

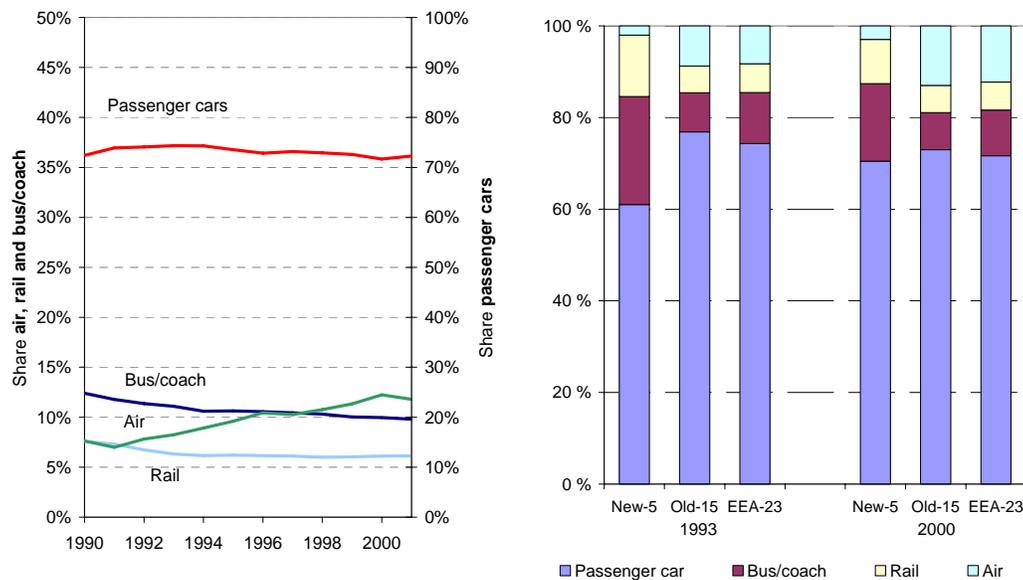
Indicator Fact Sheet

TERM 2004 12b – Modal shares in passenger transport

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☺ **Passenger transport continues to be dominated by the car, with a share of 72 %¹ of total passenger-kilometres. The share of air transport has increased strongly, while bus/coach and rail transport have both declined slowly. The objective of increasing the share of alternative modes has not been achieved.**

Figure 1: a) Modal shares of passenger transport demand in the EEA-23 and b) Development in share of each mode, by region.



Note: a) Observe the TWO y-axes. Shares are based on passenger-km. 2001 data are based on estimates of air transport demand assuming similar development as in energy consumption. For a list of the EEA-23 countries, see the Metadata section. b) Shares could not be calculated for years after 2000, as more recent air data is unavailable.

Source: Eurostat, 2004

¹ Taken into account passenger car, rail, bus coach and aviation in the EEA-23 region.

Results and assessment

Policy relevance:

The European Commission has set itself the following objectives to achieve more sustainable transport (reduction of congestion and other negative side effects):

Bring back the shares of alternative modes (rail, water and public passenger transport) to their 1998 levels by 2010 and thus make for a shift of balance from 2010 onwards;

Policy context:

Shifting transport from road to rail is an important strategic element in the EU transport policy. The objective was first formulated in the Sustainable Development Strategy (SDS) (European Commission, 2001a). In the review of the T&E integration strategy in 2001 and 2002 (European Council 2001; European Council, 2002), the Council states that the modal split should remain stable for at least the next ten years, even with further traffic growth. In the White Paper on the Common Transport Policy (CTP) "European Transport Policy for 2010: Time to Decide" (European Commission, 2001b), the modal shift is central and the Commission proposes measures aimed at the modal shift.

Important concrete policies and initiatives bearing on the modal split policy are listed in the following paragraphs. Many have origins in the CTP paper.

To shift passenger transport flows towards alternative modes, the CTP proposes measures to revitalise alternative modes, in particular rail. The adopted second railway package (European Commission, 2002a) aims at creating an interoperable high-speed and conventional railway network, and the recent proposal for a third railway package (European Commission, 2004) seeks to open up international passenger services to competition within the European Union.

Infrastructure investments

The trans-European Network (TEN-T) guidelines are currently being revised. Currently, the focus is on a limited number of priority projects – generally large infrastructure projects, and include projects for rail-, water- and road modes. It is currently being considered to subject all projects to Strategic Environmental Assessments (Environment Daily, 2004).

Fair and efficient pricing mechanisms

Fair and efficient pricing should encourage use of the best performing modes of transport (see also TERM 2003 - 26 – Internalisation of external costs). The Commission proposes in the CTP to allocate the additional revenues raised, which are generally higher than the costs of infrastructure, to new rail infrastructure thereby promoting rail transport further. However, recently the Commission published a proposal to introduce distance based charging for heavy goods vehicles on main arteries in Europe (European Commission, 2003). In this proposal, cross-financing of infrastructure investments is left outside. Also the internalisation of external costs other than accident costs (climate, air, etc.) is not included in this proposal. The issues of earmarking, cross-financing and external cost items to be included are currently discussed in the Council and Parliament.

CIVITAS

A number of limited-scale programmes exist, such as the CIVITAS programme (European Commission, 2000a) which provides funding for cities experimenting with the development of urban transport, encourages competitive alternatives to cars in city centres and combats growing congestion and pollution. The CIVITAS initiative supports the best-integrated and innovative proposals put forward by European cities.

Environmental context:

The relevance of the modal split policy for environmental impact of passenger transport arises from differences in environmental performance (resource consumption, GHG emissions, pollutant and noise emissions, land consumption, accidents etc.) of transport modes. These differences

are becoming smaller, which makes it increasingly difficult to determine the direct and future overall environmental effects of modal shifting. The total environmental effect of modal shifting can in fact only be determined on a case-by-case basis, where local circumstances and specific local environmental effects can be taken into account (e.g. transport in urban areas or over long distances).

Assessment:

Decline of alternative modes

The slow decline of bus/coach and rail passenger transport demand is a problem in light of the objective of stabilizing and eventually increasing the shares of alternative modes. On EEA-23 level the decline is nevertheless slow. However, for the five new member states where data is available the decline has been much greater, and is probably greater yet if the 1990-1993 period is included. The decline may be related to increased car ownership in those countries. Intra-EU rail transport competes with air transport. The upcome of low-cost carriers has made rail transport less favoured for longer distances. Besides, international rail connections are still slowed down by border-crossings. High-speed rail lines are developing quickly to better compete with air transport, but, without internalizing the external costs of transport, air transport growth may continue to outpace growth in long-distance rail transport.

Other underlying reasons could be the (real and perceived) advantages of private transport over public and alternative transport modes: private transport is generally faster and more flexible (in particular outside urban areas) and perceived to be more luxurious and cheaper than public transport. The current transport charging structure (with fixed annual vehicle taxes rather than flexible charges linked to transport usage) does not contribute to remove such perception, as car users generally only take the additional fuel costs into account when deciding on a trip.

In urban areas, the situation can be somewhat different. Public transportation is often well developed in the central parts of urban areas and competitive with cars in terms of time and costs. Introduction of a congestion charge, like in London, significantly influences the competitiveness of the various modes by favouring public transport over private car usage. The effects are considerable (see Box 2). In the outskirts of urban areas, where public transport is much less accessible, accessibility to basic services by public transport, cycling or walking decreases. This leads to more car usage and subsequent traffic bottlenecks around and in cities. Hence, urban sprawl – the expansion of cities – could lead to more car dependency and usage, and more urban congestion.

Growing share of air transport

The growing share of air traffic is linked to a rapidly growing tourism industry. The high growth of low cost airlines has also contributed. In 2001 the share of air transport declined for the first time as a consequence of the terrorist attacks on the World Trade Centre in New York and the war in Afghanistan, Iraq, etc. The crisis forced the carriers into fierce competition to accelerate the recovery of the demand, and hence a hold to price increases. The number of flights declined in 2001 and 2002 and was in 2003 still lower than in 2000 (Eurocontrol, 2004). But the positive effect on modal split is unlikely to persist, as growth is forecast to exceed 3 % a year until 2010 (European Commission, 2003b).

Private car transport

The share of car transport in the EEA-23 has been stable, but there are regional disparities. In the new member countries the share has increased, a trend linked to increased car ownership. In the 15 old member states it has decreased, not because of lower demand, but rather because of faster growth in air transport. Increased congestion and higher fuel prices since 1999 may be other contributing factors.

Other

Cycling and walking have the potential to increase their modal share at the expense of cars, especially in urban regions (see box 1). Half of all car trips are for less than 6 km, for which cycling could often be faster than driving (in urban areas), certainly when time for finding a parking space is included. 10 % are for less than 1 km, an ideal walking distance (European Commission, 2002b). Box 1 provides additional information about the potential of these environmentally friendly modes.

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Data

Table 1: Trends in modal shares of passenger transport demand in the EEA-23

Unit: % shares of passenger-km

	car	bus	rail	air
1990	72.4 %	12.4 %	7.6 %	7.6 %
1991	73.9 %	11.8 %	7.3 %	7.0 %
1992	74.1 %	11.4 %	6.7 %	7.8 %
1993	74.3 %	11.1 %	6.3 %	8.3 %
1994	74.3 %	10.6 %	6.2 %	8.9 %
1995	73.6 %	10.6 %	6.2 %	9.6 %
1996	72.8 %	10.5 %	6.2 %	10.4 %
1997	73.2 %	10.4 %	6.1 %	10.3 %
1998	72.9 %	10.3 %	6.0 %	10.8 %
1999	72.6 %	10.0 %	6.0 %	11.3 %
2000	71.7 %	10.0 %	6.1 %	12.2 %
2001	72.3 %	9.8 %	6.1 %	11.8 %

Note: 2001 data are based on an estimation of air transport demand assuming a development similar to the development in energy use. Minor estimates have been done in other cases, see how in 'Meta data'.

Source: Eurostat, 2004, European Environment Agency, 2004 (air transport).

Meta data

Web presentation information

1. Abstract / description / teaser:

The share of alternative transport modes (rail and bus transport) has declined, and the objective of stabilising the shares of alternative modes at their 1998 levels requires more effort. The share of air transport has grown rapidly, but had a dip after the 2001 terrorist attacks on the WTC in New York.

2. Policy issue / question:

Are we moving towards stabilising the shares of alternative modes at their 1998 levels?

3. EEA dissemination themes:

Transport

4. DPSIR: D

Technical information

1. Data source:

Passenger-km from Eurostat Structural indicator data (Eurostat, 2004). Air transport demand data from European Environment Agency, 2004

2. Description of data:

Data contains the number of passenger-km by private cars, buses and coaches, and rail. Data for other modes are limited available and come from other sources, as indicated in the text. Passenger-km: unit of measure representing the transport of one passenger over one kilometre (the distance to be taken into consideration is the distance actually run).

3. Geographical coverage:

23 countries were selected for which sufficient data was available. That group, called EEA-23 here, is composed of the 15 old EU member states (Belgium, Denmark, Germany, Greece, Spain, France, Ireland, Italy, Luxembourg, the Netherlands, Austria, Portugal, Finland, Sweden and the United Kingdom), 5 new member states (Poland, Czech Republic, Slovakia, Slovenia, and Hungary), plus Norway, Iceland and Turkey.

4. Temporal coverage:

1990-2002, but with numerous gaps. For the New-5, 1993 is the first year for which complete data is available.

5. Methodology and frequency of data collection:

old-15: annually collected by a Common Questionnaire developed jointly by Eurostat, UNECE and ECMT. New member states: Also collected by Eurostat; data previously very incomplete, but now improving. Data for less used modes has in some cases come from individual studies. Data is frequently, particularly for passenger cars, estimated rather than recorded. See TERM 2004 12 - Passenger transport.xls for details.

Coverage is not exactly the same in all countries. For example, in Poland, bus transport by companies with less than 9 persons is excluded, in the Netherlands, car transport excludes foreign vehicles on Dutch soil. In some countries, urban bus transport is included, in some it is excluded.

Data on trips is based on the results of national mobility surveys. Eight EU countries carried out passenger mobility surveys in the 1990s (Continuous/regular surveys: Denmark, Netherlands, Sweden and the United Kingdom. Periodic surveys: Germany. Other surveys: France, Finland and Austria)

6. Methodology of data manipulation, including making 'early estimates':

To a limited extent, missing values were guessed to allow for a better analysis. This was done using linear extrapolation based on nearby years (EX) or linear interpolation based on nearby years (IN), similar development as in an indicative neighbouring country (SD)
Passenger cars. UK: 1990 (EX); CZ: 1990-1992 (SD: Poland); PL: 1991-1994 (IN), 2001 (EX); SK: 1990-1992 (SD: Poland); TR: 1997-1998 (IN), 2000-2001 (EX); IS 1991-1994 (IN).
Buses and Coaches. D, UK: 1990 (EX); CZ: 1990-1992 (SD: Poland); SK: 1990-1992 (SD: Poland); IS 1991-1994 (IN).
Rail. NL, UK: 1990 (EX); CZ: 1990-1992 (SD:Poland); SK: 1990-1992 (SD:Poland).
Air. 2001: Estimated assuming similar development as in air transport energy consumption, for which statistics are available (see TERM 2004 01 - Transport final energy consumption by mode)

Quality information

7. Strength and weakness (at data level):

The data on passenger-km is often estimated rather than directly recorded. However, since the same methodology has been used for many years, the trends generally give a good indication of the passenger transport demand.

Data for transport by ferries is not available, but is probably small. Large data gaps have made it necessary to exclude some countries from the analysis

8. Reliability, accuracy, robustness, uncertainty (at data level):

Data is considered to be fairly reliable and consistent for the Old-15. For central and Eastern European countries the data are generally much less reliable and much less comparable with data updates often resulting in significant revisions of historical time series.

9. Overall scoring (give 1 to 3 points: 1=no major problems, 3=major reservations): 2

Relevancy: 2 (Vehicle-km provides a better unit of measurement, since it is more directly linked to environmental impact of transport movements)

Accuracy: 3 (Passenger-km figures are estimated (more uncertainty for cars than for bus/trains etc.) rather than measured and vary by source (Eurostat, ECMT, UNECE etc))

Comparability over time: 2 (some extrapolations for 1990-1992 and 2001)

Comparability over space: 2 (coverage not uniform, see heading 5)

Further work required

Data coverage should be improved. For some countries there is either no data at all, or large holes. Data on pkm by air transport lags behind; the most recent data are for 2000.

Further work is needed to develop reliable and comparable statistics on vehicle-km used for passenger transport, since such data is closer connected to the environmental consequences of transport

Shifting passenger transport flows towards cleaner transport modes in urban or rural areas or international trips requires different policy approaches. It would therefore be valuable to be able to monitor the modal split for these specific areas and trips.

Box 1: Short car trips and walking and cycling trips

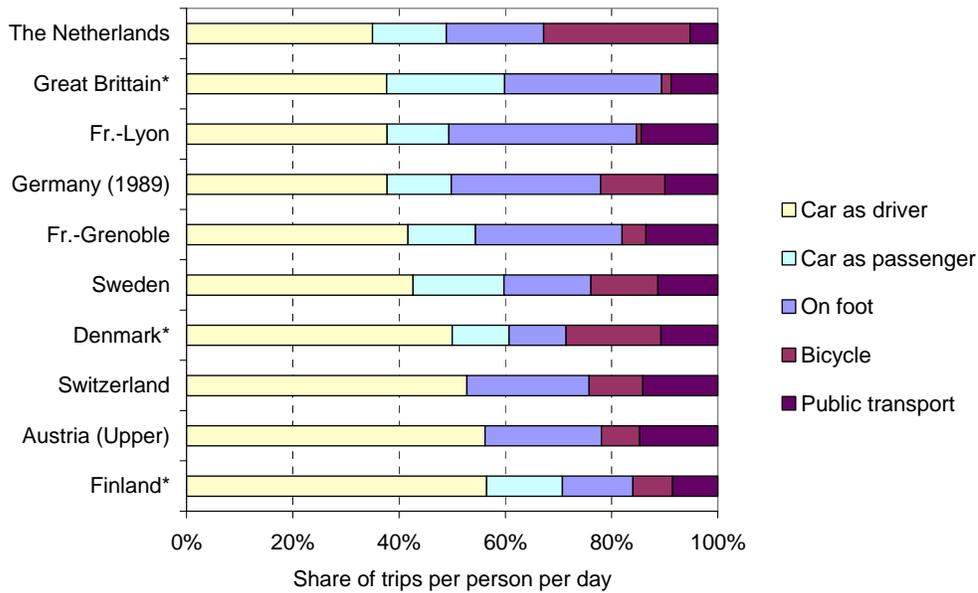
The average European makes about three trips per day. Most trips are 1 km or less for walkers and 3-5 km for cyclists, although this differs between countries. The share of cycling in Europe is around 5-10 % of all trips, with much higher rates in the Netherlands (29 %) and Denmark (17 %).

Many car trips are quite short; a change from car to walking or cycling for trips shorter than 3-5 km could replace half of all car trips in many European cities. *Trip chains* (a sequence of trips to travel between origin and destination) could only explain some of the car use on short trips. There are important differences between men and women, young and old, car-owners and those without a car, workers and non-workers.

Some other findings about walking and cycling:

- Walking and cycling are often done as a purpose in themselves.
- Women walk more than men.
- People working part-time make most trips.
- The larger the city, the more people walk.

Figure 2: Modal split of all trips in 9 European countries



Note: Share based on number of trips. Great Britain, Denmark and Finland: based on trips longer than 200-500 m.

Source: European Commission, 2000b

Box 2: London access charge

In February 2003 the city of London introduced a flat congestion charge to alleviate congestion. The congestion charge applies for central London (20 km²) from 7.00am to 6.30pm, Monday to Friday, excluding public holidays. The charge does not apply at weekends. Drivers pay £5 (8 €) per day. The system is enforced by camera observation. The penalty for non-payers is £80. The revenues are less than the expected £130 million per year, only 80 million, indicating the scheme's success. Congestion is reduced by about 30 % and lower than in the mid-80's. The revenues will go back into the capital's transport system. The revenues will be used for investments in buses and road safety, such as street lighting and better-marked road crossings.

There are a range of exemptions and discounts for certain categories of drivers and certain categories of vehicles and individuals. Residents and crucial staff receive a 90 and 100 % discount respectively. Drivers of alternative fuel vehicles, vehicles with nine or more seats and taxis are allowed to enter the zone without charge.

Source: www.cclondon.com;