebr's macroeconomics department produces regular forecasts of key economic indicators for the UK national, regional and local economies which can directly inform our analysis. We therefore rely on our own projections of the Solent LEP economy.

Combining the local authorities forming Solent LEP, we can obtain historical and projected figures for the regional economy we are interested in.

Cebr expects Solent LEP regional GVA to grow at a moderate Compounded Annual Growth rate (CAGR) of 1.8% over 2018-2023 in real terms. This rate is lower than the 2.1% CAGR observed during the past 5 years. A high level of uncertainty characterises the forecast as the outcome of Brexit negotiations could easily shift the projections.

Seaborne trade

As highlighted in the downstream impacts section, Solent LEP performs as an international gateway for the UK trade with the rest of the world.

Seaborne trade represents the main opportunity for the UK Maritime Sector over the near future. We consider both worldwide and UK-specific trade projections within our modelling framework.

Worldwide trends indicate a sustained growth in trade. UNCTAD⁴² sees positive prospects for world seaborne trade forecasting a 3.8% compound annual growth rate between 2018 and 2023 with strongest growth in volumes for containerized and dry bulk commodities. Seaborne trade projections are in line with recent trends showing an average growth rate of 3.5% between 2005 and 2017. These figures are broadly in line with forecasts published by other organisations. DNV GL (an internationally accredited registrar and classification society) projected a 39% increase in seaborne trade tonnage over 2016-2030⁴³. According to the OECD, global trade is forecast to grow at a higher rate than the economy and specifically a 1% increase in GDP is expected to correspond to a 1.1% growth in seaborne trade (tonnes)⁴⁴.

UK prospects are slightly less optimistic than the aforementioned forecasts, as demonstrated by the 2019 DfT's projections of UK port freight traffic covering the years 2017 through to 2050. DfT reports that overall port traffic is forecast to remain relatively flat over the short term, but then grow over the long term, with tonnage 39% higher in 2050 compared to 2016.

Cruise & International Sea passengers

Solent LEP plays a central role in tourism and leisure with Southampton acting as a cruise hub for the UK and Portsmouth as a main UK port for ferry passengers. The Solent share of international passengers at UK Ports has increased remarkably over the past. In 2017, 1.65 million cruise passengers passed through Southampton and 1.85 million international passengers on short sea routes passed through Portsmouth⁴⁵.

Cruise passengers in the UK almost doubled during the last decade and Southampton share of international cruise passengers in the UK also increased.

Defence budget

In order to reflect the inclusion of Portsmouth Naval Base in our analysis, we consider national defence budget as a driver of future economic performance. The UK has the largest defence budget in the EU and the second largest in NATO. Starting from 2016, the government has committed to increase defence spending by 0.5% above inflation until 2021⁴⁶.

The 2019-2023 forecast

Figure 23 shows the Solent-based Maritime sector experiencing steady growth over the five year horizon. Our forecast indicates that Solent-based maritime turnover and GVA are set to grow at a Compounded Annual Growth rate (CAGR) of 3.1% over the considered period. This translates into a cumulative nominal growth of 16% for 2019-2023, which, when considered alongside projected inflation, is about 6%.

42 United Nations Conference on Trade and Development. (2018). ['Review of Marine Transport 2018'](#).

43 DNV GL (2018). ['Energy Transition Outlook'](#).

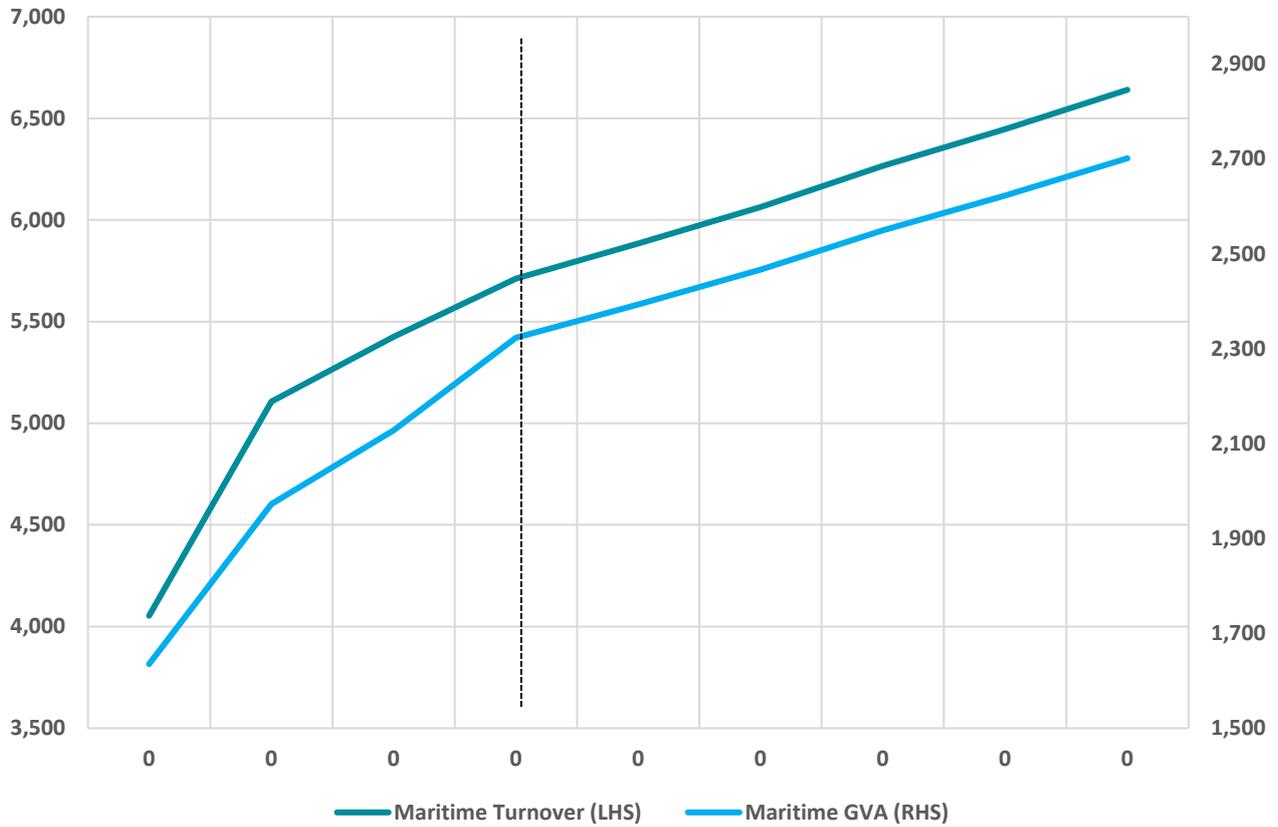
44 OECD. (2018). ['Growth prospects, challenges and uncertainties for selected ocean industries'](#).

45 Department for Transport (2018). Sea Passenger Statistics.

46 <https://www.gov.uk/government/news/defence-budget-increases-for-the-first-time-in-six-years>.

Although the projected growth is lower than what experienced over the period from 2010 to 2017, maritime sector in the Solent LEP region is set to grow at a faster rate than in the UK, where we forecast a CAGR of 2.7%.

Figure 23: Solent-based maritime sector turnover and GVA trends and projections, £ million, 2015 to 2023



9 Concluding remarks

This report has assessed the economic importance of the Solent-based Maritime sector and Portsmouth Naval Base from two perspectives that serve to harness downstream and upstream relationships, respectively:

- The role that it plays as a gateway for trade with the rest of the world
- The economic impact of the Solent maritime sector and Portsmouth Naval base in terms of the key macroeconomic indicators: gross value added (GVA), employment and the compensation of employees.

9.1 The Solent-based maritime sector as a gateway for international trade

An important lens through which to understand the importance of the maritime sector in the Solent LEP is the role that it plays in facilitating UK trade with the rest of the world. International trade drives economic growth and better living standards.

Importance in facilitating exports

In 2017 the Solent-based maritime sector facilitated 13% of the volume of total UK exports with non-EU countries, and 13% of the total value of these exports. The Solent is particularly important for the export of “machinery and transport equipment”, facilitating £17 billion of exports, or 22% of the value of the UK total. The vast majority of exports falling under this category were road vehicles (£12 billion).

Importance in facilitating imports

In 2017 the Solent maritime sector facilitated 10% of the volume of UK imports with non-EU countries, and 11% of the value total UK imports. In particular, it facilitates 21% of the total value of UK imports of petroleum products, and 24% of the value of road vehicles. Furthermore, it accounts for 31% of the value of UK imports of parts and accessories for motor vehicles, so confirming its role in facilitating the supply chain needs of UK manufacturers of machinery and transport equipment.

The overall conclusion from this analysis is that the maritime sector in the Solent provides a vital cog in the wheel of most, if not all, of the full range of manufacturing sectors in the UK, from food and clothing, to motor cars and goods vehicles to aircraft, spacecraft and satellites. This role comes in various guises from ensuring the movement of vital imported inputs to UK manufacturers from abroad, of valuable exports to our trading partners or in moving imported final goods that provide a competitive discipline for UK manufacturers looking to maintain global market share.

9.2 The economic impact of the Solent-based maritime sector

After accounting for the wider economic impacts that occur through industry supply chains and induced effects of expenditure, the total economic footprint of the Solent-based Maritime sector and Portsmouth Naval Base are summarised in Table 23:

Table 23: Summary of the aggregate economic impacts of the Solent-based maritime sector and Portsmouth Naval Base, 2017

GVA (£m)	Employment (thousands)	Compensation of employees (£m)
5,779	152	2,517

Source: Cebr analysis