Transport

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Statistics in focus
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A fall in average vehicle loads

Average loads, distances and empty running in road freight transport - 2010

Average vehicle loads, after rising in 2007, began a sharp decline in 2008 which continued into early 2009 before a gradual recovery began (Figure 1).

Two factors were behind this:

a) a fall in construction activity for Europe as a whole;

b) a faster decline in total international transport than in national transport in 2008 but with a faster recovery in 2010.

Higher loads were reported for international transport than for national transport.
Higher loads were also recorded by countries with heavy products, e.g. timber for Sweden or fruits and vegetables for Spain, or with a substantial international transport performance, e.g. Lithuania.

Most road freight transport falls in the middle distance band with journeys between 150 km and 999 km.
In 2009, longer distance transport (over 1 000 km) was hit very hard by the economic crisis but recovered strongly in 2010.
Short distance transport was also strongly affected in 2009 and declined again in 2010, a reflection of the weakness in the European construction sector.

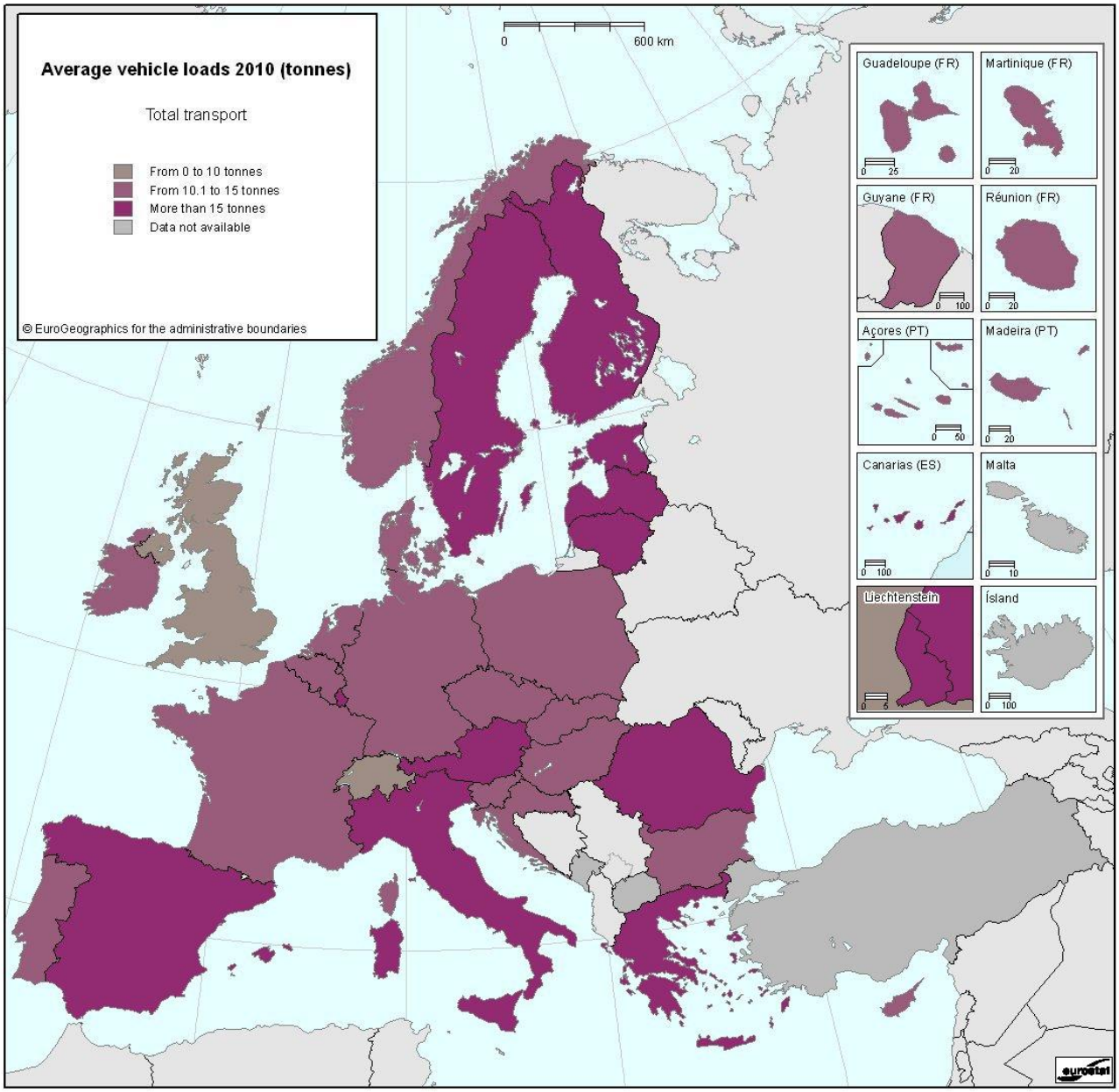
Empty running is twice as prevalent in national transport than in international transport.
Between 2007 and 2010, the ratio of empty running vehicle-kilometres in the total fell by one percentage point, from 25% to 24%.

Figure 1: Average vehicle loads for total transport in the EU-27 (tonnes)

* EL and UK: 2009 instead of 2010.
Source: Eurostat (online data code: road_go_tq_tott).

Products transported and/or high international transport affect loads for countries

Map 1: Average vehicle loads for total transport, 2010 (tonnes)



* EL and UK: 2009 data

Source: Eurostat (online data code: road_go_ta_tott)

Average vehicle loads varied significantly between countries (Map 1).

At one extreme were Sweden, Finland, the Baltic countries, Spain, Italy, Austria, Greece and Romania where the average vehicle loads were more than 15 tonnes. For Sweden and Finland this is partly explained by the heavy loads in the forestry industries in those two countries. Hauliers in Italy and Spain both move heavy loads of fruit and vegetables.

At the other extreme are the United Kingdom and Switzerland, both with average loads less than 10 tonnes.

It should be noted that the average vehicle loads for total transport depend on the proportions of national and international transport performed by each country, especially when comparing figures in Map 1 and in Table 1.

Table 1: Average vehicle loads for national and international transport (tonnes)

	2007		2010		% change 2007-2010	
	National	International	National	International	National	International
EU-27	12.7	16.1	12.7	16.0	-0.1%	-0.7%
BE	10.3	17.7	11.8	17.8	14.2%	0.4%
BG	10.4	14.9	10.9	15.9	5.6%	7.2%
CZ	8.3	14.6	9.5	15.5	15.3%	5.6%
DK	9.3	15.1	9.6	13.1	2.4%	-13.2%
DE	13.0	16.0	12.9	15.7	-0.5%	-1.4%
EE	13.7	16.4	13.3	17.5	-2.4%	6.5%
IE	10.4	16.8	10.6	16.8	1.5%	-0.3%
EL*	14.1	19.4	14.5	20.1	3.1%	3.3%
ES	15.7	17.6	15.5	18.1	-1.0%	2.9%
FR	12.8	17.8	12.4	17.7	-3.4%	-0.9%
IT	15.7	15.9	15.6	15.6	-0.3%	-2.1%
CY	12.6	18.0	12.8	21.0	2.0%	16.7%
LV	6.0	16.8	14.8	17.2	145.7%	2.1%
LT	10.0	16.6	11.5	17.8	15.0%	7.1%
LU	11.4	16.6	11.3	16.9	-1.4%	1.7%
HU	11.7	16.4	12.3	15.9	5.5%	-3.1%
NL	9.3	14.7	9.5	14.7	2.1%	-0.4%
AT	13.1	17.9	13.4	17.6	2.1%	-1.6%
PL	11.1	15.4	12.2	15.4	10.7%	0.4%
PT	12.7	16.9	11.0	17.2	-13.3%	1.5%
RO	15.1	18.4	14.8	16.6	-1.4%	-9.7%
SI	10.1	15.8	9.9	15.7	-2.2%	-0.2%
SK	6.6	14.2	5.4	13.4	-18.5%	-5.7%
FI	16.3	19.0	15.6	20.7	-4.3%	9.2%
SE	18.7	15.8	16.3	15.9	-12.6%	0.2%
UK*	9.9	9.9	9.8	10.4	-1.6%	5.1%
LI	:	17.0	:	16.8	:	-0.7%
NO	12.8	20.0	12.5	20.4	-2.3%	1.8%
CH	:	:	8.2	15.1	:	:
HR	:	:	13.2	16.9	:	:

Source: Eurostat (online data code: road_go_ta_tott).

As Table 1 shows, the tonnages moved in international transport were significantly higher than for national transport. For the EU-27, the average load for international transport in 2010 was 16 tonnes while the load for national transport came to a little under 13 tonnes. There were substantial variations at individual country level.

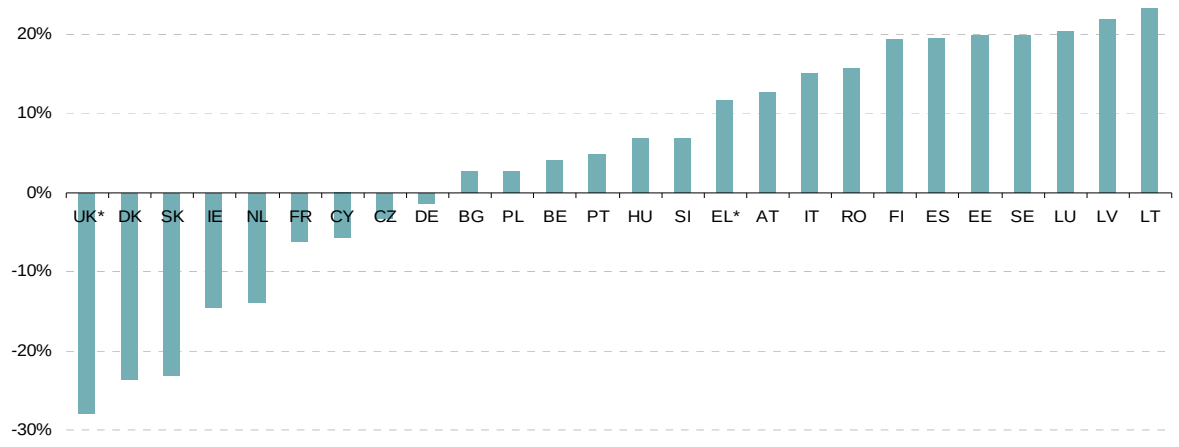
In contrast to the overall picture, average loads in national traffic in Sweden were higher than in international traffic and it had the highest average for any country. No doubt, the higher permitted loads in Swedish national traffic were the prime reason for this. Loads in Italy were much the same for the two categories. Cyprus and Finland recorded the highest average load for international transport, both with more than 20 tonnes. Slovakia had the lowest average load for national traffic and five other countries, the Czech Republic, Denmark, the Netherlands, Slovenia and the United Kingdom, recorded figures less than 10 tonnes.

Comparing 2010 with 2007, Latvia saw a 145% rise in its average national load and Slovakia an 18% fall. For international traffic, Finland recorded a 9% rise in the average load, while Denmark showed a 13% decline. There was also a 17% rise in Cyprus, though the level of such transport is very small.

In 2010, while Sweden and Italy had average loads on national transport higher or equal to international transport, the United Kingdom, Romania, Latvia and Spain had international loads just over national average loads (less than 20% higher). On the other hand, the Czech Republic, Cyprus and particularly Slovakia had international average loads that were more than 60% larger than national loads (for Slovakia, the figure was nearly 150% larger).

Figure 2 gives another presentation of the variation of average loads across countries. Average loads in the United Kingdom, Denmark and Slovakia were all more than 20% below the EU average. In contrast, Luxembourg, Latvia and Lithuania had average loads more than 20% higher than the EU average. The high share of international transport in these countries might provide some explanation.

Figure 2: Variation of each country's average vehicle loads from EU average in total transport, 2010 (% on tonnes)

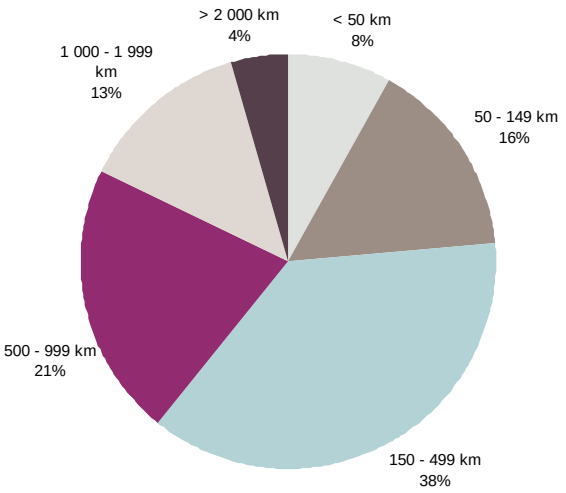


* 2009 instead of 2010.

Source: Eurostat (online data code: road_go_ta_tott).

Geography and competitive advantage key factors in country distance profiles

Figure 3: EU-27 total transport by distance classes, 2010* (% on tkm)



* EL and UK: 2009 instead of 2010.

Source: Eurostat (online data code: road_go_ta_dc).

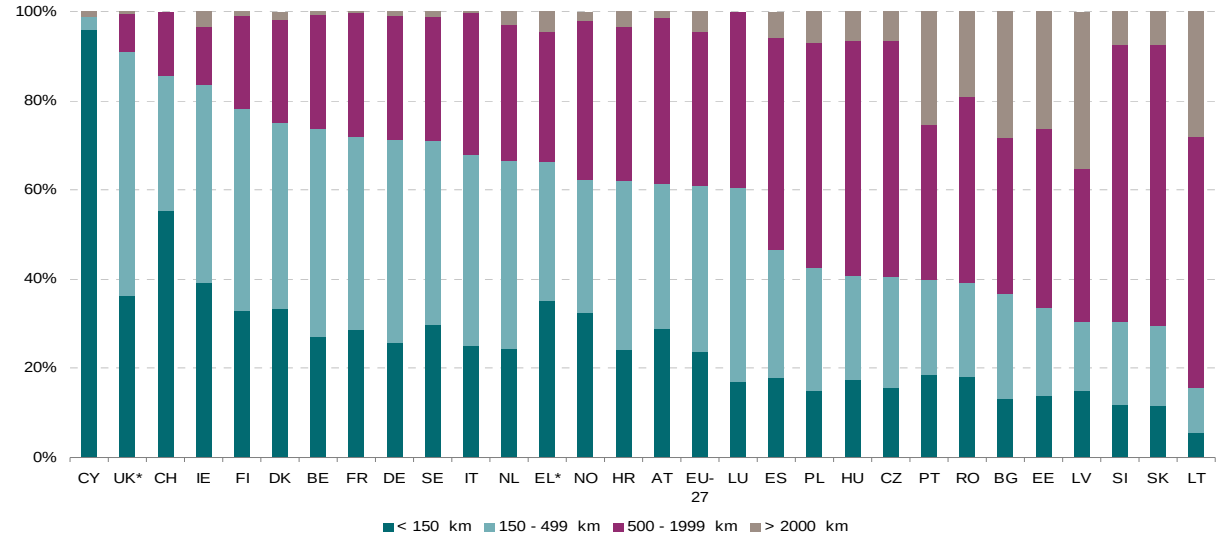
In 2010, journeys in the range 150 to 499 km accounted for 38% of total journeys for the EU-27, measured in tonne-kilometres (tkm). Journeys of 500 to 999 km were next with 21%, followed by the 50 to 149 km band at 16% and the 1 000 to 1 999 km band at 13%. Journeys of less than 50 km or more than 2 000 km were a minor part of the total.

However, there were substantial differences between countries. At one extreme were the “island” economies, notably Cyprus, the United Kingdom and Ireland where the large majority of journeys, over 80%, were in the less than 500 km band. In the case of Cyprus, over 95% of journeys were in the less than 50 km band, not surprising for a small island. Finland too had more than 75% of its journeys less than 500 km, its specific geographical situation being an explanation.

In contrast, Lithuania had more than 80% of its journeys over 500 km. Romania, Bulgaria, Estonia, Latvia, Slovenia and Slovakia all had journeys over 500 km accounting for between 60 to 70% of the total. The distance between the Baltic States, Romania and Bulgaria, all peripheral countries, and the main European markets, as well as good road connections are part of the explanation. Slovenia and Slovakia are much closer to the heart of Europe and they both have very high shares in the intermediate 500 to 1 999 km band. For Latvia, the "2 000 km or more" band accounts for more than 35% of the total while Lithuania and Bulgaria have nearly 30% in this band.

For the other countries, two groups can be identified. First a group with the longer journeys (more than 500 km) above the EU-27 average: Spain and Portugal at the periphery and then Poland, Hungary and the Czech Republic for which the competitive advantages in terms of costs of the newer Member States means a greater market share in the longer European road transport journeys. The second group consists of Denmark, Belgium, France, Germany, Sweden, Italy, the Netherlands, Greece, Austria and Luxemburg, all with these longer journeys below or near the EU-27 average.

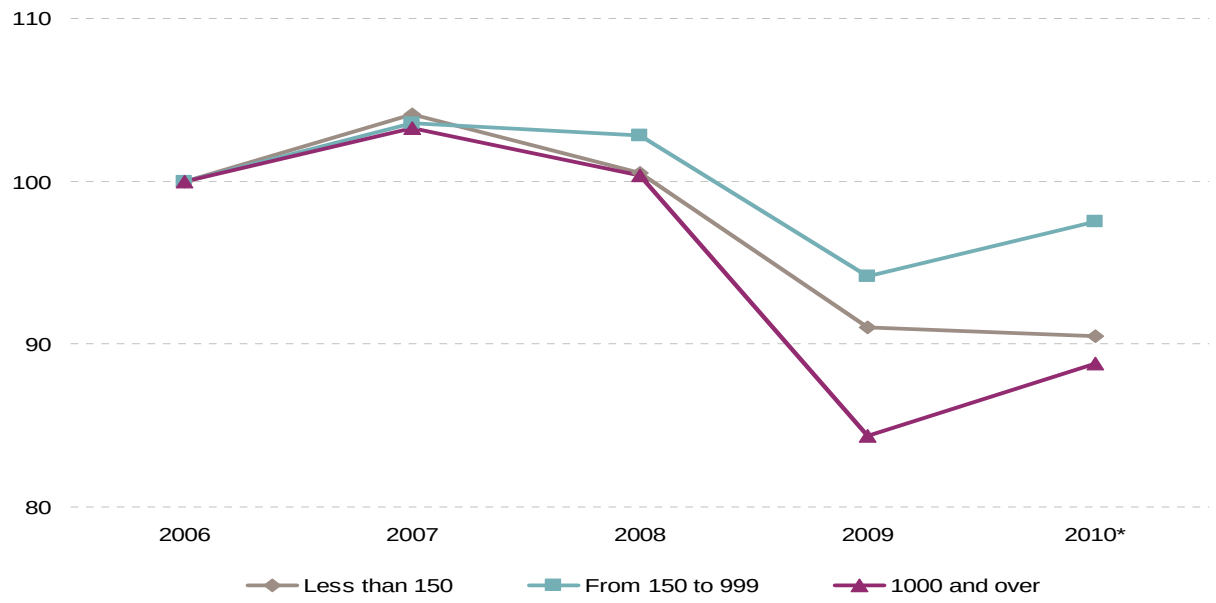
Figure 4: Total transport by distance classes, 2010 (tkm)



* 2009 instead of 2010.

Source: Eurostat (online data code: road_go_ta_dc).

Figure 5: EU-27 total transport by distance classes (2006=100, based on tkm)



* EL and UK: 2009 instead of 2010.
Source: Eurostat (online data code: road_go_ta_dc).

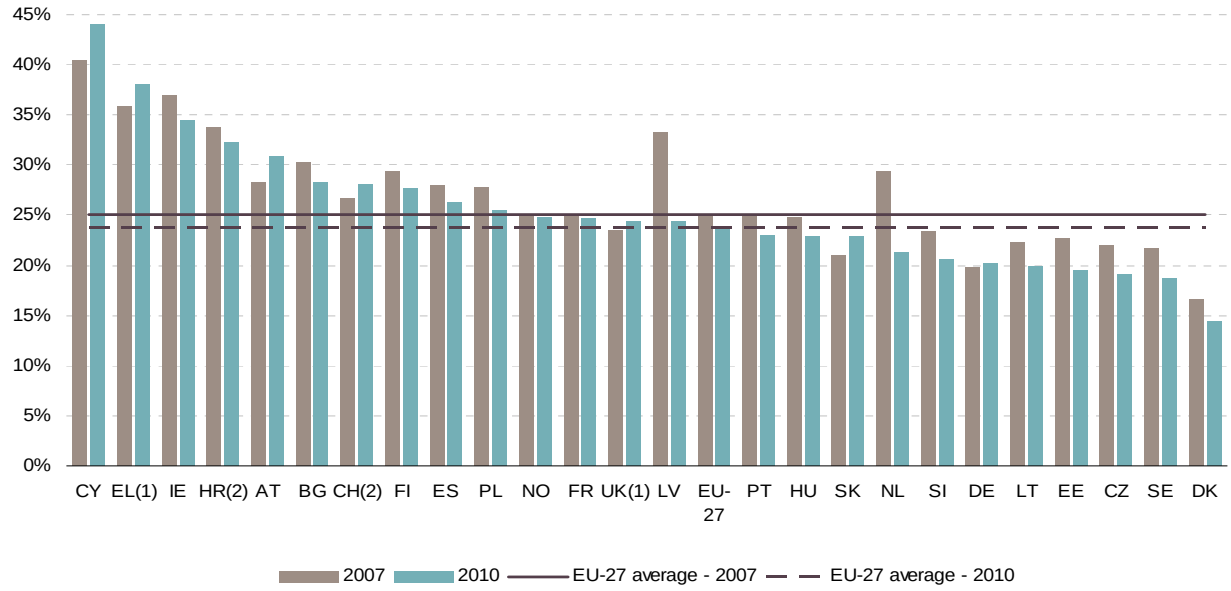
Looking at the development of transport measured in tkm by broad distance class (presented in Figure 5), a distinct pattern emerges. Transport in all the distance classes was affected by the economic downturn which began in 2008. The initial impact in 2008 was mainly on shorter distance transport (less than 150 km) and longer distance transport (more than 1 000 km) with both falling back in 2008 to their 2006 levels. Middle distance transport (500 to 999 km) was less affected in 2008, maintaining its 2007 level. As the crisis deepened in 2009, all distance classes suffered a significant downturn, with the longer distance journeys most affected, falling 16% below the 2006 level. Shorter distance transport also fell 9% below its 2006 level, while the middle distance transport showed a 6% decline. In 2010, longer and middle distance transport recovered, most sharply in the case of longer distance transport but compared with 2006, its level remained below those for middle and short distance transport. Short distance transport experienced another small decline compared with 2009. This may reflect the continuing weakness of the European construction sector since 2007, a major driver for transport for this distance class.

A fall in empty vehicle running

The proportion of empty vehicle-kilometres (vkm) in total vkm and its development over time is an important measure of the efficiency of road freight transport - the lower it is the more efficient is road freight transport. Overall, the level of empty running in the EU-27 road freight industry was 24% in 2010, a little lower than the 25% in 2007. However, it will not be possible to eliminate empty running as there will be situations where it is unavoidable. This applies particularly to the construction industry where materials will be transported from a quarry with the vehicle returning empty to pick up a new load. Another example is Cyprus, a relatively small island, where there is much delivery of goods from the ports, with the vehicles returning empty to pick up a new load. This could help to explain empty running of more than 40% which is reported by Cyprus. The same explanation may be valid for Ireland. At the other extreme a small group of countries, Denmark, Sweden, the Czech Republic, Estonia and Lithuania, all achieved empty running rates below 20%. The good performance of Estonia and Lithuania may be a reflection of the high degree of international transport their hauliers undertake and where return loads may be easier to obtain. Of the major economies for which figures are available, Germany showed the best performance with an empty running rate of a little over 20%. Spain, France and the United Kingdom were all close to the EU-27 average.

Of the countries outside the EU, Croatia had a relative high rate of empty running at 32% in 2010.

Figure 6: Share of empty vehicle-kilometres in the total vehicle-kilometres (% on vkm)

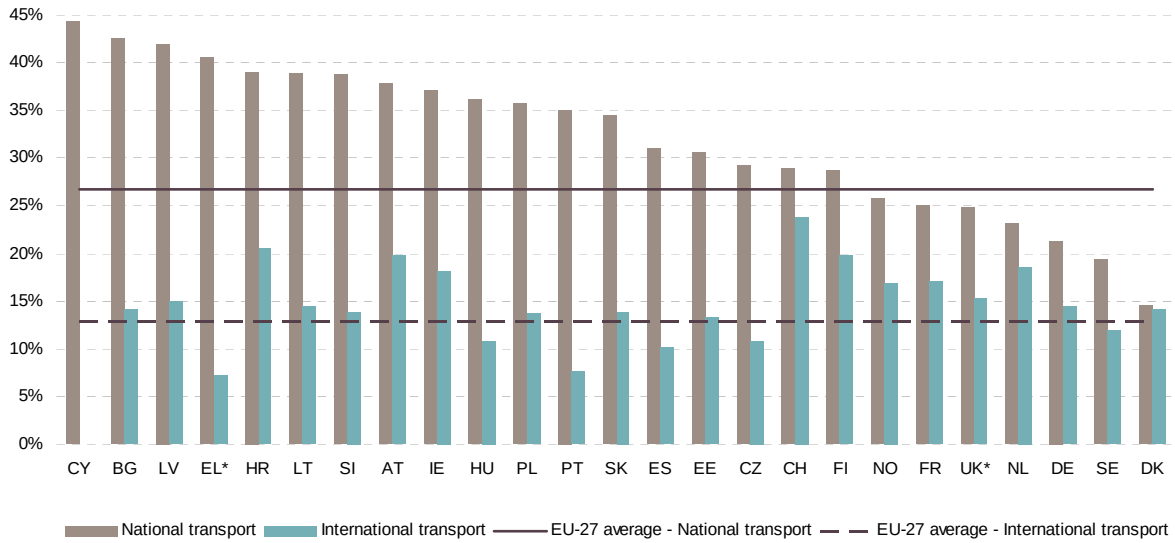


(1) 2009 instead of 2010.
(2) 2008 instead of 2007.
Source: Eurostat (online data code: road_go_ta_tott).

At the EU-27 level, the rate of empty running for national transport at 27% was twice that for international transport at 13 %. Apart from Denmark, all countries had higher shares of empty running for national than for international transport. For Denmark, in contrast, the percentage was around 15% for both types of transport. Both Greece with over 40% for national against 7% for international and Portugal with 35% national and 8% international had extremely marked differences between the two categories.

Lithuania, which scored well overall, balanced a good 15% for international transport against over 35% for national transport. Among the major economies, Germany, with 21% for national and 14% for international scored well. Spain balanced a good 10% empty running for international against over 30% for national transport.
For the countries outside the EU, Norway was close to the EU-27 average, with Switzerland above while Croatia was well above with an empty running rate of near 40% for national and 20% for international transport.

Figure 7: Share of empty vehicle-kilometres in the total vehicle-kilometres by type of operation, 2010 (% on vkm)



* 2009 instead of 2010.
Source: Eurostat (online data code: road_go_ta_tott).

METHODOLOGICAL 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, Croatia, Liechtenstein, Norway and Switzerland and record the road goods transport undertaken by vehicles registered in these countries.

Each Member State may exclude from the scope of Council Regulation 1172/98 goods road transport vehicles with load capacity lower than 3.5 tonnes or maximum permissible laden weight lower than 6 tonnes, in the case of single motor vehicles. Therefore, the coverage of the surveys carried out by each reporting country might be different.

Average vehicle loads

The average vehicle loads used in this publication has been calculated by dividing tonne-kilometres by vehicle-kilometres for laden journeys only. The following table shows an example of the calculation of the average:

Journey	Load	Vkm (Journey length)	Tkm	Tkm/Vkm
1	30	10	300	30
2	10	1 000	10 000	10
Sum		1 010	10 300	10.2

As can be seen, the average produced, 10.2 tonnes, is closer to the load for the longer journey than that for the shorter journey. Since the chance of encountering the vehicle with the 10 tonne load is much higher because of the time it spends on the road network than it is for the vehicle making the shorter journey, the average produced in this way represents the average load of goods vehicles travelling on European roads.

However, results in this publication are biased by the inclusion of light goods vehicles in the data of some reporting countries. The transport performance (measured in tonne-kilometres) of vehicles below the maximum permissible laden weight of 6 tonnes accounts for less than 3% in all reporting countries. However, the distance travelled by light goods vehicles is much higher. Consequently, the average loads of the total vehicle fleet show lower values in these countries than in those countries that have excluded light goods vehicles from their surveys (see Table 1 in http://epp.eurostat.ec.europa.eu/portal/page/portal/product_details/publication?p_product_code=KS-RA-11-016).

Empty journeys

Empty journeys are defined as 'the goods road vehicle containing no article or any item of transport equipment that has to be unloaded at a given destination'. This information always refers to journey related data. It needs to be stressed that this variable is still an optional one; consequently Belgium, Italy and Romania are not reporting it. Luxembourg reported empty journeys until 2008.

Total transport

Total transport includes national transport, international transport of goods loaded in the reporting countries, international transport of goods unloaded in the reporting countries, cross-trade and cabotage transport.

International transport

International transport is composed of international transport of goods loaded in the reporting countries, international transport of goods unloaded in the reporting countries, cross-trade and cabotage transport. Double counting is avoided since reporting relates only to resident carriers of the reporting countries.

'**Haulier'** refers to a transport operator either undertaking road transport for 'hire or reward' (i.e. the carriage of goods for remuneration on behalf of third parties) or transport for 'own account'.

Bulgaria and Romania

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

Greece and the United Kingdom

As road transport data for 2010 have not been reported yet, 2009 data have been used instead.

Malta:

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

Liechtenstein:

Liechtenstein reports only international road freight transport.

EU-27 totals calculated in this publication refer to the road freight transport reported by the 27 Member States excluding Malta which is not reporting road freight statistics.

Road freight transport has not been reported by Montenegro, the former Yugoslav Republic of Macedonia and Turkey. Iceland is exempted from providing data.

More detailed data and metadata are available in the Eurostat dissemination database and on CIRCA:
http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database
http://circa.europa.eu/Public/irc/dsis/transport/library?l=/03_road&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 15 August 2011.

Country codes

EU-27: European Union of 27 Member States from 1 January 2007: Belgium (BE), Bulgaria (BG), the Czech Republic (CZ), Denmark (DK), Germany (DE), Estonia (EE), Ireland (IE), Greece (EL), Spain (ES), France (FR), Italy (IT), Cyprus (CY), Latvia (LV), Lithuania (LT), Luxembourg (LU), Hungary (HU), Malta (MT), the Netherlands (NL), Austria (AT), Poland (PL), Portugal (PT), Romania (RO), Slovenia (SI), Slovakia (SK), Finland (FI), Sweden (SE) and the United Kingdom (UK).
Candidate countries and EFTA countries: Croatia (HR), Liechtenstein (LI), Norway (NO), Switzerland (CH).

In this publication:

: not available
1 billion = 1 000 000 000

This publication was produced with the assistance of Richard Butchart and Marie-Noëlle Dietsch.

Further information

Eurostat Website: http://ec.europa.eu/eurostat

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Select ‘road transport’

Further information on ‘Transport statistics’
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