



# TRANSPORT AND COMMUNICATIONS

YEARBOOK 2005

SWEDISH INSTITUTE FOR TRANSPORT AND COMMUNICATIONS ANALYSIS



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**SWEDISH INSTITUTE FOR TRANSPORT AND COMMUNICATIONS ANALYSIS**

Transport and Communications 2005

Swedish Institute for Transport and Communications Analysis, SIKA

[sika@sika-institute.se](mailto:sika@sika-institute.se)

[www.sika-institute.se](http://www.sika-institute.se)

Tel: +46-8 506 206 00

Fax: +46-8 506 206 10

Editors: Marika Engström and Ellen Åhlander

Photo credits: EyeQnet bildbyrå

Graphic design and layout: Ateljén Arne Öström

Printed by: Bulls Tryckeri AB, Halmstad 2005

ISBN 91-89586-50-6

ISSN 1403-7912

## PREFACE

The Swedish Institute for Transport and Communications Analysis, SIKÅ, is the agency responsible for developing, compiling and analysing statistics in the transport and communications sector. One way of disseminating the results of this work is by publishing regular yearbooks.

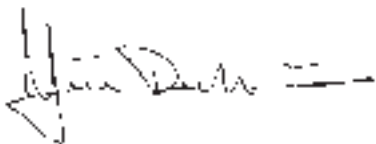
SIKÅ has published yearbooks on transport and communications every year since 1999, and this is therefore the fourth book. The contents of this yearbook are arranged in the same way as the previous issues as regards the presentation of statistics. The sections of the book are arranged in accordance with the areas we have also selected for our statistical report – i.e. infrastructure, operators, resources, transport and communications, economy and environment and safety. Developments have been reported over the past ten-year period as far as possible.

As in previous yearbooks, this issue is introduced by a section on a specific topic in the transport sector. This time we take up technical development as a driving force in transport policy. Here we describe the key role that technical development has for the ability to achieve transport policy objectives, with climate policy as the main example.

The yearbook is available in a Swedish and English version, in printed form and as pdf-files on SIKÅ's website [www.sika-institute.se](http://www.sika-institute.se).

We hope that the book will be widely used and useful to our readers in Sweden and elsewhere.

Stockholm, November 2004



Kjell Dahlström  
Director-General



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# Technical development as a driving force in transport policy

This section presents the key role of technical development for the achievement of transport policy objectives with climate policy as the prime example. Technical development is affected by many factors such as economic instruments, legislation and voluntary agreements.



## **The carbon dioxide objective: the same level in 1990 and in 2010**

The climate issue is central for the future development of the transport sector. The transport sector is currently responsible for about a third of the emissions of greenhouse gases in Sweden. According to calculations made in connection with the most recent national report to the UN Convention on Climate Change, carbon dioxide emissions from the transport sector will increase by approximately 14 per cent between 1990 and 2010. Subsequent calculations indicate even greater increases<sup>1</sup>. (Carbon dioxide is the most important of the emissions of greenhouse gases by the transport sector.)

Under the Kyoto Protocol, the EU has undertaken to reduce its emissions of greenhouse gases by eight per cent totally for all Member States (EU-15) from 1990 to the period 2008–2012 (the average value for these years). Future international agreements will with all probability entail more stringent requirements.

Within the EU, an agreement has been reached on burden-sharing to meet this undertaking. For Sweden, this distribution means a right to increase emissions by four per cent. However, the Riksdag has adopted a climate policy objective with a higher level of ambition. The Swedish target means that the Swedish emissions of greenhouse gases (the average value for the period 2008–2012) are to be at least four per cent lower than in 1990. The objective does not state how the burden should be shared between different sectors of society.

The Government set an objective for the transport sector in a bill in 1998<sup>2</sup> that emissions of carbon dioxide in 2010 should not exceed the level of 1990. Very far-reaching measures need to be taken if this objective is to be achieved – how great the cost for the measures will be depends on the measures decided upon. According to SIKA's estimates, measures would be required that would correspond to an increase in the price of petrol of about five kronor per litre.

The transport sector is one of the sectors that are not included in the EU-wide system of trade with emission rights that will come into force in 2005. According to the EC Emissions Trading Directive, Member States may also include sectors that are not mandatory in the system from 2008. The more sectors included in the system, the greater the possibilities will be to reduce the costs of climate policy.

In 2004, SIKA analysed various factors in the surrounding world that affect the conditions for the development of the transport sector. This analysis was produced at the request of the Government to serve as a basis for a transport policy bill in 2005. This section has been taken from the surrounding world analysis published as SIKA Report 2004:7.

## **Halving of carbon dioxide emissions in the long term**

The Riksdag's resolution also entails a long-term objective to halve the emissions of greenhouse gases by 2050. Since the transport sector is responsible for a large proportion of the emissions, it is probable that the transport sector will be affected in some way.

The uncertainty about the demands for emission reductions which may be made in the future affects the long-term planning of investments in the infrastructure, i.e. in the first place roads and railways. The socio-economic profitability of the investments depends on how much traffic will use them. Far reaching demands for reduction of carbon dioxide emissions can be important for the demand for transport and thus for the profitability of the facilities. However, the extent of this is unclear.

Studies show that if general instruments such as carbon dioxide tax or trading with emission rights are used to meet far-reaching demands, adaptations in road traffic will take place in the first place by technical adaptation in the field of vehicles and fuels. It is considered that adaptations will be made to a lesser extent by reduced demand for transport.

## **Scarcity leads to higher prices...**

In a market economy, price changes can stimulate technical development. When the raw material prices rise, this takes place, for instance, by manufacturers trying to change the products or find cheaper ways of producing them.

An example of this is the effects of the first evident oil crisis in the 1970s. The assessment was made then that the demand for petrol would only be slightly affected by price changes, i.e. the same quantity of petrol would be consumed regardless of price. This also proved to be correct in the short term. However, after a time, adaptations started to be made in a number of sectors that led to reduced demand for petrol.

Similar adaptations have taken place in other areas as a result of price changes, for instance, for copper and coffee. When scarcity starts to have an impact, consumers will try other alternatives. High prices due to taxes also lead to evident adaptations.

## **... which in turn speeds up technical development**

In Europe, which has relatively high petrol prices, cars are considerably smaller, lighter and use less fuel than cars in the United States, with its low petrol prices. A large part of this difference can be said to be the result of a systematic product development aimed at achieving technically more efficient vehicles.

The price difference for fuel has thus been a strong driving force for producing technically more efficient vehicles for the European market. When

consumer demand for energy-efficient (or safe) cars increases, more such cars are produced and prices are pressed down. It can therefore be expected that technology will largely compensate consumers for the price increases.

If the costs of emitting carbon dioxide increase, we can thus expect that it will lead to intensive development activity to reduce emissions of carbon dioxide. If the vehicle fleet can be changed by technical development so that it does not have the present negative side effects, it is not either certain that the car fleet need be reduced in order for there to be a great decrease in carbon dioxide emissions. The consequence of this is that a shift of travel from car to railways may not be necessary to achieve the carbon dioxide objectives.

### **Market demand for different properties**

We have thus noted that technical development in the transport sector is very important for the possibility of achieving the transport policy objectives. The driving forces underlying vehicle development can be of different kinds.

An important driving force is the market's demand for different properties. Demand is in turn affected by advertising and information, as well as by tax rules and charges that provide incentives for particular choices. Different restrictions for use, for instance, environmental zones in built-up areas, can increase interest in cleaner, quieter and safer vehicles. This is mainly about getting existing technology on to the market, increasing volume and thus reducing the manufacturing cost.

Another important driving force is demands targeted on manufacturers. These may include legal requirements on safety, environment and accessibility for those with special needs. Requirements can also be made in connection with procurement of vehicles. Negotiations with manufacturers can lead to voluntary agreements or undertakings on the part of the manufacturers. This is partly about developing new technology.

The following section provides some examples that affect the technical development of vehicles in different directions with respect to fuel, emissions and safety.

### **Large powerful cars are chosen in preference to cars with good fuel economy**

During the period 1980–2000, the fuel consumption for new cars decreased by 17 per cent in Sweden although no reduction has taken place after 2000. There are a number of underlying factors for this development.

Engines have become more efficient, although this improvement has not primarily been made use of by lower fuel consumption but by an increased demand for larger and more powerful cars. The fuel consumption of new

Swedish cars was 24 per cent higher than the European average (EU-15) in 2002. The trend in the past few years has been for this difference to increase.

There are also other factors that can be assumed to push up demand for larger and more powerful cars. Among other things, a study carried out on behalf of the National Road Administration<sup>3</sup>, shows that there is a limited availability of certain cars in the Swedish market with good fuel economy. Other studies have noted that information about fuel consumption is hidden away both in marketing by manufacturers and in the comments of the mass media on new car models.

The European car industry (ACEA) has undertaken to reduce the average carbon dioxide emissions from new cars to 140 g/km in 2008, which entails a reduction by 25 per cent compared with 1995. However, it does not look as if this target will be achieved.

The Swedish Environmental Protection Agency<sup>4</sup> has made the assessment that the weight and engine power of new cars will increase although the carbon dioxide emissions will none the less decrease by around eleven per cent between 2003 and 2010 due to more efficient engines. An important assumption for such estimates is the distribution between petrol and diesel cars. It is assumed that the proportion of diesel cars will increase, which can lead to reduced carbon dioxide emissions.

However, fuel consumption for heavy vehicles has not decreased significantly in recent years, and there are no indications of a marked reduction in future.

### **Slow introduction of alternative fuels and forms of power**

The introduction of alternative fuels and forms of power is proceeding slowly. Limited vehicle fleets are powered by colza methylester, ethanol, natural gas or biogas. There are still only a limited number of electric and electric hybrid vehicles. The greatest impediments for introduction on a larger scale are the high costs and overcoming inertia when introducing new technology and new distribution systems for fuel.

An important driving force in this context is the EC directive on promotion of the use of biofuels or other renewable fuels<sup>5</sup>. According to this directive, biofuels are to have replaced two per cent of petrol and diesel consumption by 2005. The corresponding portion is to be 5.75 per cent by 2010. It is expected that use will initially take place by low-level mixture in vehicle fuels and flexible-fuel vehicles.

Another important driving force is the price of fossil fuels. This can be expected to increase as the more easily available resources are exhausted. Official forecasts for the development of the crude oil price do not indicate any drastic changes in the near future, however.

Hydrogen is a possible future fuel and fuel cells are a technology that



many regard as promising in the long run. However, no introduction on a large scale is expected in the next few decades. The technology is available although costs are still too high in relation to convention forms of power.

### **Legislation the foremost driving force underlying exhaust cleaning and noise reduction**

Legislation on car exhausts and the requirements on engine fuels are the foremost driving forces underlying technical development of exhaust emissions by cars.

Emissions are regulated by EC directives<sup>6</sup>, which have become successively more stringent over the years. The directive has been implemented in Swedish legislation by the Exhaust Gas Purification and Engine Fuels Act (2001:1080). The next step in the requirements for light and heavy vehicles will be implemented in 2005. Further steps will be taken in 2008 for heavy vehicles. The requirements will lead to emissions of the regulated substances



being considerably lower when the car fleet has been replaced. However, certain problems will persist for a long time, mainly local problems due to particle emissions.

The exhaust directive provide scope for initiating a faster introduction of cars that comply with the requirements decided upon ahead of time with the aid of economic instruments.

The EC directive on noise from motor vehicles<sup>7</sup> is the foremost driving force with respect to the development to restrict motor noise. The noise problem will largely persist, however, since agreement has not been reached on how noise from tyres and road surfaces is to be regulated.

### **Pending alcolocks and seat belt reminder systems**

Various technical security requirements on cars have been discussed, including alcolocks, speed restricters and seat belt reminder systems. There is no legislation on this yet at EU level. Demand for such equipment could increase if it is included as a parameter in the European classification system for cars Euro NCAP. Another way of increasing the proportion of cars with such equipment is that government agencies, municipalities and county councils specify it as a requirement in connection with procurement of cars.

Computer-based “intelligent” systems in road traffic, so-called ITS solutions, can contribute to increased safety, reduced environmental problems and increase accessibility. However, use has not increased to the extent that was previously thought, since demand has not been sufficiently great.

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1 Edwards (2003) and Kågeson (2002).

2 Government Bill 1997/98:56, *Transport policy for sustainable development*.

3 Elvingsson (2003), National Road Administration

4 Abrahamsson (2004)

5 2003/30/EC

6 70/220/EEC and 88/77/EEC with amendments

7 70/157/EEC



# 1. Infrastructure

This chapter presents the infrastructure in the transport and communications sector and how responsibility for these systems is distributed: for road and rail transport, sea and air transport and for post and telecommunications. The national road and rail networks and the largest ports and airports are presented in maps and statistics.



**1.2 The Swedish trunk road network.**

#### Definition of concepts

*Transport performance* is the number of persons or tonnes of transported goods multiplied by the road distance transported. It is measured in passenger kilometres or tonne kilometres.

*Traffic performance* is the number of vehicles multiplied by the road distance driven. Traffic performance is measured in vehicles kilometres.

These measures can be used for all modes of transport.

## 1.1 ROAD TRANSPORT

The Swedish public road network consists of over 138 000 km of road. In addition, there are 75 000 km of private roads with central government grants and an extensive network of private roads without government grants. The public road network accounts for the major part of traffic performance.

The state is responsible for the public road network in the countryside and for the through traffic routes in built-up areas. The municipalities are responsible for local road maintenance in built-up areas. The system of rules that applies to traffic on the public road network has been decided upon by the Riksdag (Swedish Parliament) and the government. Certain local traffic regulations have been decided upon by the municipalities.

### The state road network consists of the following types of road

*National roads* including European highways are numbered from 4 to 99.

*County roads* that cross county borders have unique road numbers from 101 to 499 and county roads are numbered from 500 upwards within the respective county.

### The state road network is categorised according to strategic importance

*The national trunk road network* has been designated by the Riksdag as the road network that is of strategic importance for the continued prosperity of Sweden. This road network includes all European highways and some national roads.

*Regional roads* are included in the road network that the National Road Administration considers as being of strategic importance for the development of the respective region.

*Local roads* are the roads that are neither part of the national trunk road nor regional road network.

### 1.1. The public road network by length and traffic performance.

Source: National Road Administration Sector Report 2003

Category responsible for road maintenance		Road length, km	Traffic performance bn
State roads	Total	98 200	50
	European highways	4 900	18
	Other national roads	10 500	14
	Primary county roads	11 000	8
	Other county roads	71 900	11
Municipal streets and roads		40 000	21

## 1.2 RAIL TRANSPORT

In 2003, the Swedish rail network consisted of approximately 15 000 kilometres of track, over 80 per cent of which belongs to the state rail network.

Just under 20 per cent of the state rail network is permitted for 25 tonnes axle load and approximately 20 per cent is cleared for the largest loading gauges. Approximately 11 per cent has double track and approximately 50 per cent of the network is electrified.

### The state rail network consists of

*The trunk railways* consist of the track transferred from Swedish State Railways when the National Rail Administration was created in 1988 including train tracks, marshalling yards and some sidings, mainly track for passenger train storage. The lines previously referred to as county railways are also now categorised as trunk lines.

*Other railways* consist of capillary railways – some small railways such as industrial and harbour railways.

The Inland railway, extending for 1 053 km, is no longer part of the state's track facilities. In 1992, the Riksdag decided to transfer to right to run services on this route to an association of interested parties. It is still owned by the state but Inlandsbanan AB, owned by the fifteen municipalities the line passes through, has the right to operate services.

Other lines on which services are run and which are not included in the state's track facilities are Roslagsbanan (Ro-



**1.3. The Swedish trunk network.**

Source: National Rail Administration.

slag line), Saltsjöbanan (Saltsjö line) and Lidingöbanan (Lidingö line) in the County of Stockholm. These lines are owned by Stockholm County Council. Their total length is 93 km. The Stockholm metro is also owned by Stockholm County Council and consists of a total of 108 km of track.

Arlandabanan (The Arlanda line between Rosersberg and Odensala) consists of 22 kilometres, while the whole distance from Stockholm to Arlanda is 41 kilometres.

Tramways are operated in Gothenburg, Norrköping and Stockholm. The route network is 145 km in Gothenburg and 17 km in Norrköping. The total length of all tram lines in Stockholm is 17 km.

Otherwise, commercial services are run on some small privately-owned railways. There are some 19 heritage and tourist associations that run railway services on their own lines.

#### 1.4. The railway system in 2003.

Source: National Rail Administration Annual Report 2003

Category responsible		Track length, track km for track maintenance
Total		17 118
The state	Total	14 328
	Trunk railways	13 388
	Other railways	647
	Disused	293
Other	Total	approx. 2 790
	IBAB, SL, A-train AB etc.	approx. 1 400
	Heritage, tourist associations, etc.	approx. 260
	Other capillary lines	approx. 1 130

### 1.3 SEA TRANSPORT

The sea transport infrastructure consists of ports and fairways. The Swedish ports are important nodes in the transport system working together with the road and rail networks. The ports are municipally owned with few exceptions and port operations are operated commercially. There are also ports adjacent to private companies.

The Swedish Maritime Administration is responsible for the fairways (extension and maintenance) and for pilotage, ice-breaking and sea charts.

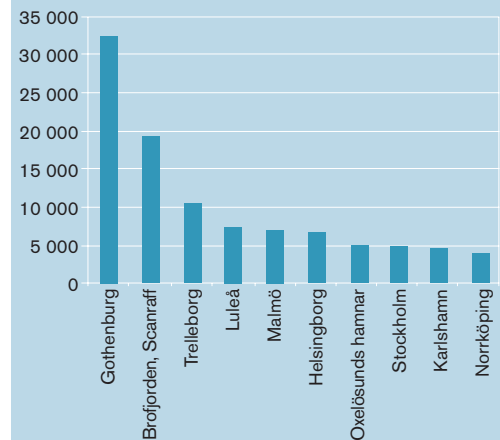
#### 1.5. The ten largest Swedish ports by quantity of goods transported, thousand tonnes, 2003.

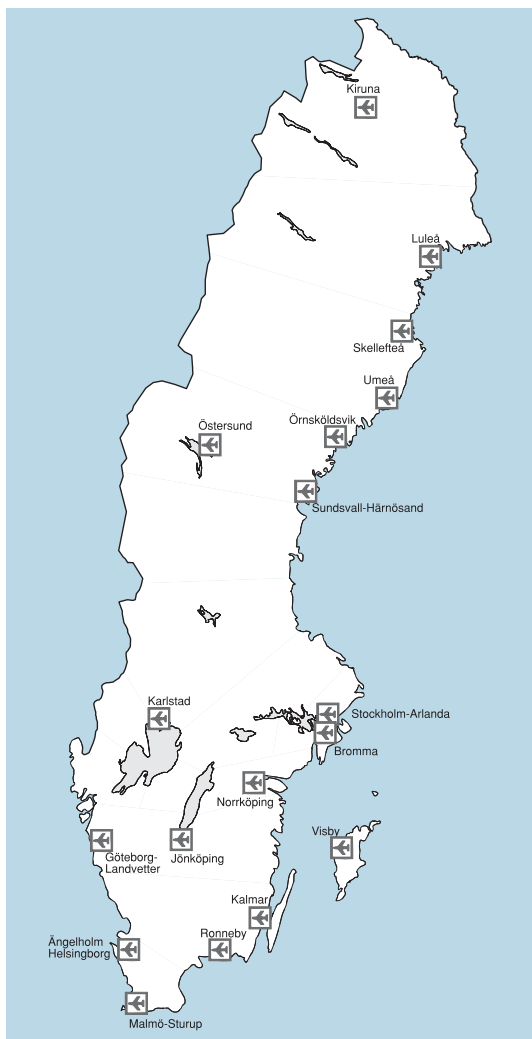
Source: SIKA/Statistics Sweden Foreign and domestic transport by ship, 2003

Port	Quantity of goods, thousand tonnes
Gothenburg	32 356
Brofjorden, Scanraff	19 440
Trelleborg	10 655
Luleå	7 605
Malmö	7 215
Helsingborg	6 913
Oxelösunds hamnar	5 126
Stockholm	5 025
Karlshamn	4 596
Norrköping	4 113

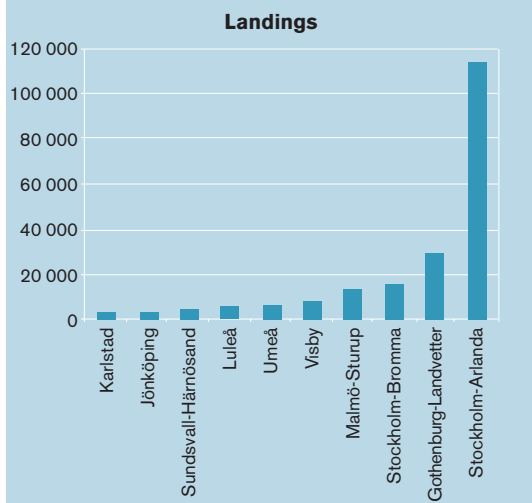


#### 1.6. The largest Swedish ports by quantity of goods handled.





1.8. The state airports in Sweden.



## 1.4 AIRPORTS

There were 42 airports in Sweden with regular civilian air services (scheduled services) and charter services in 2003. Fifteen of these were operated by the Civil Aviation Administration and three were military air bases where the civilian air traffic was administered by the Civil Aviation Administration. The Civil Aviation Administration is also responsible for operation of a municipal airport through a leasing agreement. Of the other 23 airports, two were municipally run military training airfields, 19 municipal airports and two privately-owned.

Development has differed from airport to airport. Some experienced a positive development in 2003 compared with the previous year while traffic decreased at the great majority of them.

### 1.7. Sweden's ten largest airports by number of landings in 2003. The number of passengers refers to arrivals and departures by scheduled and charter services.

Source: SIK/Civil Aviation Administration, Air transport 2003

Airport	Owner	Landings Number	Passengers No, thousands
Stockholm-Arlanda	State	114 024	15 114
Gothenburg-Landvetter	State	29 507	3 605
Stockholm-Bromma	State	15 212	1 282
Malmö-Sturup	State	13 360	1 742
Visby	State	7 745	310
Umeå	State	6 368	706
Luleå	State	5 792	847
Sundsvall-Härnösand	State	4 200	344
Jönköping	State	3 906	163
Karlstad	State	2 803	172

## 1.5 POSTAL SERVICES

The postal infrastructure in Sweden has been substantially shaped by Sweden Post's (Posten AB) dominant position. Sweden Post distributed almost 93 per cent of all letters in 2003. The remaining seven per cent were conveyed by some forty operators. Information about Sweden Post can therefore be used to provide a picture of the major part of the postal infrastructure.

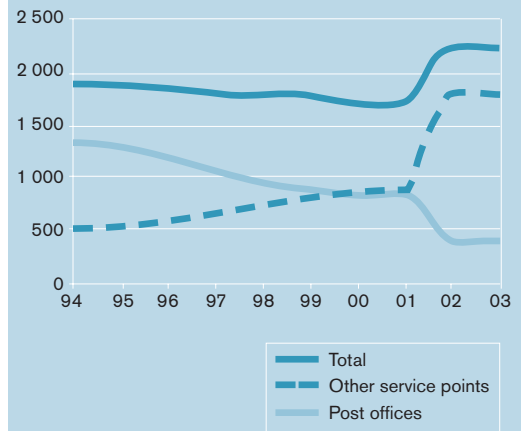
The number of post offices run by Sweden Post has decreased over the past ten years. At the same time, Sweden Post has opened service points in shops and banks. The total number of post offices and service points has increased by over 19 per cent in the past ten-year period.

### 1.9. Number of post offices and other postal service points (post office in collaboration with retail outlets or banks).

Source: SIKA/Statistics Sweden Postal operations 2003

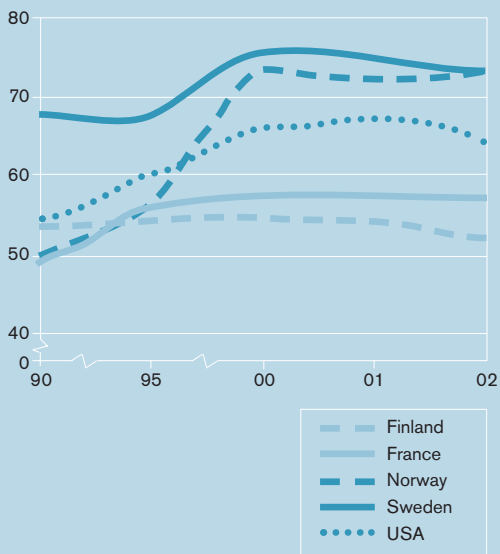
	Post offices	Other service points	Total
94	1 341	537	1 878
95	1 289	564	1 853
96	1 177	640	1 817
97	1 075	720	1 795
98	1 019	781	1 800
99	922	853	1 775
00	851	890	1 741
01	840	900	1 740
02	433	1 800	2 233
03	440	1 800	2 240

Number of post offices and other service points



A *main line* is a line between the subscriber's equipment and the public telephone network, with a specially allocated connection at the exchange.

**Main lines per hundred inhabitants**



## 1.6 TELECOMMUNICATIONS

Telecommunications are usually divided into two components, fixed and mobile telephony respectively. The number of telephone lines (main lines, see fact panel) per hundred inhabitants is often used as a measure to describe the extent of the fixed telephone network.

The public telephone network was well developed at an early date in Sweden and expanded until 2000, when the number of lines was almost 76 per hundred inhabitants. The number subsequently decreased to just under 74 in 2002. This development is in accordance with an international trend.

### 1.10. Number of telephone lines (main lines) per hundred inhabitants. N.B. the scale in the diagram starts at 40.

Source: ITU Yearbook of statistics

	90	95	00	01	02
Denmark	56.7	61.1	71.5	72.2	68.9
Finland	53.4	54.3	55.0	54.0	52.4
France	49.5	56.0	57.7	57.4	57.2
Japan	44.1	49.6	58.6	57.6	55.8
Canada	56.5	61.6	66.1	65.4	64.3
Norway	50.2	56.7	73.3	73.3	73.4
Switzerland	57.4	63.7	72.6	74.3	74.4
Sweden	68.1	68.0	75.8	75.4	73.6
USA	54.5	60.4	66.5	67.1	64.6

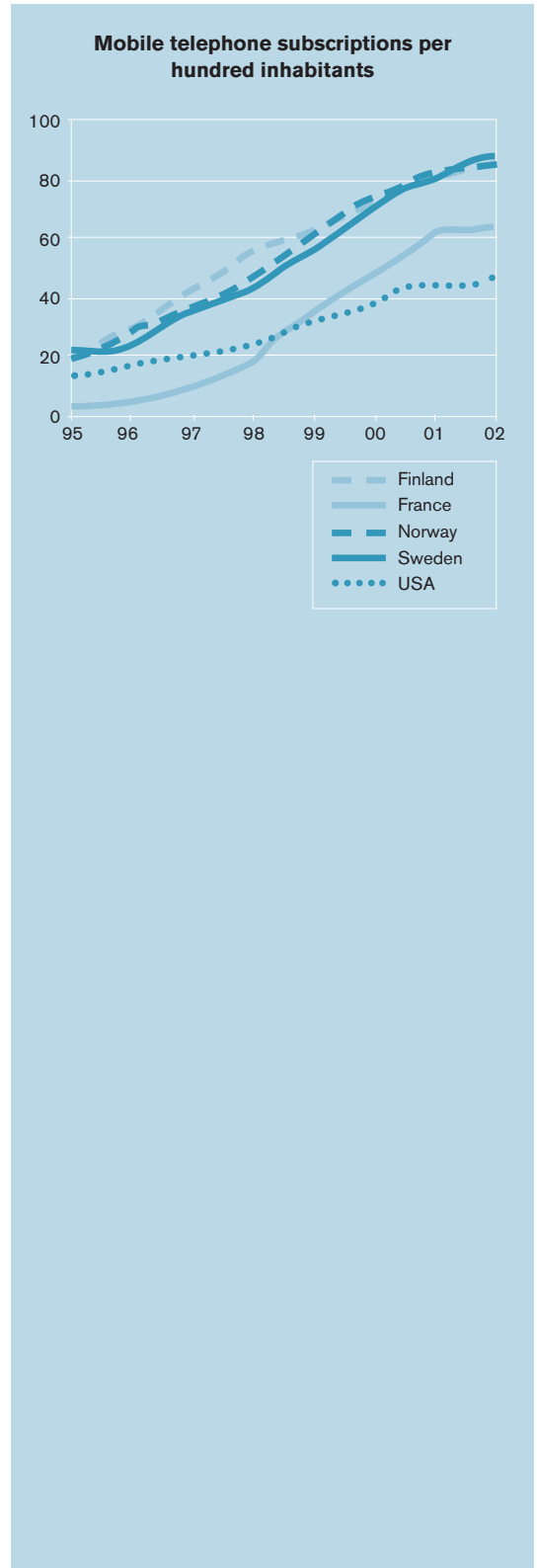
The number of subscribers for mobile telephony has continued to increase greatly. In Sweden, the number of subscribers increased from just under 23 per hundred inhabitants in 1995 to almost 89 in 2002. The number is increasing in other countries, although Sweden continues to be in the lead.

The swift growth of mobile telephony is probably one of the factors affecting the decrease in the fixed telephone network in the recent period. However, a slackening-off can be noted in, for instance, France and Norway.

### 1.11. Number of subscriptions for mobile telephony per hundred inhabitants

Source: ITU Yearbook of statistics

	95	96	97	98	99	00	01	02
Denmark	15.7	25.1	27.4	36.4	49.5	63.1	74.0	83.3
Finland	20.1	29.3	42.0	55.2	63.4	72.1	80.4	86.7
France	2.3	4.2	10.0	19.2	36.6	49.3	62.3	64.7
Japan	9.3	21.4	30.3	37.4	44.9	52.6	58.8	63.7
Canada	9.1	12.1	14.7	18.3	23.4	28.3	34.9	37.8
Norway	22.5	28.7	38.0	47.4	61.3	74.8	83.1	84.4
Switzerland	6.4	9.4	14.7	23.8	42.6	64.3	72.8	78.9
Sweden	22.7	28.2	35.8	46.4	58.3	71.8	80.6	88.9
USA	12.8	16.4	20.4	25.2	31.0	38.9	45.1	48.8





## 2. Operators

This chapter presents the public and other operators in the transport and communications sector. Information about the number of undertakings and employees is provided for activities in road and rail transport, sea and air transport and post and telecommunications.

## 2.1 ALL MODES OF TRANSPORT

### The National Public Transport Agency

The National Public Transport Agency's work is to promote the development of a co-ordinated long-distance public transport system of coach, ship, flight and train transport, which operates in the best interests of passengers. The objective is to create an accessible transport system with high quality, safe traffic and a good environment and to achieve a positive regional development.

The National Public Transport Agency will also, on behalf of the government, procure long-distance public transport that is justified from the point of view of transport policy which is not being provided by the transport authorities or the commercial transport operators.

The work of the National Public Transport Agency for improved accessibility and regional development includes surveying long-distance public transport and co-ordination of timetables, ticket systems and information.

Other important tasks of the National Public Transport Agency are to make travelling easier for people with special needs and to strive for equality issues to be taken into consideration in public transport.

The National Public Transport Agency was created in 1999 and had an average of twelve full-time employees during 2003.

### SIKA

The Swedish Institute for Transport and Communications Analysis, SIKA, has three main areas of responsibility in the transport and communications sector:

- To carry out studies for the government
- To develop forecasts and planning methods
- To be the responsible authority for official statistics

SIKA analyses and presents data and establishes a basis for planning the transport and communications sector. SIKA provides the actors in the sector with statistics, descriptions of the present situation, forecasts and consequence analyses.

SIKA co-ordinates the work of the transport agencies with regard to long-term infrastructure planning and, to-

gether with the transport agencies, produces material on which Government decisions can be based. SIKa also takes part together with the transport agencies in the work of following up and working out the details of the national transport policy objectives.

SIKA is responsible for the quality and development of the tools and methods that are used to make forecasts of transport development and analyses of, for instance, different transport policy measures. These forecast and analytical tools are used jointly by the transport agencies in national transport planning.

Within the field of statistics, SIKa works with developing the content, quality and accessibility of statistics. SIKa is responsible, inter alia, for the major national studies of the population's journeys and contacts – RES and KOM. At the end of 2003, SIKa had just under 30 full-time employees. SIKa was established in 1995.

## 2.2 ROAD TRANSPORT

### The National Road Administration

The National Road Administration is responsible for representing the state at the national level on issues relating to the road transport system. The tasks of the National Road Administration consist of four main components:

*Sector responsibilities:* collaborating with and co-ordinating the work of the relevant parties, and promoting developments in the road transport system. This is achieved by reaching agreements, providing support, purchasing services, supplying basic data and initiating research and development.

*Role as a public authority:* drawing up and applying regulations for vehicles, driving licences, the road traffic environment as well as administration of central government grants.

*National road management:* developing and managing the national road network in the role of client, and exercising supervision of local government road management.

*Contract-based work:* planning and design, construction, operation and maintenance as instructed by the National Road Administration and others.

The National Road Administration is organised in a head office at Borlänge, seven regions and four production units. The average number of employees at the agency was approximately 5 600 persons in 2003.

### Hauliers, etc.

In 2003, there were almost 17 600 undertakings in sectors related to road transport, which together had over 93 100 employees. The number of undertakings in the industries presented has decreased by approximately 1 500 in the past ten-year period. During the same period, the number of employees has increased by around 23 000 persons.

The sector “Road transport of goods” (SNI 60.24) is dominated by a large number of small enterprises, which had just over three employees per company on average in 2003. Just under one per cent of the enterprises had 50 or more employees. The number of employees increased between 1994 and 2000 but has decreased by approximately 300 persons in the most recent three-year period.

#### Sectors included associated with road transport

Road transport of goods = SNI 60.24

Goods handling = SNI 63.11

Storage and warehousing = SNI 63.12

Other support services for road transport = SNI 63.21

Other provision of transport = SNI 63.40

Other postal conveyance = SNI 64.12

This categorisation has been made in accordance with the Swedish categorisation of industries (SNI92) until 2002 and thereafter in accordance with (SNI2002).

The sector “Other provision of transport” (SNI 63.40) had, however, a higher average number of employees per undertaking (over 12) in 2003. Just under three per cent of these were larger enterprises with 50 or more employees.

The number of employees also increased among transport provision companies between 1994 and 2001 but has subsequently decreased by over 900 persons up to the end of 2003.

47 per cent of the haulage companies (SNI 60.24) had 1–9 employees in 2003, while the proportion of transport provision companies (SNI 63.40) with 1–9 employees was 42 per cent.

**2.1. Number of companies and number of employees in industries associated with road transport.**

Source: Statistics Sweden’s Business Register, Basic facts

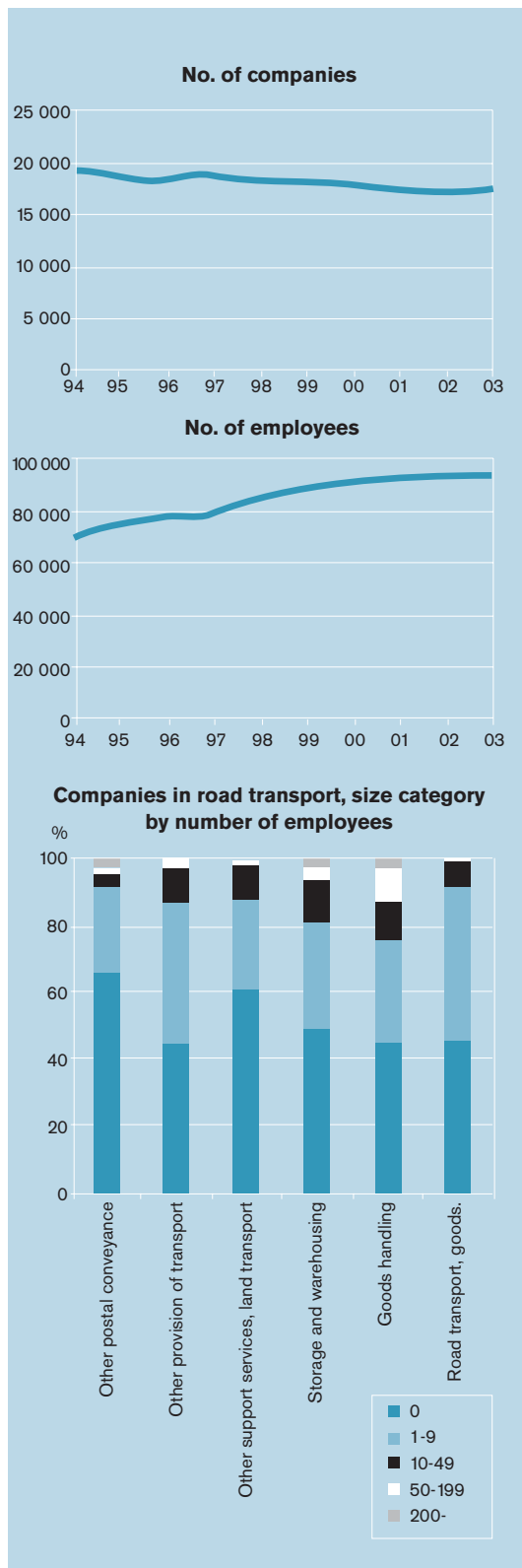
	No. of companies	No. of employees
94	19 125	69 776
95	18 659	73 735
96	18 484	77 451
97	18 778	78 179
98	18 441	84 572
99	18 077	87 299
00	17 944	92 666
01	17 815	93 742
02	17 608	94 231
03	17 572	93 114

Sectors included: SNI 60.24, 63.11, 63.12, 63.21, 63.40 och 64.12

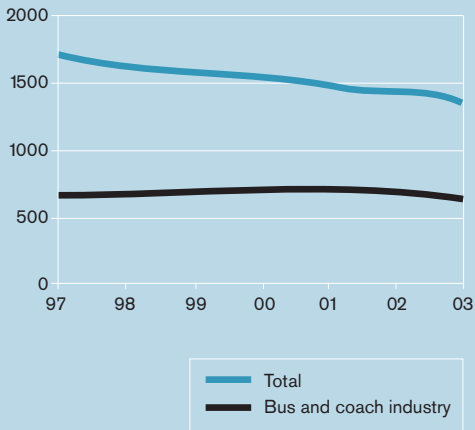
**2.2. Number of companies in certain sectors associated with road transport, by size categories of employees, 2003.**

Source: Statistics Sweden’s Business Register, Basic facts

Sector	0	1–9	10–49	50–199	200–	Total
Road transp. goods	6 698	6 907	1 049	120	6	14 780
Goods handling	90	62	22	21	5	200
Storage and warehousing	84	57	22	7	4	174
Other support serv. land tran	262	113	45	9	1	430
Other provision of transpt	734	686	179	35	10	1 644
Other postal conveyance	227	88	14	5	10	344
Total	8 095	7 913	1 331	197	36	17 572



### Companies with licences for commercial services



### Bus and coach companies

One way of establishing how many bus and coach companies there are in Sweden is to investigate how many companies have a permit for commercial services. In 2003, there were almost 1 400 holders of such permits. Just under half of these companies were in the bus and coach industry.

The number of licences for commercial services decreased by 23 per cent between 1994 and 2003. The decrease in the number of licences has mainly taken place outside the bus and coach industry.

### 2.3. Number of companies with licences for commercial bus/coach services.

Source: Statistics Sweden, Statistical register for vehicles

	Total	Of which in the industry <sup>1)</sup>
94	1 814	697
95	..	..
96	..	..
97	1 694	676
98	1 656	667
99	1 598	686
00	1 555	681
01	1 498	688
02	1 458	666
03	1 388	650

1) Public transport, scheduled services and charter coach companies

### Taxi businesses

In March 2004, there were just under 8 000 active licence holders, which is a decrease of just under two and half per cent compared with the previous year. The number of active licence holders has decreased by approximately 11 per cent since 1996. During the same period, the vehicle park has decreased by around two per cent. The number of active licence holders without vehicles has increased every year since 1998.

## 2.4. Number of taxi licences.

Source: Swedish Association of Taxi Owners, Situation in the industry 2003–2004

	Registered	Active	Without vehicle
96	9 850	8 948	902
97	9 668	8 925	743
98	9 452	8 789	663
99	9 310	8 671	639
00	9 308	8 611	697
01	9 205	8 521	684
02	9 085	8 378	707
03	8 910	8 171	739
04	8 693	7 957	736

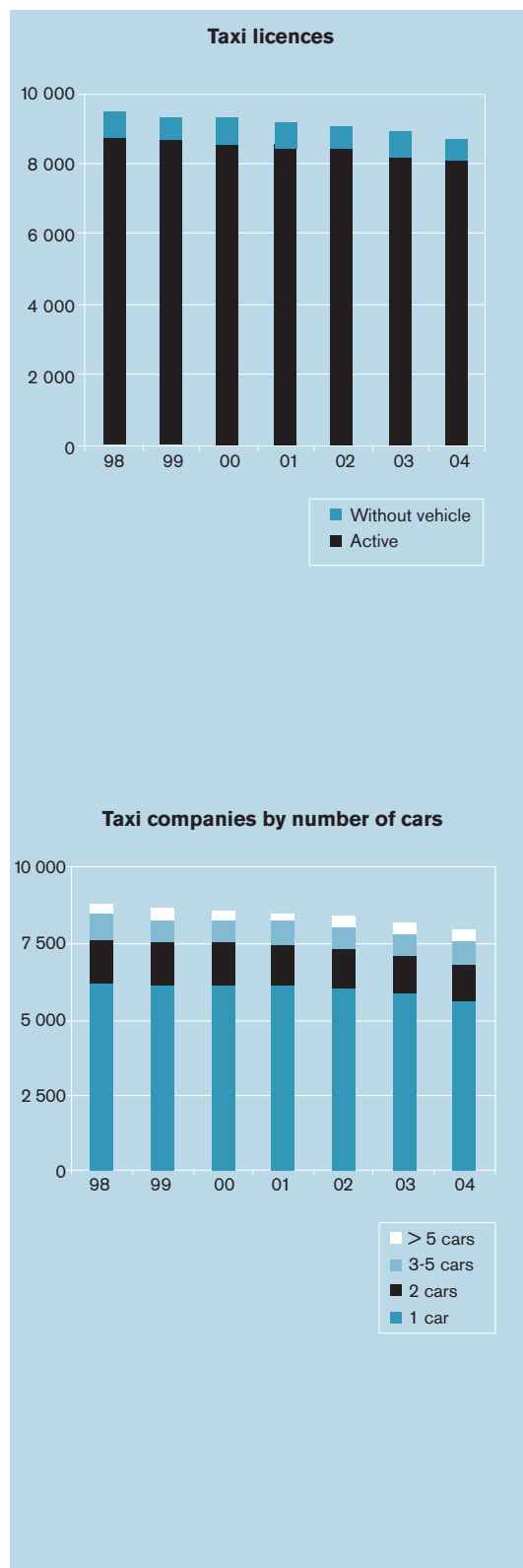
Note. The statistics relate to different months. 1996 August, 1997–2000 March, 2001–2004 April.

According to the Swedish Association of Taxi Owners, which has compiled the information on the number of taxis per company, the trend continues to be towards established taxi companies acquiring more vehicles and therefore becoming larger – in particular in the big cities. Since 1996, the number of vehicles per active licence holder has increased by over ten per cent from 1.6 to 1.8 vehicles.

## 2.5. Number of taxi companies by number of taxis. Information relates to the situation in May in the respective year.

Source: Swedish Association of Taxi Owners, State of the industry 2003–2004

	98	99	00	01	02	03	04
1 car	6 186	6 149	6 103	6 146	6 019	5 860	5 635
2 cars	1 490	1 404	1 386	1 252	1 266	1 207	1 187
3–5 cars	901	878	860	859	822	820	826
>5 cars	212	240	262	264	271	284	309
Total	8 789	8 671	8 611	8 521	8 378	8 171	7 957



## 2.3 RAIL TRANSPORT

### The National Rail Administration

The National Rail Administration has overall responsibility for the railway network in Sweden. It was made responsible for the national railway network on 1 July 1988 when SJ was split into a public enterprise for transport services and an agency for track maintenance, etc. The National Rail Administration has three main tasks:

*Sectoral responsibilities:* being responsible for Swedish rail transport in a broad sense, including metro and trams. This includes active participation in the development of the railways, driving development forward, being responsible for environment and safety, assisting the Riksdag and government and initiating research and development.

*Track maintenance:* developing and managing the Swedish railway network.

*Production:* carrying out the design, construction and maintenance of technical areas specific to the railway at the behest of the National Rail Administration and others.

The National Rail Administration is organised with a head office at Borlänge and five track regions for management of the railway network. There are also a number of production units and some freestanding units that are administratively attached to the National Rail Authority. The National Rail Administration had approximately 6 600 employees on average in 2003.

### The Swedish Rail Agency

The Swedish Rail Agency is a new agency that started its work on 1 July 2004 and is responsible for supervising the railway, metro and tram systems. The agency shall also work for safety in the systems and for an efficient railway market with healthy competition. The agency is also to investigate accidents and accident incidents in the sector.

The head office is in Borlänge. The agency has no local inspectors although it has a local office in Stockholm.

### Operators

On 1 January 2001, SJ was incorporated and split into six different companies. Since then, passenger services have been operated by SJ AB and goods traffic by Green Cargo.

These two companies are the largest passenger and goods operators respectively.

Malmtrafik i Kiruna AB (MTAB) is the largest of the other goods operators. MTAB has been operating the ore transport on the Malmbanan since 1 July 1996 and has been wholly owned by LKAB since 1 January 2000.

There are several large operators of passenger services. The second largest after SJ are Citypendeln and Tågkompaniet.

## 2.4 SEA TRANSPORT

### Swedish Maritime Administration

The Swedish Maritime Administration is a public enterprise in the transport sector. It works with supervision of Swedish commercial shipping and fishing boats as well as leisure craft. The intention of the supervision is to check current safety requirements. The agency is largely funded by the charges paid by shipping for the use of fairways and pilots.

The agency's main responsibilities are

- to promote safe, environmentally compatible and efficient shipping within the framework of sector responsibility
- to be responsible for the needs of shipping for infrastructure services in the form of sea routes, pilotage, ice breaking, nautical information, communication and services
- to work for consideration being taken to persons with special needs in sea transport
- to be responsible for Swedish maritime and sea rescue operations
- to strive for safety on board Swedish ships independent of fairways
- to monitor competition in the Swedish shipping industry.

In 2003, the Swedish Maritime Administration had approximately 1 250 employees. 330 persons worked at the head office in Norrköping and 923 in the regions.

### Other operators

According to Statistics Sweden's Business Register (CFAR), approximately 960 companies were engaged in shipping operations in 2003. This is an increase of about 35 companies compared with the previous year. During a ten-year period, the number of companies has increased by just under 300 or approximately 45 per cent. However, the number of employees has decreased by over 700 persons or 17 per cent during the ten-year period.

Most ports are integrated companies, where a previous

port authority and a stevedoring company that engaged in loading and unloading have merged into one company.

## 2.6. Number of companies and employees in sea transport by sector.

Source: Statistics Sweden Business Register

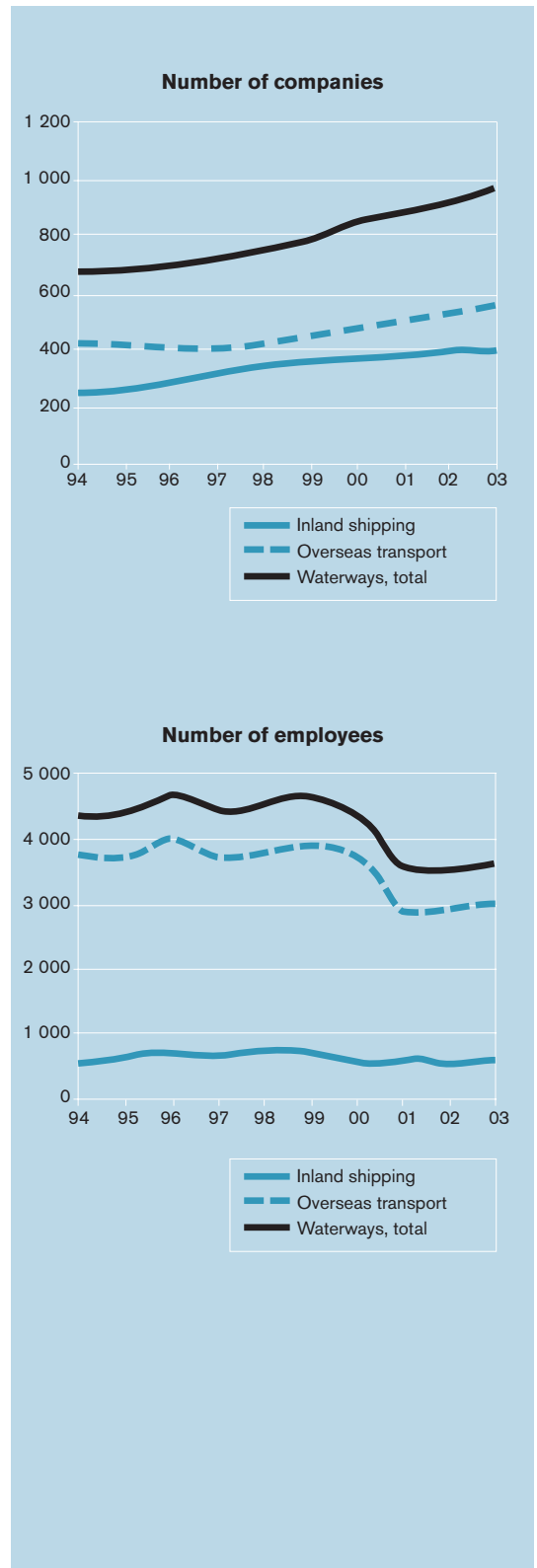
	SNI 61.1 Overseas transport		SNI 61.2 Inland shipping		Total	
	Companies	Employees	Companies	Employees	Companies	Employees
94	418	3 744	250	587	668	4 331
95	413	3 739	253	646	666	4 385
96	410	3 981	276	674	686	4 655
97	412	3 694	318	711	730	4 405
98	421	3 855	334	735	755	4 590
99	443	3 901	342	739	785	4 640
00	485	3 785	363	597	848	4 382
01	509	2 941	376	621	885	3 562
02	529	2 992	399	592	928	3 584
03	560	2 985	404	627	964	3 612

Most companies in the shipping industry are small and 93 per cent of the companies have nine or fewer employees. The greatest proportion of companies (72 per cent) have no employees. Most employees are in the medium-sized companies and 61 per cent of the employees work in companies with 10 to 199 employees.

## 2.7. Number of employees with employees in the shipping industry by sector by size categories of employees, 2003.

Source: Statistics Sweden Business Register

	SNI 61,1 Overseas transport		SNI 61,2 Inland shipping		Waterways, total	
	Companies	Employees	Companies	Employees	Companies	Employees
0	383	0	313	0	696	0
1-9	127	386	77	207	204	593
10-49	38	832	11	192	49	1 024
50-199	10	974	3	228	13	1 202
200-	2	793	0	0	2	793
Total	560	2 985	404	627	964	3 612



## 2.5 AIR TRANSPORT

### **The Swedish Civil Aviation Administration**

The Swedish Civil Aviation Administration is a public enterprise responsible for airports, air traffic management and air safety. The major part of the state's tasks in aviation is handled by the Swedish Civil Aviation Administration. The agency is responsible for certain agency functions but otherwise operates as a group that engages in business activities on a commercial basis.

The main tasks given to the Swedish Civil Aviation and Administration by the Riksdag and the Government are

- to promote the development of civil aviation
- to operate and develop state airports for civil aviation
- to exercise supervision over air safety for civil aviation
- to be responsible for air traffic service in peacetime for civil and military aircraft
- to be responsible for protection of the environment against pollution from civil aviation
- to take care of emergency facilities for civil air transport
- to make the transport system accessible for people with special needs

The Swedish Civil Aviation Administration shall also promote a transport system with equal opportunities, where the air transport system is designed in such a way as to meet the transport needs of men and women. Women and men are to be given the same opportunities to influence the coming into being, design and management of the transport system and their values are to be given equal weight.

The Swedish Civil Aviation Administration had approximately 3 600 employees in 2003. The Swedish Civil Aviation Administration was responsible for operation and development of 15 airports for civil aviation at three military airbases. These have been made available for civilian services by a collaboration agreement with the Armed Forces. On 1 January 2005, the Swedish Civil Aviation Administration was split up and a new agency, the Swedish Civil Aviation Authority established. Swedish Civil Aviation Authority is responsible for rules and supervision, for safety in Swedish aviation and for monitoring, analysis and development of the aviation industry.

## Other operators

The number of airline companies (according to Statistics Sweden's Business Register CFAR, including dormant companies) has been relatively stable during the past ten-year period. In 2003, there were 203 airline companies in Sweden. Between 1994 and 2003, the number of companies in scheduled services decreased by approximately eleven per cent while charter and taxi air companies increased by approximately five per cent. The number of employees at airline companies has increased by approximately 25 per cent in the past ten years.

### 2.8. The number of airline companies and employees in scheduled and charter/taxi services.

Source: Statistics Sweden Business Register

	Scheduled services		Charter och taxi services		Total	
	Companies	Employees	Companies	Employees	Companies	Employees
94	93	9 928	114	357	207	10 285
95	82	9 656	121	445	203	10 101
96	91	9 681	126	862	217	10 543
97	87	9 377	132	1 117	219	10 494
98	91	9 129	128	1 343	219	10 472
99	92	10 780	113	1 692	205	12 472
00	98	10 444	118	1 912	216	12 356
01	89	12 496	115	1 864	204	14 360
02	84	13 259	110	1 725	194	14 984
03	83	10 995	120	1 811	203	12 806

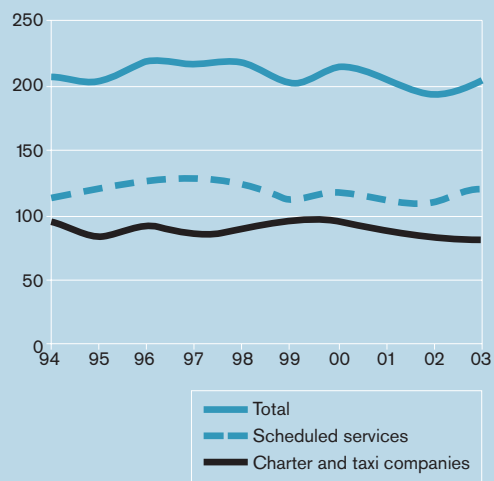
Only a small proportion of the companies, seven per cent, have more than 50 employees. Most employees, 88 per cent, are, however, employees in the three per cent of the companies that have more than 200 employees.

### 2.9. Number of airline companies and employees in scheduled services and taxi services by different size classes for employees 2003.

Source: Statistics Sweden Business Register

	Scheduled services		Charter and Taxi companies		Total	
	Companies	Employees	Companies	Employees	Companies	Employees
0	31	-	65	-	96	-
1-9	27	124	42	136	69	260
10-49	15	316	8	201	23	517
50-199	6	521	2	182	8	703
200-	4	10 034	3	1 292	7	11 326
Total	83	10 995	120	1 811	203	12 806

Number of airline companies



## 2.6 POST AND TELECOMMUNICATIONS

Postal and telecommunications services have traditionally been provided by public enterprises – Sweden Post Office Administration and Swedish Telecom. These are now limited companies, Posten AB (Sweden Post) and Telia-Sonera AB, which work on a commercial basis in competitive markets.

### **The National Post and Telecom Agency**

The National Post and Telecom Agency, PTS, is the central administrative agency responsible for supervising the postal, telecommunications and radio sectors. It endeavours to ensure that the objectives set by the Riksdag are complied with.

In those cases where there is a public need for measures to be taken in the postal and telecommunications sectors that are not catered for by the market, these can be met by procurement among the companies operating in the industry concerned. This is carried out by the National Post and Telecom Agency, with just over 200 employees in 2004.

### **Postal operators**

Until 1 January 1993, the Swedish Post Office had a legally protected monopoly position for conveyance of letters. CityMail AB had started to compete with the Swedish Post Office on a small scale at the time of the abolition of the monopoly.

On 1 March 1994, the Swedish Post Office was incorporated and became Posten AB (Sweden Post). Few operators were established between 1994 and 1996, however. At the end of 1995, there were four notified postal operators and at the end of 1996 there were 12.

As from 1 January 1997, operators must be licensed by PTS to engage in postal operations. On 1 January 2000, 64 companies had a licence to engage in postal operations and 33 at the end of 2003.

During 2001, Sweden Post started on the establishment of its new service network in which cashier service and postal services are provided separately. The service network now consists of approximately 400 “postal centres”

run by Sweden Post and primarily targeted on business customers. There are furthermore approximately 1 800 “Letter and parcel service outlets” at partners in shops, petrol stations and shopping centres, and approximately 1 000 service outlets in corner shops, kiosks, petrol stations, airports and hospitals. There is in addition the service provided by over 2 500 rural letter carriers.

Sweden Post’s volumes have decreased during the period 2002–2003 by two per cent, while Citymail’s have increased by almost twelve per cent. However, this only entails marginal changes in the businesses’ market shares.

### 2.10. Conveyance of letters by postal operators in 2002 and 2003

Source: PTS: Service and competition, 2004

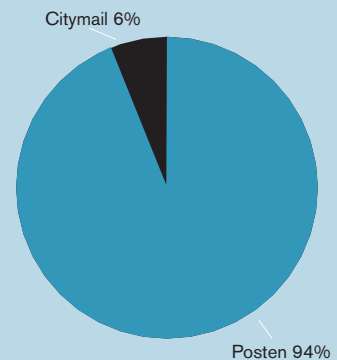
	02	03
Posten	3 037	3 100
Citymail	216	193
Others	14	15
Total	3 267	3 308

### 2.11. Number of operators with postal activities as their main activity.

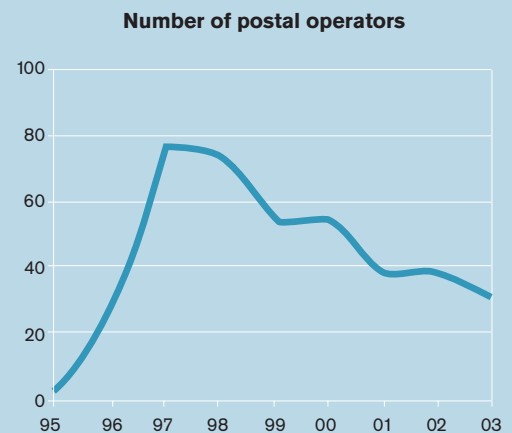
Source: SIKA/Statistics Sweden Postal activities, 2003

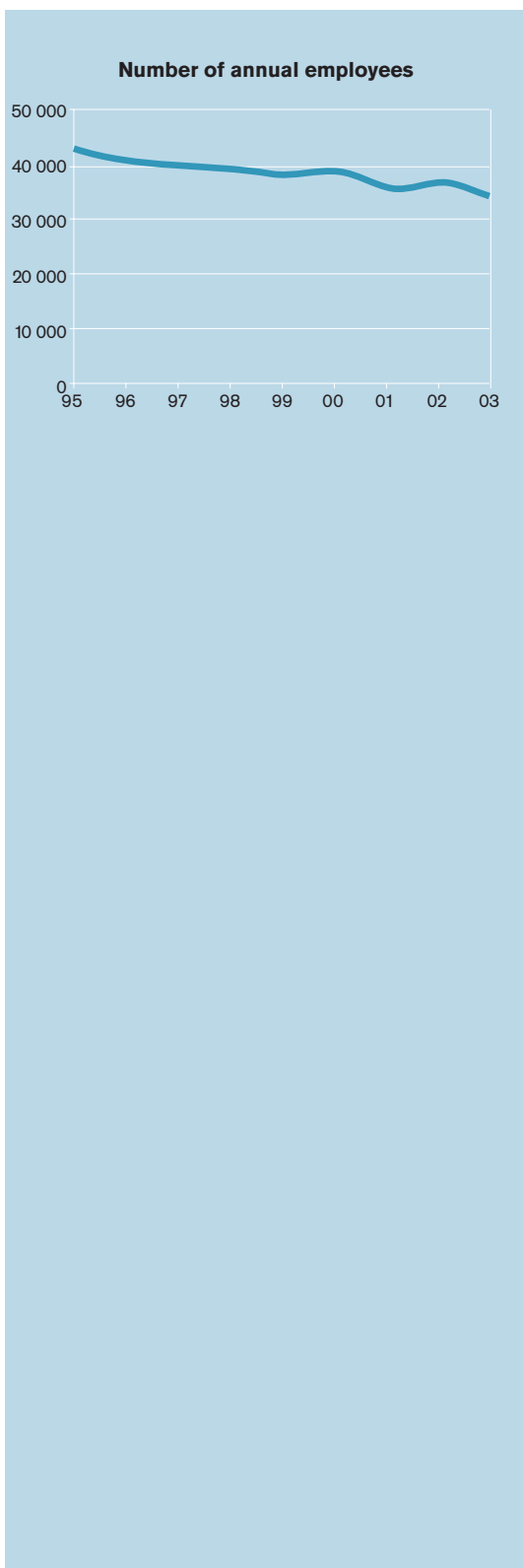
Number of operators	
95	3
96	29
97	77
98	74
99	54
00	55
01	39
02	39
03	31

The number of employees in postal activities has decreased since 1995, despite the number of companies being greater than in 2003. Expressed in annual employees, see fact panel, the number of employees has decreased by over 8 200 persons, equivalent to 19 per cent, during the period 1995–2003. It is above all Posten AB which has decreased the number of employees.



*Annual employees* means the total time worked for all employees of the Company, divided by normal working hours for a person who works full-time.





## 2.12. Number of annual employees in companies carrying out postal activities.

Source: SIKA/Statistics Sweden postal activities, 2003

No of annual employees*	
95	42 820
96	41 246
97	39 388
98	39 291
99	38 855
00	39 455
01	36 610
02	37 091
03	34 539

\* With postal conveyance as their main activity.

### Telecommunication operators

At the end of 2003, there were 169 companies notified for *fixed telephone services* in accordance with the new Electronic Communications Act (EkomL SFS 2003:389). In 2003, there was a relatively high level of growth with 20 newly notified companies.

At the same time as the law was introduced, changes were made to the existing division into different services subject to notification. The concepts and definitions previously used were replaced by new ones. All notified operators have not yet been re-registered in accordance with the new structure and comparability between the 2003 figures on the number notified and information from previous years can therefore be somewhat misleading.

It is estimated that around 50 operators of all registered companies have actively provided fixed call services during the year. In PTS's price comparisons, 33 operators offered fixed telephone services to private customers. Around five operators offered fixed call services only to business customers.

Telia AB is still the dominant actor in the market. According to PTS, Telia's market share in 2003 was over 71 per cent, and in second place came Glocalnet with almost three per cent.

At the end of 2003, there were 91 companies notified for supply of *mobile call services*. During the first year, an increase of 18 notifications took place. In 2003, slightly over 20 operators have actively supplied mobile services. Of these, four operators (Telia, Tele2, Vodafone and Tre) had

their own mobile network in Sweden. Altogether, there were three GSM-networks (TeliaSonera, Tele2 and Vodafone) and three UMTS networks, i.e. the third generation mobile telephones (Hi3G, Svenska UMTS licence and Vodafone).

Telia is also the largest mobile telephone operator with 43 per cent of subscriptions at the end of 2003. In second place is Tele2 with a market share of 38 per cent. Vodafone has 15 per cent of the subscriptions. The proportion of service providers, see fact panel, consisted of over 3 per cent of subscriptions.

### 2.13. Proportion of subscriptions (in per cent) for mobile telephones on 31 December by operator.

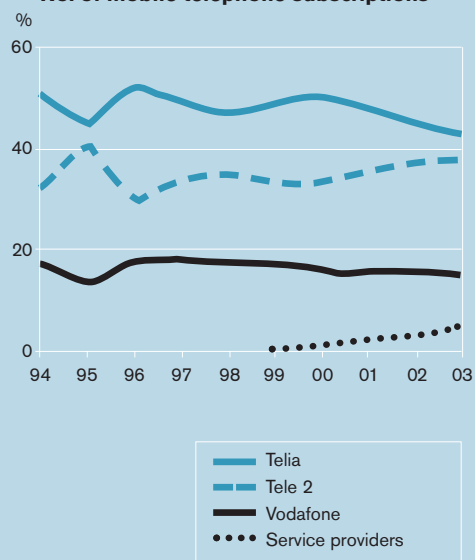
Source: PTS, Swedish telecommunications market, 2003

	Telia	Tele2	Vodafone	Service providers
94	51	32	17	
95	45	41	14	
96	52	30	18	
97	49	34	18	
98	47	35	17	
99	49	34	17	0.0
00	50	34	16	0.5
01	47	36	16	1.4
02	44	38	15	2.1
03	43	38	15	3.3

At the end of 2003, there were 369 companies registered by PTS as notified for one or more services subject to the new legislation on duty to notify. Since 2002, there have been 48 new companies, which is partly due to an expansion in the duty to notify to include more services.

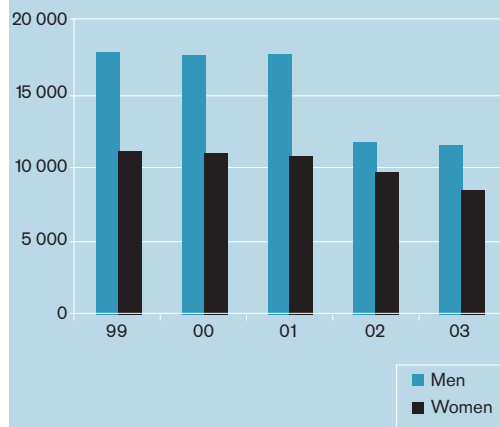
In 2003, the number of annual employees in the telecommunications industry (network operation) totalled almost 21 000 persons. The major part of the employees or almost 94 per cent worked in the network operation sector. Like many other capital-intensive sectors, the telecommunications industry has a small number of large companies that dominate the market. More than 16 700 of the total of 18 100 persons employed in the network operation sector, (equivalent to 89 per cent) worked for the 50 companies that had 50 or more employees.

No. of mobile telephone subscriptions



*Service providers* refers to companies that lease network capacity of mobile operators and sell mobile services on to the final customer in their own name.

### Employees in telecommunications operations (network operations)



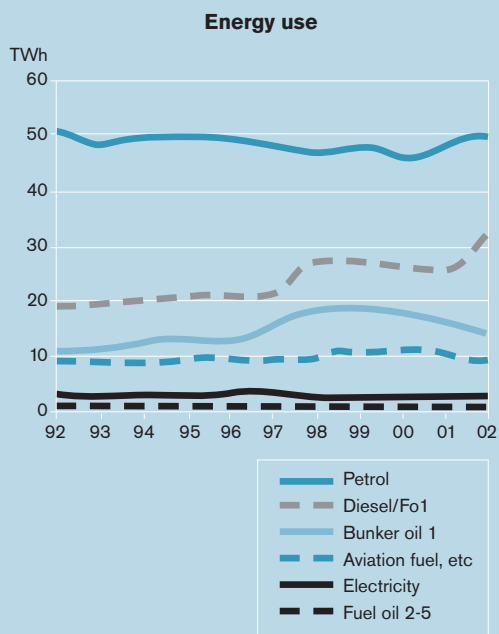
### 2.14. The number of employees in telecommunications (network operation) at the end of the respective year, by sex.

Source: SIKI/Statistics Sweden Telecommunications activities, 2003

	Men	Women	Total
99	17 758	11 060	28 818
00	17 746	10 976	28 722
01	17 582	10 674	28 256
02	11 907	9 713	21 620
03	11 624	8 343	20 087

# 3. Resources

This chapter presents the use of different resources in the transport and communications sector, including the use of energy, the number of vehicles and craft used in the sector and household telecommunications equipment such as telephone subscriptions and computers.



### 3.1 ENERGY USE

#### Total energy use in the transport sector as a whole

Total energy use, expressed in terawatt hours (TWh) in the transport sector has increased by 19 per cent during the past decade. Of the types of fuel shown in Figure 3.1, petrol and diesel are mostly used in road traffic, electricity on the railways, bunker fuel and light fuel oil 2-5 in sea transport and aviation fuel in air transport.

Use of bunker fuel has increased by 67 per cent during the past ten-year period, totalling almost 32 TWh in 2002. There has also been an increase in the use of bunker oil. In 2002, use of bunker oil was just over 14 TWh, which is 34 per cent more than in 1993.

Use of petrol accounted for 46 per cent of the transport sector's total energy use in 2002. The equivalent share in 1993 was 54 per cent. The reduced share of petrol is mainly explained by an increase in other forms of fuel.

#### 3.1. Final energy use in the transport sector (including foreign shipping, i.e. bunker oil), TWh. The figures for 2002 are preliminary.

Source: Swedish National Energy Administration The Energy Situation in Figures, 2003

	Petrol	Diesel/Fo1	El	Bunker oil 1	Fo 2-5	Aviation fuel, etc	Total
92	50.9	19.0	2.5	10.7	0.5	9.5	93.1
93	48.4	19.1	2.3	10.7	0.3	9.7	90.5
94	49.0	20.2	2.5	12.6	0.2	9.8	94.3
95	49.9	20.8	2.7	12.4	0.2	9.9	95.9
96	49.3	21.0	3.1	13.1	0.1	9.8	96.4
97	48.3	21.5	3.0	15.6	0.4	10.1	98.9
98	47.0	26.3	2.8	17.8	0.4	9.6	103.9
99	47.2	26.8	3.0	17.4	0.4	10.9	105.7
00	46.5	26.1	3.2	16.9	0.4	10.8	103.9
01	48.7	25.9	2.9	16.2	0.5	10.2	104.4
02	49.0	32.0	2.7	14.3	0.5	9.3	107.8

#### Vehicle fuels

Deliveries of petrol have been relatively constant in the past decade. Measured over a ten-year period, petrol deliveries have decreased by 0.5 per cent. Of the quantity of petrol delivered, 1.5–2 per cent is used in other areas be-

sides road traffic, primarily boat engines and working machines.

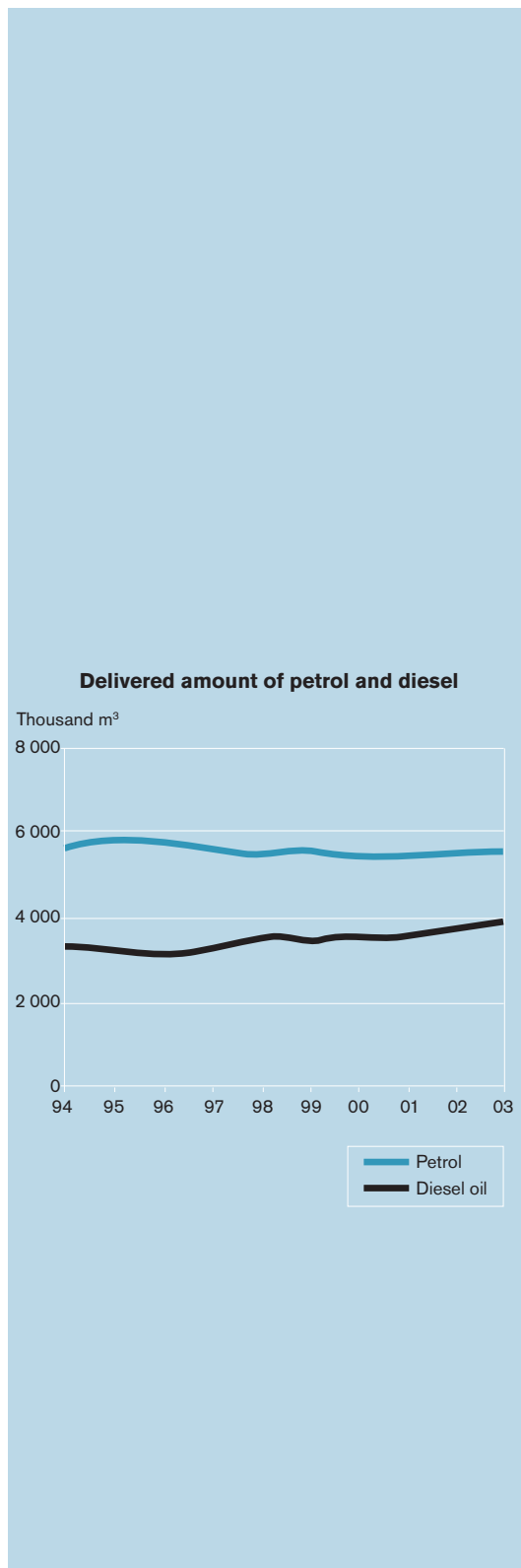
The trend for diesel oil supplies differs from petrol. Deliveries of diesel oil have increased by 25 per cent in the past ten years. Part of this increase can be explained by an increase in the share of diesel-driven cars.

The diesel that is delivered is not wholly used in the road sector. The Petroleum Institute has estimated that approximately two-thirds of diesel delivered is used for road transport. However, there is considerably greater uncertainty relating to the road sector's use of diesel than in the case of petrol use. This is partly due to there being flows to and from the sector and also to these flows being considerably larger for diesel than for petrol.

### 3.2. Delivered amount of petrol and diesel oil in cubic metres.

Source: Statistics Sweden Fuels. Deliveries and fuel consumption

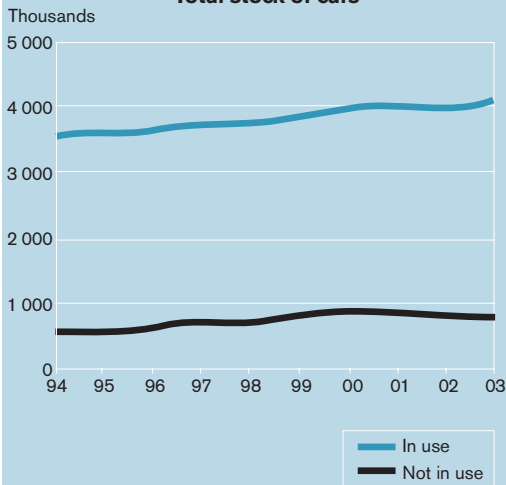
	Petrol 1000 m <sup>3</sup>	Diesel 1000 m <sup>3</sup>
94	5 655	3 280
95	5 763	3 160
96	5 694	3 147
97	5 577	3 232
98	5 429	3 454
99	5 453	3 502
00	5 373	3 513
01	5 418	3 556
02	5 525	3 717
03	5 547	3 854



Car is defined as a vehicle primarily intended for conveyance of people, although at most the driver and eight passengers.

3.

**Total stock of cars**



## 3.2 ROAD TRANSPORT

### Cars

At the year-end 2003/2004, there were over four million cars on the road in Sweden. This is the highest level measured to date. Compared with 2002, the number of cars on the road increased by just under 33 000, corresponding to just under one per cent.

On average, there were 454 cars per thousand inhabitants on 1 January 2004. There were most cars per thousand inhabitants in the counties of Dalarna (522) and Gotland (537) while the County of Stockholm had the lowest density of cars in Sweden with 401 cars per thousand inhabitants.

After a decline in the early 1990s, the number of cars not in use started to increase in 1996. This trend was interrupted in 2001 and 2002, but resumed in 2003, when the number of cars not in use increased by 18 657 or over two per cent in comparison with the previous year. On 1 January 2004, a total of just under 4.9 million cars were registered, of which just under 4.1 million were on the road and approximately 0.8 million were not in use.

### 3.3. Total stock of cars.

Source: SIK/Statistics Sweden Vehicles on 1 January

	In use	Not in use	Total
94	3 594 199	558 065	4 152 264
95	3 630 760	560 595	4 191 355
96	3 654 920	605 937	4 260 857
97	3 702 778	662 043	4 364 821
98	3 792 056	709 033	4 501 089
99	3 889 902	776 438	4 666 340
00	3 999 268	852 212	4 851 480
01	4 018 533	814 592	4 833 125
02	4 044 928	795 740	4 840 668
03	4 077 973	814 397	4 892 370

In 2003, a total of just under 307 100 cars were registered in Sweden, which is an increase of just over 13 000, corresponding to 4 per cent, compared with 2002. The increase in 2003 was for cars owned by households just over seven per cent and for company cars just over under two per cent.

De-registered vehicles in the reported statistics consist

mainly of scrapped vehicles. The number of deregistered vehicles also contains a small portion that have been taken out of Sweden.

### 3.4. Number of registered, de-registered and scrapped cars.

Source: SIKI/Statistics Sweden Vehicles on 1 January

	Registrations	De-registrations	Scrapped
94	159 578	164 358	150 765
95	175 060	142 067	131 044
96	200 154	135 174	127 786
97	258 944	160 097	153 786
98	286 671	155 477	148 730
99	335 632	172 124	165 183
00	354 649	169 517	162 591
01	290 262	299 758	289 035
02	293 919	290 846	273 945
03	307 068	253 397	239 152

### Buses/coaches

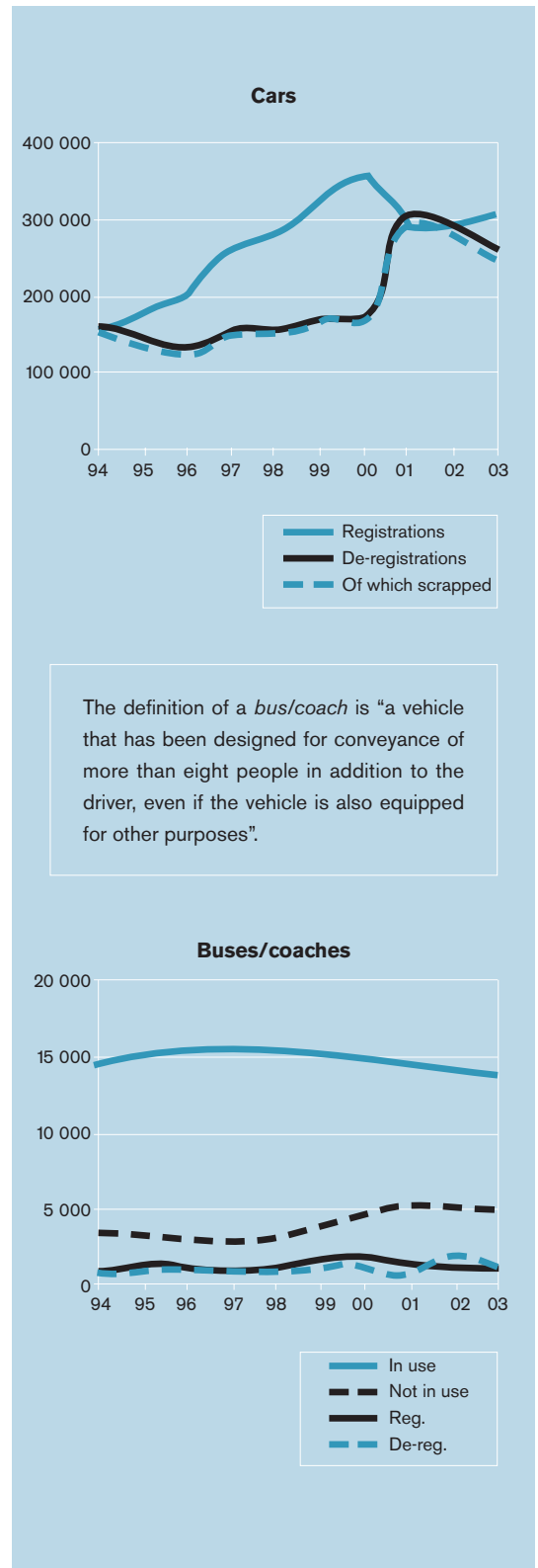
On 1 January 2004, there were over 13 700 buses/coaches on the road, which is a decrease compared with the previous year. The number of buses/coaches in traffic increased from 1994 to 1999, after which it subsequently decreased. Buses/coaches with a permitted number of passengers of 80 or more make up just under 28 per cent of the number of buses/coaches in use.

In 2003, just under 1 200 buses/coaches were registered. Compared with the previous year, it is equivalent to a reduction of 43 buses/coaches or just over three per cent. The number of deregistered buses/coaches decreased also, almost 900 in 2003 compared with almost 1 500 in 2002.

### 3.5. Stock of buses/coaches, registrations and de-registrations.

Source: SIKI/Statistics Sweden Vehicles on 1 January

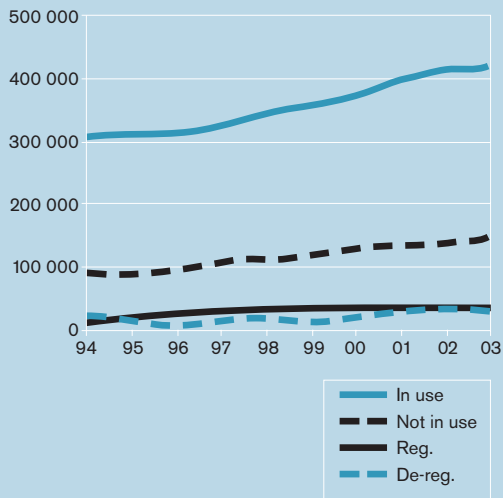
	In use	Not in use	Registered	De-registered
94	14 293	3 080	672	699
95	14 577	2 984	914	604
96	14 753	3 080	1 089	671
97	14 844	3 240	1 186	799
98	14 895	3 212	1 081	936
99	14 869	3 675	1 280	717
00	14 432	4 535	1 385	806
01	14 244	4 709	1 187	1 080
02	14 022	4 550	1 230	1 476
03	13 743	5 037	1 187	894



A lorry means a vehicle which is not to be regarded as a car or bus/coach. According to the Road Traffic Definitions Act (SFS 2001:559), a *light lorry* is a lorry with a total weight of at most 3.5 tonnes, which is the definition used in the text below. In the statistics on transport by Swedish lorries, lorries with a maximum load weight of 3.5 tonnes or more are investigated.

3.

Lorries



## Lorries

As in the case of cars, the number of lorries in use peaked in 2003. At the end of 2003, there were just over 421 600 lorries in use, an increase of just under 13 000 or approximately three per cent compared with 2002.

Since 1975, the number of lorries in use has more than doubled. The entire increase of the lorry stock can be explained by a substantial increase in light lorries. At the end of 1975, there were over 78 000 light lorries in use and at the end of 2003, there were 346 000 light lorries in use. This is an increase of over 340 per cent.

The number of heavy lorries has fallen, however, between 1975 and 2003. This reduction amounts to 2 300 lorries, which is equivalent to two per cent. The number of heavy lorries in use fell substantially in the early 1990s but increased again until 2001. Since 2002, the number of heavy lorries in use decreased slightly and totalled just over 75 000 at the end of 2003.

### 3.6. Stock of lorries, registrations and de-registrations.

Source: SIK/Statistics Sweden Vehicles on 1 January

	In use	Not in use	Reg.	De-reg.
94	303 541	90 254	10 423	14 847
95	307 709	89 936	14 758	11 576
96	311 751	98 751	21 062	8 967
97	321 749	105 026	25 766	10 807
98	338 320	109 505	31 405	11 745
99	354 256	118 297	35 169	11 485
00	374 331	127 259	39 269	11 755
01	395 646	132 922	36 149	19 083
02	408 955	137 447	35 743	22 240
03	421 602	145 531	35 961	20 023

### Motorcycles and cross-country scooters

Between 1994 and 2003 (measurement date, 30 June), the number of motorcycles in use (including EU-mopeds) increased by almost 131 900 or 114 per cent, to total 247 100. At the end of June 2003, 68 per cent of the total motorcycle stock was in use.

The number of cross-country scooters in use has, however, been relatively constant during the past decade, with minor fluctuations. The proportion of cross-country scooters not in use of the total stock increased from 19 per cent at the end of 1994 to 43 per cent at the end of 2003.

#### 3.7. Stock of motorcycles (30 June) and cross-country scooters (31 December).

Source: SIKI/Statistics Sweden Vehicles on 1 January

	MC in use	MC not in use	Scooters in use	Scooters not in use
94	115 196	97 302	146 438	34 420
95	117 387	97 387	146 793	40 862
96	121 950	98 115	150 765	38 226
97	130 041	99 290	149 380	54 086
98	137 466	102 918	148 454	64 904
99	149 970	104 520	150 490	73 643
00	167 346	105 348	142 723	89 897
01	190 607	107 370	145 734	97 043
02	220 750	110 302	151 619	101 027
03	247 129	118 391	148 472	113 862

### Taxis

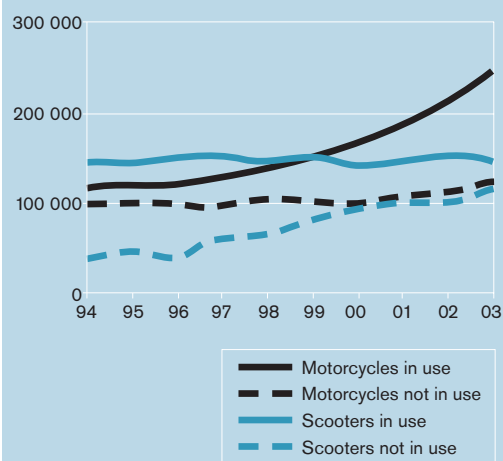
The number of taxis was just over 13 300 in 2003. Between 1994 and 2003, the number decreased by approximately nine per cent. Taxis are included in the stock of cars reported in Table 3.3.

#### 3.8. Stock of taxis.

Source: SIKI/Statistics Sweden Vehicles on 1 January

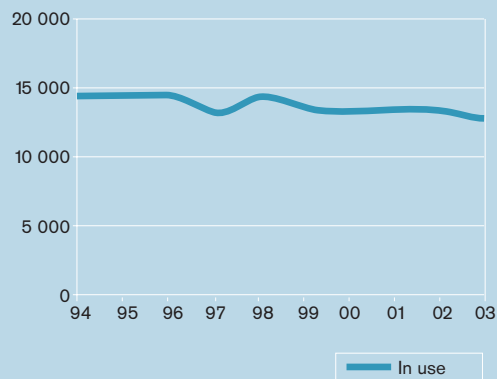
	In use	Not in use	Total
94	14 389	250	14 639
95	14 460	204	14 664
96	14 390	210	14 600
97	13 297	178	13 475
98	14 307	231	14 538
99	13 529	189	13 718
00	13 320	174	13 494
01	13 280	169	13 449
02	13 243	163	13 406
03	13 160	192	13 352

Motorcycles and cross-country scooters

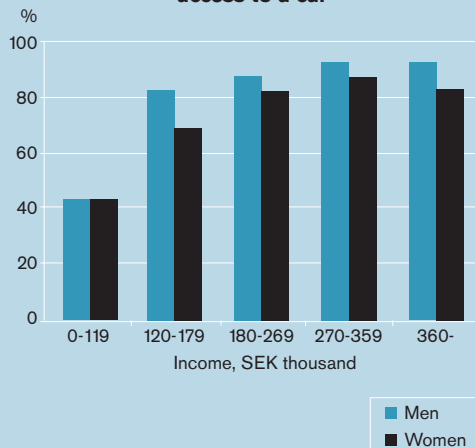


A taxi is defined as a car with a licence for taxi traffic.

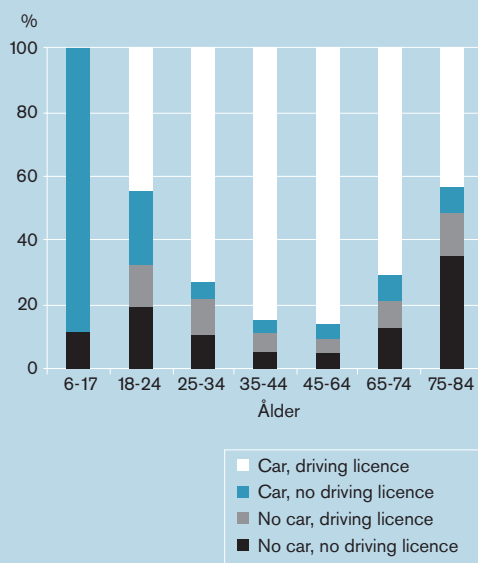
Taxis



Proportion with a driving licence and access to a car



Access to car and driving licence



## Access to cars and driving licences

The higher income an individual has, the more probable it is that he or she both has a driving licence and access to a car in the household. Regardless of income, a larger proportion of men have both a driving licence and access to a car in the household than women.

### 3.9. Persons over 18 years of age with a driving licence and access to a car in the household, by personal income, thousands of persons 2001 (percentage proportions shown in diagram).

Source: SIKa RES

Income, SEK	Men	Women
0-119 000	157	269
120 000-179 000	304	481
180 000-269 000	1 080	817
270 000-359 000	493	189
360 000-	311	67
All	2 766	2 238

The combination of access to a car in the household and a driving licence is most common for those aged between 25 and 74, where 70-90 per cent are able in this way to drive a car. Among older people, the proportion with access to a car and a driving licence is 40 per cent. Among young people who are old enough to have a driving licence, just under 60 per cent have taken a driving licence before their 25<sup>th</sup> birthday. A large proportion of young people/children under 18 years of age have access to a car (90 per cent), so that even if they do not drive themselves, they have considerable opportunities to travel by car.

### 3.10. Access to a car and a driving licence by age, thousands of persons 2001 (percentage proportions shown in diagram).

Source: SIKa RES

	Age						
	6-17	18-24	25-34	35-44	45-64	65-74	75-84
No car, no licence	149	126	116	64	109	99	195
No car, licence	0	88	131	77	107	65	72
Car, no licence	1 240	154	63	41	108	67	47
Car, licence	0	288	849	1 042	2 007	572	243
All	1 390	656	1 159	1 224	2 331	803	557

The fact that access to a car is so high among young people and children is due to families with children having patterns of activities and travel that are in many cases facilitated by having a car in the household. Many young people aged between 18 and 24 also still live with their parents and can use the household car.

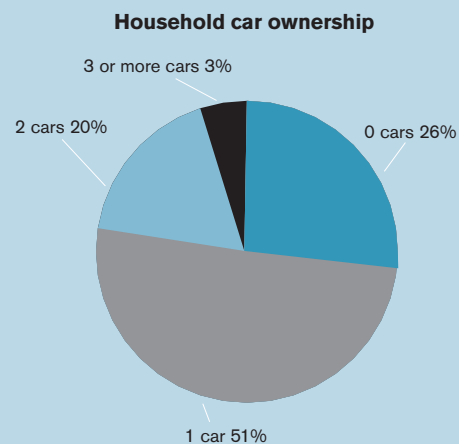
The household type that has access to one or more cars to the greatest extent (90–97 per cent) is couples living together with or without children. With more children in the household, car access increases, as well as the number of cars.

In recent years, the trend has been for the number of households with two cars to increase slightly. However, it is most common with only one car per house, and approximately a quarter of all households have no access to a car at all.

### 3.11. Household car ownership 2001, households in thousands.

Source: SIKa RES

	Single no ch.	Single, ch.	Partner, no. ch	Partner 1 child	Partner 2+ ch	All
0 car	822	82	125	16	18	1 063
1 car	725	129	770	154	273	2 051
2 cars	66	15	342	121	248	792
3 or more	15	4	53	29	35	136
All	1 630	232	1 291	322	576	4 051



A *locomotive* is a railway engine without space for goods or passengers, which is intended to provide traction power for a train.

A *traction engine* is a locomotive with a low motive power, mainly intended for shunting.

A *railcar* is a railway vehicle with space for passengers or goods intended to provide motive power in a train.

3.

### 3.3 RAIL TRANSPORT

The development of the number of rolling stock for goods and passenger traffic available to the Swedish railway operators is shown in Figure 3.12. The figures include rolling stock at the disposal of the transport undertaking and relate to stock that is owned, leased or otherwise available. It also includes rolling stock that is temporarily leased to another transport undertaking. However, the figures do not include rolling stock leased to another undertaking for a longer period, nor rolling stock temporarily leased from another undertaking. Rolling stock is also excluded that is only used for official use and rolling stock that has been withdrawn for sale or scrapping.

The total number of locomotives and power cars has decreased by 9 per cent during the past decade, from 643 to 582. The number of electric locomotives decreased by 76, while there were 15 more diesel locomotives. The total number of motive power units in the form of locomotives and railcars is unchanged, which is explained by a 31 per cent increase in the number of electric railcars.

The number of passenger coaches has increased by 5 per cent in the past decade while the number of seats, couchettes and sleepers has increased by over 7 per cent.

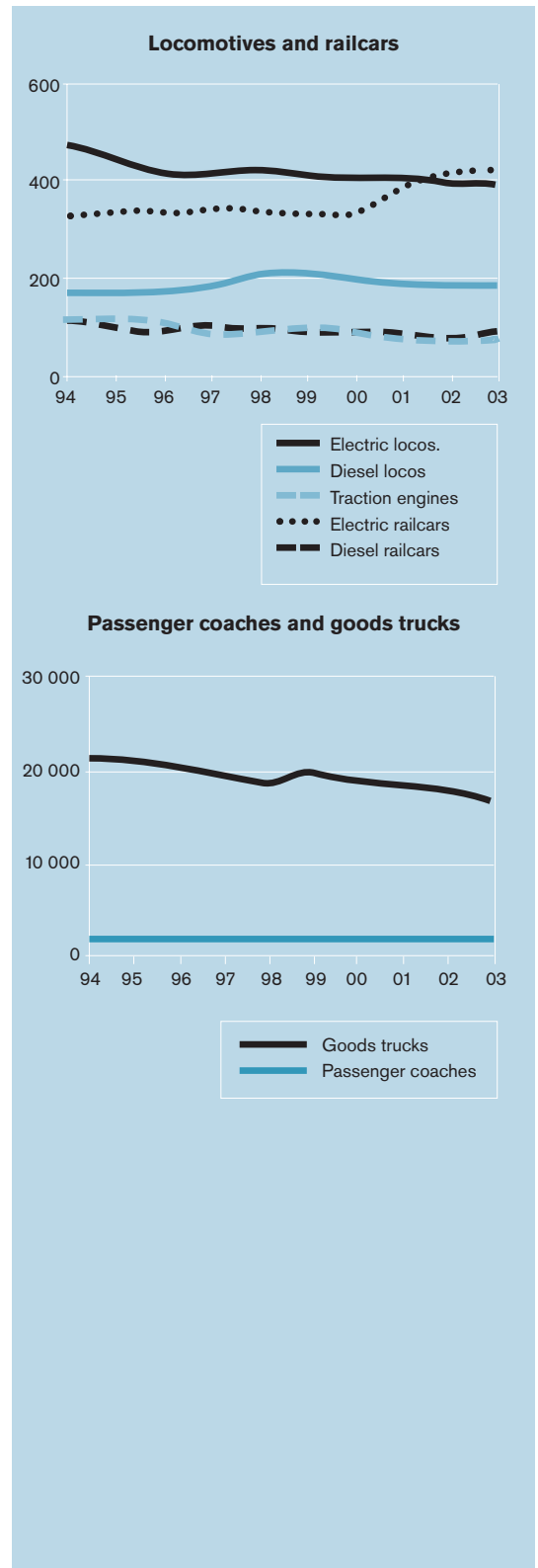
The total load capacity of goods trucks has also decreased by 7 per cent. However, the number of goods wagons has fallen more, by 20 per cent. Railway transport performance has increased by over five per cent during the same period, which means that the truck fleet for goods transport is being used more efficiently.

### 3.12. Rolling material at the disposal of Swedish railways.

Source: SIKI/National Rail Administration Rail transport 2002/2003

	Electric locos	Diesel locos	Traction engines	Electric railcars	Diesel railcars
94	470	173	114	323	109
95	446	178	116	331	88
96	415	183	110	333	95
97	415	189	86	336	97
98	417	211	89	334	91
99	414	210	87	330	85
00	402	201	88	332	86
01	402	202	70	381	86
02	401	193	69	414	77
03	394	188	70	423	83

	Passenger	No. of seats, couchettes and sleepers	Goods trucks	Load capacity in tonnes
94	1 758	112 720	21 066	780 299
95	1 709	111 495	20 865	782 060
96	1 675	108 313	20 302	773 337
97	1 696	109 301	19 635	750 550
98	1 686	108 817	18 943	728 518
99	1 656	107 131	19 757	776 716
00	1 716	111 124	18 406	740 724
01	1 809	118 287	17 910	739 802
02	1 851	122 288	17 674	734 296
03	1 850	121 898	16 909	719 835



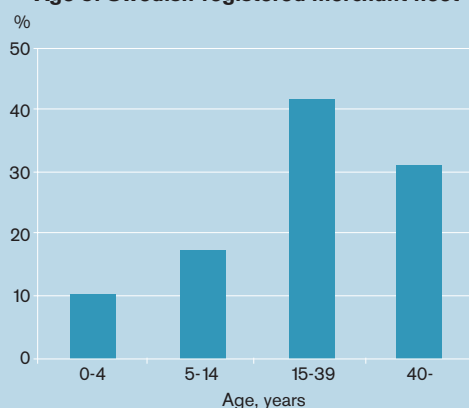
3.

*Gross tonnage* is a type-independent measure of the ship's internal space.

*Gross tonnage days* are calculated as the vessel's gross tonnage, multiplied by the number of the days in use.

3.

**Age of Swedish-registered merchant fleet**



### 3.4 SEA TRANSPORT

There were 426 Swedish-registered merchant vessels with a gross tonnage (see fact panel) of at least 100 at the end of 2003. After a long period with a downward trend in the Swedish merchant fleet since its high point in the mid-1970s, the trend has reversed. The increase noted between 1989 and 1992 was largely the result of a number of large tankers being registered in the Swedish register. The decrease in the following years was the result of these being flagged out to other registers. In 1994, the new ship measurement rules were fully applied, which led to an increase in the merchant fleet in 1994 of approximately 0.5 million gross tonnes.

Almost three-quarters of these ships were 15 years old or older at the end of 2003. More than one in four ships was 40 years old or more. However, these were relatively small vessels and only made up a small part of the gross tonnage. Dry cargo vessels make up 61 per cent of the merchant fleet's total gross tonnage, passenger ferries account for 23 per cent and tankers for 14 per cent. The presentation in figure 3.14 includes vessels registered in the register of shipping at the Swedish Maritime Administration (this register was taken over from Stockholm City Court on 1 December 2001).

#### 3.13. Age distribution of Swedish-registered merchant vessels with a gross tonnage of at least 100, 2003.

Source: SIKALloyd's Register – Fairplay Research

Age, year	Share, per cent
0-4	10 %
5-14	17 %
15-39	42 %
40-	31 %

### 3.14. Swedish merchant vessels gross tonnage 2003 classified by type.

Source: SIKALloyd's Register – Fairplay Research

	Gross tonnage
Tanker	413
Dry cargo vessel	1 754
Other cargo vessel	14
Passenger ferries	663
Other passenger ferries	31
Total	2 875

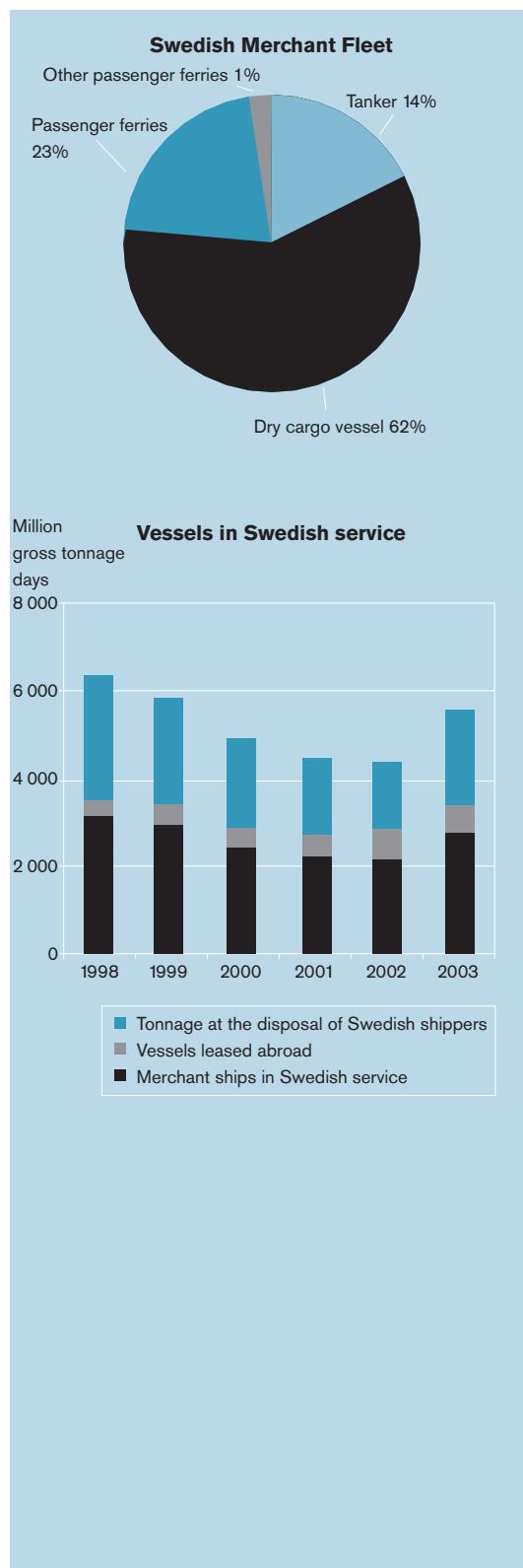
The capacity of the merchant fleet at the disposal of the shipping industry in 2003 was almost 2 800 million gross tonnage days. This entails an increase of 27 per cent compared with the previous year. 2002 was the lowest level since 1989 and 2003 is at a slightly lower level than 1999.

### 3.15 Swedish and foreign vessels in Swedish service, million gross tonnage days.

Source: SIKALloyd's Register – Fairplay Research

	98	99	00	01	02	03
<b>Merchant shipping in Swedish service</b>	3 163	2 947	2 446	2 227	2 199	2 793
Of which:						
Swedish-registered shipping	952	976	1 035	999	1 057	1 234
Leased foreign vessels	2 211	1 971	1 410	1 228	1 142	1 498
<b>Vessels leased abroad</b>	333	480	486	486	608	543
Of which:						
Swedish-registered vessels	81	225	404	414	392	481
Sub-leased foreign vessels	252	255	81	73	216	61
<b>Tonnage at disposal of Swedish shippers</b>	2 831	2 467	1 960	1 740	1 592	2 250
Of which:						
Swedish-registered vessels	871	751	631	585	666	752
Leased foreign vessels	1 960	1 716	1 329	1 155	926	1 437

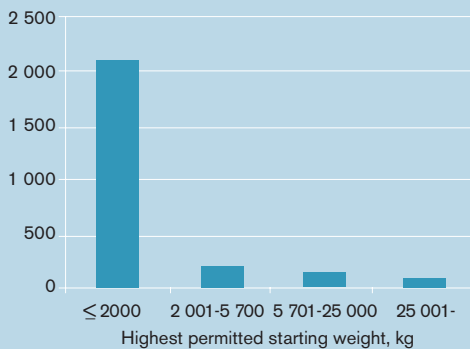
Note: Statistics for 1998–2002 produced by Statistics Sweden



*Aircraft* are motor-powered airplanes and helicopters and other aircraft such as gliders, motor gliders, and balloons.

3.

**Aircraft by weight class**



### 3.5 AIR TRANSPORT

The Civil Aviation Inspectorate is responsible for the register of motor-powered aircraft which are registered in Sweden and which also includes other aircraft. In 2003, there were 474 valid airworthiness certificates for gliders, motorised gliders and balloons and 1 605 airworthiness certificates for motor-powered aircraft.

The number of motor-powered aircraft decreased by 217 between 1998 and 2003, and totalled just over 2 500 in 2003. The majority of the approximately 2 500 motor-powered aircraft are owned by private persons, businesses, etc. Together, this category owned 70 per cent (1 794) of the aircraft. Flying clubs owned 455 aircraft in 2003.

#### 3.16. Number of motor-powered aircraft by weight class.

Source SIKA/Civil Aviation Administration Air Transport, 2003

	Highest permitted starting weight, kg					
	98	99	00	01	02	03
≤2 000	1 898	1 971	2 042	2 076	2 098	2 108
2 001-5 700	204	191	195	198	209	208
5 701-10 000	47	43	43	47	50	51
10 001-15 000	30	40	44	43	34	38
15 001-25 000	41	54	59	55	53	57
25 001-100 000	89	83	84	82	76	67
>100 000	11	12	9	9	8	8
	2 320	2 394	2 476	2 510	2 528	2 537

### 3.6 POSTAL SERVICES

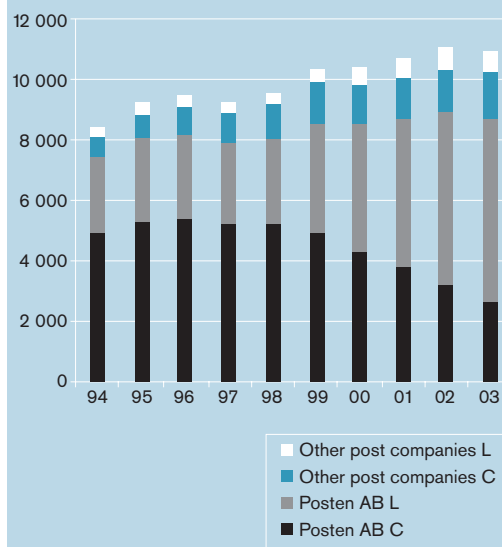
The number of cars and lorries registered by companies carrying out postal activities increased by over 35 per cent from just over 8 400 to over 11 000 between 1994 and 2003. The deregulation of the market in 1994 has primarily entailed an increase in the number of lorries, while the number of cars has decreased since 1998. Posten AB's (Sweden Post) lorry fleet increased by just under 10 per cent or by around 540 lorries between 2002 and 2003, while the car fleet has decreased by approximately 650 or just under 20 per cent in the same period.

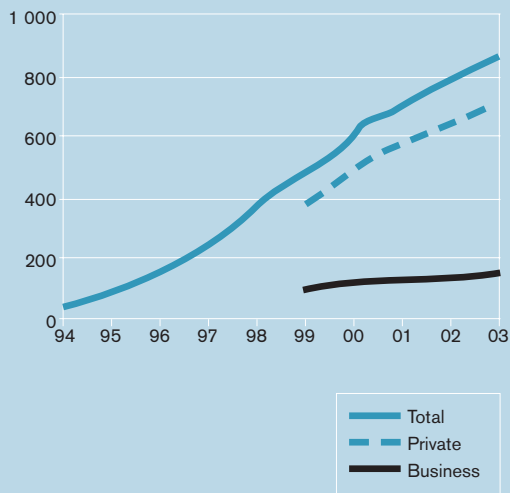
#### 3.17. Number of cars (C) and lorries (L) in use by Posten AB and other post companies.

Source: Statistics Sweden, Statistical register for vehicles

	Posten AB C	Posten AB L	Other post companies C	Other post companies L
94	4 904	2 592	649	266
95	5 333	2 742	851	306
96	5 377	2 767	1 019	377
97	5 218	2 732	1 029	308
98	5 255	2 758	1 245	351
99	4 982	3 610	1 334	422
00	4 311	4 252	1 371	483
01	3 800	4 894	1 464	565
02	3 287	5 592	1 551	636
03	2 635	6 135	1 567	679

Number of vehicles in use by post companies



**Mobile telephone subscriptions**

### 3.7 TELECOMMUNICATIONS AND ICT

#### Subscriptions for mobile telephones

The number of mobile telephones and pay-as-you-go cards for mobile telephones has increased markedly in recent years. In 1999 alone, the number of mobile telephones increased by approximately a million. In 1999 and 2000, the rate of increase was 25 and 24 per cent respectively, while the rate of growth in 2001 dampened slightly and totalled 12 per cent.

In all, there were over 7 million subscriptions for mobile telephones in 2001, of which just under 1.5 million were corporate subscriptions. In 2003, the total number of subscriptions has increased by almost 10 per cent. The proportion of private subscriptions has increased by over 10 per cent, while corporate subscriptions have increased by 8 per cent in the past year.

#### 3.18. Number of subscriptions for mobile telephone subscriptions in Sweden, thousands.

Source: PTS Swedish telecommunications market, 2003

	Total	Private	Business
94	422		
95	1 033		
96	1 571		
97	2 414		
98	3 605		
99	4 835		
00	6 191	3 866	970
01	7 033	5 696	1 338
02	7 812	6 434	1 378
03	8 669	7 153	1 498

According to figures from ITU, the number of telephone subscriptions per hundred inhabitants has increased. In the majority of countries within the EU area, there are over 70 subscriptions per hundred inhabitants. The United States is far behind with only 49 subscriptions per hundred inhabitants.

The number of fixed telephone lines is shown in Chapter 1 Infrastructure, section 1.6.

### 3.19. Mobile telephone subscriptions per hundred inhabitants 2001–2002.

Source: ITU Yearbook of statistics 1993–2002

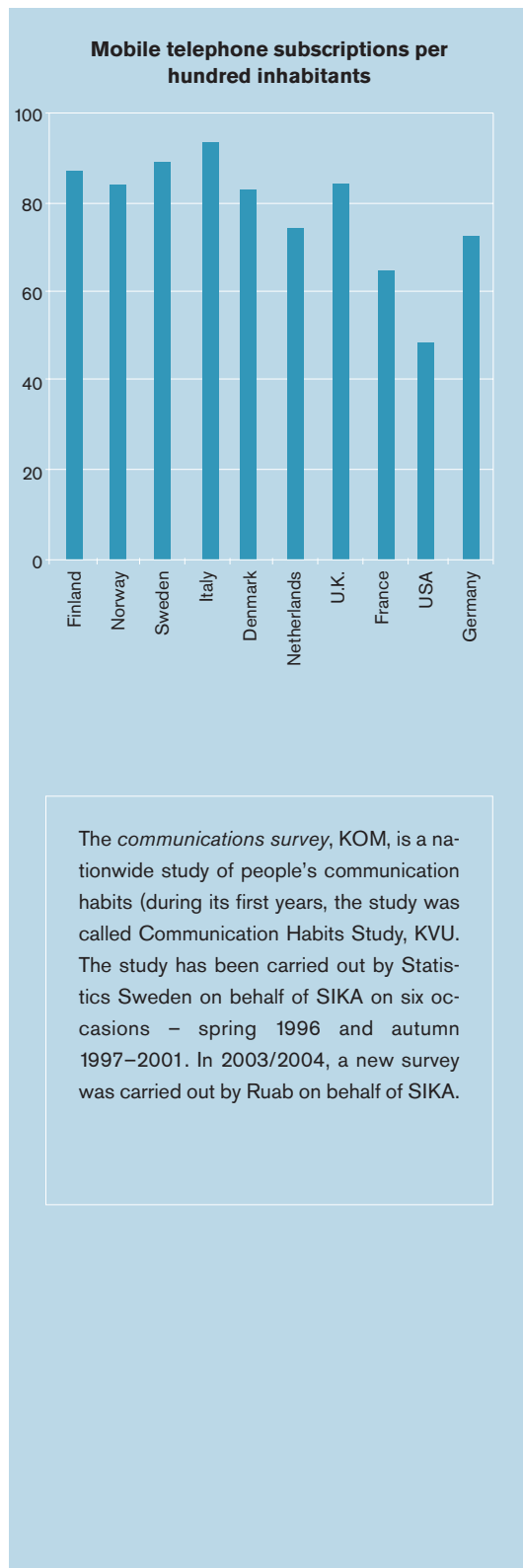
	2001	2002
Germany	68	73
USA	45	49
France	62	65
U.K.	77	84
Netherlands	77	74
Denmark	74	83
Italy	88	94
Sweden	81	89
Norway	83	84
Finland	80	87

### Access to computer and Internet

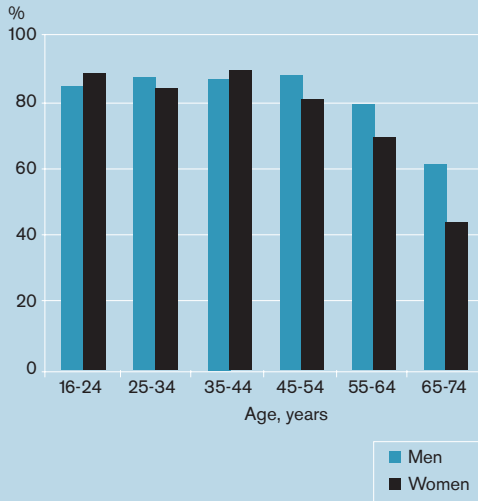
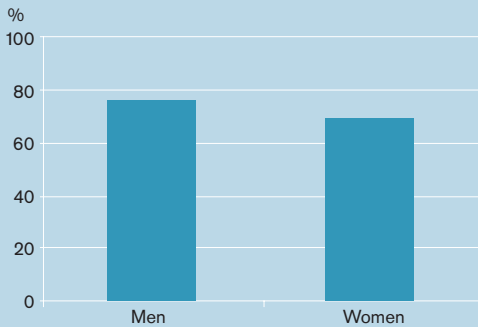
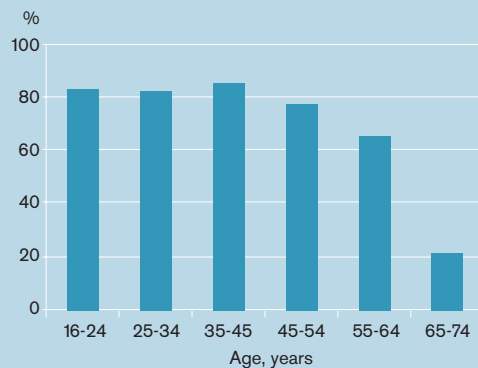
Access to computers has increased rapidly in recent years and is very high in Sweden in an international comparison. As more and more people have obtained access to a computer, the rate of increase has slackened somewhat in recent years. In spring 1996, 32 per cent of persons aged from 15 to 84 had access to a computer at home (according to KVVU). In autumn 2001, this proportion had increased to 73 per cent (according to KOM).

Young people aged from 15 to 24 are the group that previously had the greatest access to a computer at home. Access is now relatively evenly distributed over age groups with the exception of persons aged 65 and over. Computer access is increasing most quickly among those aged over 65, although this does not alter the fact that computer access is clearly lower in this age group.

In 2003, 80 per cent of the Swedish population aged between 16 and 74 had access to a PC at home. 9 of 10 women in the age group 35–44 had access to a PC at home in the same year. Among men, the proportion is highest in the age group 45–54, 88 per cent. The age group 65–74 (both men and women) have least access to PCs at home, 45 per cent of women and 62 per cent of men.



The *communications survey*, KOM, is a nationwide study of people's communication habits (during its first years, the study was called Communication Habits Study, KVVU). The study has been carried out by Statistics Sweden on behalf of SIKa on six occasions – spring 1996 and autumn 1997–2001. In 2003/2004, a new survey was carried out by Ruab on behalf of SIKa.

**Access to computer at home****Access to Internet at home, by sex****Access to Internet at home, by age****3.20. Access to a PC at home by age and sex, per cent, 2003.**

Source: Statistics Sweden Use of computers and Internet by private persons, 2003

	Men	Women	Total
16-24	85	88	
25-34	87	84	
35-44	87	90	
45-54	88	82	
55-64	79	70	
65-74	62	45	
Total			80

In 2003, a total of 73 per cent of the population had access to Internet at home. Access was 76 per cent among men and 70 per cent among women. Access was highest in the age group 16-24, 83 per cent, and lowest among the age group 65-74, 25 per cent.

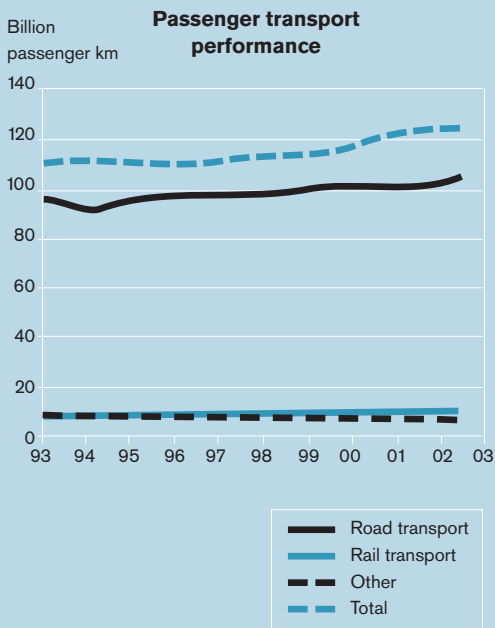
**3.21. Proportion of the population that has access to Internet at home by gender and age, per cent, 2003**

Source: Statistics Sweden Use of computers and Internet by private persons, 2003

Sex	Men	Women
Age	16-24	83
	25-34	83
	35-44	86
	45-54	78
	55-64	67
	65-74	22
Total		73

# 4. Transport and communications

This chapter presents how people and goods are transported on roads, railways, on water and by air. It also contains information on how we use post and telecommunications services in Sweden.



## 4.1 OVERVIEW PASSENGER TRANSPORT

Passenger transport performance is the measure used for summary description of the development of passenger transport. It is measured in passenger-kilometres (pkm), one passenger kilometre meaning the transport of a passenger for one kilometre.

In 2002, passenger transport performance totalled 125 billion passenger kilometres. In the past ten years, it has increased by 14 billion passenger kilometres, or just over ten per cent. Road transport accounts for 88 per cent of passenger transport performance. Road transport (car, bus/coach and motorcycle) also accounts for the greatest increase in the past ten years. It has increased by ten billion passenger kilometres, of which travel by car accounts for more than eight billion. The share of rail transport of passenger transport performance was nine per cent in 2002. Rail transport includes trains, metro and trams. Other modes of transport accounted together for seven per cent of total passenger transport performance.

The share of public transport was just over 20 per cent of total passenger transport performance in 2002. It includes travel by bus/coach, rail transport, air transport and ferries. The share of public transport of total travel has increased by two per cent since 1993. However, this increase should be interpreted with great caution, as it is very difficult to estimate transport performance by mode of transport.

### 4.1 Passenger transport performance 1993–2000 by mode of transport, billion passenger kilometres\*

Source: SIK A The development of transport performance

	Road transport	Rail transport	Other	Total
93	94.6	8.2	8.1	110.9
94	94.1	8.3	8.2	110.7
95	95.9	8.6	8.1	112.6
96	96.4	8.9	8.1	113.4
97	96.8	8.9	8.2	113.9
98	97.6	9.1	8.4	115.2
99	100.3	9.6	8.6	118.5
00	101.3	10.3	8.8	120.3
01	102.2	10.8	8.8	121.8
02	105.0	11.3	8.6	124.9

\* The figures shown in the table differ from the statistics in the national travel survey due to different measuring methods and partly differing categorisation.

The above statistics originate from surveys of the different modes of transport. Greater knowledge of travel can be obtained by carrying out travel surveys. The following statistics are from the most recent survey RES 2001. New statistics will be available in early 2005 in the KOM 2003 survey. Changes in daily travel take place with some lag. The difference from year to year should not be too great therefore.

The car is the most common form of transport, for all purposes, and is used for 60 per cent of all journeys. Journeys on foot or by bicycle represent approximately 30 per cent of the journeys.

The main individual purpose of travel is leisure travel, accounting for almost 35 per cent of all journeys. Journeys to and from work and school comprise over 25 per cent of all journeys. Shopping and business journeys represent roughly the same proportion. A large proportion of the journeys, 40 per cent, are shorter than 2.5 km.

#### 4.2. Number of journeys by purpose and mode of transport, million journeys, 2001.

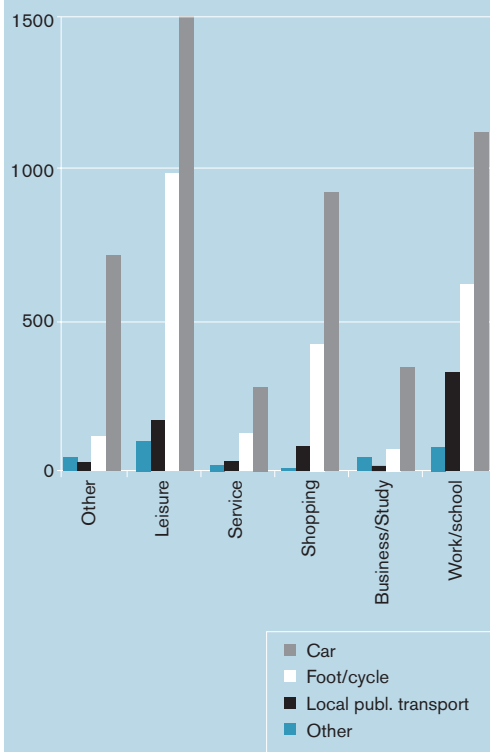
Source: SIKa RES

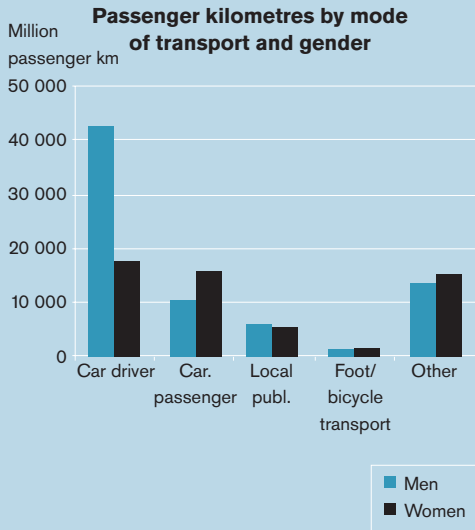
	Work/ school	Business/ study	Shopping	Service	Leisure	Other	All
Car	1 125	344	917	274	1 509	717	4 886
Foot/bicycle	619	73	418	129	984	119	2 342
Local publ. transport	330	20	86	32	171	26	665
Other	79	49	10	15	102	45	300
All	2 160	492	1 445	450	2 795	916	8 258

Only three per cent of the domestic passenger transport performance takes place on foot or by bicycle. The car is also the dominant mode of transport in terms of transport performance, 66 per cent of all kilometres travelled are by car. "Other" modes of transport represent around a quarter of the passenger transport performance because the category of Other also includes modes of transport used for longer journeys – trains, aeroplanes and long-distance coaches.

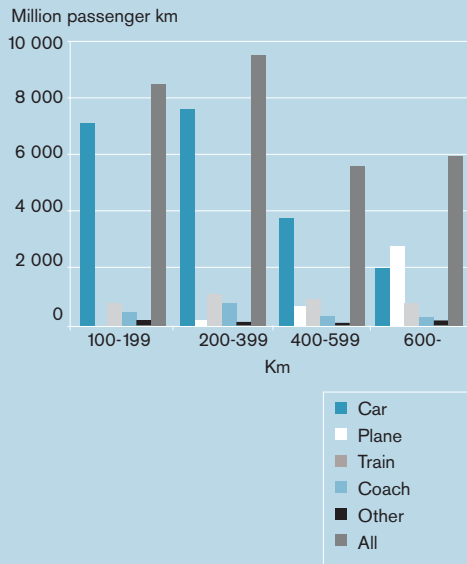
The word *journey* in the context of this publication means movement with a specific purpose, e.g. travelling to the day care centre to drop off children and then continuing the journey to work is counted as two journeys. In other contexts, the term part-journey is sometimes used to mean the same thing.

Journeys by purpose and mode of transport





#### Long-distance domestic transport performance by length of journey and mode of transport



#### 4.3. Number of passenger kilometres by mode of transport and gender. Journey length in million km, 2001.

Source: SIKA RES

	Men	Women	All
Car driver	42 182	17 524	59 706
Car pass.	10 122	15 924	26 046
Local publ. transp	6 353	5 562	11 916
By foot, cycle	1 945	2 034	3 980
Other	13 555	15 015	28 569
All	74 157	56 059	130 217

#### Long-distance journeys

Two-thirds of passenger transport performance for journeys over 100 km takes place by car. It is only for really long journeys, over 600 km one way, that air travel takes a larger share, accounting for almost half of the passenger transport performance for journeys over 600 km. Car travel represents the largest share of passenger transport performance for journeys of between 100 and 200 km and subsequently decreases the longer the journey. Train travel accounts for its greatest share of long-distance passenger transport performance in the interval 400–600 km at 17 per cent. Coach travel has its greatest market share in the interval 200–400 km.

#### 4.4. Long-distance domestic transport performance by length of journey and mode of transport. One-way journeys longer than 100 km, million passenger kilometres, 2001.

Source: SIKA RES

Mode of transport	Length of journey, km				Total
	100–199	200–399	400–599	600–	
Car	7 126	7 564	3 670	1 988	20 349
Plane	1	105	646	2 838	3 593
Train	837	1 031	958	766	3 594
Coach	447	765	298	304	1 814
Other	174	149	41	67	433
All	8 585	9 614	5 613	5 963	29 783

The great majority of long-distance journeys from Sweden to foreign destinations were to Denmark, Finland and Norway. International trips are usually private but a large proportion are also made to certain countries for business or study purposes, for instance the U.K.

For the majority of international trips, air travel is the

main mode of transport (scheduled or charter flights). After air travel, car is the most common mode of transport. Many international trips are also made by ferry to Denmark or Finland, making sea travel the third most common mode of transport. Ferry travel is also a feature of certain trips by car and train but is not then the main mode of transport.

The mode of transport varies somewhat between business and private trips. Scheduled flights are mostly used for business trips while other modes of transport tend mostly to be used for private journeys.

#### 4.5. Number of international journeys by mode of transport and purpose, 2001, thousand.

Source: SIKA RES

	Business/studies	Private	All
Car	330	2 365	2 695
Scheduled flights	1 382	1 375	2 758
Sea	85	916	1 002
Charter flights	61	1 826	1 888
Coach	120	604	726
Train	8	225	234
Other	0	71	71
All	1 986	7 382	9 374

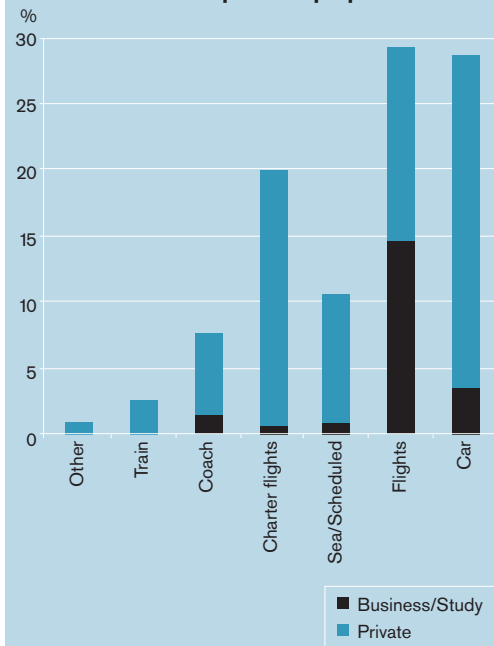
#### Public transport

In 2003, more than 1.1 billion trips were made in scheduled services, about the same as in 2002. Journeys by long-distance coach and by sea are not included in these available figures. Approximately three million journeys were made by long-distance coach in 2000, and over seven million boat trips in county traffic.

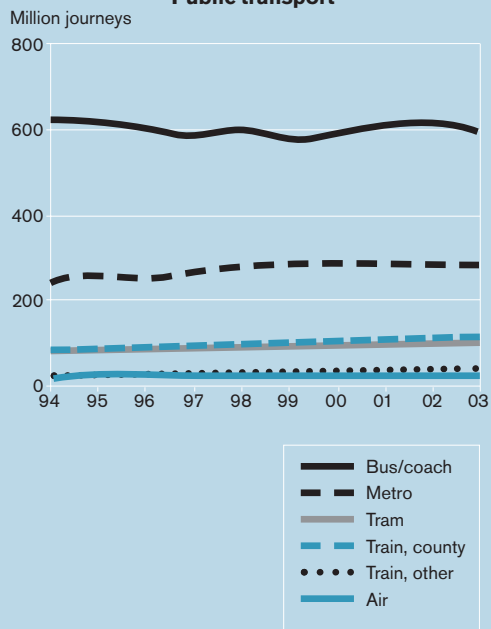
Overall, travel by public transport has increased since 1994. However, in the case of bus/coach travel, where most journeys by public transport are made, travel outside the County of Stockholm has decreased slightly since 1994. In 2003, 597 million journeys were made by bus/coach, a reduction of four million since 2002. The metro also accounts for a large proportion of journeys by public transport. Journeys by metro decreased by four million to 279 million in 2003. Travel by train has increased by five million between 2002 and 2003 to a total of 148 million. There were 101 million journeys by tram in 2003, an in-

*The main mode of transport is defined as the method of travel used for the longest part of a journey.*

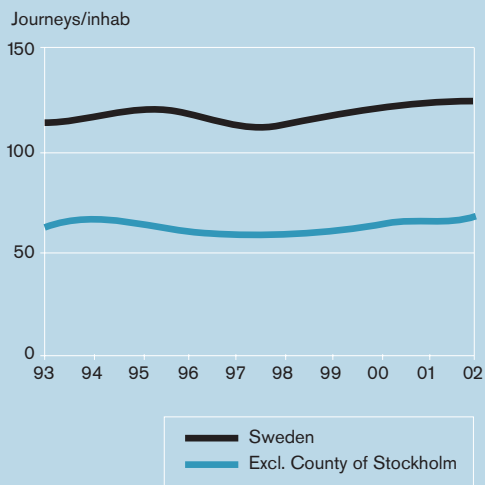
International journeys by mode of transport and purpose



### Public transport



### Journeys by local and regional public transport



crease of five million journeys since 2002.

### 4.6. Number of journeys by public transport per mode of transport, million.

Source: SIK/SLTF/Transek AB Local and regional public transport 2003, SIK/National Rail Administration Rail transport 2003 and SIK/Civil Aviation Administration Air transport 2003.

	Bus/coach	Metro	Tram	Train, county.	Train, other	Air	Total
94	614	244	78	86	25	17	1 063
95	609	256	77	90	25	17	1 075
96	599	257	76	94	25	18	1 069
97	598	263	87	92	27	21	1 087
98	593	269	87	95	28	22	1 094
99	580	273	88	99	30	23	1 093
00	592	284	91	96	33	25	1 121
01	601	283	95	103	35	24	1 141
02	601	283	96	106	37	23	1 146
03	597	279	101	111	37	22	1 147

The number of journeys by county traffic per inhabitant and year increased slightly during the period 1993–2002\*, from 115 to 124. The lowest level was in 1997/98 with 115 journeys per inhabitant. Travel has thereafter increased. The same tendency applies for travel outside the County of Stockholm, in the period 1993–2002 travel increased from 65 to 67 per inhabitant and year. The lowest level was in 1997/98 with 58 public transport journeys, after which travel has increased. In the County of Stockholm, the number of journeys was 342 per inhabitant and year in 2002.

\* The statistics for 2003 are not yet available.

### 4.7. Number of journeys by local and regional public transport per inhabitant.

Source: SLTF Industry statistics, 2002

	Sweden	Excl. Stockholm County
93	115	65
94	118	68
95	118	65
96	117	63
97	115	58
98	115	58
99	119	61
00	121	64
01	123	65
02	124	67

## Mobility service

At the end of 2003, just over 380 000 people or approximately 4.2 per cent of the Swedish population had a mobility service permit. Almost 70 per cent of these were women. In the past decade, the number of persons entitled to use mobility service has successively decreased. Between 2002 and 2003, the number decreased by approximately 2 000. In 1994, 5 per cent of the population were entitled to use the mobility service.

### 4.8. Number of persons with a permit to use the mobility service by gender, number of single journeys undertaken using mobility service, and average number of journeys per person entitled to mobility service.

Source: SIKÅ/Inregia SIKÅ Mobility service and national mobility service, 2003

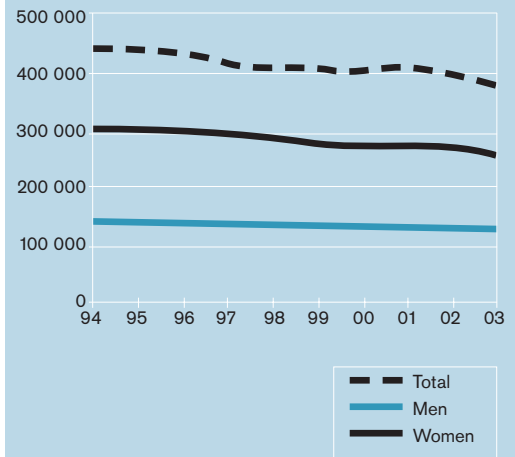
	Persons with permits			No. of single journeys	No. of journeys per permitholder
	Total	Men	Women		
94	441 279	139 098	300 991	17 456 091	40
95	431 547	135 102	295 645	16 641 200	39
96	426 697	134 281	292 416	15 763 617	37
97	418 673	131 792	286 881	15 046 352	36
98	409 602	129 767	279 835	14 459 950	35
99	405 190	127 737	277 453	14 201 017	35
00	404 648	128 230	276 418	13 561 056	34
01	403 379	129 551	273 828	13 566 099	34
02	393 199	125 835	267 364	13 390 736	34
03	380 203	122 016	258 187	12 879 757	34

The proportion of the population with mobility service permits varies by age and sex. The older the persons, the greater proportion with permits. Women have permits to a greater extent than men of the same age. In the age group over 80, 50 per cent of the women have permits and just over 30 per cent of the men. Among persons aged between 65 and 79, seven per cent of the men and eleven per cent of the women have permits. Among persons younger than 65, less than one per cent have a permit.

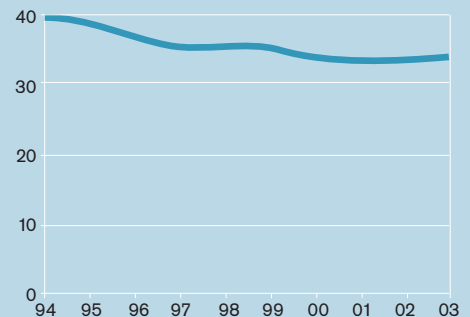
The number of permits has decreased by 26 per cent in the past decade. In 2003, over 12.9 million one-way journeys were made using mobility service, an average of 34 journeys per permitholder. In 1994, 17.5 million journeys or 40 one-way journeys per permitholder were made.

*Mobility service is a complement to the general public transport provision and exists to provide travel opportunities for people who have considerable difficulty using public communications*

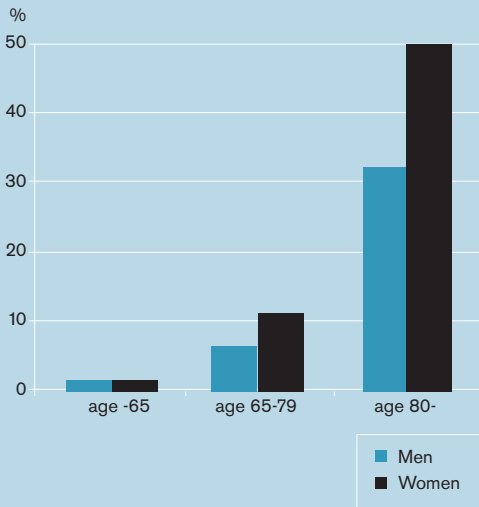
#### Persons with mobility service permits



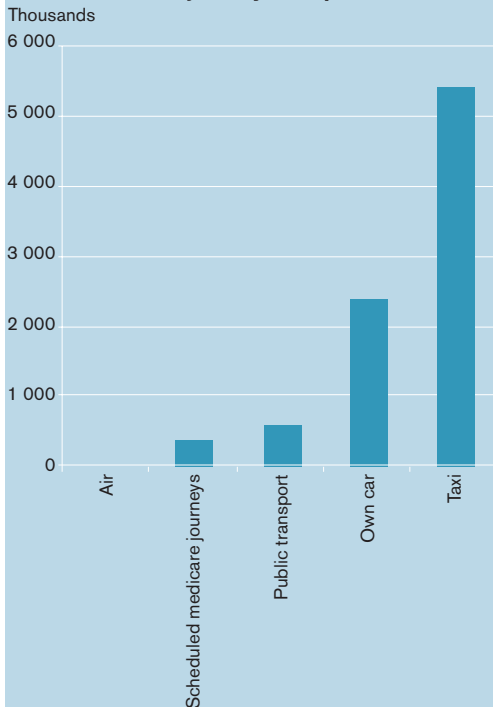
#### Number of journeys per permitholder



### Proportion with entitlement to mobility service



### Medicare journeys compensated for



### 4.9. Age distribution of mobility service permitholders, 2003

Source: SIK/Inregia SIK/ Mobility service and national mobility service, 2003

#### Whole population

Age	Men	Women	Total
-19	1 104 817	1 047 473	2 152 290
20-44	1 502 867	1 444 667	2 947 534
45-64	1 177 421	1 157 171	2 334 592
65-79	490 722	574 594	1 065 316
80-	170 829	305 109	475 938
Total	4 446 656	4 529 014	8 975 670

#### Entitlement to mobility service

Age	Men	Women	Total
-19	4 256	3 261	7 517
20-44	10 739	11 405	22 144
45-64	18 059	25 395	43 454
65-79	33 809	64 815	98 624
80-	55 153	153 311	208 464
Total	1232 016	258 187	380 203

### Medicare trips

The county councils and municipalities are obliged by law to reimburse trips made in connection with sickness. They have, however, no formal responsibility to ensure availability of travel. Patients pay a fee decided by the county councils and the three municipalities without county councils.

In 2003, 8.8 million medicare trips were reimbursed, a decrease of 2 per cent or 100 000 journeys compared with the previous year. More than half of these journeys – 62 per cent – were made by taxi.

Medicare journeys by taxi make up the largest cost item at 73 per cent of the total costs or SEK 1.24 billion. Medicare costs for the county councils totalled SEK 1.67 billion in 2001.

### 4.10. Number of medicare journeys compensated for in 2003 by mode of transport.

Source: The Federation of Swedish County Councils, Medicare trips, 2003

Taxi	5 451 987
Own car	2 388 727
Public transport	592 713
Scheduled medicare journeys	327 791
Air	16 561
Total	8 777 779

## 4.2 OVERVIEW FREIGHT TRANSPORT

In 2003, 517 million tonnes of freight (domestic loads) were transported within Sweden. 60 per cent of this freight was transported by lorry. Road transport is very dominant on shorter distances. The further the transport, the more even the distribution between modes of transport. For distances over 300 km, sea is the dominant mode of transport.

The figures include both freight of domestic origin/destination and international freight. Information about transport by foreign or light lorries is not included. Some details of foreign lorry transport to and from Sweden are shown in section 4.4. The statistics are recorded in accordance with a EU directive which requires Member States to submit details of both domestic and international freight transport carried by lorries registered in their own country.

As regards transport carried out by light lorries, a study of lorries with a maximum load under 3.5 tonnes was carried out in 1999/2000. These lorries accounted for a transport performance of around 3 188 million kilometres.

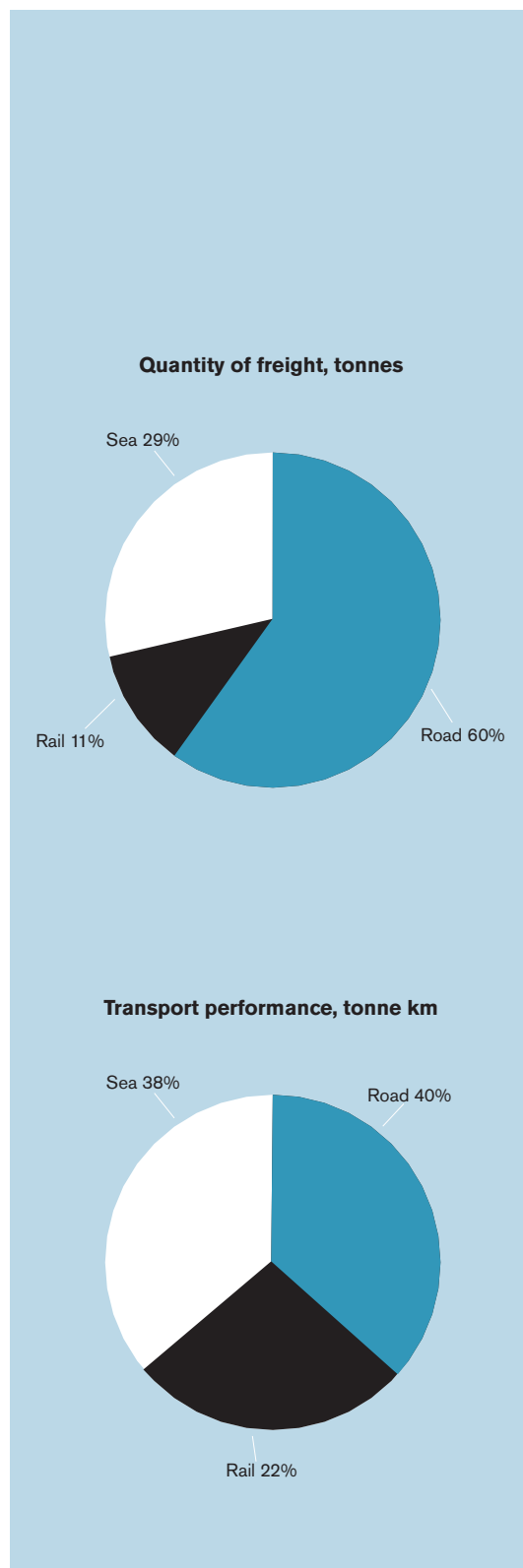
To obtain a complete picture of how freight transport within Sweden is distributed between modes of transport, it is also necessary to record transport with foreign lorries and lorries with a maximum load under 3.5 tonnes. SIKa is currently carrying out work to develop this part of the statistics and the results will be published during 2005.

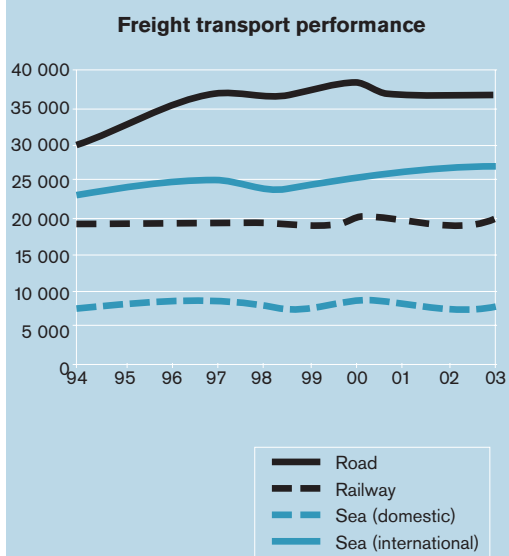
### 4.11. Quantity of freight and freight transport performance for shipments within Sweden 2003, by mode of transport.

Source: SIKa/Statistics Sweden International and domestic transport by ship 2003, SIKa/National Rail Administration 2002/2003 and SIKa Development of transport performance.

	Tonnes	Share	Tonne-km	Share
Road*	309	60 %	36 500	40 %
Railway	58	11 %	20 100	22 %
Sea	150	29 %	34 300	38 %
Total	517	100 %	90 900	100 %
Of which international sea transport	138	27 %	26 800	29 %

\*Information on foreign lorries is not included in the statistics on transported tonnes





Domestic freight transport performance totalled approximately 91 000 million tonne kilometres. Road and sea transport have roughly equal shares of the total transport performance at 40 and 38 per cent each respectively. Shipments of international freight in Swedish waters accounted for approximately 78 per cent of sea transport's transport performance. Unlike the information on transported tonnes, the statistics on transport performance include foreign and light lorries.

Since 1994, freight transport performance in Sweden has increased by approximately 15 per cent. Lorry transport has increased by 22 per cent, and sea transport has increased by 12 per cent, while rail transport has increased by five per cent.

#### 4.12. Freight transport performance for shipments within Sweden by mode of transport, million tonne kilometres.

Source: SIKA/Statistics Sweden International and domestic transport by ship, 2003, SIKA/National Rail Administration Rail administration 2002/2003 and SIKA Development of transport performance.

	Road	Rail	Sea (domestic)	Sea coastal (international)	Total
94	29 800	19 100	7 700	22 800	79 400
95	32 400	19 400	8 300	23 800	83 900
96	34 500	18 800	8 600	24 900	86 800
97	36 800	19 200	8 400	24 900	89 300
98	36 500	19 200	8 300	24 000	88 000
99	37 200	19 100	7 700	24 400	88 400
00	38 100	20 100	8 200	25 100	91 500
01	36 200	19 500	7 600	25 600	88 900
02	36 500	19 200	7 200	25 900	88 800
03	36 500	20 100	7 500	26 900	91 000

In 2001, a national commodity flow survey was carried out. This survey included both domestic and international transport, by mode of transport. The survey material makes it possible to break down transported weight and value by regions and combinations of different modes of transport. The survey included the industries mineral extraction, manufacturing industry and wholesalers. The material was complemented by information on timber, dairy and sugar beet transport.

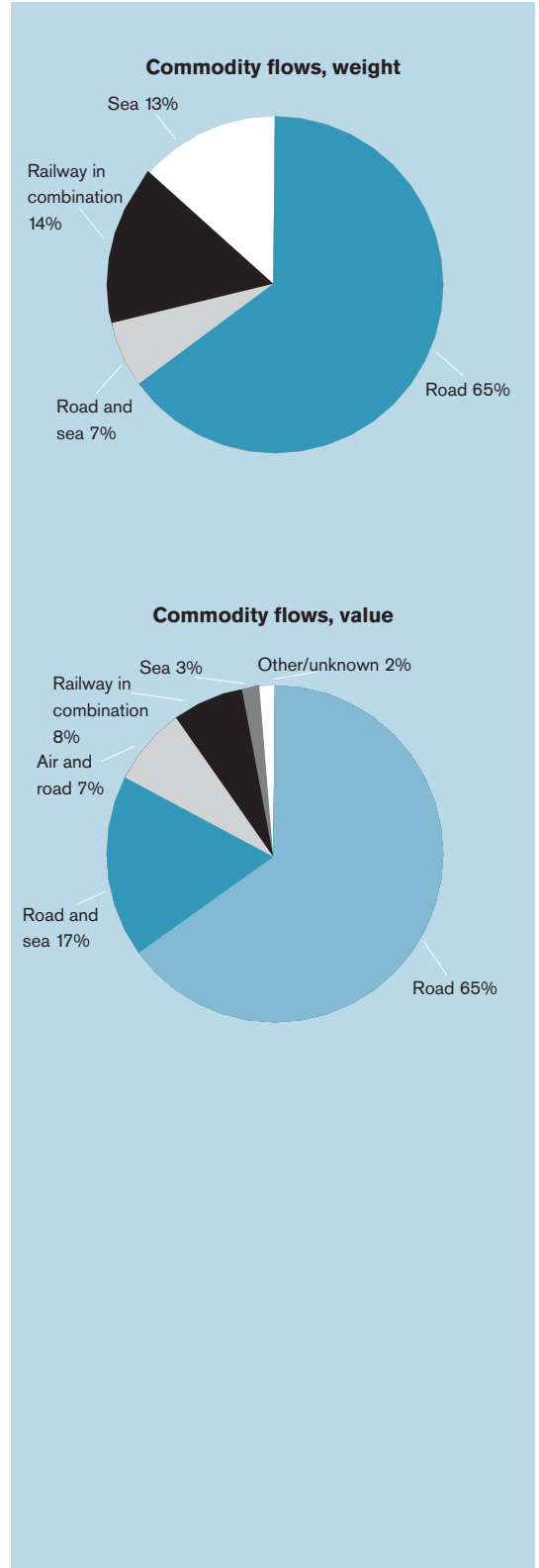
According to the commodity flow survey, the total value of transported freight in 2001 was SEK 1 905 billion for outbound freight with domestic and foreign recipients. The corresponding total weight is estimated at over 246 million tonnes. The estimated weight applies to the complete chains of transport from sender to final destination, without possible double counting due to re-loading of freight.

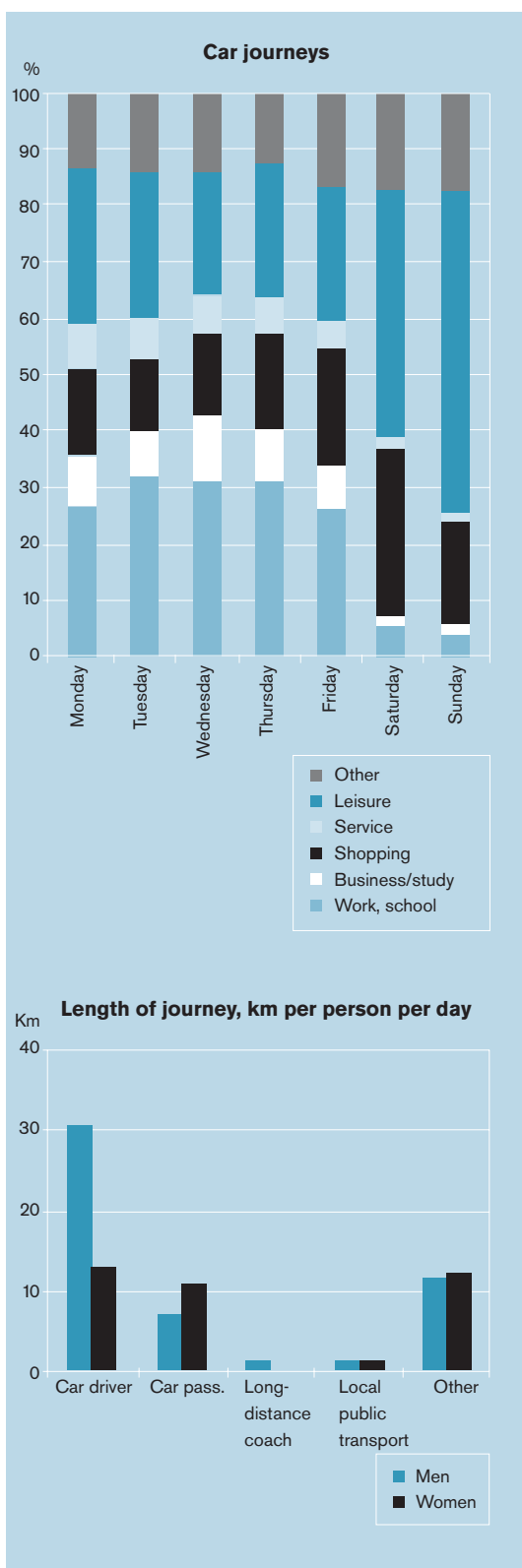
The second national commodity flow survey was initiated on 1 July 2004 and will take a year. The results of the survey will be available in spring 2006.

**4.13. Commodity flows in 2001 calculated as outbound freight from Sweden to recipients within and outside the country, by mode of transport and weight and value respectively.**

Source: SIK/Statistics Sweden Commodity flow survey 2001

Mode of transport	Share of weight, %	Share of value, %
Road	65	65
Road and sea	7	17
Air and road	0	7
Rail in combination	14	8
Sea transport	13	3
Other/unknown	1	2
Total	100	100





### 4.3 ROAD TRANSPORT, PASSENGERS

The car is the dominant mode of transport when it comes to road traffic. During weekdays, the most common purpose of car journeys is to travel to and from work and school. On Fridays, leisure journeys take over to some extent and then dominate completely over the weekend. In total around 30 per cent of all car journeys are undertaken for leisure purposes. Car journeys for shopping usually take place on Friday and Sunday, while service trips are undertaken on weekdays. Use of the car for business and study purpose is most frequent on Mondays and Wednesdays.

#### 4.14. Number of car journeys according to purpose on different weekdays, millions of journeys, 2001.

Source: SIKa RES

	Work, school	Business/ study	Shopping	Service	Leisure	Other	All
Monday	187	65	113	53	192	98	708
Tuesday	205	50	82	52	164	90	643
Wednesday	239	85	112	52	161	109	758
Thursday	218	58	118	46	164	86	690
Friday	211	61	174	38	191	136	811
Saturday	34	16	204	13	296	120	683
Sunday	26	5	109	10	334	106	590
All	1 125	344	917	274	1 509	717 4	886

On average Swedes travel 45 kilometres per person and day using different modes of transport. Of these 45 kilometres, around 69 per cent are made by car.

Men travel longer distances per day than women. In their daily journeys, men use the car to a greater extent than women, usually as the driver of the car. Women, on the other hand, travel slightly longer distances using local public transport than men.

#### 4.15. Average length of journey per individual per day by mode of transport, km, 2001.

Source: SIKa RES

	Men	Women	All
Car driver	30.6	13.3	21.9
Car passenger	6.9	10.8	8.9
Long-distance coach	0.9	0.2	0.5
Local publ. transport	1.4	1.5	1.5
Other	11.8	12.3	12.1
All	51.6	38.1	44.8

## 4.4 ROAD TRANSPORT, FREIGHT

A total of 302 million tonnes of freight was transported by Swedish lorries on Swedish roads in 2003. The average haulage distance was 104 km and the proportion of empty runs 24 per cent. The proportion of empty runs varies greatly between the different goods categories – general consignments showed an empty run proportion of 8 per cent, while, for instance, round timber had an empty-run proportion of 46 per cent.

The average haulage distance also varies greatly depending on the category of goods. The longest haulage distance for the larger goods groups was 229 kilometres, while earth, stone, gravel and sand had a mean haulage distance of 21 kilometres.

Earth, stone, gravel and sand is the largest goods category, measured by weight, with a total transported weight of 72 million tonnes in 2003. The next-largest category is timber with a total transported weight of 70 million tonnes.

### 4.16. Average haulage distance and proportion of empty runs for Swedish lorries with a maximum load of at least 3.5 tonnes in domestic traffic, kilometres.

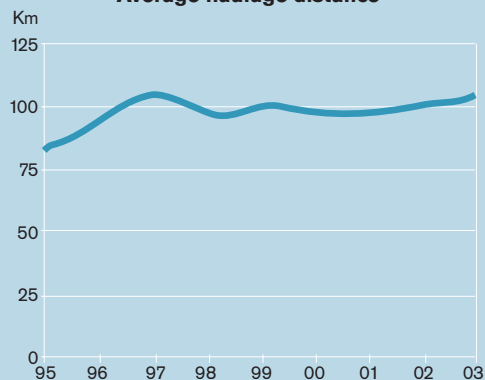
Source: SIKA/Statistics Sweden Domestic and international transport by Swedish lorries

	Average haul dist, km	Empty runs, proportion
93	82	28 %
94*		
95	82	26 %
96	97	25 %
97	104	23 %
98	97	24 %
99	100	24 %
00	97	24 %
01	98	24 %
02	101	24 %
03	104	24 %

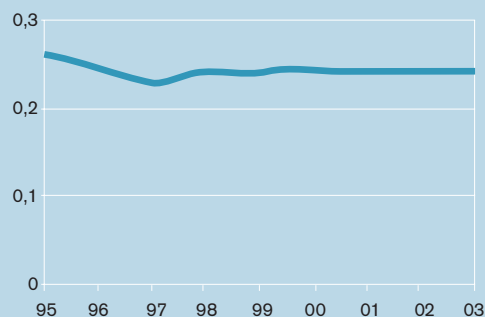
\* During the years 1991–92 and 1994, no surveys were made of goods transport by road. As from 2000, domestic and international transport by Swedish lorries was investigated in a common survey.

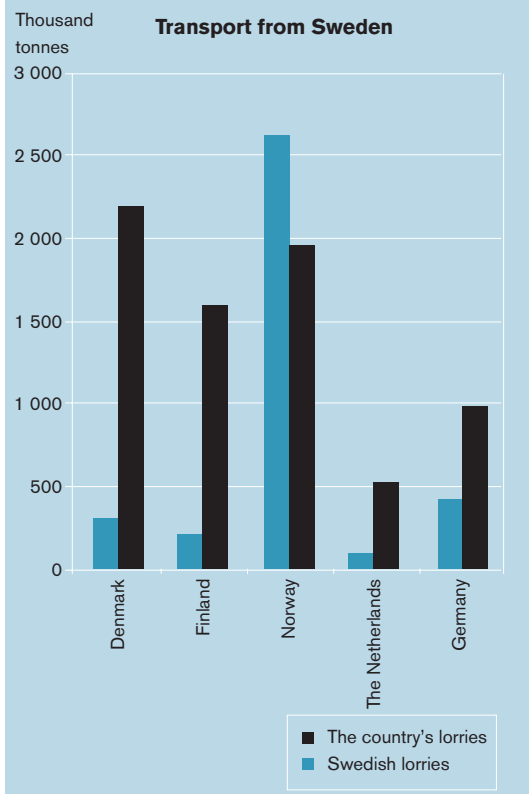
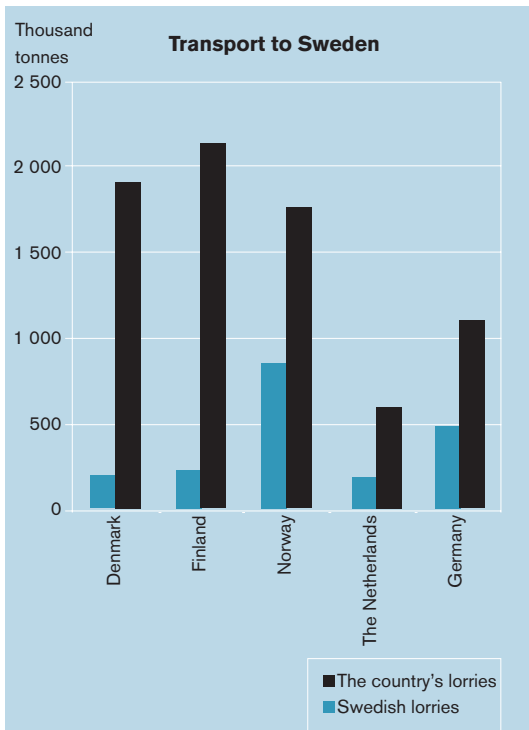
In 2003, Swedish lorries in international traffic transported over 6.6 million tonnes of freight to and from Sweden. The largest receiving and sending countries for

Average haulage distance



Empty journeys, proportion





these shipments were Norway and Germany. Transport to these countries accounted for two-thirds of the transported quantities of freight to and from Sweden by Swedish lorries.

Comparing transport to and from Sweden, carried out by lorries registered in one of our neighbouring countries, with shipments by Swedish lorries to these countries, it can be seen that Swedish lorries transport smaller quantities in every case with the exception of shipments from Sweden to Norway.

#### 4.17. Quantity of freight transported to and from Sweden carried out by lorries registered in Sweden and in the respective country 2003, thousand tonnes.

Source: SIKI/Statistics Sweden Domestic and international transport by Swedish lorries, 2003 and the statistical authorities in the respective country.

	To Sweden		From Sweden	
	Swedish lorries	The country's lorries	Swedish lorries	The country's lorries
Denmark	196	1 926	286	2 187
Finland	231	2 155	201	1 593
Norway	857	1 770*	2 616	1 951*
Netherlands	185	602*	94	529*
Germany	497	1 123	419	985

\*The figures refer to 2002

## 4.5 RAIL TRANSPORT, PASSENGERS

Passenger transport performance with different types of rail transport totalled 11 038 million passenger kilometres in 2003. Train traffic accounted for over 80 per cent of transport performance in 2003. Transport performance by train has increased by over 40 per cent since 1994. The largest increase has been in train services provided by others than the county transport authorities. This traffic has increased by 56 per cent, while train services operated by the county transport authorities increased by 48 per cent. Until the end of 1999, only SJ ran its own train services. After that date, more operators have appeared through the National Public Transport Agency's procurement and the opening of the Arlanda line.

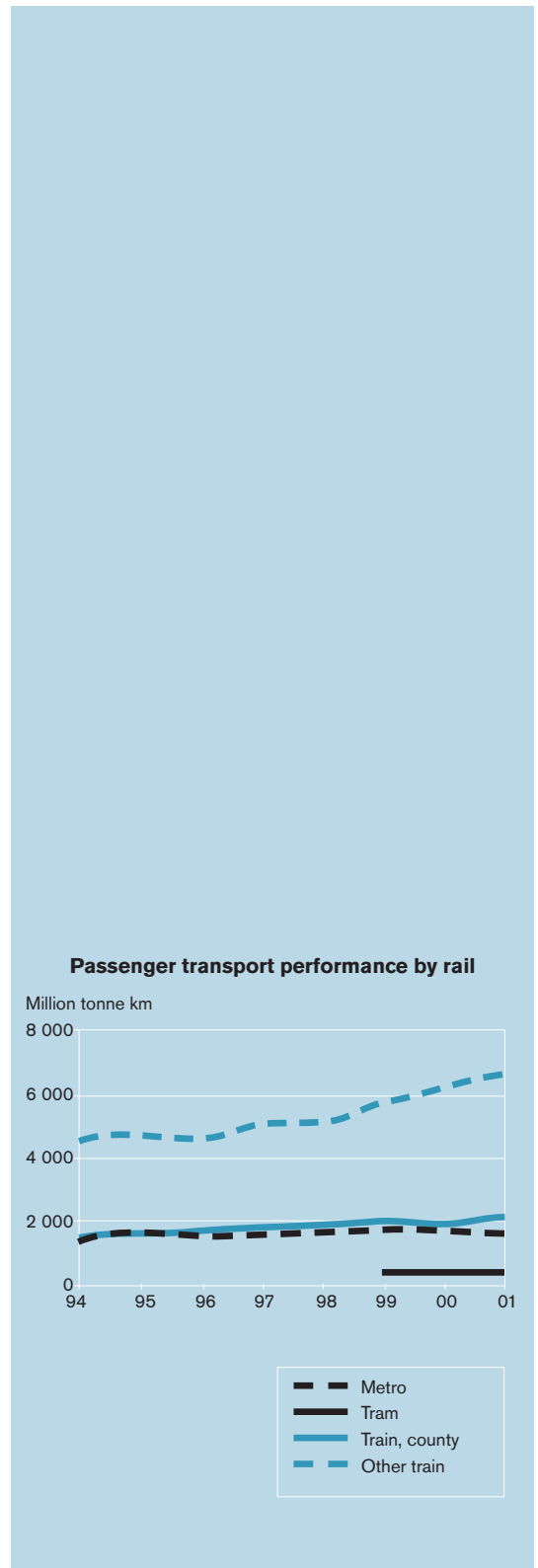
Journeys by metro accounted to almost 15 per cent of rail transport performance. In the past ten-year period, transport performance by metro has increased by 12 per cent.

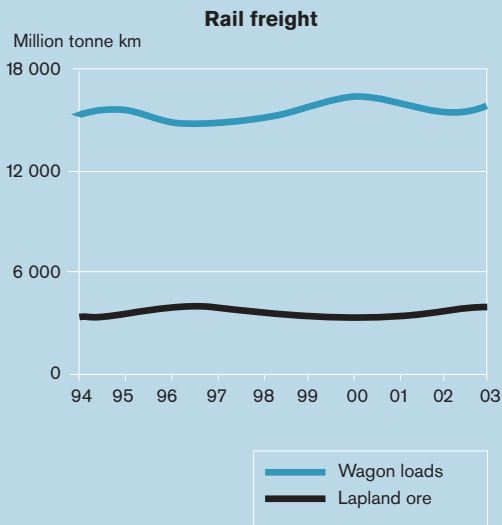
Transport performance by tram totalled 429 million passenger kilometres in 2003. It is not self-evident which lines are to be defined as trams. This applies primarily to the Roslag, Saltsjö and Lidingö lines in the County of Stockholm. In this case, the Roslag and Saltsjö line are considered as trains run by the county council while the Lidingö line is classified as a tram.

**Tabell 4.18. Passenger transport performance by different types of rail transport, million passenger kilometres.**

Source: SIK/National Rail Administration Rail transport 2002/2003

	Metro	Tram	Train, county	Other train	Total
94	1 391		1 558	4 504	7 453
95	1 441		1 670	4 683	7 794
96	1 481		1 765	4 619	7 865
97	1 496		1 883	5 071	8 450
98	1 505		1 959	5 191	8 655
99	1 526	380	2 006	5 695	9 607
00	1 588	394	1 960	6 283	10 225
01	1 581	410	2 147	6 585	10 723
02	1 581	415	2 285	6 699	10 980
03	1 558	429	2 430	6 622	11 039





## 4.6 RAIL TRANSPORT, FREIGHT

In 2003, transport performance by rail in Sweden was over 20.1 billion tonne kilometres, which is the highest value ever recorded. Lapland ore makes up approximately 20 per cent of the total transport performance and this proportion has been largely constant during the past decade. The statistics on wagon loads also included express freight transported by railway. Express freight has been of very little importance for the total transport performance, however. In 2003, no express freight was reported at all and the year before it was approximately five million tonne kilometres.

### 4.19. Rail freight transport, million tonne kilometres.

Source: SIKI/National Rail Administration Rail transport, 2003

	Wagon loads	Lapland ore	Total
94	15 217	3 852	19 069
95	15 592	3 799	19 391
96	14 902	3 944	18 846
97	15 230	3 951	19 181
98	15 309	3 854	19 163
99	15 560	3 530	19 090
00	16 332	3 756	20 088
01	15 900	3 647	19 547
02	15 460	3 737	19 197
03	16 055	4 086	20 141

## 4.7 SEA TRANSPORT, PASSENGERS

The number of boat passengers using the services provided by the county transport authority totalled almost 7.8 million in 2003. This is a reduction compared with the previous year, while there has been a weak rising trend since 1995. Half of these journeys took place in the County of Stockholm. Of the other counties, the greatest amount of traffic is in the County of Västra Götaland followed by the County of Blekinge.

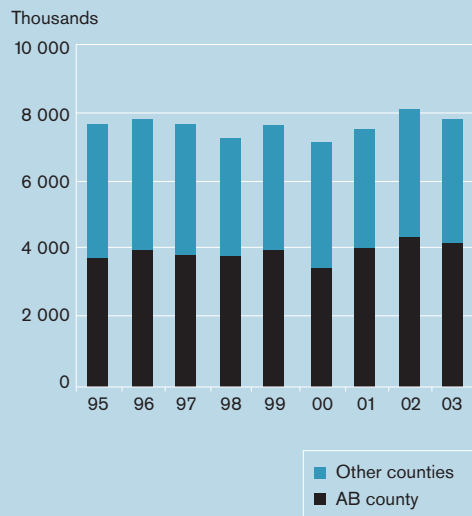
### 4.20. Passengers travelling by boat on services provided by the county council, thousands.

Source: SIK/SLTF/TranseK AB Local and regional public transport, 2003

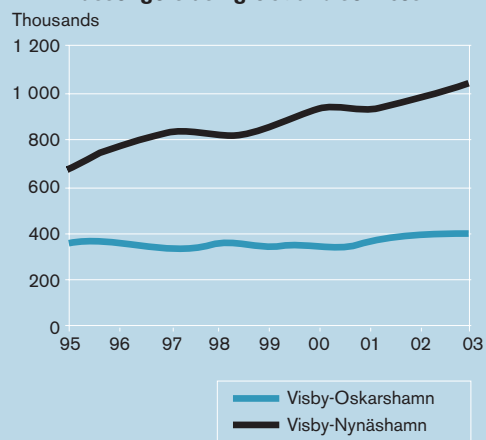
	Total	County of Stockholm	Other counties
95	7 694	3 672	4 022
96	7 735	3 863	3 872
97	7 668	3 775	3 893
98	7 250	3 655	3 595
99	7 683	3 893	3 790
00	7 179	3 429	3 750
01	7 504	3 959	3 545
02	8 138	4 303	3 835
03	7 874	4 223	3 651

In 2003, 1.4 million passengers travelled on the Gotland services [Gotlandstrafiken], which is an increase of three per cent compared with 2002. Since 1994, over a million passengers have used these services each year. As from 1989, services are operated from two ports on the main land – Nynäshamn and Oskarshamn. Earlier in the 1980s, services were also operated from Stockholm, Västervik and Grankullavik. Measured in numbers of passengers, the biggest route is Nynäshamn–Visby, which accounted for around 73 per cent of the passengers in 2003. In 1995, Nynäshamn's share of the total number of passengers was 66 per cent.

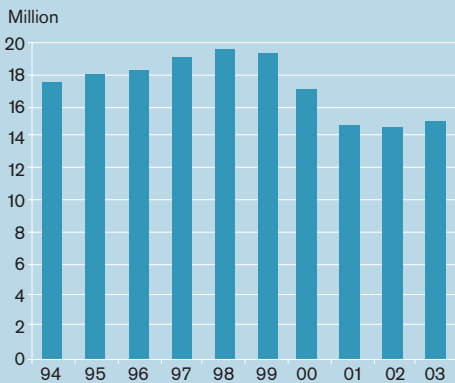
Travel by ship in county traffic



Passengers using Gotland services



**Number of passengers arriving by ship in international traffic**



#### 4.21. Number of passengers in Gotland services, thousands.

Source: SIK/Statistics Sweden International and domestic transport by ship

95	351	669	1 020
96	347	755	1 102
97	340	827	1 167
98	354	807	1 161
99	339	885	1 224
00	355	936	1 291
01	359	935	1 294
02	393	983	1 377
03	386	1 036	1 422

In 2003, 15.1 million passengers travelled by ferry to Sweden from abroad, which is an increase of 2 per cent compared with 2002. 5.8 million or 38 per cent of the passengers travelling to Sweden came from the Danish Öresund ports. In all, traffic from Denmark accounted for 50 per cent of the ferry passengers arriving from abroad, which is less than during the mid-1990s when the proportion was approximately 63 per cent. The number of passengers arriving decreased greatly from 19 million in 1999 to 15 million in 2001 when the Öresund Bridge opened on 1 July 2000.

The single biggest line in 2003 was Helsingborg–Helsingör with 5.8 million passengers arriving, followed by Stockholm–Turku and Stockholm–Helsinki each with 1.3 million passengers arriving.

#### 4.22. Number of passengers arriving by ferry in international traffic, million.

Source: SIK/Statistics Sweden International and domestic transport by ship

Million passengers	
94	17.5
95	18.0
96	18.2
97	19.2
98	19.6
99	19.4
00	17.2
01	14.9
02	14.8
03	15.1

## 4.8 SEA TRANSPORT, FREIGHT

After a decline at the end of the 1980s, the maritime freight transport performance started to increase again in 1992. In 2003, the total transport performance in Swedish waters came to 34.3 billion tonne kilometres. Foreign shipping along the Swedish coast accounted for 26.9 billion tonne kilometres or 78 per cent of the total freight transport performance in Swedish waters. These figures include freight in international and domestic traffic. Freight on ferries is included in the statistics from 2000 inclusive.

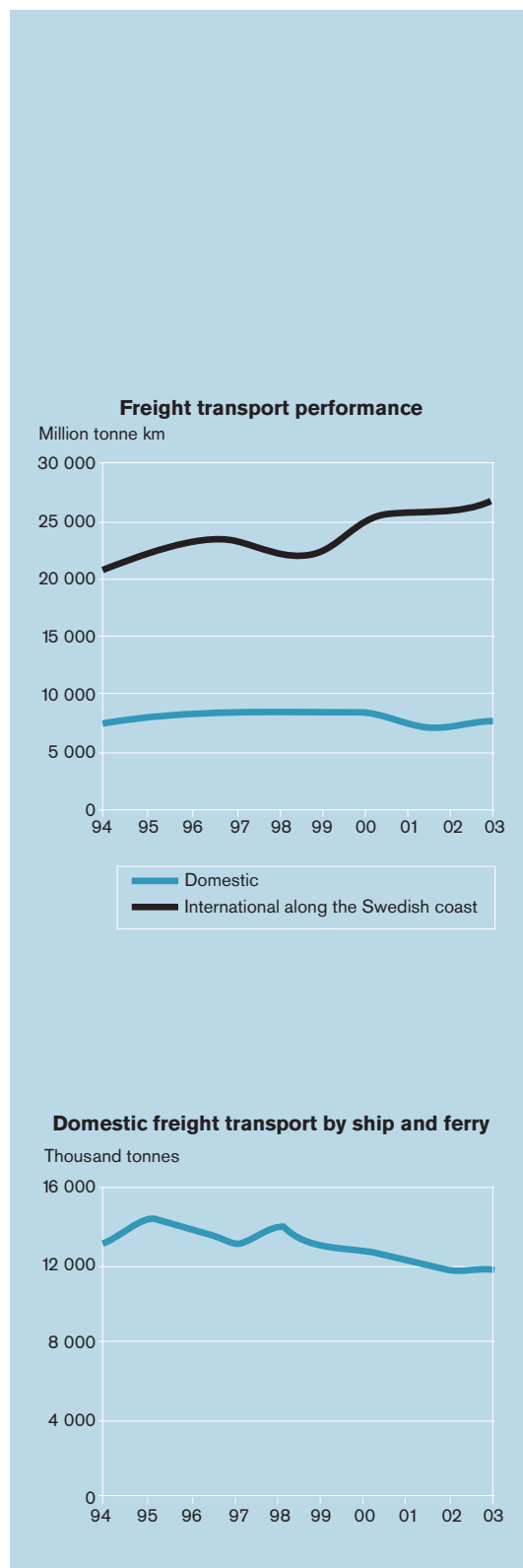
### 4.23. Maritime freight transport performance, million tonne kilometres. From 2000, freight on ferries is also included in the freight transport performance.

Source: SIKA/Statistics Sweden International and domestic transport by ship

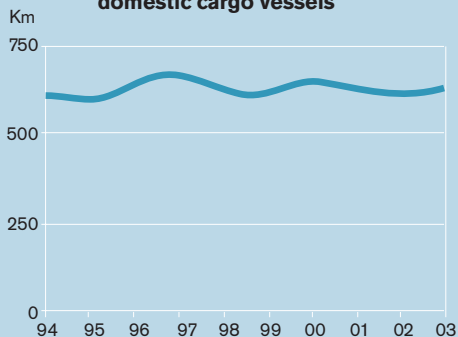
	Domestic	International, along the Swedish coast	Total
94	7 600	20 993	28 593
95	8 274	21 900	30 174
96	8 634	22 940	31 574
97	8 387	22 932	31 319
98	8 334	22 097	30 431
99	7 700	22 455	30 155
00	8 188	25 138	33 326
01	7 579	25 556	33 135
02	7 183	25 934	33 117
03	7 456	26 857	34 313

### Domestic sea transport

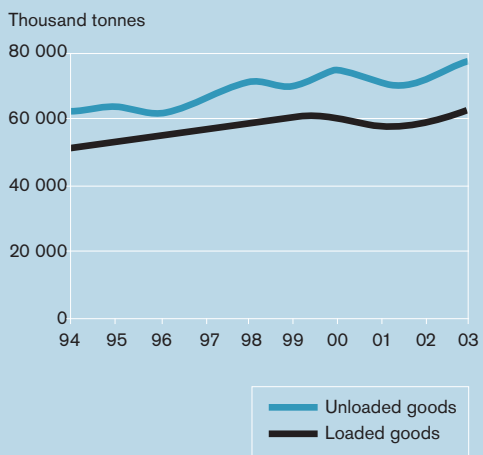
In all, 11.8 million tonnes of freight were unloaded in domestic sea transport in 2003. This is an increase of one per cent compared with the previous year. In 1994, a total of 13 million tonnes of freight were unloaded in Swedish ports.



**Average transport distance for freight, domestic cargo vessels**



**International freight on vessels including ferries**



**4.24. Domestic freight traffic by ship and ferry, thousand tonnes.**

Source: SIK/Statistics Sweden International and domestic transport by ship

**Domestic freight transport, thousand tonnes**

94	13 008
95	14 136
96	13 725
97	13 048
98	13 813
99	12 904
00	12 629
01	12 207
02	11 723
03	11 806

The distances for domestic maritime transport increased during the 1990s. However, since the peak year of 1997, when the average transport distance was 667 kilometres, it has fallen slightly. The dominant goods group in domestic traffic is petroleum products, which comprised 52 per cent of the domestic freight quantity in 2003.

**4.25. Average transport distance for cargo vessels in domestic freight traffic, kilometres (tonne km/tonne). As from 2000, freight traffic by ferries is also included in these statistics.**

Source: SIK/Statistics Sweden International and domestic transport by ship/Statistics Sweden International and domestic freight transport by ship

**Average transport distance, km**

94	609
95	601
96	652
97	667
98	624
99	618
00	648
01	621
02	613
03	632

**International sea transport**

The quantity of freight shipped totalled 138 million tonnes in 2003, which is an increase of 5 per cent in comparison with 2002. 77 million tonnes arrived from foreign ports while 61 millions were loaded to be shipped abroad, which can be compared with 72 million tonnes and 59 million tonnes respectively in 2002.

#### 4.26. International freight transport, on ships and ferries, thousand tonnes.

Source: SIKA/Statistics Sweden International and domestic transport by ship/Statistics Sweden International and domestic freight transport by ship

	Goods unloaded	Goods loaded	Total international freight handled.
94	62 518	51 164	113 682
95	63 508	53 179	116 687
96	61 980	54 752	116 731
97	66 021	57 514	123 535
98	71 397	56 698	127 972
99	70 446	59 775	130 221
00	74 204	59 798	134 002
01	70 677	57 781	128 459
02	72 382	58 911	131 293
03	76 777	60 990	137 767

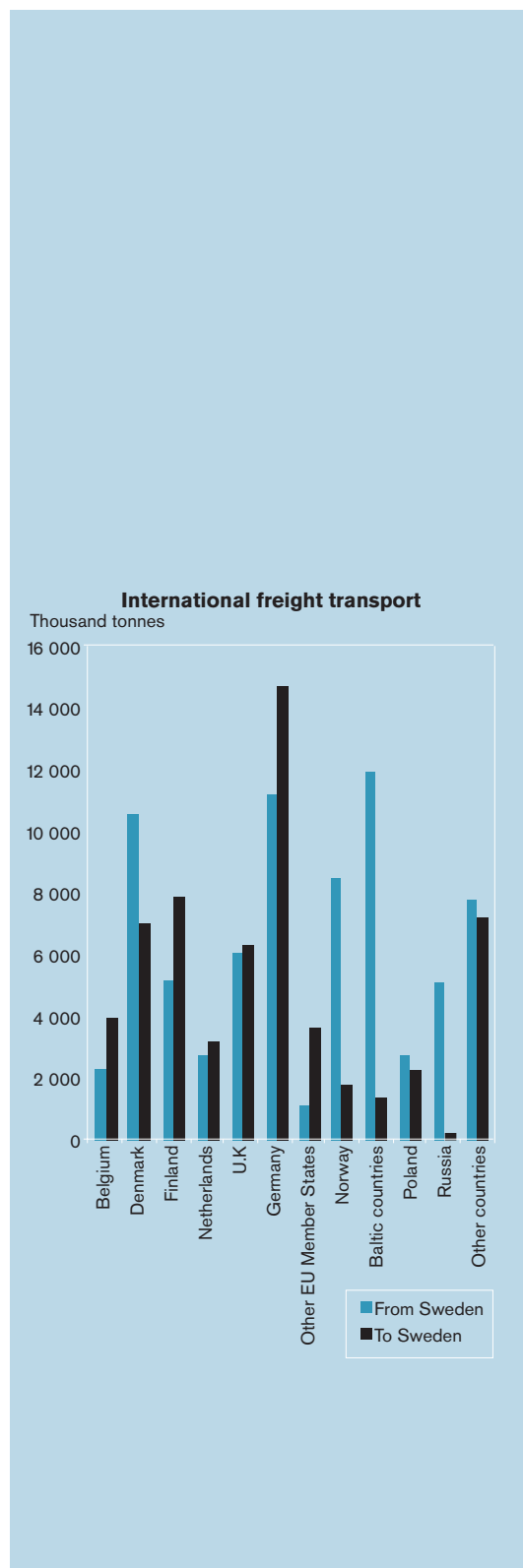
The countries that received the largest proportion of freight in international sea transport from Sweden in 2003 were Germany, Finland and Denmark. Shipments to Germany accounted for 24 per cent of the total freight transported abroad.

Germany, Denmark and Norway are the countries that ship the largest amount of goods to Sweden. Altogether, just under 9 million tonnes of freight from Norway were unloaded, which corresponds to 11 per cent of the total imported quantity of goods by sea. Six million tonnes of these goods were crude oil and oil products. This commodity group dominates international trade and represents 38 per cent of the quantity of goods unloaded and 21 per cent of loaded goods.

#### 4.27 International freight transport to and from Sweden by country, 2003, thousand tonnes.

Source: Statistics Sweden International and domestic freight transport by ship

	To Sweden	From Sweden
Belgium	2 349	3 979
Denmark	10 606	7 110
Finland	5 235	7 924
Netherlands	2 854	3 277
U.K.	6 170	6 375
Germany	11 266	14 727
Other EU Member States	1 189	3 642
Norway	8 575	1 900
Baltic countries	12 036	1 481
Poland	2 838	2 337
Russia	5 249	265
Other countries	7 868	7 282
Country not spec.	542	693
Total	76 777	60 992



## 4.9 AIR TRANSPORT, PASSENGERS

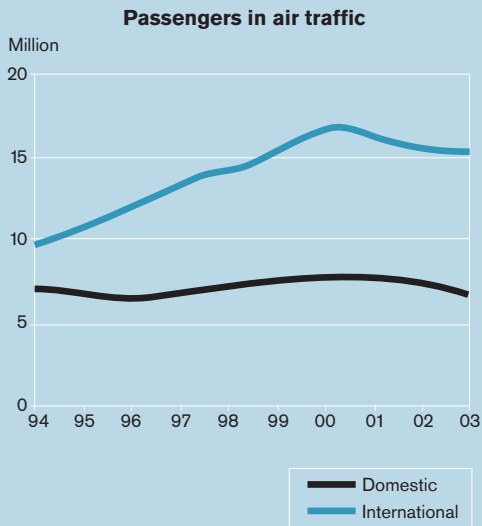
In 2003, there were almost 22 million flights. Overall, the Swedish air traffic fell by three per cent or 760 000 passengers in 2003. Domestic traffic decreased by eight per cent and international traffic by two per cent.

Up until 1990, domestic and international flights had followed the same pattern of development. From 1991 onwards, however, international flights have increased considerably more than domestic flights. The number of international flights increased by 53 per cent between 1994 and 2003, while the number of domestic flights decreased by ten per cent during the same period. In 1994, 58 per cent were international flights and approximately 42 per cent domestic flights. In 2003, the proportion of international flights increased to 69 per cent.

International air traffic includes the number of both incoming and outbound passengers, while the figures for domestic air traffic only refer to the number of outbound passengers.

### 4.28. Number of passengers in domestic and international air traffic in millions.

Source: SIK/Civil Aviation Administration Air transport, 2003



	Domestic	International	Total
94	7.0	9.8	16.8
95	6.6	10.8	17.4
96	6.6	11.9	18.5
97	6.8	13.3	20.1
98	7.2	14.5	21.7
99	7.6	15.3	23.0
00	7.9	16.6	24.5
01	7.8	16.4	24.2
02	7.2	15.3	22.5
03	6.7	15.0	21.7

Domestic transport performance with scheduled and charter traffic in 2003 totalled almost 3.2 billion passenger kilometres. This is a reduction of 3 per cent compared with 1994. During this period, transport performance has varied between 3 and 3.7 billion passenger kilometres. The figures include air travel where either the start or landing took place at a state airport. Scheduled and chartered traffic between non-state airports still

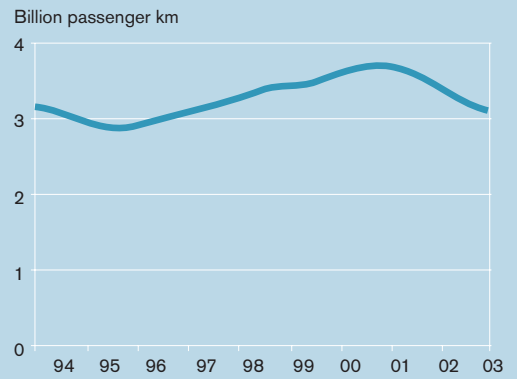
accounts for a very small proportion of air traffic in Sweden.

**4.29. Passenger transport performance in domestic air traffic, billion passenger kilometres.**

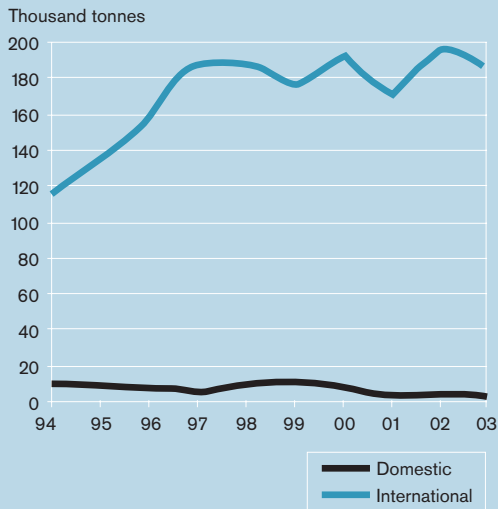
Source: SIKI/Civil Aviation Administration, Air Transport, 2003

Billion person km	
94	3.1
95	3.0
96	3.0
97	3.1
98	3.3
99	3.5
00	3.6
01	3.7
02	3.4
03	3.2

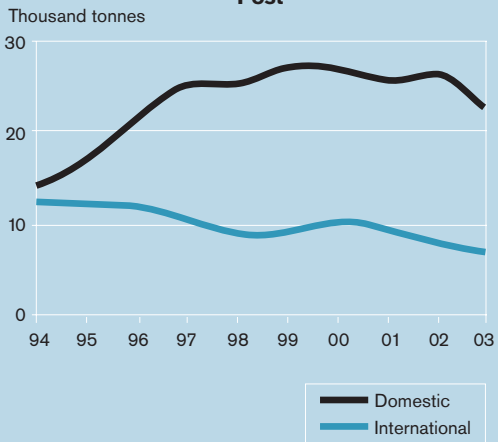
**Passenger transport performance, domestic flights**



### Freight



### Post



## 4.10 AIR TRANSPORT, FREIGHT

The quantity of freight in air traffic to and from Swedish airports totalled just over 190 000 tonnes in 2003, which was a decrease of six per cent compared with 2002. International freight decreased by six per cent to 185 700 tonnes. Domestic freight, which only accounted for two per cent of the total volume of freight, decreased by 18 per cent to 4 400 tonnes.

The quantity of mail by air decreased by 13 per cent to 30 000 tonnes. Domestic and international post freight both decreased by 13 per cent. The reduction in figures was 3 560 and 1 050 tonnes respectively. This means that post conveyed by air has decreased for three consecutive years.

### 4.30. Incoming and outbound freight and mail by scheduled flights and charter traffic, thousand tonnes.

Source: SIK/Civil Aviation Administration Air transport 2003

Year	Domestic Freight	Domestic Post	Total	International Freight	International Post	Total	Grand total
94	9.0	14.4	23.4	116.4	12.1	128.6	152.0
95	6.6	16.8	23.4	133.5	12.4	145.9	169.3
96	6.8	21.9	28.7	159.2	11.7	170.9	199.6
97	6.5	25.2	31.7	184.9	10.4	195.3	227.0
98	9.3	25.4	34.7	189.1	8.9	198.0	232.7
99	12.5	27.2	39.7	176.1	8.9	185.0	224.7
00	6.9	27.5	34.4	193.4	10.2	203.6	238.0
01	5.0	26.0	31.0	170.9	9.7	180.6	211.6
02	5.4	26.4	31.8	197.1	8.1	205.2	237.0
03	4.4	22.9	27.3	185.9	7.1	193.0	220.3

## 4.11 PEDESTRIAN AND CYCLE TRAFFIC

Neither cycling nor walking accounts for a large part of the distance Swedes travel on a daily basis; the proportion varies between one and four per cent, depending on age. Cycling is most common among young people – they cycle the longest distances per day and also have the highest cycling proportion in relation to the daily distance travelled.

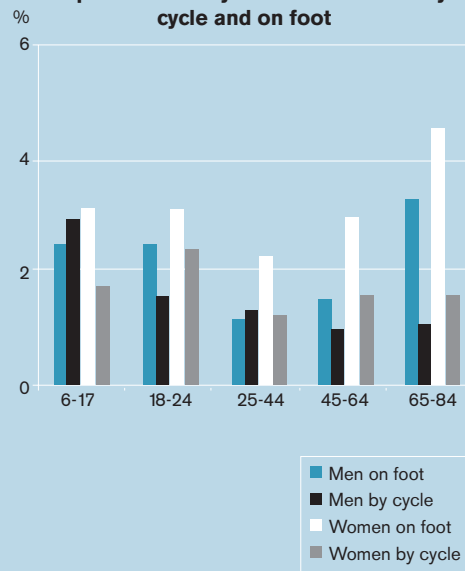
The daily distance travelled on foot does not vary with age to the same extent. The proportion of travel accounted for by walking does increase with age, however. The largest increase is from the 45–64 age group to the 65–84 age group, in particular for women. One explanation for this is that reaching pension age brings to an end the need for work-related trips, trips previously undertaken using other modes of transport.

### 4.31. Daily average distance travelled (km) on foot or by cycle, by age and gender 2001.

Source: SIKa RES

Age	Men			Women		
	On foot	Cycle	All modes	On foot	Cycle	All modes
6–17	0.8	0.9	32.2	1.0	0.5	31.6
18–24	1.3	0.7	51.9	1.2	0.9	38.6
25–44	0.7	0.8	64.8	1.2	0.6	50.6
45–64	0.9	0.5	61.3	1.3	0.6	42.2
65–84	0.9	0.3	28.1	0.8	0.3	18.5
All	0.9	0.7	51.6	1.1	0.5	38.1

Proportion of daily distance travelled by cycle and on foot



## 4.12 POSTAL SERVICES

During 2003, over 3.3 billion addressed items of post were sent. Addressed items of post include letters, addressed newspapers and magazines, and advertising up to 2 kg. It also includes items weighing over 2 kg, i.e. parcels. Since 2002, the number of addressed items of post has decreased by almost 340 million or 10 per cent. The proportion of parcels is small, so that the larger portion of the reduction derives from items up to 2 kg. One cause of this reduction can be the use of competing media, for instance e-mail.

### 4.32. Volume transported for companies conveying post, million of addressed items.

Source: SIK/Statistics Sweden Business Register

Type of item	Number of million items								
	95	96	97	98	99	00	01	02	03
Weight at most 2 kg	3 467	3 576	3 578	3 575	3 558	3 548	3 266	3 603	3 262
Weight over 2 kg	49	47	43	42	43	48	42	49	42

The market for addressed letters is still dominated by Posten AB in 2003 with a market share of over 92 per cent. CityMail was the second largest operator with over 7 per cent of the market. Other operators, mainly small companies who carry out local operations, accounted for the remaining one per cent. See section 2.6 for more information.

## 4.13 TELECOMMUNICATIONS

In 2003, the number of traffic minutes for fixed telephone services was estimated at 35.1 billion, which is a decrease of 0.5 billion minutes since 2002. The number of traffic minutes for fixed telephony increased steadily since 1995 but has decreased in the past two years. However, mobile calls continue to increase. In 2003, calls increased by 0.4 billion minutes.

### 4.33. Traffic minutes by type of service, billion.

Source: SIK/Statistics Sweden Telecommunications 2003

	95	96	97	98	99	00	01	02	03
Fixed services	31.7	34.4	34.4	39.8	41.6	40.7	41.6	35.6	35.1
Mobile services	1.6	1.9	2.6	2.7	3.9	3.9	5.5	6.3	6.7

The total number of outbound traffic minutes in fixed telephone was 48.4 billion minutes in 2003, distributed among a number of different services.

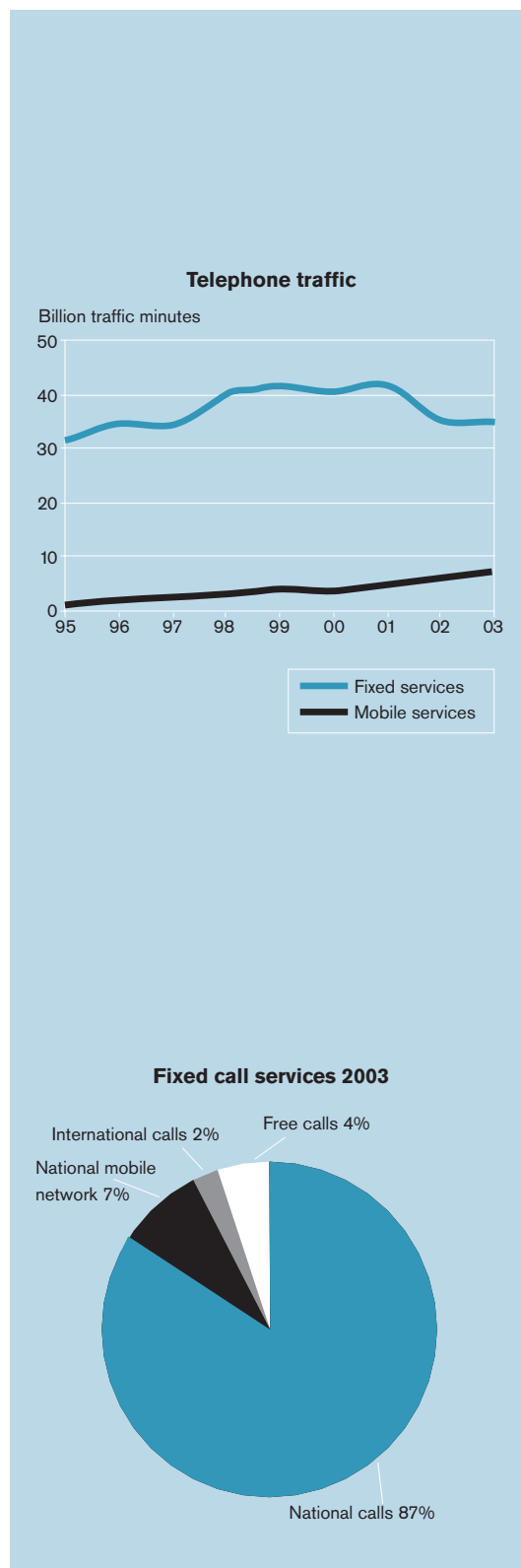
The largest part, almost 90 per cent of the number of traffic minutes in fixed telephony, was used for contacts within Sweden. Only two per cent of the number of traffic minutes was for calls abroad.

The largest proportion of calls from mobile telephones was to the mobile network approximately 60 per cent, while 36 per cent of the calls went to the fixed network. The proportion of calls from the fixed to the mobile network is seven per cent. Only a small portion, just over three per cent, was international calls.

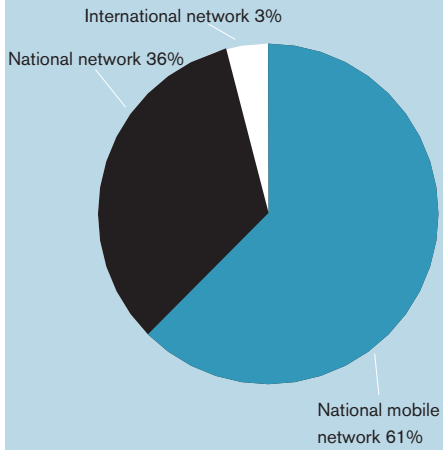
**Table 4.34. Outbound traffic minutes with fixed telephony, million**

Source: PTS Swedish telecommunications market, 2003

	00	01	02	03
National calls	50 117	50 642	44 958	41 935
National mobile network	2 533	3 078	3 260	3 345
International calls	1 086	1 137	1 156	1 169
Free calls (020-)	1 685	1 657	1 695	1 887
Directory enquiries (118 XYZ)	34	33	27	
Total	55 421	56 548	51 102	48 363



**Mobile services 2003**



**Table 4.35. Outbound traffic minutes by mobile telephony, million**

Source: PTS Swedish Telecommunications market, 2003

	01	02	03
National mobile network	2 733	3 291	4 052
National fixed network	2 573	2 785	2 450
International traffic	223	207	212
Total	5 529	6 283	6 714

# 5. Economy

This chapter takes up economy in the transport and communications sector.

The income and costs of the different operators are shown in tables and diagrams. The chapter also contains information on the state's revenue and expenditure and the price trend for travel in recent years.

## 5.1 SURVEY

### Investments

For many years, annual investments in the infrastructure of the transport sector were relatively even, although from the early 1990s investments began to rise. From 1990 to 1995, the volume of investments, measured in current prices, doubled. In 2002, accumulated investments in the transport infrastructure totalled SEK 27.2 billion. The figures shown include value-added tax, which means that there may be discrepancies with figures published elsewhere

In recent years there has been an increase investments in air traffic infrastructure as a result of the expansion of Arlanda Airport. Adaptation to the Schengen agreement has also led to the need for further investments in air traffic. In 2002, road investments accounted for almost 56 per cent, and railway investments for 27 per cent. The large increase in road investment in recent years is explained by investments more than doubling in the local government sector since the mid-1990s as well as by central government investments.

The category “Roads” in Table 5.1 includes central and local government investments and the investments made by private parties in roads that receive state subsidies. “Railways” includes investments made primarily by the National Rail Administration. “Public transport” chiefly comprises the investments made in connection with local and regional public transport. The figures for “Ports” do not include the investments in fairways, etc. made by the Swedish Maritime Administration.

The heading of “Support land trp” (land transport) includes the investments made in the Öresund Link. These investments are distributed between Sweden and Denmark based on the nationality of the contractor.

### 5.1. Investments in infrastructure facilities, SEK million, current prices\*.

Source: Statistics Sweden National accounts

	Roads	Railways	Public transp.	Ports	Airports	Support land trp.	Total
93	11 620	6 758	769	256	299	565	19 702
94	11 545	11 119	948	228	290	574	24 130
95	13 003	12 144	948	476	497	2 212	27 068
96	11 141	12 989	1 026	346	852	2 538	26 354
97	10 085	10 747	1 653	259	722	3 654	23 466
98	11 931	12 007	1 715	424	1 012	3 592	27 089
99	10 489	10 189	1 456	479	2 799		25 412
00	9 969	6 779	1 290	477	4 881		23 396
01	11 921	6 149	1 327	462	5 881		25 740
02	15 217	7 245	1 141	254	3 306		27 163

\* The figures include value-added tax.

Investments for undertakings in the transport sector totalled SEK 25.1 billion in 2002, which is almost six billion more than in 1996. The largest increase in investments was by undertakings in the post and telecommunication sectors. In 2000 and 2001, approximately SEK 30 billion was invested annually, which is partly explained by the investments made for the third generation of mobile telephones (UMTS).

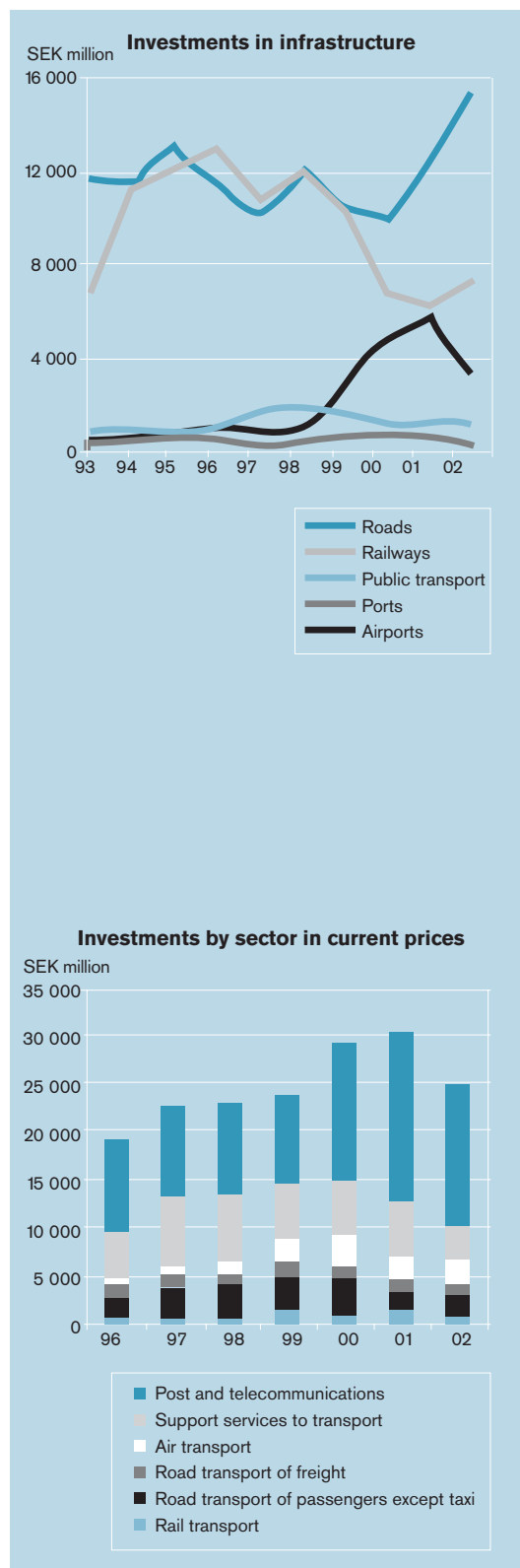
### 5.2 Investments by sectors in current prices, SEK million.

Source: Statistics Sweden Statistical Yearbook for Sweden, 2004

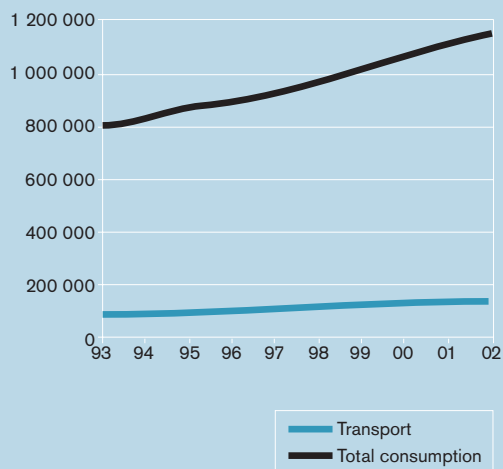
Sector (SNI 92)	96	97	98	99	00	01	02
Rail transport	602	527	601	1 262	826	1 249	895
Landtr. of passengers except taxi	2 185	3 356	3 605	3 709	3 848	2 059	1 989
Road transport of freight	1 186	1 201	1 046	1 636	1 379	1 429	1 287
Air transport	947	864	1 366	2 370	3 110	2 506	2 738
Support services for transport	4 523	7 473	7 082	5 820	5 765	5 674	3 519
Post and telecom.	10 040	9 436	9 512	9 212	14 572	17 801	14 749
Total	19 483	22 857	23 212	24 009	29 500	30 718	25 177

### Consumption

Household expenditure on transport and communications increased during the 1990s. In 1993, these costs re-



### Private consumption



presented just under 11.8 per cent of total household expenditure. In 2002, this proportion had risen to 12.7 per cent. The Swedish people pay a total of over SEK 145 billion for transport and communications, or approximately SEK 16 200 per inhabitant in 2002.

### 5.3 Private consumption by purpose, SEK million, current prices.

Source: Statistics Sweden National accounts

	Transport	Total consumption	Transport's share in %
93	94 072	796 014	11.8
94	99 149	832 961	11.9
95	106 221	865 244	12.3
96	110 109	890 592	12.4
97	119 260	931 692	12.8
98	124 651	967 191	12.9
99	135 608	1 015 743	13.4
00	144 592	1 078 361	13.4
01	142 382	1 108 419	12.8
02	145 114	1 145 306	12.7

### Energy and environment taxes from the transport sector

The state collects revenue from the transport sector in the form of energy and environment taxes. Taxes are levied on fuel for vehicles and carbon dioxide. The energy tax on fuel is levied as a fixed sum per weight or unit of volume. The fuels used as propellants are taxed with a higher energy tax. Carbon dioxide tax is levied on all fossil fuels and is calculated according to the carbon content of the fuel.

The tax rates on fuel have been adjusted since 1 January 2004. The carbon dioxide tax on fuel was increased by approximately 18 per cent. However, the energy tax rate was reduced on petrol and high-taxed unmarked oil for motor vehicles by as much as the carbon dioxide tax was increased. Fuels on which only carbon dioxide tax was charged were exempted from this increase. In addition to this, the energy tax on high-taxed oil was increased by SEK 0.10 per litre. Increases of 1.65 per cent were also charged on all fuels including propellants due to upward index adjustment.

#### 5.4. Energy and carbon dioxide taxes on 1 January 2004 for non-industrial use, fuels for motorized vehicles, SEK per litre.

Source: Swedish Tax Agency, Selective taxes, SKV 505 version 17

Fuel	Carbon dioxide tax	Energy tax	Total tax
Diesel env.class 1	2.60	0.73	3.33
Diesel env.class 2	2.60	0.98	3.57
Diesel env.class 3	2.60	1.29	3.89
Petrol env.class 1	2.11	2.68	4.79
Petrol env.class 2	2.11	2.71	4.82

#### Tax revenue from vehicles and fuels

Vehicle tax is levied on vehicles. This applies to motorcycles, cars, buses/coaches, lorries, tractors, heavy cross-country vehicles, engine equipment and trailers that are registered but not temporarily de-registered.

A sales tax is levied on motorcycles, cars, buses/coaches and lorries. As from 1 January 1997, sales tax was abolished for new cars. The state's revenue for 2003 from energy and carbon dioxide taxes on vehicle fuels and from other vehicle-related taxes totals SEK 52.5 billion.

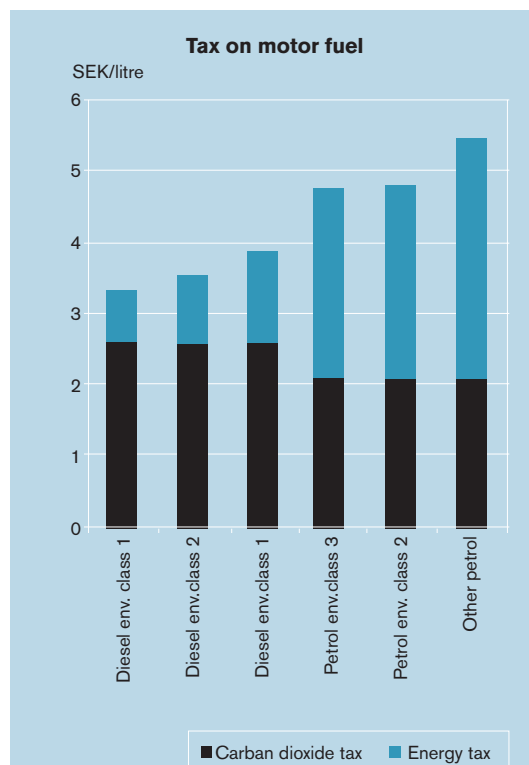
#### 5.5. Tax revenue from vehicles and fuels, SEK million, 1998-2003.

Source: National Financial Management Authority Outcome of state budget, 2003, time series.

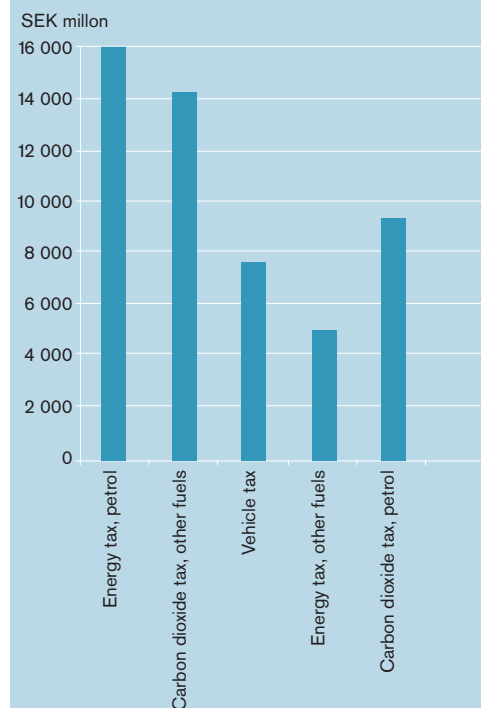
Taxes and charges	98	99	00	01	02	03
Energy tax, petrol	19 513	19 752	19 411	17 625	17 192	15 979
Carbon dioxide tax, other fuels	8 147	8 121	7 621	9 970	11 540	14 315
Vehicle tax	6 103	6 421	6 868	7 017	7 429	7 686
Energy tax, other fuels	7 043	7 089	7 788	6 538	5 921	5 045
Carbon dioxide tax, petrol	4 648	4 690	4 623	6 487	7 833	9 438
Sales tax, motor vehicles	270	230	258	0	15	0
Total	45 724	46 303	46 569	47 638	49 931	52 462

#### Central government expenditure for communications

Central government expenditure in the transport policy sector was SEK 25.3 billion in 2003. SEK 24.1 billion of this expenditure was for transport policy and SEK 1.2 billion for IT, post and telecommunications. The Civil Aviation Administration and the Swedish Maritime Administration are financed by charges from air and sea transport respectively.



#### Tax revenue from vehicles and fuels 2003



## 5.6 Central government expenditure, 2003 and 2004 budget years, SEK million.

Source: National Financial Management Authority Outcome of state budget, 2003, time series

Communications	Outcome	Grant
	2003	2004
<b>Total</b>	25 281	28 535
<b>Transport policy</b>	24 101	27 176
36:01 National Road Administration: Administration	959	1 030
36:02 Road maintenance and central government grants	14 233	15 564
36:03 National Rail Administration: Administration	755	773
36:04 Track maintenance and sector responsibilities	6 857	8 484
36:05 Compensation to SJ	39	0
36:05 Support financed by EC budget	78	200
36:06 Compensation for pleasure craft, etc.	71	71
36:07 Compensation for certain canal traffic, etc.	63	63
36:08 The shipping register	4	5
36:09 Grant to sea transport	0	0
36:09 The Shipping Board: Adm	1	3
36:10 Operating grant to municipal airports	95	81
36:11 National Public Transport Authority: Administration	12	19
36:12 National Public Transport Authority, Procurement	847	793
36:13 Certain international activities	5	3
36:14 National Road and Transport Research Institute	33	34
36:15 SIKA	49	53
36:16 Swedish Rail Agency	0	0
<b>IT, electronic communications and post</b>	1 180	1 359
37:01 National Post and Telecom Agency: Adm. costs	20	7
37:02 Procurement of community undertakings	132	153
37:03 Compensation to Posten AB	400	400
37:04 Compensation to SOS Alarm	150	144
37:05 Information technology	43	13
37:06 Joint radiocommunications for protection and security	6	192
37:07 IT-infrastructure Regional transport networks	430	450

### State purchases of traffic

The state purchases such inter-regional passenger traffic as is considered important by the Riksdag but not commercially viable. This includes transport support to Gotland, purchase of inter-regional rail and air services, etc, and compensation to transport authorities for purchase of certain public transport. In 2003, traffic was purchased for over SEK 862 million, an increase of almost 22 per cent compared with 2002.

## Public transport

The self-financing ratio of public transport provided by the transport authorities was 56 per cent in 2003. Ticket revenues accounted for almost 40 per cent and other income in the form of advertising, etc. for 16 per cent. The self-financing ratio decreased in 2003. It was 58 per cent in 2002.

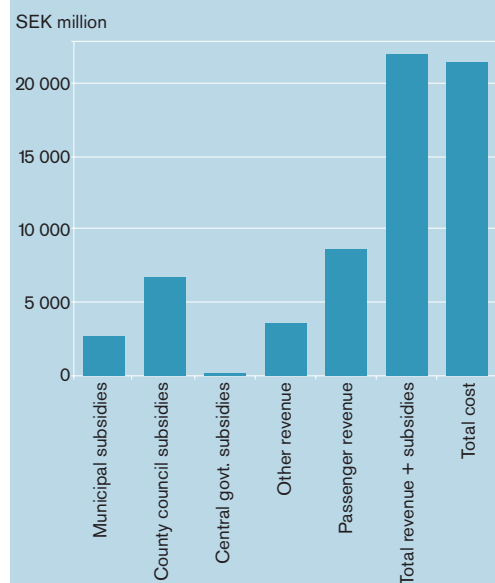
The total cost amounted to SEK 21.6 billion in 2003, which is four per cent more than in 2002.

### 5.7. Revenue and costs for county and local transport authorities in 2003, SEK million.

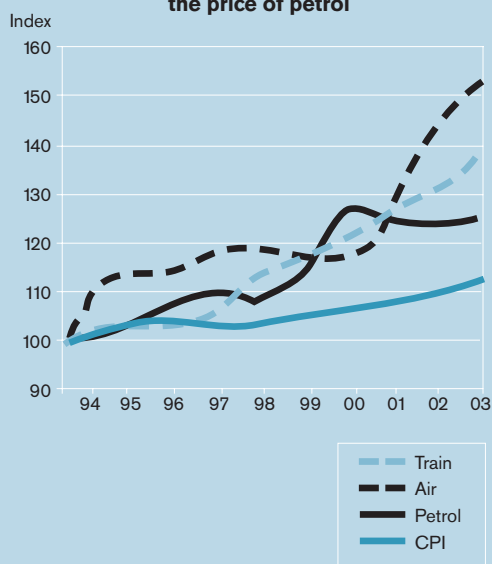
Source: SIK/SLTF/TranseK AB Local and regional public transport, 2003

	SEK m
Total cost	21 567
Total revenue + grant	21 967
Passenger revenue	8 672
Other revenue	3 600
Central govt. subsidies	231
County council subsidies	6 804
Municipal subsidies	2 660

Transport operators' revenue and costs



**Price trend for air and train tickets and the price of petrol**



### Price trend for domestic travel by air, train and car

The cost of air travel is increasingly more quickly than for other domestic travel. Ticket prices for private air travel have increased somewhat faster than the equivalent costs for travel by train and car. Air tickets have increased by 7.5 per cent between 2002 and 2003, while train ticket prices have increased by 6.7 per cent during the same period. The price of petrol has, however, increased moderately by one per cent during the period. The price of petrol has been restrained by the weaker dollar in 2003.

Transport prices for private travel have generally increased more than other consumer prices, in particular after 1995. Prices for train and air tickets, as well as the price of petrol, have increased more quickly than the consumer price index during the most recent ten-year period.

### 5.8. Price trend for air and train ticket prices and the price of petrol. Index 1994=100.

Source: Statistics from Statistics Sweden, processed and compiled by SIKA

Year	Train	Air	Petrol	CPI
94	100	100	100	100
95	104	113	101	102
96	103	114	106	103
97	103	117	110	103
98	114	119	108	103
99	115	116	112	104
00	121	116	126	105
01	125	125	126	107
02	131	142	124	110
03	139	153	125	112

### Services price index for domestic air travel

The price of domestic air travel has increased by 18 per cent from 1996 to 2003. This increase was constant between 1996 and 2002, although it then decreased by almost four per cent in 2003.

The price increase for domestic private travel has been over 38 per cent over the same period. However, the rate of price increases for this travel has been more uneven. As from 2000, the price increase for private travel has increased greatly. Prices have increased by 30 per cent in the past three years. In 2003, prices increased by 8 per cent.

Value-added tax for domestic flights was reduced on 1 January 2001 from twelve to six per cent. This value-added reduction only affects the index for private travel since business travel is calculated exclusive of value-added tax.

### 5.9. Services price index for domestic air travel, 1996=100.

Source: Statistics Sweden Consumer price index

	Business travellers	Private persons
96	100	100
97	106	104
98	110	106
99	113	102
00	115	104
01	120	110
02	123	128
03	118	138



## 5.2 ROAD TRANSPORT

### National Road Administration

The activities of the National Road Administration for 2003 accounted for SEK 22.7 billion, an increase of over four per cent in comparison with 2002. The major part, 76 per cent, of the activity is for road maintenance. Commissioned activities have accounted for over nine per cent and have increased by 17 per cent in comparison with previous years.

#### 5.10. Activities of the National Road Administration during the past three-year period, SEK million.

Source: National Road Administration Annual Report, 2003

	01	02	03
Sector responsibilities	558	589	644
Exercise of public authority	3 101	3 395	2 760
Public road maintenance	13 837	16 114	17 128
Total sum areas of activity	17 496	20 098	20 532
- of which administration	1 012	1 040	975
Commissioned activities*	1 871	1 819	2 120
Total business volume	19 368	21 0917	22 652

\*Refers to invoicing to National Road Administration's external clients.

### Other operators

Between 1993 and 2001, the industry generally showed an upward trend. Value added has increased by 60 per cent between 1993 and 2001 in current prices, and by six per cent between 2000 and 2001.

Table 5.11 shows information for companies operating in road transport of freight, freight handling, storage and warehousing of goods, other support services for land transport, other provision of transport and other postal conveyance. The breakdown has been made in accordance with the categorisation of Swedish industries, *Svensk näringsgrensindelning* (SNI92). This entails some overlapping since some companies in these sectors of industry are wholly or partly active in sea transport, air and rail transport.

**5.11. Value-added in road transport, warehousing and provision of transport for freight, SEK million in current prices.**

Source: Statistics Sweden National accounts

Value added, SEK million	
93	31 286
94	32 625
95	35 808
96	36 425
97	40 166
98	42 823
99	45 747
00	47 236
01	50 110

**Petrol price**

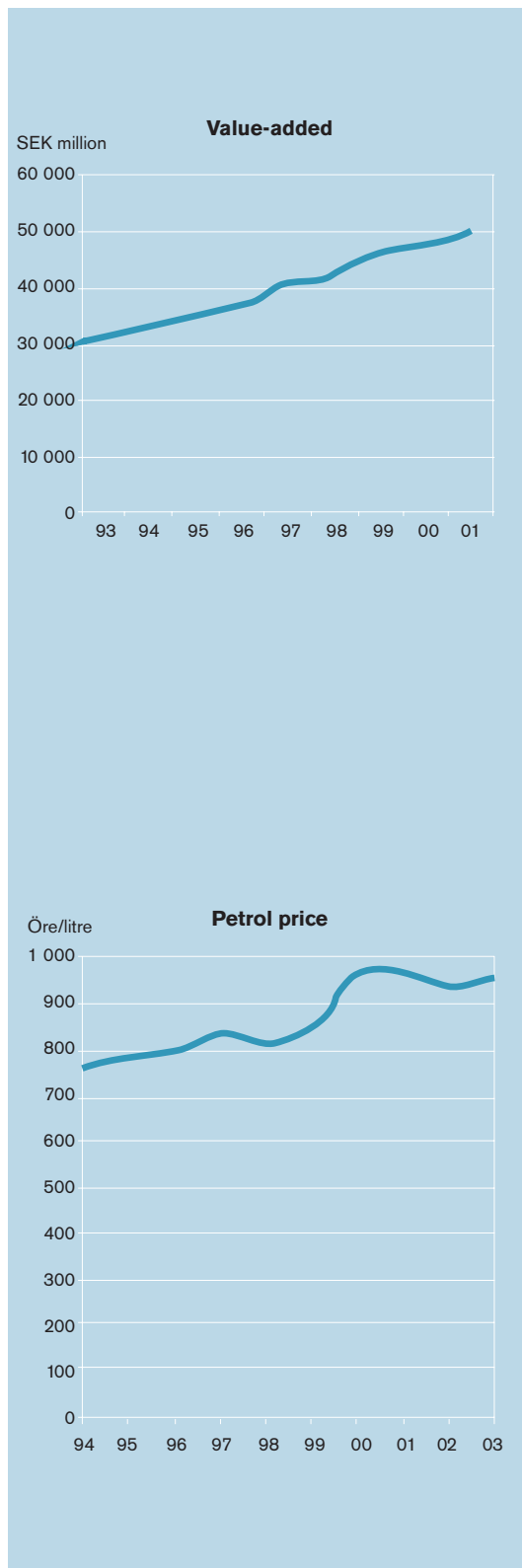
The price of petrol, in current prices, has increased by 26 per cent in the past ten years. Between 2002 and 2003, the price of petrol increased by over 1 per cent. The dollar exchange rate is an important factor for the price of oil and petrol. The high oil price has been counteracted by a weaker dollar, which has entailed a moderate development of petrol prices. 30 per cent of the pump price is the price of the product and the remainder tax.

**5.12. Annual average price of petrol, unleaded 95 octane, current prices. National average price for the week including the 15th of the month. Self-service price.**

Index 1994=100.

Source: Statistics Sweden Statistical notices PR 14 SM0409

	Öre per litre	Index 1994=100
94	750	100
95	755	101
96	785	105
97	824	110
98	808	108
99	837	112
00	952	127
01	954	127
02	933	124
03	943	126



## 5.3 RAIL TRANSPORT

### National Rail Administration

The business volume of the National Rail Administration for 2003 was SEK 12.7 billion, which was almost 14 per cent higher than the previous year. Volume has mainly increased in track maintenance. The major part of the total business volume, 77 per cent, was for track maintenance, 11 per cent for production and sale to external clients and 4 per cent sector responsibilities. The activities of the National Rail Administration in the most recent three-year period are shown in Table 5.13.

#### 5.13. Activities of the National Rail Administration in the most recent three-year period, SEK million.

Source: National Rail Administration, Annual Report, 2003

	01	02	03
Administration	665	739	748
Sector responsibilities (excl. adm.)	556	526	565
Track maintenance (excl. adm.)	7 655	8 562	9 851
Production and sale to external clients	1 330	1 373	1 568
Total business volume	10 206	11 200	12 732

## 5.4 SEA TRANSPORT

### Swedish Maritime Administration

The operating income of the Swedish Maritime Administration totalled over SEK 1.5 billion in 2003. This is equivalent to a decrease of approximately three per cent. Traffic revenue accounted for over 80 per cent of the total turnover. Operating expenses for 2003 totalled just under SEK 1.5 billion, an increase of two per cent. The activities of the Swedish Maritime Administration for the past three-year period are shown in Table 5.14.

#### 5.14. Activities of the Swedish Maritime Administration during the past three-year period. Statement of income, SEK million.

Source: Swedish Maritime Administration, Annual Report, 2003

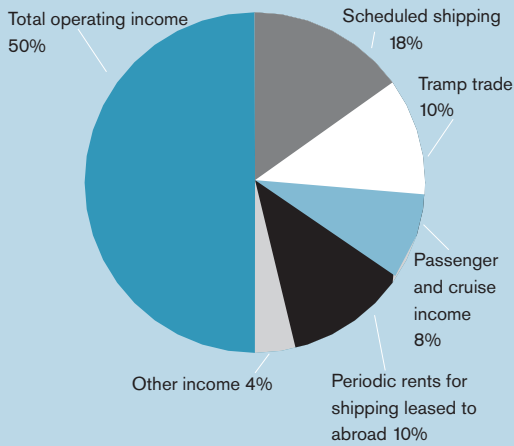
	01	02	03
Operating income, of which	1 327	1 450	1 494
- traffic income	1 065	1 265	1 349
- other external income	263	185	145
Operating expenses	-1362	-1399	-1459
Operating profit/loss	-34	51	34
Operating profit/loss after financial items	-45	25	-3
Tax equivalent	-	-7	-11
Result for the year	-45	18	27

### The shipping industry

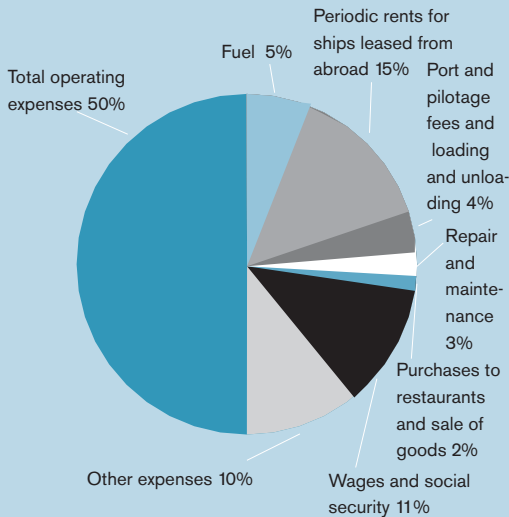
The total receipts of the shipping industry amounted to SEK 23.1 billion in 2002, which is SEK 2.5 billion less than the year before. Over 76 per cent of this income was for freight and 16 per cent for passenger transport. The rest was partly for rents from leased vessels.

Freight income totalled over SEK 17.5 billion, a reduction of SEK 3.7 billion since 2000. The total expenses of the shipping industry amounted to SEK 16 billion in 2002. The largest costs are periodic rents for leased ships, which account for 30 per cent of the total costs.

### Income, Swedish shipping



### Expenses, Swedish shipping



### 5.15. Shipping industry income and expenses, 2002.

Source: The institute of shipping analysis (SAI)

Income	SEK million
Scheduled shipping	8 130
Tramp trade	4 772
Passenger and cruise income	3 762
Periodic rents for foreign leased vessels	4 581
Other income	1 886
<b>Total operating income</b>	<b>23 131</b>

Costs	SEK million
Fuel	1 579
Periodic rents for ships leased from abroad	4 714
Port and pilotage fees and loading/unloading	1 171
Rep. and maintenance	1 062
Purchases for rest. and sale of goods	704
Wages and social security	3 606
Other costs	3 119
<b>Total operating costs</b>	<b>15 955</b>

## 5.5 AIR TRANSPORT

### Civil Aviation Administration

In 2003, air traffic decreased for the third consecutive year. The income of the Civil Aviation Administration fell sharply, amounting to a loss of SEK 48 million before tax, compared with a profit of SEK 151 million the previous year.

#### 5.16. The operations of the Civil Aviation Administration during the past three-year period. Statement of income, SEK million.

Source: Civil Aviation Administration, Annual Report, 2003

	01	02	03
Operating income, of which	5 088	5 384	5 402
Operating expenses	4 965	4 884	5 113
Operating profit/loss	143	489	200
Profit/loss after financial items	20	151	-48
Tax and tax equivalent	-7	-46	11
Result	13	105	-37

### Other operators

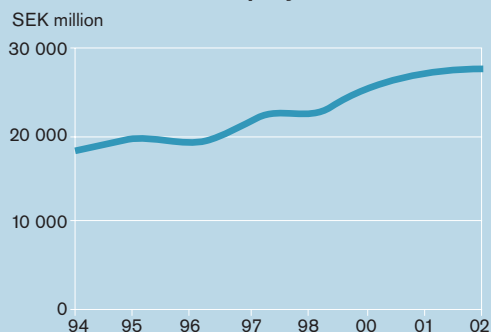
The turnover of the airline companies between 1992 and 2001 increased by over SEK 11 billion (current prices) or by 71 per cent to just under SEK 27 billion. From 1994 to 2001, statistics for airlines operating scheduled and charter services have been reported separately. This was not possible in 2002 due to the information being secret.

#### 5.17. Annual turnover for airlines operating scheduled and chartered services, SEK million.

Source: Statistics Sweden Economic statistics

	Scheduled	Charter	Total
94	17 067	795	17 862
95	17 983	1 296	19 279
96	18 136	1 131	19 267
97	19 728	1 858	21 586
98	19 256	3 027	22 283
00	20 220	3 960	24 180
01	22 500	4 550	27 050
02			26 912

Airline company turnover



## 5.6 POSTAL SERVICES

### Operators

In 2003, there were 31 operators engaging in postal activities, which is eight operators fewer than the previous year. Altogether, operating income totalled almost SEK 24 billion. Over 85 per cent of this income was generated by the large postal companies.

Costs amounted to SEK 24.6 billion and thus exceeded income. A comparison between 2002 and 2003 shows that income increased by 8.6 per cent, while costs increased by 8.9 per cent.

### Prices

Taking into consideration the general price trend, it is more expensive today to send a letter than it was ten years ago. This is the case for domestic and international letters (20 grams) and for economy (second class) letters (20 and 100 grams) and international letters (20 grams), as shown here.

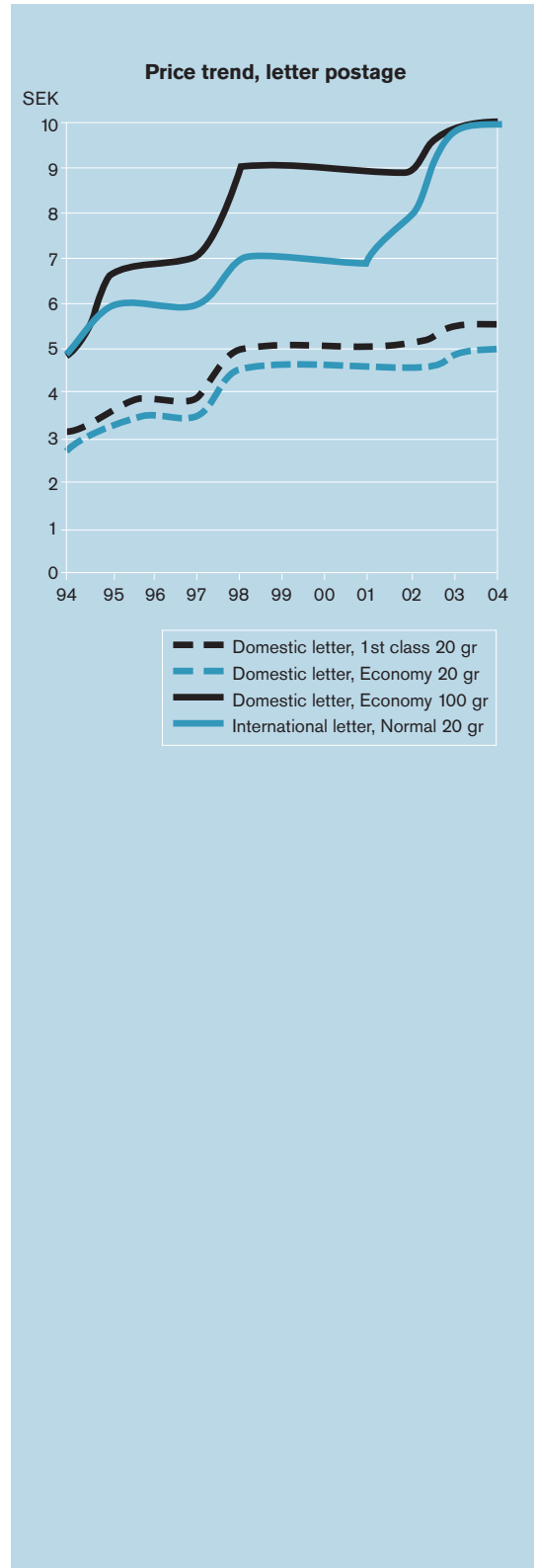
In 2004, letter postage was SEK 5.50 for a normal domestic letter, which has been unchanged since 2003. From 1998 to 2002 inclusive, postage was SEK 5. Postage for an economy letter (20 grams) was SEK 5 for an economy letter (100 grams) and SEK 10 for an international letter (20 grams).

The largest increase in postage has been for economy letters (100 grams), which increased by almost 108 per cent between 1994 and 2004. Postage for domestic letters (20 grams) and economy letter (20 grams) increased during the same period by 72 and 79 per cent respectively. Postage for international letters (20 grams) increased in price by 100 per cent during the ten-year period.

### 5.18. Price trend for letter postage in real prices, stamped letters, SEK. Index 1993=100

Source: Sweden Post, Postage tables

	Domestic 1st class 20 gr	Domestic Economy 20 gr	Domestic Economy 100 gr	International Normal 20 gr
94	3,20	2.80	4.80	5.00
95	3.70	3.35	6.70	6.00
96	3.85	3.50	7.00	6.00
97	3.85	3.50	7.00	6.00
98	5.00	4.50	9.00	7.00
99	5.00	4.50	9.00	7.00
00	5.00	4.50	9.00	7.00
01	5.00	4.50	9.00	7.00
02	5.00	4.50	9.00	8.00
03	5.50	5.00	10.00	10.00
04	5.50	5.00	10.00	10.00



## 5.7 TELECOM SERVICES

### Telecom operators

The total turnover of the telecommunications industry increased by over 28 per cent from 1997 to 2003. Between 1999 and 2001, turnover increased by an average of over nine per cent per year. However, in 2002, the positive trend came to a halt and the value of sales remained substantially unchanged between 2001 and 2002.

In 2003, the total turnover of the industry decreased slightly despite turnover in the cable TV operations segment increasing greatly during the year.

### 5.19. Turnover from telephone services by sector, SEK million.

Source: SIKA/Statistics Sweden SIKA Statistics 2004:4 Telecommunications, 2003

Sector	97	98	99	00	01	02	03
Network operations	50 763	57 218	61 349	67 648	72 722	73 366	71 280
Transmission	2 428	1 317	2 155	2 685	3 089	2 245	2 113
Cable-TV-operation	567	238	501	581	778	598	2 049
Total	53 759	58 772	64 006	70 914	76 589	76 209	75 439

Despite an increase in total turnover, income from fixed telephone services has remained relatively constant since 1998. From having had an annual increase of a couple of per cent until 2001, turnover has decreased in recent years by approximately four per cent per year. Turnover for fixed telephone services is at largely the same level in 2003 as it was in 1998.

The increase in total turnover instead originates from increased income for mobile services and other telecommunications and network services. From 1998 to 2001, income from mobile services increased by an average of 15 per cent per year. Growth has been weaker in the past two years and, in terms of turnover, the mobile telephone market has increased by three per cent per year. Overall, turnover for mobile telephone has increased by approximately seven billion Swedish kronor since 1998. Turnover for other telecommunications and network services, which mainly consists of Internet services and joint operation services has also increased by approximately SEK

7 billion during this period.

The increased importance of mobile and other services has changed the structure of turnover in the telecommunications market. In 1998, fixed telephony accounted for approximately 42 per cent of total turnover, while mobile telephony accounted for 18 per cent and other telecommunications and network services for 13 per cent. In 2003, the relation was 32 per cent for fixed telephone services, 23 per cent for mobile services and 20 per cent for other telecommunications and network services.

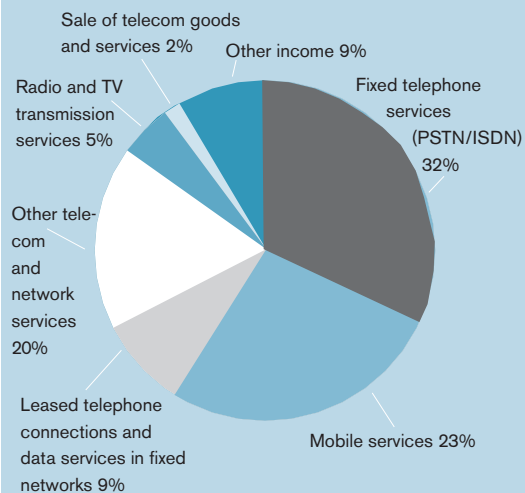
#### 5.20. Turnover by type of income, SEK million.

Source: SIK/Statistics Sweden SIK Statistics 2004:4 Telecommunications, 2003

Type of service	98	99	00	01	02	03
Fixed telephone services (PSTN & ISDN)	24 644	25 529	26 045	26 537	25 515	24 428
Mobile services	10 741	12 658	14 392	16 247	16 750	17 241
Leased telephone connections and data services in fixed networks	5 415	6 536	6 261	6 748	7 393	7 027
Other telecommunication and network services	7 642	9 279	12 939	14 674	14 120	15 094
Radio and TV transmission services	2 183	2 441	4 043	4 468	3 549	3 426
Sale of goods and services related to telecom	5 130	4 790	4 216	5 257	3 554	1 750
Other income	2 018	2 773	3 018	2 658	5 328	6 473
Total turnover	58 773	64 006	70 914	76 589	76 209	75 439

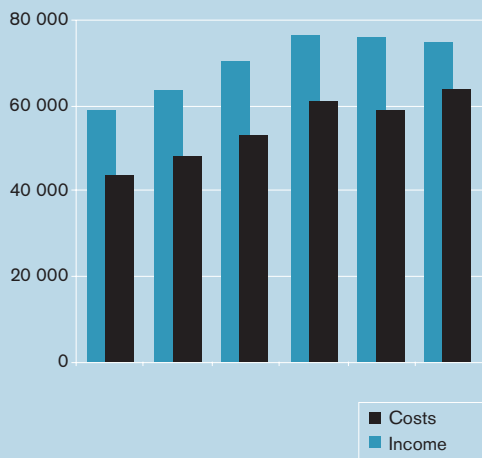
Costs have also increased apace with the increased turnover. Between 1998 and 2001, total operating costs increased by 39 per cent, which corresponds to an average of over 11 per cent per year. During 2001, costs increased most, i.e. by 16 per cent. In connection with staff cuts in the segment in 2002, operating costs decreased, however, by four per cent, before again increasing in 2003.

Telecommunications, income



### Telecommunications, income and costs

SEK million



### 5.21. Operating expenses, by sector, SEK million.

Source: SIKA/Statistics Sweden SIKA Statistics 2004:4 Telecommunications, 2003

Sector	98	99	00	01	02	03
Network operations	42 729	46 480	49 598	57 120	56 409	60 329
Transmission	1 030	1 609	2 637	3 280	1 911	1 807
Cable-TV operation	187	447	648	702	497	2 086
Telephone services, total	43 946	48 536	52 882	61 102	58 817	64 222

### 5.22. Operating income and operating costs 1998–2003, SEK million.

Source: SIKA/Statistics Sweden SIKA Statistics 2004: 4 Telecommunications, 2003

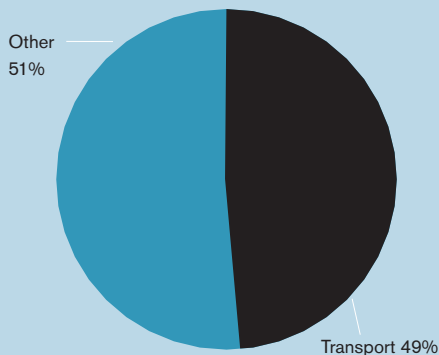
	98	99	00	01	02	03
Income	58 773	64 006	70 914	76 589	76 209	75 439
Costs	43 946	48 536	52 882	61 102	58 817	64 222

# 6. Environment and safety

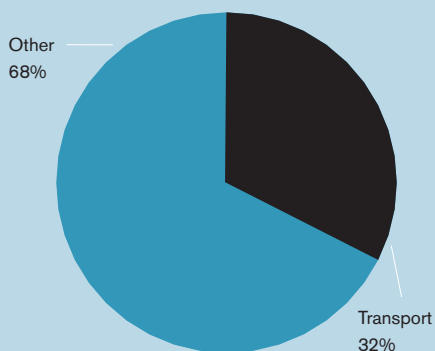
This chapter presents the emissions of carbon dioxide, sulphur dioxide, volatile hydrocarbons and nitrogen oxides by the transport sector. It also contains information on safety in road and rail transport, sea transport and air transport.

*Bunkering* here means refuelling of ships and aircraft in international traffic.

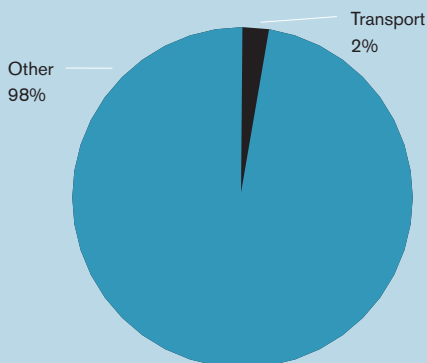
### Sulphur dioxides (excl. bunkering)



### Nitrogen oxides (excl. bunkering)



### Hydrocarbons (excl. bunkering)



## 6.1 ENVIRONMENT

### Emissions to the air

According to information from the Swedish Environmental Protection Agency, the transport sector accounts for 37 per cent of carbon dioxide emissions, almost half of the nitrogen oxide emissions and just under a third of emissions of volatile hydrocarbons. Emissions of sulphur dioxide from the transport sector accounts for only a couple of per cent of the total emissions. However, if bunkering of fuel is included, the transport sector's proportion of emissions becomes considerably greater (see fact panel). The transport sector is then responsible for almost 20 per cent of the total emissions of sulphur dioxide.

Statistics are based on calculations and source material of varying kinds. However, there is some uncertainty in the reporting and information can deviate from corresponding information reported elsewhere.

#### 6.1. The transport sector's emissions and the sector's share of the total emissions in all sectors, 2002. Working machines are not included in the transport sector.

Source: Swedish Environmental Protection Agency, Sweden's National Inventory Report 2004

	Excl bunkering			Incl bunkering		
	Total	Transp.	Transp's share	Total	Transp.	Transp's share
Carbon dioxide	54 753	20 025	37 %	60 332	25 604	42 %
Sulphur dioxide	59	1	2 %	71	13	19 %
Nitrogen oxides	243	119	49 %	336	212	63 %
Hydrocarbons (VOC)	295	93	32 %	298	96	32 %

The transport agencies have been instructed by the government to monitor the transport policy goals annually, including the subsidiary objective of a good environment. The following information has been obtained from the reports of the transport agencies, as presented in sector reports and annual reports. This information does not completely tally with the information presented above from the Swedish Environmental Protection Agency. This is partly explained by the information on bunkering being treated differently and in-data and calculation methods

differing between agencies. Furthermore, the figures from the Swedish Environmental Protection Agency are based on deliveries in Sweden, while the estimates by the transport authorities are based on the traffic in Sweden.

Compared with 1990, the emissions of **carbon dioxide** from the transport sector increased by almost 6 per cent in 2003. Compared with 2002, emissions from the transport sector have increased by 0.4 per cent. Road traffic emissions account for over 80 per cent of the emissions and have increased by over 1 per cent compared with 2002.

Compared with 1990, carbon dioxide emissions from road traffic have increased by over nine per cent. This increase is primarily due to increased emissions from heavy lorries during the period 1990 to 2003 due to increased traffic performance. Emissions from light lorries (<3.5 tonnes) have also increased during this period. A further explanation for emissions not decreasing is that the Swedish car fleet has become increasingly heavy with an greater motor power, which has counteracted the better fuel economy achieved.

Emissions from air traffic have decreased by almost seven per cent between 2002 and 2003. This reduction is due to a reduction in traffic.

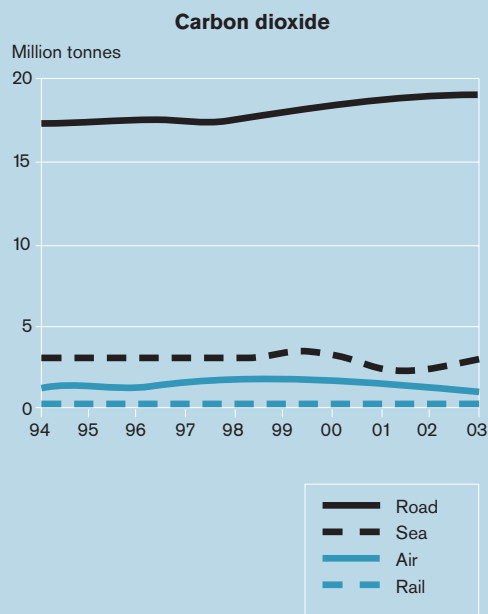
### 6.2. Emissions of carbon dioxide by the transport sector, million tonnes.

Source: Sector and annual reports from the National Rail Administration, the Civil Aviation Administration, the Swedish Maritime Administration and the National Road Administration, 2003.

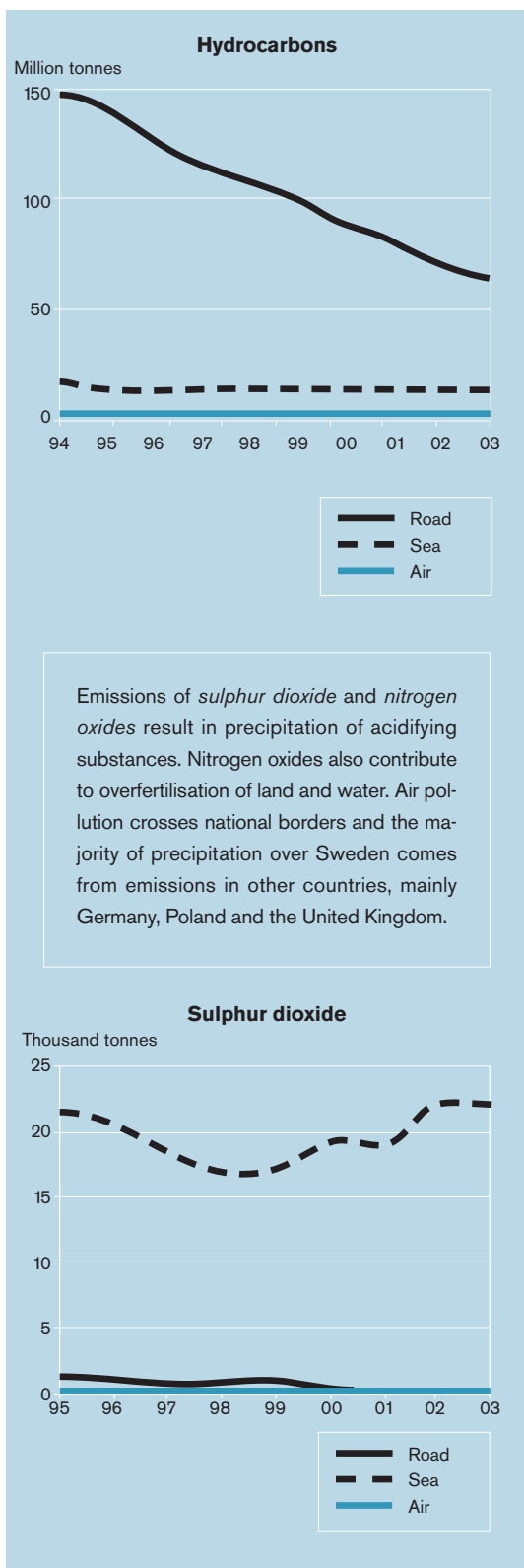
	Road	Sea	Air	Rail	Total
90	17.4	2.8	1.6	0.1	21.9
95	17.5	3.2	1.4	0.1	22.2
00	18.3	3.0	1.6	0.1	23.0
01	18.5	2.6	1.5	0.1	22.7
02	18.8	2.8	1.4	0.1	23.1
03	19.0	2.8	1.3	0.1	23.2

The emissions of the transport sector of **volatile hydrocarbon** in 2003 have decreased by almost nine per cent compared with 2002. Road traffic accounts for over 82 per cent of the emissions. Hydrocarbon emissions from road traffic have fallen sharply throughout the 1990s. During the period 1995 to 2003, emissions from the

*Carbon dioxide* is released when fossil fuels are burnt. The emissions of carbon dioxide and other gases lead to an increase in the atmosphere of greenhouse gases. The gases allow solar radiation to pass through to the earth but prevent it radiating back into space. More heat is captured and the earth's average temperature increases. This is usually called the greenhouse effect.



*Volatile hydrocarbon compounds (VOC)* and similar organic substances (except methane) contribute to the accumulation of ozone in the lower atmospheric layers. The ozone which is useful as an UV filter in the atmosphere, is harmful for people, animal and plants in layers of air close to the ground.



transport sector have halved. This reduction is largely due to more stringent exhaust requirements, including systems that greatly reduce evaporation of fuel that were introduced for cars as from 1989's models.

The emissions of air traffic have decreased slightly in recent years due to the reduction in traffic.

### 6.3. Emissions of volatile hydrocarbons from the transport sector, thousand tonnes.

Source: Sector and annual reports from the National Rail Administration, the Civil Aviation Administration, the Swedish Maritime Administration and the National Road Administration, 2003.

	Road	Sea	Air	Rail	Total
95	149.4	16.2	1.0	0.1	166.7
00	94.1	13.8	0.9	0.1	108.9
01	83.8	13.8	0.7	0.1	98.4
02	75.6	13.8	0.6	0.1	90.1
03	67.9	13.8	0.5	0.1	82.3

Emissions of **sulphur dioxide** by the transport sector have decreased slightly during the period 1995 to 2003. Since 1995, emissions from road traffic have decreased due to fuels with a reduced sulphur content. Emissions from air traffic have decreased slightly due to the reduction in traffic. 96 per cent of the emissions of sulphur dioxide in the transport sector come from sea transport.

There is considerable uncertainty about the emissions of sea transport, which makes it difficult to make a statement on developments. The Swedish Maritime Administration has together with SIKÅ, the Swedish Environmental Protection Agency and SMED, a consortium consisting of the Swedish Meteorological and Hydrological Institute (SMHI), Statistics Sweden and the Swedish Environmental Research Institute (IVL), carried out work to review the emissions to the air of sea transport. It has been seen that estimates of the sulphur dioxide emissions can be underestimated by between 20 and 50 per cent due to the sulphur content in fuel being higher than previously assumed.

#### 6.4. Emissions of sulphur dioxide from the transport sector, thousand tonnes

Source: Sector and annual reports from the National Rail Administration, the Civil Aviation Administration, the Swedish Maritime Administration and the National Road Administration, 2003.

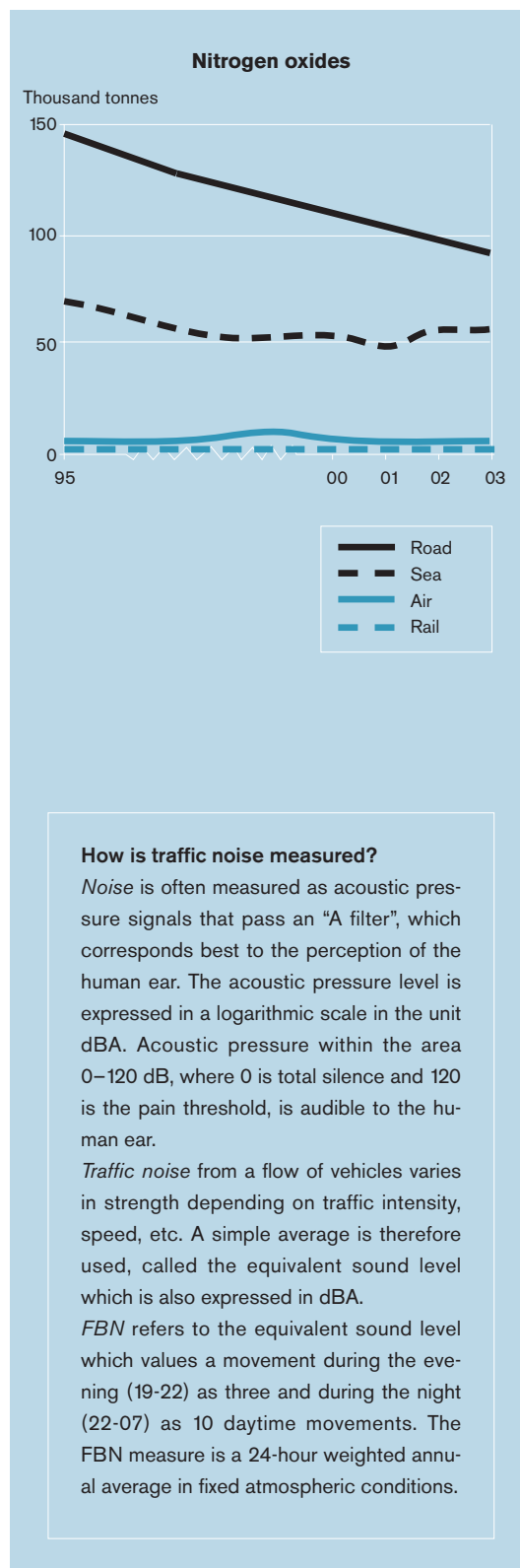
	Road	Sea	Air	Rail	Total
95	1.5	21.6	0.4	0.1	23.6
00	0.4	19.0	0.5	0.1	20.0
01	0.4	19.0	0.5	0.1	20.0
02	0.4	22.0	0.4	0.1	22.9
03	0.4	22.0	0.4	0.1	22.9

Emissions of **nitrogen oxides** from the transport sector have decreased by over 31 per cent in the period 1995 to 2003. Road traffic accounted for almost 60 per cent of the transport sector's emissions of nitrogen oxides in 2003. The greatest part of this reduction is due to more stringent exhaust requirements both for light and heavy road vehicles. The reduction is also due to an increasing number of ships undertaking nitrogen-oxide reducing measures in response to the environmentally-differentiated fairway charges. As in the case of emissions of sulphur dioxide, the emission statistics for sea transport are very uncertain. With respect to air traffic, emissions of nitrogen oxides have decreased in recent years, which can largely be explained by the reduced traffic performance.

#### 6.5. Emissions of nitrogen oxides by the transport sector, thousand tonnes.

Source: Sector and annual reports from the National Rail Administration, the Civil Aviation Administration, the Swedish Maritime Administration and the National Road Administration, 2003.

	Road	Sea	Air	Rail	Total
95	147.2	69.5	5.7	1.7	224.1
00	110.7	54.2	7.1	1.6	173.6
01	103.7	51.0	6.7	1.6	163.0
02	98.3	56.0	5.9	1.5	161.7
03	91.5	56.0	5.5	1.5	154.5



## Noise

Over 2 million people were exposed in to traffic noise levels over 55 dBA equivalent level outdoors. It is estimated that approximately 1.5 million people are exposed to noise of at least 55 dBA from road traffic in housing, care facilities, and educational premises. As regards noise in excess of 65 dBA equivalent level outdoors, the number of person exposed is stated at 20 000 to 25 000 along the state road network and 160 000 to 230 000 people along the county road network. Furthermore, 100 000 to 300 000 people are exposed to noise outside in excess of the target value for the maximum level (70 dBA) but have less noise than the target value for the equivalent level. The corresponding figure is not available for the county roads.

It is estimated that approximately 500 000 people are exposed to noise in excess of 55 dBA from rail traffic. Around 14 000 dwellings (approximately 35 000 residents) are exposed to a maximum noise level in excess of 55 dBA indoors at night.

Approximately 50 000 people were exposed to noise in excess of 55 dBA from civil and military aviation combined in excess of 55 dBA and 30 000 were exposed to noise from military aircraft.

## 6.2 SAFETY

### Road transport

In 2003, 529 people died in road accidents that were reported to the police. At first sight, this would seem to be a reduction of 31 per cent or almost five per cent compared with 2002. However, the whole reduction can be explained by the application of the definition “killed” being changed between 2002 and 2003 so that information on people who have died due to illness has been removed from the statistics. These totalled 34 persons in 2003. The number of fatalities is therefore substantially unchanged compared with 2002. Viewed in a longer perspective, the death rate decreased until the mid-1990s and then the graph has flattened out to 500-600 deaths annually.

In 2003, 4 664 persons were severely injured in road

traffic. This is an increase of 72 persons or almost two per cent compared with 2002. The number of people seriously injured in road traffic has declined since 1973. The downward trend was interrupted in 1997 and the number seems since then to have stabilised at around 4 000 severely injured persons until 2002, when reporting of the number of seriously injured increased greatly when a new system for reporting accidents STRADA was commissioned.

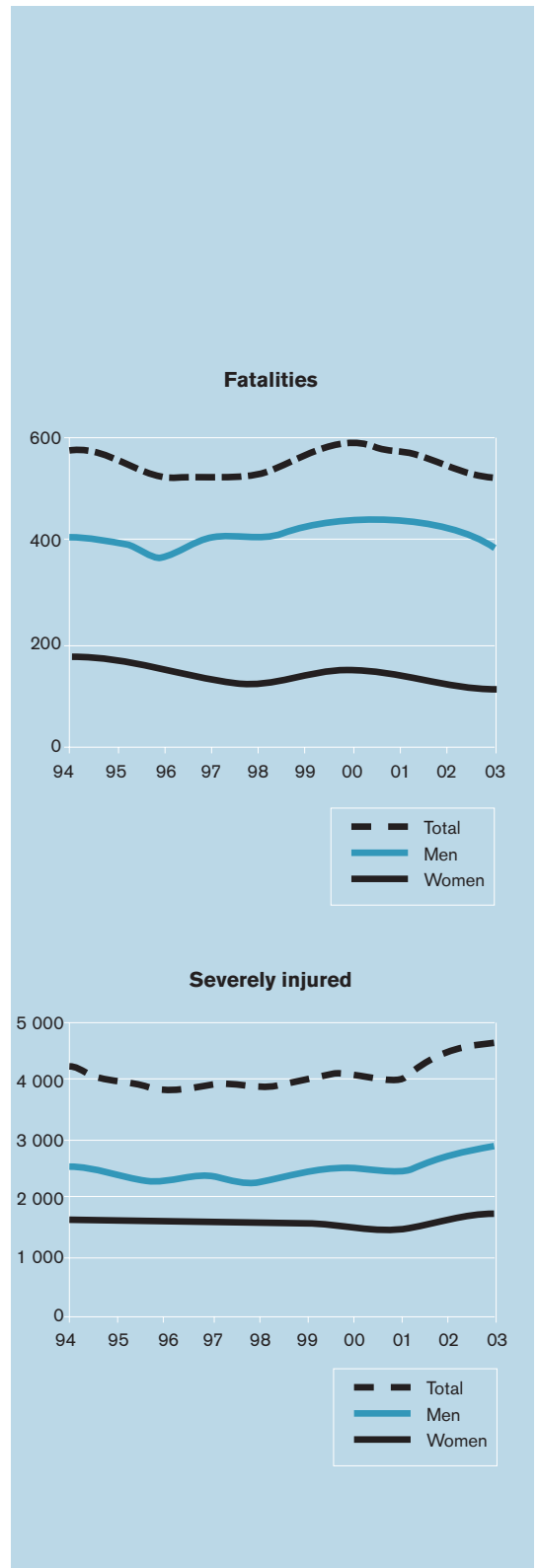
There are a number of unrecorded cases in statistics on road traffic injuries/accidents that are reported to the police. In general, the number of unrecorded cases diminishes with the severity of the injury, for instance, the number of fatalities is known, while the number of those severely injured may only account for 60 per cent. Regular studies are carried out aimed at increasing knowledge of the number of unrecorded cases.

**6.6. The number of fatalities and severely injured persons in road accidents reported to the police, by gender.**

Source: SIKI/Statistics Sweden/National Road Administration Road traffic injuries, 2003

	Fatalities			Severely injured		
	Men	Women	Total	Men	Women	Total
94	408	180	589	2 560	1 634	4 221
95	403	167	572	2 421	1 535	3 965
96	376	161	537	2 294	1 527	3 837
97	404	136	541	2 360	1 507	3 917
98	410	121	531	2 277	1 569	3 883
99	422	158	580	2 448	1 543	4 043
00	438	153	591	2 486	1 576	4 103
01	433	149	583	2 498	1 514	4 058
02	423	137	560	2 802	1 711	4 592
03	390	138	529	2 891	1 762	4 664

Car drivers are the group of road users with most fatalities, followed by car passengers and pedestrians. In 2003, 268 car drivers were killed, which is over 50 per cent of the total number of those killed in road accidents. All groups of road users except motorcycle drivers decreased between 2002 and 2003. The number of motorcycle drivers killed increased by eleven persons, which is equivalent to an increase of 30 per cent compared with 2002. It is difficult to explain this large increase although the number of fatalities is relatively small which means that random changes have a large impact. At the same time,





the number of vehicles in use has increased which probably affects the frequency.

#### 6.7. The number of fatalities in road accidents reported to the police by category of road user.

Source: SIKI/Statistics Sweden/National Road Administration Road traffic injuries, 2003

	Car driver	Car passenger	MC driver	MC-pass	Moped	Cyclist	Pedestrian	Others	Total
94	293	115	27	4	10	52	86	2	589
95	283	111	29	3	9	57	71	9	572
96	243	113	38	2	14	49	74	4	537
97	273	98	33	3	13	42	72	7	541
98	271	74	33	7	12	58	69	7	531
99	277	115	36	0	12	45	86	9	580
00	301	116	36	3	10	47	73	5	591
01	278	121	35	3	9	43	87	7	583
02	289	116	34	3	12	42	58	6	560
03	268	110	45	2	9	35	55	5	529

The information on the number of road accidents is not presented in this yearbook since the figures are not comparable with previous years due to the reduction in the number of unreported accidents with the commissioning of the new system for reporting accidents, STRADA. The report will be resumed in the next yearbook.

#### Rail transport

Rail traffic accidents have a singular character that can have a considerable effect on statistics. In Table 6.8, a three-point sliding average has therefore been used to even out the effects of particular events. The reported figures below only include accidents with moving rolling stock.

The number of fatalities and severely injured in rail traffic decreased greatly at the end of the 1980s and the early 1990s. As from the mid-1990s, the level seems to have stabilised at around 60 to 70 persons. The reported figures do not include suicides. In 2003, 59 suicides were registered in rail traffic and five in metro traffic.

### 6.8. The number of fatalities and severely injured persons in rail traffic accidents, three-point sliding average.

Source: Railway Inspectorate

	Railway	Metro	Tram	Total
93	47	14	17	79
94	41	15	6	62
95	40	14	7	61
96	45	13	9	67
97	46	12	12	71
98	48	10	14	73
99	40	9	16	66
00	36	6	17	60
01	32	7	18	57
02	34	5	19	58

The number of fatalities in railway accidents has fluctuated between 15 and 25 in the past decade. In 2003, 20 persons died in railway accidents. Of these, three died in accidents on level crossings. 23 persons were severely injured in railway accidents in 2003, six of them in level crossing accidents.

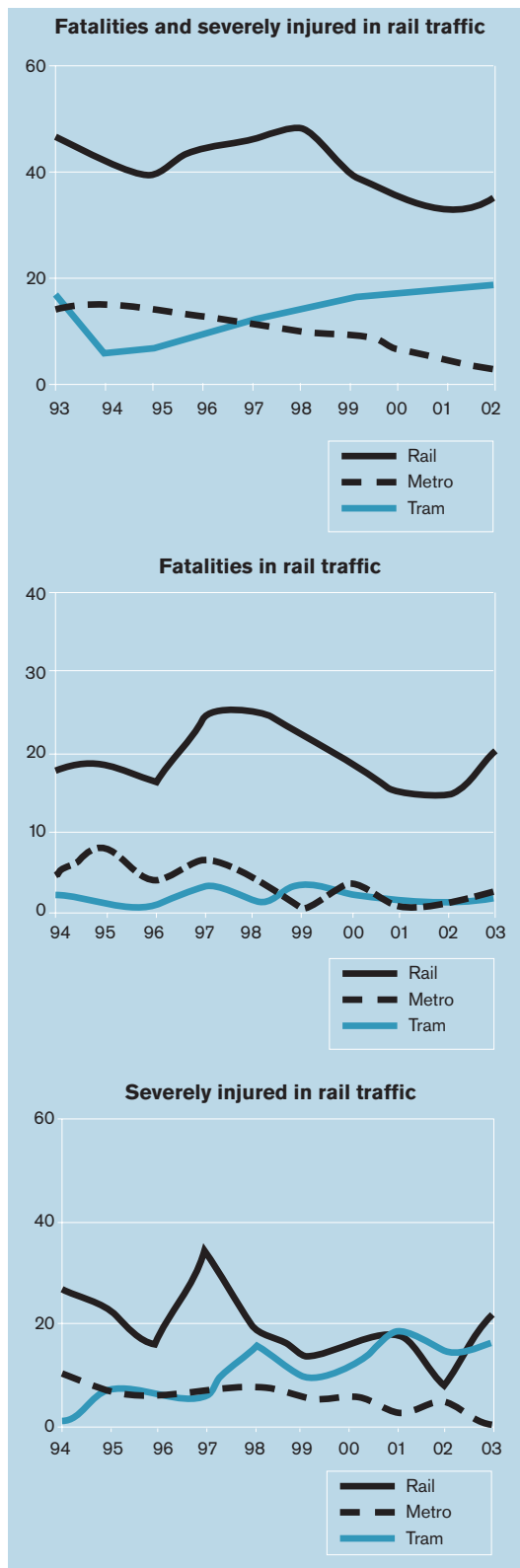
The number of persons who died in tram accidents has not exceeded three during the past decade. However, the number of severely injured persons has increased from two persons in 1994 to 18 persons in 2003.

In the past decade, the number of fatalities and severely injured persons in metro (underground) accidents have both decreased. The number of fatalities varies between zero and ten persons per year. In 2003, five persons were killed. No person was seriously injured in metro accidents in 2003.

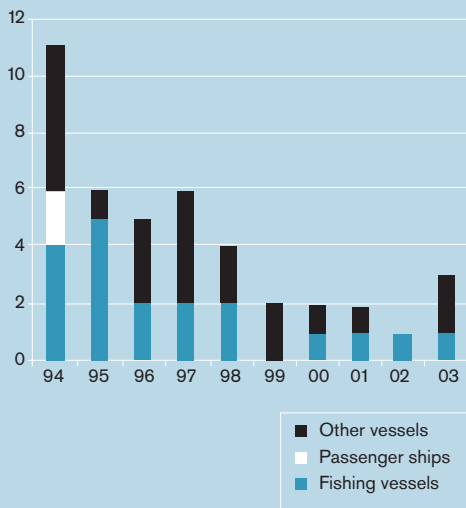
### 6.9. The number of fatalities and severely injured persons in rail accidents.

Source: Railway Inspectorate

	Railway		Metro		Tram		Total	
	Fatalities	Sev. injured	Fatalities	Sev. injured	Fatalities	Sev. injured	Fatalities	Sev. injured
94	18	28	5	11	2	2	25	41
95	19	22	9	7	1	8	29	37
96	16	17	4	7	1	7	21	31
97	24	36	7	6	3	8	34	50
98	25	21	4	8	1	17	30	46
99	22	16	0	6	3	11	25	33
00	19	18	4	6	3	14	26	38
01	15	19	0	3	1	20	16	42
02	15	11	2	5	0	16	17	32
03	20	23	5	0	2	18	27	41



**Swedish-registered vessels shipwrecked in Swedish waters**



6.

### Commercial shipping

In 2003, three Swedish-registered ships were shipwrecked in Swedish waters, a fishing vessel and two other vessels. No fatalities occurred in conjunction with the shipwrecks. From 1994–2003, a total of 42 ships have been shipwrecked, 19 of which were fishing vessels and two passenger ships.

No foreign ships were shipwrecked in Swedish waters in 2003. Between 1994 and 2003, a total of 16 foreign ships were shipwrecked in Swedish waters, eight of them being fishing vessels and eight categorised as other vessels.

The sinking of the Estonia in 1994, when 852 people died, is not included in the figures. This is because Estonia was not a Swedish-registered vessel. Moreover, the accident did not take place in Swedish waters.

### 6.10. Number of Swedish vessels shipwrecked in Swedish waters, by category of ship.

Source: Swedish Maritime Administration, Summary of reported ship accidents and incidents and accidents involving persons in Swedish commercial and fishing vessels, 2003

	Fishing vessels	Pass.vessels	Other ships	Total
94	4	2	5	11
95	5	0	1	6
96	2	0	3	5
97	2	0	4	6
98	2	0	2	4
99	0	0	2	2
00	1	0	1	2
01	1	0	1	2
02	1	0	0	1
03	1	0	2	3

Swedish-registered vessels were involved in 81 accidents in Swedish waters in 2003. Of these 22 went aground, 26 had engine breakdowns and 8 were involved in collisions with other ships

The trend from 1994 to 2003 in Swedish waters shows that the number of accidents involving Swedish-registered vessels varied between 81 and 131. The number of accidents peaked in 1997 at 131 and then fell again. The number of accidents with foreign vessels shows a similar trend, with the exception of the number of accidents being fewer.

### 6.11. The number of reported ship accidents in Swedish waters, by flag.

Source: Swedish Maritime Administration, Summary of reported ship accidents and incidents and accidents involving persons in Swedish commercial and fishing vessels, 2003

	Swedish	Foreign
94	91	45
95	100	51
96	115	53
97	131	68
98	126	50
99	111	59
00	102	62
01	108	48
02	82	52
03	81	48

### Pleasure craft

The number of fatalities and the number of accidents leading to fatalities involving pleasure craft has decreased since the early 1990s. Between 2000 and 2001, the number of accidents and fatalities both almost doubled, however, since the statistics started to include not only incidents in boats but also incidents in harbours and on jetties.

In 2003, 39 people died in 35 accidents, which is a reduction since 2001 of nine persons and seven accidents. In general, the majority of accidents take place during the summer. During the period June to August 2003, 24 persons died, which is over 60 per cent of all fatalities.

### 6.12. The number of fatalities in accidents with pleasure craft and the number of accidents involving fatalities.

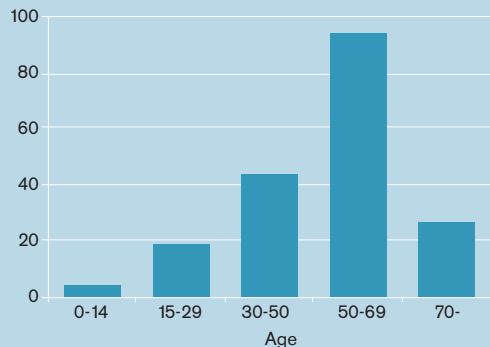
Source: Swedish Maritime Administration Sea rescue call-outs 2003

	Fatalities	Accidents
94	46	39
95	47	40
96	33	31
97	38	33
98	42	36
99	28	28
00	27	22
01	48	42
02	46	43
03	39	35



6.

**Fatalities in pleasure craft accidents**



In the five-year period from 1998 to 2003, 188 persons were killed in pleasure craft accidents. Of these, over 65 per cent were aged between 40 and 69 and two per cent under twenty years of age. Almost 25 per cent of the fatalities took place in the archipelago, over 47 per cent in inland lakes,, approximately nine per cent on the coast and the open sea, eight per cent in rivers and streams and just under twelve per cent in harbours or canals.

**6.13. Number of fatalities in accidents with pleasure craft, by age.**

Source: Swedish Maritime Administration Sea rescue, call-outs 2003

Age	Number
0-7	0
8-14	2
15-19	1
20-29	17
30-39	15
40-49	29
50-59	54
60-69	40
70-79	18
80-	8
Unknown	4

**Air transport**

Between 1994 and 2003, 167 persons died in accidents with Swedish-registered powered aircraft. 66 per cent died in accidents in scheduled services, 26 per cent in private aviation and seven per cent in commercial aviation.

The number of injured persons in accidents with Swedish-registered powered aircraft totalled 57 during the period. Of these, 60 per cent can be referred to private aviation, eleven per cent to commercial aviation and six per cent to training flights. Five persons were seriously or slightly injured in accidents in charter or scheduled services, which is six persons fewer than in commercial aviation.

In October 2001, 118 persons died at Linate Airport in Milan during the take-off of a SAS plane. This was SAS's first fatal accident since 1969 when an aircraft crashed near Los Angeles.

**6.14. Number of fatalities and injured persons in accidents with Swedish-registered powered aircraft, irrespective of place of accident.**

Source: SIKACivil Aviation Administration, Air transport, 2003

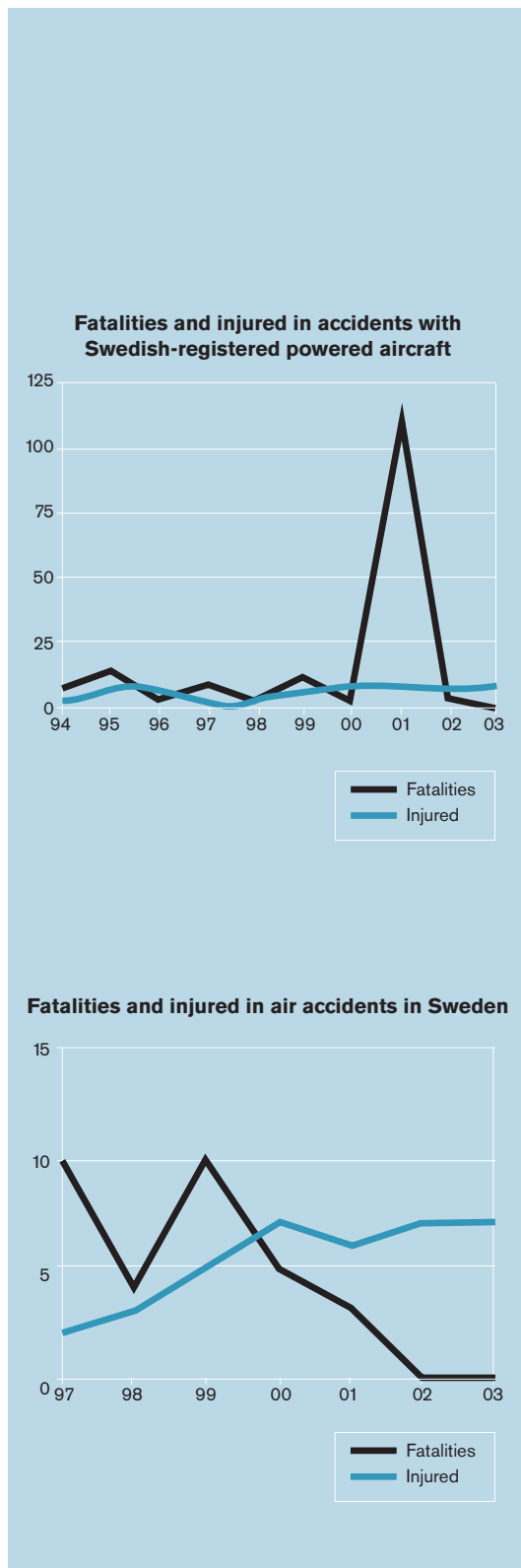
	Fatalities	Injured
94	7	2
95	14	8
96	4	7
97	9	2
98	4	3
99	12	7
00	1	7
01	113	7
02	3	7
03	0	7

The figures in Table 6.15 refer to fatalities and injured persons in accidents with Swedish-registered aircraft regardless of where the accident took place. Figures on fatalities and injuries in Sweden, regardless of the country of registration of the aircraft have been available since 1997 and are shown in Table 6.16. In 2003, no persons died and seven were injured in conjunction with air accidents in Sweden.

**6.15. Number of air accidents in Sweden, regardless of nationality.**

Source: SIKACivil Aviation Administration, Air transport, 2003.

	Fatalities	Injured
97	10	2
98	4	3
99	10	5
00	5	7
01	3	6
02	0	7
03	0	7



6.



# Explanation of terms

**Aircraft:** Powered airplanes and helicopters and other air vehicles such as gliders, motor gliders and balloons.

**Alcolock:** A device based on technology that prevents the car being started if the driver has alcohol in his exhaled breath.

**Biofuel:** Fuel based on biomass (agricultural products, forest residue, waste, etc).

**Bus/coach:** A vehicle designed for conveyance of more than eight people in addition to the driver, even if the vehicle is also equipped for other purposes.

**Car:** A car is defined as a vehicle primarily intended for conveyance of people, although at most the driver and eight passengers.

**Carbon dioxide, CO<sub>2</sub>:** Released when fossil fuels are burned. The emissions of carbon dioxide and other gases lead to an increase in the atmosphere of greenhouse gases. The gases allow solar radiation to pass through to the earth but prevent it from radiating back into space. More heat is captured and the earth's average temperature increases. This is usually called the greenhouse effect.

**Communications survey KOM:** A nationwide survey of people's communication habits (an earlier version was called KVU), carried out by Statistics Sweden on behalf of SIKa on six occasions (spring 1996 and autumn 1997-2001).

**Emission rights:** EC directive on trading with emission rights applies to carbon dioxide. An emission right provides entitlement to emit a particular quantity of carbon dioxide. The right can be sold.

**EU 15:** The fifteen Member States of the EU prior to the most recent enlargement.

**Euro NCAP:** Euro NCAP (The European New Car Assessment Programme) is a European organisation for testing the safety of new cars.

**Fossil fuels:** Fuels based on fossil raw materials (coal, oil, natural gas).

**Greenhouse gases:** The greenhouse gases covered by the Kyoto Protocol are carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride. The climate effect of a greenhouse gas is due to the ability of the gas to absorb heat radiation, the time of retention in the atmosphere and the quantity of emissions. In the case of emissions by the transport sector, emissions of carbon dioxide account for almost the total effect on the greenhouse effect (approximately 95 per cent).

**Gross tonnage:** A type-independent measure of a vessel's internal space.

**Gross tonnage days:** A vessel's gross tonnage, multiplied by the number of days the vessel has been in use.

**H-region:** A division of Sweden into six regions that takes some account of the differences in population density. The regions are formed by an amalgamation of homogeneous, but not necessarily contiguous municipalities. The six H-regions are Stockholm, Gothenburg and Malmö; Larger cities, Southern medium population density areas, Northern rural areas and Northern urban areas.

**ITS:** Intelligent transport systems (IT support for planning, information, traffic management,

charge systems, speed adjustment, etc.).

**Journey:** The word journey in this publication means movement with a specific purpose, e.g. travelling to the day care centre to drop off children, and the continuing the journey to work is counted as two journeys. In other contexts, the term part-journey is sometimes used to mean the same thing.

**Kyoto Protocol:** Protocol drawn up in 1997 within the framework of the UN Convention on Climate Change.

**Locomotive:** A railway engine without space for goods or passengers, which is intended to provide motive power for a train.

**Lorry:** A lorry means a vehicle which is not to be regarded as a car or bus/coach. A light lorry is a lorry with a maximum load weight of 3.5 tonnes according to the Road Traffic Definitions Act.

**Mobility service:** A complement to the general public transport provision to provide travel opportunities for people who have considerable difficulty in using public communications.

**Nitrogen oxides, NO<sub>x</sub>:** Created when fossil fuels are burnt and lead to a precipitation of acidic substances, contributing to overfertilisation of ground and water. Precipitation crosses national borders and thus also comes from other countries.

**Railcar:** A railway vehicle with space for passengers or goods, intended to provide motive power for a train.

**Renewable fuel:** Fuel based on renewable energy sources (wind, sun, water, biomass).

**Seatbelt reminder:** Alarms by light and sound signals if the belt is not used.

**Sulphur dioxide, SO<sub>2</sub>:** Created when fossil fuels are burnt and lead to a precipitation of acidic substances. Precipitation crosses national borders and thus also comes from other countries.

**Taxi:** A car with a traffic licence to operate as a taxi.

**Traction engine:** A locomotive with a low tractive power, mainly intended for shunting.

**Traffic :** The concept *traffic* means vehicle movements. *Traffic performance* is measured in vehicle kilometres.

**Transport:** The concept *transport* means that goods or people are moved from one point to another. *Category of transport* means passenger transport and freight transport. *Mode of transport* means road transport, rail transport, air transport and sea transport. *Transport performance* in passenger transport is measured in passenger kilometres and freight transport in tonne kilometres.

**Travel Survey RES:** A nationwide survey of travel habits, carried out by Statistics Sweden on behalf of SIKa, the transport agencies and others agencies between 1999 and 2001. (A previous version Riks-RVU was carried out between 1994 and 1999.)

**Volatile Hydrocarbon compounds, VOC:** Organic substances that are created when fossil fuels are burnt and which contribute to the accumulation of ozone in the lower atmospheric layers. The ozone, which is useful as an UV filter in the atmosphere is harmful for people, animal and plants in layers of air close to the ground.



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# TRANSPORT AND COMMUNICATIONS

YEARBOOK 2005

As the agency responsible for statistics in the field of transport and communications, SIKA is now publishing its fourth yearbook with statistics and explanatory comments in this field. The sections of the book are arranged in accordance with the areas we have also selected in other contexts for our statistical report– i.e. infrastructure, operators, resources, transport and communications, finance, and environment and security. Developments have been reported over the past ten-year period as far as possible.

According to tradition, the book is introduced by a section on a specific topic in the sphere of transport. This time we take up technical development as a driving force in transport policy. Here we describe the key role of technical development for the achievement of transport policy objectives with climate policy as the prime example.

To contribute to the spread of knowledge in other countries about Swedish transport and communications, the yearbook is available in a Swedish and an English version. Both versions are available on SIKA's website on the Internet.

## **Swedish Institute for Transport and Communications Analysis**

P.O. Box 17 213, SE-104 62 Stockholm, Sweden

Phone: +46 8 506 206 00, Fax +46 8 506 206 10

[www.sika-institute.se](http://www.sika-institute.se)

[sika@sika-institute.se](mailto:sika@sika-institute.se)



ISBN 91-89586-50-6

ISSN 1403-7912

