Title	Freight transport to from & within UK from official statistics – Briefing report
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Number (ERG-TR)	ENG-TR.039
Date	30th January 2024
ISSN	2633-6839

Centre for Sustainable Road Freight

FREIGHT TRANSPORT ACTIVITY TO, FROM AND WITHIN THE UK PROVIDED BY OFFICIAL STATISTICS

Briefing Report

Technical Report XXXX

XXXX 2024

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University of Westminster

This briefing report has been produced as part of the Centre for Sustainable Road Freight (SRF – EPSRC grant number EP/R035148/1). Further details about the SRF project are available at: http://www.csrf.ac.uk/

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1. Introduction

This report provides insight into international freight transport activity to and from the UK as well as domestic freight transport within the UK by all modes. It makes use of official UK government data to do so. It is intended to supplement the SRF briefing reports that consider the interaction between logistics land and freight transport activity, especially the reports into warehousing; land use and infrastructure requirements of all freight modes; and the impacts of Covid and Brexit on logistics land.

It should be noted that much of data concerning freight transport in this report are expressed in tonnes (tonnes lifted and tonne-kilometres). This is due to a lack of due to a lack of available freight data about the volume of goods transported. Department for Transport freight surveys do not collect data about the volume (i.e. cubic size) of goods transported. There is a general lack of data availability of volume based measures of freight lifted and moved despite the importance of the bulk density of products and unit loads transported in freight transport efficiency. Any changes in the bulk density of products being transported (through the substitution of heavier materials with lighter ones in the manufacturing process) and the effect of this on goods vehicle operations is therefore not reflected in the data presented. Further discussion of the limitation of this official government data is provided in **Appendix 1**.

Until 2010, the Department for Transport published data showing the limiting factor on loads carried by HGVs (weight, volume, or both). In 2010, of those tonne-kilometresthat were limited, 4% were limited by weight, 43% by volume and 53% by both in 2010. This indicates that HGV activity was more hampered by vehicle volume constraints than weight constraints (calculated from data in Department for Transport, 2011).

The decline in the freight transport of coal over the last fifteen years, due to decarbonisation policies in the UK, needs to be borne in mind when studying data showing total tonnages of goods transported. However, the decline in the use of coal has been partially offset by an increased use of wood pellets in power stations. Other replacement renewable energy sources, such as wind and solar, do not require freight transport other than in the constructing and setting up of their infrastructure, and therefore these changes in energy policy can have important effects on the tonnes of freight lifted and moved in an economy.

Domestic freight transport by rail and water tends to be used to carry a greater proportion of products with high bulk densities over long distances compared with road freight transport. These include building materials such as sand, gravel, stone and cement, as well as steel, oil and chemical products. Weight-based data does not reflect the far smaller volume of such goods that are transported compared with less dense products. If volumetric data was available, it would further accentuate the importance of road freight transport over rail and water for domestic transport in the UK.

As McKinnon has noted, the lack of data about the volume of goods transported is not surprising given that weight is much easier to measure than volume, especially as many freight consignments can have irregular shapes. In addition, weight-based measures also correlate more closely with energy use and ‘wear-and-tear’ on transport infrastructure. However, volumetric freight data provides insight into the vehicle and container space required and gives greater insight into the utilisation of vehicle capacity (McKinnon, 2010).

This report does not address the efficiency with which freight transport vehicles are used. An analysis of the efficiency of use of HGVs operated domestically within the UK using official government data is available in Allen and Piecyk, 2024. Data on the efficiency of use of other freight transport modes is not collected in official government statistics.

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2. Factors affecting freight transport activity levels

The quantity of freight lifted and moved to and from the UK and within the UK is subject to many supply chain, transport, economic and social factors that can change over time and therefore should be noted in any consideration of long-term trends in freight activity (McKinnon, 2007, 2018). **Table 2.1** shows these factors and indicates whether they affect the tonnes lifted, tonne-kilometres, and/or vehicle kilometres in the UK.

It should be noted that official UK domestic road freight transport data collected and published by the Department for Transport only includes activity carried out by HGVs. It does not include goods transport by light goods vehicles (LGVs – i.e. goods vehicle up to and including 3.5 tonnes gross weight. The goods transport activity by these LGVs impact on total tonnes lifted, tonne-kms and vehicle kms involved in UK freight activity but are not recorded or reported on.

It is also important to note that the vast majority of freight transport activity statistics rely on weight-based units of measurement (such as tonnes and tonne-kilometres). This is a reflection of the ease with which weight can be measured in contrast with other measures such as area and volume as well as the requirement of its use for commercial, operational and legal reasons (McKinnon, 2021). Few studies of the volume utilisation of freight transport operations have been carried out due to the lack of available data for doing so, but those that have taken place in road freight operations in the UK indicated the under-loading of vehicles by area and volume in many operations as well as variation between operations and sectors (McKinnon, 2009).

Water and rail freight transport have traditionally carried a greater proportion of products with high densities than road freight (such as coal, oil and chemicals, aggregates, cement, steel and other metals etc.). This difference in the bulk density of products carried by different modes is reflected by their share of tonne-kilometres when modal split comparisons are made.

Table 2.1: Factors that affect total tonnes lifted, tonne-kilometres and vehicle kilometres performed to, from and within the UK by freight transport vehicles

Factor	Specific issue	Impact on tonnes lifted	Impact on tonne-kms	Impact on vehicle kms
Change in production methods and techniques	Digitalisation of various products including paperwork, newspapers, books, films and music resulting in them not requiring freight transport	✓	✓	✓
	Lightweighting and miniaturisation of goods (i.e. substituting heavy for lighter materials in product manufacture as well as making them smaller)	✓	✓	✓
	Use of lighter and less packaging materials (e.g. the use of fewer tinned food products)	✓	✓	✓
	Increased levels of goods recycling, reuse and remanufacturing of products	✓	✓	✓
	Use of additive manufacturing processes (such as 3D printing)	✓	✓	✓
	Postponement of product customisation and packaging to nearer to consumption or use location	✓	✓	✓
Changes in the demand for specific types and quantities of products	Customer demand by product type	✓	✓	✓
Changes in the structure of the UK economy	Rise in importance of service sector (generates less &less heavy freight than manufacturing)	✓	✓	✓
	Relative decline of the UK manufacturing sector	✓	✓	✓
	Increased dependence on imported materials and finished goods	✓	✓	✓
	Less consumer spending on products in recent years (and more spending on activities and experiences such as holidays, visiting entertainment venues etc.)	✓	✓	✓
Changes in freight transport modes used	Relative cost/service of freight transport modes for international and domestic movements	x	✓	✓
Changes in the energy system	Producing electricity and other energy requirements from renewable sources rather than fossil fuels	✓	✓	✓
Reduction in number of links in the supply chain	The number of locations that goods are transported between in their supply chain	✓	✓	✓
Change in the relative cost of freight transport	Trade-off between freight transport costs and warehousing / stock holding costs	✓	✓	✓
Spatial / location factors	Change in the extent of spatial concentration in product supply chains	x	✓	✓
	Goods traffic imbalances between places where products are produced and consumed	x	x	✓
Means of improving efficiency of vehicle operations	Use of dynamic (real-time) computerised routeing and scheduling	x	✓	✓
	Carrying capacity technologies (higher capacity vehicles; lightweighting vehicles; product, packaging and vehicle dimensional compatibility etc).	x	x	✓
	Operational initiatives (e.g. collaboration between operations; data sharing; relaxing delivery time windows; permitting off-hours deliveries etc.)	x	x	✓
	Regulation (e.g. permitting higher capacity vehicles; operating hours; licensing regulations concerning carrying other firms' goods etc.)	x	x	✓

Source: based on issues discussed in McKinnon, 2007, 2018.

3. International freight transport to/from the UK

3.1 Total international freight transport

Using UK Department for Transport data it is possible to estimate the importance of transport modes used for goods imported into the UK (see **Table 3.1**). Maritime shipping (i.e. sea-based transport) is by far the most important mode, responsible for lifting 94% of all imported freight tonnage in 2021. Rail via the Channel Tunnel (both through freight trains and goods vehicle carried on Le Shuttle) accounted for approximately 6% of tonnage of goods imported, and air freight for less than 1%.

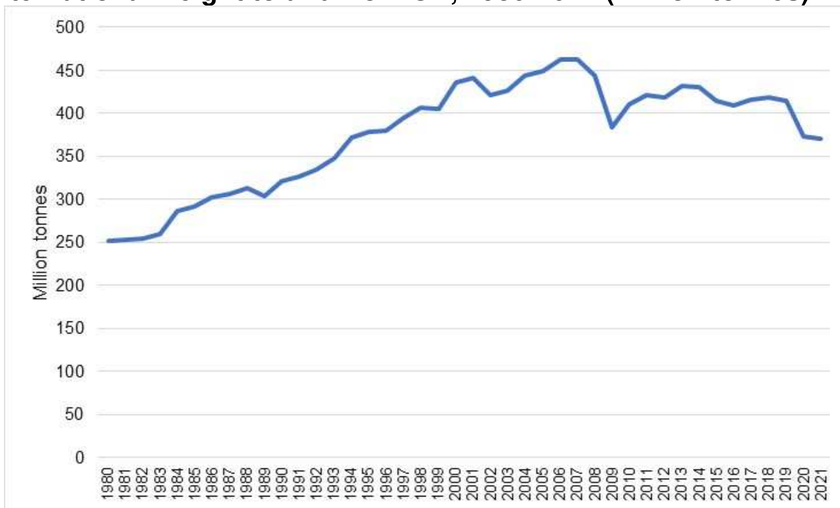
Table 3.1: International freight to and from UK, 2021 (tonnes lifted)

Mode	**Million tonnes**	**% of tonnes lifted**
Maritime	347.3	93.6%
Goods vehicles carried through Channel Tunnel on LeShuttle	20.4	5.5%
Rail freight Channel Tunnel through-trains	1.0	0.3%
Air	2.2	0.6%
Total	**373.5**	**100%**

Notes:
Rail freight data for Channel Tunnel freight includes goods vehicle carried on LeShuttle (which are assumed to have average loads of 15 tonnes based on analysis of DfT HGV data) plus rail freight through-trains.
The vast majority of this international freight also requires road freight transport between factories, warehouses and seaports, airports and rail terminals in foreign countries.
Source: calculated from data in Department for Transport, 2022a, 2022b, 2022c.

Figure 3.1 shows the total tonnes of freight transported internationally to and from the UK since 1980. This indicates the considerable increase in the imports (by weight) between 1980 and 2000 (by approximately 85%). Between 2000 and 2008 the tonnes of goods imported continued to rise, after which they fell in 2008 and 2009 as a result of the global economic recession. Imports rose again in 2010 and then remained relatively stable up until 2019, after which they fell again due to the Covid-19 pandemic and Brexit. The global economic crisis of the period 2008-2010 and the Covid-19 pandemic in early 2020 are clearly visible in the graph. Other major factors that have influenced the total tonnages imported to the UK include the restructuring of the UK economy since 1980, with a reduction in the absolute importance of manufacturing and the rise of the servicing economy, with a consequent growing dependence on imports of finished ptoducts and consumer goods, together with a likely reduction in the demand for machinery, raw materials and sub-components. The lightweighting of products has been taking place over the entire period as manufacturers reduce the materials used in goods they produce (which has reduced the weight of many consumer products such as cars, white goods and boilers), while some products that were formerly physical and required freight transport have now become digital (such as books, music, film, computer games and software). Consumer purchasing habits have also changed over recent decades, which has influenced the quantity and type of goods purchased and may have affected the tonnes of goods imported. Over the last fifteen years there has been a move away from the importation of coal due to UK electricity generation policy, however some of this has been offset by the importation of wood pellets for electricity production in power stations.

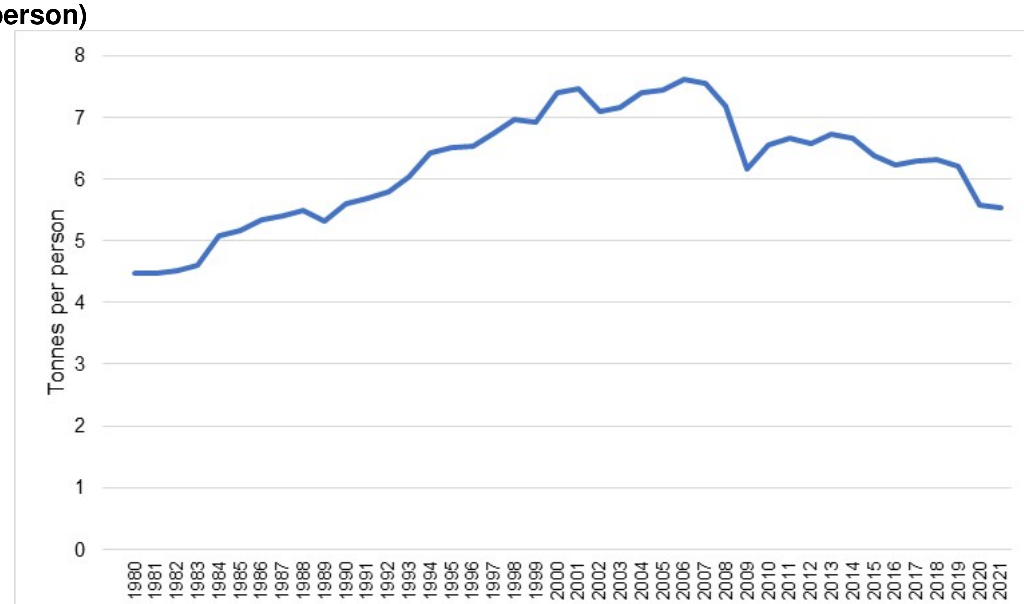
Figure 3.1: International freight to and from UK, 1980-2021 (million tonnes)



Notes:
International freight shown in the figure includes freight lifted at sea ports, air ports and rail terminals that is despatched to the UK. It does not include inland transport between factories and warehouses to these points of despatch.
Rail freight data for Channel Tunnel crossings includes goods vehicle carried on LeShuttle (assumed to have average loads of 15 tonnes based on analysis of DfT HGV data) plus rail freight through-trains.
Source: calculated from data in Department for Transport, 1986, 1996, 2006, 2022a, 2022b, 2022c.

Figure 3.2 shows that international freight tonnage lifted to and from the UK per head of population rose from 4.5 tonnes in 1960 to 7.5 tonnes in the mid-2000s, before falling since to 5.5 tonnes in 2021.

Figure 3.2: International freight to and from UK per head of population, 1980-2021 (tonnes per person)



International freight shown in the figure includes freight lifted at sea ports, air ports and rail terminals that is despatched to the UK. It does not include inland transport between factories and warehouses to these points of despatch.
Rail freight data for Channel Tunnel crossings includes goods vehicle carried on LeShuttle (assumed to have average loads of 15 tonnes based on analysis of DfT HGV data) plus rail freight through-trains.
Source: calculated from data in Department for Transport, 1986, 1996, 2006, 2022a, 2022b, 2022c, ONS, 2021.

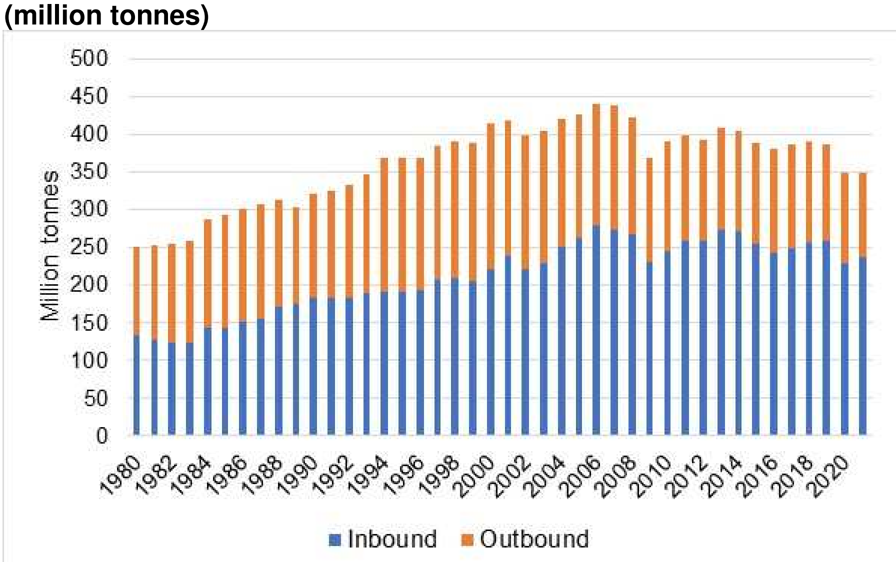
It is important to note that the international freight data shown in **Figures 3.1** and **3.2** does not include the tonnes lifted and transported by land freight transport in other countries where goods destined for the UK are manufactured and which is used to transfer them from factories and warehouses to sea ports and air ports as part of their journey to the UK. Including this inland transport between production/storage locations and sea ports, air ports and international rail terminals would at the very least double the international freight tonnage lifted. In addition, many raw materials and other inputs and components required in the production of these goods manufactured overseas that are transported to and consumed in the UK also require freight transport in these other countries. It is not possible to estimate the tonnes of freight lifted internationally that are associated with the production of thse goods destined for the UK. However, if such calculation were possible it would the absolute quantity of tonnes lifted internationally even more.

3.2 International maritime transport

There are 51 major seaports and 59 minor seaports in the UK that handled freight at least one million tonnes of cargo in 2021. Major UK seaports handled 98% of total freight tonnage at all UK seaports in 2021 (Department for Transport, 2022d). UK ports that handled less than one million tonnes of cargo are excluded from the data presented in this section. Tonnages of cargo presented in this section are gross tonnes (which include the weight of crates and other packaging). However the tare weights of containers, road goods vehicles, trailers and other items of transport equipment (for example, the unloaded weight of the vehicle or equipment itself) are excluded (Department for Transport, 2022e).

Total international cargo handled (by weight) at UK major and minor seaports has increased from 59% of all maritime cargo lifted in 1980 to 78% in 2021, reflecting both an absolute increase in international maritime traffic imported to the UK and an absolute decline in domestic traffic (see **Figure 3.3**). Domestic maritime traffic accounted for 41% of all freight handled at UK ports in 1980 but only 22% in 2021. The decline in total freight tonnage handed at UK ports since 2005 is largely due to two factors. First, the reduction in domestic traffic volumes of oil and gas from North Sea fields that are then exported either as crude or refined petroleum products. Second, international imports have been subject to a reduction in imports of coal for power stations over the last fifteen years. However, these international imports of coal have been partially offset by increased imports of liquefied natural gas (LNG) via Milford Haven in West Wales and the Isle of Grain in the Thames Estuary as well as wood pellets imported via ports such as Liverpool and Immingham.

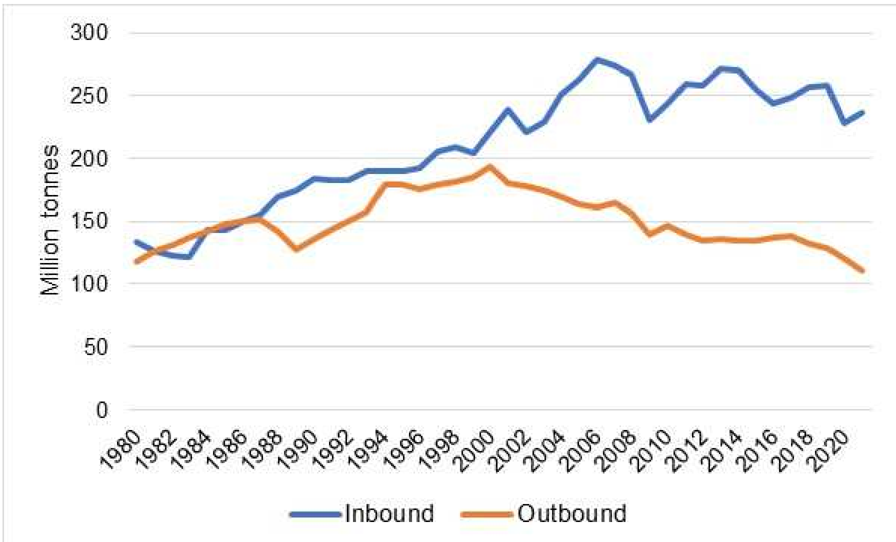
Figure 3.3: International and domestic cargo handled at major and minor UK seaports, 1980-2021 (million tonnes)



Source: Department for Transport, 2022f.

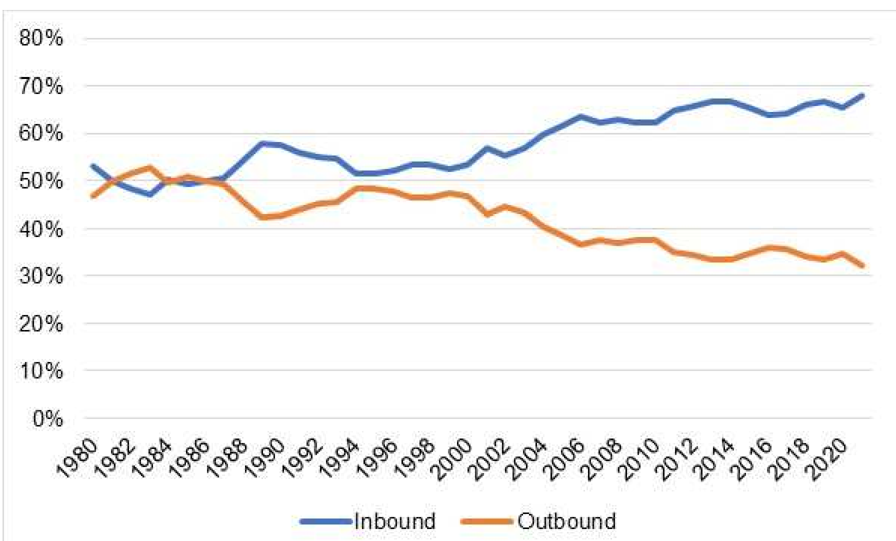
Considering only international cargo to and from UK major and minor seaports, **Figure 3.4** shows that the tonnage of imports and exports were approximately equal between 1980 and 1987. This has changed considerably since with imports share of international shipping at UK ports increasing over time and accounting for 68% of all international cargo in 2021 (see **Figure 3.5** for the percentage split between inbound and outbound international maritime cargo). Since 2000, outbound cargo has fallen in absolute terms while inbound cargo has continued to increase at times when the economy has been growing.

Figure 3.4: International freight to and from UK seaports, 1980-2021 (million tonnes)



Source: calculated from data in Department for Transport, 2022f.

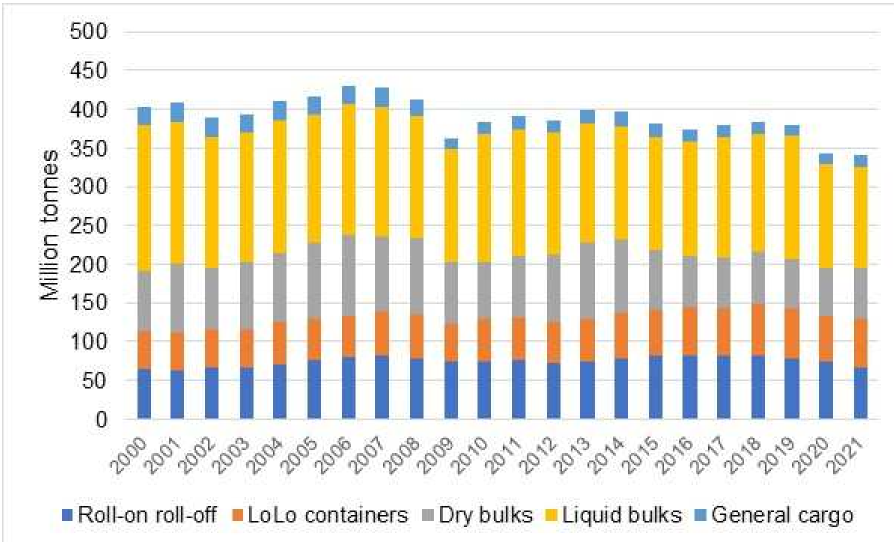
Figure 3.5: Proportion of inbound and outbound international freight to and from UK major seaports, 1980-2021 (based on tonnes)



Source: calculated from data in Department for Transport, 2022f.

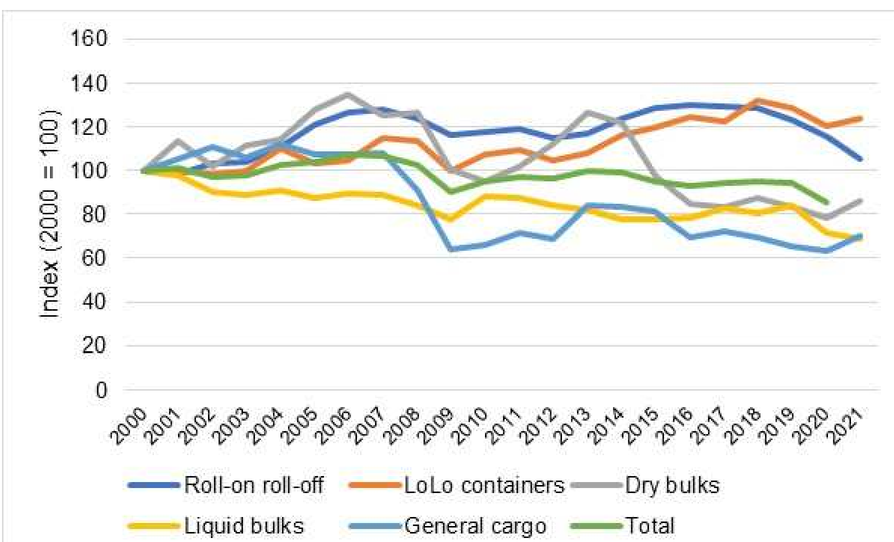
Cargo transported by maritime shipping comprises several different categories of goods that are moved in several different types of vessel. This comprises dry and liquid bulks, general cargo, goods lifted on and off vessels in containers (referred to as Lift-on Lift-off – LoLo) and goods in HGVs accompanied by drivers and unaccompanied HGV trailers transported on ferries (referred to as Roll-on Roll-off – RoRo). **Figures 3.6** and **3.7** show the tonnage of international cargo transported to and from UK major seaports annually by category of cargo. It reflects the importance of liquid and dry bulks (but which has been diminishing over time), together with the growing importance of LoLo containers and RoRo traffic.

Figure 3.6: International freight to and from UK major seaports by cargo category, 2000-2021 (million tonnes)



Note: includes inbound and outbound international cargo.
Source: Department for Transport, 2022g.

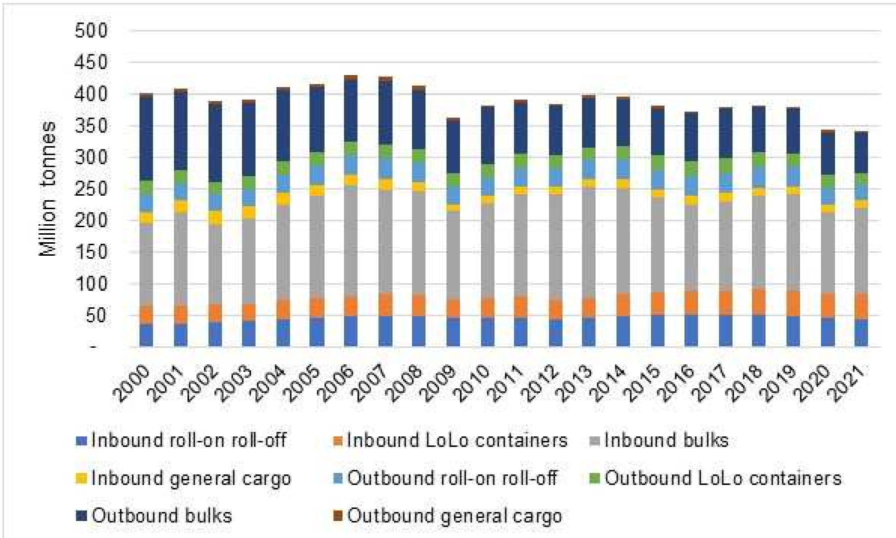
Figure 3.7: International freight to and from UK major seaports by cargo category, 2000-2020 (Index of tonnes handled: 2000 = 100)



Note: includes inbound and outbound international cargo.
Source: Department for Transport, 2022g.

Figure 3.8 provides a further disaggregation of the tonnage of categories of international cargo handled by inbound and outbound movements at major UK seaports over the last 20 years. Bulks (liquid and dry) can be seen to represent the most important cargo categories by weight over the entire period accounting for 58% of all cargo in 2021 (with almost twice as much heading inbound than outbound). Roll-on Roll-off accounted for 20% of all inbound and outbound cargo in 2021, Lift-on lift-off containers for 18% of all inbound and outbound cargo, and general cargo for 5%.

Figure 3.8: International inbound and outbound freight to and from UK major seaports by cargo category, 2000-2021



Note: includes inbound and outbound international cargo.
Source: Department for Transport, 2022g.

International LoLo container shipping to and from the UK includes both deep-sea and short-sea services (with short-sea routes including those between the UK and Ireland, the north west European mainland, Scandinavia, the Baltic, the Atlantic coast of the European mainland and the Mediterranean basin). The majority of international container services to and from the UK are (in order of importance in terms of quantity of goods carried): deep-sea services through the Suez Canal to the Gulf, Indian Subcontinent and the Far East, short-sea services linking the UK to the rest of Europe, and deep-sea services across the transatlantic to North America.

Many containers travelling to the UK from distant locations such as the Far East are transhipped onto smaller vessels at European hub ports rather than transported directly to the UK. This is due to the hub and spoke nature of many container shipping services as well as the inability of many UK container ports to accommodate the largest container ships operated. In terms of the number of container ship movements to and from the UK, more than half are short-sea services between UK and mainland European ports, especially North West European deep-sea container port hubs such as Rotterdam and Antwerp, from which containers destined for the UK from more distanct locations are transhipped onto smaller container ships that UK ports can accommodate. EU ports accounted for 43% of LoLo container traffic to/from the UK by tonnage in 2021, with other non-EU European and Mediterrean ports accounting for a further 10% (see **Table 3.5**). The average size of container ships used on short-sea routes is far smaller than those operated on deep-sea routes. The largest deep-sea container ships can carry 24,000 TEUs (twenty-foot equivalent containers) and are approximately 400 metres long and 60 metres wide, with very deep hulls. These vessels can only be handled in the worlds's largest and deepest ports and require substantial cranes and other handling equipment to load and unload them. The average deep-sea container vessel has a container capacity of approximately 15,000 TEU, whereas a short-sea vessel has an average capacity of approximately 1,500 TEU. The largest container vessels are unlikely to get much larger due to physical limits of locks, canals, docks and storage space and other facilities at ports, as well as container safety, and vessel ability to cope in storms and other poor weather at sea.

Table 3.2 shows the cargo categories by type of international freight handled at UK major seaports in 2021 by weight. Crude oil and oil products accounted for 83% of all liquid bulks. In terms of LoLo, forty-foot containers were twice as important as twenty-foot containers in 2021 (whereas they had equal importance in 2000). In term of RoRo, both powered HGVs and unaccompanied trailers each accounted for approximately 40% of total traffic (with motor vehicles and movements of rail wagons and barges accounting for the remaining 20%). The absolute and relative importance of unaccompanied HGV movements had been increasing between 2013 (in which year they accounted for 39% of RoRo, and powered HGVs for 44%) and in 2020 (when they accounted for 45% and and powered for 40%) but this trend is likely to have been affected by container shortages due to the worldwide container shortage. Forestry products, iron and steel products each accounted for 13-20% of general cargo in weight terms in 2021, with unspeicified other general cargo accounting for the remaining 50%.

Table 3.2: International freight handled at UK major seaports in 2021 by cargo category and type (million tonnes and %)

Cargo category and type	Million tonnes	% by category	% of total
Liquid bulk			
Liquefied gas	13.77	10.6%	4.0%
Crude oil	61.10	47.0%	17.9%
Oil products	47.22	36.3%	13.8%
Other liquid bulk products	7.82	6.0%	2.3%
All liquid bulk traffic	***129.90***	***100.0%***	***38.0%***
Dry bulk			
Ores	16.69	24.7%	4.9%
Coal	7.55	11.2%	2.2%
Agricultural products	9.12	13.5%	2.7%
Other dry bulk	34.26	50.7%	10.0%
All dry bulk traffic	***67.61***	***100.0%***	***19.8%***
Container (Lo-Lo) traffic			
20' containers	17.37	28.5%	5.1%
40' containers	35.39	58.0%	10.4%
Containers between 20' and 40'	1.42	2.3%	0.4%
Containers over 40'	6.87	11.3%	2.0%
All container traffic	***61.06***	***100.0%***	***17.9%***
Roll-on/Roll-off (Ro-Ro) traffic			
Road goods vehicles and trailers	27.17	40.4%	8.0%
Unaccompanied road goods trailers	27.65	41.1%	8.1%
Import/Export motor vehicles	4.06	6.0%	1.2%
Rail wagons, shipborne trailers, barges	8.01	11.9%	2.3%
Unaccompanied caravans, agricultural & industrial vehicles	0.28	0.4%	0.1%
All roll-on/roll-off traffic	***67.26***	***100.0%***	***19.7%***
Other general cargo			
Forestry products	5.50	17.4%	1.6%
Iron and steel products	6.24	19.8%	1.8%
General cargo & containers <20'	4.03	12.8%	1.2%
All other general cargo traffic	15.76	50.0%	4.6%
All general cargo	***31.52***	***100.0%***	***9.2%***
All traffic	**341.59**		**100.0%**

Note: includes inbound and outbound international maritime cargo.

Source: Department for Transport, 2022g.

Important changes in international maritime cargo handled over the period include an absolute and relative reduction in outbound bulks, and inbound and outbound general cargo, and an absolute and relative increase in inbound Roll-on Roll-off and container traffic (see **Table 3.3**).

Table 3.3: International freight to and from UK major seaports by type of cargo, 2000 and 2021 (proportion of tonnes lifted)

	Share of all cargo, 2000	**Share of all cargo, 2021**	**2000-2021 % change in tonnes handled**
Inbound containers	9%	**13%**	19%
Inbound Roll on Roll off	7%	**12%**	48%
Inbound bulks	33%	**39%**	2%
Inbound general cargo	4%	**4%**	-27%
Outbound containers	7%	**7%**	-14%
Outbound Roll on Roll off	5%	**6%**	-8%
Outbound bulks	33%	**18%**	-53%
Outbound general cargo	1%	**1%**	-39%
Total (%)	**100%**	**100%**	-15%
Total (million tonnes)	**402**	**342**	-

Note: includes inbound and outbound international cargo.
Source: Department for Transport, 2022g.

Table 3.4 shows the importance of different parts of the world for imports and exports to UK major seaports in 2021 by cargo type. The EU accounted for 54% of total cargo to and from the UK (and virtually all of the RoRo traffic), followed in importance by other European and Mediterranean countries, the Americas, Asia, Africa and Australasia.

Table 3.4: International cargo traffic at UK major seaports by route and cargo type, 2021 (based on tonnages)

Region of loading / unloading	**Liquid bulks**	**Dry bulks**	**Other general cargo**	**Lo-Lo containers**	**Roll-on / Roll-off**	**All traffic**	**All traffic (million tonnes)**
European Union	16.1%	8.0%	3.2%	7.7%	19.1%	54.2%	185.0
Other European & Mediterranean	10.5%	5.0%	0.6%	1.8%	0.2%	18.1%	61.8
Africa	0.8%	0.6%	0.0%	0.4%	0.0%	1.8%	6.2
Americas	6.5%	5.4%	0.3%	1.9%	0.2%	14.2%	48.5
Asia	4.1%	0.7%	0.5%	6.0%	0.1%	11.4%	38.9
Australasia	0.0%	0.2%	0.0%	0.1%	0.0%	0.4%	1.2
Total	38.0%	19.8%	4.6%	17.9%	19.7%	**100.0%**	**341.6**
Total (million tonnes)	**129.9**	**67.6**	**15.8**	**61.1**	**67.3**	**341.6**	**-**

Note: Total international port traffic at UK major ports (i.e. inbound and outbound traffic)
Source: Department for Transport, 2022h.

The EU accounted for 97% of RoRo traffic to and from the UK by tonnage in 2021. Meanwhile in terms of LoLo containers to/from the UK, the EU accounted for 43%, Asia for 34%, the America for 11%, other European and Mediterrean countries for 10% and Africa for 2% in 2021 (see **Table 3.5**).

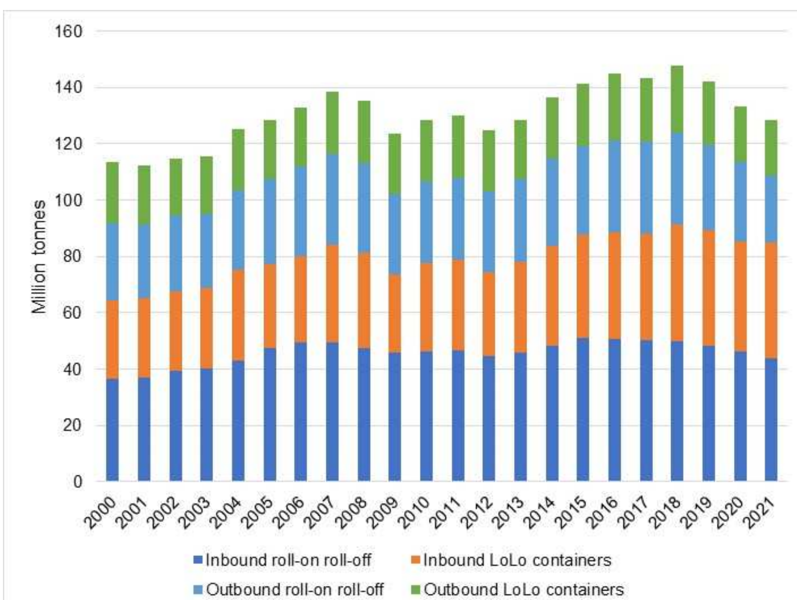
Table 3.5: International LoLo and RoRo traffic at UK major seaports by route, 2021 (based on tonnages)

Region of loading / unloading	Lo-Lo containers		Roll-on / Roll-off	
	Million tonnes	%	Million tonnes	%
European Union	26.2	43%	65.4	97%
Other European & Mediterranean	6.2	10%	0.6	1%
Africa	1.4	2%	0.1	0%
Americas	6.4	11%	0.6	1%
Asia	20.6	34%	0.4	1%
Australasia	0.2	0%	0.2	0%
Total	**61.1**	**100%**	**67.3**	**100%**

Note: Total international port traffic at UK major ports (i.e. inbound and outbound traffic)
Source: Department for Transport, 2022h.

In terms of manufactured goods moving internationally, to and from UK seaports, these are moved by RoRo and LoLo container. RoRo includes powered vehicles (i.e. driver with tractor unit pulling the trailer) and unaccompanied trailers moved on ferries, with the vast majority of RoRo taking place on short-sea crossings between the UK and mainland Europe). Meanwhile LoLo containers, which are moved on container ships, are typically moved over greater distances. **Figure 3.9** shows the difference between inbound and outbound international flows broken down for RoRo and LoLo. In 2021, 68% of all international LoLo and 66% of all international RoRo tonnage to/from UK major seaports was inbound. This compares with 56% and 57%, respectively, in 2000, indicating the growing imbalance in both types of flows, with the imbalance in LoLo growing fastest.

Figure 3.9: RoRo and LoLo international cargo to and from major UK seaports by direction of travel, 2000-2021

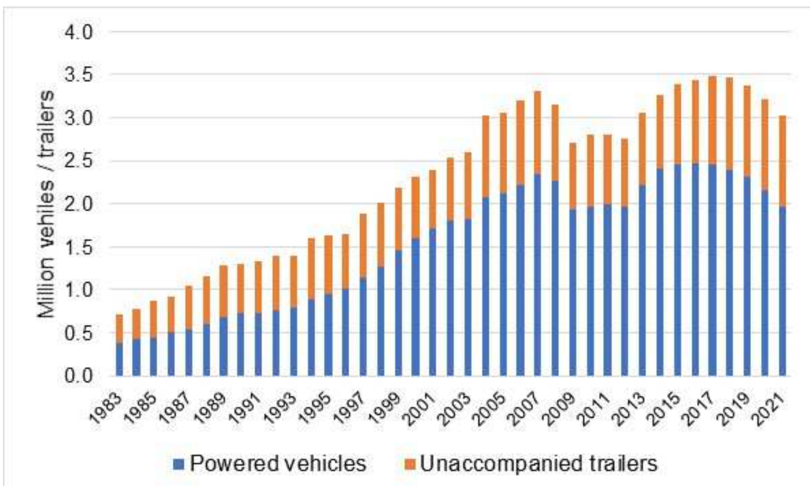


Source: calculated from data in Department for Transport, 2022g.

Container ship traffic declined sharply in 2020 due to the impacts on the Covid-19 pandemic on manufacturing and port shutdowns especially in the Far East. Ship traffic congestion and capacity issues occurred at container ports from the end of 2020 and throughout the whole of 2021 as delayed shipments began to be transported again as factories and ports reopened. This led to container ships having longer times at anchor outside ports while waiting for berths in ports to become free, and also staying at berth for longer due to extended loading and unloading times. In efforts to deal with ship queueing, ports prioritised unloading waiting ships over the despatch of empty containers that required repositioning. This resulted in further problems at ports in terms of container storage space availability and delays in despatching containers for inland transport, as well as problems for shippers due to lack of available empty containers.

Considering only RoRo traffic by powered vehicles and unaccompanied trailers, in 2021 there were 3.0 million goods vehicle/trailer crossings departing the UK via seaports and the Channel Tunnel to EU ports (compared with only 0.7 million in 1983 – an increase of 327%). Of these, 2.0 million were powered HGV RoRo movements by ferry and rail (65%) and 1.1 million unaccompanied HGV trailer RoRo movements by ferry (35%). This split between powered and unaccompanied HGVs using RoRo services has changed over time, with 53% powered goods vehicle and 47% unaccompanied trailer crossings in 1983. The Channel Tunnel commenced operations in 1994 and its use grew rapidly (see **Figure 3.10**). Total RoRo vehicle journeys to/from the UK have been declining since 2017. Some of this is likely to be due to the Brexit vote in the UK in 2016, together with the end of the Brexit transition period (at the end of 2020) and the onset on the Covid-19 pandemic in early 2020.

Figure 3.10: Road goods vehicles travelling by RoRo from UK to EU by sea and rail, powered vehicles and unaccompanied trailers, annually 1983-2021

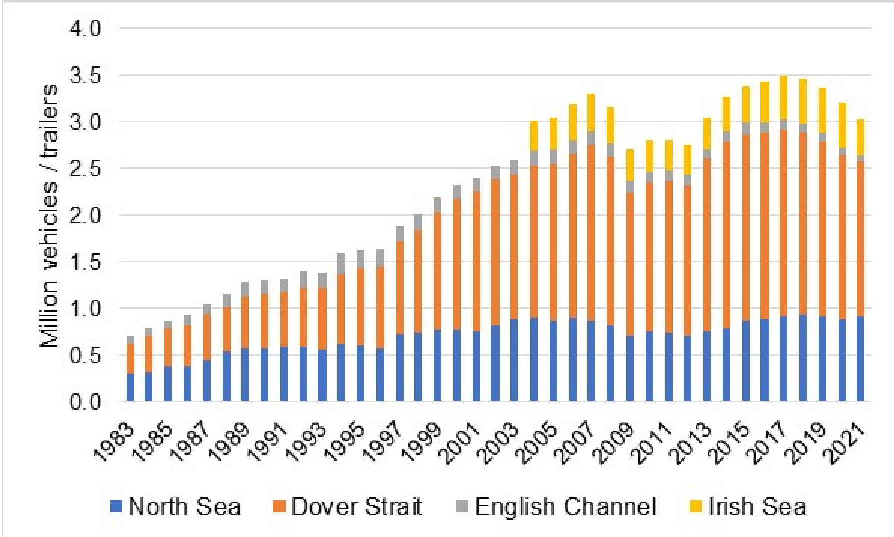


Note: Until 2004 data is only for journeys to mainland Europe; data for the Republic commenced in 2004.
Source: calculated from data in Department for Transport, 2022i.

In terms of routes taken by RoRo powered vehicle and unaccompanied trailer crossings from UK to the EU, the number of vehicles/trailers using ports and rail in the Dover Straits increased by approximately 400% between 1983 and 2021, while those using North Sea ports increased by approximately 200% (see **Figure 3.11**).

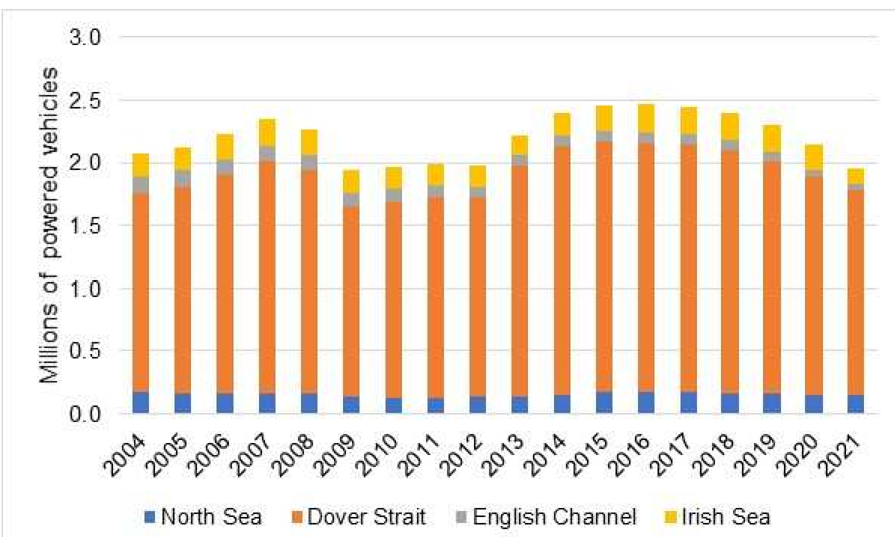
RoRo crossings of the Dover Straits are almost entirely of powered HGVs (i.e. with the driver present), whereas North Sea RoRo crossings are mostly of unaccompanied HGV trailers. **Figure 3.12** shows the breakdown by route for powered vehicle RoRo crossings from UK to EU ports. In 2021, the Dover Straits (including both sea and rail crossings through the Channel Tunnel) accounted for 84% of all UK powered vehicle crossings (up from 76% in 2004), the North Sea for 8%, the Irish Sea for 6% and the English Channel for 2%.

Figure 3.11: Road goods vehicles travelling by RoRo from UK to EU seaports by route/port group, annually 1983-2021



Notes:
North Sea: Ferry routes from all GB ports on the east coast, north of and including the Thames estuary.
Dover Strait: Ferry routes from Dover, Folkestone and Ramsgate, along with the Channel Tunnel (opened 1994).
English Channel: Ferry routes from all GB ports on the south coast, west of Folkestone.
Irish Sea: Ferry routes from all GB ports on the west coast.
Until 2004 data is only for journeys to mainland Europe; data for the Republic of Ireland commenced in 2004.
Source: calculated from data in Department for Transport, 2022j.

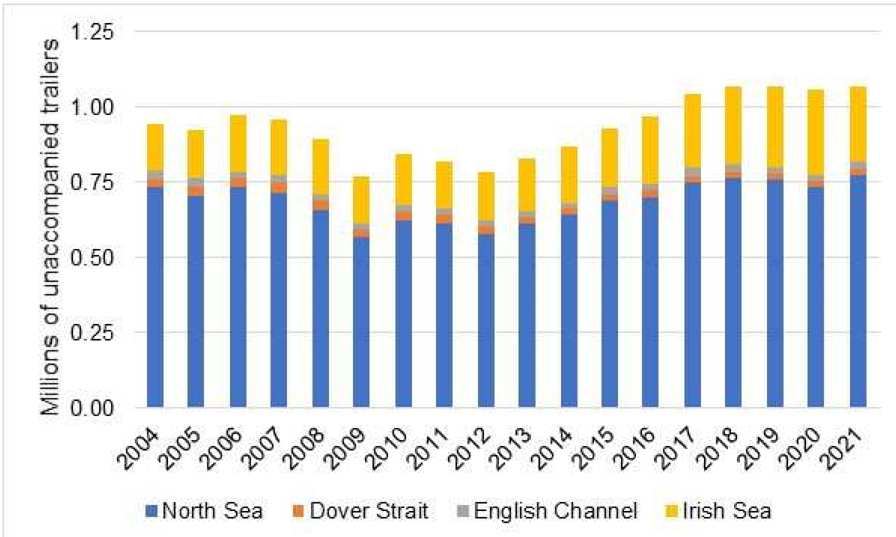
Figure 3.12: Powered HGV RoRo goods vehicles travelling from UK to EU by sea and rail by route/port group, annually 2004-2021



Notes:
North Sea: Ferry routes from all GB ports on the east coast, north of and including the Thames estuary.
Dover Strait: Ferry routes from Dover, Folkestone and Ramsgate, along with the Channel Tunnel.
English Channel: Ferry routes from all GB ports on the south coast, west of Folkestone.
Irish Sea: Ferry routes from all GB ports on the west coast.
Source: calculated from data in Department for Transport, 2022k.

Figure 3.13 shows the breakdown by route for unaccompanied trailer RoRo crossings from UK to EU sea ports. In 2021, the North Sea accounted for 72% of all UK unaccompanied HGV trailer crossings, the Irish Sea for 24%, and the English Channel and Dover Strait both for 2%. Unlike powered HGV RoRo movements, unaccompanied HGV trailer RoRo movements have not been falling since 2017. This indicates that the use of unaccompanied RoRo on North Sea crossings is being preferred by businesses to avoid the road traffic delays and dispruption to HGVs and their drivers on UK roads to the Port of Dover and the Channel Tunnel in Folkstone.

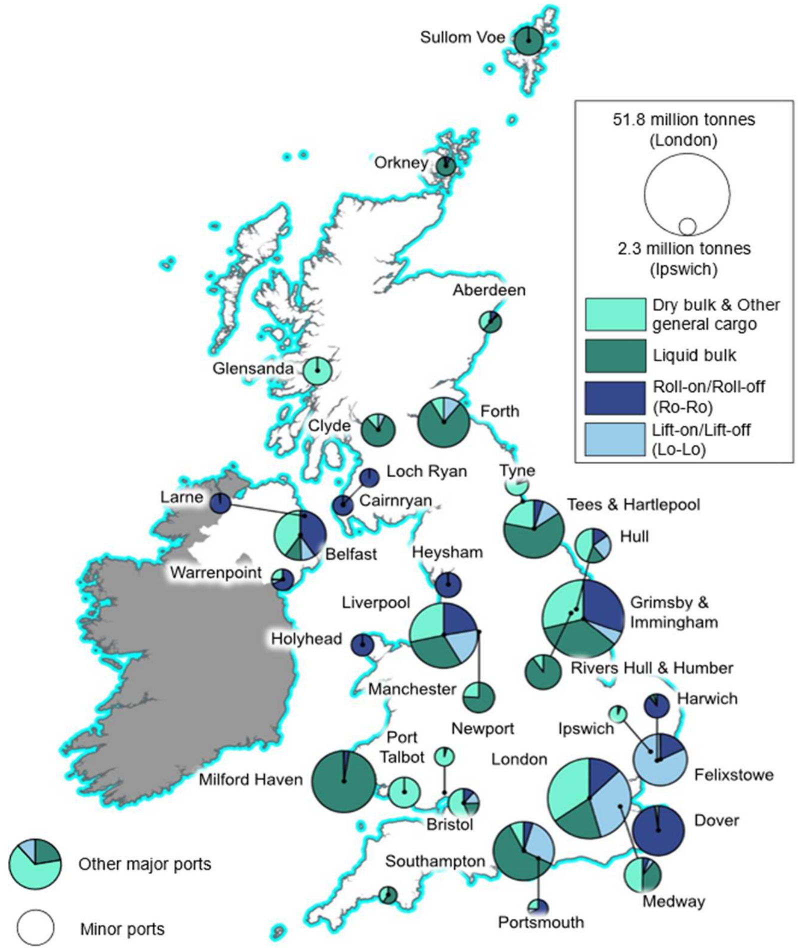
Figure 3.13: Unaccompanied HGV trailer RoRo goods vehicles travelling from UK to EU by sea by route/port group, annually 2004-2021



Notes:
North Sea: Ferry routes from all GB ports on the east coast, north of and including the Thames estuary.
Dover Strait: Ferry routes from Dover, Folkestone and Ramsgate.
English Channel: Ferry routes from all GB ports on the south coast, west of Folkestone.
Irish Sea: Ferry routes from all GB ports on the west coast.
Source: calculated from data in Department for Transport, 2022l.
The remaining figures and tables in **section 3.2** include both international and domestic freight traffic handled at UK major seaports.

Figure 3.14 shows the most important UK major ports in terms of tonnage handled in 2021 by cargo type. Key ports in terms of total cargo handled can be seen to be London, Immingham, Liverpool, Tees, Forth, Milford Haven, Felixstowe, Dover, Southampton and Belfast. In terms of RoRo traffic, ports located in the south east of the country can be seen to be particularly important together with Grimsby & Immingham and Liverpool (as well as Holyhead and Heysham in the case of RoRo between Britain and Northern Ireland/Republic of Ireland. For LoLo, key ports include Felixstowe and London in the South East, Southampton in the south and Liverpool on the west coast.

Figure 3.14: UK major seaports: tonnage by cargo type, 2022 (international and domestic cargo)



Notes:
All ports marked on the map handled over 2 million tonnes of freight in 2021.
Includes international and domestic cargo.
Source: Department for Transport, 2022m.

Table 3.6 shows the top ten UK ports for cargo (international and domestic cargo combined) by tonnage of cargo type handled. Overall in 2020, London handled the greatest tonnage of cargo, followed by Grimsby and Immingham. However, the cargo types handled by ports can be seen to vary considerably with, for example, Dover almost exclusively handling RoRo and Milford Haven liquid bulks, while Felixstowe mostly handles LoLo.

Table 3.6: Top ten largest UK ports by total cargo in 2020 (international and domestic cargo – based on tonnage handled)

			Total freight traffic 2020 – cargo type proportions (%)					
Port	**Total cargo (million tonnes)**	**% of all UK major ports**	**Dry bulk**	**Liquid bulk**	**LoLo**	**RoRo**	**Other general cargo**	**Total**
London	47.4	11.0%	28.8%	21.3%	32.4%	14.5%	2.9%	**100%**
Immingham[1]	45.6	10.6%	27.2%	30.9%	4.6%	34.8%	2.4%	**100%**
Milford Haven	33.6	7.8%	0.2%	97.3%	0.0%	2.5%	0.0%	**100%**
Liverpool	31.1	7.2%	22.5%	32.1%	19.0%	24.1%	2.3%	**100%**
Tees & Htlepl[2]	29.3	6.8%	15.8%	64.9%	9.7%	6.5%	3.1%	**100%**
Southampton	27.6	6.4%	7.1%	56.7%	30.5%	4.5%	1.2%	**100%**
Felixstowe	23.1	5.4%	0.0%	0.2%	83.2%	16.7%	0.0%	**100%**
Forth	23.0	5.4%	5.7%	82.8%	9.4%	0.0%	2.1%	**100%**
Dover	21.9	5.1%	0.6%	0.0%	0.3%	98.4%	0.7%	**100%**
Belfast	18.6	4.3%	37.6%	11.5%	8.5%	41.0%	1.4%	**100%**
Above ports	301.0	70.2%	16.0%	40.8%	19.1%	22.3%	1.8%	**100%**

Notes:
1 - Grimsby & Immingham
2 - Tees & Hartlepool
LoLo - lift-on, lift-off
RoRo - roll-on, roll-off
Includes domestic and international inbound and outbound cargo movements.
Source: Department for Transport, 2021a.

Table 3.7 shows the top ten most important UK ports, in terms of tonnage handled, by type of cargo in 2020. In **Table 3.7**, RoRo is split into that carried out by powered vehicles (i.e. driver with tractor unit pulling the trailer) and unaccompanied trailers moved on ferries (with the vast majority of all RoRo taking place on short-sea crossings between Dover and mainland Europe). Unaccompanied trailer movements are more common on longer sea crossings (as it is usually uneconomical to have the driver and tractor unit on board).Together, these two types of RoRo accounted for 86% of all RoRo tonnage handled at UK ports in 2020[1].

[1] Other types of RoRo include: (i) the import and export of motor vehicles, in which the RoRo unit is itself the cargo, usually transported on large specialist car carriers which travel on separate services from RoRo ferries, often to dedicated terminals (with the vehicles driven on and off the vessel by port operatives, and then parked in local storage areas before onward delivery), (ii) the import and export of other transport equipment including rail wagons and barges, and (iii) goods loaded onto vessels using specialised port-to-port trailers (with the goods either lifted off the trailer once they are on board, or remaining on the trailer and then driven off at the destination port – these goods may or may not be containerised either in standard size or outsize container units).

Table 3.7: Top ten UK major ports by type of cargo handled, 2020 (international and domestic cargo – based on tonnage handled)

RoRo – powered goods vehicles	RoRo – unaccomp. trailers	LoLo	Liquid bulks	Dry bulks	General cargo	All cargo
Dover	Grimsby & Immingham	Felixstowe	Milford Haven	London	Medway	London
Holyhead	Belfast	London	Forth	Grimsby & Immingham	Newport	Grimsby & Immingham
Liverpool	Liverpool	Southampton	Tees & Hartlepool	Liverpool	London	Milford Haven
Belfast	Heysham	Liverpool	Southampton	Belfast	Hull	Liverpool
Harwich	Felixstowe	Tees & Hartlepool	Grimsby & Immingham	Port Talbot	Grimsby & Immingham	Tees & Hartlepool
Larne	London	Forth	London	Glensanda	Tees & Hartlepool	Southampton
Cairnryan	Holyhead	Hull	Liverpool	Tees & Hartlepool	Aberdeen	Felixstowe
Portsmouth	Warrenpoint	Grimsby & Immingham	Rivers Hull & Humber	Medway	Liverpool	Forth
Loch Ryan	Harwich	Belfast	Sullom Voe	Bristol	Boston	Dover
Grimsby & Immingham	Loch Ryan	Bristol	Manchester	Tyne	Goole	Belfast

Notes:
LoLo - lift-on, lift-off
RoRo - roll-on, roll-off
Includes international and domestic inbound and outbound cargo movements.
Source: Department for Transport, 2021a.

Most ports tend to specialise in one or more of these types of cargo. Therefore, the choice of UK ports to use for imports and exports is limited by the type of cargo involved. **Table 3.8** shows the market concentration for each type of cargo handled by UK major ports in 2020.

Table 3.8: UK major port market concentration by type of cargo handled & ship arrivals, 2020 (international & domestic cargo) (% of tonnes handled & arrivals at all UK major ports)

Cargo	Top port	Top 3 ports	Top 5 ports	Top 10 ports	All major ports
Dry bulk	16%	38%	54%	77%	**100%**
Liquid bulk	20%	43%	61%	86%	**100%**
LoLo	31%	69%	83%	97%	**100%**
RoRo - powered goods vehicles	53%	67%	76%	93%	**100%**
RoRo - unaccompanied goods trailers	21%	46%	63%	86%	**100%**
Other general cargo	9%	26%	40%	64%	**100%**
All cargo	11%	29%	44%	70%	**100%**
Ship arrivals	17%	32%	49%	63%	**100%**

Notes:
Includes domestic and international inbound and outbound cargo movements.
Ship arrivals – all ships including passenger.
Source: Department for Transport, 2021a.

Table 3.9 shows the change in the tonnage of freight handled at the UK's top ten ports in 2019, 2020 and 2021, as well as at, other ports and all ports. This data indicates the changes in tonnages handled over the period of the Covid-19 pandemic and the end of the Brexit transition period (at the end of December 2020). Almost all ports experienced a decline in tonnages handled in 2020 due to Covid-19. Tees and Hartlepool was an exception to this. In 2021, ports experienced differing experiences with some seeing tonnages rebound, while others continued to experience reductions.

Table 3.9: Top ten largest UK ports by total cargo, 2019, 2020 and 2021 (international and domestic cargo – based on tonnage handled)

Port	Total cargo (million tonnes)			% change 1019-2020	% change 2020-2021
	2019	2020	2021		
London	54.0	47.4	51.8	-12%	9%
Immingham[1]	54.1	45.6	50.0	-16%	10%
Milford Haven	35	33.6	30.3	-4%	-10%
Liverpool	34.3	31.1	34.5	-9%	11%
Tees & Htlepl[2]	28.2	29.3	26.8	4%	-9%
Southampton	33.2	27.6	27.6	-17%	0%
Felixstowe	25.3	23.1	21.5	-9%	-7%
Forth	25.2	23	19.8	-9%	-14%
Dover	23.4	21.9	19.9	-6%	-9%
Belfast	18.5	18.6	19.9	1%	7%
Above ten ports	331.2	301.2	302.1	-9%	0%
Other major ports	154.9	128.8	133.4	-17%	4%
All ports	486.1	430	435.5	-12%	1%

Notes:
1 - Grimsby & Immingham
2 - Tees & Hartlepool
Includes domestic and international inbound and outbound cargo movements.
Source: calculated from data in Department for Transport, 2022n.

The average size of cargo ships used for international freight transport have been increasing over time. However, the largest ships can only be accommodated at the world's largest ports with suitable berth and handling facilities to service them. Port facilities are a major determinant on ship size operated. **Tables 3.10** and **3.11** show the relative size of cargo ships arriving at all UK ports in 2009 and 2021 by type of ship (including minor and major ports). Use of the smallest tankers, dry cargo vessels and RoRo vessels (i.e. with deadweights of up to 4,999 tonnes) have diminshed ove this period. In the case of container vessels, the proportion of the largest category of vessels arriving at all UK ports has diminished over the period. This is due to changes in ther operations of container shipping, with the largest vessels using hubs in mainland Europe (such as Antwerp and Rotterdam) and UK ports being increasingly served by smaller, feeder containers ships from these ports.

Table 3.10: Tanker and dry cargo vessel arrivals at all UK ports, 2009 and 2021 (proportion of total ship arrivals by deadweight of vessel)

	Tankers		Dry cargo vessels	
Deadweight tonnes	**2009**	**2021**	**2009**	**2021**
1 - 4,999	45%	34%	76%	66%
5,000 - 19,999	34%	47%	15%	23%
20,000 - 99,999	12%	11%	8%	11%
100,000+	9%	8%	1%	0%
Total	**100%**	**100%**	**100%**	**100%**

Source: Department for Transport, 2022o.

Table 3.11: RoRo and container vessel arrivals at all UK ports, 2009 and 2021 (proportion of total ship arrivals by deadweight of vessel)

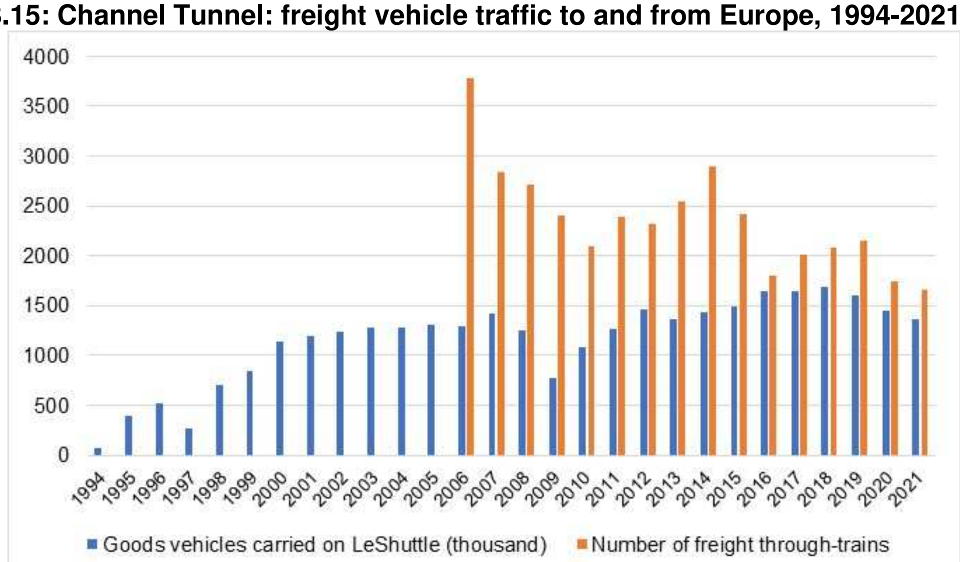
	RoRo vessels		Container vessels	
Deadweight tonnes	**2009**	**2021**	**2009**	**2021**
1 - 4,999	50%	26%	4%	3%
5,000 - 19,999	50%	73%	46%	60%
20,000 +	0%	1%	49%	37%
Total	**100%**	**100%**	**100%**	**100%**

Source: Department for Transport, 2022o.

3.3. International rail freight transport

Figure 3.15 shows the number of through rail freight trains and rail crossings by goods vehicles through the Channel Tunnel to and from mainland Europe since 1994. Through freight trains have diminished over time, while goods vehicles carried on LeShuttle increased between 2009-2019.

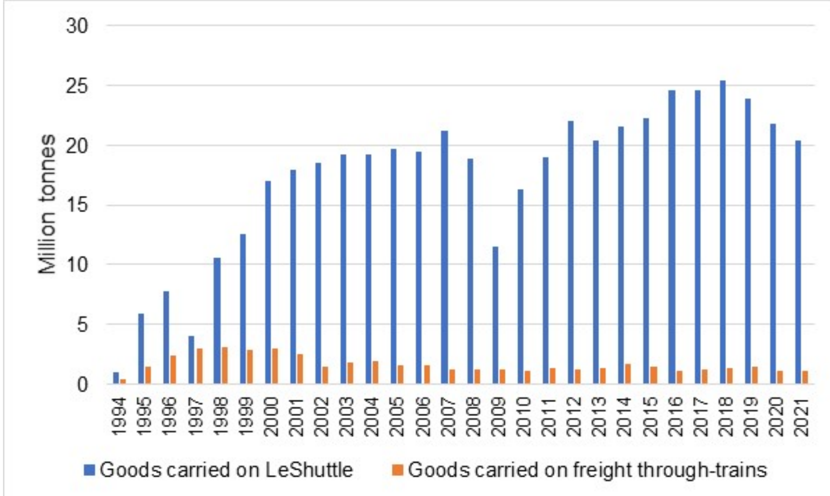
Figure 3.15: Channel Tunnel: freight vehicle traffic to and from Europe, 1994-2021



Note: Get Link rail freight through-train data using the Tunnel (for rail train operators DB Cargo UK on behalf of BRB, the SNCF and its subsidiaries, and Europorte). Data for the number of through freight trains only available since 2006 despite the service commencing in 1994.
Source: Department for Transport, 2022b; Get Link, 2006-2021.

Figure 3.16 shows the tonnes lifted by rail freight on these journeys through the Channel Tunnel since 1994. This indicates that far more goods are carried in vehicles transported on LeShuttle than in through freight trains (with the former responsible for approximately 95% of this rail freight tonnage to and from mainland Europe).

Figure 3.16: Channel Tunnel: tonnes of freight traffic to and from Europe, 1994-2021



Notes: Tonnes of goods carried by goods vehicles on LeShuttle – assumed average vehicle load of 15 tonnes based on analysis of Department for Transport data for all British-registered HGVs operating domestically in the UK between 2000-2020 multiplied by Get Link data for goods vehicles carried by LeShuttle. Tonnes of goods carried by rail freight through-trains collected by Get Link and published by Department for Transport.
Source: calculated from data in Department for Transport, 2022b; Get Link, 2006-2021.

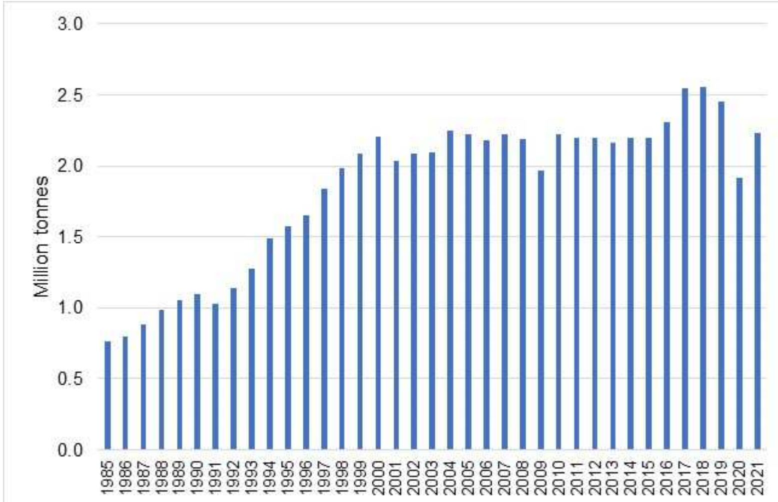
3.4 International air freight transport

International air cargo was handled at 24 airports in the UK in 2021. **Figure 3.17** shows the quantity of international air freight to and from UK airports since 1985. It can be seen to have grown strongly between 1985 and 1999, and remained relatively stable until 2016, with a further increase in 2017-2019, before a sharp decline in 2020 due to the Covid-19 pandemic and a slight recovery in 2021.

In 2021, of the 2.2 million tonnes of international cargo handlded at UK airports, 23% was transport to and from EU member states and 77% to and from non-EU countries. In 2021, for air cargo to and from EU countries, 91% was transported on dedicated air freighters, while 9% was transported in the bellyhold of passenger aircraft. For air cargo to and from non-EU countries, 54% was transported on dedicated air freighters, while 46% was transported in the bellyhold of passenger aircraft (calculated from data in Civil Aviation Authority, 2022).

There is more inbound than outbound international airfreight at UK airports. In 2021, 59% of all air freight lifted was inbound to the UK and 41% outbound. UK international air freight vastly exceeds domestic air freight – in 2021, international air freight accounted for 96% of total air freight in weight terms (calculated from data in Civil Aviation Authority, 2022).

Figure 3.17: International freight to and from UK airports, 1985-2021



Note: Does not include mail transported by air.
Source: Department for Transport, 2022c.

Table 3.12 shows the top ten UK airports for international air cargo handling in 2021. Heathrow accounted for 63% of the UK total in 2021, with the top 3 airports (Heathrow, East Midlands and Stansted accounting for 92% of all international air freight, and the top ten airports for 99% of all international air freight.

Table 3.12: Top ten UK airports for international air freight transport, 2021 (thousand tonnes and proportion)

Airport	**Freight lifted to and from**	
	Thousand tonnes	**% of tonnes lifted**
Heathrow	1,403	62.8%
East Midlands International	385	17.2%
Stansted	262	11.7%
Manchester	52	2.3%
Luton	26	1.1%
Doncaster Sheffield	24	1.1%
Birmingham	20	0.9%
Prestwick	15	0.7%
Bournemouth	15	0.7%
Gatwick	12	0.5%
Top ten (tonnes and % of UK total)	2,213	99.1%
Total for all UK airports	2,234	100%

Note: Does not include mail transported by air.
Source: calculated from data in Civil Aviation Authority, 2022.

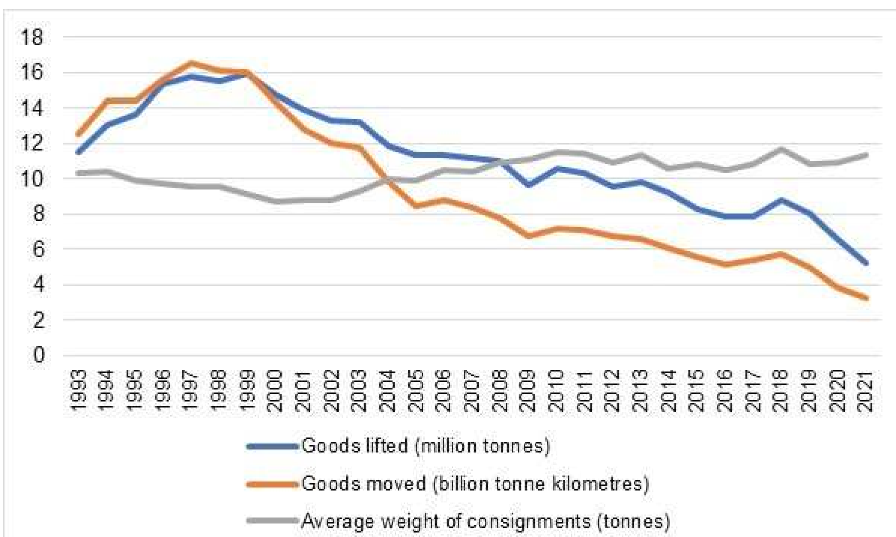
In addition, 54,000 tonnes of international mail was transported to and from UK airports in 2021. Of this, 85% was transport to and from non-EU countries and 15% to and from EU countries (calculated from data in Civil Aviation Authority, 2022).

3.5 International road freight transport

As previously discussed, over recent decades an increasing proportion of goods consumed in the UK have been produced outside of the Uk and imported to it by international freight transport. As well as the international transport by sea and air that this generates, it also results in domestic inland transport in the countries where the goods are manufactured. As noted in **section 3.1**, official UK government freight statistics do not provide data on the tonnes lifted and transported by road and other inland freight transport in other countries where goods destined for the UK are manufactured and which is used to transfer them from factories and warehouses to sea ports and air ports as part of their journey to the UK. Including this inland transport between production/storage locations and sea ports, air ports and international rail terminals would at the very least double the international freight tonnage lifted. In addition, many raw materials and other inputs and components required in the production of these goods manufactured overseas that are transported to and consumed in the UK also require freight transport in these other countries. It is not possible to estimate the tonnes of freight lifted internationally that are associated with the production of thse goods destined for the UK. However, if such calculation were possible it would the absolute quantity of tonnes lifted internationally even more.

Official UK government freight statistics do provide data on the goods lifted and moved internationally to and from the UK by HGVs (both UK- and foreign-registered HGVs). **Figure 3.18** shows road freight transport operations carried out by UK-registered HGVs to and from international locations. This HGV activity is very small compared to domestic HGV operations by UK-registered vehicles (in 2020, approximately 0.5% of domestic tonnes lifted and 2% of domestic tonne-kilometres). These road freight operations carried out by UK-registered HGVs to and from international locations have fallen considerably since the late 1990s.

Figure 3.18: UK-registered HGV activity between the UK and international locations, 1993-2021



Note: Excludes UK-registered HGVs travelling between Northern Ireland and the Republic of Ireland only, i.e. where the whole journey is confined to the island of Ireland.
Source: Department for Transport, 2022p.

In 2021, 2.8 million tonnes of goods were imported to the UK by UK-registered HGVs, while 2.4 million tonnes were exported. The ratio of tonnes of goods imported to those exported by HGV-registered HGVs has been relatively balanced over the last 30 years. The total weight of goods lifted and tonne-kilometres performed by UK-registered HGVs to and from mainland Europe has been falling rapidly since 2018. Tonnes lifted fell by 41% between 2018 and 2021, while tonne-kilometres performed fell by 43% over this period (calculated from data in Department for Transport, 2022p).

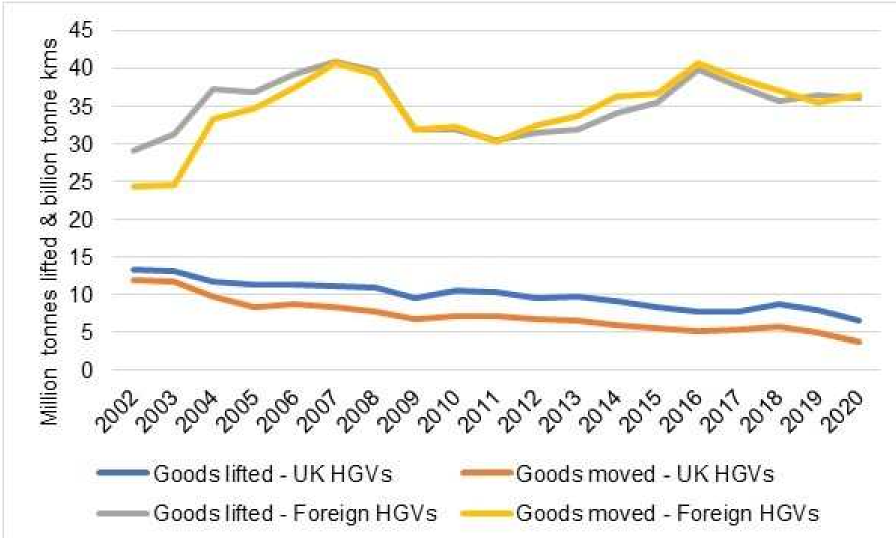
In 2021, 2.4 million tonnes of goods were exported from the UK by UK-registered HGVs. Of which 89% (2.2 million tonnes) were unloaded in one of the five following countries: France, 0.88 million tonnes (36%), Ireland, 0.46 million tonnes (19%), Belgium, 0.45 million tonnes (19%), Netherlands, 0.19 million tonnes (8%), and Germany, 0.19 million tonnes (8%). In 2021, 2.8 million tonnes of goods were imported to the UK by UK-registered vehicles. Of which 88% (2.5 million tonnes) were loaded in one of the five following countries: Belgium, 0.84 million tonnes (30%), France, 0.83 million tonnes (29%), Netherlands, 0.33 million tonnes (12%), Germany, 0.27 million tonnes (10%), Ireland, 0.21 million tonnes (8%).

The top 5 countries for tonnes of goods exported and imported to/from the UK by UK-registered HGVs have remained relatively constant over recent years. However, tonnes of goods exported to Germany by UK-registered HGVs have decreased from 1.4 million tonnes in 2000 to 0.19 million tonnes in 2021. The same trend has been seen for tonnes of goods imported from Germany by UK-registered HGVs, with a decrease from 1.5 million tonnes in 20000 to 0.27 million tonnes in 2021.

In 2021, the most common commodities exported (by weight) from the UK by UK-registered HGVs were: food and drink products (0.51 million tonnes - 21% of goods exported by UK-registered HGVs), groupage (0.41 million tonnes - 21% of goods exported). Mail and parcels (0.30 million tonnes - 17% of goods exported), agricultural products (0.20 million tonnes - 13% of goods exported), and machinery and equipment (0.18 million tonnes - 8% of goods exported). In 2021, the most common commodities imported (by weight) from the UK by UK-registered HGVs were: food and drink products (0.97 million tonnes - 35% of goods exported by UK-registered HGVs), groupage (0.45 million tonnes - 16% of goods exported). Mail and parcels (0.26 million tonnes - 9% of goods exported), agricultural products (0.16 million tonnes - 6% of goods exported), and machinery and equipment (0.15 million tonnes - 5% of goods exported).

While international road freight activity by UK-registered HGVs has been falling over the last 20 years, road freight transport operations to and from the UK by foreign-registered HGVs has been increasing over this time. **Figure 3.19** shows the goods lifted and tonne-kilometres moved to and from the UK by UK- and foreign-registered HGVs since 2002. In 2002, foreign-registered HGVs lifted and moved, respectively, 2.2 and 2.0 times more freight to and from the UK than UK-registered HGVs. In 2020, foreign-registered HGVs lifted and moved, respectively, 5.1 and 9.0 times more freight to and from the UK than UK-registered HGVs.

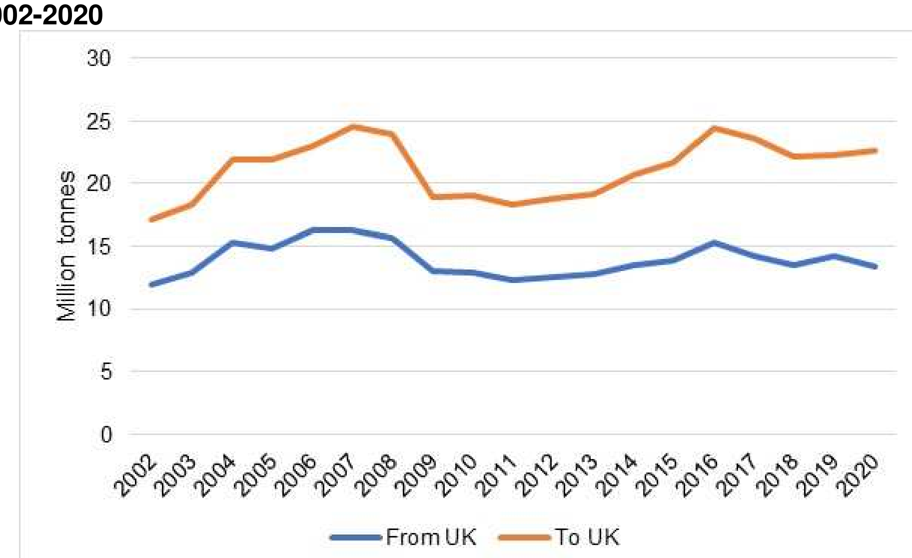
Figure 3.19: HGV activity between the UK and international locations, 2002-2020 (million tonees and billion tonne-kilometres)



Note: Excludes UK-registered HGVs travelling between Northern Ireland and the Republic of Ireland only, i.e. where the whole journey is confined to the island of Ireland.
Source: calculated from data in Department for Transport, 2021b, 2022p.

Far more tonnes of goods are transport to the UK by foreign-regisrered HGVs than are exported (see **Figure 3.20**).

Figure 3.20: Tonnes of goods imported to and exported from the UK by foreign-registered HGVs, 2002-2020

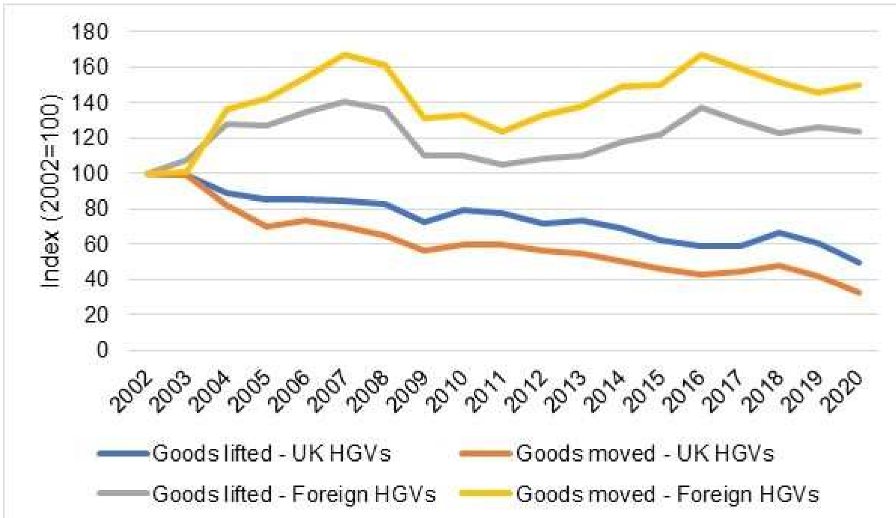


Source: Department for Transport, 2021b.

For goods imported and exported to/from the UK by foreign-registered HGVs in 2020, Polish-registered vehicles accounted for 32% of total tonnes lifted in both directions, Irish-registered vehicles for 13%, Spanish-registered vehicles for 9%, Romanian-registered vehicles for 8%, Dutch-registered vehicles for 6%, and Lithuanian-registered vehicles for 6% (calculated from data in Department for Transport, 2021b).

Figure 3.21 shows that the goods lifted and moved between the UK and international locations by UK-registered HGVs fell by 50% and 68%, respectively, between 2002 and 2020. By contrast, the goods lifted and moved between the UK and international locations by foreign-registered HGVs increased by 24% and 50%, respectively, over the same period. This indicates that some of the fall in international activity by UK-registered HGVs is due to a substitution to the use of foreign-registered HGVs to carry out this activity.

Figure 3.21: HGV activity between the UK and international locations, 2002-2020 (indexed 2002=100)



Note: Excludes UK-registered HGVs travelling between Northern Ireland and the Republic of Ireland only, i.e. where the whole journey is confined to the island of Ireland.
Source: calculated from data in Department for Transport, 2021b, 2022p.

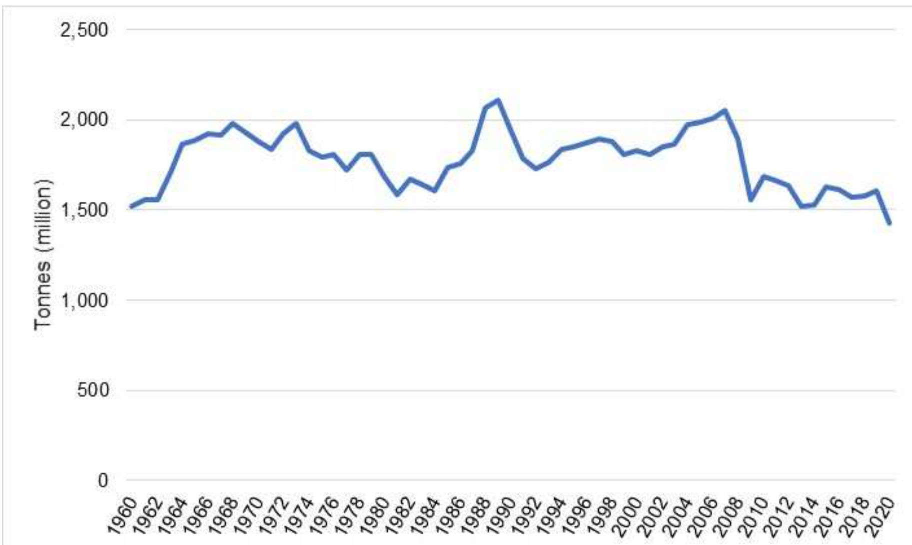
The average length of haul of UK-registered HGVs making international journeys to and from the UK in 2021 was approximately 630 kilometres, while it was approximately 1020 kilometres for foreign-registered HGVs making journeys to and from the UK in 2020 (this includes the distance travelled within the UK on these journeys) (calculated from data in Department for Transport, 2021b, 2022p). The average length of haul for foreign-registered HGVs reflect the more countries they operate to and from in supplying goods to the UK.

4. Domestic freight transport within the UK

4.1 Total domestic freight transport

Figure 4.1 shows the quantity of freight lifted domestically by road (HGVs only), rail and water (river, canal, coastal and one-port shipping) in the UK between 1960 and 2020. In addition to the freight lifted domestically by road, rail and water in the UK, it should be noted that in 2020, 83,000 tonnes of freight was lifted domestically by air. This was equivalent to about 0.01% of freight lifted domestically in 2020 by HGVs, water and rail (Department for Transport, 2021c). It should be noted that goods transported domestically may be handled on more than one occasion by commercial goods vehicles as they are distributed along their supply chains (e.g. from port to national distribution centre to regional distribution centre to retail shop).

Figure 4.1: Total freight lifted domestically in the UK, 1960-2020

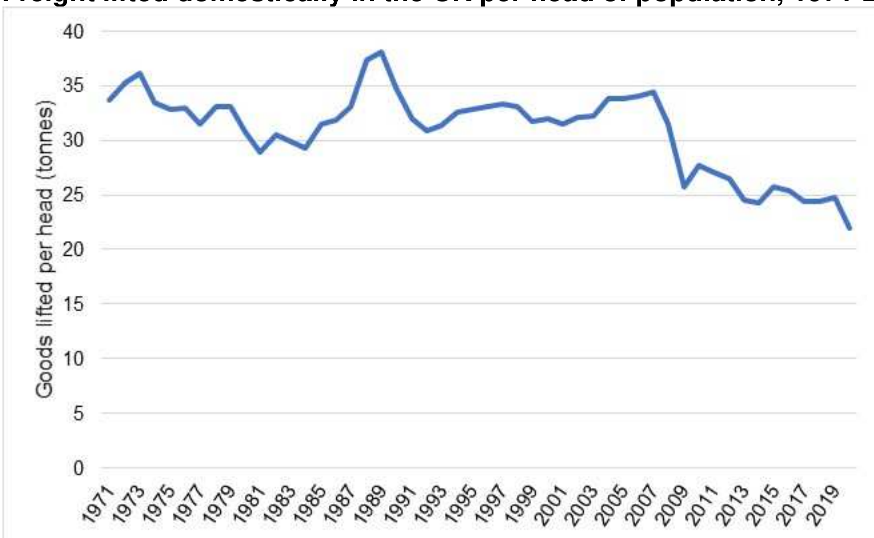


Notes:
Includes freight lifted by road, rail, and water.
Does not include road freight lifted by non-UK registered HGVs and by air.
Prior to 2014 road data included an estimate for LGVs (i.e. vans), but since 2014 data is for HGVs only.
Goods transported domestically may be lifted on more than one occasion as they are distributed along their domestic supply chain.
Source: calculated from data in Department for Transport, 2022c, 2022q.

Figure 4.1 shows that the quantity of goods by weight lifted domestically by road, rail and water transport was 6% lower in 2020 than in 1960 (and has been falling since 2008), despite the fact that UK GDP increased 177% at constant prices over this period and retail sales also grew substantially (increasing 109% at constant prices between 1988 and 2020, the longest period for which data is available).

Figure 4.2 shows the freight lifted domestically by road, rail and water per head of population. This was approximately 30% lower in 2020 than 50 years earlier. This is likely to be due to factors including changes in the structure of the UK economy, changes in consumer purchasing habits, the lightweighting of consumer and capital goods, the digitalisation of some products and the reduction in coal use (however this has been partially offset by an increased use of wood pellets in power stations). The ever-increasing offshoring of the manufacture of goods for consumption in the UK to other countries has reduced the quantity of materials and inputs that would have required transporting between farms, quarries, mines, factories and warehouses in the UK had domestic manufacturing levels been unaffected. These goods are instead produced overseas and transported to the UK, from where they are shipped to warehouses, shops, and points of consumption and use.

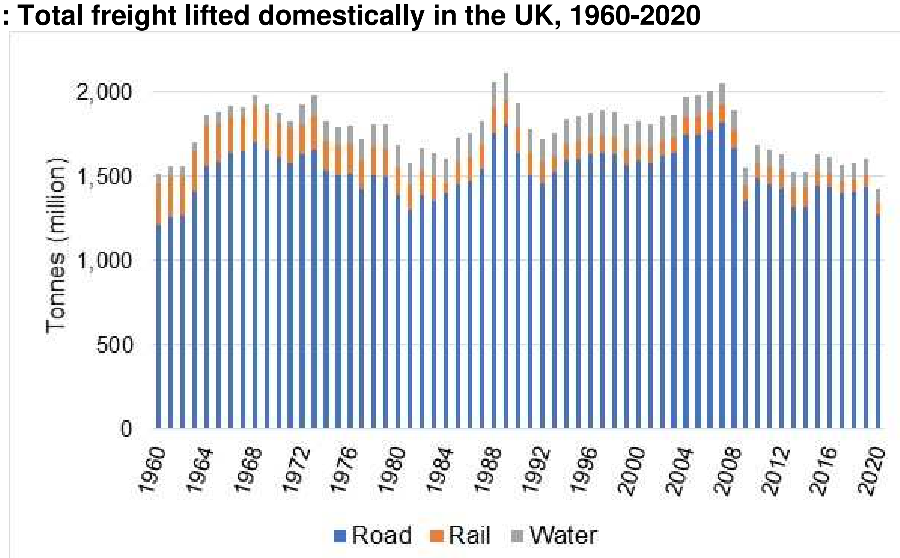
Figure 4.2: Freight lifted domestically in the UK per head of population, 1971-2020



Notes: Includes freight lifted by road, rail and water.
Does not include road freight lifted by non-UK registered HGVs and by air.
Prior to 2014 road data included an estimate for LGVs (i.e. vans), but since 2014 data is for HGVs only.
Goods transported domestically may be lifted on more than one occasion as they are distributed along their domestic supply chain.
Source: calculated from data in Department for Transport, 2022p, ONS, 2021.

Figure 4.3 shows the breakdown of domestic freight lifted in the UK by mode between 1960 and 2020.

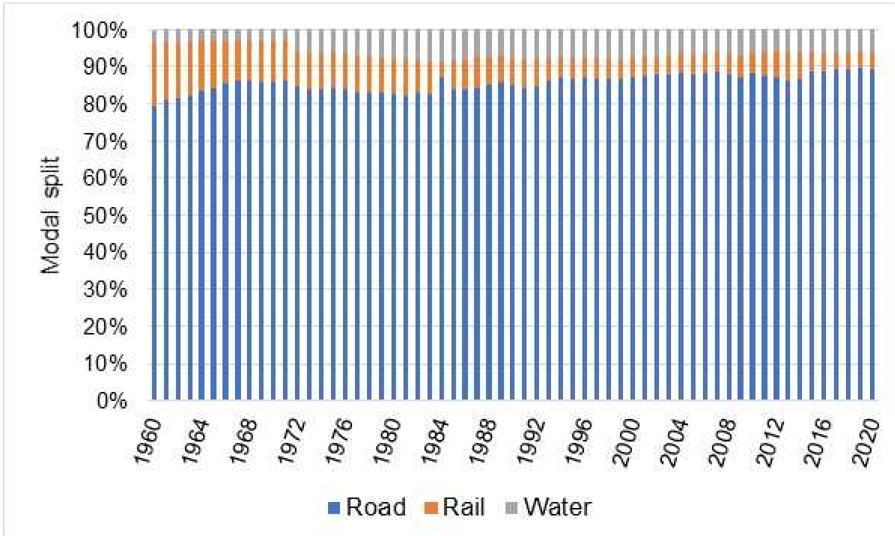
Figure 4.3: Total freight lifted domestically in the UK, 1960-2020



Notes: Includes freight lifted by road, rail and water.
Does not include road freight lifted by non-UK registered HGVs and by air.
Due to methodological changes in road freight data collection it is not possible to compare road freight data collected in 2021/22 with previous years, so 2021 data for all modes has had to be omitted.
Prior to 2014 road data included an estimate for LGVs (i.e. vans), but since 2014 data is for HGVs only.
Goods transported domestically may be lifted on more than one occasion as they are distributed along their domestic supply chain.
Source: calculated from data in Department for Transport, 2022q.

Figure 4.4 shows the modal split for domestic freight lifted by road, rail and water over this period.

Figure 4.4: Proportion of goods lifted domestically in the UK by mode, 1960-2020 (based on tonnes)



Notes:
Includes freight lifted by road, rail and water.
Does not include road freight lifted by non-UK registered HGVs and by air.
Due to methodological changes in road freight data collection it is not possible to compare road freight data collected in 2021/22 with previous years, so 2021 data for all modes has had to be omitted.
Prior to 2014 road data included an estimate for LGVs (i.e. vans), but since 2014 data is for HGVs only.
Goods transported domestically may be lifted on more than one occasion as they are distributed along their domestic supply chain.
Source: calculated from data in Department for Transport, 2022q.

Table 4.1 provides the modal split for domestic freight transport lifted in 2020. Road was responsible for approximately 90% of all tonnage handled.

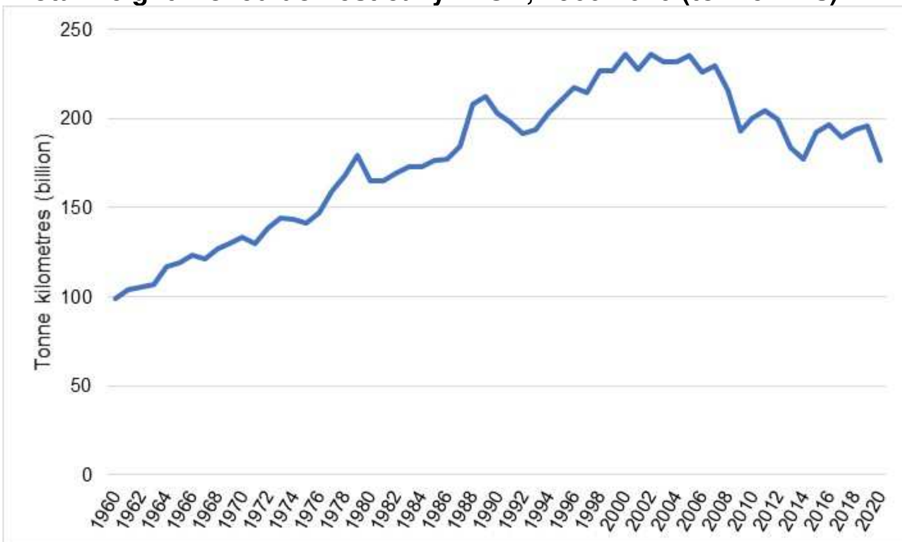
Table 4.1: Domestic freight transport within the UK, 2020 (tonnes lifted)

Mode	Million tonnes	Proportion (%)
Road	1271.8	89.1%
Water (coastal and inland)	86.8	6.1%
Rail	69.0	4.8%
Air	0.1	0.01%
Total	**1427.6**	**100%**

Notes:
Includes freight lifted by road, rail, water and air.
Does not include road freight lifted by non-UK registered HGVs and by air.
Source: calculated from data in Department for Transport, 2022c, 2022q.

Figure 4.5 shows the quantity of freight moved domestically by road, rail and water in the UK between 1960 and 2020. Measured in tonne-kilometres this takes account of the distance over which the freight lifted was transported.

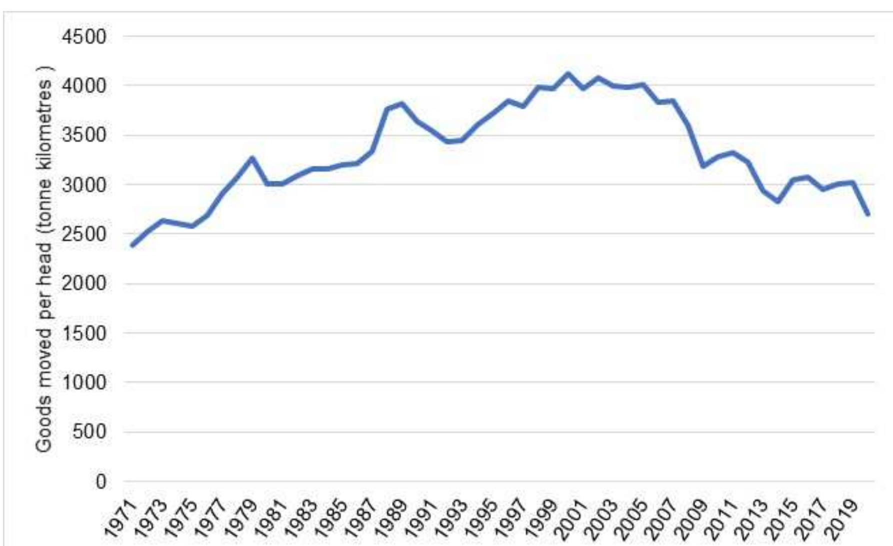
Figure 4.5: Total freight moved domestically in UK, 1960-2020 (tonne-kms)



Notes: Includes freight lifted by road, rail and water.
Does not include road freight lifted by air freight.
Due to methodological changes in road freight data collection it is not possible to compare road freight data collected in 2021/22 with previous years, so 2021 data for all modes has had to be omitted.
Prior to 2014 road data included an estimate for LGVs (i.e. vans), but since 2014 data is for HGVs only.
Goods transported domestically may be lifted on more than one occasion as they are distributed along their domestic supply chain.
Source: calculated from data in Department for Transport, 2022q.

Figure 4.6 shows the quantity of freight moved domestically by road, rail and water per head of population between 1971 and 2020.

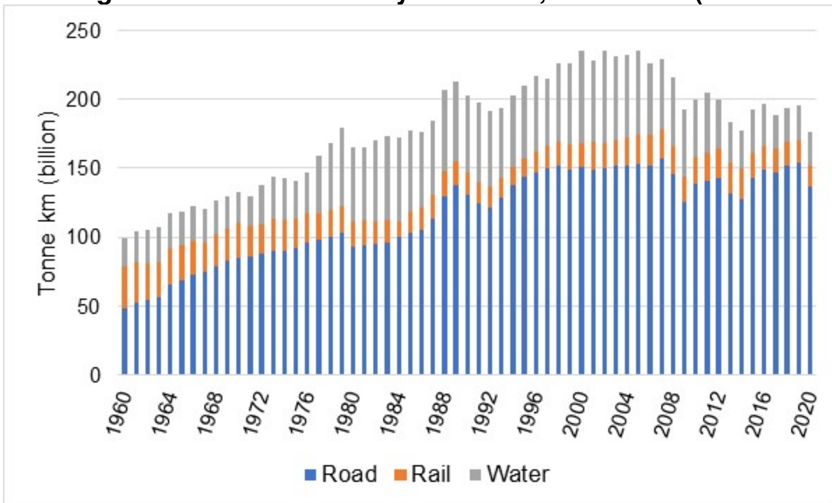
Figure 4.6: Freight moved domestically in UK per head of population, 1971-2020 (tonne-kms)



Notes: Includes freight lifted by road, rail and water.
Does not include road freight lifted by non-UK registered HGVs and by air.
Due to methodological changes in road freight data collection it is not possible to compare road freight data collected in 2021/22 with previous years, so 2021 data for all modes has had to be omitted.
Prior to 2014 road data included an estimate for LGVs (i.e. vans), but since 2014 data is for HGVs only.
Goods transported domestically may be lifted on more than one occasion as they are distributed along their domestic supply chain.
Source: calculated from data in Department for Transport, 2022q, ONS, 2021.

Figure 4.7 shows the breakdown of domestic freight moved in the UK by mode from 1960 to 2020.

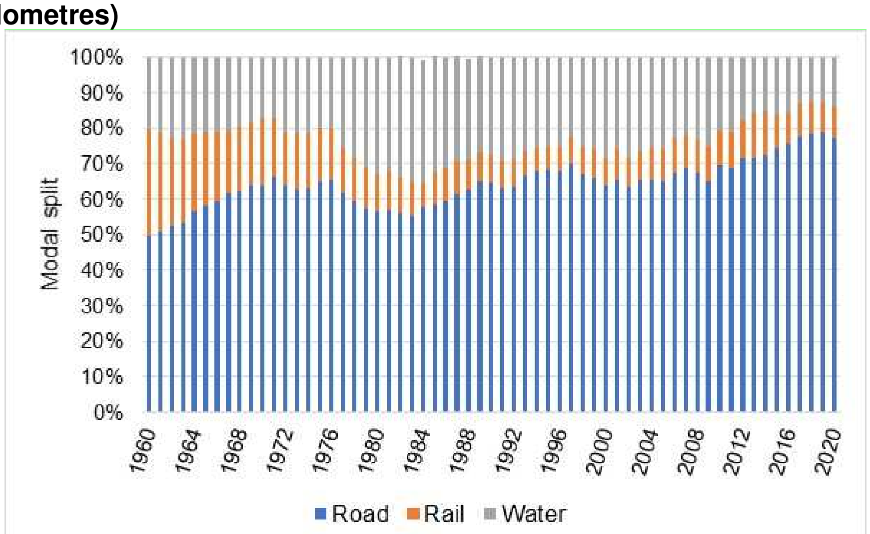
Figure 4.7: Total freight moved domestically in the UK, 1960-2020 (tonne-kilometres)



Notes: Includes freight lifted by road, rail and water.
Does not include road freight lifted by non-UK registered HGVs and by air.
Due to methodological changes in road freight data collection it is not possible to compare road freight data collected in 2021/22 with previous years, so 2021 data for all modes has had to be omitted.
Prior to 2014 road data included an estimate for LGVs (i.e. vans), but since 2014 data is for HGVs only.
Goods transported domestically may be lifted on more than one occasion as they are distributed along their domestic supply chain.
Source: calculated from data in Department for Transport, 2022q.

Figure 4.8 shows the modal split for domestic freight moved by mode over this same period.

Figure 4.8: Proportion of goods moved domestically in the UK by mode, 1960-2020 (based on tonne-kilometres)



Notes: Includes freight lifted by road, rail and water.
Does not include road freight lifted by non-UK registered HGVs and by air.
Due to methodological changes in road freight data collection it is not possible to compare road freight data collected in 2021/22 with previous years, so 2021 data for all modes has had to be omitted.
Prior to 2014 road data included an estimate for LGVs (i.e. vans), but since 2014 data is for HGVs only.
Goods transported domestically may be lifted on more than one occasion as they are distributed along their domestic supply chain.
Source: calculated from data in Department for Transport, 2022q.

As previously discussed, the share of tonnes lifted and moved domestically by road has been increasing over time. **Table 4.2** shows the modal split in 1960 and 2020. Rail and water have a larger share of tonne-kilometres than tonnes lifted given the longer distances over which these modes typically transport goods.

Table 4.2: Goods lifted and moved domestically in the UK by mode, 1960 and 2020

Mode	**Goods lifted (% of tonnes lifted and million tonnes)**		**Goods moved (% of tonne-kms and billion tonne-kms)**	
	1960	**2020**	**1960**	**2020**
Road	80%	89%	49%	77%
Rail	17%	5%	30%	9%
Water	4%	6%	20%	14%
Total (%)	**100%**	**100%**	**100%**	**100%**
Total (no.)	**1521**	**1428**	**99**	**176**

Notes:
Includes freight lifted by road, rail and water.
Does not include road freight lifted by non-UK registered HGVs and by air.
Due to methodological changes in road freight data collection it is not possible to compare road freight data collected in 2021/22 with previous years, so 2021 data for all modes has had to be omitted.
Prior to 2014 road data included an estimate for LGVs (i.e. vans), but since 2014 data is for HGVs only.In 2020, 83,000 tonnes of freight was lifted domestically by air - equivalent to 0.01% of all freight lifted domestically in 2020 by HGVs, rail and water.
Source: calculated from data in Department for Transport, 2022q.

A measure of the distance over which the tonnes lifted are transported in provided by the average length of haul (tonne-kilometres divided by tonnes lifted). The average length of haul by road increased substantially between 1960 and 2020 (+165%), and for rail (+85%) but fell for water (-23%) (**see Table 4.3**). Over this period, manufacturers and retailers centralised their stockholding facilities, using fewer, larger sites with an increasing reliance on freight transport operations to distribute these goods to points of consumption and use. These decisions were based on the relative cost of freight transport and warehousing and the increasing speed, size and reliability efficiency of freight transport vehicles.

Table 4.3: Average length of haul domestically in the UK by mode, 1960 and 2020

Mode	**Kilometres**		**% change 1960-2020**
	1960	**2020**	
Road	40	107	+165%
Rail	119	220	+85%
Water	370	274	-23%
Total	65	123	+90%

Source: calculated from data in Department for Transport, 2022q.

<u>4.2 Domestic road freight transport by HGVs</u>

Due to methodological changes in domestic road freight data collection implemented by the Department for Transport in 2021, it is not possible to compare road freight data collected in 2021/22 with previous years, so the most current year of road freight data included in this section is 2020 (Department for Transport, 2023a).

Table 4.4 shows the importance of various commodity categories in the freight lifted and moved by HGV by road in the UK in 2020.

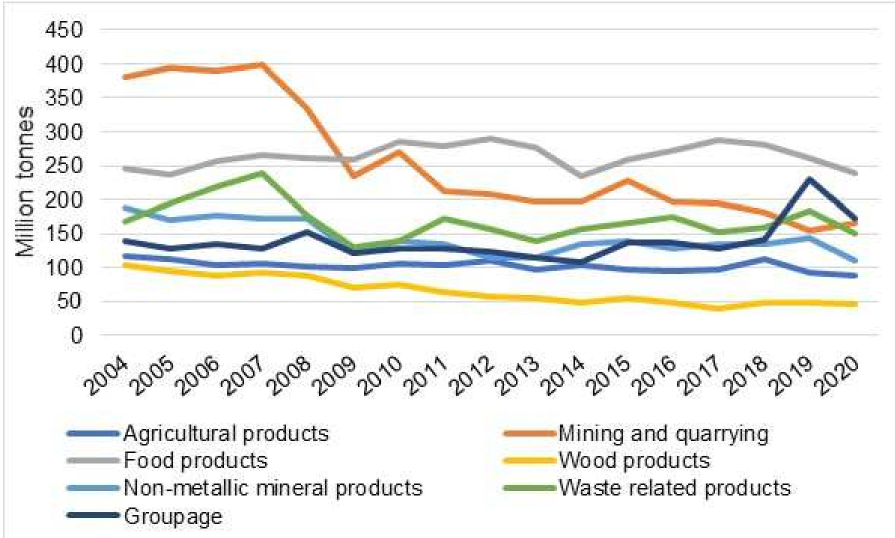
Table 4.4: Goods lifted and moved by British-registered HGVs in the UK by commodity category, 2020

Commodity category	Goods lifted		Goods moved	
	Million tonnes	%	Billion tonne-kilometres	%
Agricultural products	89	7%	11.4	8%
Coal and lignite	2	0%	0.3	0%
Metal ore and other mining and quarrying	166	13%	11.5	8%
Food products, including beverages and tobacco	239	19%	31.7	23%
Textiles and textiles products, leather and leather products	9	1%	1.1	1%
Wood products	46	4%	6.7	5%
Coke and refined petroleum products	43	3%	4.1	3%
Chemical products	44	3%	6.3	5%
Glass, cement and other non-metallic mineral products	111	9%	9.0	7%
Metal products	25	2%	3.0	2%
Machinery and equipment	27	2%	4.1	3%
Transport equipment	25	2%	3.1	2%
Furniture and other manufactured goods	8	1%	1.1	1%
Waste related products	151	12%	10.2	7%
Mail and parcels	40	3%	6.2	5%
Empty containers, pallets and other packaging	25	2%	2.9	2%
Household and office removals and other non-market goods	25	2%	1.8	1%
Groupage	173	14%	19.2	14%
Unidentifiable goods	22	2%	3.1	2%
Other goods not elsewhere classified	0	0%	0	0%
TOTAL	**1,272**	**100%**	**136.4**	**100%**

Source: calculated from data in Department for Transport, 2021c.

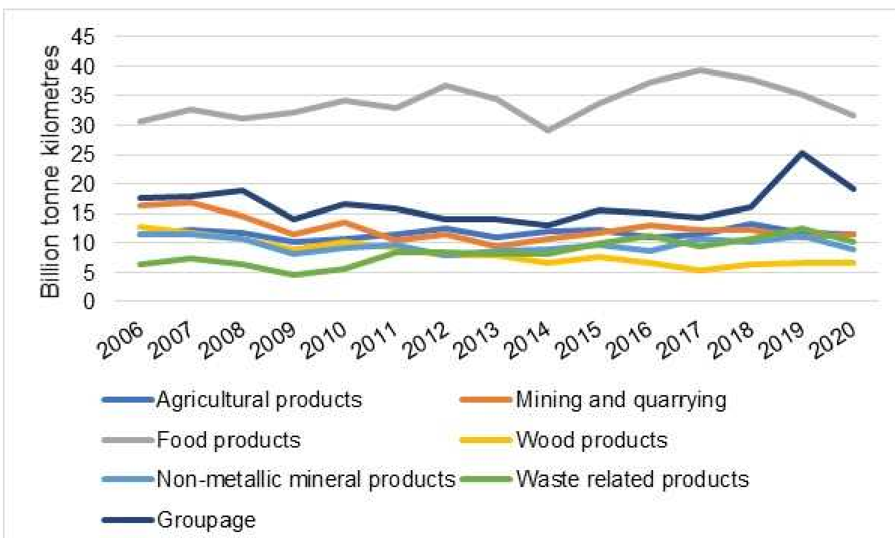
Figures 4.9 and **4.10** show the change in goods lifted (tonnes) and moved (tonne-kilometres) by British-registered HGVs in the UK for selected major commodity categories between 2004 and 2020.

Figure 4.9: Selected commodities lifted by British-registered HGVs in the UK, 2004-2020 (million tonnes lifted)



Notes:
'Non-metallic mineral products' includes glass and cement plus other construction products.
Source: calculated from data in Department for Transport, 2021c.

Figure 4.10: Selected commodities moved by British-registered HGVs in the UK, 2004-2020 (billion tonne-kilometres)



Notes:
'Non-metallic mineral products' includes glass and cement plus other construction products.
Source: Department for Transport, 2021o, 2022.

Source: calculated from data in Department for Transport, 2021c.
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Table 4.5 shows the freight lifted and moved in the UK by HGVs in 2020 and their average length of haul by their mode of appearance. This data indicates the importance of palletised goods and solid bulks in HGV transport (based on weight of products).

Table 4.5: Freight lifted and moved and average length of haul by British-registered HGVs in the UK by mode of appearance of goods, 2020

Mode of appearance of goods	Goods lifted		Goods moved		Average length of haul 2020
	Million tonnes	%	Billion tonne-kilometres	%	Kms
Liquid bulk	106	8%	9.6	7%	91
Solid bulk	428	34%	33.3	24%	78
Large freight containers, including ISO containers	42	3%	5.4	4%	128
Other freight containers, including stillages	16	1%	2.1	2%	131
Palletised goods	315	25%	45.6	33%	145
Pre-slung goods	10	1%	1.1	1%	108
No packaging, such as livestock, cars, plant	80	6%	9.1	7%	113
Roll-cages	107	8%	12.2	9%	114
Other cargo types	167	13%	18.1	13%	109
ALL GOODS	**1,272**	**100%**	**136.4**	**100%**	**107**

Notes:
Mode of appearance refers to how the goods were carried.
Other cargo types include swap bodies, boxes, crates, cylinders and mixed consignments.
Source: calculated from data in Department for Transport, 2021d.

Table 4.6 shows the freight lifted and moved in the UK by HGVs in 1990 and 2020 and their average length of haul by the gross mass of the vehicle. This data indicates the increase in importance of articulated HGVs over the 30-year period (with them responsible for 66% of all goods lifted and 82% of all goods moved in the UK in 2020, compared to 42% of all goods lifted and 69% of all goods moved in the UK in 1990).

Table 4.6: Freight lifted and moved domestically and average length of haul by British-registered HGVs in the UK by gross mass of HGV, 1990 and 2020

Vehicle type	Vehicle gross weight (tonnes)	Goods lifted (tonnes) (% of total)		Goods moved (tonne-km) (% of total)		Average length of haul 2020
		1990	**2020**	**1990**	**2020**	**Kms**
Rigid	Over 3.5t to 7.5t	5%	2%	4%	1%	42
	Over 7.5t to 17t	17%	1%	12%	1%	59
	Over 17t to 25t	16%	6%	5%	4%	68
	Over 25t	20%	25%	9%	13%	57
	All Rigid	*58%*	*34%*	*31%*	*18%*	*58*
Articulated	Over 3.5t to 33t	12%	2%	17%	1%	100
	Over 33t	31%	65%	52%	80%	133
	All Articulated	*42%*	*66%*	*69%*	*82%*	*132*
	All vehicles	**100%**	**100%**	**100%**	**100%**	**107**

Source: calculated from data in Department for Transport, 2021e.

Table 4.7 shows the average length of haul of HGV journeys in the UK in 1990 and 2020 by gross mass of the vehicle. This indicates that while average length of haul was relatively similar articulated HGVs in 1990 and 2020, it was far higher in 2020 than in 1990 for rigid goods over 17 tonnes, but shorter for those under 7.5 tonnes, indicating changes in the operating patterns of these rigid vehicles.

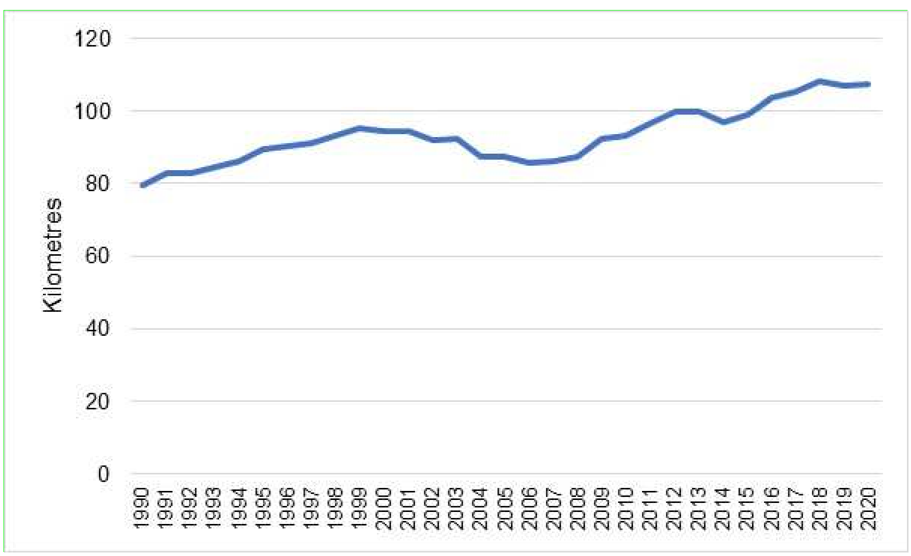
Table 4.7: Average length of haul domestically by British-registered HGVs in the UK in 1990 and 2020 by gross mass of HGV (kilometres and % change)

Vehicle type	**Vehicle gross weight (tonnes)**	**1990**	**2020**	**% change 1990-2020**
Rigid	Over 3.5t to 7.5t	60	42	-30%
	Over 7.5t to 17t	57	59	3%
	Over 17t to 25t	27	68	152%
	Over 25t	37	57	54%
	All Rigid	*43*	*58*	*34%*
Articulated	Over 3.5t to 33t	115	100	-13%
	Over 33t	134	133	-1%
	All Articulated	*129*	*132*	*2%*
All HGVs		***80***	***107***	***34%***

Source: calculated from data in Department for Transport, 2021e.

Figure 4.11 shows the change in the average length of haul for road freight transported by all HGVs since 2000. The average distance over which goods have been moved by HGV has been increasing as a result of continued centralisation in stockholding points in UK supply chains.

Figure 4.11: Average length of haul domestically by British-registered HGVs in the UK 1990-2020 (kilometres)



Source: Department for Transport, 2022p.

In addition to the wholly domestic freight transport discussed above, UK-registered and foreign-registered HGVs also carry out international journeys to and from the UK that involve travelling within the UK on their way to and from seaports and the EuroTunnel. This road freight activity is shown for 2020 in **Table 4.8**. This shows that this international freight activity by road was responsible for 4% of all tonnes lifted in the UK and 23% of all tonne-kilometres performed on road freight journeys starting and/or ending in the UK in 2020 (with foreign-registered HGVs responsible for approximately three times as many tonnes lifted to/from the UK and approximately seven times as many tonne-kilometres as UK-registered goods vehicles).

Table 4.8: Freight moved domestically by HGVs in the UK in 2020

Vehicle status	Goods lifted		Goods moved	
	Million tonnes	**%**	**Billion tonne-kilometres**	**%**
UK-registered HGVs working domestically*	1,314.6	96%	140.5	77%
UK-registered HGVs working internationally**	13.7	1%	5.0	3%
Foreign-registered HGVs working internationally	36.0	3%	36.5	20%
TOTAL	**1,364.3**	**100%**	**182.0**	**100%**

Notes:
* - includes the domestic legs of international journeys.
** - includes journeys to and from Republic of Ireland.
Source: calculated from data in Department for Transport data, 2021c, 2021f, 2021g, 2021h, 2021i, 2021j.

Table 4.9 shows that intermodal journeys by British-registered HGVs accounted for only a small proportion of all journeys (2.6%), all tonnes lifted (4.9%) and all tonne-kilometres (6.1%) by British-registered HGVs in 2020.

Table 4.9: Inter-modal journeys and goods lifted and moved as a proportion of all domestic activity by British-registered HGVs, 2020

Measure of activity	% of all domestic activity by HGVs
Journeys to/from intermodal facilities	2.6%
Tonnes lifted to/from intermodal facilities	4.9%
Tonne-kilometres to/from intermodal facilities	6.1%

Notes:
1. Site of collection or delivery of an item of freight was an airport, a railway siding/terminal or shipping docks
2. Goods transported from an origin to a destination by an HGV
3. Goods lifted: the weight of goods carried, measured in tonnes.
4. Goods moved: the weight of goods carried multiplied by the distance hauled, measured in tonne-kilometres
5. The total excludes double counting where both the origin and destination of a HGV journey are intermodal sites

Source: calculated from data in Department for Transport, 2021k.

Table 4.10 shows the importance of different types of intermodal journeys by British-registered HGVs in 2020. The data shows the dominance of seaport traffic, with docks accounting for 71% of all intermodal journeys, 78% of all intermodal tonnes lifted and 85% of all intermodal tonne-kilometres. Seaports were followed in importance by rial sidings and terminals, and lastly airports.

Table 4.10: Inter-modal journeys and goods lifted and moved by British-registered HGVs by site of collection/delivery, 2020

Intermodal facility	Journey to/from		Tonnes lifted to/from		Tonne-kilometres to/ from	
	Millions	%	Million tonnes	%	Billion tonne-kms	%
Shipping Docks	2.6	71%	49	78%	7.1	85%
Rail Siding/Terminal	0.6	17%	12	19%	1.0	12%
Airport	0.4	12%	2	4%	0.3	3%
Total	3.6	100%	63	100%	8.3	100%

Notes:
1. Site of collection or delivery of an item of freight was an airport, a railway siding/terminal or shipping docks
2. Goods transported from an origin to a destination by an HGV.
3. Goods lifted: the weight of goods carried, measured in tonnes.
4. The total excludes double counting where both the origin and destination of a HGV journey are intermodal sites.
4. Goods moved: the weight of goods carried multiplied by the distance hauled, measured in tonne-kilometres.
5. The sum of the totals include double counting, where the origin and destination of a HGV journey are two different inter-modal sites (e.g. shipping docks as origin and airport as a destination, will count to both the shipping dock total and airport total).

Source: calculated from data in Department for Transport, 2021l.

4.3 Domestic road freight transport by LGVs

At the end of 2021, there were 4.54 million LGVs licensed in the UK, which was equivalent to 11% of all motorised licensed vehicles. The number of licensed LGVs increased by 94% between 1990 and 2021 (Department for Transport, 2022r). At the end of 2021, 96.1% of these vehicles were diesel-powered, 3.1% were petrol-powered, 0.7% were fully battery electric), and 0.1% were gas-powered (Department for Transport, 2022r).

Not all LGV activity is associated with delivery and collection operations. However LGV freight transport operational data is not collected by the Department for Transport on a regular basis so no regular insight into the relative importance of LGV use for goods delivery and collection work and how this has been changing in recent years is available. Survey work in 2019/20, indicated that using LGVs primarily for the collection and delivery of goods accounted for 24% of total van mileage (9% in the case of privately registered LGVs and 28% in the case of company registered LGVs) with an average annual distance travelled for these LGVs of 21,169 miles (14,592 miles for privately registered LGVs and 22,048 miles for company registered LGVs). LGVs used primarily for carrying equipment, tools and materials to enable the provision of a service accounted for 68% of total LGV mileage, private/domestic non-business use (including travel to work) for 8%, recreational and leisure use for 4% and providing transport to other for 2% (Department for Transport, 2020a). A previous LGV survey by the Department of Transport in 2008 found that the delivery and collection of goods accounted for 29% of all LGV distance travelled (with servicing, commuting, and private use accounting for the remainder), compared with 24% in the 2019/20 survey (Department for Transport, 2009). Meanwhile, earlier survey work in 2002/3-2005 found that the delivery and collection of goods accounted for 30% of all LGV distance travelled. This survey work differed from the two more recent surveys in that it asked respondents to keep travel diaries including journey purposes and therefore calculated total mileage associated with delivery and collection work rather than only asking respondents about the primary use of their LGV (Department for Transport, 2004, 2007).

Despite the lack of a regular LGV operating survey that matches the on-going survey carried out by the Department for Transport for domestic HGVs, it is possible to use various sources of Government data (on LGV total annual distance travelled, total annual fuel used, total GHG emissions, LGV GHG emissions factors and assumed LGV payloads and loading factors) together with other sources of data (from the 2019/20 Van Survey about the proportion of total LGV annual distance travelled primarily for delivery and collection work, and average distance travelled annually by those using LGVs for this purpose – Department for Transport, 2020) to estimate the total activity of LGVs used to delivery and collect goods in the UK in 2020.

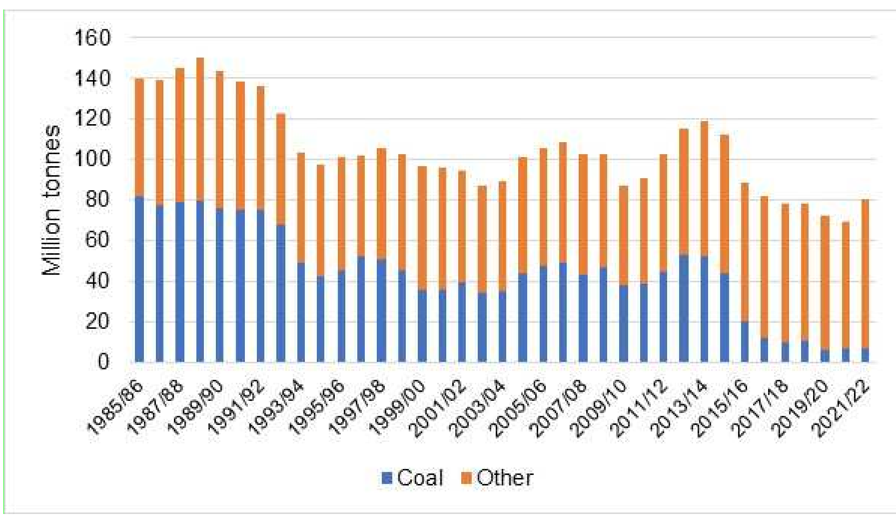
Assuming that 30% of total LGV activity is for goods delivery and collection, 1.0 tonne average LGV carrying capacity, a loading factor of 0.4 when laden, empty running of 25% of total vehicle distance travelled (the same loading factor and empty running as that of 3.5-7.5 tonne HGVs in the 2020 CSRGT data collected by the Department for Transport has been assumed), and an average length of haul of 90 km (taken from the Department for Transport van survey in 2019/20 – Department for Transport, 2020) then it can be estimated that in 2020 LGVs lifted approximately 79 million tonnes of freight domestically in the UK, performed approximately 7 billion tonne-kilometres and travelled approximately 23 billion vehicle kilometres in so doing.

When compared with domestic activity by GB-registered HGVs in the UK, these estimates indicate that LGVs were responsible for 6% of total domestic road freight tonnes lifted, 5% of tonne-kilometres, and 59% of vehicle kilometres (calculated using assumptions taken from data in Department for Transport, 2020, 2021n).

4.4 Domestic rail freight transport

Figure 4.12 shows the total tonnage of freight lifted by rail in Britain since 1985/86. Coal lifted has dimisnished substantially since 1985/86 as electricity generation at British power stations began to decarbonise (with coal lifted falling from 82 million tonnes in 1985/86 to 7 million tonnes in 2021/22). This has been partially offset by an increase in other goods lifted since 2009/10 (with other goods increasing from 49 million tonnes in 2009/10 to 73 million tonnes in 2021/22). Overall, total tonnage of goods lifted by rail was 42% lower in 2021/22 than in 1985/86 (calculated from data in Office of Rail and Roads, 2022a).

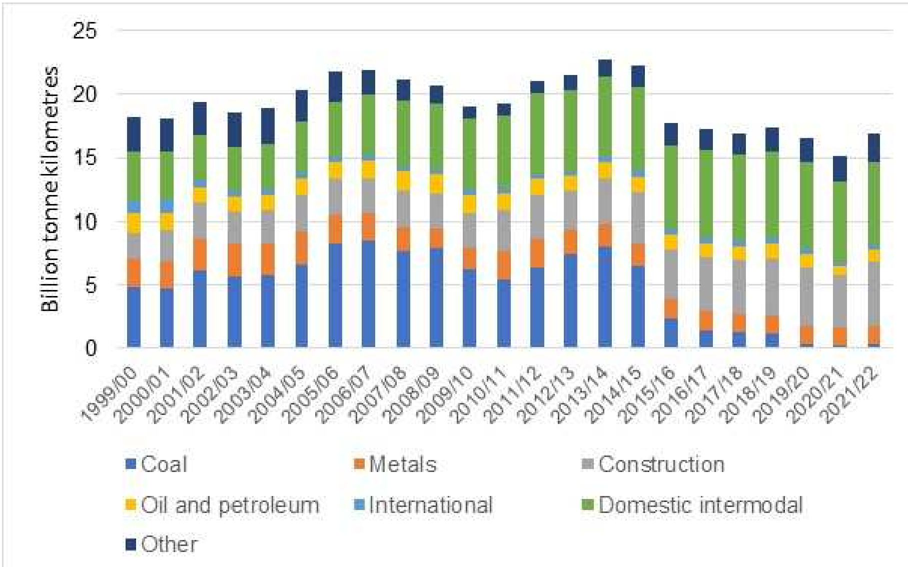
Figure 4.12: Freight lifted by rail in Britain, 1985/86-2021/22



Notes:
Data is for April to March each year.
Source: Office of Rail and Road, 2022a.

Figure 4.13 shows the rail freight moved domestically in Britain by commodity type over the last twenty years. Total rail freight moved has been significantly affected by the reduction in coal traffic as the UK has moved away from coal-fired power plants in efforts to decarbonise electricity generation.

Figure 4.13: Rail freight moved in Britain by commodity, 1999/2000-2021/2022 (net tonne-kilometres)



Notes:
Data is for April to March each year.
'Other' includes biomass, chemicals, domestic automotive, nuclear flasks, domestic waste, general merchandise and parcels and mail.
Source: Office of Rail and Road, 2022b.

Table 4.11 shows the change in the freight moved by rail over the twenty years period by commodity type. While coal, oil/petroleum, international movement and metals have all fallen considerably, construction and domestic intermodal traffic have increased substantially.

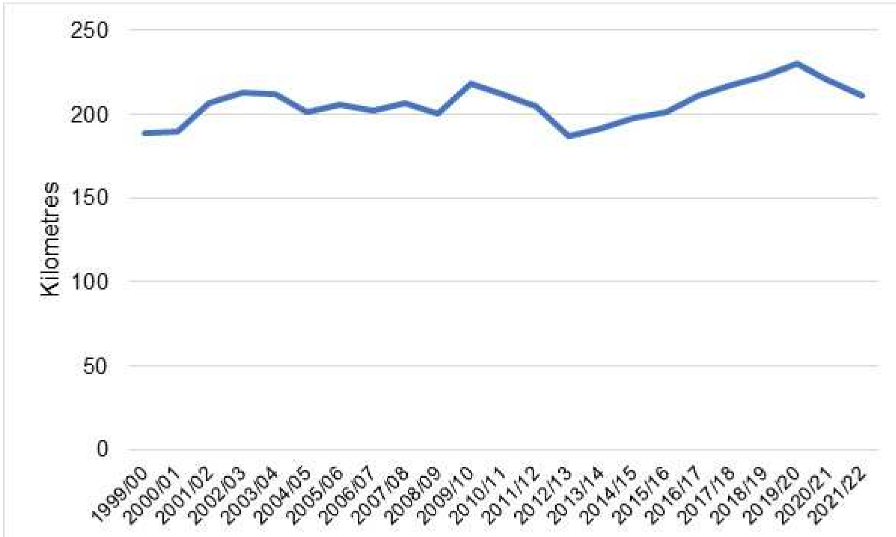
Table 4.11: Change in freight moved by rail in the UK by commodity, 1999/2000-2021/2022 (% change in net tonne-kilometres)

Commodity	% change
Coal	-94%
Metals	-35%
Construction	152%
Oil and petroleum	-38%
International	-68%
Domestic intermodal	66%
Other	-17%
Total	-17%

Source: calculated from Office and Rail and Road, 2022a; 2022b.

Figure 4.14 shows the average length of haul for all ral freight in Britain since 1999/2000. Average length of haul rose over the last decade as a result of the reduction in importance of coal and the rise in the importance of other goods. This is because coal movements tended to be over relatively short distances between ports where the coal was imported to and inland power stations, whereas other more valuable goods which are increasing in importance are moved over longer distances (such as such as containerised traffic moving between deep sea container ports and inland intermodal rail terminals and warehouses that are rail-connected).

Figure 4.14: Average length of haul for rail freight in Britain, 1999/2000-2021/2022



Note: Data is for April to March each year.
Source: calculated from Office and Rail and Road, 2022a; 2022b.

Goods moved by rail can essentially be divided into bulk and non-bulk operations. Bulk operations include bulky usually low-value goods such as construction materials and waste, biomass and coal, that are transport in loose form in rail wagons with journeys usually taking place between privately owned railway sidings (such as between a port and a power station or a quarry and an aggregates terminal). Non-bulk rail freight operations involve goods carried is some form of unit load, which is most commonly a container (but can also take the form of palletised cargo conveyed in railway box wagons). International and domestic intermodal rail freight fall into ths category. The unit load is transported on flat-deck platform wagons between specialist intermodal terminals, at which it is usually transferred to other modes. Intermodal rail freight services can be either scheduled services running at regular intervals usually carrying more than one customers' goods, or can be dedicated services with the entire train operated for one customer.

Domestic intermodal goods moved by rail refer to goods transported to and from seaports and other ports as well as other goods transported by two or more modes of transport (e.g. rail freight train and HGV within the UK – such as goods handled in this way for grocery retailers). Maritime intermodal traffic to/from sea ports accounts for the majority of these domestic intermodal goods category. It does not include goods destined to go through (or to) the Channel Tunnel. These intermodal goods moved domestically by rail in the UK accounted for 41% of all domestic rail freight in 2020/21. The absolute and relative importance of these intermodal goods has been increasing as a proportion of total domestic rail freight over the last 20 years (see **Table 4.12**). These intermodal goods moved domestically by rail in the UK accounted for 39% of all domestic rail freight in 2021/22. The absolute and relative importance of these intermodal goods as a proportion of total domestic rail freight has been increasing over the last 20 years (see **Table 4.12**).

Table 4.12: Intermodal goods moved by rail freight domestically in the UK, 1999/2000 and 2020/2021 (billion net tonne-kilometres and % change)

	1999/2000	2021/2022	Change in tonne-kilometres 1999/2000-2020/2021
Billion tonne-kilometres	3.9	6.5	+66%
Proportion of total rail freight tonne-kilometres	21%	39%	n/a

Note: Data is for April to March each year.
Source: calculated from Office and Rail and Road, 2022a; 2022b.

Rail freight taking place domestically in the UK also includes goods transported to and from mainland Europe via the Channel Tunnel in Folkestone, Kent. These international goods (which include containers, metals, and automotive vehicles) accounted for 2% of all goods moved domestically (i.e. tonne-kilometres) by rail in 2020/21 (calculated from data in Office and Rail and Road, 2022b).

4.5 Domestic waterborne freight transport

UK ports that handled less than one million tonnes of cargo are excluded from the data presented in this section. Tonnages of cargo presented in this section are gross tonnes (which include the weight of crates and other packaging). However the tare weights of containers, road goods vehicles, trailers and other items of transport equipment (for example, the unloaded weight of the vehicle or equipment itself) are excluded. Data is collected from port statistics together with a survey of barge operators (Department for Transport, 2017; 2022s).

Table 4.13 shows a breakdown of all domestic waterborne traffic in the UK in 2020 by type of traffic. This indicates the importance of coastal traffic (both coastwise and one-port) and foreign traffic that has to travel on inland waters to access port facilities located on estuaries. Traffic that was transport wholly on UK inland waters (rivers and canals) represented only 3.2 million tonnes in 2021 (3% of all waterborne freight lifted).

Table 4.13: Waterborne transport within the UK goods lifted and goods moved by traffic type, 2021

Traffic type	Traffic sub-type	Goods moved		Goods lifted	
		Tonnes (million)	%	Tonne-kilometres (billion)	%
Coastal	Coastwise between UK ports	39.3	42%	17.0	71%
Coastal	One-port traffic of UK ports	19.3	21%	5.9	25%
UK inland waters	Internal	3.2	3%	0.1	0%
UK inland waters	Coastwise	5.0	5%	0.1	1%
UK inland waters	Foreign	31.2	34%	0.9	4%
UK inland waters	One-port	6.5	7%	0.3	1%
TOTAL		**93.0**	**100%**	**23.9**	**100%**

Notes:
Coastwise traffic: traffic carried around the UK coast.
One-port coastal traffic: traffic to and from UK offshore installations and sea dredging/dumping.
Coastwise and one-port coastal traffic includes the inland waters component.
Source: calculated from data in Department for Transport, 2022t.

Table 4.14 shows waterborne transport within the UK by cargo category in 2020. Liquid and dry bulks can be seen to be the main types of commodity transported by water, followed by unitised traffic and general cargo. Unitised cargo is mostly RoRo rather than LoLo (see **Figure 4.12**) which moves between Britain and Northern Ireland.

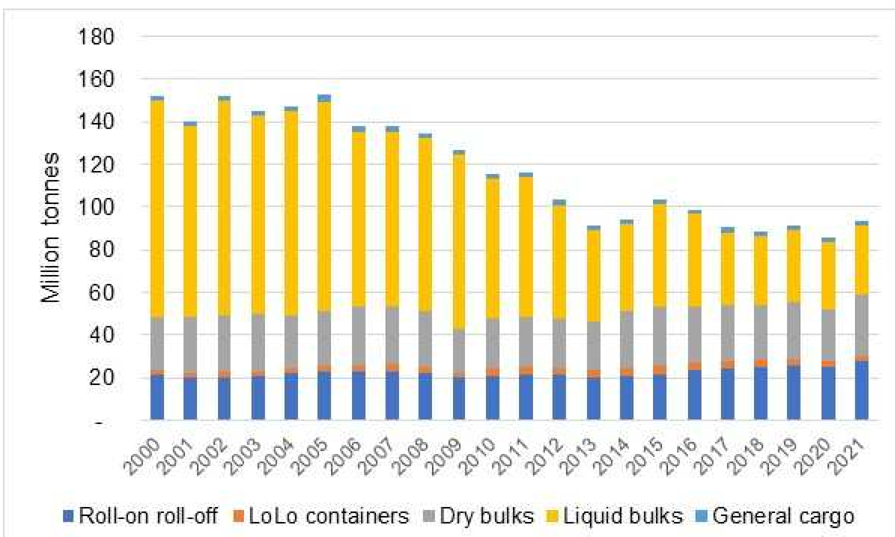
Table 4.14: Waterborne transport within the UK goods lifted and goods moved by cargo category, 2020

Type of cargo	Goods lifted		Goods moved	
	Tonnes (million)	%	Tonne-kilometres (billion)	%
Liquid Bulk	32.6	38%	11.4	46%
Dry Bulk	27.0	31%	8.0	32%
Unitised Traffic	21.1	24%	3.0	12%
General Cargo	6.1	7%	2.3	9%
Total	**86.8**	**100%**	**24.7**	**100%**

Source: calculated from data in Department for Transport, 2022t.

Figure 4.15 shows domestic waterborne lifted since 2000 by cargo category. This indicates the reduction in total tonnes lifted in 2020 compared with the start of the period, which has been accounted for by the reduction in liquid bulks (which fell from 102 million tonnes in 2000 to 31 million tonnes in 2021, primarily due to reductions in the transport of crude oil and oil products).

Figure 4.15: Waterborne transport within the UK by cargo category, 2000-2021 (million tonnes)



Source: calculated from data in Department for Transport, 2022f.

There were 410,000 RoRo HGV domestic crossings between British and Northern Irish ports in 2021. Of these 33% were powered vehicles crossing and 67% were unaccompanied trailers (Department for Transport, 2022u). Comparing 2004 and 2021, these domestic RoRo crossing were virtually unchanged (1% fewer in 2021 than in 2004).

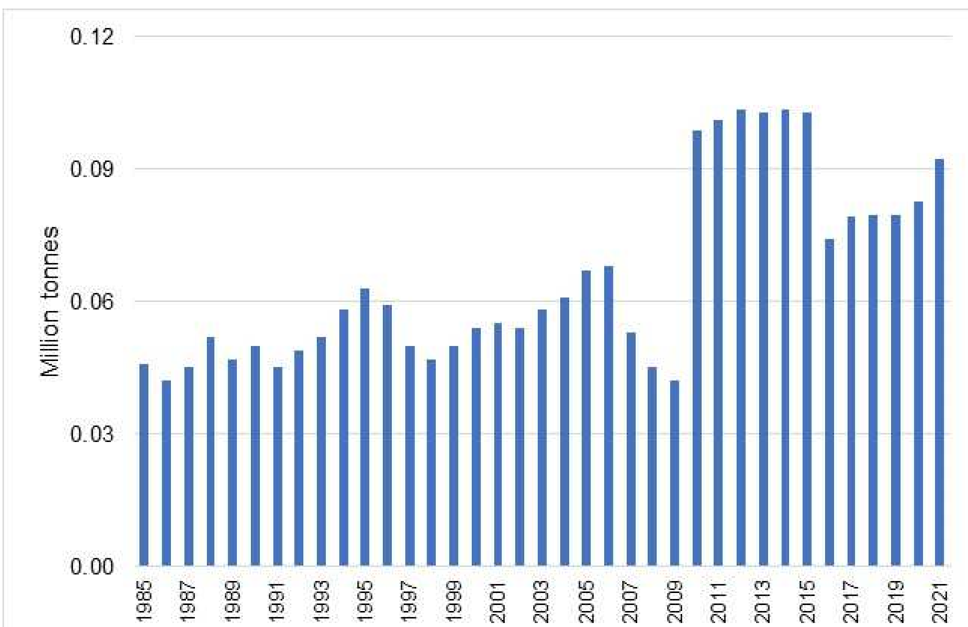
In 2021, the ten most important UK ports in terms of domestic tonnages handled ere Belfast (13.1 million tonnes), London (11.0 million tonnes), Tees and Hartlepool (6.9 million tonnes), Liverpool (5.6 million tonnes), Grimsby and Immingham (4.7 million tonnes), Heysham (4.3 million tonnes), Milford Haven (4.3 million tonnes), Larne (3.2 million tonnes), the Hull and Humber rivers (2.7 million tonnes) and Aberdeen (2.6 million tonnes). The vast majority of tonnage handled at these ports was coastwise traffic, with the exception of London abd Aberdeen where more one-port than coastwise traffic was handled (Department for Transport, 2022v).

Of seagoing domestic tonnes lifted in 2021, 51% was lifted handled on the River Thames, 15% on the River Forth, 12% on the Manchester Ship Canal / River Mersey, 7% on the River Humber and 5% on the River Orwell (Department for Transport, 2022v). Of the inland waterways traffic (which only accounted for 3% of the total tonnage of goods lifted by domestic waterborne transport in the UK in 2021) 54% was lifted handled on the River Thames, 14% on the River Severn, and 7% on th River Humber, with smaller quantities hanlded on the Manchester Ship Canal / River Mersey, River Ouse, and Aire and Calder (Department for Transport, 2022w). This inland waterways traffic traffic is carried by barges or seagoing vessels on inland waterways.

4.6 Domestic air freight transport

Domestic air cargo was handled at 28 airports in the UK in 2021. **Figure 4.16** shows the quantity of domestic air freight to and from UK airports since 1985. The quantity of domestic air freight is very small in weight terms, with only 89,000 tonnes transported in 2021. In 2021, 99% of domestic air freight was transported on dedicated air freighters, while 1% was transported in the bellyhold of passenger aircraft (calculated from data in Civil Aviation Authority, 2022).

Figure 4.16: Domestic air freight handled at UK airports, 1985-2021



Note: Does not include mail transported by air.
Source: Department for Transport, 2022c.

Table 4.15 shows the top ten UK airports for domestic air cargo handling in 2021. East Midlands International accounted for 43% of the UK total in 2021, with the top 3 airports (East Midlands International, Belfast and Edinburgh accounting for 87% of all domestic air freight, and the top ten airports for 99% of all domestic air freight.

Table 4.15: Top ten UK airports for domestic air freight transport, 2021 (thousand tonnes and proportion)

Airport	Freight lifted to and from	
	Thousand tonnes	**% of tonnes lifted**
East Midlands International	38.5	43.3%
Belfast International	24.5	27.6%
Edinburgh	13.8	15.6%
Aberdeen	4.9	5.5%
Birmingham	2.9	3.3%
Stansted	1.4	1.6%
Prestwick	0.8	0.9%
Manchester	0.5	0.6%
Glasgow	0.3	0.3%
Heathrow	0.2	0.2%
Top ten (tonnes and % of UK total)	87.8	98.9%
Total for all UK airports	88.8	100%

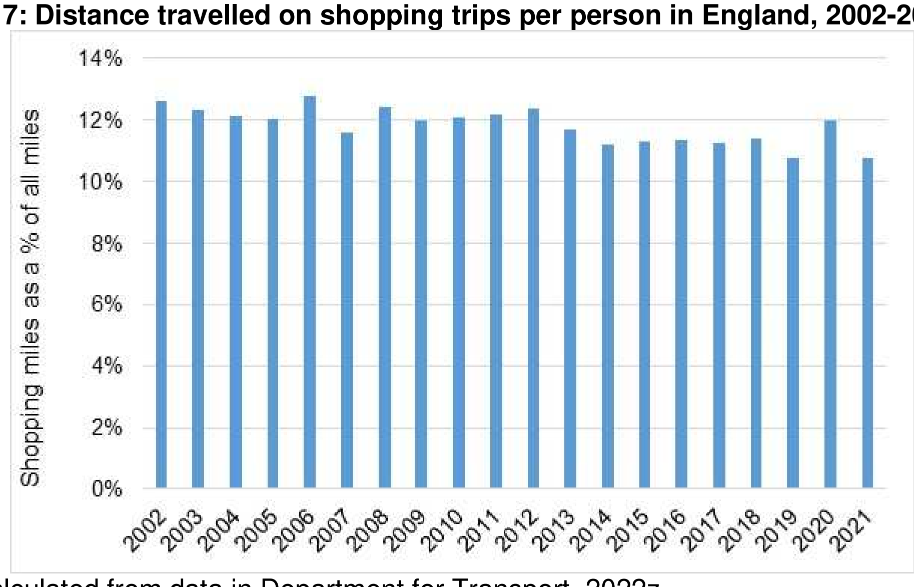
Note: Does not include mail transported by air.
Source: calculated from data in Civil Aviation Authority, 2022.

In addition, 82,000 tonnes of domestic mail was handled at UK airports in 2021. East Midlands International, Belfast and Edinburgh handled 72% of this domestic mail (calculated from data in Civil Aviation Authority, 2022).

4.7 Domestic consumer shopping transport for goods

As well as goods being transport along product supply chains from point of production to point of sale or use, consumers who purchase goods from shops also carry out journeys that involve the movements to and from their homes and the shops where they make purchases. Data from the Department for Transport's National Travel Survey (also referred to as 'NTS') shows that shopping travel has been reducing in importance in relative and absolute terms over the past twenty years. Shopping accounted for 12.6% of total personal travel mileage per year in England in 2002. By 2021, it accounted for 10.8%. However, it rose during 2020 as a result of the Covid-19 pandemic and restrictions concerning permissible reasons for travel during lockdowns, of which shopping was one (see **Figure 4.17**).

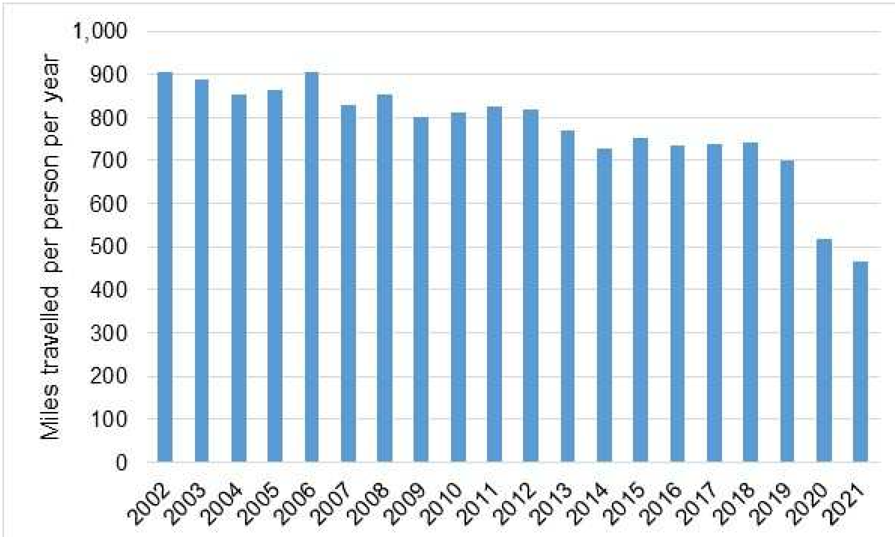
Figure 4.17: Distance travelled on shopping trips per person in England, 2002-2021



Source: calculated from data in Department for Transport, 2022z.

The average total distance that private individuals in England travelled per year on shopping journeys fell by 48% between 2002 and 2021, with the rate of decline increasing since the onset of the Covid-19 pandemic in early 2020 (a fall of 23% between 2002 and 2019 and of 33% between 2019 and 2021 – see **Figure 4.18**). This decline in shopping travel since 2002 is likely to reflect the growing use of online shopping as well as a reduction in shopping as a leisure activity, which was exacerbated by the Covid-19 pandemic.

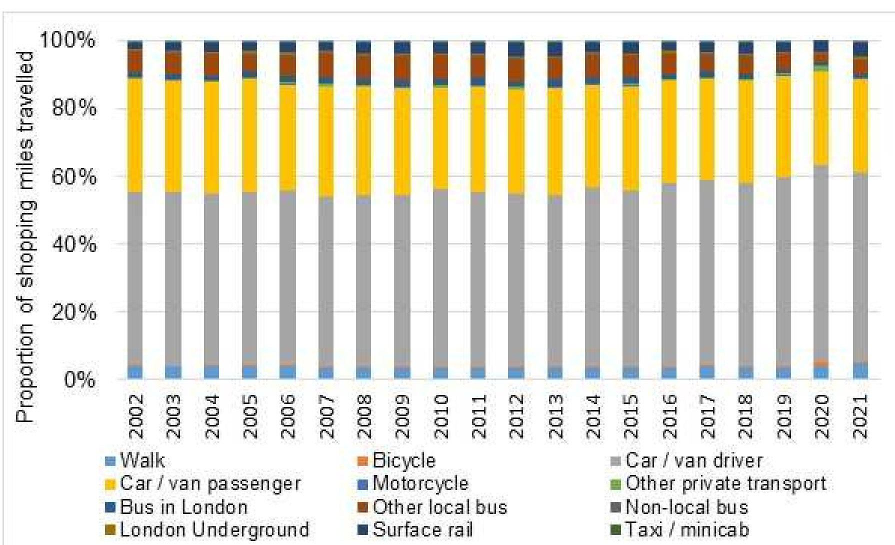
Figure 4.18: Total average annual distance travelled on shopping trips per person per year in England, 2002-2021



Source: Department for Transport, 2022x.

In terms of transport modes used for shopping, the car (and van) predominates, accounting for 84% of total shopping distance travelled (as driver or passenger) in England in 2021 (see **Figure 4.19**). Public transport accounted for 10% of shopping mileage, while walking and cycling accounted for 5% and 1%, respectively, of shopping mileage in 2021. Since 2002 there has been no discernible modal shift away from car/van use for shopping mileage travelled.

Figure 4.19: Shopping miles travelled per year by main mode in England, 2002-2021 (proportion of all shopping trips)



Source: calculated from data in Department for Transport, 2022x.

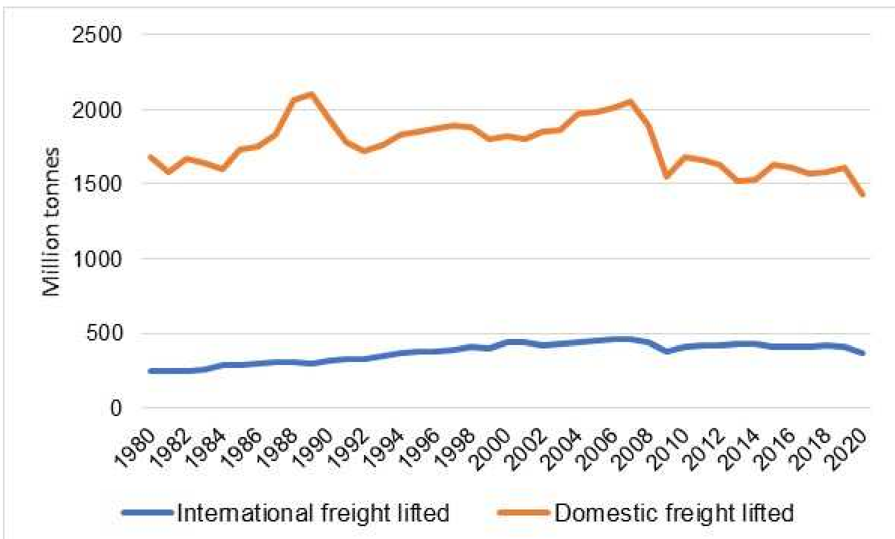
Extrapolating this shopping mode choice and distance travelled from this survey in England to Britain, it is possible to estimate that shopping travel using cars, taxis and vans resulted in approximately 30 billion vehicle kilometres Britain in 2021 (calculated using from Department for Transport, 2022q, 2022x).

5. Comparing freight handled internationally and domestically

Figure 5.1 shows the tonnes of freight lifted internationally to/from the UK with that lifted domestically between 1980 and 2020. This indicates that the tonnage of domestic freight lifted is far greater than international freight. In 2020, international domestic freight transport accounted for 79% of the total domestic and international tonnes of freight lifted shown in **Figure 5.1**, while international freight transport lifted by sea, rail and air accounted for 21% of it.

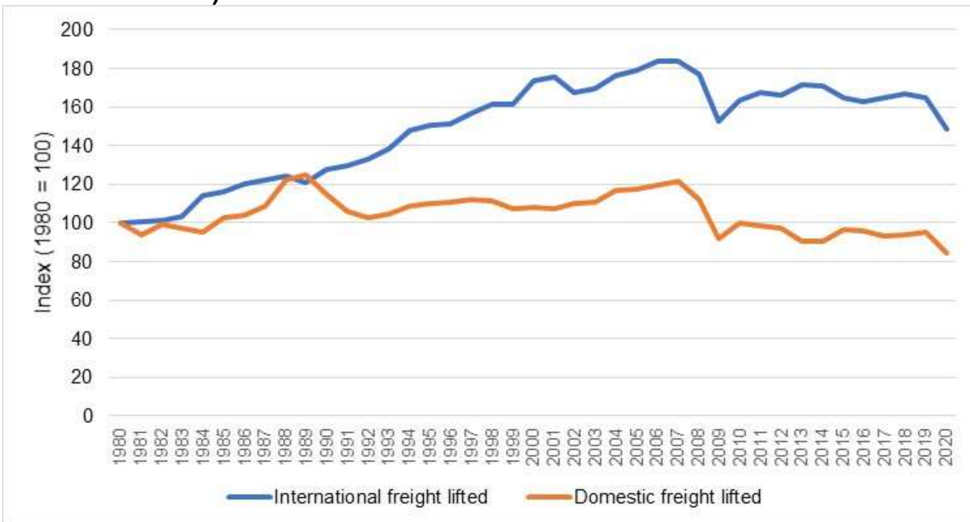
The tonnes of international freight lifted at sea ports, air ports (and rail terminal for international movements through the Channel Tunnel) on their way to the UK have been increasing (due to growing imports). Meanwhile, tonnes of domestic freight lifted were similar at the start and end of the forty year period. This is shown in **Figure 5.2** in which the freight lifted internationally to/from the UK and domestically is indexed to 1980. Over this period, the tonnes of international freight destined for the UK have increased by approximately 50%, despite the reduction in coal imports (which have been partially offset by an increased use of wood pellets in power stations).

Figure 5.1: Freight lifted to/from UK and domestically within the UK, 1980-2020 (million tonnes)



Notes:
International freight shown in the figure includes freight lifted at sea ports, air ports and rail terminals that is despatched to the UK. It does not include inland transport between factories and warehouses to these points of despatch.
Goods transported domestically may be lifted on more than one occasion as they are distributed along their domestic supply chain.
Source: calculated from data in Department for Transport, 2022a, 2022b, 2022c, 2022q.

Figure 5.2: Freight lifted to/from UK and domestically within the UK, 1980-2020 (based on tonnes: index 1980=100)



Notes:
International freight shown in the figure includes freight lifted at sea ports, air ports and rail terminals that is despatched to the UK. It does not include inland transport between factories and warehouses to these points of despatch.
Goods transported domestically may be lifted on more than one occasion as they are distributed along their domestic supply chain.
Source: calculated from data in Department for Transport, 2022a, 2022b, 2022c, 2022q.

The increase in the relative importance of tonnes lifted internationally that are shipped to the UK has altered the split between tonnes lifted domestically and internationally of all UK freight transport. In 1980, this split was 87%:13%, compared to 79%:21% in 2020.

It is important to note that the international freight data shown in **Figures 5.1** and **5.2** does not include the tonnes lifted and transported by land freight transport in other countries where goods destined for the UK are manufactured and which is used to transfer them from factories and warehouses to sea ports and air ports as part of their journey to the UK. By contrast, the domestic freight shown **in Figures 5.1** and **5.2** may be lifted on more than one occasion as they are distributed along their domestic supply chain. If it is assumed that the international freight shipped to the UK from sea ports, air ports and international rail terminal is handled only once by inland transport between production/storage locations and these points of depatch to the UK this alters the split of total domestic and international tonnes of freight lifted in 2020 to 66:34% (rather than 79%:21% without its inclusion). In reality some of this freight may be handled by more than one goods vehicle on these journeys.

In addition, many raw materials and other inputs and components required in the production of these goods manufactured overseas that are transported to and consumed in the UK also require freight transport in these other countries. It is not possible to estimate the tonnes of freight lifted internationally that are associated with the production of thse goods destined for the UK. However, if such calculation were possible it would inflate the absolute and relative importance of the tonnes lifted internationally even more.

This growth in imports, especially of manufactured products by retailer has resulted in the demand for an increasing quantity of warehousing floorspace in the UK, with the average size of warehouses also increasing as the UK retail markets has become increasingly concentrated in the hands of fewer businesses.

Appendix 1: Notes on official freight statistics used in the report

As explained in the Introduction (see **section 1**) this report has provides insight into international freight transport activity to and from the UK as well as domestic freight transport within the UK by all modes. It makes use of official UK government data to do so. Much of data concerning goods transport in this report are expressed in tonnes (tonnes lifted and tonne-kilometres). This is due to a lack of due to a lack of available freight data about the volume of goods transported. Department for Transport freight surveys do not collect data about the volume (i.e. cubic size) of goods transported. There is a general lack of data availability of volume based measures of freight lifted and moved despite the importance of the bulk density of products and unit loads transported in freight transport efficiency. Any changes in the bulk density of products being transported (through the substitution of heavier materials with lighter ones in the manufacturing process) and the effect of this on goods vehicle operations is therefore not reflected in the data presented.

Below are notes about changes in the processing of the official government freight transport data sources used in this report that can affect the comparability of individual time series data.

<u>Maritime statistics</u>

<u>Port statistics</u>

The data included in the Department for Transport's port freight statistics are collected from major ports and shipping lines and agents, on a quarterly basis, and from minor ports annually. Whilst the way in which providers submit information has changed several times, the scope of the collection has remained basically unchanged since 2000 when it was introduced.

UK ports that handled less than one million tonnes of cargo are excluded from maritime port data (both domestic and international) published by the Department for Transport. Although data from before 2000 are considered to be largely comparable with data from 2000 onwards, changes in data collection methodology resulted in some discontinuities in the data between 2000 and previous years (Department for Transport, 2022e).

<u>Ship arrivals at UK ports</u>

Statistics on cargo vessels arriving at UK ports are compiled from two data sources: i) data from the Maritime and Coastguard Agency Consolidated European Reporting System (CERS), which is based on a mandatory reporting procedure for vessels arriving at UK ports, and ii) data collected as part of the port freight collection system described above. Both ports and shipping agent returns capture information about cargo vessel voyages and this information is used where information is not available from the first source. The overall estimates of arrivals are compiled by taking the best estimate from these sources for each vessel and port combination and aggregating them.

The main change in the calculation method for 2018 was to replace data previously purchased from Lloyds List Intelligence (LLI) with data freely available from CERS. These sources differ in coverage, particularly for non-cargo vessels and minor ports - some of which are not well covered in CERS. A detailed comparison for the years for which both estimates are available suggests that these are not systematic; in some cases, CERS counts more vessels and in some cases less, but overall for most ports there was a good agreement between the different approaches.

Users should note that the arrival statistics are best estimates based on the data available, and subject to limitations. In comparing LLI and CERS data, it was noted that some movements within ports (for example, between different terminals within Milford Haven port) were being counted. Such movements have been excluded from the figures calculated under the new approach, wherever possible, which is one reason why the figures on the new basis are generally lower.

Domestic waterborne freight

Domestic waterborne freight data are based largely on data collected through the port freight collection system, but processed differently and with some additional sources, which include: i) inclusion of data for inland waterway movements, which comes from a survey of barge operators, further information for inland movements (such as between Liverpool and Manchester) collected as part of the port freight system but not included in the port freight figures, and estimates for minor ports. It should be noted that when looking at internal waterways traffic, in 2019, more companies responded to the Barge Survey and hence, internal waterways traffic may have seen an increase in their annual figures because of this (Department for Transport, 2017, 2022s).

Road freight transport statistics

The below notes about road freight statistics are from Department for Transport, 2023b unless otherwise stated. THE CSRGT, IHRS and NI IHS are all conducted by surveying a proportion of HGV operators and then grossinh these results up to obtain national estimates.

Continuing Survey of Road Goods Transport (CSRGT) – goods lifted and transported by GB-registered HGVs in the UK

In the 2010 Road Freight Statistics publication it was noted that due to revisions in the vehicle licensing statistics, figures for 2006 to 2009 needed to be revised. Figures from 2010 are on a consistent basis to the revised 2006 to 2009 CSRGT figures. Statistics prior to 2006 have not been revised.

The methodology used to process the data captured from the CSRGT GB questionnaires changed from Q2 2011. Neither the estimates for years prior to 2011 nor the estimates from 2011 have been adjusted to refect this change. Comparisons over time where methodological changes have occurred should be treated with caution.

In 2021, the Department for Transport switched its survey of HGV operators from paper forms to an online data submission. This switch has resulted in a higher response rate and has made it easier to increase data validation checks (with it being found that it has resulted in operators providing more accurate data). It has not resulted in a change in the trend of distance travelled by HGVs, but there an observable increase in the weight of goods lifted by HGVs was found. According to the Department this has meant that comparisons between paper surveys (2020 and earlier) and online data (2021 onwards) should not be made (Department for Transport, 2023c).

International Road Haulage Survey (IRHS) - goods lifted and transported by GB-registered HGVs on international journeys

The methodology used to process the data captured from the IRHS questionnaires changed from Q1 2012. Neither the estimates for years prior to 2012 nor the estimates from 2012 have been adjusted to refect this change. Comparisons over time where methodological changes have occurred should be treated with caution.

Statistics derived from the IRHS for 2004 onwards were retrospectively revised following the methodological review of grossing procedures by the Office for National Statistics. As a result of the revised grossing methodology, IRHS data for 2004 onwards are not directly comparable to those prior to 2004, comparisons between these time periods should be treated with caution.

Northern Ireland Road Haulage Survey (NI RHS)

Prior to 2014 Quarter 4 the Department for Regional Development in Northern Ireland supplied the vehicles to be sampled and the vehicle populations for the purposes of grossing. From 2014 Quarter 4 the sample and vehicle population information is extracted from vehicle records maintained by the Driver and Vehicle Licensing Agency (DVLA).

The methodology used to process the data captured from the CSRGT NI questionnaires changed from Q2 2011. Neither the estimates for years prior to 2011 nor the estimates from 2011 have been adjusted to refect this change. Comparisons over time where methodological changes have occurred should be treated with caution.

Activity of foreign-registered HGVs in the UK

Eurostat collects data from EU member states under Regulation (EU) No 70/2012 of the European Parliament and of the Council of 18 January 2012 on statistical returns in respect of the carriage of goods by road. Department for Transport statistics on the activity of foreign-registered HGVs in the UK have been taken from the Eurostat Transport Statistics Database.

Changes to CSRGT, IHRS and NI RHS between 2011 and 2012

Between 2011 and 2012, a number of changes were made to how the three DfT road freight surveys were processed. While these changes will have different implications for different publication tables (depending on the survey from which the statistics are derived, and the contents of the table), caution should be used when making comparisons over time for statistics based on Continuing Survey of Road Goods Transport Great Britain, Continuing Survey of Road Goods Transport Northern Ireland or International Road Haulage Survey. Estimates prior to 2011 have not been adjusted. Therefore, caution must be used when looking at trends over time (Department for Transport, 2012a).

Roll-on roll-off international freight statistics

The statistics in the Road goods vehicles travelling to Europe series are compiled from quarterly returns of the Roll-on Roll-off Goods Vehicle Survey provided by all the roll-on roll-off ferry operators in Great Britain, for each ferry route leaving Great Britain that carried roll-on roll-off goods vehicles, and by Eurotunnel, for data pertaining to the Channel Tunnel. Only data on vehicles travelling to Europe are collected, where this is defined as the commonly held geographical description of Europe. In each return, operators are asked to provide information on the number of powered vehicles (disaggregated by country of registration) and unaccompanied trailers travelling outbound from Great Britain on the route, during a three month period. Vehicles being exported as freight are excluded from the figures (Department for Transport, 2012b).

Rail freight statistics

Rail freight lifted data excludes the weight of locomotives and wagons. The freight lifted data only covers the four largest freight operating companies due to the unavailability of data from other smaller operators. Based on Network Rail freight moved statistics which covers all operators, these four companies account for around 99% of the freight moved market so the value for freight lifted is underestimated by a very small margin.

Following the prviatisation of rail freight in 1996, there were some changes in the method of estimating freight tonne-kilometres. Changes to source data took place in 1999/2000. Further changes in collection methods for goods lifted by rail took place in 2003/04. From 2005/06 goods lifted data includes data from GB Railfreight. This means that exact comparisons of rail freight tonnes lifted before and after 1999/2000, 2003/04 and 2005/06 and tonne-kilometresbefore and after 1996 should be treated with caution (Office of Rail and Road, 2019; Department for Transport, 2023d).

Air freight statistics

Prior to 2000 DfT air freight were derived from the annual Airport Statistics series published by the CAA. For figures from 2000 onwards, figures are derived from a version of the CAA Airport Statistics held by DfT. The underlying dataset held by DfT is the same dataset that produces the CAA Airport Statistical tables outlined above, however due to differences in data processing methods, figures might vary slightly between the 2 versions of the data.

Air freight tonnage is based on the weight of property carried on an aircraft excluding mail and passengers' and crews' permitted baggage. Freight in transit through the airport on the same aircraft is excluded (Department for Transport, 2013).

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