Water transport industry review, 2016

Full report

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This publication

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1 Introduction

In the UK, the output approach to measuring gross domestic product (GDP(O)) is based on a comprehensive and wide-ranging suite of short-term indicators that are used to compile the Index of Services, Index of Production, Retail Sales Index and Output in the Construction Industry. As part of the Office for National Statistics (ONS) commitment to continuous improvement a programme of industry reviews commenced in December 2012 to review the concepts, methods and data sources underpinning the short-term indicators to ensure that they remain fit for purpose. It also demonstrates our commitment to quality assure outputs as part of the Code of Practice for Official Statistics. This programme of reviews mirrors the similar work conducted between 2002 and 2009, during which time the Index of Services achieved National Statistics status, in April 2007, due at least in part to the existence and impact of the industry review programme.

The reviews are conducted broadly at divisional level, of the UK Standard Industrial Classification 2007 (UK SIC (2007)) and will cover the whole economy with a provisional completion date of 2021. The reviews had been prioritised using a priority matrix designed by ONS which is described in section 4.1 of the GDP Output Improvement Report – 2014 and updated each year. However, the matrix is becoming less useful in informing reviews and, increasingly, emerging issues are informing where our resource must be focused.

Through using the priority matrix the Water transport industry review commenced in April 2014. At the time of the GDP Output Improvement Report – 2014 it was ranked 49th out of 89 industries. In addition to the ranking of the industry the Eurostat quality ratings were B – acceptable for water transport. Water transport was selected for review as it was the only experimental industry in the transport sector.

A summary report of the Water transport industry review (2016), is also available on our website.

2 Summary

The main messages from the Water transport industry review are:

- sea and coastal freight, and inland waterborne transport methods are considered conceptually appropriate
- improvements are recommended to the timeliness and periodicity of freight transport by ferries
- new data source is recommended for estimating passengers by ferries to improve the timeliness and periodicity of the data

Below are the recommendations from the Water transport industry review:

Recommendations which we aim to implement at Blue Book 2016:

1. Recommendation 1: At Blue Book 2016 replace current data source from the Chamber of Shipping with 2 series from the Department for Transport (DfT), 'short sea' passenger routes on a monthly basis, and 'long sea' and cruise passengers' with a monthly breakdown updated annually.

2. Recommendation 3: At Blue Book 2016 move to using the more timely quarterly series for freight transported by ferries.

Recommendation which we aim to implement at Blue Book 2017:

1. Recommendation 2: At Blue Book 2017 we aim to include new data from DfT on inter-island, other domestic and river ferries passengers. Introduce aggregation weights for international and domestic passenger split based on expenditure.

Table 1: Comparison of Blue Book 2015 and Blue Book 2017 GDP(O) data sources for division 50

Blue Book 2015					Blue Book 2016 and 2017				
Industry group	Industry description	Current price	Volume measure	Deflator	Industry group	Industry description	Current price	Volume measure	Deflator
50.1	Sea & Coastal Passenger Water Transport				50.1	Sea & Coastal Passenger Water Transport			
50.11	Passenger Transport by Ferries	Trade in Services	Derived**	CPI	50.111[1]	International Passenger Transport by Ferries	Derived**	Department for Transport	CPI
					50.112[2]	Domestic Passenger Transport	Derived**	Department for Transport	CPI
50.12	Freight Transport by Ferries	Derived**	Department for Transport	SPPI	50.12[1]	Freight Transport by Ferries	Derived**	Department for Transport	SPPI
50.2	Sea & Coastal Freight Water Transport				50.2	Sea & Coastal Freight Water Transport			
50.21	Tankers	Trade in Services	Derived**	SPPI	50.21	Tankers	Trade in Services	Derived**	SPPI
50.22	Dry Cargo	Trade in Services	Derived**	SPPI	50.22	Dry Cargo	Trade in Services	Derived**	SPPI
50.23	Interport & One-Port	Derived**	Department for Transport	SPPI	50.23	Interport & One-Port	Derived**	Department for Transport	SPPI
50.3-4	Inland Water Transport	Derived**	Department for Transport	SPPI	50.3-4	Inland Water Transport	Derived**	Department for Transport	SPPI

[1] denotes changes we aim to implement for Blue Book 2016 from Blue Book 2015.

[2] denotes changes we aim to implement for Blue Book 2017.

** A 'derived' measure can be calculated using the ratio or product of 2 indices, that is:

- dividing a current price index by a price index (to create a volume index)
- dividing a current price index by a volume index (to create an implied deflator)
- multiplying a volume index by a price index (to create a derived current price measure)

3   Industry overview

3.1   UK Standard Industrial Classification 2007 (UK SIC (2007)) description

The water transport industry covers all activities under UK SIC 2007 division 50. This division includes the transport of passengers or freight over water, whether scheduled or not. Also included is the operation of towing or pushing boats, excursion, cruise or sightseeing boats, ferries, water taxis etc. Although location is an indicator for the separation between sea and inland water transport, the deciding factor is the type of vessel used. Transport on sea-going vessels is classified in groups 50.1 and 50.2, while transport using other vessels is classified in groups 50.3 and 50.4.

Based on the 'UK Standard Industrial Classification (2007)' the following areas are classified to water transport:

Table 2: UK Standard Industrial Classification 2007 codes for water transport

UK SIC (2007) component	UK SIC (2007) description
Section H	Transportation and storage
Division 50	Water transport
Group 50.1	Sea and coastal passenger water transport
Class 50.10	Sea and coastal passenger water transport
Group 50.2	Sea and coastal freight water transport
Class 50.20	Sea and coastal freight water transport
Group 50.3	Inland passenger water transport
Class 50.30	Inland passenger water transport
Group 50.4	Inland freight water transport
Class 50.40	Inland freight water transport

Source: UK Standard Industrial Classification (2007)

Annex A contains a detailed breakdown of the UK SIC (2007) for water transport.

The types of roles and activities undertaken within each aspect of the UK SIC 2007 classification can be found in the ONS guide 'Index, Alphabetical and Numerical'. This is particularly useful as it provides more specific information on what roles are undertaken within activities classified to division 50. Further details on taxonomy and jobs in water transport can be found in Annex B.

3.2.   Inter-Departmental Business Register (IDBR) – Industry summary

The Inter-Departmental Business Register (IDBR) is a comprehensive list of UK businesses that is used by government for statistical purposes. It provides the main sampling frame for business

surveys carried out by both ONS and other government departments. It is also a main data source for analyses of business activity.

The main administrative sources for the IDBR are VAT (Value Added Tax) and PAYE (Pay As You Earn) information from HM Revenue and Customs (HMRC) and details of incorporated businesses from Companies House. The information from these administrative sources is supplemented mainly by the ONS Business Register and Employment Survey (BRES) to form the IDBR.

The UK Business: Activity, Size and Location - 2015 statistical bulletin is published annually in October and contains information collated from a snapshot of the IDBR taken in March. Information specific to the water transport industry (UK SIC 2007 division 50) has been extracted from the statistical bulletin to give an overview of the industry.

- there were 1,405 enterprises allocated to the water transport industry in 2015 – this represented a slight decrease of 60 enterprises (4.27%) compared with the previous year (March 2014)
- 50.10 sea and coastal passenger water transport and 50.20 sea and coastal freight water transport make up the majority of the industry, with 530 and 600 enterprises in each class respectively (37.7% and 42.7% of whole industry)
- 50.40 inland freight water transport was the smallest class within industry 50 with only 80 enterprises (5.7% of whole division).
- in terms of geographic location, 550 enterprises were located in London and the South East of England (39.1%)
- there were 370 enterprises within industry 50 that had an annual VAT turnover of less than £50,000 (26.3%) – similarly, there were 265 enterprises that had a turnover of over £1 million (18.9%)
- the majority of enterprises employed fewer than 4 people (1,060 enterprises or 73.7%)

For further summary information on water transport as sourced from the IDBR please see Annex C.

3.3   Index of Services (IoS) industry structure

The structure of industry 50 water transport for Index of Services (IoS) is very similar to the SIC structure. The main difference is that for the IoS the structure is at a 4 digit level. This further level of detail is for internal purposes and is not based on any specific classification. It is based on the level of detail we use for data collection. The breakdown of the structure is shown in Table 3.

Table 3: Water transport industry structure for Index of Services - Blue Book 2015

Industry code	Industry description
Section H	Transport and Storage
Division 50	Water Transport
50.1	Sea and Coastal Passenger Water Transport
50.11	Passenger Transport by Ferries
50.12	Freight Transport by Ferries
50.2	Sea and Coastal Freight Water Transport
50.21	Tankers
50.22	Dry Cargo
50.23	Inter-Port and One-Port
50.3-4	Inland Water Transport

Although the detailed IoS structure described in Table 3 is used for ease of measuring output, the lowest published level of data within the IoS publication and the GDP estimates (preliminary estimate, second estimate and the quarterly national accounts) is at division 50.

As demonstrated in Table 3, the structure follows the SIC structure up to 3 digit level.

Division 50.1 is then split into 2 components: 50.11 Passenger transport by ferries and 50.12 Freight transport by ferries. This is to ensure we have coverage of road freight transport that is travelling to Europe via ferries which becomes classed as water transport when it boards a ferry.

Division 50.2 is split out into 3 components: 50.21 Tankers, 50.22 Dry cargo, 50.23 Inter-port and One-port. This breakdown is to represent the different types of cargo that is classed as sea and coastal freight water transport. The data used for tankers includes wet cargo such as oil and molasses that are imported to or exported from the UK. Dry cargo includes items such as minerals and container ships that are imported or exported. Inter-port and One-port includes sea and coastal freight water transport between UK ports and sea freight transported between UK ports and UK offshore platforms such as oil rigs.

Division 50.3-4 Inland water transport is not broken down further from the SIC.

3.4   Importance of the industry to the UK economy at Blue Book 2015

The importance of each industry within the context of the gross domestic product (GDP) produced by the overall economy can be expressed by a weight, in parts per thousand. For the output approach to measuring GDP this represents its proportion of the sum of gross value added (GVA) produced by the economy in a given year. GVA is derived from outputs less inputs, or output less intermediate consumption. This is explained in further detail in the 'A short guide to UK national accounts' which can be found on the national accounts methods webpage.

The weights used by GDP(O) are derived from supply and use tables calculated as part of supply and use balancing for each year from 1997 and revisions tend to be higher in later periods. The weights are specifically the GVA for the industry divided by the total GVA for the economy and then multiplied by 1,000. To calculate GVA weights specific for the services industries, or Index of

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Services GVA weights, rather than dividing by the whole economy, the denominator is the GVA of the services industries.

For Blue Book 2015, balancing was applied to 2013 for the first time but GDP(O) has only used weights for the years up to and including 2012. This is due to the current convention that weights should undergo 2 years of balancing to minimise the impact of any revisions. The weights for 2012 are also used in 2013 and subsequent periods. Updated weights will decrease the importance of industries where GVA has fallen and increase the importance of industries where GVA has risen. This will necessarily create the potential for revision to the overall GDP(O) index, although the growth rates of constituent industries remain unchanged, their significance will vary each year. The last year for which weights are calculated is also the reference year for the index. Therefore, for UK National Accounts – Blue Book 2015, the last set of industry weights was for 2012 and therefore the index was produced on a 2012=100 basis.

The GVA weights for 2012, as at Blue Book 2015, for division 50 are shown in Table 4.

Table 4: Blue Book 2015 summary of 2012 GVA weights for division 50

Industry code	Industry description	2012 GVA Weights			
		GDP(O) weights section (ppt)**	Industry (ppt)**	Low level industry (ppt)**	IoS Weights (ppt)**
Section H	Transport and Storage	42.9263			54.6434
Division 50	Water Transport		4.0127		5.1080
50.1	Sea and Coastal Passenger Water Transport			1.5998	
50.11	Passenger Transport by Ferries			0.6555	
50.12	Freight Transport by Ferries			0.9433	
50.2	Sea and Coastal Freight Water Transport			2.3090	
50.21	Tankers			0.5418	
50.22	Dry Cargo			1.6564	
50.23	Inter-Port and One-Port			0.1108	
50.3-4	Inland Water Transport			0.1049	

* On a 2010 price basis; **(ppt) = Parts per thousand

All weights listed are expressed as parts per thousand (ppt) and indicate the relative contribution to the UK economy, with the exception of IoS weights, which indicate the relative contribution to the UK services industries. The weights in Table 4 are as at Blue Book 2015 for reference year 2012, these weights are revised year on year as more detailed data becomes available.

In 2012, water transport contributed 0.4% to the total UK economy and 0.5% to the services industries.

All previous years' GVA weights are open to revision each year, as more data becomes available. For further information on the historic GVA weights used for the water transport industry, please see Annex C.

The low level industry weights are used to aggregate low level indices to the required SUT level. These low level weights, also known as low level industry aggregation weights, are updated less frequently than GVA weights, and were last updated in 2014 on a 2010 price basis. For Blue Book 2015 the low level weights remain on a 2010 price basis.

For further information on the derivation of IoS weights, aggregation weights and deflator weights, see the Index of Services methods page on our website. For an overview of GVA weights used in GDP(O), see the output approach to measuring gross domestic product methods page on our website.

3.5   Output index at February 2016

As previously mentioned, the lowest published level of data for the water transport industry within the IoS publication and within GDP publications is division 50.

Figure 1 shows the time period Quarter 1 (Jan to Mar) 2007 to Quarter 3 (July to Sep) 2015, however, data can be obtained back to 1990 on a quarterly or annual basis. All data can be found in the GDP publications (preliminary estimate, second estimate and the quarterly national accounts) on the spreadsheet entitled: 'GDP(O) Low Level Aggregates'. The graph illustrates how the index for water transport has been reported over time.

Figure 1 shows how division 50 follows the general trend of the economic climate leading up to the downturn in 2008. There was a period of recovery during 2010 followed by a decline in the industry to the end of 2012. The most recent quarters of 2014 and 2015 are showing more stability in the industry.

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Figure 1: Chained volume measure index for water transport activities from second estimate of GDP Quarter 4 (Oct to Dec) 2015 (February 2016 release), UK, 2007 to 2015
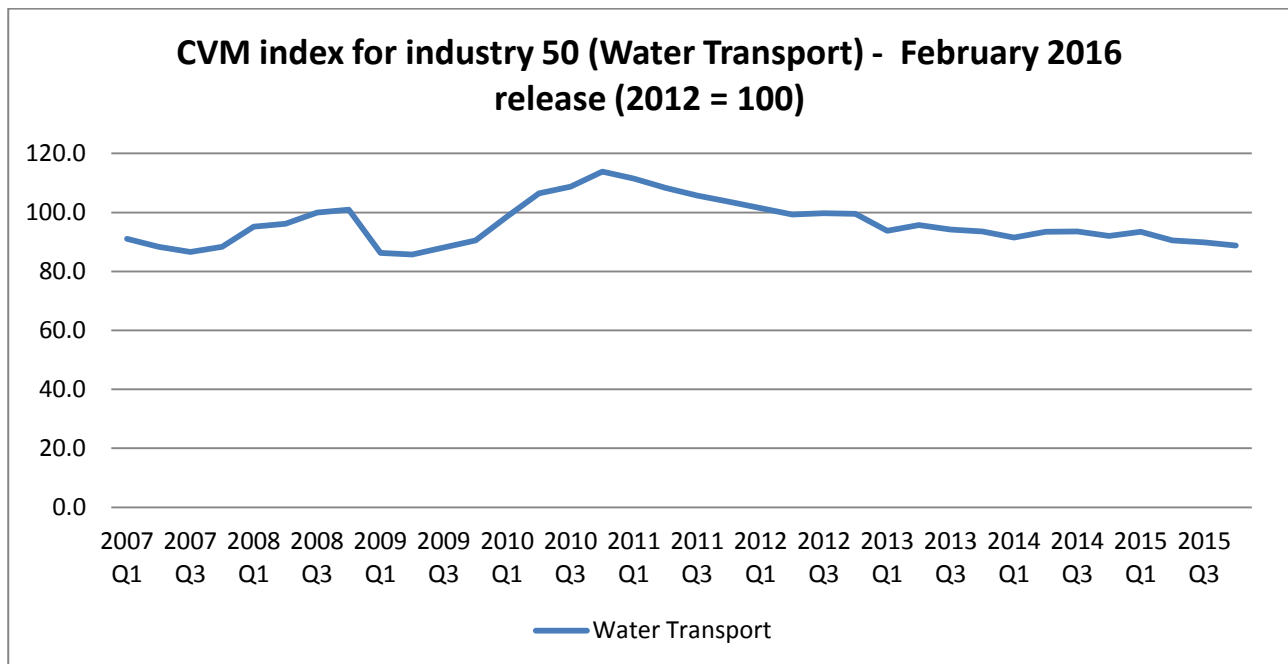
Source: Second estimate of GDP for quarter 4 (Oct to Dec) 2015

4   Previous industry review

As part of the commitment to improve the sources and methods used to measure the service sector, water transport was previously reviewed as part of the ONS Index of Services Development Industry Review Programme in the early 2000s.

Under the previous industry review programme there was one report on water transport which was published alongside Blue Book 2005.

The previous review recommended 3 improvements to the methodology of water transport all of which were implemented following the review. These improvements were:

1. the use of the Retail Price Index (RPI) for sea fares to deflate the International Passenger Survey (IPS) – this was subsequently replaced by the Consumer Prices Index (CPI) when national accounts improved its methods of deflation in 2011, further details on this change can be found in the paper on 'Deflation Improvement in the UK National Accounts (2011)'
2. the use of the Corporate Services Price Index (CSPI), now the Service Producer Price Index (SPPI), for sea and coastal freight for freight, sea and coastal water transport
3. the introduction of a new data series from the Department for Transport (DfT) on road goods vehicles travelling to mainland Europe

This previous review provides good background and context information to the methods and sources used to measure water transport for GDP(O). However, incremental changes have taken

place across short-term indicators since this report. Section 5 explains the methodology as at Blue Book 2015 and builds upon the information included from the previous reviews.

5   Blue Book 2015 methodology

This section outlines the methodology used to measure short-term output in water transport for the output approach to measuring GDP. The data sources, methods and concepts described in this section relate to those used for Blue Book 2015; prior to the completion of this industry review.

Table 5: Summary of Blue Book 2015 GDP(O) methodology for division 50

Industry code	Industry description	Current Price source	Volume source	Deflator source	Low level industry weight (parts per thousand (ppt)) GDP =1000	Component percentage of division 50 (%)
50.11	Passenger Transport by Ferries	Trade in Services	Derived**	CPI	0.6555	16.3361
50.12	Freight Transport by Ferries	Derived**	Department for Transport	SPPI	0.9433	23.5080
50.21	Tankers	Trade in Services	Derived**	SPPI	0.5418	13.5009
50.22	Dry Cargo	Trade in Services	Derived**	SPPI	1.6564	41.2795
50.23	Inter-port & One-Port	Derived**	Department for Transport	SPPI	0.1108	2.7620
50.3-4	Inland Water Transport	Derived**	Department for Transport	SPPI	0.1049	2.6135

Note: Blue Book 2015 GVA weights are shown as the basis for the calculations in the weights columns.

**A 'derived' measure can be calculated using the ratio or product of 2 indices example:

- dividing a current price index by a price index (to create a volume index)
- dividing a current price index by a volume index (to create an implied deflator)
- multiplying a volume index by a price index (to create a derived current price measure)

5.1   50.11 Passenger transport by ferries

SIC 2007 notes that this class measures the transport of passengers on vessels designed for operating on sea or coastal waters and also includes the transport of passengers on lakes etc. when similar types of vessels are used.

Data for passenger transport by ferries are collected via a survey run by the Chamber of Shipping (CoS) on behalf of the Office for National Statistics (ONS). All CoS data used to estimate this industry are delivered to our Trade in Services branch. Two surveys are conducted by CoS, a quarterly survey selecting a sample of the CoS members and an annual survey of all CoS members, which replaces the quarterly data. The surveys include questions on passage money and other passenger receipts.

The annual data series is compiled by CoS by surveying all of CoS's membership. Once it is delivered to ONS, a weighting factor is derived by comparing gross ship tonnage from IHS data provided by Department for Transport (DfT) with the CoS return, which is applied to the CoS data. As the IHS data is a comprehensive list of ship tonnage for the UK fleet, this methodology ensures that CoS figures are representative of the whole industry.

The data collected from the quarterly survey sample is weighted up by ONS to the full CoS membership, using a weighting factor derived from a comparison between quarterly and annual returns. As the annual data has already been weighted to reflect the UK fleet, this representation also applies to the quarterly data series.

5.2   50.12 Freight transport by ferries

SIC 2007 notes that this class measures the transport of freight on passenger vessels (for example, ferries) designed for operating on sea or coastal waters and also includes the transport of passengers on lakes etc. when similar types of vessels are used.

Data for freight transport by ferries are collected from the Department for Transport (DfT) website from table number RORO0102 (as at February 2016) – Road Goods Vehicles Travelling to Mainland Europe Quarterly from 1983, which is part of the Road freight: domestic and international statistics release. It should be noted that DfT do not collect data on an SIC 2007 basis, instead they class sea and inland water by location rather than vessel.

The data series used is a volume measure of the number of road goods vehicles travelling from Great Britain to mainland Europe. The data covers powered vehicles registered in the UK. These data are collected via the Roll-on Roll-off Goods Vehicle Survey. This is a quarterly census of ferry operators which records the number of commercial vehicles using their crossing services. The figures are collected direct from the DfT website without any further processing.

5.3   50.21 Tankers

SIC 2007 notes that this class measures the transport of wet cargo (such as oil, LPG, molasses) freight on vessels designed for operating on sea or coastal waters. Also included is the transport of freight on lakes etc. when similar types of vessels are used.

Data for tankers are collected via a Chamber of Shipping survey on a quarterly basis. The data are measured by time charter receipts of UK trade, imports and exports of wet cargo, and cross trades, where UK registered ships engage in trade between 2 or more non-UK countries, thus neither importing nor exporting yet generating revenue for the UK. The data are processed using the same methods described in section 5.1.

5.4 50.22 Dry cargo

SIC 2007 notes that this class measures the transport of dry cargo freight on vessels designed for operating on sea or coastal waters. Also included is the transport of freight on lakes etc. when similar types of vessels are used.

Data for dry cargo are collected via the Chamber of Shipping survey on a quarterly basis. The data are measured by charter receipts of UK trade, imports and exports of dry cargo and cross trades, where UK registered ships engage in trade between 2 or more non-UK countries, thus neither importing nor exporting yet generating revenue for UK. Dry cargo includes freight transport by container ships and dry cargo hulls. The data are processed using the same methods described in section 5.1.

5.5 50.23 Inter-port and One-port

SIC 2007 notes that this class measures the transport of freight between UK ports or from UK ports to UK off-shore platforms such as oil rigs, on vessels designed for operating on sea or coastal waters. Also included is the transport of freight on lakes etc. when similar types of vessels are used.

Data for inter-port and one-port are collected direct from the DfT website from table number DWF0101 (as at February 2016) – Waterborne Transport within the UK, 2001 – 2014 which forms part of the Maritime and Shipping statistics release. The data collected are goods moved – coastwise traffic between UK ports and one-port traffic of UK ports. The data series used are volume measures of freight transport between UK ports, and between UK ports and UK offshore platforms. It should be noted that DfT do not collect data on an SIC 2007 basis, instead they class sea and inland water by location rather than vessel.

The data are collected under the Maritime Statistics Directive as part of the port freight statistics data collection. The directive requires all shipping lines, agents and port authorities to provide detailed data for freight movements through major UK ports (those handling more than 1 million tonnes of freight per year) on a quarterly and annual basis. For ports handling less than 1 million tonnes of freight annually, a smaller amount of detail is required which is collected on an annual basis. The data are collected on behalf of DfT by a third party, DfT then complete the analysis and publish the data. The data are collected directly from the DfT website without further processing.

Details of the DfT methods can be found on their 'Maritime and Shipping guidance pages' under domestic waterborne freight notes and definitions.

5.6 50.3-4 Inland water transport

SIC 2007 notes that this class includes the transport of freight on inland waters, involving vessels that are not suitable for sea transport.

Data for inland water transport are collected direct from the DfT website from table number DWF0101 (as at February 2016) – Waterborne Transport within the UK, 2001 – 2014 which forms part of the Maritime and Shipping statistics release. The data collected are goods moved – UK inland waters traffic, non-seagoing traffic – internal and are volume measures of the freight transported on the UK internal waterways such as canals and rivers. It should be noted that DfT do not collect data on an SIC 2007 basis, instead they class sea and inland water by location rather than vessel. Passengers are not collected within this data series.

The data are processed using the same methods described in section 5.5. Details of the DfT methods can be found on their 'Maritime and Shipping guidance pages' under domestic waterborne freight notes and definitions.

5.7 Prices used for deflation

The current price and volume series collected for the water transport industry are deflated using a combine deflator made up of 2 Service Producer Price Indices (SPPI) series and 1 Consumer Prices Index (CPI) series both produced by ONS.

5.7.1 Service Producer Price Index

The SPPI is a statutory quarterly survey which measures changes in the price received for selected services provided by UK businesses to other UK businesses and government.

SPPI – 50.11 – Commercial vehicle ferries

Index is calculated using prices collected in 4 categories:

- Straits of Dover – accompanied vehicles (18.46%)
- North Sea – accompanied vehicles (9.51%)
- North Sea – unaccompanied vehicles (30.99%)
- Ferries to Ireland (41.04%)

Percentages are taken from the SPPI methods and guidance 2015 paper.

SPPI – 50.20 – Sea and coastal water freight

The index is calculated using prices collected in 3 categories:

- Coastal (Domestic) (74.79%)
- Europe (12.52%)
- Rest of World (12.70%)

Percentages are taken from the SPPI methods and guidance 2015 paper.

Further information on the SPPI can be found on the SPPI methodology pages and the SPPI methods and guidance 2015 paper published in October 2015.

5.7.2   Consumer Prices Index

The CPI is a statutory monthly survey which measures the change in price received for selected goods and services provided by UK businesses to consumers.

CPI – 07.3.4 Passenger transport by sea and inland waterway

The index is calculated using prices collected from:

- international routes – these must begin in the UK and include Republic of Ireland, fares are collected 2 months before departure and only include retail fares, business fares are excluded
  - cars with 2 passengers on international routes
- domestic routes – including Northern Ireland, fares are collected 1 month before departure and only include retail fares, business fares are excluded.
  - foot passengers and
  - car with 2 passengers on domestic routes

Further information on the CPI can be found on the CPI methodology pages.

6   Conceptual quality

In considering the methodology (as at Blue Book 2015) for measuring water transport it is worthwhile understanding what international guidance suggests is the best practice as to how to measure the industry.

6.1   Industry specific guidance on conceptual quality

The Office for National Statistics (ONS) uses the most appropriate and comprehensive international guidance to judge the conceptual quality underpinning estimates of short-term growth. In this context the most important guidance is that contained in the Eurostat Handbook on prices and volumes measures in national accounts (2016), and provides guidelines on the suitability of methods. The handbook is based upon the Classification of Products by Activity (CPA) 2008 which broadly relates to UK Standard Industrial Classification of Economic Activities 2007.

Using this guidance framework the quality of each industry is re-assessed by our experts each year. It is important to note that the assessment considers the weakest element of each industry where this breaches a 10% significance threshold and rates the measures as A, B or C quality, with C rated as 'improvement required', B rated industries being deemed 'acceptable' and A rated industries achieving the highest 'appropriate' rating.

The Organisation for Economic Co-operation and Development (OECD) has also published the Compilation manual for an Index of Service Production (2007) providing international guidelines on the compilation of output indicators for the services industries for OECD member countries. It has been written to compliment the Eurostat 'Handbook on prices and volumes measures in national accounts' with an emphasis on short-term measures of output, (as the Eurostat handbook has been written in the context of annual data) although it can be used in the context of quarterly and monthly data.

The OECD manual (paragraph 87) states that:

> "Appropriately deflated turnover would be classified as an "A" method. Turnover deflated by a less appropriate deflator (for example, with wider industry coverage) would be classified as a "B" method. Generally the Eurostat Handbook classifies volume measures as "B" methods. However, if there is a detailed breakdown by type of commodity ensuring reasonable homogeneity, and there is very little change in quality, a volume indicator could be classified as an A method. 'Input' indicators are classified as "C" category indicators by Eurostat, because they do not adequately detect changes in productivity; employment is an example."

The price and volume measures in national accounts guidance suggest the following in terms of water transport (Please see section 4.8 (pages 89 to 93)).

Water transport is detailed in CPA H (CPA 2008) which covers transportation and storage services. Water transport 50 (CPA 2008) is concerned with transportation of people and cargo. The guidance makes a distinction between passenger transport and freight transport.

6.1.1   Passenger transport

The guidance makes further distinction between mode of transport (transport via railways, other land transport, water transport and air transport), without this breakdown any method would always be a "C".

Passenger transport is concerned with the movement of people via various modes of transport, for this review we are only concerned with moving people by sea or waterways. There are often difficulties associated with measuring the price of passenger transport due to different priced tickets, such as one-off journeys and season tickets, peak and off-peak travel, the inclusion of subsidies and free travel. These factors are less prominent for water transport than for other methods of transport such as bus or train travel.

An "A" method would require the use of Producer Price Indices (PPIs) for various types of tickets available. A "B" method recommends the use of the Consumer Prices Index adjusted for basic prices and taking sufficient account for quality changes.

6.1.2   Freight transport

It is more difficult to compile a price for freight transport as there is no fixed pricing structure. The price paid for transporting freight varies depending on a number of factors such as distance and route travelled, whether it is considered an international or domestic journey, the size and weight of the cargo, the type of cargo – live animals, bulk cargo and chemicals will require different facilities, and if there is any return freight. To certain extent freight transport has the characteristics of a unique product. It is therefore suggested using model pricing, using a set of representative standard journeys, be considered appropriate.

The guidance makes a clear distinction that there should be a breakdown on the mode of transport used otherwise any approach would be considered as a "C" method, this breakdown includes – transport via railways, other land transport, transport via pipelines, sea and coastal water transport, inland water transport and air transport.

The use of PPIs, possibly based on a pricing model could be considered an "A" method. The use of volume indicators on a tonnes per kilometre approach would constitute a "B" method with all other approaches being considered a "C" method.

The OECD 'Compilation manual for an Index of Service Production' (2007) also provides detailed information on the recommended use of indicators and deflators for the industry (see pages 94 and 95). The guidance outlines preferred, alternative and other measures for use in measuring short-term output. Whilst this guidance is on a UK SIC (2003) basis, it is still a useful guide for recommended short-term indicators for water transport (division 61 on SIC 2003).

6.2   Blue Book 2015 industry quality rating

Prior to the industry review process, the conceptual quality of the short-term measurement of water transport output was assessed according to the principles outlined in the Eurostat 'Handbook on price and volume measures in national accounts'. It should be noted that the assessments made in this report are made by our experts rather than Eurostat.

The Blue Book 2015 methodology used to measure water transport output is defined in Table 6.

Table 6: Eurostat quality rating as at Blue Book 2015

Industry code	Industry description	Eurostat quality rating as at Blue Book 2015
50.11	Passenger transport services by ferries	B
50.12	Freight transport services by ferries	A
50.2	Sea and costal freight water transport services	A
50.3-4.1	Inland water transport services – commercial vehicles ferries	A
50.3-4.2	Inland water transport services – sea and coastal water freight	A

According to the internationally recognised guidance, the A/B/C rating as defined in section 6.1 at Blue Book 2015 was as followed for each component of water transport.

We have complied with the Eurostat guidance with each mode of transport being measured individually. Furthermore water transport is disaggregated to distinguish between passenger and freight transport. The changes in method we aim to implement for Blue Book 2017 will further distinguish between international and domestic passengers; see sections 8 and 9 of this report for further details.

For 50.11 – passenger transport services by ferries was defined as a "B – acceptable" method, as the CPI is used which provides coverage of domestic and international journeys. PPIs for passenger water transport are currently not available in the UK.

For 50.12 and 50.2 – freight and inland water transport was defined as a "A – appropriate" method, as it makes appropriate use of the available SPPIs.

Overall water transport has been classed as a "B – acceptable" method as the overall rating is based on the weakest element where that breaches 10% of the industry.

7 International perspective

7.1 OECD

In terms of international comparisons there are a limited number of countries which undertake the collection of data on the services industries to produce a monthly index. The Organisation for Economic Co-operation and Development (OECD) has produced guidance in the form of the 'Compilation manual for an Index of Services Production' (2007). This was compiled in collaboration between representatives from the UK, Republic of Korea, USA and Canada national statistical institutes (NSIs). These countries all have forms of publication which aim 'to obtain a

more accurate view of short-term economic phenomena in their services sectors.' This has been devised in connection with the guidance, as mentioned in the handbook on prices and volumes measures in national accounts (2016) (see section 6). The OECD manual provides specific methodology in terms of how the service sector should be measured in the short-term. This includes areas such as defining a framework and classification system, noting possible sources and methods and also how the index should be calculated.

7.2   Eurostat

Within the European Union few member states compile a monthly IoS. However, work is being conducted at a European level to try to address the lack of monthly data for this area of the economy. This is being carried out in the form of a taskforce between Eurostat and member states' NSIs. However, apart from the UK, the only other EU member states which conduct a monthly IoS or equivalent in their respective countries are Ireland and Sweden.

A broad overview of monthly IoS measures produced by other NSIs can be found below. This is based upon information made publicly available through their respective websites (unless otherwise stated).

7.3   Ireland

The Irish equivalent is called the 'Monthly Services Index'. This index is relatively recent in its development as data can be obtained since January 2009 and is based on a sample of 2,500 businesses.

7.4   Sweden

Within Europe the nearest comparison to the UK's IoS is the Swedish 'Service production index'. Results are published 35 days after the reference period end. For water transport it is possible to obtain industry level data direct from the Statistics Sweden website in their statistical database (search for 'turnover in the service sector'). There is also specific water transport methodology information published as part of their 'Index of Service Production (ISP) methodological manual'. The section specific to water transport can be found on page 26 (section 6.6) of the manual. Whilst the manual is based on an old classification basis (Swedish SIC 2002, this is similar to the UK SIC (2003)), it still possible to understand the compilation of the sources in producing the index for water transport.

Extract taken from Statistics Sweden 'Index of Service Production (ISP) methodological manual' (pg.26 refers to water transport):

> "SIC division 61 includes transport of goods and passengers on water (coastal and oceanic travel). The service sector turnover statistics are the only source Statistics Sweden has for sea transport turnover. Turnover in current prices from Turnover Statistics is deflated by means of a collective weighting of the price index from the Service Producer Price Index for

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sea transport, the Consumer Price Index for passenger transport by sea, the Consumer Price Index for restaurants and the Service Producer Price Index for temporary workers within the activity."

Table 7: Statistics Sweden Service Production index – water transport methodology

SIC code	Description	Source	Indicator	Weight (Index of Service Production =1000)	Deflator
61	Sea Transport	Service Sector Turnover Statistics	Turnover in current prices	9.8	1. SPPI Sea Transport (SPPI 61) 2. CPI: Sea Transport (GcNA 61A) 3. CPI: Restaurants (GcNA 55A

7.5 Canada

As mentioned in the UK Index of Services publication (for example, February 2016 – background notes – section 8), the closest equivalent estimates beyond Europe are from Canada, who produce a monthly output estimate of GDP with a breakdown by industry (including an aggregate for services).

The Statistics Canada website provides an overview of the methodology used to produce Monthly Gross Domestic Product by Industry with estimates published in line with the North American Industry Classification System (NAICS) 2007; including NAICS 2007 classification 483 which covers water transport.

There is a clear summary of the data sources used to produce monthly GDP and Table 8 shows details the data used to measure NAICS 2007 classification 483.

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Table 8: Statistics Canada – Monthly GDP methodology – water transport methodology

NAICS 2007 code	Industry name	Type of indicators	Methods and data sources
483	Water Transportation	Revenues and output	Revenues declared on the Goods and Services Tax remittance form, Canada Revenue Agency.
			Industrial product price indexes, Record no. 2318, and average weekly earnings, Survey of Employment, Payrolls and Hours, Record no. 2612.
			Number of persons and vehicles carried by deep sea and coastal ferries by route multiplied by base year ticket prices, Marine Atlantic Inc. and BC Ferries.

8 Issues identified during the industry review

As part of the industry review, various areas were investigated in order to ascertain whether the existing methodology is sufficient and meets the internationally recognised guidance. This section will discuss and address the following issues:

- periodicity of the data and the timeliness of the delivery of the data for passenger transport

- periodicity of the data and the timeliness of the delivery of the data for freight transport by ferries

8.1.1 Periodicity of the data and timeliness of the delivery of the data for passenger transport

The source data used at Blue Book 2015 were either produced on a quarterly or annual basis, with quarterly data accounting for 71% and annual accounting for 29% of the volume and current price series.

One of the main areas of this review was to investigate the possibility of improving the timeliness of data used to estimate the industry. The review looked at improving the timeliness of the current data sources and explored the potential use of alternative data sources.

Passenger transport by ferries – SIC (2007) 50.11

Firstly it would be useful to break down exactly what is covered under this classification.

Passenger transport by ferries includes

- international – short sea journeys (for example, Europe)
- international – long sea journeys (for example, to New York)
- international – sea cruises

- domestic – inter-island sea journeys (for example, Scottish mainland to island, UK mainland to Isle of Wight)
- domestic – sea journeys (for example, all other domestic travel around the coast of UK mainland)
- domestic – river ferry (for example, Liverpool to Birkenhead)

The international and domestic split based on passenger numbers is 35% and 65% respectively in 2014. Passenger numbers by mode of transport is shown in Table 9.

Table 9: Percentage of passengers in 2014 by mode of travel, UK

	International passengers			Domestic passengers		
	Short sea	Long sea	Sea cruise	River cruise	Inter island	Other domestic
2014	32.4%	0.1%	2.7%	31.2%	28.2%	5.4%

Source: Department for Transport

However, it is more useful to look at the international and domestic split for expenditure which is approximately 87% and 13% respectively for 2014, based on data prices and passenger numbers for the 6 types of journeys mentioned above.

The expenditure gives a better indication of the value of both the international and domestic passenger transport sectors. With this in mind the review has identified a new data source for the estimation of passengers travelling internationally by ferries.

The current data source collected by Chamber of Shipping on ONS's behalf is only available on a quarterly basis and no further improvements could be identified to the timeliness of this survey. However, the Department for Transport (DfT) produces a monthly volume indicator on the number of passengers travelling on international 'short sea' routes which accounts for approximately 92% of international passengers and 35% of international expenditure in 2014.

This data will be supplemented with a monthly breakdown on 'long sea' passenger route and cruise passengers which is available once a year from DfT. Although the data are only available once a year the monthly breakdown provided will allow for a more representative monthly path for the Index of Services and improve the seasonality of the industry, this can be seen in Figures 2 and 3. The 'long sea' and cruise passengers account for approximately 65% of expenditure of international passengers for 2014.

Figure 2: The quarterly path of the current total passengers' revenue from the Chamber of Shipping survey index to 2012=100, UK, 2003 to 2014
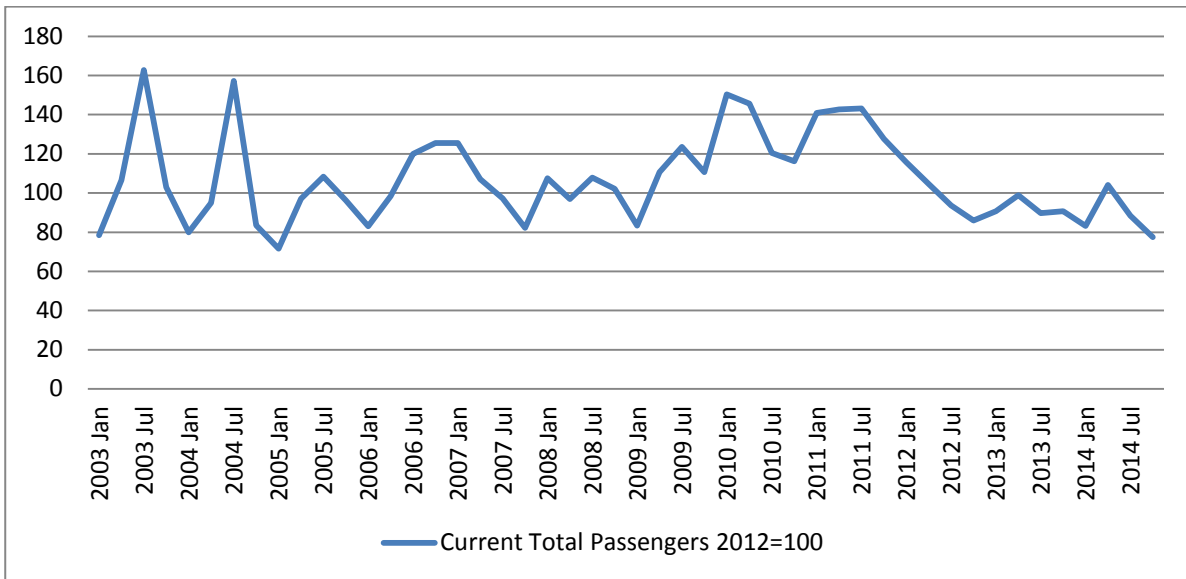
Source: ONS – Trade in Services branch

Figure 3: The monthly path of total international passengers' index 2012=100, UK, 2003 to 2014
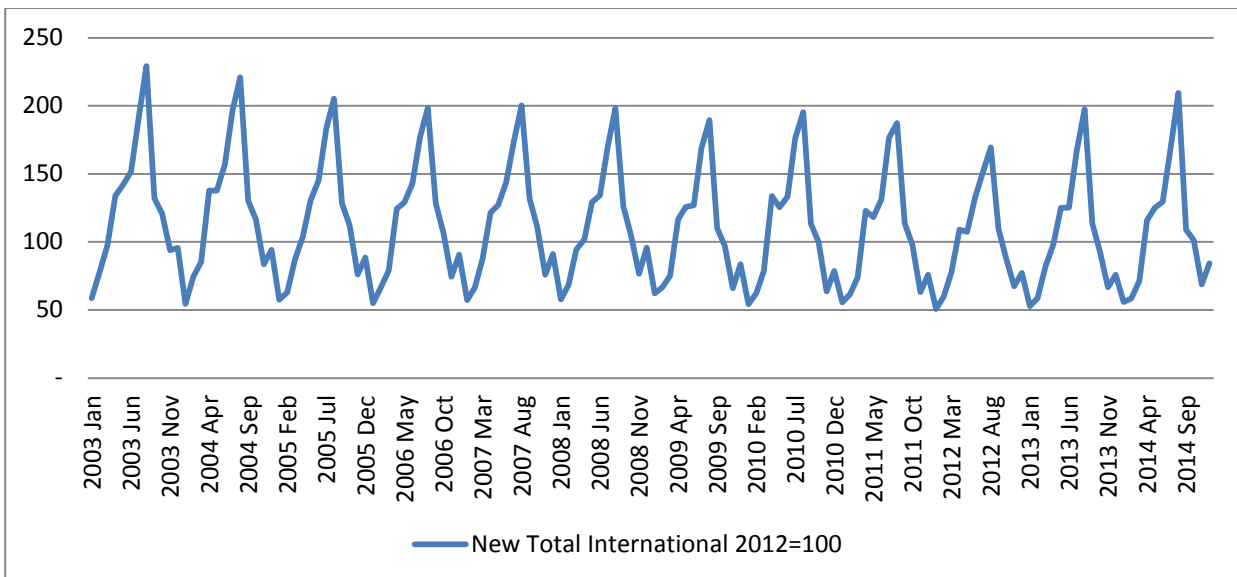
Source: Department for Transport

Furthermore the data will be supplemented annually with passenger numbers on domestic routes which will account for the remaining 13% passenger expenditure and 65% of passengers. The domestic routes will include domestic sea journeys (UK port to UK port) and inter-island travel (UK mainland to islands, including Isle of Wight, Isle of Man, Scottish Isles, etc) and river ferries.

More detailed information on the methodology, strengths and weakness of the new data source for international and domestic passengers can be found in the section 8.1.2.

Recommendation 1: At Blue Book 2016 aim to replace current data source from the Chamber of Shipping with 3 series from the DfT, 'short sea' passenger routes on a monthly basis, and monthly 'long sea' and monthly cruise passengers available annually.

Recommendation 2: At Blue Book 2017 aim to include new data from DfT on inter-island, other domestic and river ferries passengers. Introduce aggregation weights for international and domestic passenger split based on expenditure.

8.1.2   Detailed methodology for international and domestic passengers

Data on 'short sea' passenger routes are collected regularly from the operators or, in the case of the crossings to Orkney and Shetland and Scottish inter-island routes, supplied by the Scottish Government Data. Figures include drivers of lorries, coaches and other vehicles, and all passengers travelling on international routes from UK ports to Ireland and other European countries including Belgium, Denmark, Faroe Isles, Finland, France, Germany, Netherlands, Norway, Spain and Sweden. Full details of the routes where data are collected from can be found in the DfT's technical note on Sea Passengers: methods and quality, available on the DfT website. The data for international 'short sea' routes are quality checked in detail either by the DfT and are considered to be extremely robust.

 'Long sea' passenger routes include all international sea travel not covered under 'short sea' passenger routes. Cruise passengers, like other passengers, are included at both departure and arrival if their journey begins and ends at a UK seaport. An issue raised by DfT is that long sea voyage data are collected from operators who also operate cruises, meaning that long sea data may not always be distinguishable from the cruise data. This is not ideal as separate homogenous measurements would be preferred. Despite this the cruise and long sea data are fit for purpose.

Domestic sea passengers and river ferry cover the main ferry and river ferry routes in the UK. Full details of the routes can be found in the DfT's technical note on Sea Passengers. An issue raised by DfT is that data on river ferries are collected from the operators annually, where the total number of passenger kilometres (that is the number of passengers multiplied by the kilometres travelled) travelled on the route is over 500 per year. River ferries which do not meet the criteria are not included in the published data. The data on river ferries are quality checked and are fit for purpose. The data for inter-island and other domestic sea passenger routes are collected regularly from the operators or supplied by the Scottish government. The data sets are quality checked in detail either by the DfT or, before they are supplied, by the Scottish government, and considered to be extremely robust.

All international and domestic data were assessed against the Code of Practice for Official Statistics by the UK Statistics Authority and confirmed as National Statistics in February 2013. Further details can be found on the Maritime and Shipping Statistics page on the DfT website.

The data are readily available on the DfT website. Data for international ferry passenger routes, domestic sea crossings and inter-island routes are collected regularly from the operators or, in the case of the crossings to Orkney and Shetland and Scottish inter-island routes, supplied by the Scottish Government. These operators and authorities are required to supply data under the Maritime Statistics Directive.

This new method not only improves the timeliness of a significant proportion of the data but also improves the monthly path of data and seasonality of the series leading to a more representative dataset.

8.2   Periodicity of the data and the timeliness of the delivery of the data for freight transport by ferries

The review confirmed that improvements to the transport of freight by ferries series could be made. Since the previous review of the industry in 2005, the Department for Transport have produced a more timely series to measure this type of transport. Under the Blue Book 2015 methodology an annual series was being used, however, DfT now publish the same series on a quarterly basis. The review also considered the methods being use in collecting this data and confirms that the series is conceptually appropriate.

> Recommendation 3: At Blue Book 2016 aim to move to using the more timely quarterly series for freight transported by ferries.

8.3   Review of remaining data sources

All other series were reviewed for their timeliness and conceptual appropriateness. The review confirms that the remaining data collected from CoS cannot be collected in a more timely manner than the current quarterly data, this is due to the nature of the industry and how the CoS conducts this survey. The current data methods have been deemed acceptable and will remain in place.

The review confirms that the data collected from DfT on inter-port, one-port and inland water transport are appropriate and no further improvements could be made at this time.

The deflation methods were reviewed and no alternative sources could be found. The current methods have been deemed to be appropriate and will remain in place.

8.4   DfT data assessed against the UK Statistics Authority guidance 'Quality Assurance and Audit Arrangement for Administrative data'

The UK Statistics Authority has published a regulatory standard for the Quality Assurance of Administrative Data. This standard will be used to assess statistics derived from administrative sources against the Code of Practice for Official Statistics. It is published alongside the Administrative Data Quality Assurance Toolkit which is the mechanism that the Authority will use to determine compliance.

The standard encourages risk-based judgement and supports a proportionate approach, recognising that not all administrative data sources are high risk. As a result, the standard is pragmatic, and the toolkit that supports it provides helpful guidance to statistical producers about the practices they can adopt to assure the quality of the data they receive. The toolkit is built around the quality assurance (QA) matrix which presents the levels of assurance for 4 areas of practice:

1. operational context and administrative data collection
2. communication with data supply partners
3. QA principles, standards and checks applied by data suppliers
4. producer's QA investigations and documentation

A second matrix on risk and profile (Table 10) evaluates the likelihood of quality issues arising in the data that may affect the quality of the statistics and of the nature of the public interest served by the statistics.

Table 10: Risk/Profile Matrix

Level of risk of quality concerns	Public interest profile		
	Lower	Medium	Higher
Low	Statistics of lower quality concern and lower public interest [A1]	Statistics of low quality concern and medium public interest [A1/A2]	Statistics of low quality concern and higher public interest [A1/A2]
Medium	Statistics of medium quality concern and lower public interest [A1/A2]	Statistics of medium quality concern and medium public interest [A2]	Statistics of medium quality concern and higher public interest [A2/A3]
High	Statistics of higher quality concern and lower public interest [A1/A2/A3]	Statistics of higher quality concern and medium public interest [A3]	Statistics of higher quality concern and higher public interest [A3]

Source: UK Statistics Authority Administrative Data Quality Assurance Toolkit

For the purposes of this review we have considered the data received from DfT within the context of overall GDP. Given the weight of the industry this necessarily merits a low level of significance. The approaches to data collection and processing adopted by DfT are described below. However, it should be noted that DfT keep these constantly under review. When DfT review this data collection we will similarly consider a proportionate review of our methods in this area and re-assess the quality assurance of administrative data.

Using the UK Statistics Authority guidance, we have assessed the DfT against the quality assurance matrix and risk/profile matrix. The outcome is as follows:

The data from DfT used to estimate the IoS and GDP(O) have been rated as low/lower on the risk/profile matrix.

They are rated as low in the level of risk of quality concerns as there is a clear agreement in place between the Office for National Statistics (ONS) and DfT with a clear understanding of when, how and by whom data are provided. There is a good appreciation of the context of the data in which the data are collected and we understand the quality standards being applied to the data.

They are rated as lower in public interest profile as water transport within both the IoS and GDP(O) has limited user base and limited media interest. Water transport data are judged in terms of the industry itself rather than as GDP(O) as a whole, given the importance of the industry.

It should also be noted that all DfT data used by ONS in estimating the IoS and GDP(O) are designated National Statistics. The international and domestic passengers and waterborne freight data were assessed against the Code of Practice for Official Statistics by the UK Statistics Authority and confirmed as National Statistics in February 2013. The remaining road freight by ferries data as described in section 5.2 of this report are also designated as National Statistics and are currently undergoing routine assessment by the UK Statistics Authority.

Table 11 shows the level of assurance given to each of the 4 practice areas as defined by the standard.

Table 11: Quality Assurance Matrix

Practice area	Level of assurance given
Operational context and administrative data collection: •environment and processes for compiling the administrative data •factors which affect data quality and cause bias •safeguards which minimise the risks •role of performance measurements and targets; potential for distortive effects	A2: Enhanced assurance Statistical producer has evaluated the administrative data QA arrangements and published a fuller description of the assurance Justification for the rating: Producer has provided users with a fuller description of the operational context and administrative data collection arrangements, including - explanations for classifications, (see ECMSD administrative rules and code lists as part of the Maritime Statistics Directive guidance) Identified and summarised potential sources of bias and error in administrative system, (see Annex F)
Communication with data supply partners: •collaborative relationships with data collectors, suppliers, IT specialists, policy and operational officials •formal agreements detailing arrangements •regular engagement with collectors, suppliers and users	A2: Enhanced assurance Statistical producer has evaluated the administrative data QA arrangements and published a fuller description of the assurance Justification for the rating:

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Producer has agreed and documented:

- data requirements for statistical purposes
- legal basis for data supply
- data transfer process
- arrangements for data protection

(see Maritime Statistics Directive guidance)

Established an effective mode of communication with contacts (for example, with data collector and supplier bodies, IT systems, operational/policy officials) to discuss the ongoing statistical needs in the data collection system and quality of supplied data, (see Annex F)

QA principles, standards and checks applied by data suppliers:	A1: Basic assurance

•data assurance arrangements in data collection and supply

•quality information about the data from suppliers

•role of operational inspection and internal/external audit in data assurance process

Statistical producer has reviewed and published a summary of the administrative data QA arrangements.

Justification for the rating:

Producer has knowledge of suppliers' QA checks and published a brief description, (see technical note and Annex F).

Further discussions with DfT have confirmed that appropriate validation routines are in place to identify missing, incomplete and inaccurate data. A grossing method is applied to the data to ensure that the final results use the most accurate data.

Identified whether audits are conducted on the admin data (such as internal or operational audits, external audit such as by regulator), (data is regulated by UK Statistics Authority)

Producer's QA investigations and documentation:

•QA checks carried out by statistics producer

•quality indicators for input data and output statistics

•strengths and limitations of the data in relation to use

•explanation for users about the data quality and impact on the statistics

A2: Enhanced assurance

Statistical producer has evaluated the administrative data QA arrangements and published a fuller description of the assurance

Justification for the rating:

Producer has provided a fuller description of its own QA checks on the admin data and detailed the general approach and findings for specific quality

indicators, (see GDP(O) methods and sources webpage for details on the quality of the GDP(O), including accuracy, sampling and non-sampling errors, improvements and quality assurance)

Identified the strengths and limitations of the admin data, (see section 5 and 8 of this report and technical note)

Further information on areas discussed with DfT in reaching these conclusions can be found in Annex F.

9   Blue Book 2016 and 2017 methodology

This section outlines the methodology to be used to measure short-term output in water transport for the output approach to measuring GDP.

9.1 Blue Book 2016 and 2017 data sources

Following this review, the data sources, methods and concepts that we will aim to implement for measuring water transport output for GDP(O) as at Blue Book 2016 are shown in Table 12 and for Blue Book 2017 are shown in Table 13.

Table 12: Summary of the methodology aimed for implementation for Blue Book 2016

Industry code	Industry description	Current price source	Volume source	Deflator source
50.111	International Passenger Transport by Ferries[1]	Derived[1]**	Department for Transport[1]	CPI
50.12	Freight Transport by Ferries[2]	Derived**	Department for Transport	SPPI
50.21	Tankers	Trade in Services	Derived**	SPPI
50.22	Dry Cargo	Trade in Services	Derived**	SPPI
50.23	Inter-port & One-Port	Derived**	Department for Transport	SPPI
50.3-4	Inland Water Transport	Derived**	Department for Transport	SPPI

[1] denotes a significant change in the methodology of the indicator aimed to be implemented in Blue Book 2016 compared Blue Book 2015.

[2] denotes a change in the periodicity of data source as at Blue Book 2016 from Blue Book 2015.

**A 'derived' measure can be calculated using the ratio or product of 2 indices that is:

- dividing a current price index by a price index (to create a volume index)
- dividing a current price index by a volume index (to create an implied deflator)
- multiplying a volume index by a price index (to create a derived current price measure)

Table 13: Summary of the methodology aimed for implementation for Blue Book 2017

Industry code	Industry description	Current price source	Volume source	Deflator source
50.111	International Passenger Transport by Ferries	Derived**	Department for Transport	CPI
50.112	Domestic Passenger Transport by Ferries[1]	Derived[1]**	Department for Transport[1]	CPI
50.12	Freight Transport by Ferries	Derived**	Department for Transport	SPPI
50.21	Tankers	Trade in Services	Derived**	SPPI
50.22	Dry Cargo	Trade in Services	Derived**	SPPI
50.23	Inter-port & One-port	Derived**	Department for Transport	SPPI
50.3-4	Inland Water Transport	Derived**	Department for Transport	SPPI

[1] denotes a significant change in the methodology of the indicator aimed to be implemented in Blue Book 2017 compared to Blue Book 2016.

**A 'derived' measure can be calculated using the ratio or product of 2 indices that is:

- dividing a current price index by a price index (to create a volume index)
- dividing a current price index by a volume index (to create an implied deflator)
- multiplying a volume index by a price index (to create a derived current price measure)

The improvements which we aim to make to the water transport industry for Blue Book 2016 and 2017 as a result of this review are as follows:

Recommendation 1: At Blue Book 2016 replace current data source from the Chamber of Shipping with 2 series from the Department for Transport: 'short sea' passenger routes on a monthly basis, and 'long sea' and cruise passengers' monthly breakdown annually.

Recommendation 2: At Blue Book 2017 include new data from DfT on inter-island, other domestic and river ferries passengers. Introduce aggregation weights for international and domestic passenger split based on expenditure.

Recommendation 3: At Blue Book 2016 move to using the more timely quarterly series for freight transported by ferries.

9.2 Blue Book 2016 industry quality rating

According to the internationally recognised guidance, the A/B/C rating as defined above at Blue Book 2016 will be as follows for each component of water transport (Please see Table 14).

The quality ratings themselves have not changed following the improvements to the industry as timeliness is not considered as part of the ratings.

Table 14: Comparison of Eurostat quality rating between Blue Book 2015 and Blue Book 2016

Industry code	Industry description	Blue Book 2015 Eurostat rating	Blue Book 2016 Eurostat rating
50.11	Passenger transport services by ferries	B	B
50.12	Freight transport services by ferries	A	A
50.2	Sea and costal freight water transport services	A	A
50.3-4.1	Inland water transport services – commercial vehicles ferries	A	A

10   User engagement

Throughout the water transport industry review process, consultations have taken place with a range of internal and external stakeholders. These consultations provided an opportunity to contribute to the continued improvement of the methods and sources used in the measurement of water transport output, within GDP(O).

External bodies which have been included in consultation discussions have been; HM Treasury, Bank of England, Office for Budgetary Responsibility, and Department for Transport.

Wider public consultation was sought as part of our annual GDP Output Improvement Reports.

The industry review process has informed the Short Term Output Indicator stakeholder group of progress. Final recommendations of the industry review were also passed by the GDP(O) Improvement project board, which is attended by senior managers within National Accounts.

The authors would like to thank the following ONS colleagues for their valued input and quality assurance of the report:

Kim Jones, Henry Brown, Pete Lee, Ole Black, Marilyn Thomas, Rob Smith, Mark Stephens and Michael Gibbs.

For a full list of external meetings with external bodies as part of the consultation process for the water transport industry review please see Annex G.

11 Recommendations

This section provides a summary of the recommendations from the water transport industry review (2016):

- Recommendation 1: At Blue Book 2016 replace current data source for sea passengers from the Chamber of Shipping with 2 series from the Department for Transport, 'short sea' passenger routes on a monthly basis and 'long sea' and cruise passenger's monthly breakdown annually

- Recommendation 2: At Blue Book 2017 aim to include new data from DfT on inter-island, other domestic and river ferries passengers; introduce aggregation weights for international and domestic passenger split based on expenditure

- Recommendation 3: At Blue Book 2016 move to using the more timely quarterly series for freight transported by ferries

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UK Statistics Authority 'Code of Practice'

13   Glossary

List of acronyms and abbreviations

Acronym	Full title
BRES	Business Register and Employment Survey
CoS	Chamber of Shipping
CPA	Classification of Products by Activity
CPI	Consumer Price Index
CSPI	Corporate Services Price Index
DfT	Department for Transport

DWF	Domestic Waterborne Freight
ESA	European System of Accounts
GDP	Gross Domestic Product
GDP(E)	Expenditure approach to measuring Gross Domestic Product
GDP(O)	Output approach to measuring Gross Domestic Product
GGFCE	General Government Final Consumption Expenditure
GVA	Gross Value Added
HMRC	HM Revenue and Customs
IDBR	Inter-Departmental Business Register
IoP	Index of Production
IoS	Index of Services
OECD	Organisation for Economic Co-operation and Development
ONS	Office for National Statistics
PAYE	Pay As You Earn
PPI	Producer Price Index
PPT	Parts per thousand
SIC	Standard Industrial Classification
SPPI	Service Producer Price Index
SUT	Supply Use Tables
VAT	Value Added Tax

Annexes

Annex A: UK Standard Industrial Classification 2007 (UK SIC (2007)) detailed description for water transport

50 Water transport

This division includes the transport of passengers or freight over water, whether scheduled or not. Also included, are the operations of towing or pushing boats, excursion, cruise or sightseeing boats, ferries, water taxis etc. Although the location is an indicator for the separation between sea and inland water transport, the deciding factor is the type of vessel used. Transport on sea-going vessels is classified in groups 50.1 and 50.2, while transport using other vessels is classified in groups 50.3 and 50.4. This division excludes restaurant and bar activities on board ships (see 56.10, 56.30), if carried out by separate units.

50.1 Sea and coastal passenger water transport

This group includes the transport of passengers on vessels designed for operating on sea or coastal waters. Also included is the transport of passengers on great lakes etc. when similar types of vessels are used.

50.10 Sea and coastal passenger water transport

This class includes:

- transport of passengers overseas and coastal waters, whether scheduled or not:
- operation of excursion, cruise or sightseeing boats
- operation of ferries, water taxis etc.

This class also includes:

- renting of pleasure boats with crew for sea and coastal water transport (for example, for fishing cruises)

This class excludes:

- restaurant and bar activities on board ships, when provided by separate units, see 56.10, 56.30
- renting of pleasure boats and yachts without crew, see 77.21
- renting of commercial ships or boats without crew, see 77.34
- operation of "floating casinos", see 92.00

50.2 Sea and coastal freight water transport

This group includes the transport of freight on vessels designed for operating on sea or coastal waters. Also included is the transport of freight on great lakes etc. when similar types of vessels are used.

50.20 Sea and coastal freight water transport

This class includes:

- transport of freight overseas and coastal waters, whether scheduled or not
- transport by towing or pushing of barges, oil rigs etc.

This class also includes:

- renting of vessels with crew for sea and coastal freight water transport

This class excludes:

- storage of freight, see 52.10
- harbour operation and other auxiliary activities such as docking, pilotage, lighterage, vessel salvage, see 52.22
- cargo handling, see 52.24
- renting of commercial ships or boats without crew, see 77.34

50.3 Inland passenger water transport

This group includes the transport of passengers on inland waters, involving vessels that are not suitable for sea transport.

50.30 Inland passenger water transport

This class includes:

- transport of passengers via rivers, canals, lakes and other inland waterways, including inside harbours and ports

This class also includes:

- renting of pleasure boats with crew for inland water transport

This class excludes:

- renting of pleasure boats and yachts without crew, see 77.21

50.4 Inland freight water transport

This group includes the transport of freight on inland waters, involving vessels that are not suitable for sea transport.

50.40 Inland freight water transport

This class includes:

- transport of freight via rivers, canals, lakes and other inland waterways, including inside harbours and ports

This class also includes:

- renting of vessels with crew for inland freight water transport

This class excludes:

- cargo handling, see 52.24
- renting of commercial ships or boats without crew, see 77.34

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Annex B: UK Standard Industrial Classification 2007 (UK SIC (2007)) taxonomy and jobs for water transport

50100 Sea and coastal passenger water transport

- Boat rental for passenger conveyance with crew (except for inland waterway services)
- Coastal water transport for passengers
- Excursion, cruise or sightseeing boat operation (except for inland waterway service)
- Hovercraft operator between UK and international ports (passenger)
- Passenger ferry between UK and international ports
- Passenger ferry on domestic or coastal routes
- Passenger shipping service (sea and coastal)
- Pleasure boat rental with crew (for example, for fishing cruises) (except for inland waterway service)
- Sea ferry (passenger)
- Transport of passengers overseas and coastal waters
- Transport of passengers over water (except for inland waterway service)
- Water taxis operation (except for inland waterway service)

50200 Sea and coastal freight water transport

- Anchor handling services
- Anti-pollution vessel services
- Barge transport (except for inland waterway) freight service
- Boat rental for transport of freight with crew (except for inland waterway service)
- Cable-laying vessel services
- Coastal water transport (freight)
- Freight ferry (domestic or coastal)
- Freight ferry (sea going)
- Freight shipping service (except for inland waterway service)
- Freight shipping service (sea and coastal)
- Heavy lift vessel services
- Launch barge services
- Marine tow out services
- Merchant Navy
- Offshore supply vessel services
- Oil-rig transportation by towing or pushing
- Rental of vessels with crew for coastal freight water transport
- Rental of vessels with crew for sea freight water transport
- Royal Fleet Auxiliary
- Standby vessel services
- Transport by towing or pushing of barges (except inland waterway)

- Transport of freight overseas and coastal waters (whether scheduled or not)
- Waterborne freight transport (except for inland waterway service)

50300 Inland passenger water transport

- Barge lessee or owner (passenger) (inland waterway service)
- Boat rental for passenger conveyance with crew (inland waterway service)
- Canal carrier (passenger)
- Excursion, cruise or sightseeing boats operation (inland waterway service)
- Ferry transport for passengers (inland waterway service)
- Inland water transport (passenger)
- Lake steamer service
- Local authority passenger ferry services on rivers, canals and lakes
- Passenger ferry (river or estuary)
- Passenger ferry transport (inland waterway)
- Rental of pleasure boats with crew for inland water transport
- Transport of passengers over water (inland waterway service)
- Transport of passengers via canals
- Transport of passengers via inside harbours
- Transport of passengers via lakes
- Transport of passengers via ports
- Transport of passengers via rivers
- Water taxis operation (inland waterway service)

50400 Inland freight water transport

- 61209 Barge lessee or owner (freight)
- Boat rental for transport of freight with crew (inland waterway service)
- Canal carrier (freight)
- Freight ferry (river or estuary)
- Freight ferry transport (inland waterway service)
- Freight vessel rental with crew (inland waterway service)
- Inland water transport (freight)
- Local authority freight ferry services on rivers, canals and lakes
- Transport of freight via canals
- Transport of freight via lakes
- Transport of freight via ports
- Transport of freight via rivers
- Water transport of freight inside harbours and docks

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Annex C: Inter-departmental business register summary information for water transport

Taken from 'UK Business: Activity, Size and Location - 2015' publication

Table 15: UK – Number of VAT and/or PAYE based enterprises in water transport in 2015 by UK SIC 2007 class by employment sizeband

Class	Employment size							
	0-4	5-9	10-19	20-49	50-99	100-249	250 and over	TOTAL
5010	425	50	25	15	5	5	5	530
5020	410	85	60	25	10	10	0	600
5030	135	30	15	10	5	0	0	195
5040	65	10	5	0	0	0	0	80

Table 16: UK – Number of VAT and/or PAYE based enterprises in water transport in 2015 by UK SIC 2007 class by turnover sizeband

Class	Turnover size (£ thousand)							
	0-49	50-99	100-249	250-499	500-999	1,000-4,999	5,000 and over	TOTAL
5010	220	105	95	40	20	25	25	530
5020	75	85	120	60	65	115	80	600
5030	50	50	40	30	15	10	0	195
5040	20	20	20	5	5	5	5	80

Table 17: UK – Number of VAT and/or PAYE based enterprises in water transport in 2015 by UK SIC 2007 class by region

Class	Region					
	North East	North West	Yorkshire and The Humber	East Midlands	West Midlands	East of England
5010	20	15	10	10	10	45
5020	10	40	35	10	20	80
5030	5	10	10	10	15	15
5040	0	10	5	5	5	15

Class	Region						
	London	South East	South West	Wales	Scotland	Northern Ireland	TOTAL
5010	40	140	115	40	85	0	530
5020	200	90	35	15	55	10	600
5030	30	35	35	10	20	0	195
5040	10	10	10	5	5	0	80

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Annex D: Historic gross value added weights for division 50

Figure 4: Revised GVA weights through Blue Book 2011 to 2015, UK, 1997 to 2012

Division 50:Revised GVA weights through Blue Books

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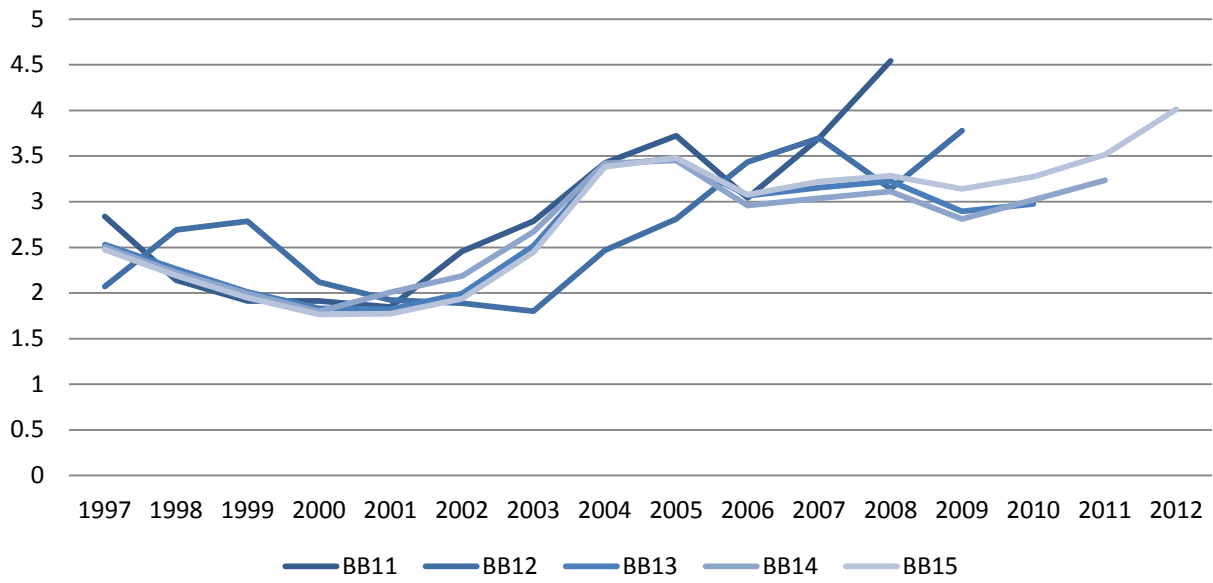
Annex E: Industry review: Using administrative data guidance: UK Statistics Authority 'Quality Assurance and Audit Arrangements for Administrative Data'

Every industry review must consider the use of administrative data and report clearly where appropriate, within the main messages and recommendations of the final report, on the outcomes of the review if such data are used.

Firstly, the industry review should consider whether the use of administrative data is conceptually appropriate or whether the use of the data as a proxy is appropriate. This may entail a review of whether alternative data is available.

Secondly, if administrative data is considered appropriate for use, the review must then consider the quality of the data and include this as a section of the industry review report (in the water transport (2016) industry review this is section 8.1) As a minimum this must include the following to enable the data usage to pass the requirements of the Code of Practice:

- commentary on views of the 'quality assurance practice model' and 'administrative data toolkit'
- commentary on the use of the 'data quality concern and public interest profile matrix'
- completion of the 'quality assurance matrix'
- completion of 'quality guidelines', 'statement of administrative sources' and 'quality reports' where these are appropriate

To see the full UK Statistics Authority guidance please sees the report 'Quality Assurance and Audit Arrangements for Administrative Data'.

Annex F: Department for Transport – Quality Assurance of Administrative Data

Areas discussed with DfT in establishing the quality assurance of administrative data.

Operational context and data collection

This relates to the need for statistical producers to gain an understanding of the environment and processes in which the administrative data are being compiled and the factors which might increase the risks to the quality of the administrative data.

1. Describe the operational context for the data. Why and how the data are collected and recorded.

The data are collected to satisfy Eurostat and European Union requirements. They are collected on a 'census' of Port Authorities and ferry operators, which operate at 500 passenger kilometres per year. The data collection is carried out by private contractor BMT Reliability Consultants (BMT) on behalf of DfT. Data for smaller operators is not deemed to be significant in scale.

Details of the data collection methods can be found on the Maritime Statistics Directive reporting guidance webpage.

2. Describe any potential sources of uncertainty, risk or bias in the data collection system; this may include subjective recording, missing and/or imputed data or poorly recorded data.

DfT explained that theoretically when new ferry services come into operation, they will not be identified immediately, but only when their annual screening process takes place. This could mean that a new service is not included in the data for over 11 months. However, this is a very rare occurrence and has not proven to be significant.

Secondly DfT rely on BMT to inform them if a large business goes out of service. Again this is very rare but it does allow for potential overestimating in the survey population but the rarity determines this is not a significant risk. The strengths and weaknesses of each series are explained in the technical notes of each publication.

3. Is the data collected on a consistent basis, in reference to methodology, concepts, coverage and timeliness? If not, are caveats provided with the data?

The Roll on Roll off survey part of the Roads Goods Vehicles Travelling to mainland Europe release, had revisions in 2004. These were made following a data quality review which is fully explained in the methods and quality section of the background notes. All other changes are noted in the background notes for the release.

4.   Describe any potential sources of uncertainty, risk or bias in the data collection system; this may include subjective recording, missing and/or imputed data or poorly recorded data.

The good relationships between DfT and data suppliers help to alleviate potential limitations over the data collection method. So this was not determined to be a risk.

5.   What is the story behind the patterns revealed by the statistics?

The statistics show a downturn around the time of the financial crisis in 2008 and the subsequent downturn in 2008/2009. Recently the sector has stabilised and is showing signs of recovery in the later periods. This is further explained in the statistical bulletins.

6.   Are the changes (to data collection, data quality or methodology) governed by a management process?

The survey is contracted out to a third party; the survey has been conducted for over 10 years with BMT supplying the contact list in that time. They have also agreed an extension for a further 5 years. The data supplier for all series is consistent.

7.   What level of assurance do you have over the administrative data?

The validation of the data is extensive and it is helped by having regular dialogue with BMT. DfT can query aspects of the data with BMT at any time.

8.   How important is the data to meeting your Key Performance Indicators or success factors?

The data are required by Eurostat but it is also used by policy decision makers and for regulatory impact assessments.

9.   Are the statistics independent from political and policy decision makers?

The statistics have complete independence. This is highlighted by their National Statistics status and regular UK Statistics Authority assessments.

Communication with data suppliers

This relates to the need to maintain effective relationships with suppliers (through written agreements such as service level agreement or memoranda of understanding) which include

change management processes and the consideration of statistical needs when changes are being made to relevant administrative systems.

1. Establish and maintain collaborative relationship with data supplier through written agreements such as service level agreements; which specifies roles and responsibilities, data specifications and schedule, process for data supply, security and confidentiality protection, change management process and collaborative arrangements for example, secondments.

   BMT are contracted by DfT to conduct the survey on their behalf. The contract is put out to tender every 5 years. BMT have been awarded the contract for the past 10 years and have secured a further extension in 2015.

   A service level agreement (SLA) is in place between ONS and DfT for the supply of all DfT data described in section 5 and 8. The SLA will be reviewed on a bi-annual basis.

2. Establish regular and clear communication channels with data suppliers such as regular meetings, newsletters, regular conferences, online resources and documentations.

   As part of the SLA, clear communication channels are in place. ONS is able to discuss changes in the data, large revision, etc. All queries will be saved on an ONS internal database. Annual contact will be made to discuss any potential or emerging issues which may arise over the next 12 months.

3. Establish a change management process which encompasses changes in data collection, quality or methodology?

   As part of the SLA, DfT will ensure that series are reported consistently over time. DfT will notify ONS of any inconsistencies that arise.

   DfT are required to:

   - make us aware of any changes in their methods
   - provide advance warning of any delays to publication
   - reply to any concerns ONS has with data will be queried

   Records of queries will kept and maintain within IoS.

Producer's QA investigations and documentation

This relates to the quality assurance conducted by the statistical producer (ONS), including corroboration against other data sources.

1. Quality assure the data received from suppliers (such as thorough validation, consistency checks and sense checks) and document your findings.

   The ONS Index of Services (IoS) production team uses a variety of procedures to ensure that the estimates produced are of high quality. The procedures for examining the data and identifying suspected errors are described in the "Quality of the IoS" report.

2. Identify and document the findings of any relevant investigations or audits conducted on the administrative data by regulators or external auditors and identify the implications for the statistics.

   The IoS and GDP(O) are regulated by the UK Statistics Authority and in 2014 the IoS and GDP(O) were reassessed (first review took place in 2010) by the Authority as part of its ongoing review to ensure that Official Statistics comply with the Code of Practice for Official Statistics,

3. Identify and explain the likely degree of risk to the quality of the data (for example, incomplete data, incorrect data, mis-typed data or variation in recording between suppliers).

In the event of data from DfT being incomplete or incorrect the impact on the IoS and GDP(O) dataset will be minimal given the size of the industry in relation to the whole economy. A forecasting mechanism based on the previously supplied data in place in the event of any missing data. There are quality assurance procedures to review the raw data provided by DfT with mechanisms in place to discuss any issues directly with DfT contacts.

Annex G: List of user engagement visits and consultations

Table 18: List of consultation visits throughout industry review process

Date	Organisation visited	Purpose of visit
23 September 2013	Short Term Output Indicators Stakeholder Group attendees: • HM Treasury • Bank of England • Department for Business, Innovation and Skills • Office for Budget Responsibility	As part of the meeting the progress into the Industry Review process was discussed. See section 'GDP(O) Improvement Seminar'
2 October 2013	GDP(O) users seminar attendees: • HM Treasury • Department for Business, Innovation and Skills • Office for Budget Responsibility • National Institute of Economic and Social Research • Marine Management Organisation	Presentations and Q&A on the industry review process, wider GDP(O) improvements and experimental statistics.
22 October 2013	Bank of England	A trimmed down version of the seminar held 2 October.

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21 January 2014	Short Term Output Indicators Stakeholder Group attendees: • HM Treasury • Bank of England • Department for Business, Innovation and Skills • Office for Budget Responsibility	As part of the meeting the progress into the Industry Review process was discussed. See section 'Item 6 – Update on Industry Review and GDP(O) Improvement project'.
9 May 2014	Short Term Output Indicators Stakeholder Group attendees: • HM Treasury • Bank of England • Department for Business, Innovation and Skills • Office for Budget Responsibility	As part of the meeting the progress into the Industry Review process was discussed. See section '5 – Update on continuous improvement / industry reviews'.
14 April 2015	Separate meetings were held with • Bank of England • Office for Budget Responsibility	Update on the industry for water transport was given including recommendations.
14 April 2015	Department for Transport	Overview of the industry review process was provided and discussions around the current data sources provided by DfT were discussed.
28 April 2015	HM Treasury	Update on the industry for water transport was given including recommendations.

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Table 19: Links to the industry review requests for consultation from users

Date	Publication/Output
August 2012	Index of Services – Industry Reviews
24 April 2013	Continuous Improvement of Gross Domestic Product: Sources, Methods and Communication (Section 3.1.1. Source Data – Index of Services Industry Review)
June 2013	GDP Output Improvement Report June 2013
22 November 2013	Continuous Improvement of Gross Domestic Product – November 2013 (Section 3.1.1. Source Data – Index of Services Industry Review)
29 May 2014	Continuous Improvement of Gross Domestic Product: Sources, Methods and Communication (Section 3.1.1. Source Data – Index of Services Industry Review)
30 June 2014	Changes to National Accounts: Industry Reviews BB14 Implementation
30 September 2014	GDP Output Improvement Report – September 2014
30 September 2015	Improvements to the output approach to measure UK GDP, 2015
Feb 2013 to present	Index of Services (IoS) monthly statistical bulletin In the background notes section of the IoS bulletin, there has been links to articles and seminars highlighted in the tables above. This is therefore another method in which users can consult in terms of the water transport industry review process.