



**TRANSPORT
SCOTLAND**
CÒMHDHAIL ALBA

Transporting Scotland's Trade

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1. Executive Summary

Modern societies and economies are characterised by high levels of mobility, with businesses increasingly trading and competing on a global scale. Scotland is no exception. Its international presence is only possible through connections which Scotland's transport infrastructure provides; connections which underpin and determine the capacity of any region to build economic prosperity and social cohesion.

The transport network in Scotland consists primarily of four modes; road, rail, air and sea. Scotland has a trade surplus in goods and has done for the past six years. This further emphasises the importance of maintaining a resilient transport network that will continue to support Scottish trade long into the future.

Under Scotland's Economic Strategy, the Scottish Government's overall purpose is to increase sustainable economic growth. A safe, efficient, effective and sustainable transport system, for both passengers and freight, remains one of the key enablers of such sustainable economic growth. It supports businesses in achieving their local, national and international objectives and improves the lives of individuals and communities, by connecting them with their economic future.

This report provides a summary of Scotland's key exports and imports, and how they are transported from, into and within Scotland. An overview of some of Scotland's key transport hubs is provided along with further details of some of its key trading partners. Key highlights are:

Scotland's Trade

- Scotland has strong trade links with 105 countries across nearly 100 different industries and sectors.
- Scotland traded nearly £53 billion worth of goods in 2017, with more than half (54%) being exports. Of the £28.7 billion worth of exports destined for international markets, nearly half (49%) went to the EU.
- The top 5 destinations for Scottish exports in 2017 were the Netherlands (£4.3 billion), the United States (£3.4 billion), Germany (£2.8 billion), China (£2.2 billion), and France (£1.7 billion)
- Scotland's key exports markets include Petroleum, petroleum products & related materials, Food & Drink and Power Generating machinery and equipment – with 38% of all exports in these goods, being sent to EU markets.

Transporting Scotland's Freight

- In 2016, total freight (excluding pipeline and rail) lifted in Scotland was over 271 million tonnes. Road freight made up the largest proportion (204 million tonnes) followed by sea (67 million tonnes) and then air (55,000 tonnes).
- The vast majority of freight lifted in Scotland was carried by road and remained within Scotland.

- Although the amount of freight carried by road to mainland Europe is small, the road network is an essential way to transport Scotland's perishable goods to such markets in Europe.

Scotland's Key Transport Hubs

- Forth Ports is Scotland's largest port with 27.5 million tonnes being handled by the port in 2017.
- Edinburgh Airport handles the most air freight in Scotland, and is also the country's busiest passenger airport and the sixth busiest in the UK.
- As well as being Scotland's largest commercial site, Eurocentral located next to the M8 and the rail network is one of Scotland's key transport logistic facilities.
- Cairnryan/Loch Ryan is Scotland's main port for carrying goods and passengers to Northern Ireland. Trunk road links to the port (A77 and A75) carry an estimated £67 million worth of goods per day.

Transport Links to Key Trade Destinations

- Scotland's number one international export destination is the Netherlands this is a result of the Dutch port of Rotterdam being an international shipping hub with goods exported to other global destinations from there.
- In 2017, the USA was Scotland's main non-EU export destination with whisky being a key export commodity. Although most high density freight to the USA is carried by ship, some direct flights which operate from some of Scotland's key airport also carry low volume freight.
- Both Northern Ireland and the Republic of Ireland remain core trading partners with Scotland. In 2017 nearly £1.3 billion of exports went to the Republic alone accounting for 4.5% of Scotland's total exports. A proportion of these goods would have been transported via the 13 daily sailings from Cairnryan / Loch Ryan.
- Since 2013, Scotland has imported more goods from Norway than any other nation. Over that time, imports from Norway have totalled more than £19.4 billion. As a result of both countries involvement in the North Sea oil and gas fields, the top commodities are related to petroleum and gas. These are typically transported by either boat or pipeline.

2. Introduction

The purpose of this report is to present information outlining where and how Scotland's trade travels. The report highlights the values and types of goods transported, along with Scotland's main transport gateways and corridors, and their trends over time. The report also summarises the key modes and routes used to lift and move Scottish freight, while at the same time drawing links to various goods exports and imports to and from Scotland.

The report is illustrated throughout with maps, graphs, and tables to highlight the values, destinations and origins of these goods, and to make the report more accessible.

The document is structured into four main chapters which each examine these issues in greater depth:

Chapter 3 – Scotland's Trade – highlights the importance of exports, imports and tourism to Scotland's economy. Details of key goods markets, value, and the destination / origins of both exports and imports are given. Tourism is a key industry for the Scottish economy and one of Scotland's six Growth Sectors. This chapter also provides an overview of the modes used by tourists to travel to and from Scotland.

Chapter 4 – Transporting Scotland's Freight – looks in more detail at how freight is carried both internally within Scotland and also to and from key trading partners using the modes of air, sea, road and rail. The analysis provided helps illustrate the importance of certain transport routes for Scottish businesses and passengers and finds which modes are of more importance for freight movement in Scotland (in terms of volume).

Chapter 5 – Scotland's Key Transport Hubs – highlights some of the key transport hubs for carrying freight to, from and within Scotland as well as the main networks linking Scotland with the rest of the UK and abroad.

Chapter 6 – Transport Links to Key Trade Destinations – links chapters three and four by highlighting the most prominent transport corridors to each of Scotland's top trading partner countries. Further detail is provided around the types of goods that Scotland trades with each country, and the likely route of travel for these commodities.

The report relies heavily on data at a Scottish level¹ however, some of the DfT and ORR datasets cannot be disaggregated down to Scotland, and therefore some gaps in time do occur. The overall report however, is able to identify Scotland's key trade markets, alongside their key transport gateways and networks. The report can therefore help inform the necessary policy tools to ensure Scotland's transport network is fit for purpose pending global and domestic activity which will undeniably impact the way in which businesses will use Scotland's transport network in the future.

¹ Data is available at a much more disaggregated level as well as in weight (tonnes), but only at a broader UK level. For such data see [Trade Map](#) (an interactive database of international trade flows covering 220 countries and territories and 5300 products of the Harmonized System, provided by the international trade centre).

3. Scotland's Trade²

Scotland is home to a strong and productive economy, characterised by a diverse business base with international successes across a wide range of sectors including life sciences, food and drink, sustainable tourism, financial services, energy and creative industries – Scotland's Growth Sectors. Scotland's transport network supports the functioning of over 360,000 businesses³, with 45% of these registered enterprises being part of one of the six Growth Sectors mentioned above.

Over the coming years, Scotland's economic success will be increasingly realised through its ability to compete in a global market. Strengthening links with the global economy brings with it increased trade, attracts investment and creates an environment for sharing skills, expertise and collaborating with others to support the economy. International markets offer enormous potential for Scottish companies to grow their exports. The EU is Scotland's most important international export market.

As businesses become increasingly more international, society is likely to benefit from increased productivity which brings with it new ideas, new technologies, a wider variety of goods and services, lower prices, better-paying jobs and generally speaking better living standards⁴. Additionally, attracting skilled workers to Scotland is key to boosting the skills base and tackling the challenges of demographic change.

This section provides an overview of Scotland's trade in goods with the rest of the world⁵. The use of HMRC Regional Trade Statistics (RTS)⁶ allows for a more up to date assessment, with latest full year data up to 2017 (Export Statistics Scotland currently has data up to 2016). HMRC RTS also deals solely with trade in goods⁷ and does not include trade in services, making analysis more realistic as services are less likely to 'travel'.

HMRC regional trade statistics makes use of transaction information such as commodity code, value of trade, weight of trade, partner country/country group and other data fields to determine good and destination of import/export. Import and export classifications are not based on the method of travel, meaning data will include exports from Scotland that may go via a different country (i.e. mainland Europe or the rest of the UK) before arriving at their final destination.

Having said that, it is important to note that over the past decade, Scotland's trade in services with the rest of the world has steadily increased as the sectors' contribution to the economy as a whole, has grown. The services sector now accounts for 76% of Scotland's economy⁸, while the production sector's contribution has shrunk over the same period and now accounts for 17% (down from over 23% in 1998).

² Data included is HMRC Regional Trade Statistics for calendar year 2017.

³ How Scotland's Transport Network Supports the Growth Sectors, Transport Scotland, 2016

⁴ IMF, Globalisation: A brief overview, <https://www.imf.org/external/np/exr/ib/2008/053008.htm>

⁵ Excluding the rest of the UK.

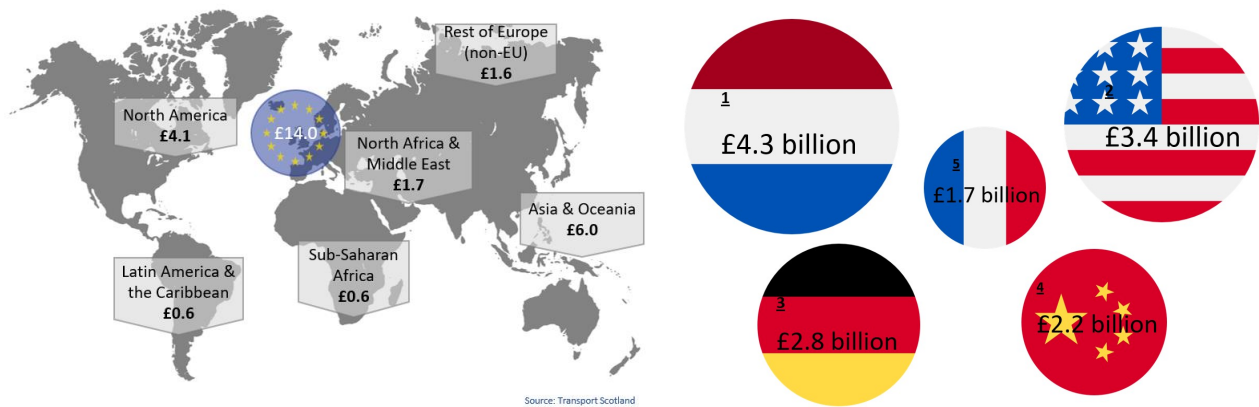
⁶ HMRC RTS includes all merchandise trade within the scope of the UK's OTS. It therefore excludes trade in services (e.g. banking, tourism) and intangibles (e.g. financial investments or transfers) and also the movement of goods between regions of the UK.

⁷ HMRC Regional Trade Statistics, Methodology, see <https://www.uktradeinfo.com/Statistics/RTS/>

⁸ Supply, Use and Analytical Input-Output (IO) Tables 1998-2015 (18 July 2018)

3.1 Exports

Figure 1: Destination and Value of Scotland's Exports (£ billions), and Top 5 Export countries



Scottish goods have a strong presence in international markets. Latest HMRC⁹ data shows that in 2017, goods exports from Scotland totalled £28.7 billion. This was an increase of 18.6% compared to 2016. Of this total, non-EU partner countries accounted for 51%, a decrease from 53% the previous year, while exports to EU member countries increased.

In 2017, exports from Scotland increased in value by 19% compared to 2016. Over the same period, Scotland's exports to the EU increased by 23%, while exports to non-EU countries increased by 14%. Over £14 billion of trade was with EU member states.

Key Markets

In recent times, Scotland's top 5 export partners have evolved. As is highlighted in Figure 1 the top 5 export destinations in 2017 for Scottish goods are:

- (1) Netherlands (£4.3 billion);
- (2) USA (£3.4 billion);
- (3) Germany (£2.8 billion);
- (4) China (£2.2 billion);
- (5) France (£1.7 billion);

The Netherlands has been Scotland's largest export partner for 4 out of the past 5 years (2013-2017), having reclaimed top spot from USA in 2017. Its dominance as Scotland's main export partner can be explained in part, by the Dutch port of Rotterdam being an important international shipping hub (the largest port in Europe and 10th largest worldwide). Many of the goods transported to Rotterdam will be transported on to another country rather than residing in the Netherlands. The final destination of these goods is not routinely collected which artificially boosts the value of exports to the Netherlands ('the Rotterdam effect').

⁹ Note this includes oil and gas and is only for goods.

In 2016 China became one of the top export markets replacing the Republic of Ireland in the Top 5, and in 2017 it was Scotland's 4th largest export market largely driven by the partial recovery in the oil and gas sector. Exports to all of Scotland's top 5 partners increased in value during the 2017.

Scotland's top 5 good exports using the Standard International Classification in 2017 were:

- (1) Petroleum products (£8.5 billion);
- (2) Beverages (£4.1 billion);
- (3) Power generating machinery (£2.2 billion);
- (4) General industrial machinery (£1.3 billion);
- (5) Transport equipment (£1.2 billion);

Scottish exports (goods) are carried by all four main modes of transport (road, water, rail and air). These include water freight from one of Scotland's main commercial seaports; road freight using Scotland's extensive trunk road network; air freight with airports in Scotland flying direct to over 220 destinations worldwide, and rail freight on Scotland's ever expanding railway network.

One export good which is a key market for Scotland is 'Beverages'. Data shows that Scotland exported over £4 billion worth of beverages in 2017. Approximately 15% of total beverage exports went to either France, Germany or the Netherlands.

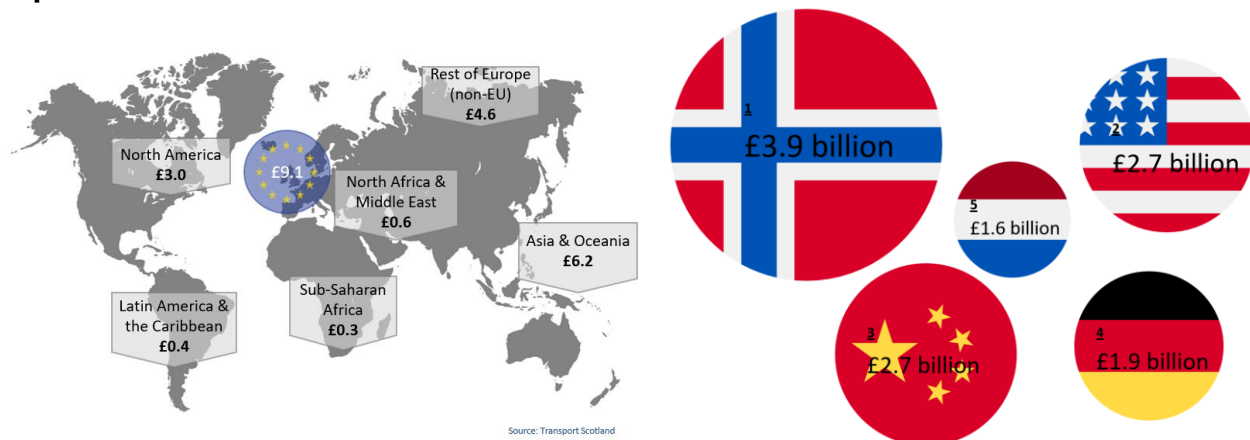
Beverage companies in Scotland include A.G. Barr (non-alcoholic soft drinks) and large whisky companies such as Diageo which own well-known brands such as Johnnie Walker, Bell's and J&B. Their trade habits reach far beyond the top 5 countries mentioned above, with Diageo in particular having a presence in over 180 countries around the world. The entire production process for the majority of these goods are completed on Scottish soil and as such, the destination for goods exports is more well-known. However some of these goods may be exported to another country for packaging and further processing.

Since 2013, 'mineral fuels, lubricants & related materials' have led Scottish exports, despite falling by a quarter by 2017. Over this time most goods exports have remained relatively stable and largely unchanged compared to 2013 levels, however 'food & live animal' exports have grown 44% over the past 5 years, illustrating the importance of this key sector for Scotland¹⁰. Exports to the EU from sectors such as beverages (spirits), and fish, crustaceans, molluscs (seafood) are significantly more important to the Scottish economy than they are to the UK as a whole. Furthermore, the EU is a key market for Scottish seafood products, accounting for 77% of Scottish seafood exports in 2017. Scotland is a net exporter of fish to the EU and the rest of the world, while the UK as a whole is a net importer.

¹⁰ State of the Economy, [June 2018](#)

3.2 Imports

Figure 2: Country of Origin and Value of Scotland's Imports (£ billions), and Top 5 Import Countries



Scotland's total goods imports were valued at £24.2 billion in 2017. Total imports to Scotland increased in value by £2.6 billion (12%), during the year 2017, however this growth was below the growth in exports, thus continuing Scotland's trade surplus in goods.

Compared to 2016, Scotland's imports from EU countries increased by 6.6%, compared with an increase of 15% in imports from non-EU countries over the same period. As a result, trade from non-EU partners accounted for almost two-thirds of Scotland's imports by value.

Key Markets

The percentage of goods imported into Scotland from the EU in 2017 was 38% (£9.1 billion). The top 5 countries which Scotland imports from has remained unchanged over the past 5 years, with Norway leading Scottish imports every year since 2013. As is highlighted by Figure 2, they are as follows:

- (1) Norway (£3.9 billion);
- (2) USA (£2.7 billion);
- (3) China (£2.7 billion);
- (4) Germany (£1.9 billion);
- (5) Netherlands (£1.6 billion);

Norway accounted for 16% of all imports into Scotland, up from 12% in 2016. Compared to the previous year (2016), the largest value increases were from Norway (up 44%, £1.1 billion) followed by the USA (up 21%, £475 million). The largest decreases over the last 12 months were in imports from South Korea (down 80% or £494 million) followed by the Falkland Islands (down 99% or £70 million).

While the composition of Scottish exports have changed over time, Scotland's main import goods have remained in similar industries over the past 5 years. The exceptions have been in the 'machinery & transport equipment' industry (which has grown in value) and the 'mineral fuels, lubricant & related materials' industry (which has fallen in value). In 2017, Scotland's top 5 import goods were:

- (1) Gas, natural & manufactured (£3.1 billion);
- (2) Office and automatic data processing (ADP) machinery (£2.3 billion);
- (3) Power generating machinery (£2.2 billion);
- (4) Machinery & Transport equipment (£1.8 billion);
- (5) Apparel and clothing accessories (£1.0 billion);

Over the year, compared to 2016, 4 out of the top 5 good imports increased in value, with 'Transport equipment' being the only good to fall in import value.

The largest proportion of goods imported from Norway (Scotland's number one import market) fell under the 'Mineral fuels, lubricants & related materials' SITC category, and were valued at £3.9 billion in 2017 - 16% of total Scottish imports. The single most popular good within that category, was 'Gas, natural and manufactured', which was valued at £3.1 billion.

Gas imports from Norway currently come predominantly via the Far North Liquids and Associated Gas System (FLAGS) pipeline¹¹. Other key pipelines include the Langed and Vesterled pipelines and the Scottish Area Gas Evacuation System (SAGE) pipeline to St. Fergus near Peterhead in Scotland. The Vesterled pipeline in particular is a natural gas pipeline system, which runs from the Heimdal field (Heimdal Riser platform) in the North Sea to St. Fergus Gas Plant.

Linking the other top five goods with the top five import destinations shows that Scotland imported most of its 'Office & automatic data processing (adp) equipment' from China, and 'Power generating machinery' and 'Transport equipment' from USA and the Netherlands. Clothing and apparel was more spread across a number of countries including Hong Kong and Vietnam.

Goods in the 'Machinery & transport equipment' group remained a key import good in 2017 - representing 40% of total import value in 2017. However this was down compared to 2016 (43%).

The recent decline in imports from the 'Mineral fuels, lubricant & related materials' industry is consistent with the performance of the wider Scottish economy in 2015 and 2016 alongside the slowdown in the Scottish oil and gas industry as a result of the sharp decline in the global price of oil. This also impacted the exporting of the commodity from Scotland, and this coupled with the slowdown in the oil and gas supply chain resulted in a slowdown in Scottish economic growth.

The recent recovery in the global price of oil, coupled with industry cost saving and efficiency gains has meant that trade in the commodity and related products has also started to recover.

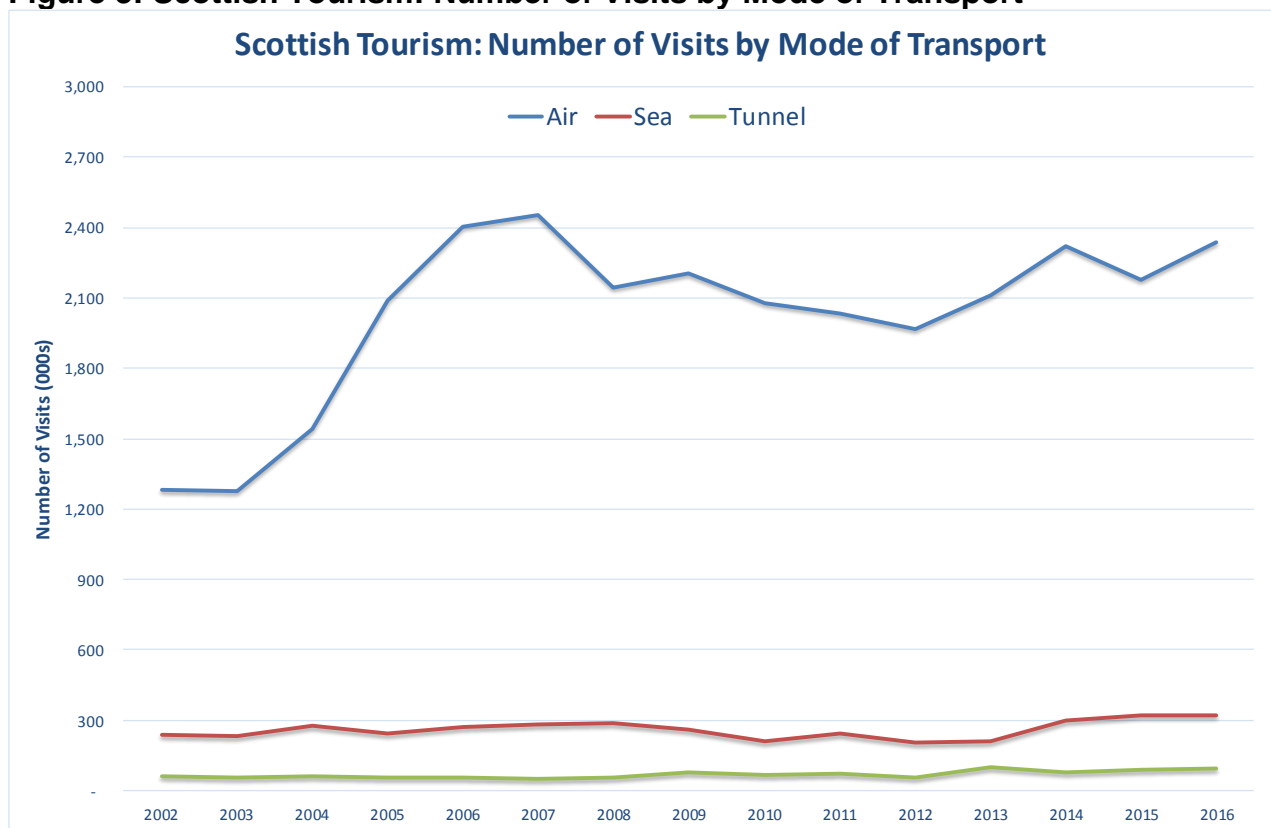
¹¹ Digest of UK Energy Statistics (DUKES), [July 2018](#)

3.3 Tourism

The International Passenger Survey (IPS)¹² produces estimates of overseas visitors to the UK, with disaggregated data available for Scotland. Data shows that overseas visitors typically come from countries that Scotland have a strong trade link with. In 2017, over 46% of visitors to Scotland came from one of the countries in Scotland's top 5 importers or exporters (China, France, Germany, Netherland, Norway, USA), and spent a combined total of £1.2 billion – over half of all visitor spend in 2017.

Travel by plane is by far the most prevalent mode of transport for visitors to Scotland (see Figure 3 below). Since 2002, the number of visitors travelling to Scotland by air has more than doubled (+118%), while sea and tunnel travel have remained fairly stable. This is shown in the chart below.

Figure 3: Scottish Tourism: Number of Visits by Mode of Transport



Respondents to the International Passenger Survey (IPS) stated that good air links within the UK and abroad were crucial for growth in any sector. All respondents mentioned the importance of direct links and the need for good connectivity. Air travel benefits businesses across Scotland by providing connections and access to wider markets; by reducing transport costs, allowing for quicker deliveries and facilitating inward investment. Scotland now has direct passenger flights to over 150 destinations.

¹² Visitors do not include rUK visitor holidays, but do include rUK citizens that are resident overseas. Further information on methodology can be found [here](#)

4. Transporting Scotland's Freight

Scotland's transport network supported nearly £53 billion worth of trade in goods in 2017¹³. This was a 15% increase in the value of trade in Scotland, from £45.8 billion in 2016.

However, tracing Scotland's exports and imports and how they are transported can often be difficult for a number of reasons. Firstly, official data on Scotland's trade, and the volume of goods carried by different modes of transport is often collected and published by different organisations which can make aggregation and comparisons difficult (i.e. DfT, CAA and ORR). Some of the data collected on trade flows, and how goods are transported is often only published at a UK level, and it is difficult or impossible to disaggregate this to a Scottish level.

Secondly, the methodology for counting exports to and from Scotland mean that often goods which move from Scottish ports to offshore oil rigs/basins, can be counted as Scottish exports/imports.

Scotland has a large amount of goods which are shipped via a number of countries before arriving at their final destination. For example, as discussed earlier, the Netherlands is the largest export market for Scottish goods, in part, as a result of the dominance of the Dutch port of Rotterdam, which acts as an international shipping hub, with goods shipped on to other destinations from there. Some exporters may not know the final destination of their goods, and this is reflected in the trade statistics.

Finally, accounting techniques are sometimes employed to move goods between company headquarters around the world, and so while goods and services may be exported and imported based on company balance sheets, occasionally the physical goods may not 'travel' anywhere, with services being even more difficult to follow.

Scotland continues to have strong trade links to a number of countries overseas with trade open up to over 105 countries across nearly 100 different industries and sectors¹⁴. One example is the food and drink sector which totalled £9.8 billion worth of exports in 2014, with fish and seafood making up the largest share of food exports that same year.

Scottish seafood companies who export their perishables often rely on frequent transport links to achieve the fluidity of their production process. Salmon is the number one food export for Scotland, with trade extending to more than 65 countries around the world. The Scottish Salmon Company (SCC) is one of the largest producers of salmon in Scotland. Initially the majority of the SCC's transport is done by boat, and then by road. Once goods reach the distribution centre, products are routed, predominantly by road, for the UK and mainland Europe and by air to international locations further afield such as China and the USA. The importance of the road network and air freight to Scotland's food and drink exporters is examined later in this chapter.

This remainder of this chapter will examine Scotland's key transport gateways and networks – namely Scotland's airports, ports, roads and railways.

¹³ HMRC Regional Trade Statistics, Q2 2018 show that there was nearly £53 billion worth of trade in goods in Scotland in 2017. While it is unlikely that all of this would have "travelled", we assume that trade was supported by the transport system in the country of origin and final destination.

¹⁴ Using the 2-digit standard international trade classifications (SITC), there are 98 commodity groups.

4.1 Key Transport Gateways and Networks

Scotland's key transport gateways include all of the four main modes of travel; air, road, rail and sea. The vast majority of Scotland's freight is carried on land either through its extensive road network which consists of over 56,000 km of road, or its railways with a total route length of 2,819 km – 709 km of which is electrified. Of the Scottish road network, 20% are major roads (including trunk and non-trunk 'A' roads), with only 1% of trunk road network being comprised of motorways.

Scotland's primary trunk road link to the rest of the UK and further into mainland Europe (via the Channel Tunnel) is across the M74 and M6 across the Scotland England border. Other routes that cross the border include the, A1 north of Berwick, the A6105 a few miles to the west, the A697 at Coldstream, the A68 at Carter Bar and the A7 north of Longtown. In 2016, 90.9% (167 million tonnes) of goods lifted by UK HGVs that originated in Scotland also ended their journey in Scotland. In total, only 8.9% of freight journeys originating on Scottish roads left Scotland for other UK destinations, 97% of which had a final destination in England.

Scotland's main airports for passengers are Edinburgh, Glasgow, Aberdeen and Inverness. For freight, the main airports are Edinburgh, Glasgow and Glasgow Prestwick. Its major ports¹⁵ are Aberdeen, Cairnryan, Clyde, Cromarty Firth, Dundee, Forth, Glensanda, Orkney, Peterhead, Stranraer and Sullom Voe.

Between 1998 and 2012, total freight lifted in Scotland fell by 65 million tonnes (20%). This is consistent with the change in the make-up of Scotland's economy. In 1998, 23% of the economy was made up in the production sector with 68% in services. By 2012, these figures had changed with only 16.7% of the economy being production and 75.6% services¹⁶. This movement towards a more service driven economy is likely to have impacted the amount of freight lifted and travelling around the country.

Of the roughly 270 million tonnes (excluding rail and pipeline) of freight lifted in Scotland in 2016, the vast majority of freight lifted was carried on Scottish roads¹⁷ with its final destination also in Scotland. In 2016, an estimated 166.9 million tonnes of goods were lifted within Scotland by UK HGVs and transported to destinations within Scotland. About 16 million tonnes of goods from Scotland were delivered to destinations elsewhere in the UK, and around 20 million tonnes were brought into Scotland from elsewhere in the UK. In comparison, the volume of international road freight by UK HGVs travelling to and from Scotland to a country outside of the UK is very small: less than 1 million tonnes in 2016.

The following sections provides further information on freight carried by the key modes and the location of the key hubs in Scotland.

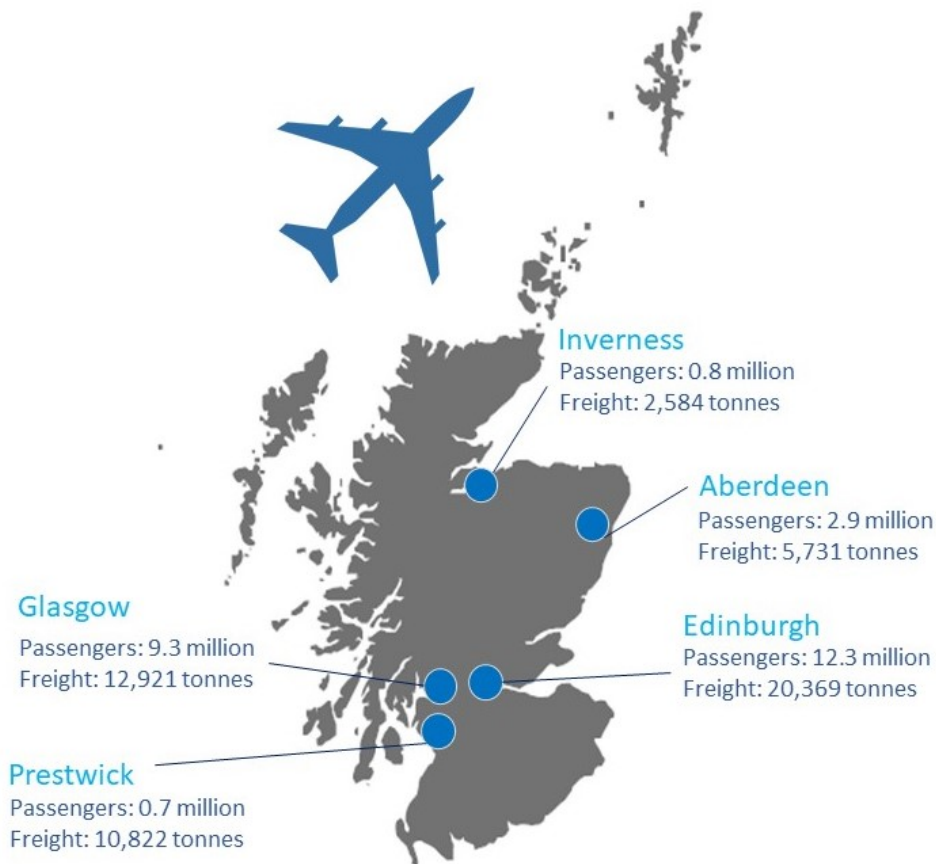
¹⁵ Major Scottish ports refer to the following: Aberdeen, Cairnryan, Clyde, Cromarty Firth, Dundee, Forth, Glensanda, Orkney, Peterhead, Stranraer and Sullom Voe. The 11 major ports are defined by Department for Transport (DfT) as regularly handling over 1 million tonnes per year

¹⁶ Supply and use tables (1998-2015) published July 2018

¹⁷ By weight 75.3% of freight was carried by road, 24.6% by boat and less than 0.1% by air (STS No. 36, 2017 edition)

4.2 Air Freight

Figure 4: Scotland's Top 5 airports with passenger numbers and freight carried (2016)



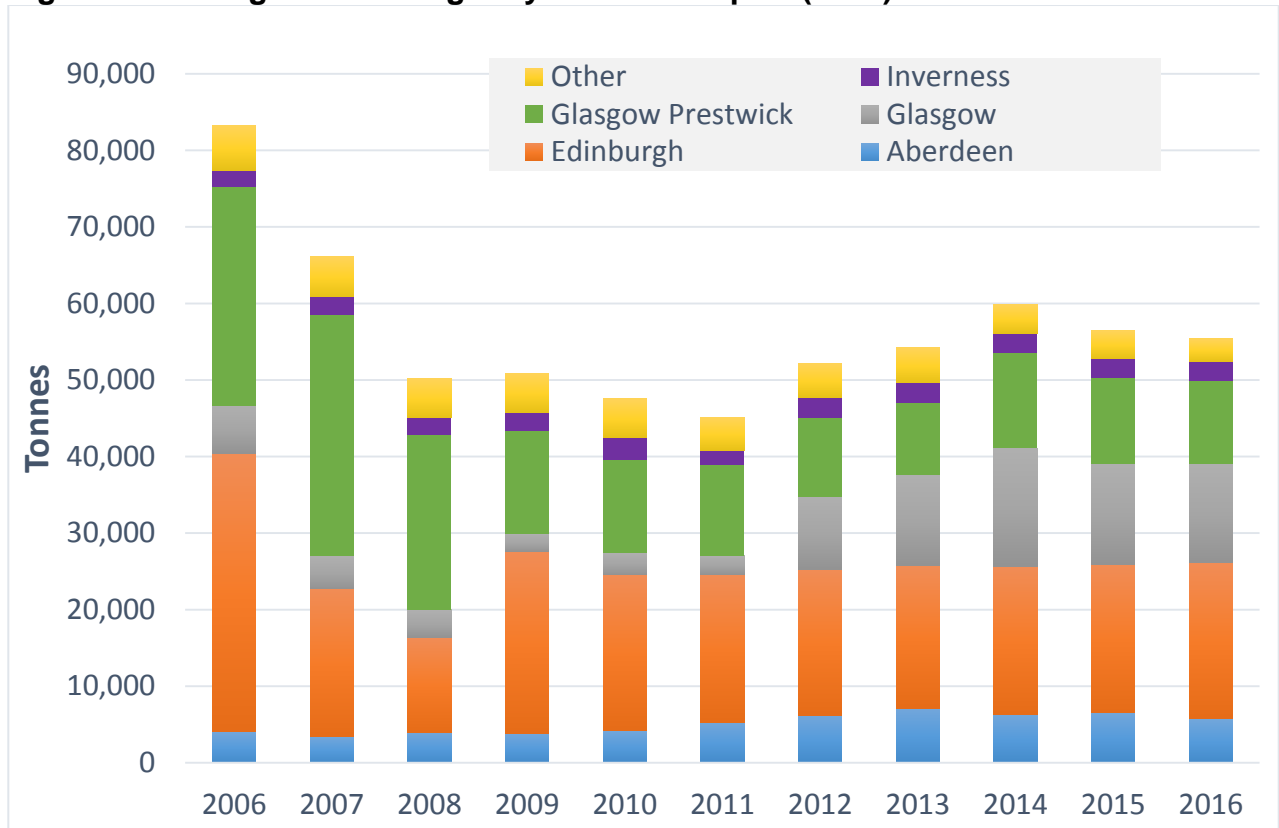
The figure above (Figure 4) shows the top 5 Scottish airports by freight and passenger numbers in 2016¹⁸. That year freight carried by air in Scotland totalled 55,392 tonnes. Air freight makes up a miniscule portion of the total tonnage of freight lifted in Scotland (approximately 0.5% in 2016, excluding rail and pipeline), however, this is likely due to the fact that the nature of goods being transported by air tend to be of a higher value, less bulky and more time sensitive. For example, some international flights may carry time sensitive blood and human tissue cargo. This is likely not to weigh much, but the importance of timeliness is critical and the worth of such goods is invaluable.

Although Scotland's airports are primarily used for passenger journeys, air freight remains important to Scotland's trade market. Whilst Scottish air freight has declined by a third since 2006, air freight volumes have been on a steady increase since reaching a low of 45,000 tonnes in 2011. As Scottish companies require the timely movement of certain types of goods, it is likely that the air freight industry will continue to be important to Scotland's export industry and therefore a crucial part of Scotland's wider transport network.

¹⁸ STS, No. 36, 2017 edition, Chapter 8: Air transport

The chart below (Figure 5) shows how freight has changed over time by airport. Over the past 5 years, freight volumes from each of Scotland's 5 main airports have remained broadly unchanged, with the two Glasgow airports seeing the biggest fluctuations. Scotland's top airport for both freight and passenger numbers is Edinburgh Airport, which is now the UK's 6th busiest airport.

Figure 5: Tonnage of Air Freight by Scottish Airport (2016)



In 2016, there were 26.9 million air passengers from all Scottish airports, 1.4 million (5.6%) more than the previous year. Passenger numbers have increased year-on-year for the past six years, and have grown by 2.4 million (9.9%) in the last decade.

From Scotland's airports it is possible to access 55 countries (international, excluding rUK) and over 220 destinations directly. Scotland's most popular destination in 2016 was Spain, with 2.4 million journeys, accounting for 16% of air passengers of direct journeys abroad that year. Edinburgh Airport had 12.3 million terminal passengers in 2016 (11% increase) and Glasgow Airport had 9.3 million, 7% more than the previous year. Aberdeen had 3.0 million, (down 15%) and Inverness had 0.8 million (17% more). Together these four airports accounted for 94% of total terminal passengers.

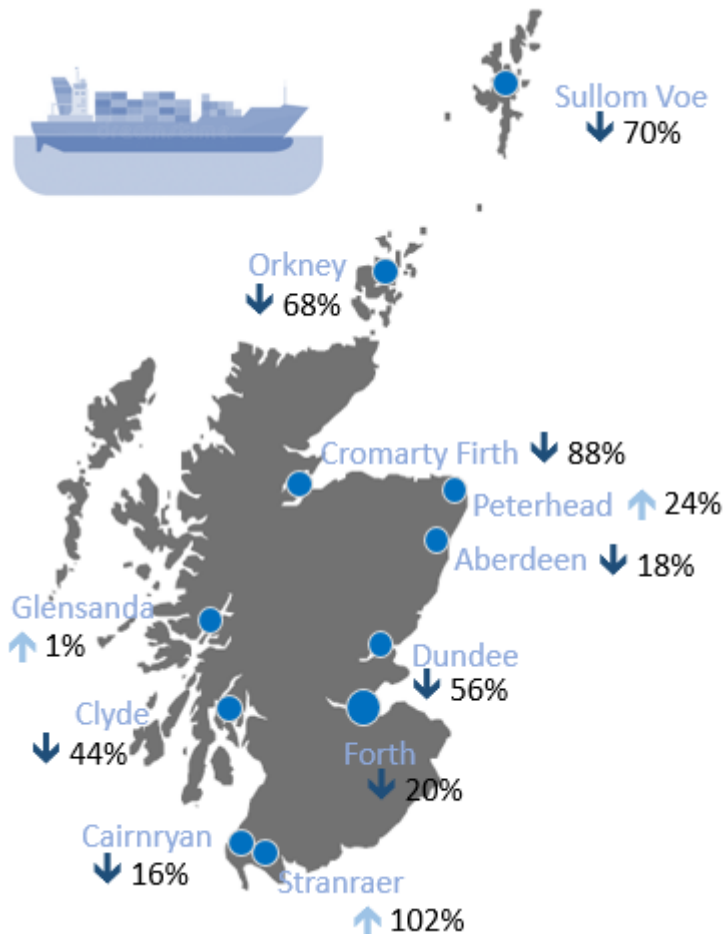
Other popular origins/destinations were the Netherlands (1.4 million passengers), the Republic of Ireland (1.2 million passengers) and Germany (around 1.0 million passengers).

4.3 Water Freight

Approximately a quarter of Scotland's freight (excluding rail and pipeline) was handled by Scotland's sea ports in 2016, with the vast majority (95%) of this being carried through the 11 major commercial ports¹⁹. Latest data²⁰ shows that these major ports carried 63.4 million tonnes in 2016, compared to 66.6 million tonnes in total for all Scottish ports, and of this 63.4 million tonnes of freight lifted by the major ports, 67% (42.5 million tonnes) was foreign traffic²¹.

Between 2006 and 2016, overall freight volumes have fallen by 34%, with only 3 out of the 11 major ports growing. This is highlighted in the chart below which highlights the locations and changes in freight carried over the last 10 years. The decline in the amount of freight handled by Scotland's port is a long-standing trend. In 1998, 116 million tonnes of freight was handled by Scottish ports, with 61 million tonnes (52.4%) of this being export freight. By 2016 this total figure had declined by 43% from 1998 to 67 million tonnes.

Figure 6: Change in freight handled by Scotland's 11 major ports 2006-2016



¹⁹ Ports are classed as major ports by the UK Department for Transport when they regularly handle over 1 million tonnes of freight per year. The total combined weight of freight lifted in Scotland in 2016 (excluding rail and pipeline) was approximately 271 million tonnes.

²⁰ STS No. 36, 2017 edition, Chapter 9: Water Transport

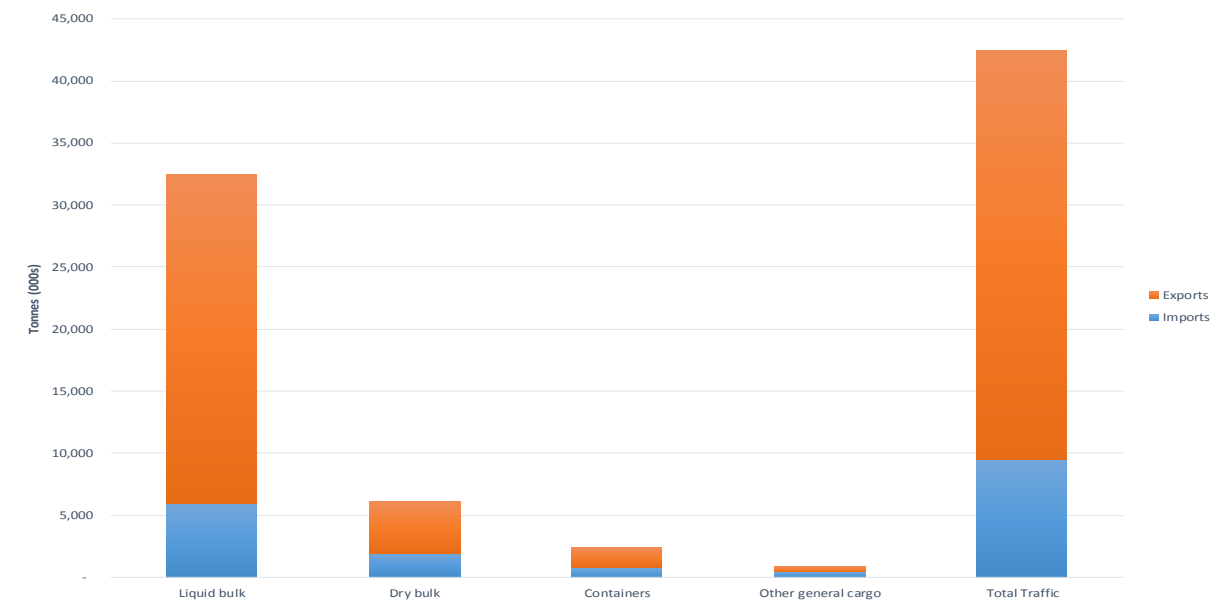
²¹ Table 9.7, STS No. 36, 2017 edition

Over the past 20 years, there has been a large shift away from domestic freight (to and from other ports in the UK) to imports from outside of the UK. In terms of share of total freight, compared to 1998, domestic freight carried by Scotland’s major ports has fallen by 8.3 percentage points, whilst the proportion of imports (from outside of the UK) handled by these ports has increased by roughly the same amount. While the absolute values of all freight have fallen, a greater proportion of ports’ traffic comes from handling exports (73% of their activity).

The 11 major ports connect to over 100 destinations worldwide, including other ports in the UK, mainland Europe, and further afield in China, South America and the Southern Hemisphere. As was highlighted above, the majority of goods handled by Scottish sea ports are outbound (export goods). This is highlighted by Glensanda which only ships outwards (bulk granite aggregates) to destinations elsewhere in the UK and to mainland Europe.

The main types of foreign traffic (both exports and imports) through the major ports in 2016 were crude oil (23.5 million tonnes), oil products (6.8 million tonnes) and other dry bulk (4.5 million tonnes). This is highlighted in the graph (Figure 7) below:

Figure 7: Type of international (foreign) freight and tonnage carried by Scotland’s Major Ports (2016)²²



Of the foreign freight traffic shown above, the Forth and Clyde ports combined accounted for 72% (30.6 million tonnes) of all foreign traffic into major ports in 2016.

In 2016, most exports handled by Scotland’s ports were destined for the Netherlands (10.8 million tonnes), China (6.4 million tonnes) and Germany (3.9 million tonnes), while most imports arrived into Scotland from Norway (1.8 million tonnes) and the Netherlands (1.6 million tonnes).

The Forth (27.4 million tonnes), Clyde (8.7 million tonnes) and Sullom Voe (6.2 million tonnes) ports accounted for the highest volume of freight traffic in 2016, while top

²² Table 9.6 (b), STS No. 36, 2017 edition

exporting ports for international traffic were the Forth (21 million tonnes); Sullom Voe (3.9 million tonnes) and Glensanda (3.4 million tonnes).

The Rosyth to Zeebrugge freight route was the only regular ferry route between Scotland and Europe up until early 2018 when the route was discontinued. This service carried 32,800 vehicles in 2016, a 24% decrease on 2015.

4.4 Road Connectivity

Scotland’s road network consists of over 56,000 km of roads, with 20% of the network comprising of trunk roads and motorways. In the last decade Scotland’s motorway length has increased by nearly 16%, whilst the length of A roads has increased by just over 2%²³.

The estimated volume of traffic on Scotland's roads in 2016 was around 46.4 billion vehicle kilometres, 2.3% more than 2015²⁴. The main trunk road / motorway connecting Scotland with England is the M74, which connects with the M6 on the Scottish / English border. This route provides a continuous motorway route from Scotland to mainland Europe via the Channel Tunnel. Other routes that cross the border include the, A1 north of Berwick-Upon-Tweed, the A6105 a few miles to the west, the A697 at Coldstream, the A68 at Carter Bar and the A7 north of Longtown. The trunk road network also links up Glasgow / Central Belt with Stranraer (Loch Ryan/Cairnryan) which is Scotland’s main port for Northern Ireland and Republic of Ireland. Traffic to Stranraer from the east / south is carried by the A75 from the M74/M6 interchange near to Gretna.

As has previously been highlighted, three quarters (75.3%) of freight in Scotland is carried by road (204 million tonnes). The vast majority of this (82% or 166.9 million tonnes) remains in Scotland. In total, only 18% of freight journeys originating on Scottish roads left Scotland for other UK destinations, 97% of which had a final destination in England (See Table 1 below)

Table 1 Quantity of freight lifted or arriving in Scotland 2016 (million tonnes)²⁵

	Scotland-Scotland	Scotland – rUK	Scotland - non UK
Tonnage Lifted	166.9	16.4	0.2
		rUK-Scotland	Non UK - Scotland
Tonnage Lifted		20.4	0.1
As a percentage of total tonnage	81.8%	18.0%	0.15%

The volume of Scottish road freight bound for/coming from international (non-UK) destinations is a small proportion of this total figure (less than 1 million tonnes in total, so approximately 0.15%). The vast majority of this international freight was exports, with only 128,000 tonnes of goods entering Scotland (imports) from non-UK countries in 2016, with 99% of which coming from destinations in the EU.

²³ STS No. 36, 2017 edition, Chapters 3 &4: Road freight and network

²⁴ STS No. 36, 2017 edition, Chapter 5: Road traffic

²⁵ Table 3.7 STS, No. 36, 2017 edition

Road freight to mainland Europe

Although the proportion of freight carried by road to mainland Europe is small it is still an important mode for transporting some of Scotland's key exports particularly perishable goods such as Scottish seafood to the main wholesale market in Boulogne sur Mer in northern France. The quickest route for transporting these goods by road to mainland Europe is via the motorway network (M74, M6, M42, M40 / M1, M25 and M20). However due to the time sensitive nature of this cargo, any delays en route can have a significant impact on the freshness, quality and price of such produce. At around 480 miles from the central belt, it is estimated that once the necessary breaks and formal booking in and out processes are taken into account, this can take between 12-14 hours. This is close to the daily limit of an HGV drivers legal hours. Even a 2 hour delay en route can be too long for the goods to reach market and be sold at a premium price. Perishable goods (and their refrigerated trucks) make up an unknown proportion of this Channel traffic.

Much of the data for international destinations include too small a sample size for an accurate estimate but of the data that can be reliably estimated, 32% of road freight bound for international destinations in 2016 (65,000 tonnes) went to France, while 12% (24,000 tonnes) went to Germany.

Using a simple calculation, taking the average freight weight of a lorry leaving/entering Scotland from outside the rest of the UK²⁶ (the maximum carrying weight for a UK HGV is currently 44 tonnes, so it is assumed that average weight taken is 30 tonnes) this suggests an average of 6,766 lorries a year from Scotland cross the Channel to Europe and 4,266 come back in the opposite direction.

The data available for the Channel ports suggests that between the port of Dover and Eurotunnel there are around 2.6 million HGV crossings a year²⁷. If this estimate is accurate then the Channel Port crossings by Scottish lorries account for less than 0.5% of total crossings. However, although this suggests the total freight travelling to / from Dover is small, this is a key gateway for Scottish traders and mainland Europe.

4.5 Rail Connectivity

Scotland's railway network consists of 359 stations across mainland Scotland with links further afield to the rest of the Great Britain via the East and West Coast. These routes are used primarily for passenger travel, with over 94 million passenger journeys being made between April 2016 and March 2017. Of these journeys (91.4%) had a destination within Scotland, further highlighting the importance of Scotland's rail network for internal connectivity.

The most recent published Scottish rail freight data is from 2012-13 and as such is difficult to compare levels across the modal types²⁸. As a point of reference, similar to the overall long-term decline in freight volumes, rail freight was also on a downward trajectory between 2005-6 and 2012-13. In 2012-13, 8.4 million tonnes of freight was lifted in Scotland by rail, 15% less than the previous year, and 41% less than the 2005-06 peak.

²⁶ [UK Domestic Road Freight Statistics](#), 2017

²⁷ [Dover Ports Statistics](#), 2017

²⁸ See [Scottish Transport Statistics 2017](#)

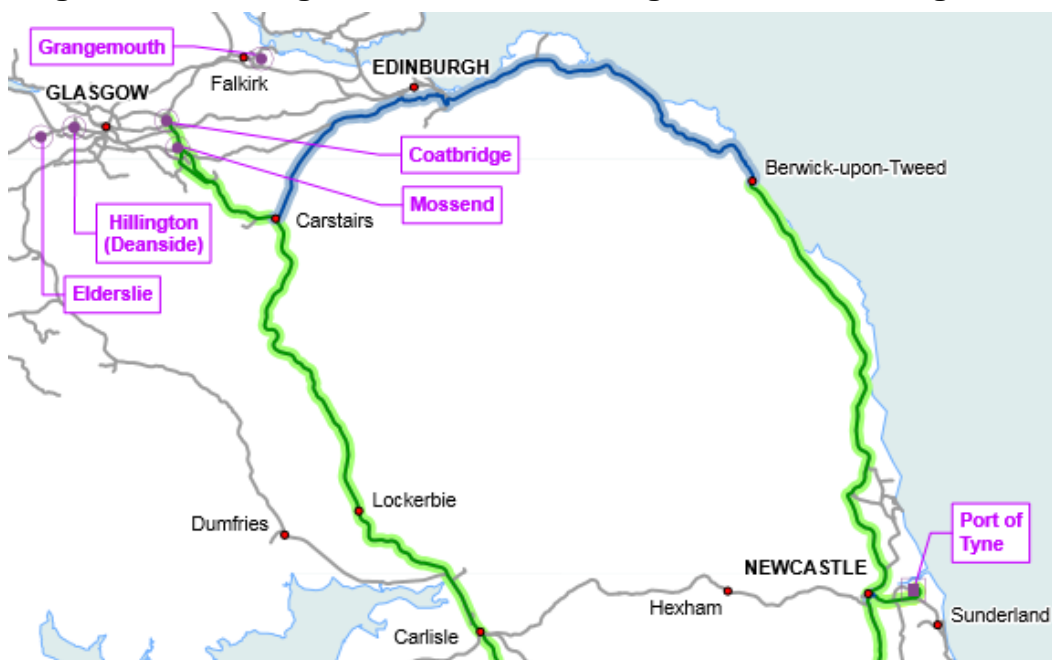
Cross-border passenger journeys originating out with Scotland have been increasing since 1994-95, with 4.2 million journeys of this type being made in 2015-16.

Rail freight data at a GB level also echoes this trend and it is evident that rail freight volumes have been on a steady decline since their peak in 2013-14. Rail freight columns increased by 60% from the mid-90s to 2013-14 but the rapid decline in coal traffic means volumes have fallen since then²⁹. In 1986 82 million tonnes of coal was rail, in 2016 this had reduced to 12 million tonnes. The decline in the transportation of coal can be linked to the decommissioning of UK coal-fired power stations. In 2016 Scotland's largest and only remaining coal-fired power station in Longannet, Fife was decommissioned, undoubtedly impacting of the volume of freight carried by rail in Scotland. For all categories of rail freight across Great Britain, the total volume of rail freight moved fell to 17 billion net tonnes kilometres in 2017-18, a 1.7% reduction on the previous year and down 5.7 billion net tonnes kilometres (25%) from the 2013-14 peak.

A recent report jointly commissioned by the Scottish Government and the Rail Delivery Group³⁰ highlighted rail contributing up to £670m in Gross Value Added annually to Scotland's economy, supporting up to 13,000 jobs and facilitating up to a further £650m in wider economic benefits. The rail freight sector is a key component of these figures. Rail freight is seen as a preferred option from an environmental perspective with each freight train said to take on average 60 HGV's off the road.

According to Network Rail, Scotland's main rail freight terminals are across the central belt. Going from East to West these are in Grangemouth, Mossend, Coatbridge, Hillington and Elderslie. The Network Rail figure below (Figure 9) shows the main rail freight route out of Scotland via Carlisle. Daily rail freight services connect Scotland to hubs and ports in England such as Felixstowe, Southampton, London and Liverpool. Tesco runs regular freight trains from their distribution centre in Daventry to Inverness using the West Coast and Highland Mainline. An overview of the Freightliner Coatbridge rail terminal is given in the following chapter.

Figure 9: Rail Freight Network Connecting Scotland with England



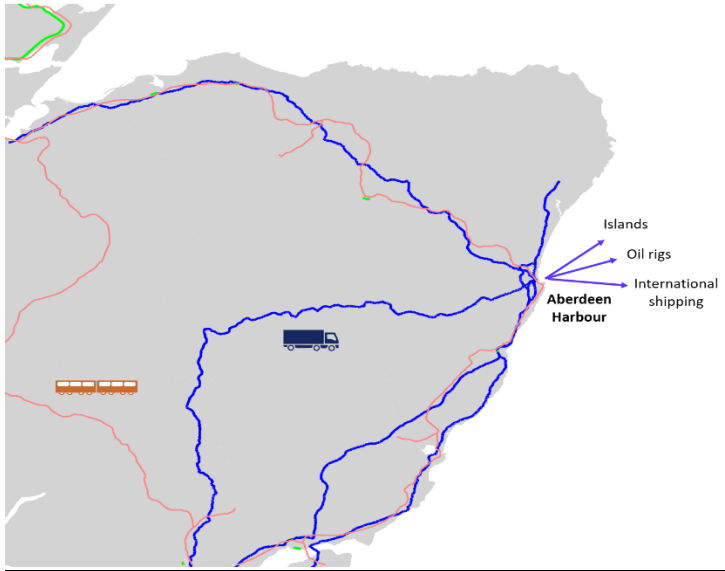
²⁹ Rail Freight Group, [Facts and Figures](#)

³⁰ [What is the Economic Contribution of Rail in Scotland?](#), TS & RDG Paper, Oxera, March 2016

5. Scotland's Key Transport Hubs

This chapter provides an overview of some of Scotland's key ports, airports, and road and rail terminals which are used to handle Scotland's freight.

Aberdeen Harbour



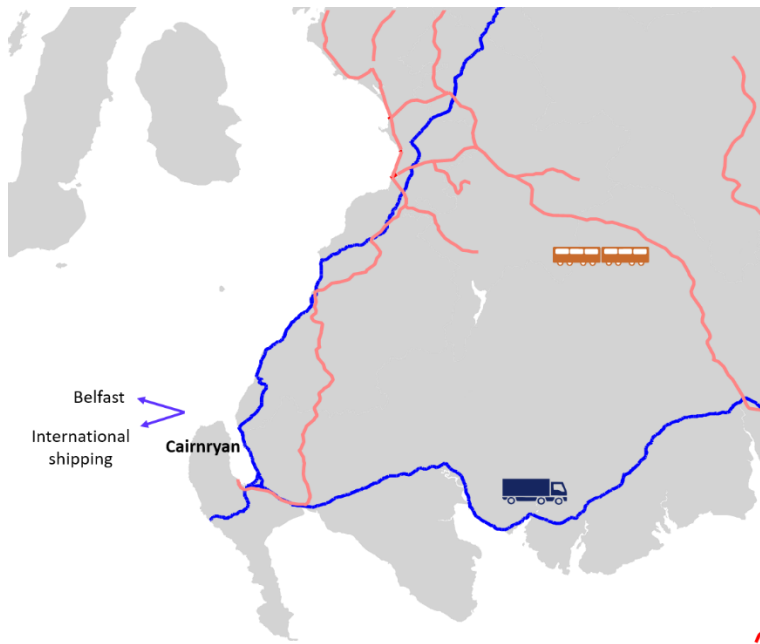
The harbour is the principal commercial port serving the north east of Scotland and is one of Europe's leading marine support centres for offshore energy. Operated by Aberdeen Harbour Trust and located in Aberdeen city centre it handles around 6,500 vessel arrivals and around four million tonnes of cargo, valued at approximately £1.5 billion annually. It has been estimated that it supports 12,260 jobs in the Scottish economy, with 9,565 of these jobs for the Aberdeen City and Shire economy. It is the key hub for servicing and the decommissioning of oil and gas platforms in the North Sea, and it is also one of Europe's leading marine support centres for offshore energy. It is major port of departure for the Baltic and also Scandinavia. Major exports include fertiliser, granite, and chemicals.

The harbour is close to the A90 and A96. The A90 is the main arterial route into the city from the north and south, linking Aberdeen to Edinburgh, Dundee, Brechin and Perth in the south and Ellon, Peterhead and Fraserburgh in the north. The A96 which starts in the city centre runs north to the Moray coast and Inverness. Aberdeen Railway Stations and depot is located adjacent to the harbour.

The harbour is currently being extended into the nearby Bay of Nigg / Torry, which will provide a facility for oil industry decommissioning work and cruise ships, and is due to be completed in 2020 at the cost of £350 million.

The Serco Northlink Ferry (SNF) Service to Orkney and Shetland operates from Aberdeen with there being up to 7 passenger and vehicle sailings a week. SNF freight vessels to the islands also operate from Aberdeen and currently there are sailings daily during peak months to service Kirkwall and Lerwick's Livestock transportation needs.

Cairnryan/Loch Ryan Port



Cairnryan / Loch Ryan are the main ports carrying goods and passengers between Scotland and Northern Ireland. Located approximately 80 miles south west of Glasgow on the A77, and 6 miles north of Stranraer on the eastern shore of Loch Ryan, it has two ferry terminal at the north and south of the village. The south terminal which is opened in 1973 is operated by P&O Ferries, with services to the port of Larne. The north terminal is operated by Stena Line linking to the Port of Belfast.

The port is the third busiest in the UK for carrying goods to and from Northern Ireland / ROI with around 400,000 freight units carried on this corridor each year (with Liverpool the busiest, followed by Holyhead). There are 13 daily crossings in each direction on this corridor providing a near turn up and go service.

The UK is the Republic of Ireland's largest trading partner (13% of exports from the Republic go to the UK, with the largest sectors being meat, pharmaceuticals and chemicals). The UK acts as a logistical lifeline that connects the Republic of Ireland to the rest of the EU, with 80% of Irish road freight that reaches mainland Europe passing through the UK.

As was observed in data collected by the South West Scotland Transport Corridor Study (due for publication in 2019) commissioned by TS, the exact end destination of freight carried through the port is difficult to track. A significant amount of freight carried by the vessels operating to/from Cairnryan / Loch Ryan is unaccompanied. Drivers on the Scottish side drop off and pick up trailers from the quayside and often did not know about the end destination of the goods they are transporting (Transport Scotland – due for publication 2019).

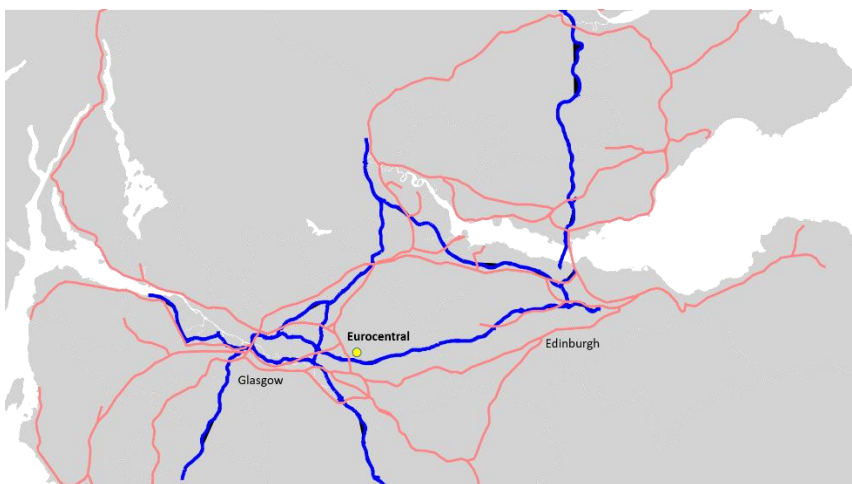
Edinburgh Airport



The airport is located 5 miles west of Edinburgh city centre and close to the M8 and M9 motorways. It is owned and operated by Global Infrastructure Partners, who are also the majority shareholder and lead the management of Gatwick Airport. The airport has one runway and one passenger terminal, and employs about 2,500 people.

In recent years Edinburgh Airport has become Scotland's busiest passenger airport, and is now the UK's 6th busiest airport. Since 1985 the number of passengers carried by the airport has increased tenfold. It is also the airport which carries the most freight in Scotland although the amount of freight carried has remained consistent over the last 10 years ³¹ (20,369 tonnes in 2016).

Eurocentral

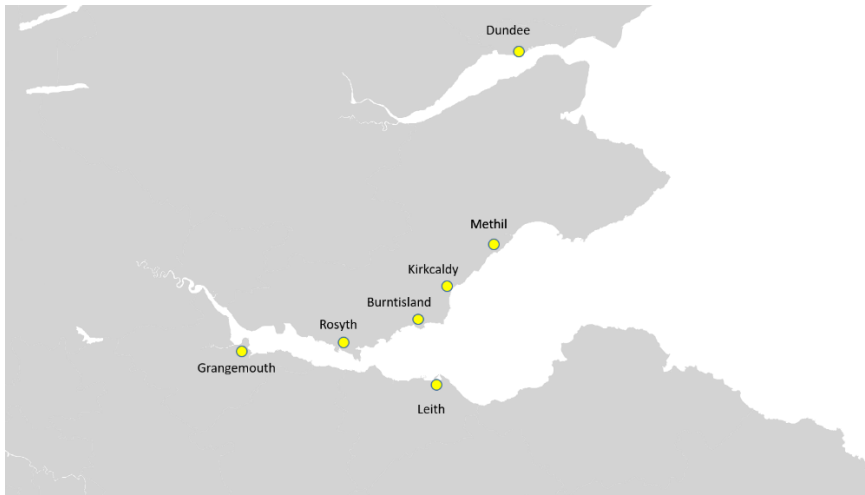


Eurocentral is Scotland's largest commercial site extending over some 650 acres and situated just off the M8 motorway 12 miles east of Glasgow city centre and 34 miles west of Edinburgh. It is within 40 minutes by road to Edinburgh and Glasgow airports. Current

³¹ During the equivalent period that had been a 16% reduction in the amount of freight carried through all of Scotland's airports.

tenants at the site include a number of logistics companies such as XPO Logistics, DX and Wincanton, major retailers Lidl, Morrisons, Next and Amazon, and is the Scottish printing press for News International. It is also the site of the Eurofreight rail terminal, and there are plans to expand this facility. Nearby Maxim Park is the UK's largest speculative office park development.

Forth Ports



Forth Ports owns and operates seven commercial ports on the Firth of Forth, and the Firth of Tay (Grangemouth, Dundee, Leith (Edinburgh), Rosyth, Methil, Burntisland, Kirkcaldy) covering 280 square miles of navigable waters. It also owns and operates Tilbury on the Thames. The ports are located close to the trunk road network (M9, M8, M90, A1, and A720) and to Edinburgh Airport.

Forth Ports is Scotland's largest port, with 27.5 million tonnes being handled by the port in 2017 a small increase on 2016 (27.4 million tonnes)³². However in 2017 it slipped in its ranking in the Top 10 UK major ports by tonnes carried from 7th place to 8th place.

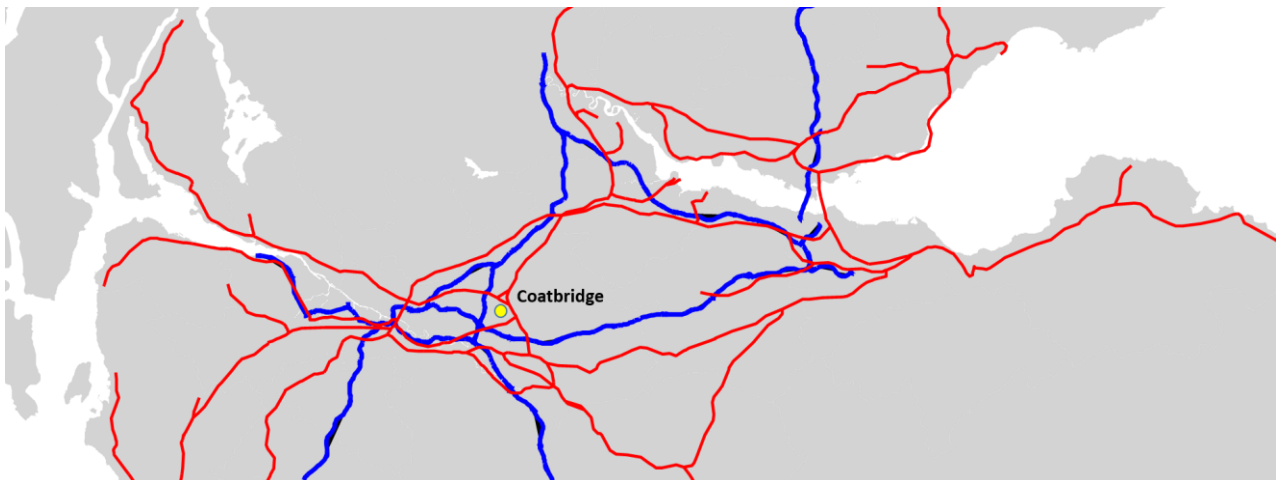
Over 50% of Scotland's GDP in goods goes through the River Forth and the River Tay, such as Oil & Gas, Food & Drink, Agriculture, Tourism, Manufacturing and Renewable Energy. Forth Ports also have two specialised marine terminals for oil and gas export, and operate Scotland's largest container terminal at Grangemouth which handles over 225,000 Unit's each year. In 2017 it was the second largest port in the UK for handling liquid bulk (crude oil, oil products, liquefied gas, and other liquids).

Until April 2018 DFDS provided a freight ferry service three days a week from Rosyth to Zeebrugge. However following a fire on one of the vessels this service was withdrawn. A service had been operating from 2002 initially as a passenger and freight service.

³² DfT (2018) UK Port Freight Statistics 2017:

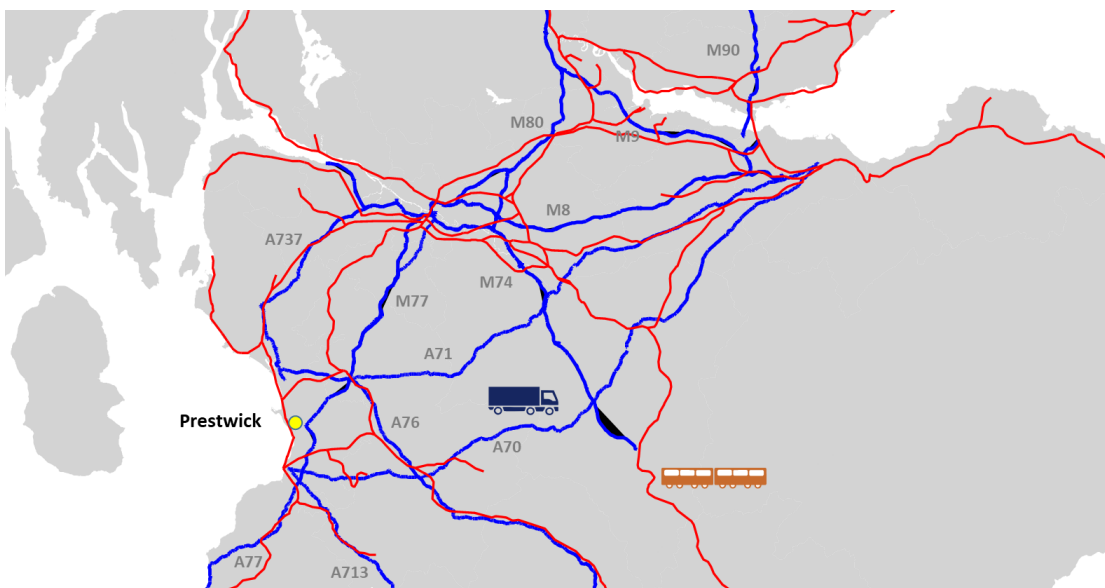
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/739789/port-freight-statistics-2017.pdf

Freightliner's Coatbridge Terminal



The terminal handles the majority of rail freight in Scotland. The 20 acre site located on the Motherwell to Inverness main line and situated between Edinburgh and Glasgow, is located close to the Central Scotland trunk and motorway network and road distribution centres. Given its central location it handles most intra-Scotland rail moves, further enhanced by its location close to major RDCs, key Scottish exporters and principal road haulage hubs. It has eight rail sidings with six rails under the cranes. There are two rail areas, each with three rail sidings and served by two overhead gantry cranes. The facility has storage capacity for 250 TEU (Twenty-Foot Equivalent Unit) laden and 1600 TEU empty. It runs a daily services to / from each of the key ports: Felixstowe (once a day), Southampton (twice a day), London Gateway (daily), and Liverpool (daily). It also handles three services per day to and from Daventry / Purfleet for Direct Rail Services Ltd.

Glasgow Prestwick Airport



Situated 34 miles south west of Glasgow city centre Glasgow Prestwick Airport is an important gateway for freight and passengers. The airport is currently owned by the Scottish Government. The airport employs over 320 people and a further 1,700 jobs

through its supplier network. SG see the facility as an important infrastructure asset that helps to sustain jobs in the west of Scotland (in excess of 4,000 jobs). Over 50% of the country's aerospace workforce are employed in Prestwick, although not directly by Glasgow Prestwick Airport Limited.

The airport is connected to the trunk road network through the nearby A77 which connects Glasgow with the port of Stranraer. It is also on the Ayrshire Coastal railway Line (Ayr-Glasgow) and is the only Scottish airport with its own dedicated railway station.

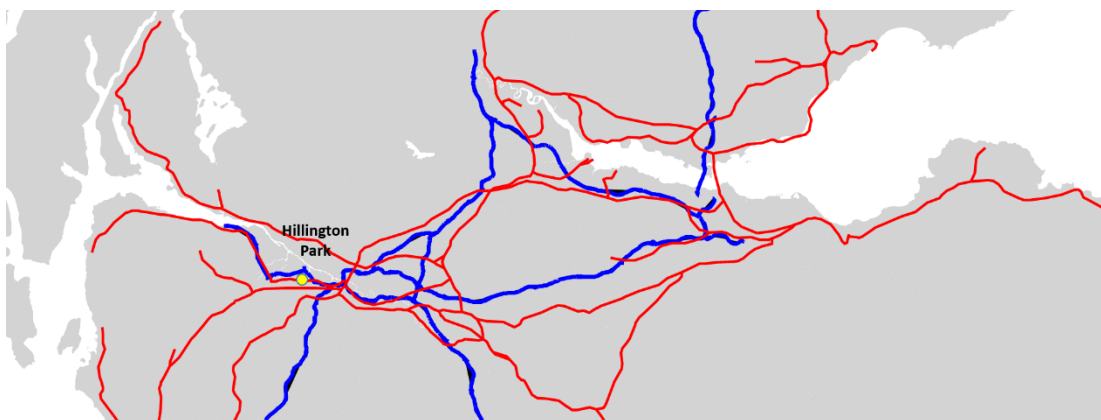
Passenger numbers at Prestwick have declined markedly over the last 10 years (in 2006 - 2,395,000 annual passengers compared to 672,000 in 2016) partly as a result of rapid expansion and better connectivity at Glasgow and Edinburgh airports, and consolidation by low cost airlines in major airports. There has also been a decline in the amount of freight carried through the airport (in 2006 28,537 tonnes of freight were carried through the airport, compared to 10,822 tonnes in 2016). However it is worth noting that there has been a decline in Scottish air freight throughout this period - 83,260 tonnes in 2006 compared to 55,392 tonnes in 2016.

Glensanda

Glensanda port, situated on the western shore of Loch Linnhe on the Morvern Peninsula, is operated by Aggregate industries UK Ltd. Given its remote location and as vehicles are unable to access the quarry by road then the port is engaged exclusively in the shipping out of granite aggregates from the adjacent Glensanda Coastal Super quarry which is the largest granite quarry in Europe. The quarry has an annual production capacity in excess of 9 million tonnes and a massive 760 million tonnes reserve of granite. The port is one of the UK's top ten tonnage ports, and has a fleet of its own purpose built ships which includes the Yeoman Bontrup and Yeoman Bridge – the largest gravity fed self-discharging bulk carriers in the world, each able to carry 100,000 tonnes of granite.³³

Since the port opened over 30 years ago, in 1986, there have been in excess of 5,500 shipments from the port to projects throughout Europe. In 2017 it handled 6 million tonnes in freight.

Hillington Park



³³ <https://www.aggregate.com/news-and-resources/press-releases/glensanda-marks-30-years-shipping>

Established in 1938, Hillington Park is Scotland's largest business park and home to over 500 organisations employing over 8,000 people.³⁴ Frasers Property acquired Hillington Park in November 2017. Located on the M8 between Glasgow City Centre and Glasgow International Airport, it is also well serviced by being the site of two train stations as well. Current tenants at the site include a number of logistics companies including JG Russell's large freight park (who are one of Scotland's largest logistics firms with over 250 vehicles and 1000 trailers³⁵) as well as smaller logistics firms such as MIQ and SEKO and a range of large retailers.

Orkney Islands Harbour Authority

The Harbour Authority operates 29 piers and harbours across the Orkney Isles, which includes Scapa Flow, Europe's largest natural harbour at 125 square miles. Some of the smaller harbours operated by Authority provide local inter-island ferry services, whilst the larger ferry terminals at Kirkwall, Stromness, and St Margaret's Head connect the main island to the Scottish mainland. The amount of freight leaving Orkney increased by 5% between 2016 and 2017 to over 4.6 million tonnes.³⁶

The Orkney Islands continues to be the most popular cruise ship destination in the UK, with over 140 cruise ships calling into Kirkwall and Stromness annually. With destinations including Iceland, Norway, Denmark and Germany as well as around Scotland's Highlands and Islands.

Ship to Ship operations of crude oil cargo have been conducted in Scapa Flow since 1980. The deep, sheltered water of Scapa Flow and its sheer expanse holds around 1 billion cubic metres of water, which offers unrivalled sheltered, swell and tidal stream free anchorage in northern Europe. In 2007, an historic milestone was reached when the world's first Ship to Ship transfer of liquefied natural gas took place in Scapa Flow.³⁷

Hatston pier just outside Kirkwall, is Scotland's longest deep-water commercial berth, and attracts oil and gas support vessels, some of the world's largest cruise shipping, freight and passenger ferry services and a sheltered berthing facility with extensive quay space for short term operational and maintenance activity for the marine renewable industry.

Furthermore, Orkney is home to the largest crab processing plant in Europe. It is not just the oil and gas industry that benefits from the deep sheltered waters of Scapa Flow. Commercial fishing for prawn, crab, lobster and scallop and the recent development of large scale salmon farms contributes a significant commercial value to the local economy. These premium products are shipped to restaurants across Europe.

There is a robust freight service by boat from the islands to the mainland, although as with other freighting routes, it is difficult to ascertain the end destination of the freight itself after it reaches the mainland. The Serco Northlink Ferry (SNF) Service operate frequent freight and passenger services from Kirkwall to Aberdeen and daily ones from Stromness to Scrabster. Pentland Ferries also operate a daily service between St. Margaret's Hope on Orkney to Gills Bay on the Scottish Mainland, carrying 80% of all livestock and dangerous goods cargoes between the two.

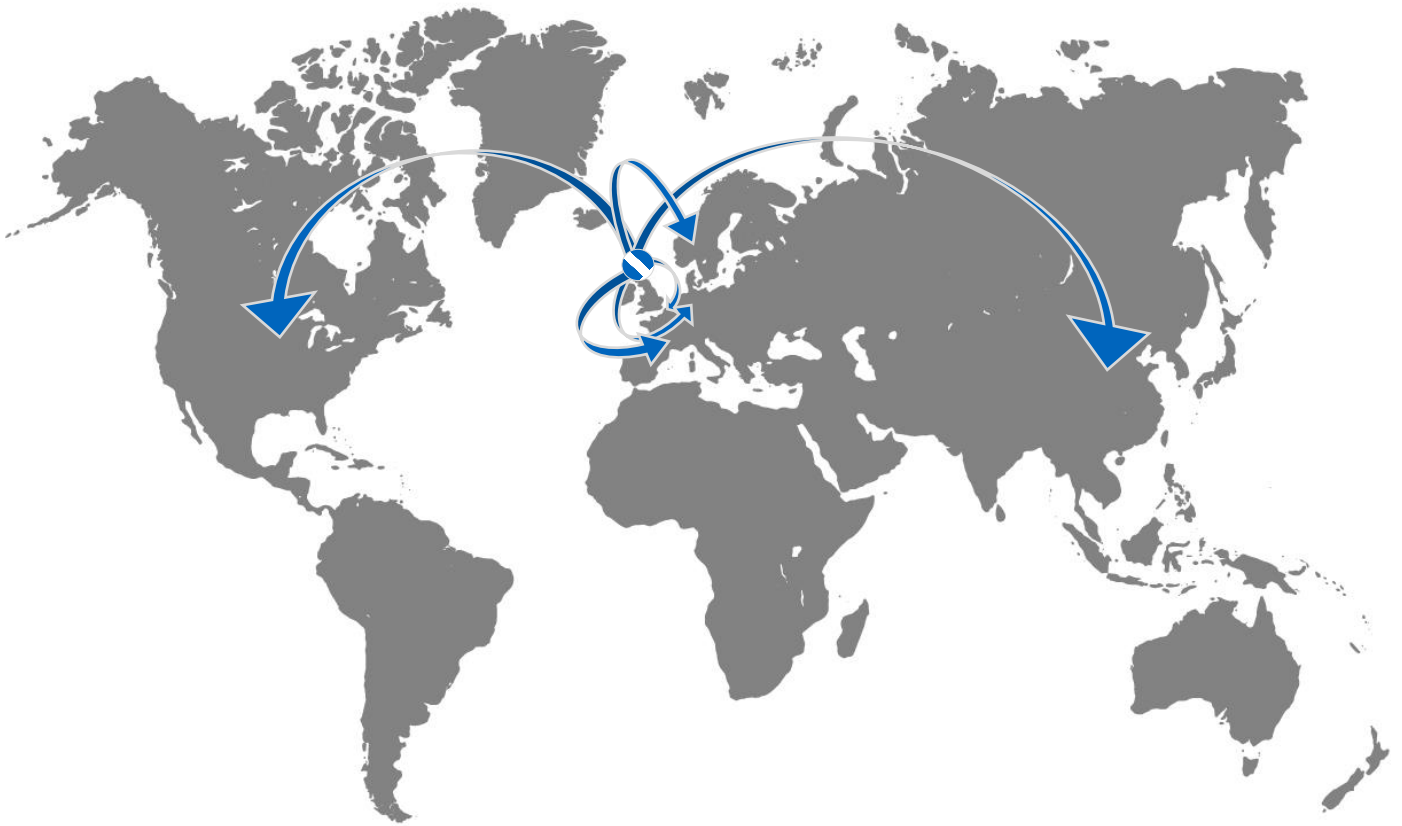
³⁴ <https://www.hillingtonpark.com/about-us/>

³⁵ <http://www.johngrussell.co.uk/services/distribution/>

³⁶ <https://www.gov.uk/government/collections/maritime-and-shipping-statistics#port-and-domestic-waterborne-freight-statistics>

³⁷ <https://www.orkneyharbours.com/sectors/oil-gas>

6. Transport Links to Key Trade Destinations



This chapter provides further details of the top 5 nations which Scotland exports to (the Netherlands, USA, Germany, China and France) with details of the key freight links to and from them. Four of these countries are also in the top 5 of the countries which Scotland imports from (USA, China, Germany and the Netherlands), with Norway being the additional country making up Scotland's top 5 import countries, so an overview of freight to Norway is also included.

As was highlighted earlier in the report, the Republic of Ireland up until 2016 had been one of Scotland's Top 5 export partners. Although the total proportion of Scotland's exports to the Republic has decreased, the country still remains an important strategic trading partner for Scotland and so an overview of trade to Ireland is included, as well as to Northern Ireland.

As has been highlighted earlier in this report key export commodities from Scotland include beverages, fish, petroleum related products, and power generation machinery. Many of these goods are produced by businesses operating in Scotland's Growth Sector. Similar categories of goods are also imported by Scotland along with gas, telecommunication, and office equipment. An overview of the key commodity categories with Scotland's Top 6 trading partners is given in the Annex (Table 2). Details of the transportation of these goods to/from the 6 countries is discussed below.

6.1 Norway

Since 2013, Scotland has imported more goods from Norway than any other nation. Over that time, imports from Norway have totalled more than £19.4 billion. The majority of goods imports are related to the energy and fuel markets, which reflects both countries' close involvement in North Sea oil and gas production and exploration. Natural Gas, Petroleum products and related materials are transported to Scotland using ports and pipelines connecting Norway and the UK.

As aforementioned, a large proportion of natural gas (Scotland's largest import good from Norway) travels via pipeline to Scotland from Norway. The trade market for this good is valued at around £3.1 billion³⁸ to the Scottish economy.

A significant part of Scottish exports to Norway are large machinery items and transport equipment. Some of these larger high value items travel in cargo planes bound for Norway, while other smaller items are able to travel in the hold of passenger flights. This is similar to seafood which is traded with Norway with an ever-growing amount being transported along commercial and passenger aviation transport routes.

Freight ferries travel twice weekly from Immingham on England's east coast to Norway with road links from Scotland to Immingham via the A1(M) and A180(M).

In terms of passenger flights, Scottish travellers can fly to Norway from any one of Scotland's 4 major airports; Aberdeen, Edinburgh, Glasgow and Inverness, with flights into the capital (Oslo) leaving from Scotland almost daily.

6.2 EU Countries

Three of Scotland's top trading partners are EU nations; the Netherlands, France and Germany. The key commodity group for goods exported and imported to the three countries is 'Machinery and transport equipment'. As was highlighted in Chapter 3, freight to and from mainland Europe can be carried in a number of different ways. For instance some perishable goods are transported via the trunk road / motorway network in Scotland and England to the Channel Tunnel or Channel ferry terminals, or air. Less time sensitive perishables may be transported on freight vessels from Scotland's ports or transported to North Sea ferry service terminals in Newcastle and Hull which offer overnight ferry services to continental Europe.

At the moment there are no direct rail freight services from Scotland to mainland Europe, however non-perishable freight can be carried by rail to hubs in England for transfer by rail or other modes to European destinations.

6.2.1 France

Scotland imports a large amount of power generating equipment from France. This includes engines for vehicles, turbines, regulators and generators. These goods are

³⁸ HMRC RTS, Q2 2018

often shipped via coastline shipping as well as bulked smaller items being transported by air.

France is also the largest EU market for Scotch whisky and seafood exports. The main wholesale market for Scotland's seafood on the European mainline is Boulogne sur Mer located close to Calais in northern France. This is accessible via the Dover Channel Crossing. Scottish freight vessels can travel to the Channel in a day, so this corridor is of vital importance to trade with France and the rest of Europe.

Scotland's primary links for trade with France are via road and port. HGVs carry goods down to Dover where they board ships to transfer over to France. Scotland has a number of air links with France, with flights to 20 different French airports available from one of Scotland's 5 major airports.

6.2.2 Germany

Similar to above, Scotland has a number of air links with Germany, with direct flights from Scotland to 17 German airports.

An important commodity exported to Germany is Scottish beverages which in 2016 totalled over £162 million. This represents 4% of total Scottish beverage exports in 2016, and 6% of all Scottish exports to Germany. While Germany is the UK's largest export market, this is not the same for Scotland with Germany accounting for 9.5% of all Scottish trade in goods (imports and exports) in 2016. Having said that, transport links between Scotland and Germany are vital for Scottish trade, with Germany being the largest economy in Europe in terms of GDP and one of the strongest in the world.

In terms of road transport, freight data shows that while most country level data is too small to be accurately used, data for 2016 shows that 12% of all Scottish freight bound for international (non-UK) destinations went to Germany. Road freight travelling from Scotland to any of the countries in continental Europe, as mentioned before, is likely to go via the Dover-Calais port crossing and/or the Eurotunnel.

Links between Scotland and Germany via ports are likely to be either charter ships carrying special goods into one of Germany's many Northwest ports (the three largest ports are Bremen, Hamburg and Wilhelmshaven), or taken into France or Netherlands via ship before a modal shift to road or rail for the remainder of the journey.

6.2.3 The Netherlands

As has been highlighted earlier the Netherlands is Scotland's key export destination (£4.3 billion in 2017) as a result of the dominance of the Dutch port of Rotterdam. The port acts as an international shipping hub with goods shipped on to other destinations from there. Due to the method in which export / import data is collected it is difficult to ascertain the final destination of goods which may pass through Rotterdam. Freight is typically carried by chartered vessels originating from Scottish ports or by road to ports on the east coast of England. Some of the freight to the Netherlands is be carried by road via the Channel ports. While there are no regular

scheduled sailings between the Netherlands and Scotland, the overnight ship between Newcastle and Amsterdam is an option for travellers and for HGVs. The main import good from the Netherlands is in office machines and telecommunication materials. Key exports to the Netherlands from Scotland include; Petroleum products, Medicinal & pharmaceutical products, and beverages, with these three goods alone accounting for 87% of total Scottish exports to the Netherlands in 2017.

Scotland's top 4 airports offer regular passenger flights to the four main airports in the Netherlands; Amsterdam, Maastricht, Rotterdam and Eindhoven.

6.2.4 Republic of Ireland and Northern Ireland

Although in 2016 the Republic of Ireland dropped out of Scotland's top 5 export destinations, it is still a core market for Scottish goods. In 2016 Scotland exported £1,025 million goods to the Republic accounting for 3.4% of Scotland's total exports. The main category of goods traded with the country are gas (natural and manufactured), petroleum and petroleum related products, and beverages.

Northern Island is also an important destination for Scotland's goods, however given the nature of export data and the fact that Northern Ireland is part of the UK, values and goods exported to or imported from the country are included in overall UK figures and are not easily disaggregated.

The main transport freight corridor between Scotland and the island of Ireland is via the ferry and freight services which operate from Cairnryan / Loch Ryan. There are a total of 13 daily sailings to Larne or the Port of Belfast, with an estimated 400,000 freight units carried on this corridor (around 1,200 a day). Two main trunk roads link the port with the central belt (A77) and from the east / England (A75). The two roads are estimated to carry a combined estimated £67 million worth of goods per day³⁹. All of Scotland's main airports have regular flights to a variety of destinations in both Northern Ireland and the Republic (Belfast, Derry, Dublin, Cork, Knock, Kerry, Shannon and Waterford).

6.3 Further afield

While the ports in mainland Europe are vital for Scottish trade, Scottish businesses regularly transport goods even further overseas, with chartered aircraft and ships travelling to Africa, South America and Asia, carrying a variety of goods.

6.3.1 USA

Similar to the EU countries that feature in Scotland's top trade partners, USA is a key market for Scottish beverage exports, even more so than France, Germany and the Netherlands. In 2017, the USA alone accounted for over 25% of all Scottish beverage exports.

Beverage exports are Scotland's second largest export good, valued at £4.1 billion in 2016. The United States is Scotland's single largest overseas market for Scotch whisky, accounting for £1.1 billion (25%)⁴⁰ of all Scotch whisky exports in 2017.

³⁹ A75-A77 Freight Corridor, Scotland Travel Study report, March 2018

⁴⁰ Scotch Whisky Exports Analysis [2017](#)

Over the last decade a number of scheduled passenger flights from Glasgow and Edinburgh Airports to the United States have been introduced. Scheduled airlines now fly from Edinburgh to New York JFK; New York Newark; Chicago, Washington DC, Philadelphia and, from summer 2019 to Boston. Glasgow has direct routes to New York JFK and New York Newark. Seasonal flights also operate to Orlando and Las Vegas.

These flights are often used to carry low volume freight, for instance time sensitive blood and human tissue. Dedicated air freighters regularly use Prestwick Airport to carry aircraft engines between Scotland and the USA. These are usually entire engines which are transported to Scotland for overhaul or repair before being shipped back.

In addition to these air links, a number of charter ships leave regularly from Scotland to the USA. From the Clyde ports, Scotland ships goods to the USA regularly, these include agriculture bulk goods and forestry goods. Aberdeen Harbour handles machinery and equipment goods imports from the US, and ships oil related goods back.

Both the USA and China are important import and export destinations for Scotland's ports, particularly in relation to Office, Automatic Data Processing, power generating and other transport machinery. Due to the bulk of these items these can only be handled by main ports such as Clyde Port and Aberdeen Harbour.

6.3.2 China

In March of 2018, Scotland secured its first direct air route to China, with direct links between Edinburgh and Beijing. The first flights were in June 2018 and although these are passenger flights, this created a direct link for Scottish goods exporters, particularly in the food and drink sector, for which China are a major importer from Scotland.

In addition to this and similar to that mentioned above, in terms of port freight travel, Scotland exports goods to China from a number of its ports – these include the Forth and Clyde Ports. These goods include steel, and power generating equipment.

Data from the latest HMRC RTS show that Scotland also export a large amount of oil and oil related products to China. In 2017, Scotland exported £3.96 billion worth of Petroleum, petroleum products and related materials to China, this was a 44% increase in the previous year. These goods travel via tanker to China and are likely to be loaded onto ships from various ports around the UK.

Scotland's link with China does not only promote trade with Chinese businesses but also provides Scottish exporters access to additional markets in and around South East Asia. This is therefore a vital gateway into other emerging and developing market economies for Scottish goods.

Annex

Table 2: Top Import and Export Goods by SITC code for each of Scotland's top Importing and Exporting Countries

Country	Import Goods (SITC Code)	Export Goods (SITC Code)
Norway	<ul style="list-style-type: none"> • Petroleum, petroleum products & related materials (33) • Gas, natural & manufactured (34) 	<ul style="list-style-type: none"> • Other transport equipment (79) • General industrial machinery and equipment (74)
France	<ul style="list-style-type: none"> • Beverages (11) • Power Generating Machinery & equipment (71) 	<ul style="list-style-type: none"> • Fish, Crustaceans, Molluscs (03) • Beverages (11)
Germany	<ul style="list-style-type: none"> • Power Generating Machinery & equipment (71) 	<ul style="list-style-type: none"> • Petroleum, petroleum products & related materials (33) • Beverages (11)
Netherlands	<ul style="list-style-type: none"> • Office machines and automatic data processing (adp) equipment (75) • Telecommunications, sound recording and reproducing equipment (76) 	<ul style="list-style-type: none"> • Medicinal & Pharmaceutical products (54)
China	<ul style="list-style-type: none"> • Office machines & adp equipment (75) • Telecommunications and sound recording & reproducing apparatus (76) 	<ul style="list-style-type: none"> • Petroleum, petroleum products & related materials (33) • Beverages (11)
USA	<ul style="list-style-type: none"> • Power generating machinery & equipment (71) • Other transport equipment (79) 	<ul style="list-style-type: none"> • Beverages (11) • Power generating machinery & equipment (71)

Table 3: Change in Scottish Export Good Proportions over 5 years

Export Good (by SITC code)	Share of Total Exports in 2013	Average Annual Growth (2013-17)	Share of Total Exports in 2017
0 - Food & live animals	3.7%	8.7%	5.7%
1 - Beverages & tobacco	12.9%	0.2%	14.2%
2 - Crude materials, inedible (excluding fuels)	1.8%	-1.5%	1.8%
3 - Mineral fuels, lubricants & related materials	38.9%	-5.2%	31.3%
4 - Animal & vegetable oils, fats & waxes	0.1%	1.3%	0.1%
5 - Chemicals & related products	7.7%	-0.3%	8.2%
6 - Manufactured goods classified chiefly by material	7.4%	-1.2%	7.5%
7 - Machinery & transport equipment	21.8%	0.4%	24.2%
8 - Miscellaneous manufactured articles	5.3%	3.5%	6.7%
9 - Commodities/transactions not classified elsewhere	0.4%	-11.3%	0.2%

Table 4: Top 11 Ports in Scotland with Freight volumes and change (2006-2016)

Ports	Total Freight Traffic of Scottish Major Ports (000s tonnes)		
	2006	2016	% change
Aberdeen	4,609	3,777	-18.2%
Cairnryan	3,274	2,740	-16.3%
Clyde	15,737	8,742	-44.4%
Cromarty Firth	3,325	395	-88.1%
Dundee	1,222	534	-56.3%
Forth	34,218	27,439	-19.8%
Glensanda	5,439	5,487	0.9%
Orkney	14,534	4,615	-68.2%
Peterhead	928	1,148	23.7%
Stranraer/Loch Ryan	1,165	2,356	102.2%
Sullom Voe	20,541	6,183	-69.9%
TOTAL	104,992	63,409	-39.6%



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ISBN: 978-1-911582-64-9
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Produced for Transport Scotland by APS Group Scotland
Published by Transport Scotland, December 2018

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