Statistics in focus

TRANSPORT

77/2007

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Contents

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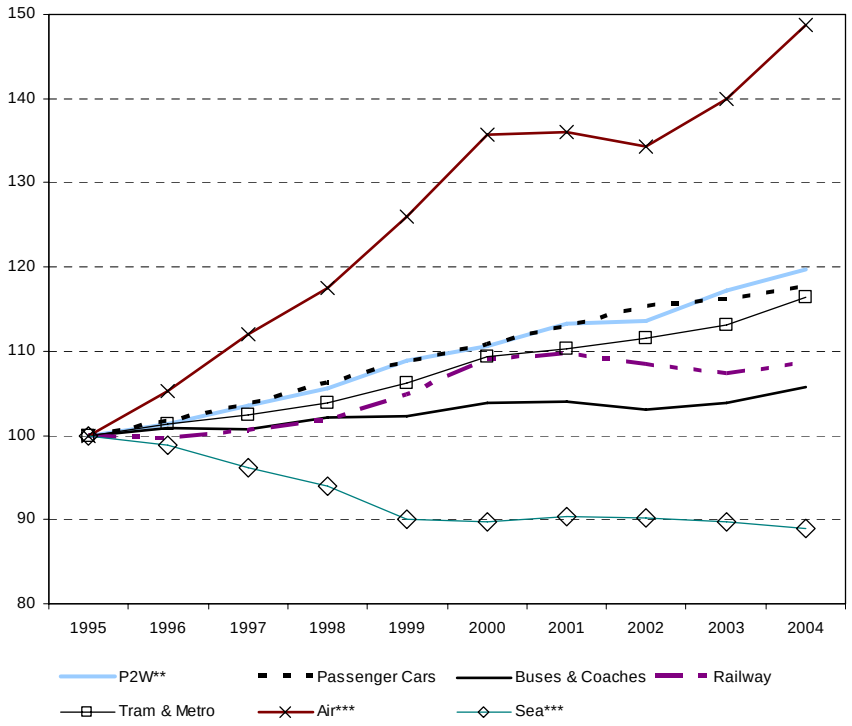
Highlights of the Panorama of Transport 1990-2005

Selected highlights

This *Statistics in focus* highlights a small selection of the data presented in the fifth edition of Eurostat's *Panorama of Transport*, to be published shortly.

- The car motorisation rate was 476 in 2005 in the EU-25, which equates to 1 car for every two inhabitants. This meant a 31 % increase on the rate in 1990.
- Not only does the transport sector ensure that people and freight get from A to B, but it is an industry in its own right: transport employed at least 8.2 million people and generated value added of EUR 363 billion in the EU-25 in 2004.
- Road freight transport showed the fastest growth in transport performance (38 %) in the EU-25, however it was closely followed by sea transport both in absolute and relative growth terms. It was also the single largest employer within transport services.
- Cross-trade and cabotage are most important in the EU's smallest Member States.
- Although most passenger-kilometres are made by car, air passenger transport was the transport mode rising fastest in the EU-25 between 1995 and 2004 (49 %), while sea transport was the only mode to decrease.
- Road accidents in the EU-25 claimed around 41 300 lives in 2005, much more than the death toll in, for example, rail transport (close to 1 500 lives).
- Although road transport accounted for over 93 % of greenhouse gas emissions from transport in the EU-25 in 2004, air transport was the fastest growing polluter.

Figure 1: Evolution of passenger transport (in passenger-kilometres performed*), by transport mode, EU-25, 1995-2004 (1995=100)

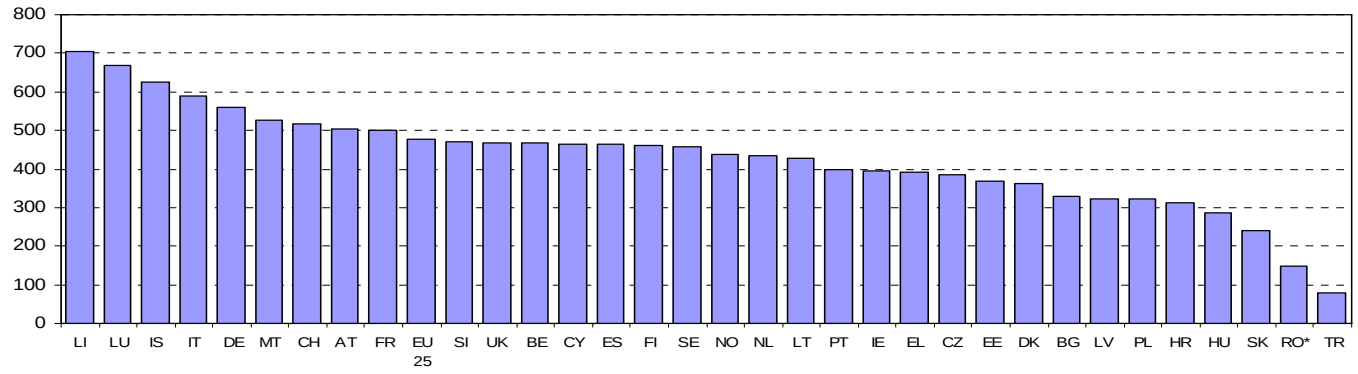


* Unit of measure representing the transport of one passenger over one kilometre.
** Powered two-wheelers.
*** Air and sea transport data only cover domestic and intra-EU-25 transport; data are also under revision.

Source: DG Energy and Transport

Means of transport: Car density equal to 476 cars per 1000 inhabitants in 2005

Figure 2: Number of cars per 1000 inhabitants, 2005



*2004 data.

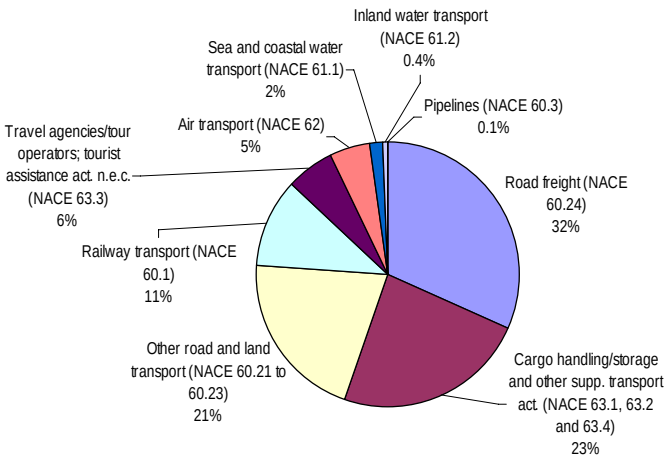
Source: Eurostat (Transport) and DG Energy and Transport

In 2005 there were 476 passenger cars for 1000 inhabitants – equating to about one car for every two inhabitants – compared with a 'motorisation rate' of 364 in 1990. Luxembourg – a Member State with the second smallest car stock – had the very highest rate of 669 cars per 1000 inhabitants. But when looking beyond the EU, Luxembourg was in fact surpassed by EFTA member Liechtenstein with a rate of 705 cars per 1000 inhabitants. Of the 19 Member States with below-average rates, half of them were new members that joined the EU in 2004: only Malta exceeded the average (526).

Other types of transport equipment covered in the *Panorama of Transport* include buses and coaches, and bicycles!

Enterprises, employment and economic performance: 'Road and other land transport' largest transport services activity

Fig. 3: Share of persons employed in transport services, by transport service, EU-25*, 2004 (in %)



*Distribution calculated using rounded estimates for certain components based on non-confidential data. For classification used, see methodological notes.

Source: Eurostat (SBS)

Of the 8.2 million persons employed in transport services in 2004, 'road and other land transport' accounted for over half (52.5 %) of employment, making it the largest single employer by far. 'Road and other land transport' (NACE 60.2) consists of 'road freight' (NACE 60.24) and 'other passenger road and land transport' (NACE 60.21 to 60.23) which covers mainly services such as taxi, bus and coach services (Figure 3). Within 'road and other land transport', 'road freight' accounted for 32% of employment in the EU-25, making it the single largest employer.

Looking at data available for the vast majority of Member States (data not shown), the share of 'road and other land transport' reached around two thirds of total employment in transport in at least three of them: Spain (65 %), Lithuania and Poland (62 % each). The share was lowest in Cyprus (26 %), reflecting the greater importance of 'sea and coastal water transport', 'air transport' and 'travel agencies; tour operators; tourist assistance n.e.c.'.

The EU's largest Member States were generally the largest contributors to transport services, as could be

Table 1: Top ten contributors to transport services, based on selected indicators*, 2004 (in %)

Persons employed (1000)		Value added (EUR bn)		Turnover (EUR bn)		Number of enterprises (1000)	
EU-25	8 186	EU-25	363	EU-25	1 024	EU-25	1 078
DE	15%	DE	18%	UK	19%	ES	20%
FR	14%	UK	18%	DE	16%	IT	14%
UK	13%	FR	15%	FR	14%	PL	13%
IT	11%	IT	11%	IT	12%	FR	9%
ES	10%	ES	9%	ES	9%	DE	8%
PL	7%	NL	5%	NL	5%	UK	6%
NL	4%	BE	3%	SE	4%	CZ	4%
CZ	3%	DK	3%	BE	4%	HU	3%
SE	3%	AT	3%	DK	3%	SE	3%
HU	3%	SE	3%	AT	3%	PT	3%

*See methodological notes.

Source: Eurostat (SBS)

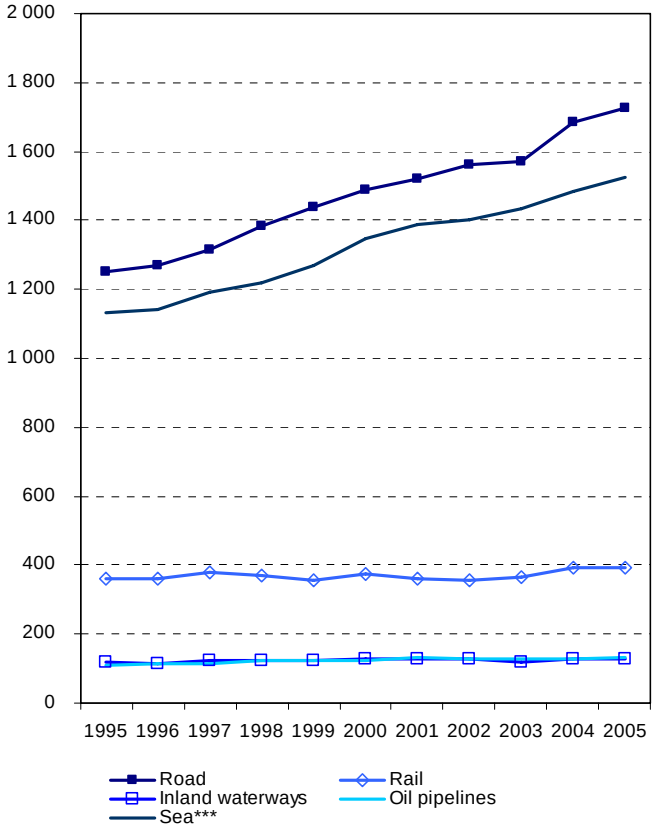
expected. However their ranking varied according to indicator (Table 1): whereas Germany was, albeit marginally, the top contributor to employment and value added, accounting for 15 % and 18 % of the transport services totals respectively in 2004, Spain was the largest in terms of number of enterprises (20 %), and the United Kingdom the largest in terms of turnover (19 %).

Based on available data covering the period 2000-2004 only, employment in transport services went up by 10 %, a growth which was not however as much as that in value added (23 %). The highest employment and value added growths were recorded in the smallest transport services sector pipeline transport: 37 % and 230 % respectively. It was followed by 'cargo handling/storage and other supporting transport activities' for employment growth (27 %) and by 'sea and coastal water transport' for growth in value added (65 %). Not all transport services recorded growths, however. The employment contraction of 14 % in railways (at the same time as 3 % growth in value added) was notable in this respect.

Among the various other aspects analysed by the *Panorama of Transport* is the share of women working in transport services. Based on the 2005 Labour Force Survey, 21 % of the labour force in transport services in 2005 were women, 23 percentage points lower than the 44 % average for services (data not shown). This difference was even larger in a number of Member States, and notably many of those that joined the EU in 2004: Slovenia displayed the highest gender gap of almost 30 percentage points. The smallest difference could be found in Malta (barely 10 points).

Freight transport performance: Road and sea transport largest and fastest growing forwarders

Fig. 4: Evolution of freight transport (in billion tonne-kilometres performed*), by transport mode, EU-25, 1995-2005**



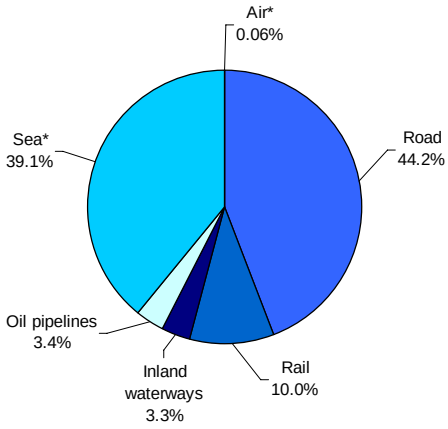
* Unit of measure of goods transport which represents the transport of one tonne over one kilometer.
** Air transport not shown because of the small volumes involved.
***Only domestic and intra-EU transport; data also under revision.

Source: DG Energy and Transport

In the EU-25, total freight transport performance (comprising road, rail, inland waterways, pipelines, intra-EU maritime and air transport) went up by 31 % between 1995 and 2005 from nearly 3 thousand billion tonne-kilometres (tkm) to reach 3 900 billion tkm. This rise was largely attributable to road and sea transport, which accounted for 44 % and 39 % respectively of the total freight moved in 2005, and which displayed growths of 38 % and 34 % respectively (Figures 4 and 5).

These increases led to changes in the modal split, i.e. the share of each transport mode in total freight transport. The progression of road freight between 1990 and 2005 is particularly notable in this respect: its 35 % increase translated into a modal share that was 2 percentage points larger by 2005, reaching a modal share of over 44 %.

Fig. 5: Modal split of freight transport performance, EU-25, 2005 (based on tkm)



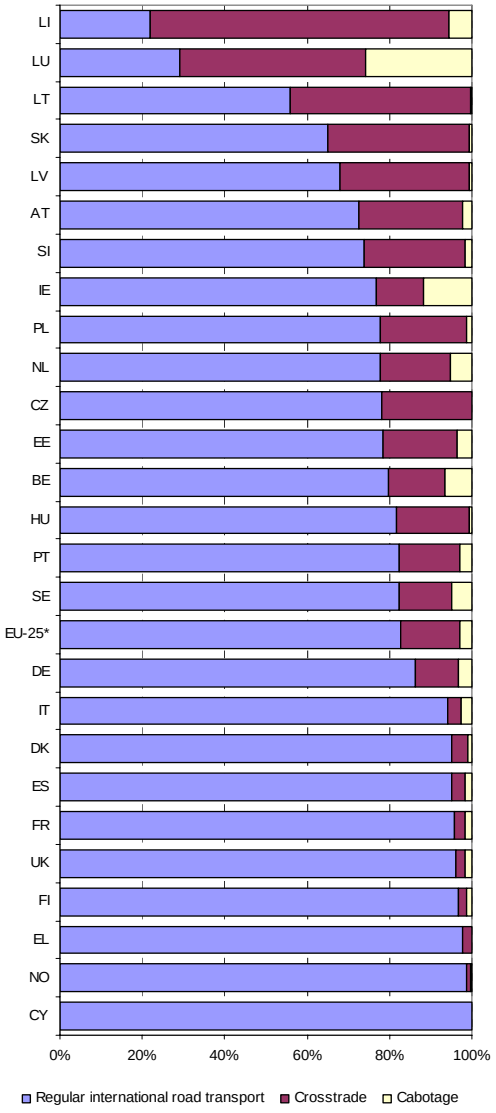
*Sea and air transport: only domestic and intra-EU transport; data under revision. Source: DG Energy and Transport

How important is international road haulage across the EU? The *Panorama of Transport* shows that national transport is generally far more important than the international share, except for smaller Member States where limited national transport markets push hauliers to look for freight opportunities abroad. This is clearly reflected by the transport performances of cross-trade and cabotage transport (Figure 6).

In 2005, total international goods transport by road (including cross trade and cabotage) amounted to about 525 billion tkm. Regular international goods transport (i.e. freight that is either loaded and unloaded in one country (where the vehicle is registered) and, in turn, unloaded or loaded in another country) was by far the largest activity in the EU accounting for 83 % of the total (or 435 billion tkm), leaving 14 % for cross-trade (75 billion tkm), the second largest activity, and 3 % for cabotage (15 billion tkm).

This balance was changeable however when looking at 23 of the EU-25 Member States available. While regular international road transport was clearly the largest activity in the overwhelming majority of Member States, Luxembourg and Lithuania stood out somewhat, with cross trade accounting for 45 % and 44 % respectively of total international road freight. In EFTA member Liechtenstein, however, cross trade represented as much as 72 % of its international road transport. Luxembourg was also exceptional because cabotage attained the highest share international road transport in this country (26 %).

Fig.6: Importance of cross-trade, cabotage and regular international road transport, 2005 (in %)



*EU-25 aggregate excludes CY (data insufficient) and MT (no data available). For definitions, see Methodological Notes.

Source: Eurostat (Transport)

Table 2: Top 20 airports in the EU* based on intra-EU freight and mail loaded/unloaded, 2005

Rank 2005	Airport	Volume handled in 2005 (1000 t)	% change 2003-2005
1	Köln/Bonn (DE)	333.7	16.3
2	Bruxelles/National (BE)	250.3	6.4
3	Frankfurt/Main (DE)	196.3	22.4
4	Nottingham East Midlands (UK)	166.1	15.8
5	London/Heathrow (UK)	152.3	22.0
6	Bergamo/Orio Al Serio (IT)	104.0	16.3
7	Madrid/Barajas (ES)	86.7	19.0
8	Milano/Malpensa (IT)	80.7	43.6
9	Luxembourg/Luxembourg (LU) **	70.3	6.5
10	London/Stansted (UK)	62.1	9.5
11	Athens (EL)	58.6	-3.4
12	Helsinki-Vantaa (FI)	56.6	45.4
13	Wien/Schwechat (AT)	53.7	12.0
14	Amsterdam/Schiphol (NL)	52.5	-1.5
15	Barcelona (ES)	50.6	28.3
16	Lisboa (PT)	38.4	2.3
17	Budapest/Ferihegy (HU)	33.5	9.3
18	Praha/Ruzyne (CZ)	33.3	26.2
19	Larnaka (CY)	29.8	39.8
20	Munchen Airport (DE)	21.9	31.1

*Excluding Danish, French and Swedish airports.
** % change 2004-2005.

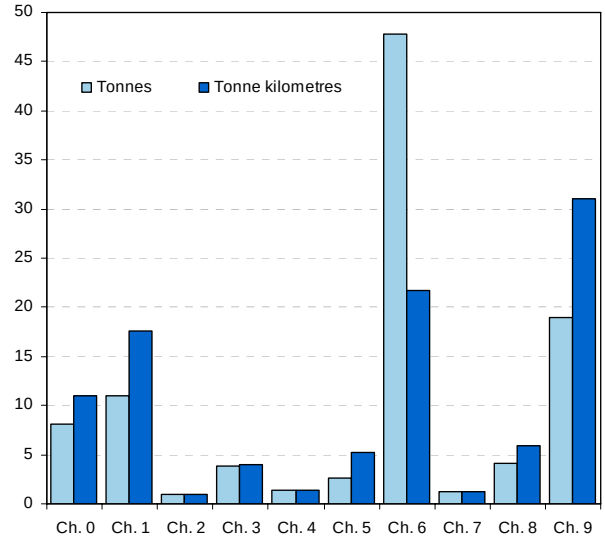
Source: Eurostat (Transport)

When it comes to looking at airports handling intra- or extra-EU freight, it is perhaps no surprise that the EU's traditionally largest airports, such as Frankfurt-Main, London-Heathrow or Amsterdam-Schiphol, rank among the top. But what is perhaps more interesting is the fact that some of the more up-and-coming airports featured among the top few and noticeably for intra-EU freight. This reflects the development of new air cargo hubs to overcome the saturation of traditional airports.

This is the case especially with Köln-Bonn airport, which with 333 700 tonnes, handled the largest volume of intra-EU freight in 2005, which was over 137 000 more than that handled by Germany's most important airport Frankfurt-Main (Table 2). Nottingham East Midlands ranked forth for intra-EU freight with a volume of 166 100 tonnes, making it the UK's most important air cargo hub, ahead of London's Heathrow airport by around 14 thousand tonnes.

What types of goods are transported and how does their performance differ between tonnes and tonne-kilometres? The *Panorama of Transport* shows for instance that although 'crude and manufactured minerals and building materials' (NST/R chapter 6) accounted for the heaviest weight in road transport and inland waterways, and one of the heaviest in rail transport, the distance travelled (expressed in tonne-km) was relatively short (Figure 7). This highlights the locally-sourced nature of this product at the national level as well. This was most obvious in national road transport where the share of this goods category in total tonne-kilometres performed (22 %) was less than half of the share in total weight forwarded (48 %).

Fig. 7: Importance of NST/R chapters* in national road transport, by tonnes and tkm, EU-25, 2004**



* See Methodological Notes.
**Excluding Greece and Malta. Source: Eurostat (Transport)

When it comes to maritime transport, bulk goods were the single largest cargo type handled in 2004, accounting for two thirds total maritime cargo handled, with liquid bulk goods alone accounting for 41 %. Looking at Member States' cargo handling shares in the EU total in 2004 (Table 3), the UK handled the largest shares in both liquid bulk goods (19 %) and roll-on-roll-off mobile units (24 %).

Table 3: Top five handlers of seaborne goods, by type of cargo, 2004 (in % of million tonnes handled in main ports*)

Large freight containers		Dry bulk goods		Liquid bulk goods		Other cargo types, not elsewhere specified		Ro-Ro mobile units	
EU Total	537	EU Total	847	EU Total	1 391	EU Total	225	EU Total	383
DE	16%	NL	16%	UK	19%	IT	12%	UK	24%
ES	16%	UK	13%	IT	16%	UK	11%	IT	13%
IT	14%	ES	12%	NL	13%	ES	10%	SE	10%
NL	12%	IT	10%	FR	12%	NL	9%	DE	9%
BE	11%	FR	9%	ES	10%	BE	9%	EL	8%

*Main ports handling 1 million tonnes or more per year.

Source: Eurostat (Transport)

Passenger transport performance: Passenger cars account for majority of transport performance

In 2004, transport demand in the EU-25 (comprising motorised transport by passenger cars, powered two-wheelers, buses and coaches, railways, subways, trams and metros, together with estimates for air and sea transport) was estimated to be 6 061 billion passenger-kilometres (pkm). This represented an increase of close to 18 % on 1995 figures (5 149 billion pkm). As illustrated in Figure 1 on the cover page, the largest gain was recorded by air transport (intra-EU and domestic only) over the 1995-2004 period: close to 49 %, a rise which increased its modal share.

On the basis of these data, an average of 36 kilometres were travelled by EU citizens per day in 2004, with car transport accounting for nearly three quarters of this total (26.5 km). This mode was followed, a long way behind, by buses/coaches and air transport (3 km each), railways (2 km), powered-two wheelers (1 km), trams and metros (0.5 km) and sea (0.3 km). Of course, this average – based on total passenger-kilometres performed – covers not only people's daily commute, but other activities necessitating transport such as tourism. Readers should note however that non-motorised forms of transport are excluded from the analysis.

Among the analyses made in the *Panorama of Transport* is the importance of country relations in international rail. While 0.6% of passenger rail transport (in number of passengers) was international, more than 60 % of this total was carried out in 5 country pairs alone (Table 4). The Channel Tunnel (between the UK and France) and the Öresund fixed link - both Trans-European Networks - accounted for nearly 45% of total international rail passenger transport. The Channel Tunnel was clearly the busiest connection with 12.8 million passengers using the service (6.4 million embarking and about the same number disembarking). This was nearly double the passenger through-put of the Öresund fixed link (6.8 million). While most passengers on the Channel Tunnel were probably tourists and business travellers, around half of the rail passengers using the Öresund fixed link in 2005 were commuters.

Table 4: Top 5 intra-EU-25 country pairs in rail passenger transport (based on number of passengers), 2004

Rank	Embarking	Disembarking	Passengers (million)
1	United Kingdom	France	6.4
	France	United Kingdom	6.4 *
2	Denmark	Sweden	3.2
	Sweden	Denmark	3.6
3	Belgium	France	2.0
	France	Belgium	1.7
4	Austria	Germany	1.8
	Germany	Austria	1.0
5	United Kingdom	Belgium	1.1
	Belgium	United Kingdom	1.1 *

*Based on data reported by the UK. Source: Eurostat (Transport)

The *Panorama of Transport* also highlights the importance of these crossings in terms of maritime traffic. The fact that Dover and Calais are the EU's two most important passenger ports (notably for roll-on roll-off ferries) highlights the Channel's position as home to the EU's busiest international maritime passenger traffic. Traffic over the Öresund is the second busiest, as suggested by the connections between Sweden and Denmark: between Göteborg and Frederikshavn and between Helsingborg and Helsingor.

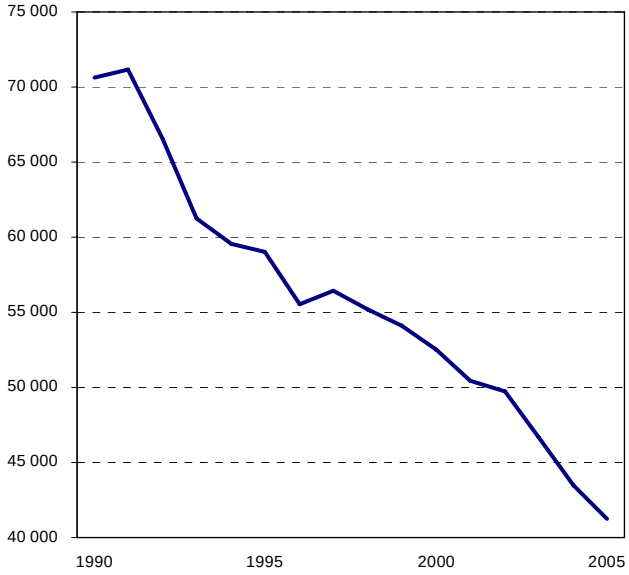
Transport safety:
At least 43 000 people lost their lives in transport accidents in 2005, most of them on the road

In 2005, at least 43 000 people lost their lives in transport accidents in the EU-25 – road, rail and air traffic combined – and most of them on the road.

Based on available data from the CARE database, there were almost 1.3 million car accidents in the EU-25 in 2005 involving personal injury. Close to 41 300 persons lost their lives, which translates as 90 road deaths for every million inhabitants in the EU-25 in 2005. While the total road death toll is shocking – tantamount to the decimation of many a European town – it was actually far less than the peak (over the 1990-2005 period) in 1991 of 71 160 lives lost, representing a decline of 42 % (Figure 8).

In the same year, at least 1 483 persons lost their lives in rail accidents (excluding suicides and metro/light rail accidents). For more information, and for detail on air transport casualties, see the Panorama of Transport.

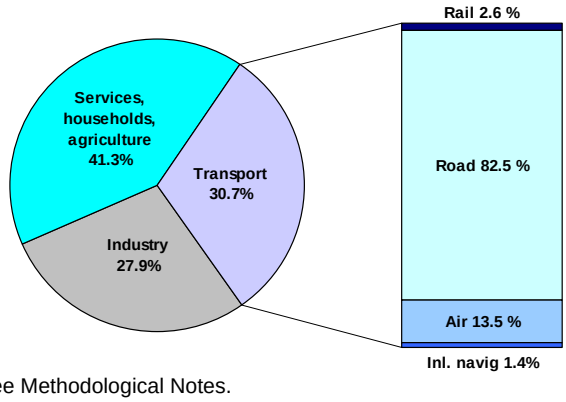
Fig. 8: Evolution of persons killed in road accidents*, 1990-2005



*See Methodological Notes. Source: CARE database

Energy consumption and emissions:
Road transport largest energy guzzler and largest polluter

Fig. 9: Share of transport in final energy consumption*, EU-25, 2004 (in % of mtoe)



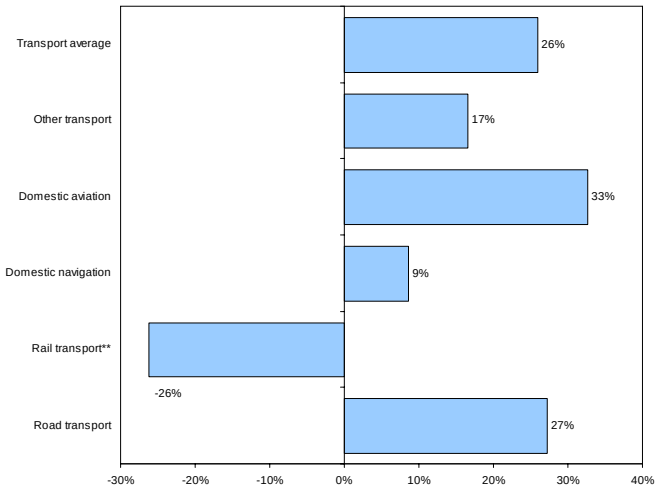
*See Methodological Notes.

Source: Eurostat (Energy)

The share of transport (road, rail, inland navigation and aviation) in total final energy consumption (excluding non-energy use) increased between 1990 and 2004 by four percentage points to reach 352 mtoe (million tonnes of oil equivalent) in 2004, or almost 31 % of total final energy consumption (Figure 9). Within the transport share, road transport was clearly the largest energy consumer, eating up almost 83 % of the total in 2004, or 290 million 'tonnes of oil equivalent' (mtoe).

As one could suspect, road transport remains by far the largest single emitter. According to the European Environment Agency, well over 93 % of transport greenhouse gas emissions came from road transport in 2004. However, looking at the evolution of greenhouse gas emissions over the 1990-2004 period, it was not the fastest polluter (Figure 10): domestic aviation recorded the fastest growth (33 %), ahead of road transport (27 %). The only drop (among the transport modes covered) was in rail transport (-26 %), but readers should note that data cover emissions from diesel combustion mainly: electric traction – which accounted for 66 % of rail energy consumption – therefore escapes the statistics.

Fig. 10: Evolution of greenhouse gas emissions* by transport mode, EU-25, 1990-2004 (in %)



* See Methodological Notes.
**Excluding electric traction.

Source: European Environment Agency

➢ ESSENTIAL INFORMATION – METHODOLOGICAL NOTES

PANORAMA OF TRANSPORT, 1990-2005

This Statistics in focus presents just a small selection of data presented in the fifth edition of Eurostat's Panorama of Transport, which covers, as far as possible, the 1990-2005 period. The Panorama presents the transport sector in the EU, looking specifically at: infrastructure; equipment; enterprises, employment and economic performance; freight and passenger transport performance; safety; and lastly, energy consumption and the environment. While previous editions have covered a wider timespan, the 1990-2005 period has been selected with a view to enlargement and because of numerous changes in EU legislation concerning transport statistics.

SOURCES

All data presented in this Statistics in focus come from the Panorama of Transport, which draws on data primarily from Eurostat (Transport, SBS, Energy and LFS) and DG Energy and Transport (Pocketbook 'EU energy and transport in figures). Other sources include the European Environment Agency and the OECD.

Eurostat data, publications and background information can be found under the theme 'Transport' on Eurostat's website: http://epp.eurostat.ec.europa.eu/.
Data compiled by the Commission DG Energy and Transport (which also draws on Eurostat's data) can be found in its Pocketbook 'EU energy and transport in figures): http://ec.europa.eu/dgs/energy_transport/

DEFINITIONS

Terms and definitions for transport are based on the Glossary of transport statistics, prepared by Eurostat, ECMT (European Conference of Ministers of Transport) and UNECE (the United Nations Economic Commission for Europe).

Other terms and classifications used in this Statistics in focus:

Figure 3 and Table 1:

With regard to Structural Business Statistics (SBS), statistics are presented by sectors of activity according to the NACE Rev. 1.1 system of classification. 'Transport services' corresponds to four NACE Divisions: land transport (60), water transport (61), air transport (62) and supporting and auxiliary services (63). These are further broken down to data at Group or Class level. For further information on SBS data, visit the 'Industry, trade and services' pages on Eurostat's website. For further information on the NACE Rev. 1.1 system of classification, visit 'Ramon' (Eurostat's metadata server): http://ec.europa.eu/eurostat/ramon/

The SBS indicators used in this publication: **Number of enterprises** (the number of enterprises active during at least part of the reference period); **Number of persons employed** (the total number of persons who work in the observation unit, as well as persons who work outside the unit but who belong to and are paid by it. It includes employees, part-time workers, working proprietors, unpaid family workers, seasonal workers etc.); **Value added at factor cost** (the gross income from operating activities after adjusting for operating subsidies and indirect taxes (including value added tax)); and **Turnover** (totals invoiced by the observation unit during the reference period, and this corresponds to market sales of goods or services supplied to third parties).

Figure 6:

International road transport: road transport between two place (a place of loading/embarkation and a place of unloading: disembarkation) in two different countries. It may involve transit through one or more additional countries. **Cross-trade road transport**: international transport performed by a road motor vehicle registered in a third country (country other than that of loading/embarkation or that of unloading/disembarkation. **Road cabotage transport**: road transport performed within a country by a motor vehicle registered in another country.

Figure 7:

NST/R goods chapters

The information presented in Figure 7 is limited to the 10 chapters of the NST/R Standard Goods Nomenclature for Transport Statistics (Revised). The 10 chapters listed below consist of 24 groups of goods.

0 Agricultural products and live animals
1 Foodstuffs and animal fodder
2 Solid mineral fuels
3 Petroleum products
4 Ores and metal waste
5 Metal products
6 Crude and manufactured minerals, building materials
7 Fertilisers
8 Chemicals
9 Machinery, transport equipment, manufactured and miscellaneous articles

For detailed information on the NST/R classification, please refer to 'Ramon', Eurostat's metadata server.

Figure 8:

For both rail and road transport, readers should note that this calculation is based on all persons killed within generally 30 days from the day of the accident.

Figures 9 and 10:

Final energy consumption covers energy supplied to the final consumer for all energy uses. Readers should note that maritime transport and pipelines are excluded from these data. **Greenhouse gases**: Emissions of the 'Kyoto basket' (6 greenhouse gases) covered by the Protocol are weighted by their global warming potentials (GWPs) and aggregated to give total emissions in CO_2 equivalent tonnes. Excluded are ozone depleting substances with global warming properties, as covered by the Montreal Protocol. The figures do not include greenhouse gases from international aviation and maritime transport, nor from electric rail traction.

Further information:

Data: EUROSTAT Website/Home page/Transport/Data

- **Transport**
  - **Transport - Horizontal view**
  - **Railway transport**
  - **Road transport**
  - **Inland waterways transport**
  - **Oil pipeline transport**
  - **Maritime transport**
  - **Air transport**

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