Group 2. Transport demand and intensity

Indicator 8 - Passenger transport

Objectives

Reduce (decouple) the link between economic growth and passenger transport demand.

Improve the shares of environmentally friendly modes, i.e. public transport (bus/coach, rail, tram/metro), inland waterways, walking and cycling.

The Commission has set itself the more specific objective, for 2010, of decoupling transport growth from economic growth and maintaining the market share of the different modes at 1998 levels.

Definition

Passenger-km travelled by transport mode.

Sub-indicators

Passenger-km by transport mode

Road
Air
Walking
Cycle
Water
Rail

Alternatively by mode of transport

Passenger-km per capita
Passenger-km per GDP

Concepts

The aim is to provide figures for domestic transport measured in passenger-km.

- Domestic passenger transport: Any movement of passengers by a road or rail vehicle, by an aircraft or by a vessel within the national territory. (4) By extension of the definition walking may be included.
- Passenger: Any person who makes a journey by a road or rail vehicle, an aircraft or a vessel. Drivers of passenger cars, excluding taxi drivers, are counted as passengers. Service staff assigned to buses, motor coaches, trolleybuses, trams, goods road vehicles, trains, aircraft or vessels are not included as passengers. (4) By extension of the definition walkers may be included.
- Passenger-kilometre: A unit of measure representing the transport of one passenger over one kilometre. (4)

Data for inland transport will include transit movements and other transport using foreign vehicles or vessels. The domestic inland passenger transport of each European country may be aggregated to form a European total.

Problems related to the chosen indicators

For waterborne and air transport such an aggregation is not so straightforward as it will omit the traffic through international territories. For the time being sea transport is not included in the list of sub-indicators. For air transport the calculation of passenger kilometres deviates from the basic definition as the passenger transport includes any movements between European airports with aircraft that are registered in the country. This definition facilitates the formation of a European total but bring about a distortion of the information on the national level.

The objective of improving the share of public transport in road transport is not monitored by the chosen indicators. Transport by scheduled buses needs to be separated from transport by private cars. It should also be considered to include transport by metros and light rails as a separate indicator as those means of transport are competitors to the non-public transport.

8.1 Road

Methodology

Information on road passenger transport may be obtained from

- Household surveys on daily and long distance mobility
- Road traffic surveys
- Energy consumption data
- Surveys of enterprises involved in scheduled and non-scheduled bus services

Traffic surveys based on manual or automatic counting of the movement of vehicles on a selection of road segments combined with an overall measurement of the traffic performance from household surveys, regular car inspection data or energy consumption data may be used to estimate the traffic.

The transported number of passengers can be calculated using estimates over the average number of passengers as obtained from household surveys or ad hoc surveys based on sample observation on the road.

For bus transport ticket sale data may be applied in the estimation of the passenger-km.

Problems related to the methodology

Household surveys will only cover the movements of residents and car inspection data will only cover vehicles registered in the country. If used as a sample frame for traffic data separate estimates for traffic by non-residents in the country and by residents abroad have to be established.

Energy consumption data obtained from the sales of petrol and diesel oil may underestimate the real consumption as part of the fuel may have been bought abroad or on the black market.

Use of statistics obtained from long distance mobility surveys may bring about new information. Results from long distance mobility surveys are not yet available. The first results from a harmonised European survey in 2001/2002 in 17 countries are expected by mid-2003. (6)

8.2 Air

Methodology

Data submitted to Eurostat on a voluntary basis and in accordance with the draft Council Regulation on statistics on air transport can be used for the calculation of the transport performance. The distances between pairs of airports are already calculated by the AEA (Association of European Airlines).

Up to now Eurostat has used data from AEA that covers only the passenger transport by the principal operator. For Denmark it means that only 2/7 of the scheduled flights by SAS has been included.

On a European level an estimate could be worked out on basis of the transport performance of aircraft leaving the country in intra-European traffic. On the national level the statistics will be less meaningful.

Problems related to the methodology

The estimates on the national level are not using the same territorial definitions as for the road and rail transport.

Further, the territory used for the calculation of air passenger-kilometres does not correspond to the one used in the calculation of the emissions.

8.3 Waterborne transport

Methodology

Data may be obtained from the port authorities or from the shipping companies.

For seaports the EU Council Directive on statistics on maritime transport requests data on passenger traffic for the bigger seaports and data on the annual number of passengers in the other seaports. Distances between pair of ports can be calculated using the geographic coordinates of the ports.

On a European level an estimate could be worked out on basis of the transport performance of vessels leaving the country in intra-European traffic. However, on the national level such statistics will be less meaningful.

Problems related to the methodology

The estimates on the national level are not using the same territorial definitions as for the road and rail transport.

8.4 Rail

Methodology

Data are reported in the Common Questionnaire to Eurostat, ECMT and UN-ECE.

Problems related to the methodology

The methodology used may vary between countries as concerns the inclusion of metros and light rails in the statistics.

Relevant literature

1. Are we moving in the right direction? EEA 2000
2. Indicators tracking transport and environment integration in the EU EEA 2001
3. Transport and Environment statistics for the Transport and Environment Reporting Mechanism (TERM) for the European Union. Eurostat.
4. Glossary for Transport statistics. Eurostat/ECMT/UNECE
5. Council Directive 95/64/EC on statistical returns in respect of carriage of goods and passengers by sea.
6. DATELINE project, cf. Website. http:/www.ncl.ac.uk/dateline
7. EEA fact sheet, cf.

   http://themes.eea.eu.int/Sectors_and_activities/transport/indicators/demand/passenger/Passenger_transport___TERM_2001.pdf
8. White Paper: European transport policy for 2010: time to decide
   COM (2001) 370, September 2001

Indicator 9 - Freight transport

Objectives Reduce the link between economic growth and freight transport demand.
Increase the shares of rail, inland waterways and short sea shipping modes.

The Commission has set a more specific objective for 2010 of maintaining the market share of the different modes at 1998 levels (14).

Definition Tonne-km carried by each transport mode (road, rail, air, inland waterways, short sea shipping and oil pipelines).

Sub-indicators
Tonne-km carried by each transport mode
Road
Air
Rail
Inland waterways
Sea
Tonne-km carried per unit of GDP by each mode of transport

Concepts The aim is to provide figures for domestic transport measured in tonne-km.

- Domestic freight transport: Any movement of goods using a road or rail vehicle, an aircraft or a vessel within the national territory. (11)
- Goods: Any goods moved by a road or rail vehicle, an aircraft or a vessel. (11)
- Tonne-kilometre: A unit of measure of goods transport which represents the transport of one tonne over one kilometre. (11)
- The Weight to be taken into consideration (11) is the gross-gross weight of goods (i.e. total weight of goods, all packaging, the tare-weight of containers etc.)

Data for inland transport will include transit movements and other transports using foreign vehicles or vessels. The domestic inland transport of each European country may be aggregated to form a European total.

For waterborne and air transport such an aggregation is not so straightforward as it will omit the traffic through international territories. Therefore short sea shipping of a country is defined as unloaded goods loaded in European (and Mediterranean) ports and goods in one port traffic to the country, and air transport for the time being is made up as any movements of freight between European airports with aircraft that are registered in the country.

Problems related to the definition For air and sea transport the chosen definitions will facilitate the formation of European totals but will unfortunately bring about a distortion of the information on the national level as the territorial unit deviates from the one chosen for rail and road transport. And further the territorial unit will deviate from the one used for the calculation of emissions.

9.1 Road

Methodology Information on freight transport may be obtained from data collected according Council Regulation (EC) 1172/98/EEC (4) on statistics on transport of goods by road. The data requested by the above mentioned legal acts relates to

- National transport between a place of loading and a place of unloading situated in the reporting country
- International transport between a place of loading and a place of unloading situated in another country

Each Member State reports transport performed by vehicles registered in the country. It is therefore necessary to add supplementary information concerning

- Transport movements of foreign vehicles in the country. These movements should cover traffic to places of loading or unloading in the country as well as transit traffic with no loading or unloading in the country
- International traffic with vehicles registered in the country. Here estimates of the domestic part of the transport distance must be elaborated.

On the basis of the reported data a European matrix of the movement of goods between countries can be established and from that the domestic transport can be estimated. To ensure conformity with the European total it is preferable to have the national shares calculated using the same model.

In the model information on the production structure of the country may be applied to estimate the transport volume from the border to the national place of loading or unloading. For transit movements border surveys may be used.

Problems related to the methodology

National estimates may be out of line with the statistics disseminated by Eurostat. Accordingly application of a general estimation model by Eurostat should be done in co-ordination with the national statistical authorities.

Each Member State may exclude goods road transport vehicles whose load capacity or maximum permissible laden weight is lower than a certain limit. This limit may not exceed a load capacity of 3,5 tonnes or maximum permissible weight of 6 tonnes in case of single motor vehicles.

9.2 Air

Methodology

The indicators may be derived from data submitted on a voluntary basis in accordance with the guidelines contented in the draft Regulation on air transport statistics (5).

9.3 Rail

Methodology

The indicators may be derived from:

- Data submitted to Eurostat according to the Council Directive (6) 80/1177/EEC on statistical returns in respect of carriage of goods by rail. These data will include freight transport on the domestic railway network but only for the principal rail operator. As from 2003 all major railway operators are requested to submit data according to a proposed Council Regulation on rail transport (7).
- Data submitted to UIC (The International Union of Railways). (10)

Problems related to the sources

Not all railway operators may submit data to UIC but the coverage of the UIC statistics is in general sufficient.

The data collected according to EU legal acts may not include detailed information from minor rail operators. As a consequence of the liberalisation of the rail transport market, information from foreign operators on their activities on the national network may be limited.

9.4 Inland waterways

Methodology

The indicators may be derived from data submitted to Eurostat according to the Council Directive (8) 80/1119/EEC on statistical returns in respect of carriage of goods by inland waterways.

The submitted data refer to freight transport on the domestic network only but include international traffic and transit traffic. Both transport using vessels registered in the country and transport using vessels registered abroad are covered by the statistics. However, Member States in which the total volume of goods transported annually by inland waterways as international or transit traffic does not exceed one million tonnes shall not be obliged to supply the statistics required under the terms of this Directive, (Article 2.2).

9.5 Sea

Methodology

The indicators may be derived from data submitted to Eurostat according to the Council Directive 95/64/EEC on statistical returns in respect of carriage of goods and passengers by sea (9).

Each Member State shall report on the volume of goods loaded or unloaded in ports handling more than one million tonnes of goods annually. For relations with European ports the port should be indicated. For relations with other ports the maritime coastal area should be reported.

Problems related to the methodology

The Directive does not request the relevant data for smaller ports. However, the coverage of the statistics is regarded as acceptable for the production of reliable statistics.

The Directive does not request information on the transported distance. The distances between pair of ports can however be estimated based on information of the geographical coordinates.

According to the Directive the weight of goods should be the gross weight of goods, i.e. the tonnage of goods carried, including packaging but excluding the tare-weight of containers or Ro-Ro units. For reason of comparison with other modes of transport where the gross-gross weight of goods are applied estimates of the tare-weight of containers should be added.

Relevant literature

1. Are we moving in the right direction? EEA 2000
2. Indicators tracking transport and environment integration in the EU EEA 2001
3. Transport and Environment statistics for the Transport and Environment Reporting Mechanism (TERM) for the European Union. Eurostat.
4. Council Regulation (EC) No 1172/98 on statistical returns in respect of the carriage of goods by road.
5. Draft Council Regulation on statistics on air transport(95K 325/08).
6. Council Directive 80/1177/EEC on statistical returns in respect of carriage of goods by rail as part of regional statistics
7. Proposal for a Regulation of the European Parliament and of the Council on rail transport statistics, 2001/ C 180 E/ 07l
8. Council Directive 80/1119/EEC on statistical returns in respect of carriage of goods by inland waterways.
9. Council Directive 95/64/EC on statistical returns in respect of carriage of goods and passengers by sea.
10. International Railway Statistics, (UIC), Paris 2001

11. Glossary for Transport statistics. Eurostat/ECMT/UNECE
12. Transport and Environment statistics for the Transport and Environment Reporting Mechanism (TERM) for the European Union. Eurostat
13. EEA fact sheet, cf. http://themes.eea.eu.int/Sectors_and_activities/transport/indicators/demand/freight/Freight_transport___TERM_2001.pdf
14. White Paper: European transport policy for 2010: time to decide COM (2001) 370, September 2001