

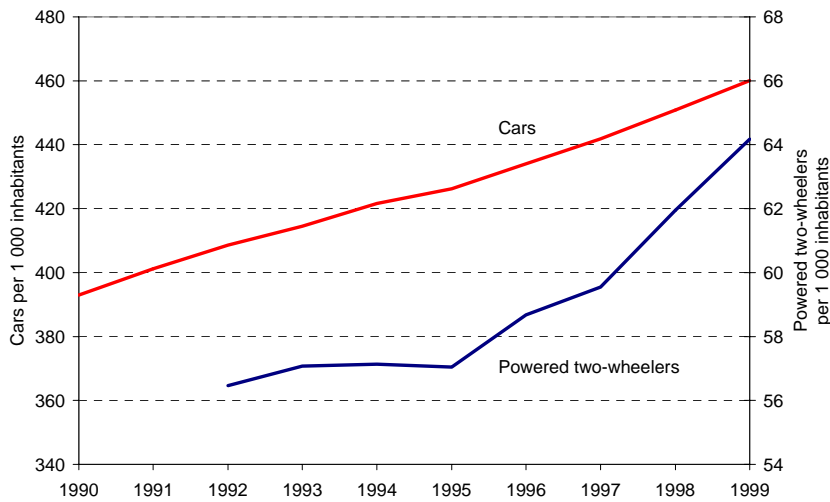


**Indicator fact sheet**

**TERM 2002 32 EU — Size and composition of the vehicle fleet**

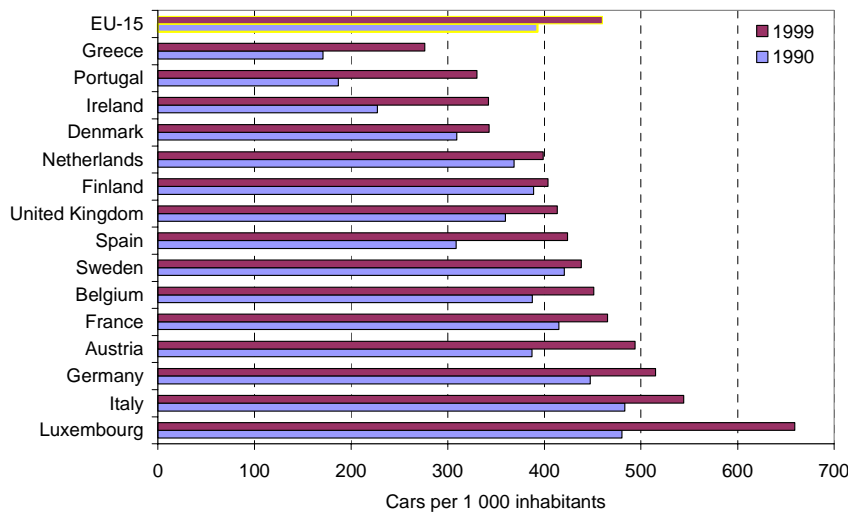
Ⓜ The level of car ownership is rising rapidly, especially in countries with relatively low car ownership levels. In the EU, the number of cars grew from 393 to 460 cars per 1 000 inhabitants between 1990 and 1999. Motorcycle ownership is also increasing. Higher private vehicle ownership has led to more use of private vehicles and might have had the opposite effect on use of public transport.

**Figure 1: Car and powered two-wheeler ownership in the EU, 1990–99**



Sources: European Commission, 2001; Eurostat, 2002a.

**Figure 2: Car ownership by country in 1990 and 1999**



Sources: European Commission, 2001; Eurostat, 2002a.

## **Results and assessment**

### **Policy relevance**

There are no specific objectives or targets related to the size of the vehicle fleet.

### **Policy context**

The level of car ownership is closely related to car use (and thus to the volume of mobility) and — especially in urban areas — to traffic congestion. Policies aimed at limiting the size and growth of the vehicle fleet might only be found in urban areas, where the number of motorised vehicles can give rise to environmental problems in terms of lack of space (see e.g. <http://www.22september.org/info/en/qua.html>). However, since there is a strong link between vehicle ownership and vehicle use, this indicator provides information about what is driving transport demand. Additionally, the total size of a vehicle fleet (combined with its average age — see TERM 2002 33 EU — Average age of the vehicle fleet) gives some indication on time needed for new technologies to penetrate into such fleets.

### **Environmental context**

Vehicle ownership is closely related to vehicle use. The size of the privately owned vehicle fleet (cars and powered two-wheelers) is therefore an important driving factor behind road transport demand and the environmental pressures it causes.

### **Assessment**

Car ownership has increased dramatically in recent decades. In the EU it grew from 393 to 460 cars per 1 000 inhabitants between 1990 and 1999, an average of 1.8 % per year. Car ownership is thus growing even faster than per capita income (on average 1.6 % per annum over the same period). The main factors underlying this strong growth are listed below.

- Decreasing number of persons per household: This decrease results in a higher growth in the number of households than is explained by the growth of the population. Since many households depend on cars for shopping and other transport needs, the result is higher car ownership.
- Increasing number of cars per household: Even though the number of persons per household is decreasing, the number of cars per household is increasing. Increased personal income stimulates this development.
- Increases in the average travel distance (see TERM 2002 14 EU — Access to basic services): Decreased accessibility by public transport (see TERM 2002 16 EU — Access to transport services) and changes in lifestyle patterns (double incomes, choice of leisure activities).

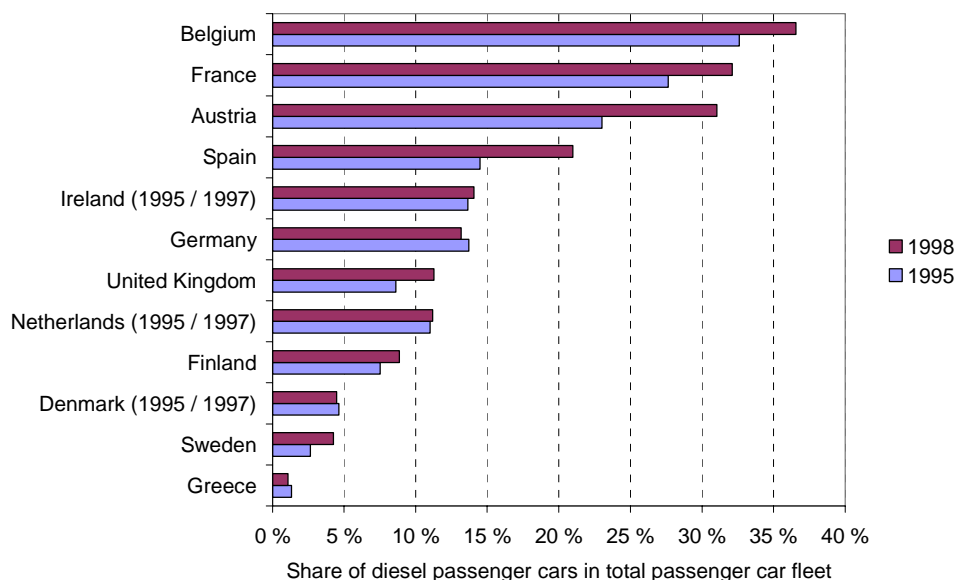
The strong growth is slowing, however, in countries that already have relatively high numbers of cars per capita. This can be explained by the fact that households may need one or two cars, but generally not more. In contrast, countries with lower numbers of cars per capita show rapid increases in vehicle ownership: in 1990, the lowest levels of car ownership were found in Greece and Portugal (171 and 187 cars per 1 000 inhabitants, respectively). These countries had the highest increases in car ownership between 1990 and 1999 (62 % in Portugal and 77 % in Greece). In 1999, Greece and Portugal were still the countries with the lowest car ownership levels (though differences with other Member States are getting smaller). It can be expected that the increase in Greece and Portugal will continue (see also Figure 2).

The average level of powered two-wheeler (including motorcycles) ownership in the EU grew by 14 % between 1992 and 1999. This might be a result of people buying them for pleasure rather than everyday travelling, like commuting. However, increasing congestion might also be a reason for buying motorcycles, which are then specifically used for commuting.

### Sub-indicator: Dieselisation

☺ The share of diesel cars in the entire passenger car fleet continuously increased in most Member States.

Figure 3: Share of diesel cars in the entire passenger car fleet in 1995 and 1998



NB: No data for Italy, Luxembourg and Portugal. Denmark, Ireland and the Netherlands refer to 1995 and 1997.

Source: Eurostat, 2002b.

### Assessment for the sub-indicator

In Germany, Denmark and Greece, the share of diesel cars in the entire passenger car fleet decreased between 1995 and 1998. In all other Member States, this share increased, most profoundly in Austria (8 percentage points), France (4) and Belgium (4). These three countries are also the countries with the highest dieselisation of the passenger car fleet.

As diesel cars are generally more energy efficient, the increasing share of diesel cars in the passenger car fleet can be seen as a positive development. The objective to reduce CO<sub>2</sub> emissions from the entire passenger car fleet to, on average, 140 g CO<sub>2</sub>/km in 2008/09 (see TERM 2002 27 EU — Energy efficiency and specific CO<sub>2</sub> emissions) will become easier to reach with more diesel cars on the road. However, in general, diesel cars emit more NO<sub>x</sub>, SO<sub>2</sub> and particulates than petrol cars. Further limiting the sulphur content of diesel and introducing PM traps in passenger cars can help to combat excessive emissions from diesel cars.

### References

European Commission, 2000, *Good practice in freight transport — A sourcebook*, European Commission, Office for Official Publications of the European Communities, Luxembourg.

European Commission, 2001, *European Union energy and transport in figures*, European Commission Directorate-General for Energy and Transport in cooperation with Eurostat ([http://europa.eu.int/comm/energy\\_transport/etif/index.html](http://europa.eu.int/comm/energy_transport/etif/index.html)).

Eurostat, 2002a, *Transport and environment: statistics for the transport and environment reporting mechanism (TERM) for the European Union, data 1980–2000*, unpublished electronic update, January 2002.

Eurostat, 2002b, NewCronos data downloaded 10 June 2002 — Theme 7 (transport).

## Data

**Table 1: Number of passenger cars per capita**

Unit: cars per 1 000 inhabitants

	1990	1999
Austria	387	494
Belgium	388	451
Denmark	309	343
Finland	389	404
France	415	465
Germany	447	515
Greece	171	276
Ireland	227	342
Italy	483	544
Luxembourg	480	659
Netherlands	368	399
Portugal	187	330
Spain	309	424
Sweden	421	438
United Kingdom	360	413
<b>EU-15</b>	<b>393</b>	<b>460</b>

Sources: European Commission, 2001; Eurostat, 2002a.

**Table 2: Number of powered two-wheelers per capita**

Unit: Powered two-wheelers per 1 000 inhabitants

	1992	1999
Austria	67	77
Belgium	46	54
Denmark	31	32
Finland	32	35
France	47	39
Germany	49	60
Greece	78	147
Ireland	11	11
Italy	103	132
Luxembourg	51	75
Netherlands	44	58
Portugal	92	78
Spain	91	87
Sweden	31	35
United Kingdom	12	12
<b>EU-15</b>	<b>56</b>	<b>64</b>

## Metadata

### Technical information

1. Data source: All data on passenger cars are from the Energy and Transport DG pocketbook (European Commission, 2001); data on population are from the *Eurostat statistical compendium* (Eurostat).
2. Description of data: Number of vehicles.  
Original measure units: Number of cars, number of powered two-wheelers, number of households and population.
3. Geographical coverage: EU-15 (Belgium, Denmark, Germany, Greece, Spain, France, Ireland, Italy, Luxembourg, the Netherlands, Austria, Portugal, Finland, Sweden and the United Kingdom).
4. Temporal coverage: Car ownership data: 1990–99.
5. Methodology and frequency of data collection: Data are collected by a common questionnaire developed jointly by Eurostat, UNECE and ECMT. Data are collected annually.
6. Methodology of data manipulation, including making 'early estimates': Cars per household are calculated by dividing the total number of passenger cars (EU) by the total number of households (EU).

### Quality information

7. Strength and weakness (at data level): Data can be considered relatively strong. However, the data is estimated and not based on registration of cars, PWTs and trucks.
8. Reliability, accuracy, robustness, uncertainty (at data level): Data are considered to be reliable and accurate, though they would be improved by using car registrations.
9. Overall scoring (give 1 to 3 points: 1 = no major problems, 3 = major reservations): 1  
Relevancy: 1  
Accuracy: 2 (Data are not based on registrations, but calculated.)  
Comparability over time: 1  
Comparability over space: 1

### Further work required

The number of vehicles should be based on registration of these vehicles rather than estimations based on sales figures etc. Using registrations would also benefit the assessment of the environmental performance of the vehicle fleet, since engine type and size would also become available, as would average age.

The number of passenger cars per type of household should be further analysed to improve knowledge about the interaction between household types and car ownership. Statistics on the number of cars per type of household are only available for one year (1994). Analysing this kind of data can give valuable insights into household transport needs.

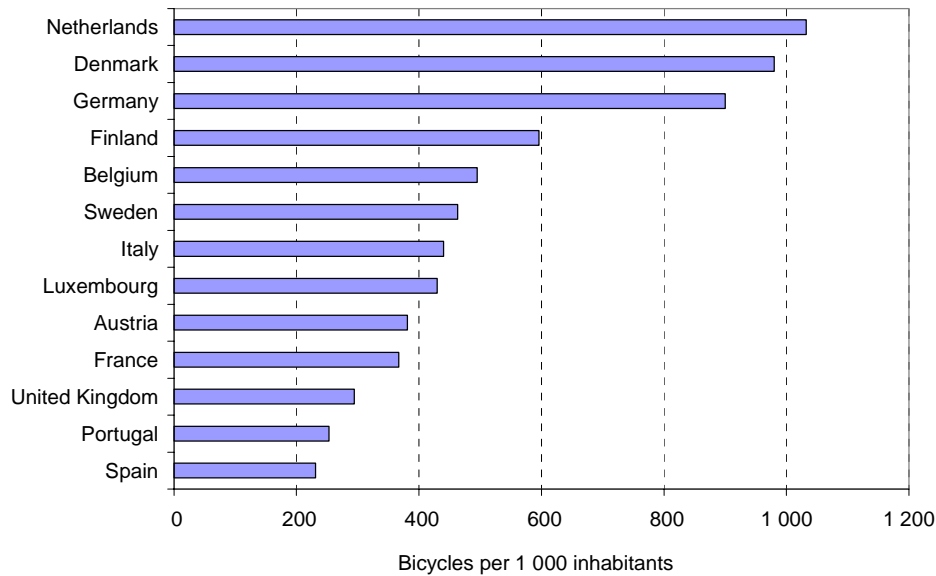
Statistics on the number of powered two-wheelers need to be improved. The main problem in this category lies in the stock of mopeds, because in some countries mopeds are registered in a different way from other vehicles.

The size of the fleet and the ownership of other vehicles — e.g. heavy goods vehicles, buses — should also be investigated.

**Box 1: Number of bicycles in the EU**

The number of bicycles varies widely between Member States in the EU. The highest number per capita is in the Netherlands — more than one bicycle per person. Spain and Portugal have relatively low ownership levels (see Figure 4).

**Figure 4: Number of bicycles per capita in EU, 1992–96**

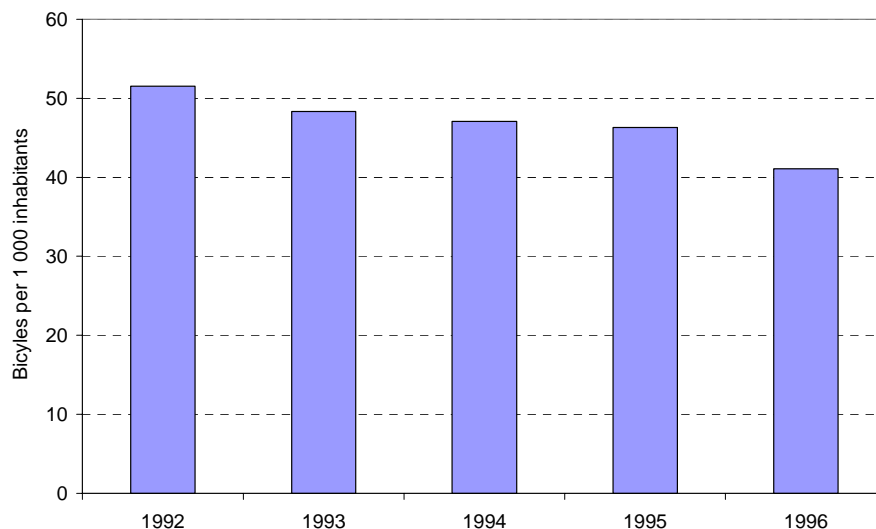


NB: Based on bicycle ownership data between 1992 and 1996. No data are available for Greece and Ireland.

Source: UITP/ECF, 1997.

Bicycle sales are gradually dropping (see Figure 5). It seems that bicycle popularity is decreasing. However, bicycle stocks and sales may have no direct influence on bicycle use. Different types of bicycles are used for different purposes (e.g. sports bikes, children’s bikes and all-terrain bikes). Hence, the number of bicycles is an indicator of the popularity of cycling and of cycling potential, but not (directly) an indicator of its potential to change the modal shares of passenger transport demand.

**Figure 5: The number of bicycles sold in the EU per 1 000 inhabitants (1992–96)**



Source: UITP/ECF, 1997.

**Box 2:      Reduction of number of vehicles**

DHL International (UK) Ltd has an action plan to improve fuel efficiency by 15 %, which will save GBP 358 000 in a three-year period. Achieving this target is linked to driver training and initiatives such as its 'team buses'. Instead of using individual courier vans, DHL has begun to use 'team buses' for journeys from Heathrow to central London. Couriers sort the consignments on the bus en route and deliver the goods on foot. The area covered by these 'foot deliveries' is very similar to the norm for postal services. This has reduced the number of vans travelling in and out of London from 18 to 2 per day and speeded up customer service and delivery times, which is good for business.

*Source:* European Commission, 2000.