Transport

Author: Simo PASI

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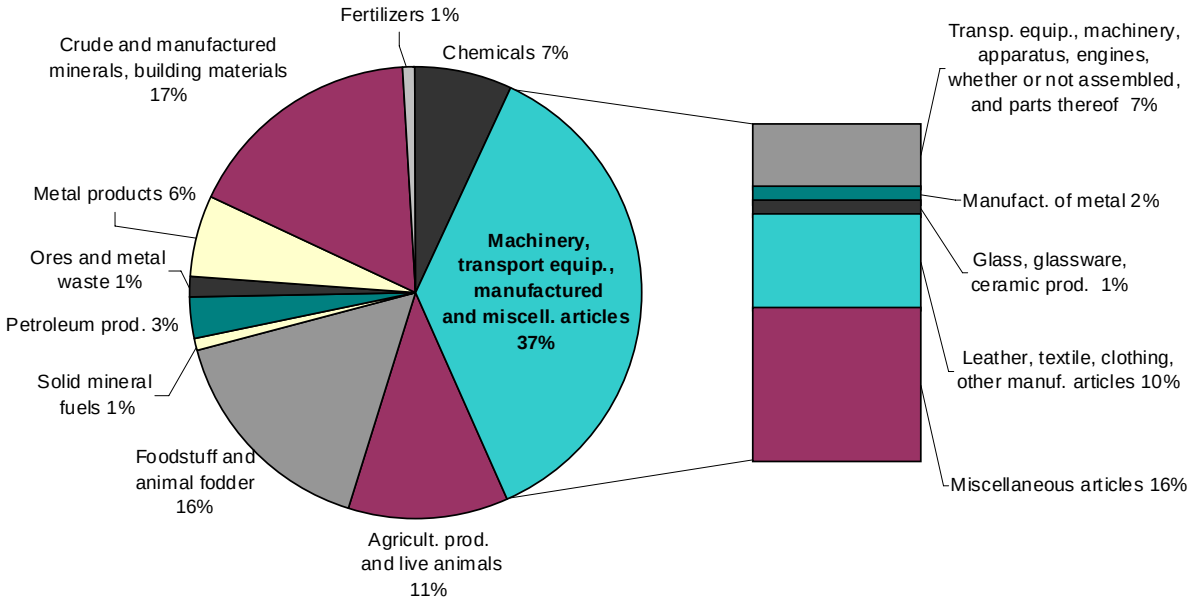
Road freight transport by type of goods - 2006

Highlights

In 2006, road transport in the EU-27, Norway and Liechtenstein carried over 17 billion tonnes, performing some 1900 billion tonne-kilometres (tkm).

- Building materials account for just under a half of the weight of all goods carried.
- Machinery, transport equipment and other manufactured products account for over a third of tkm.
- Average distance travelled by
  - **all goods** 109 km
  - **metal products** 222 km (655 km for international movements)
  - **building materials** 40 km (278 km for international movements).
- Transport of dangerous goods continues to grow, reaching 78 billion tkm in 2005 for the EU-25 and Norway.
- Flammable liquids accounted for 60% of dangerous goods transported by road.

Graph 1: EU-27* and Norway total transport by type of goods, 2006 - % by tkm



** In this publication, 2005 data have been used for Italy (data for 2006 have not been reported yet).*

Total transport

Table 1: EU-27 and Norway national and international transport by type of goods, 2006 - billion tonnes and billion tkm

	Type of goods	Billion tonnes			Share of chapter in total tonnes			Billion tkm			Share of chapter in total tkm			Average journey distances in km		
		Total	National	Inter-national	Total	National	Inter-national	Total	National	Inter-national	Total	National	Inter-national	Total	National	Inter-national
0	Agricultural products and live animals	1.35	1.23	0.12	7.8%	7.5%	12.0%	213	132	81	11.3%	10.4%	13.1%	158	107	689
1	Foodstuff and animal fodder	1.86	1.74	0.12	10.8%	10.6%	12.5%	308	228	81	16.3%	17.9%	13.1%	165	131	658
2	Solid mineral fuels	0.17	0.16	0.01	1.0%	1.0%	0.7%	13	10	3	0.7%	0.8%	0.5%	79	63	488
3	Petroleum products	0.65	0.63	0.02	3.8%	3.9%	1.6%	59	53	6	3.1%	4.2%	1.0%	91	84	370
4	Ores and metal waste	0.25	0.24	0.02	1.4%	1.4%	1.6%	25	18	8	1.3%	1.4%	1.2%	100	75	493
5	Metal products	0.50	0.43	0.07	2.9%	2.6%	7.1%	112	66	46	5.9%	5.2%	7.4%	222	152	655
6	Crude and manuf. minerals, building materials	8.17	8.04	0.13	47.2%	49.2%	13.4%	323	287	37	17.1%	22.6%	5.9%	40	36	278
7	Fertilizers	0.18	0.17	0.01	1.0%	1.0%	0.8%	16	13	3	0.8%	1.0%	0.4%	89	77	358
8	Chemicals	0.74	0.64	0.10	4.3%	3.9%	10.4%	131	71	60	6.9%	5.6%	9.8%	176	110	589
9	Machinery, transport equipment, manufactured and miscellaneous articles	3.45	3.06	0.39	19.9%	18.7%	39.9%	688	394	294	36.5%	31.0%	47.6%	199	129	754
	Total goods	17.33	16.35	0.98	100.0%	100.0%	100.0%	1 888	1 271	617	100.0%	100.0%	100.0%	109	78	631

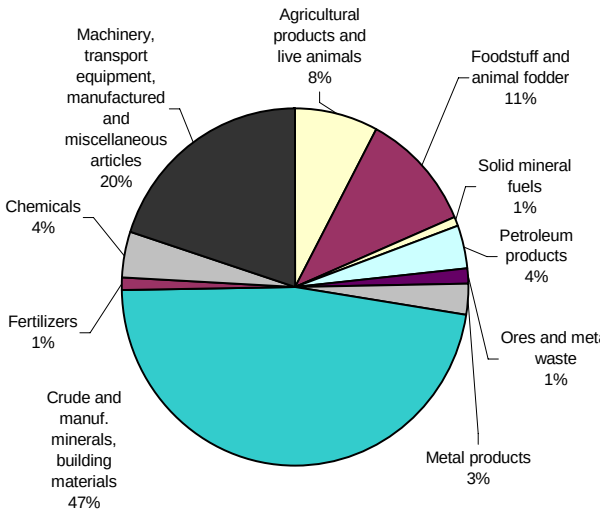
Out of a total of 17 billion tonnes of goods handled in 2006 by road hauliers in the EU-27, Norway and Liechtenstein, 16 billion were national movements and 1 billion international traffic. Building materials and cement accounted for a little under a half of the tonnage both in total and for national movements but just 13% of international transport. Machinery and other manufactures represented a fifth of the total for domestic movements but two fifths for international traffic.

The total road freight performed in 2006 (in tkm) was split into two thirds national traffic and one third international. Machinery and other manufactures accounted for over a third of the total but nearly half of international movements. Metal products' share of international transport was also much higher than for national transport. Building materials and cement accounted for nearly a quarter of national transport compared with 6% of international transport. Agricultural products and foodstuffs, two groups covering a wide range of food products including dairy products, wine and beers and tobacco, accounted for more than a quarter of the performance of both national and international road freight.

Table 1 also shows that in 2006 the average length of freight journey was 109 km in total but 78 km for national journeys compared to 631 km for international journeys.

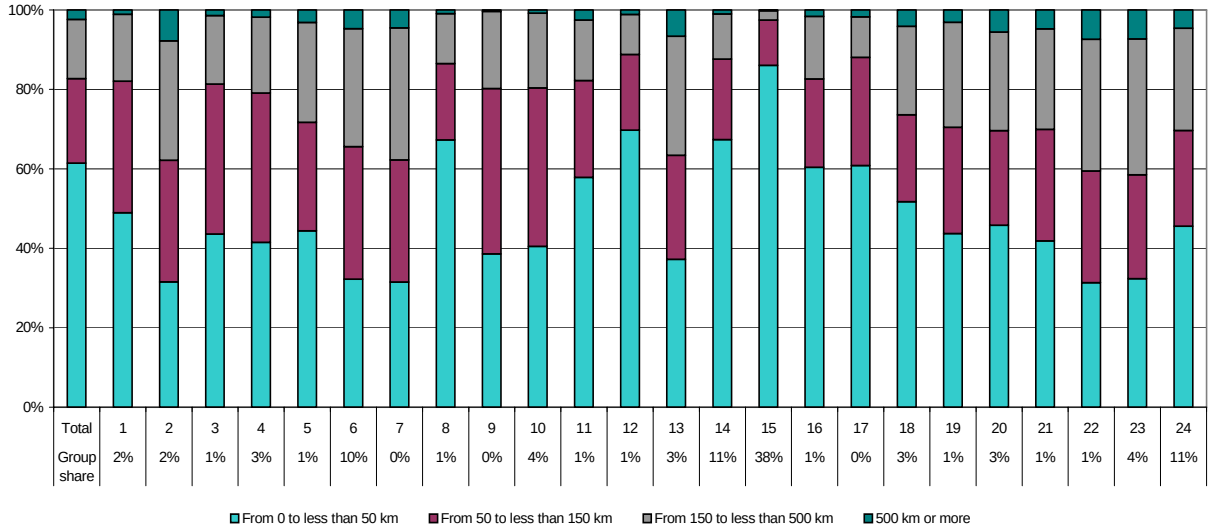
Graphs 1 and 2 show the split of total transport between product groups by both tonne-kilometres and tonnes in 2006. In Graph 1, some additional detail is added for the machinery and other manufactures. One large element of this is miscellaneous articles (16% of the total), a sub group that includes either mixed consignments or consignments that cannot be identified. The other major subgroup is leather, textiles, clothing and other manufactured articles (10% of the total). Graph 2 shows the dominance of the heavy building materials in terms of tonnes lifted.

Graph 2: EU-27 and Norway total transport by type of goods, 2006 - % by tonnes



National transport

Graph 3: EU-27 and Norway national transport by types of goods and distance classes, 2006 - % in tonnes



Graph 3 shows information about distances travelled in 2006 for each type of goods in national transport at a more detailed product level (see methodological notes). Journeys less than 50 km accounted for a little over 60% of the total, while journeys from 50 to less than 150 km took another 20%. The large majority of the remainder were journeys from 150 to less than 500 km, with journeys of 500 km or more taking only one or two per cent of the total. For 4 groups, solid mineral fuels, non ferrous ores and wastes, cement and building materials as well as crude and manufactured minerals (Groups 8, 12, 14 and 15), distance travelled of less than 50 km accounted clearly for more than 60% of the total and in the case of minerals more than 80%. In contrast, for fresh fruit and vegetables, foodstuffs, fertilisers, glass and glassware, and textiles and clothing, such distances represented about a third of the total. At the other extreme, distances travelled of 500 km or more approached 10% only for fresh fruit and vegetables, metal products, glass and glassware and textiles, clothing and other manufactured articles. This illustrates again the differences in the distribution of different commodities.

International transport

The same pattern of shorter average journey lengths for heavy products as against longer journeys for the more expensive manufactured goods emerges again for international journeys but at a much higher level. International journeys for crude building materials, fertilizers and petroleum products all have international journey lengths less than 400 km. In contrast, machinery and transport equipment, agricultural and food products and metal products all have average journey lengths over 600 km. Looking at the top international flows, based on tonnes and tkm, emphasises this difference. Measured in tonnes the top two international flows are both crude minerals such as sand and gravel, travelling relatively short distances, around 100 km, between Germany and the Netherlands, and Belgium and France. In contrast, the top two, based on tkm, are movements of fresh fruit and vegetables from Spain to Germany and the UK, travelling over 2000 km.

Table 2: Major goods carried on selected main country-to-country flows, 2006

From	To	Main NST/R group	Million tonnes	Million tkm	Average distance km
Top-5 flows in tonnes					
DE	NL	15	9.4	761	80
BE	FR	15	7.7	802	100
NL	DE	06	5.8	1 890	330
NL	DE	18	5.7	1 893	330
NL	DE	24	5.7	1 953	350
Top-5 flows in tonne-kilometres					
ES	DE	02	2.5	5 292	2 140
ES	UK	02	1.5	3 171	2 160
DE	ES	20	1.6	2 864	1 750
IT	FR	24	3.5	2 746	800
ES	FR	02	2.9	2 694	930

Source: Road freight data exchange tables 2006 (table D1); 2005 data have been used for Italy.

Graph 4: Major goods carried on the main country-to-country flows, 2006 - % by tonnes

Flow	Main NST/R groups	Million tonnes	Million tkm	Average distance km
DE - NL	15	9.4	761	81
NL - DE	15	2.1	468	221
Total	15	11.5	1 229	107
BE - FR	15	7.7	802	104
FR - BE	15	3.4	355	105
Total	15	11.1	1 157	104
DE - FR	18	3.4	1 978	589
FR - DE	18	3.1	1 773	563
Total	18	6.5	3 751	577
BE - NL	18	3.4	571	168
NL - BE	18	4.0	611	152
Total	18	7.4	1 182	160
BE - DE	18	4.8	1 848	387
DE - BE	18	3.4	1 160	345
Total	18	8.1	3 009	370
ES - FR	23	1.8	1 528	830
FR - ES	23	2.8	2 158	771
Total	23	4.6	3 687	794
DE - AT	23	2.4	1 312	547
AT - DE	23	2.0	1 083	533
Total	23	4.4	2 395	541
DE - IT	06	3.2	2 470	765
IT - DE	06	2.6	2 186	836
Total	06	5.8	4 656	797
FR - IT	06	1.5	1 524	990
IT - FR	06	1.6	1 390	859
Total	06	3.2	2 914	923
PT - ES	15	1.3	350	263
ES - PT	15	2.3	512	224
Total	15	3.6	861	238
DE - PL	23	2.4	1 979	815
PL - DE	23	3.0	2 293	772
Total	23	5.4	4 273	791
DE - CZ	20	0.7	414	556
CZ - DE	20	1.1	614	572
Total	20	1.8	1 029	565

Graph 4 shows the major country to country transport flows in tonnes within the EU-27 in 2006 at detailed product group levels. One major group is Group 15 covering building materials such as sand and gravel. There are substantial flows of these materials between Germany and the Netherlands, Belgium and France, and Spain and Portugal. A more detailed analysis shows major imbalances in all these flows with Germany, Belgium and Spain dominating the traffic as origins. Average journey lengths for this group tend to be low with average distances below 200 km for all but the Spain/Portugal flow.

There are strong flows of Group 18, chemicals, between Belgium and Germany and France and Germany. Here the traffic is much more balanced than for Group 15. This no doubt reflects the location of major production sites and their main customers.

Group 6, which includes wine, butter, coffee, tobacco and fish, features in flows between Italy and France and Italy and Germany. The traffic for this group of goods is well balanced. Of interest is the long average journey length for the traffic between France and Italy, about 900 km in both directions.

There are two flows of Group 20, one between France and Spain and another one between Germany and the Czech Republic. This group covers vehicles and their engines and other machinery. These two flows are balanced and represent the delivery of new vehicles from the production plants in the respective countries as well as the supply of components to these production facilities. The average journey length for the Spain/France flows are very long, both over 700 km.

Group 23, Textiles, clothing, leatherwear and other manufactured articles, features in three flows: Germany and Austria, Poland and Germany, and France and Spain. In the case of the Poland/Germany flow, the average journey lengths are very long at over 700 km in both directions. This flow may represent some relocation of manufacturing from Germany.

Dangerous goods

Table 3: Transport of dangerous goods by reporting country - billion tkm

	1999	2000	2001	2002	2003	2004	2005	2006
BE	2,8	3,5	4,2	3,8	2,6	2,3	2,5	2,2
BG	:	:	:	:	:	:	:	0,4
CZ	:	2,9	2,1	1,9	2,2	1,5	1,8	1,9
DK	0,9	0,9	0,8	1,0	0,8	0,9	0,7	0,9
DE	12,3	12,8	13,4	12,0	12,8	13,5	13,2	13,7
EE	:	:	:	:	0,0	0,0	0,3	0,2
IE	0,6	1,0	1,1	1,1	1,4	1,5	1,4	1,3
EL	:	:	:	:	2,0	3,9	2,0	3,1
ES	9,0	10,7	10,3	12,0	12,2	12,7	12,5	12,7
FR	8,3	7,6	8,1	8,5	8,8	8,7	8,8	9,5
IT	10,9	10,9	11,1	10,5	10,1	9,9	11,4	:
CY	:	:	:	0,1	0,1	0,2	0,2	0,2
LV	:	:	:	0,1	0,2	0,1	0,2	0,2
LT	:	:	:	:	1,2	1,2	0,4	0,5
LU	0,2	0,2	0,2	0,3	0,3	0,3	0,4	0,4
HU	:	:	:	:	:	:	:	:
MT	:	:	:	:	:	:	:	:
NL	1,0	0,8	2,1	1,7	1,7	2,0	2,2	2,4
AT	1,0	0,9	1,1	1,0	1,1	0,9	1,0	1,1
PL	:	:	:	:	:	3,7	3,6	3,3
PT	1,6	1,3	1,8	1,7	1,9	2,1	2,0	2,0
RO	:	:	:	:	:	:	:	2,6
SI	:	:	0,5	0,4	0,4	0,5	0,6	0,6
SK	:	:	:	:	0,4	0,4	0,4	0,5
FI	1,9	2,1	2,4	2,3	2,4	1,8	2,2	2,3
SE	:	1,8	1,6	2,0	1,8	1,5	1,6	1,7
UK	10,8	11,7	10,7	10,2	9,9	8,0	8,8	7,6
EU-27*	:	:	:	:	:	77,5	78,1	:
NO	1,1	1,1	0,8	0,9	1,1	0,9	0,9	0,9

: not available

** Without MT and HU.*

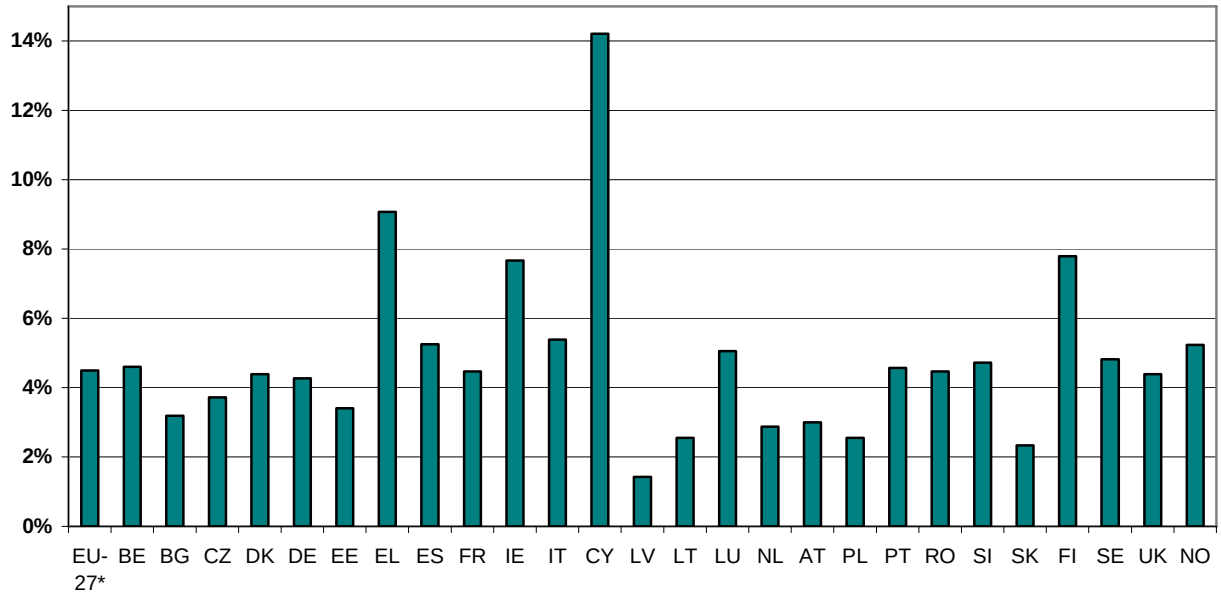
No transport of dangerous goods for LI.

Table 3 shows the transport of dangerous goods in billion tkm for the Member States of the EU-27 and Norway over the period from 1999 to 2006.

In 2005, a total of 78 billion tkm was recorded for the EU-25, and with the addition of Bulgaria and Romania, that total should be easily exceeded for the EU-27 in 2006. This is emphasised by the fact that more countries recorded a rise in dangerous goods transport in 2006 compared with 2005. Among the major economies, only the UK recorded a fall (13%) while Germany, France and Spain recorded rises (4%, 7% and 2% respectively). Indeed, much of dangerous goods transport occurred in the major EU economies, Germany, Spain, Italy, France and the UK.

Over the period since 1999, despite the erratic nature of the figures, there appears to have been strong growth in the transport of dangerous goods in Spain and smaller rises in Germany and France but a decline in the UK. Among the smaller economies, there were substantial rises in the transport of dangerous goods over the same period in Ireland, Luxembourg and the Netherlands though from a much smaller base.

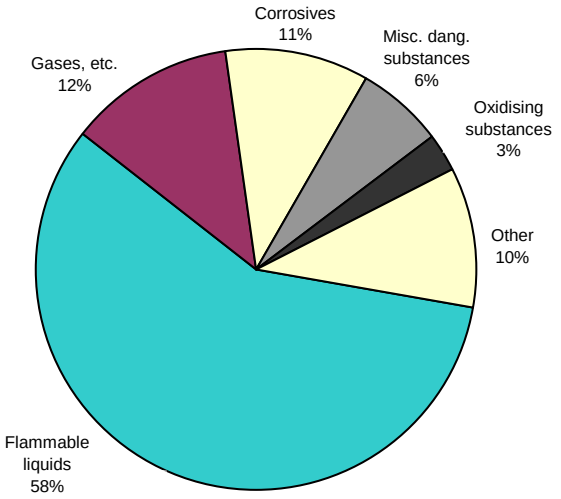
Graph 5: Share of transport of dangerous goods in total transport by reporting country, 2006 - % in tkm



** EU-27 without HU and MT.*

Graph 5 shows the share of dangerous goods transport in total transport at country level in 2006. For most countries, the share of dangerous goods transport hovered around 4%. All the major economies recorded figures in the 4% to 6% range. Some countries had a substantially greater proportion: Cyprus recorded over 14%, Greece around 9%, while Finland and Ireland settled in the 7% to 8% range. At the other extreme was Latvia with a figure a little over 1%, while Lithuania, Poland and Slovakia were a little above 2%. The Netherlands and Austria were also well below the EU-27 average.

Graph 6: EU-27* and Norway transport of dangerous goods by type of dangerous goods, 2006 - % in tkm



** EU-27 data without MT and HU.*

Graph 6 shows the dangerous goods products involved in such transport in 2006. The largest specific product group was flammable liquids, taking over a half of the total. Two other groups, gases (compressed, liquefied or dissolved under pressure) and corrosives, accounted for 12% and 11% respectively. This represents very little change compared with previous years when there was a very similar distribution between the product groups.

Looking in more detail at flammable liquids, the largest group of dangerous goods, these are mainly made up of Petroleum products (Group 10). The road transport of this product group is almost entirely national transport (97%). The average distance travelled, at less than 90 km in national transport and 370 km in international, is one of the shortest, with only minerals, building materials and fertilizers recording shorter distances.

METHODOLOGIAL NOTES

The data presented in this publication were collected in the frame of Council Regulation (EC) 1172/98 on statistical returns in respect of the carriage of goods by road. These data are based on sample surveys carried out in the reporting countries, i.e. EU Member States, Norway and Liechtenstein and record the road goods transport undertaken by vehicles registered in these countries.

Breakdown by goods groups

As foreseen in Annex D of the Council Regulation (EC) 1172/98, the classification of goods up to the reference year 2007 shall be according to the NST/R classification (Standard Goods Nomenclature for Transport Statistics / Revised) which consists in 24 goods groups. For detailed information on the NST/R classification, please refer to 'Ramon', Eurostat's Classification Server (http://ec.europa.eu/eurostat/ramon). Starting with the reference year 2008, the NST 2007 is to be used.

Group	Chapter	Description
1	0	Cereals
2		Potatoes, other fresh or frozen vegetables, fresh fruits
3		Live animals, sugar beet
4		Wood and cork
5		Textiles and waste, other raw animal and vegetable materials
6	1	Foodstuffs and animal fodder
7		Oil seeds and oleaginous fruits and fats
8	2	Solid mineral fuels
9	3	Crude petroleum
10		Petroleum products
11	4	Iron ore, iron and steel waste and blast furnace dust
12		Non-ferrous ores and waste
13	5	Metal products
14	6	Cement, lime, manufactured building materials
15		Crude and manufactured minerals
16	7	Natural and chemical fertilisers
17	8	Coal, chemicals, tar
18		Chemicals other than coal, chemicals and tar
19		Paper pulp and waste paper
20	9	Vehicles and transport equipment, machinery, apparatus, engines, whether or not assembled, and parts thereof
21		Manufactures of metal
22		Glass, glassware, ceramic products
23		Leather, textiles, clothing, other manufactured articles
24		Miscellaneous articles

Member States use their own national surveys for the collection of data based on returns from road hauliers. The results are micro-data referring to vehicles and their linked journeys providing detailed information on goods transported.

Tables providing a breakdown by group of goods are since 1999 on European level derived from basic goods transport operations (goods related information).

Total transport

Total transport includes national transport, international transport - goods loaded or unloaded in the reporting Member State, cross-trade and cabotage transport.

Dangerous goods

Council Regulation (EC) 1172/98 foresees the collection of information on different categories of dangerous goods. If applicable, these variables are obligatory. Annex E of the Council Regulation (EC) 1172/98 provides the categories to be used.

As the carriage of dangerous goods by road represents only a small percentage of total road transport and the data are collected on the basis of sample surveys, the importance of the carriage of these goods could sometimes either be over- or underestimated. These elements should be kept in mind when reading this publication.

The term 'hauliers' used in this publication refers to transport operators that perform road transport for 'hire or reward' as well as those that perform transport for 'own account'.

Germany: National figures published on the transport of dangerous goods may differ from figures in this publication as a result of different methods to calculate tkm of multiple-stop journeys. Moreover, the total weight of goods loaded is applied to dangerous goods when dangerous goods are transported together with other cargo.

Italy: Data for 2006 have not been reported yet; therefore 2005 data have been used.

Malta: Since 2004, Malta has not reported any road transport data.

Hungary: Hungary has not reported any data on dangerous goods for the period 1999-2006.

Sweden: Sweden reported 1999 data according to the former Directives and no data for dangerous goods were provided for that year.

Bulgaria and **Romania** had no obligation to report for years prior their accession in 2007 and started to report data for the reference year 2006.

Liechtenstein: Liechtenstein reports only international road freight.

Graph 4

Total international transport – loaded, unloaded and cross-trade - includes transport reported between each pair of countries by hauliers registered in all Member States. Transport undertaken by hauliers registered in other countries is not included.

More detailed data and metadata are available in the Eurostat dissemination database and on CIRCA:
http://forum.europa.eu.int/Public/irc/dsis/transport/library?l=/03_road/data_monitoring&vm=detailed&sb=Title
http://forum.europa.eu.int/Public/irc/dsis/transport/library?l=/03_road/5_methodology/precision_calculations&vm=detailed&sb=Title

Data availability

The figures presented in this publication have been extracted from Eurostat's free dissemination database and reflect the state of data availability on the 10th March 2008.

In this publication

1 billion = 1 000 000 000

Column headings (Table 2 and Graph 4) were revised on 26 August 2008.

This publication was prepared with the assistance of Richard Butchart, Anthony Albertinelli and Marie-Noëlle Dietsch.

Further information

Data: Eurostat Website/Transport/Road transport/Road freight transport measurement/ Total road freight transport/Annual road freight transport, by type of goods

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