This article presents information on freight transport in the European Union (EU), covering the transport modes road, rail, air, maritime and inland waterways. The ability to move goods safely, quickly and cost-efficiently to markets is important for international trade, national distributive trades and economic development. The rapid increase in global trade and the deepening integration of an enlarged EU, alongside a range of economic practices (including the concentration of production in fewer sites to reap economies of scale, delocalisation, and just-in-time deliveries), may (at least to some degree) explain the relatively fast growth of freight transport across the EU.

By contrast, strains on the transport infrastructure (congestion and delays), coupled with constraints regarding technical standards, interoperability and governance issues may slow down developments within the EU’s freight transport sector.

**Modal split**

In 2017, around three quarters of inland freight was transported by road (Figure 1). The road freight data used for this analysis have been adjusted to allow comparison with rail and inland waterways transport in terms of transport actually performed on the territory of each Member State. By contrast, the road freight data shown in Table 1 are based on where vehicles are registered, rather than where the transport takes place. More detailed information on the adjustments made to road freight data used for Figure 1 are available in a separate article, focused exclusively on the modal split of freight transport.
The share of EU inland freight transported by road (76.7 %) was more than four times as high as the share transported by rail (17.3 %) in 2017. The remainder (6.0 %) of the freight transported in the EU was carried on inland waterways.

All inland freight transport in Cyprus and Malta was carried out by road, as they have no railways or inland waterways infrastructure. Elsewhere, road transport accounted for more than 90 % of inland freight transport in Ireland, Greece, Spain and the United Kingdom in 2017. By contrast, road transport accounted for less than 30 % of the inland freight transported in Latvia (26.0 %), with the remainder transported by rail. Rail played an important role for the inland freight transported also in the other two Baltic Member States in 2017, with shares of 66.7 % in Lithuania and 44.4 % in Estonia. The share of inland waterways was substantially the highest in the Netherlands (44.7 %). High shares were recorded also in Romania (27.4 %), Bulgaria (24.9 %) and Belgium (15.6 %).

It should be noted that this analysis refers only to inland freight transport; considerable amounts of freight may be transported by maritime freight services and, for some product groups, by air transport or by pipelines.

Relative growth of freight transport and the economy

Over the period 2007-2017, inland freight transport in the EU grew at a slower pace than the **gross domestic product (GDP)** at constant prices. Figure 2 shows that the ratio of these two values was 9.9 % lower in 2017 than in 2007.
Compared with the situation in 2007, Slovenia and Poland recorded the greatest increases in inland freight transport relative to GDP, with their indices 13.6 % and 9.8 % higher in 2017 than 10 years earlier, respectively. By contrast, the ratio of inland freight transport to GDP fell the most in Estonia (-57.0 %), Ireland (-56.2 %) and Romania (-46.6 %).

**Road freight**

It should be noted that these road freight statistics are based on worldwide movements of vehicles registered in the reporting country (‘nationality principle’). Among the EU Member States, road freight transport relative to population size was the highest in Luxembourg, where, on average, 15 786 tonne-kilometres of freight were transported by road for each inhabitant in 2017. This was 57 % higher than the next highest level of road freight transport per inhabitant, recorded in Lithuania (10 073 tonne-kilometres) (Table 1).
Inland freight transport, 2017

<table>
<thead>
<tr>
<th>EU-28</th>
<th>Road (†) (million tonne-kilometres)</th>
<th>Rail (tonne-kilometres per inhabitant)</th>
<th>Inland waterways</th>
<th>Road (†) (million tonne-kilometres)</th>
<th>Rail (tonne-kilometres per inhabitant)</th>
<th>Inland waterways</th>
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</table>

Note: (†) not applicable (c) not available. (c) confidential.

(*†) Road transport is based on movements all over the world of vehicles registered in the reporting country.

Source: Eurostat (online data codes: road_go_ta_tott, rail_go_total, iww_go_atygo and demo_gind)

Table 1: Inland freight transport, 2017

Source: Eurostat (road_go_ta_tott), (rail_go_typeall), (iww_go_atygo) and (demo_gind)

The split between national and international road freight varied considerably across the Member States (Figure 3). In 2017, the highest proportions of national road freight transport were recorded in Cyprus (97.1 %) and the United Kingdom (95.7 %), while shares in Finland, France and Sweden were also above 90 %. By contrast, fourteen Member States reported that the majority of the goods transported by vehicles registered in their Member State had taken place on foreign road networks. The share of international road freight transport in total road freight was particularly high in Lithuania (91.9 %), Slovenia (88.9 %), Luxembourg (87.1 %) and Slovakia (82.1 %).
Air freight

About 16.3 million tonnes of air freight was carried through airports within the EU in 2017. Airports in Germany dealt with 4.7 million tonnes of air freight, considerably more than in any other EU Member State (Figure 4). The United Kingdom and France had the second and third highest amounts of air freight, with 2.7 and 2.5 million tonnes, respectively. Some of the smaller EU Member States are relatively specialised in air freight, notably all of the Benelux countries, in particular Luxembourg, which ranked as the seventh largest air freight transporter among the EU Member States.
Maritime freight

Maritime ports in the EU handled almost 4.0 billion tonnes of seaborne goods in 2017. This was almost exactly the same volume as ten years before, with only a marginal decrease of 0.1% when compared directly with 2007. Sea ports in the Netherlands handled close to 600 million tonnes of goods in 2017, while in the United Kingdom and Italy the level was close to 490 million tonnes; in Spain, the volume of freight handled in Spanish ports exceeded 470 million tonnes (Figure 5). These four EU Member States collectively handled more than half (51%) of the EU’s seaborne freight.
The development of freight transport statistics is based upon a raft of framework legislation and implementing legislation, generally organised according to the mode of transport under consideration. Statistics on inland freight transport are available with an annual frequency and time series generally begin in the early 1990s.

The majority of inland freight transport statistics are based on movements in each reporting country, regardless of the nationality of the vehicle or vessel involved (the 'territoriality principle'). For this reason, the measure of tonne-kilometres (tkm), i.e. one tonne of goods travelling a distance of one kilometre, is generally considered a more reliable measure, as the use of tonnes entails a higher risk of double-counting, particularly for international transport. The methodology used across the EU Member States is not completely harmonised: for example, road freight statistics are generally based on all movements (in the registration country or abroad) of vehicles registered in the reporting country (the 'nationality principle').

The modal split of inland freight transport is based on transportation by road, rail and inland waterways, and therefore excludes air, maritime and pipeline transport. It measures the share of each transport mode in total inland freight transport and is expressed in tonne-kilometres. Note that the data on the modal split presented in this article uses road freight data that have been adjusted to be based on the territoriality principle rather than the nationality principle.

The level of inland freight transport (measured in tonne-kilometres) may also be expressed in relation to GDP; within this article the indicator is presented based on GDP in constant prices for the reference year 2010. This indicator provides information on the relationship between the demand for freight transport and the size of the economy and allows the development of freight transport demand to be monitored relative to economic
developments.

Goods loaded are those goods placed on a road vehicle, a railway vehicle or a merchant ship for dispatch by road, rail or sea. The weight of goods transported by rail and inland waterways is the gross-gross weight. This includes the total weight of the goods, packaging, and the tare weight of the container, swap-body and pallets containing goods; in the case of rail freight transport, it also includes road goods vehicles that are carried by rail. By contrast, the weight measured for maritime and road freight transport is the gross weight (in other words, excluding the tare weight of the container).

Road freight Road freight transport statistics are collected under the framework provided by Regulation (EC) No 1172/98 on statistical returns in respect of the carriage of goods by road, substantially amended several times, and recast as Regulation (EU) No 70/2012. The data are based on sample surveys carried out in the reporting countries and record the transport of goods by road, as undertaken by vehicles registered in each of the EU Member States. It is important to note that almost all of the Member States apply a cut-off point for carrying capacity under which vehicles are not surveyed; this should not be greater than 3.5 tonnes carrying capacity, or 6 tonnes in terms of gross vehicle weight; some of the Member States also apply a limit on the age of the vehicles surveyed.

Rail freight Rail freight data are collected under the framework provided by Regulation (EU) No 2018/643 recast of Regulation (EU) No 2016/2032 on rail transport statistics. The data are collected for a quarterly frequency (usually limited to larger enterprises) and for an annual frequency (covering enterprises of all sizes). Statistics for rail freight are not available for Malta and Cyprus (or Iceland) as they do not have a railway infrastructure. Rail statistics are also collected every five years in relation to a regional analysis (NUTS level 2).

Aside from the mandatory collection of data based on legal acts, Eurostat also collects rail transport statistics through a voluntary data collection exercise. The questionnaire used for this exercise provides information in relation to railway transport infrastructure, equipment, enterprises, traffic and train movements.

Maritime freight The legal framework for the collection of statistics on maritime freight transport is Directive 2009/42/EC on statistical returns in respect of the carriage of goods and passengers by sea (Recast). Maritime transport data are available for most EU Member States from 2001 onwards, although some countries have provided data back to 1997. Statistics on maritime freight are not transmitted to Eurostat by Czechia, Luxembourg, Hungary, Austria and Slovakia as they have no maritime ports; for the same reason maritime data are not available for Liechtenstein or Switzerland.

Inland waterways freight The legal framework for the collection of statistics on inland waterways freight transport is Regulation (EU) 2018/974 of the European Parliament and of the Council of 4 July 2018. This Regulation is a codification of Regulation (EC) No 1365/2006 on statistics of goods transport by inland waterways and includes all its amendments since 2006. Data on inland waterways are only required for those EU Member States with an annual quantity of goods transported that exceeds one million tonnes. On a voluntary basis, countries can provide only a reduced dataset. Currently, eighteen Member States provide data on mandatory or voluntary basis: Belgium (BE), Bulgaria (BG), Czechia (CZ), Germany (DE), France (FR), Croatia (HR), Italy (IT), Lithuania (LT), Luxembourg (LU), Hungary (HU), the Netherlands (NL), Austria (AT), Poland (PL), Romania (RO), Slovakia (SK), Finland (FI), Sweden (SE) and the United Kingdom (UK). Data collection is based on an exhaustive survey of all inland waterway enterprises for all goods that are loaded or unloaded. In the case of transit, some countries make use of sampling methods in order to estimate the volume of goods transported.
**Air freight** The legal framework for air transport statistics is provided by Regulation (EC) No 1358/2003 of 31 July 2003 implementing Regulation (EC) No 437/2003 of 27 February 2003 on statistical returns in respect of the carriage of passengers, freight and mail by air. Statistics on air freight are collected for freight and mail loaded and unloaded in relation to commercial air flights. The information covers national and international freight transport.

Air transport statistics are collected at the airport level by the EU Member States, Norway, Iceland, Switzerland and the candidate countries. Annual data are available for most of the Member States for the period from 2003 onwards, while some countries have provided data back to 1993. Air freight statistics are also collected for a monthly and a quarterly frequency and with a regional analysis (NUTS level 2).

Treatment of double counting in air freight statistics: the national aggregates and total intra-EU-28 aggregates exclude any double counting. They include all the reported departures plus a part of the reported arrivals; the reported arrivals that are included are those for which the corresponding departures of the partner airport are missing.

**Context**

A well-functioning transport system is vital for European Union (EU) enterprises and inhabitants. Transport services are essential for exploiting the economic strengths of all EU regions, supporting the internal market and growth, and for enabling economic and social cohesion. The EU transport policy is laid down in the 2011 White Paper 'Roadmap to a Single European Transport Area — Towards a competitive and resource efficient transport system'. The strategy aims at fostering the development of an efficient, safe and secure single European transport area; shifting towards clean and low-emission mobility; connecting Europe with modern, multi-modal and safe transport infrastructure networks; creating an innovative transport sector through research and innovation activities; and at ensuring affordability, reliability and accessibility of transport. The White Paper was built around 10 goals and 40 initiatives. Currently, the progress towards the goals is under evaluation so that the EU can pave its future transport policy.

In order to monitor progress towards targets, answer specific questions on transport performance and propose future developments, the European Commission analyses a range of transport statistics. Eurostat’s statistics in this field describe the most important features of transport, not only in terms of the quantities of freight that are moved each year, but also the contribution of transport services to the economy as a whole. Data collection is supported by several legal acts obliging the EU Member States to report statistical data, as well as voluntary agreements to supply additional data.

More details concerning the European Commission’s policy initiatives on transport are provided in an introductory article on transport in the EU.

**Other articles**

- Passenger transport statistics
- Freight transport statistics - modal split
- Air transport statistics
- Freight transport statistics - modal split
- Freight transported in containers - statistics on unitisation
- Inland waterway transport statistics
- Inland waterways - statistics on container transport
- Inland waterways freight transport - quarterly and annual data

 eurostat

 Freight transport statistics
• Maritime transport of goods - quarterly data
• Maritime transport statistics - short sea shipping of goods
• Railway freight transport statistics
• Road freight transport statistics
• Road freight transport by journey characteristics
• Road freight transport by type of goods
• Road freight transport by vehicle characteristics
• Road freight transport statistics - cabotage

Publications
• Energy, transport and environment indicators, 2018 edition

Main tables
• Transport, see:
  Regional transport statistics (t_tran_r)
    Maritime transport of freight, by NUTS 2 regions (tgs00076)
    Air transport of freight, by NUTS 2 regions (tgs00078)
  Transport, volume and modal split (t_tran_hv)
    Volume of freight transport relative to GDP (tsdtr230)
    Modal split of freight transport (tsdtr220)
  Railway transport (t_rail)
    Goods transport by rail (ttr00006)
  Road transport (t_road)
    Goods transport by road (ttr00005)
  Inland waterways transport (t_iww)
    Goods transport by inland waterways (ttr00007)
  Maritime transport (t_mar)
    Sea transport of goods (ttr00009)
  Air transport (t_avia)
    Air transport of goods (ttr00011)
Database

- Transport, see:
  - Multimodal split (tran)
    - Transport, volume and modal split (tran_hv)
  - Railway transport (rail)
  - Road transport (road)
  - Inland waterways transport (iww)
  - Oil pipeline transport (pipe)
  - Maritime transport (mar)
  - Air transport (avia)

Dedicated section

- Transport

Methodology

Reference manuals

- Reference manual on rail transport statistics, version 10.1 — January 2019
- Reference manual on air transport statistics, version 14 — September 2017
- Inland waterways reference manual version 9.1 — April 2018
- Reference manual on maritime transport statistics, version 4.0 — November 2017
- Road freight transport methodology — 2016 edition (Revised edition, August 2017)
- Methodologies used in surveys of road freight transport in Member States, EFTA and Candidate Countries — Revised — 2017 edition

ESMS metadata files

- Inland waterways transport (ESMS metadata file — iww_esms)
- Maritime transport (ESMS metadata file — mar_esms)
- Modal split of freight transport (ESMS metadata file — tran_hv_frmmod_esms)
- Common Questionnaire for Inland Transport Statistics (ESMS metadata file — rail_if_esms)
- Road freight transport (ESMS metadata file — road_go_esms)

Legislation

- Regulation (EU) No 70/2012 of 18 January 2012 on statistical returns in respect of the carriage of goods by road (recast)
- Directive 2009/42/EC on statistical returns in respect of the carriage of goods and passengers by sea (recast)
External links

- European Commission Directorate General for Mobility and Transport
- Freight transport logistics in Europe
- International Transport Forum — ITF (formerly the European Conference of Ministers of Transport [ECMT])
- United Nations Economic Commission for Europe (UNECE) — Transport statistics

View this article online at http://ec.europa.eu/eurostat/statistics-explained/index.php/Freight_transport_statistics