Schweizerische Eidgenossenschaft
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Federal Department of Home Affairs FDHA
Federal Statistical Office FSO

Press release

Embargo: 21.06.2010, 9:15

11 Mobility and transport

N° 0353-1005-90

Mobility and Transport 2010

Mobile Switzerland – facts and figures in a new statistical overview

Neuchâtel, 21.06.2010 (FSO) **– How mobile is the Swiss population? How many lorries cross the Alps? What are our reasons for travel? How many accidents are caused by road traffic? A new publication from the Federal Statistical Office (FSO) answers these and many other questions and provides an overview of mobility and transport in Switzerland.**

In the globalised society, restrictions on mobility and transport have significant repercussions. This was made evident by the volcanic eruption in Iceland and the resulting restrictions in European air traffic. We depend on mobility and transport – one more reason to address this issue statistically.

SWISS FEDERAL STATISTICAL OFFICE
Press Office

Interested readers will find the complete text of the press release in the German, French or Italian version:

For German see: Bundesamt für Statistik > Aktuell > Medienmitteilungen

For French see: Office fédéral de la statistique > Actualités > Communiqués de presse

For Italian see: Ufficio federale di statistica > Attualità > Comunicati stampa

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11

Mobility and Transport

839-1000-05

Mobility and Transport

Pocket Statistics 2010

150 jahre BFS
ans OFS
anni UST
years FSO

Schweizerische Eidgenossenschaft
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Neuchâtel, 2010

Mobility and Transport

Pocket Statistics 2010

1 Parameters for passenger transport

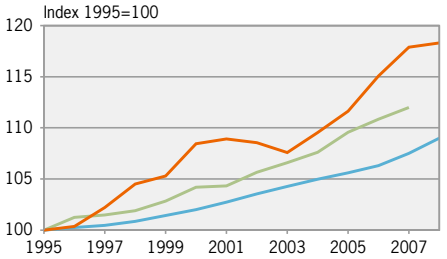
Population growth has less influence than increase in personal mobility

Per capita increase in motorised traffic mileage	54%	1970–2007
Percentage of commuter traffic (work and education/training)	27%	2005
Percentage of leisure traffic	45%	2005
Households with private cars	81%	2005

The amount of passenger traffic depends on the average daily distance covered, the size of the population and the number of trips taken by foreigners in Switzerland. The daily distance covered is affected by the distances between place of residence and place of work and shops or leisure destinations as well as the attractiveness of the various means of transport. In selecting specific means of transport, availability (vehicle ownership, distance to nearest public transport stop, service frequency), price, comfort and time needed are important factors.

The average distance covered per capita grew faster than the population in the last ten years. The rising standard of living may also have been a factor, although short-term variations in per capita GDP have little effect. 81% of Swiss households have a car.

Socio-economic framework conditions for passenger transport

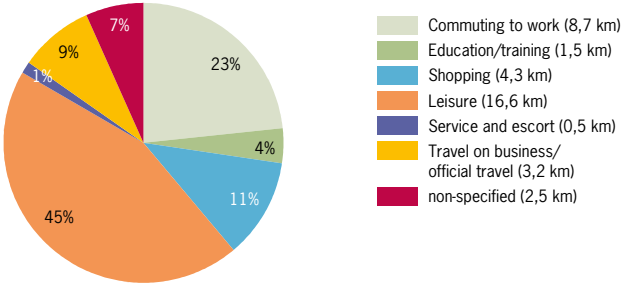


[1] Per capita transport performance of railways, cog railways and cable railways, public transport by road, private motorized transport

Source: FSO

Reason for travel

(average per capital daily distance by trip purpose, 2005)

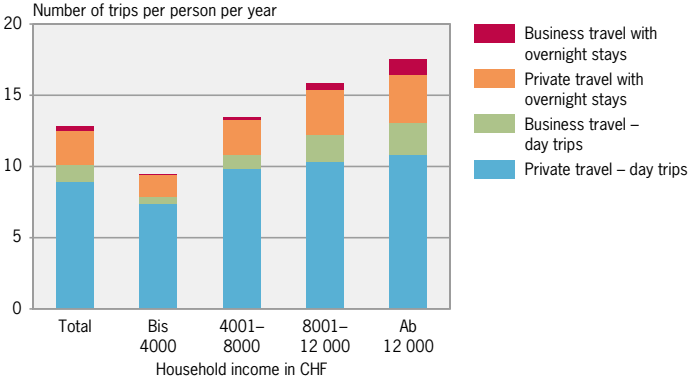


Average daily distance per person in Switzerland: 37,3 km

Sources: FSO, ARE

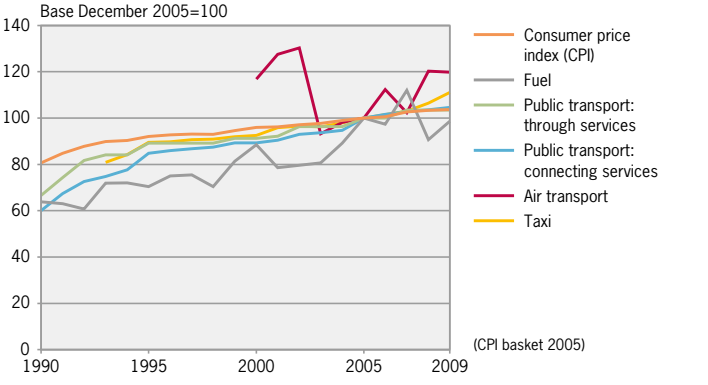
Number of trips per person per year

(2005)



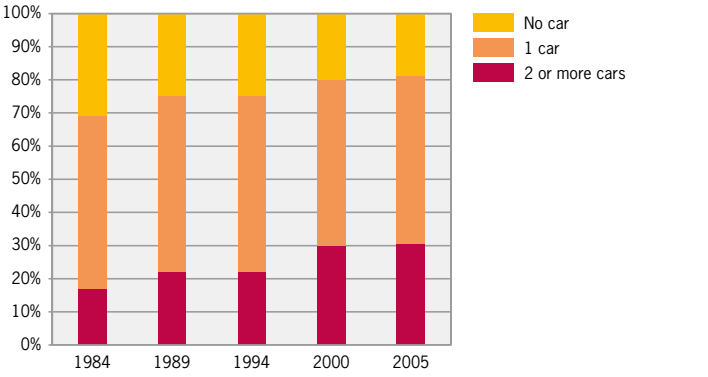
Sources: FSO, ARE

Price movements in passenger transport



Source: FSO

Number of cars per household



Sources: FSO, ARE

2 Parameters for goods transport

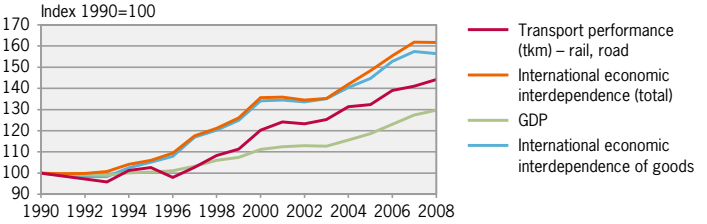
Goods transport has almost doubled since 1980

Increase in transport performance	93%	1980–2008
Increase in GDP (at constant prices)	62%	1980–2008
Increase in transport performance of heavy goods vehicles	50%	1993–2008
only domestic transport	23%	1993–2008
only transit transport	164%	1993–2008

Increasing goods transport is a side-effect of economic growth. This is because productivity can be raised in particular by increasing quantities and this is only possible if production is concentrated on fewer and fewer locations. The result is growing national and international economic interdependence. This increase in the division of labour and the rising standard of living lead to an increase in goods transport.

Goods transport on road and rail increased by 93% between 1980 and 2008, mainly because of the development of road transport. Growth was stronger than in passenger transport and disproportionate to the GDP. 60% of all transport by heavy goods vehicles is domestic, 16% transit. Expressed as a percentage, transit transport has grown considerably faster since 1993. While rail transport costs have fallen since Autumn 2007, road freight transport initially became more expensive. But since Autumn 2009 this trend has been reversed.

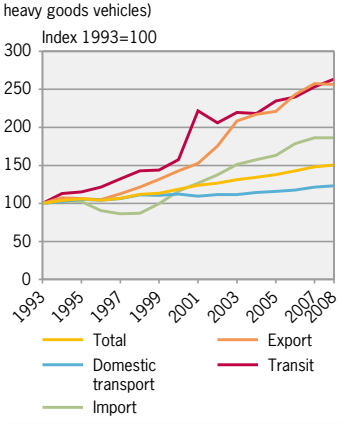
Socio-economic parameters for goods transport

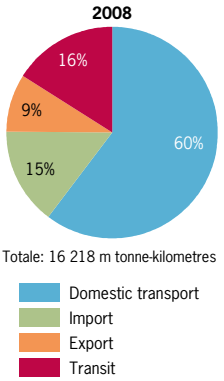


Source: FSO

Domestic and international goods transport by road

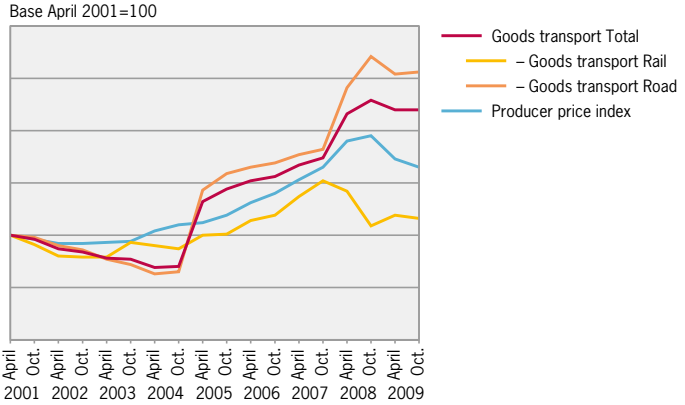
(Transport performance of Swiss and foreign heavy goods vehicles)





Source: FSO

Price movements in good transport



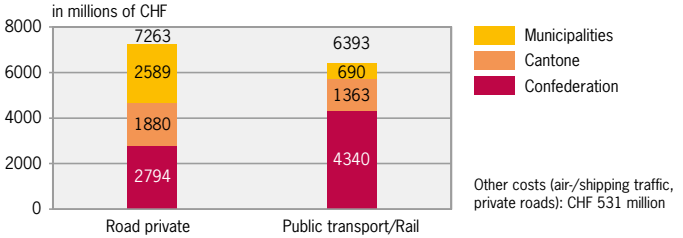
Source: FSO

3 Funding

Confederation pays approximately half of subsidies

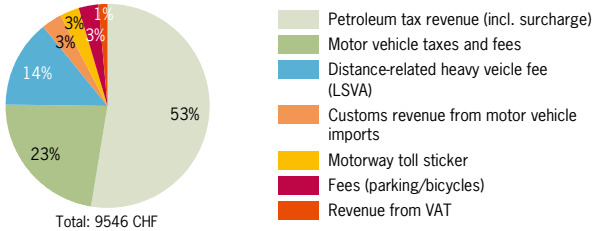
Public expenditure on transport	CHF 14.2 bn	2007
Confederation's share of public expenditure on transport	53%	2007
Petroleum tax as a percentage of revenue from road transport	53%	2007

Public expenditure on transport
(2007)



Source: FSO © *FSO*

Revenue from road transport
(2007)



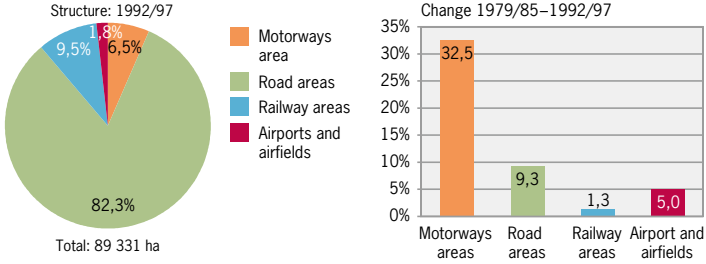
Source: FSO © *FSO*

4 Transport infrastructure

Transport infrastructure covers a third of settlement areas

National highways	1,789 km	2009
of which motorways	1,406 km	2009
Cantonal roads	18,112 km	2008
Municipal roads	51,506 km	2008
Length of railway network	5,107 km	2007
Transport areas as a percentage of settlement and urban areas	32%	1992/97

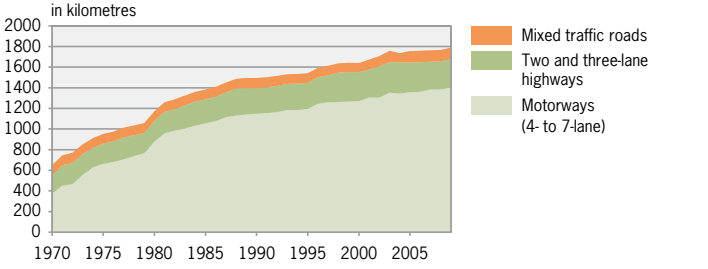
Area occupied by transport infrastructure



Source: FSO

© *FSO*

Length of national highways



Source: FEDRO

© *FSO*

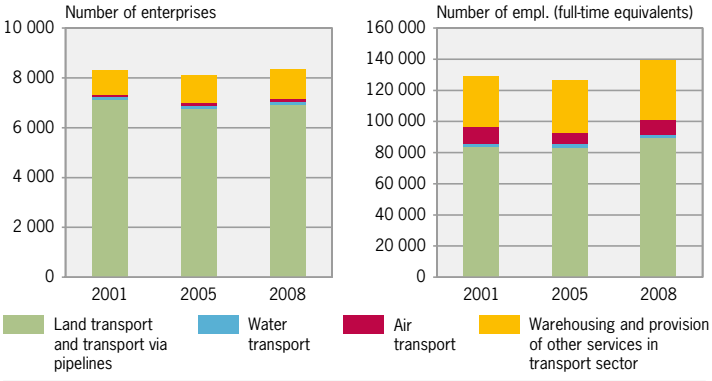
5 Transport enterprises

3% of all enterprises are active in the transport sector

Enterprises in the transport sector	8,340	2008
of which surface transport	6,918	2008
Employees (full-time equivalents) in transport	139,033	2008
of which surface transport	89,464	2008
Percentage of enterprises in transport sector	2.7%	2008
Percentage of employees in transport (full-time equivalents)	4.6%	2008

In 2008 the number of Swiss enterprises was approximately 139,000. While the number of enterprises in land transport fell slightly between 2001 and 2008, the number of air and water transport enterprises grew as did that of other service providers in the transport sector.The total number of employees (full-time equivalent) has risen since 2001 by 8% to 139,000.

Transport enterprises and employees



Source: FSO

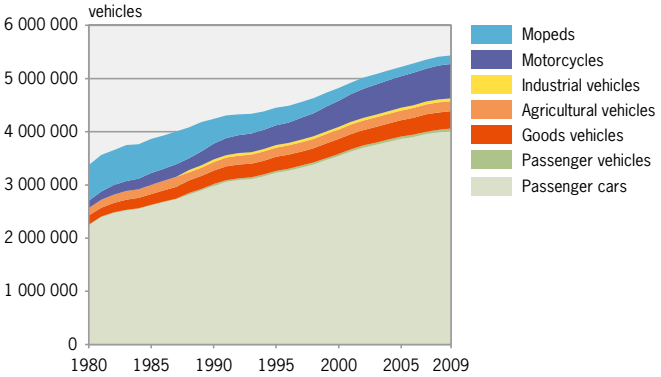
6 Means of transport

Over half as many private cars as inhabitants

Road motor vehicles	5.4 Million	2009
Change	+60%	1980–2009
Private cars	4.0 Million	2009
Goods vehicles	0.3 Million	2009
Motorcycles	0.6 Million	2009
Aircraft registered in Switzerland	3685	2009

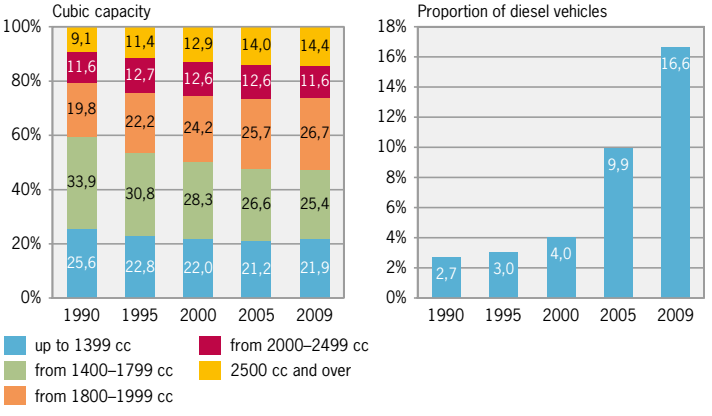
The pool of road motor vehicles has grown by more than half since 1980. Around three quarters of them are private cars. Statistically speaking, therefore, one person in two owns a car, with a trend towards more powerful cars and diesel-powered vehicles. However, by far the biggest growth was in motorcycles (more than quadrupled since 1980). In 2005, 70% of all households owned at least one bicycle.

Pool of road motor vehicles



Source: FSO, FEDRO

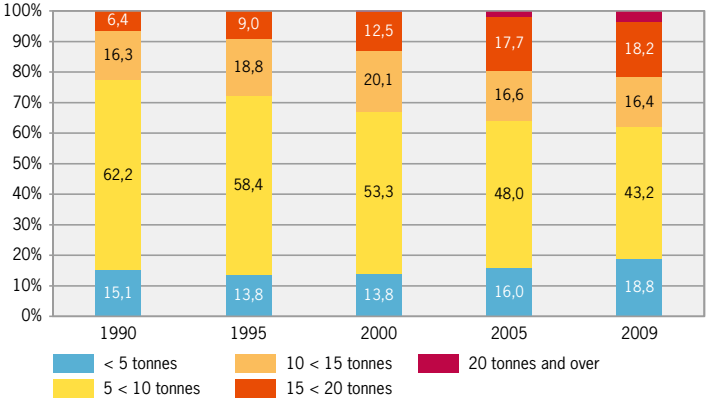
Passenger cars by engine capacity and fuel



Source: FEDRO

© FSO

Lorries by payload



Source: FEDRO

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7 Use of means of transport

Biggest growth in private motor vehicle transport

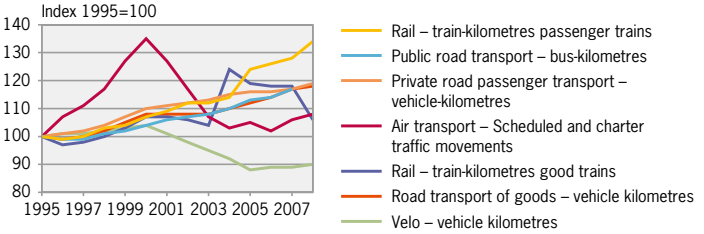
Kilometre performance of private motor vehicle traffic	54,428 M. veh.-km	2008
Average occupancy of passenger cars	1.57 pers.	2005
Kilometre performance of road transport of goods	5,746 mill. veh.-km	2008
Domestic transport as a percentage of heavy road transport of goods	73%	2008
Takeoffs and landings in scheduled and charter air traffic	409,847	2009
Hours spent in traffic jams on highways	10,048 hours	2008

Mobility needs can be met in various ways. The choice of transport means and vehicle occupancy influences road and rail traffic and affects the impact on infrastructure and environment.

In passenger transport, the increase in kilometre performance is mainly due to private motor vehicle transport with a rise of 19% since 1995. The kilometre performance of road transport as a whole increased by 17% over the same period. In heavy goods transport, there was a shift towards semi-trailers.

Most scheduled and charter traffic originating in Switzerland is on routes over foreign territory. Developments can therefore be gauged more easily on the basis of takeoffs and landings. Movements at the three national airports (Zurich, Geneva and Basel-Mulhouse) more than doubled between 1970 and 2009.

Kilometre performance

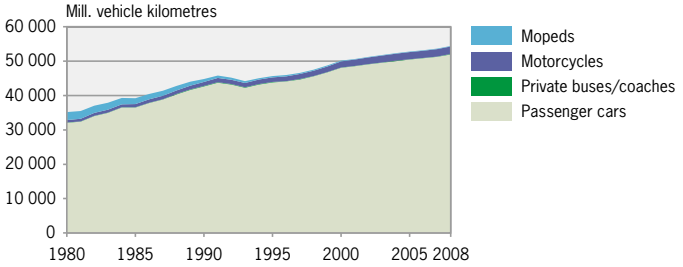


Source: FSO

Kilometre performance or transport performance?

Kilometre performance is measured in vehicle-, train- or bus-kilometres and is useful for gauging the impact on infrastructure and environment. This would hardly be possible with the transport performance indicator, measured in person- or tonne-kilometres, because a particular transport performance, depending on the occupancy and load, is achieved with a varying number of vehicles. Transport performance does, however, show the demand for mobility as well as the services actually provided by the transport system.

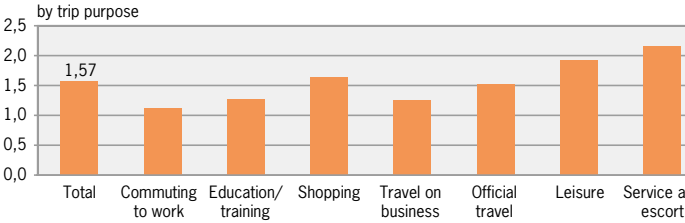
Kilometre performance of private motor vehicle traffic



Source: FSO

Occupancy of passenger cars

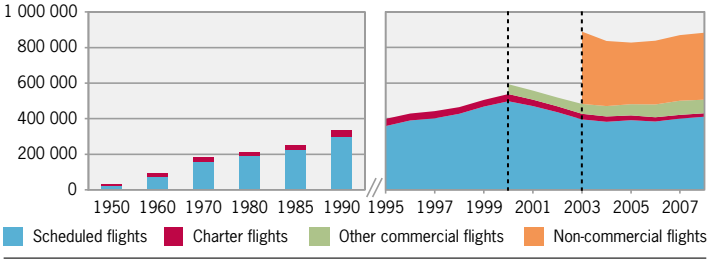
(2005)



Source: FSO, ARE

Takeoffs and landings in civil aviation

(national and regional airports, only fixed wing aircrafts)



Source: FOCA

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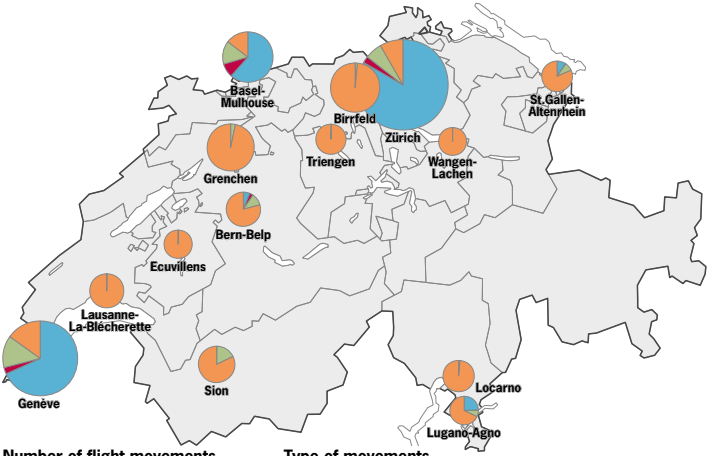
Takeoffs and landings in civil aviation, 2008



Sources: FSO, FOCA

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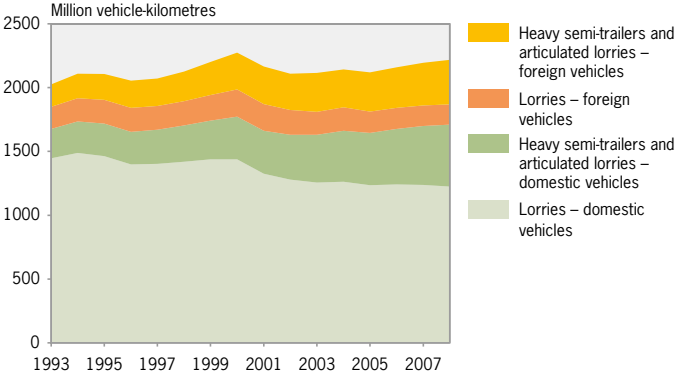
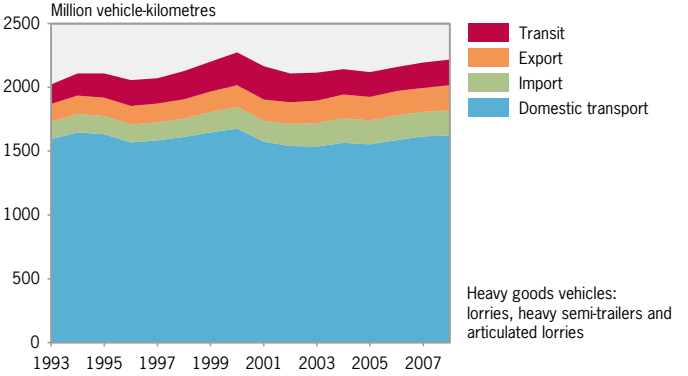
Kilometre performance of domestic and foreign heavy goods vehicles by type of vehicle



Source: FSO

Kilometre performance in domestic and international goods transport on the road



Source: FSO

8 Passenger transport performance

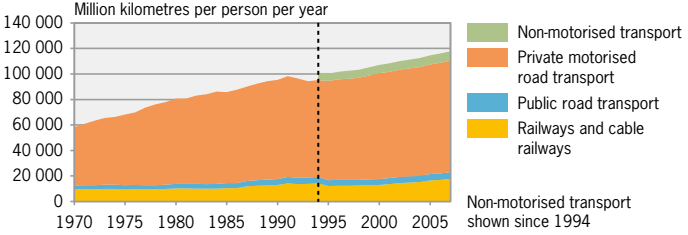
Increasing share of private motor vehicle transport

Annual distance covered by persons resident in Switzerland (in Switzerland and abroad)	19,100 km per year	2005
Average daily travel time (in Switzerland and abroad)	93 min.	2005
Public transport as a percentage of total passenger transport performance (including non-motorised traffic)	19%	2007

The sum of all the distances covered on road and rail by residents and foreigners in Switzerland was 118 billion person-kilometres in 2007 (including non-motorised traffic).

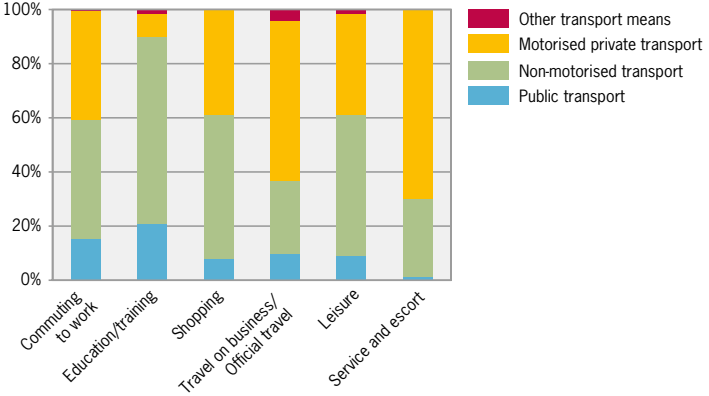
On average, each person resident in Switzerland travelled 19,100 km in 2005 by some means of transport or on foot, including 13,600 km in Switzerland. The main reason was to indulge in leisure activities, followed by commuting to work or education/training. The purpose of the trip plays an important part, as to whether public transport, private car or bicycle is chosen to meet the need for mobility. Preferences differ in the various parts of the country. An average of one and a half hours are set aside for travel each day – half for leisure activities.

Passenger transport performance



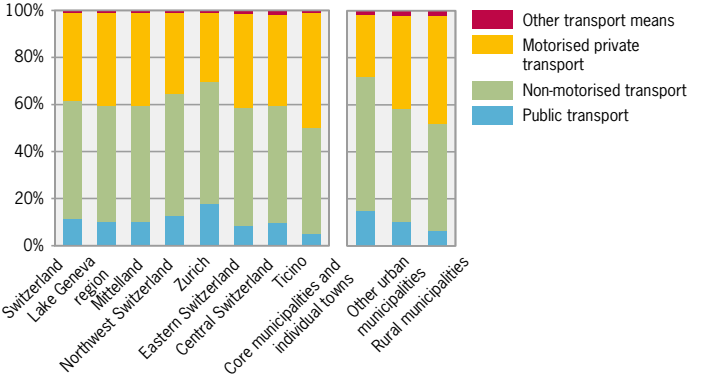
Source: FSO

Choice of means of transport by trip purpose
(as a percentage of all stages of a trip, 2005)



Source: FSO, ARE

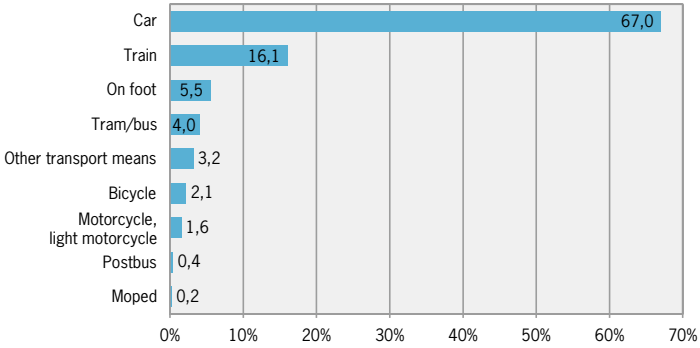
Regional differences in transport means choice
(as a percentage of all stages of a trip, 2005)



Source: FSO, ARE

Transport means choice

(Proportion of average daily distance, 2005)

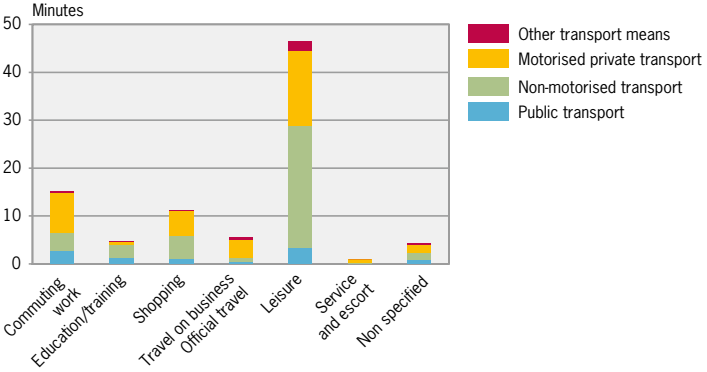


Average daily distance per person in Switzerland: 37,3 km

Source: FSO, ARE

Daily travel time by trip purpose

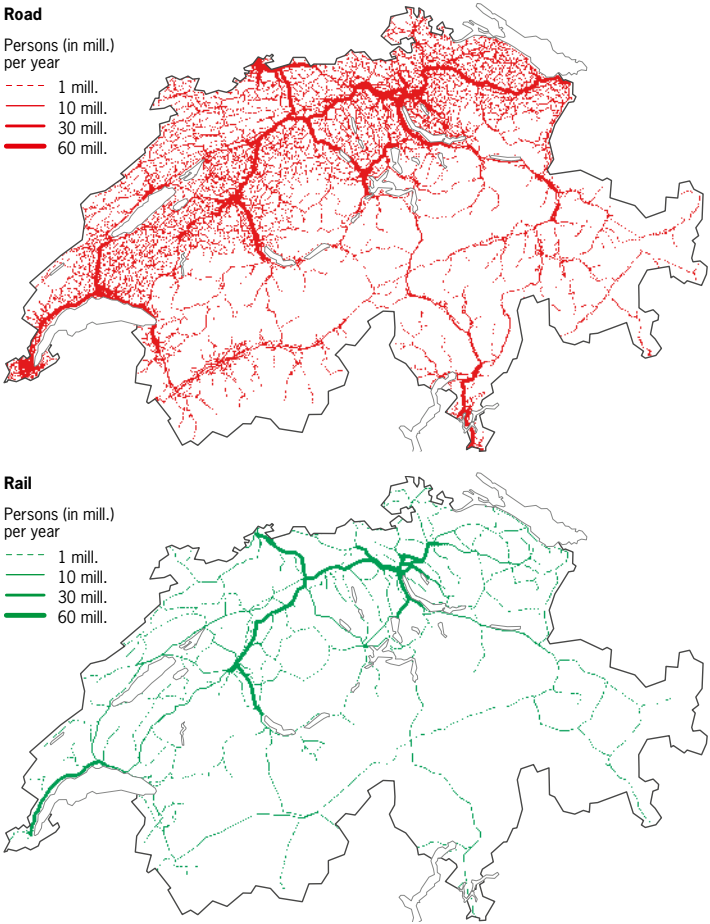
(2005)



Average daily travel time per person in Switzerland: 88.4 minutes

Source: FSO, ARE

Passenger traffic flows 2005



Sources: INFOPLAN-ARE, Traffic modelling TM-DETEC, Geostat-FSO, swisstopo

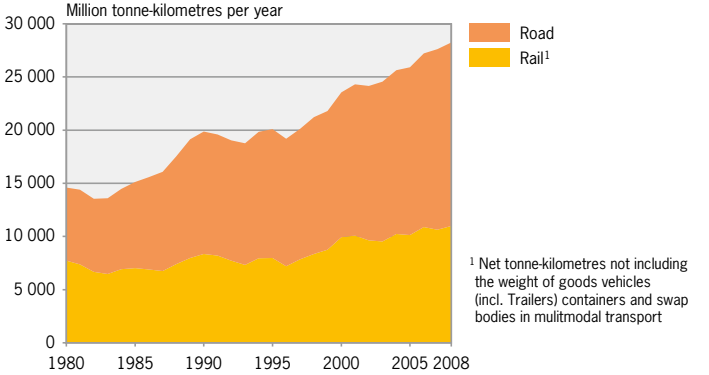
9 Goods transport performance

Falling share of goods transport by rail

Goods transport performance	28.2 bn t-km per year	2008
Rail share of goods transport (modal sharing)	39%	2008

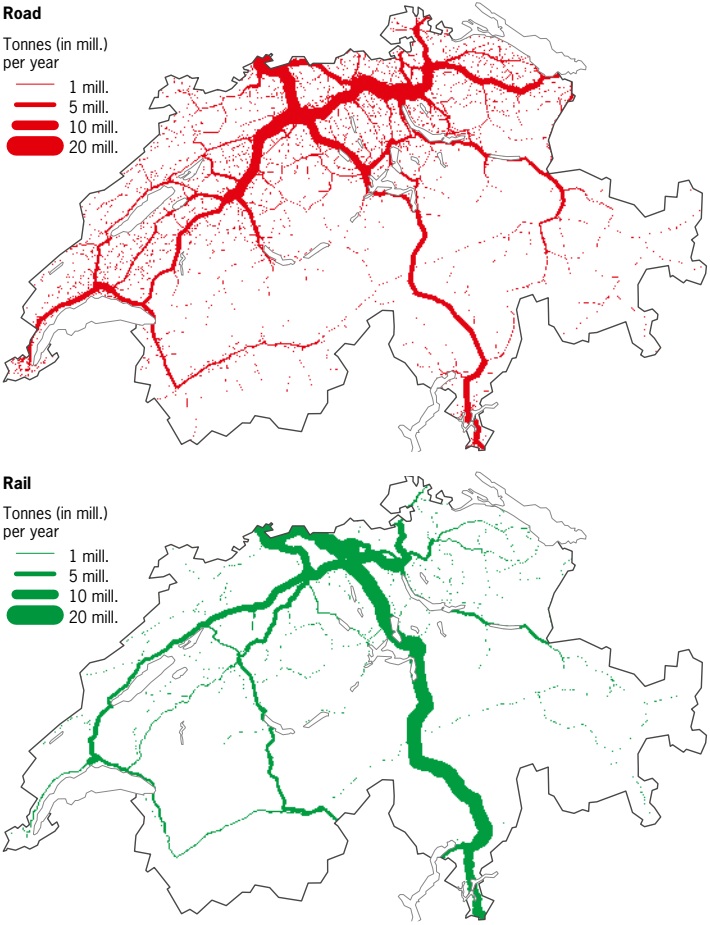
Goods transport performance increased by 93% between 1980 and 2008 to reach around 28 billion tonne-kilometres. Whereas over half was carried out by rail in 1980, by 2008 the railways share had dropped to 39%. This is mainly due to the fact that goods transport by road over this period increased by 151% whereas goods transport by rail increased by only 42%.

Goods transport performance



Source: FSO

Goods traffic flows 2000



Sources: INFOPLAN-ARE, Traffic modelling TM-DETEC, Geostat-FSO, swisstopo

10 Transalpine goods transport

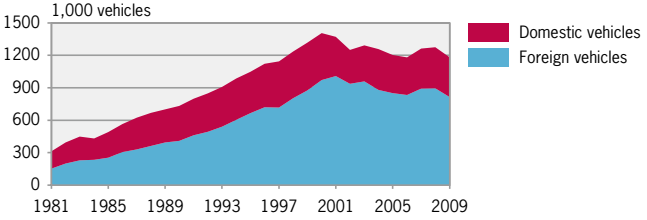
High rail share compared with France and Austria

Transalpine heavy goods vehicle traffic	1.18 mill.	2009
Change	-16%	2000–2009
Quantity of goods transported (rail and road)	34.6 mill. net tonnes	2009
Change road	+53%	2000–2009
Rail transport share (CH)	61%	2009

The number of transalpine trips through Switzerland by heavy goods vehicles more than quadrupled between the opening of the Gotthard tunnel in 1981 and the year 2000. Since 2001, a drop in trips has be noted, due to implementation of flanking transfer measures and the introduction of the Distance-related Heavy Vehicle Fee (HVF). Since 2001, 40-tonne lorries were increasingly permitted and this measure has been in general application since 2005.

The quantity of goods transported over Swiss alpine passes by road and rail has more than doubled overall since 1981 to reach 34.6 million net tonnes in 2009. The share of goods transported by road increased during that period but is still low compared with neighbouring countries as in Switzerland about 60% are transported through the Alps by rail.

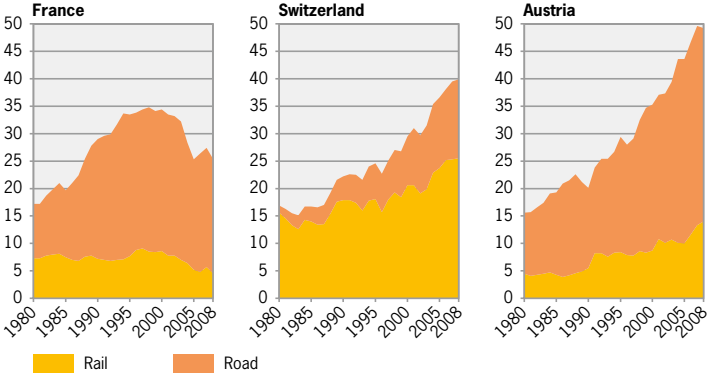
Transalpine goods traffic
(Number of heavy goods vehicles in Switzerland)



Source: FOT, FEDRO

Transalpine goods traffic volumes

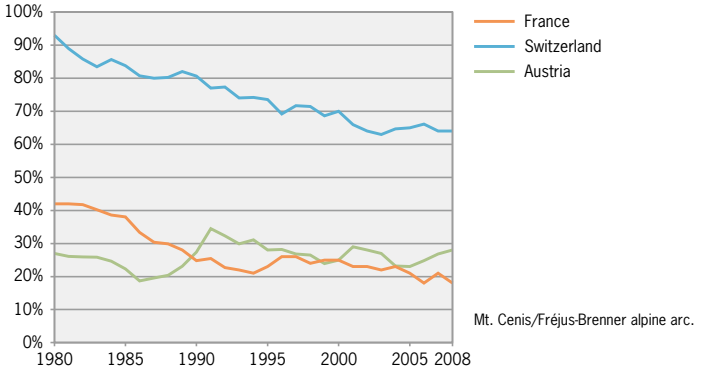
(Millions of net tonnes per year)



Source: FOT

Railway share of transalpine goods traffic

(Base: net tonnes)



Mt. Cenis/Fréjus-Brenner alpine arc.

Source: FOT

11 Accidents

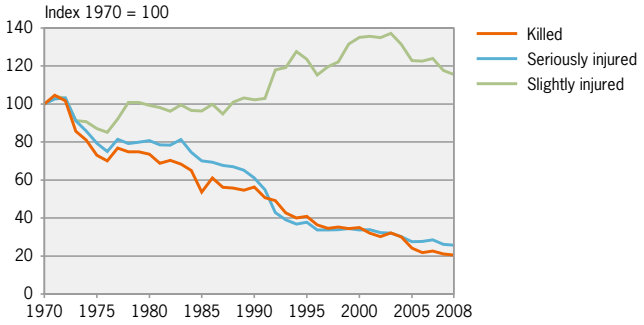
Fewer people killed on the road thanks to traffic safety measures

Road traffic		
Persons killed	357	2008
Persons seriously injured	4,780	2008
Persons slightly injured	20,776	2008
Rail traffic: Persons killed	30	2009
Air traffic: Persons killed in Switzerland	5	2009

Progress in road traffic safety has led to the number of persons killed falling since 1970. The decline between 2004 and 2006 is due partly to the reduction of the blood alcohol content limit to 0.5 mg/ml, penalties with loss of driving licence and the fact that as a consequence people expect to be checked. Most people killed are in the 18 to 25 age group. The number of injured, in particular the proportion of persons seriously injured, has fallen significantly.

Accidents with killed and injured are much rarer in other transport modes. In the case of the railways, they mainly involve persons who trespass on railway property without authorisation.

Victims of road accidents



Source: FSO

12 Energy consumption and effects on environment

Transport is the biggest energy consumption group

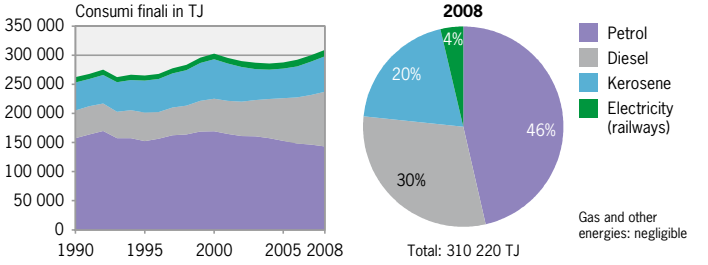
Transport's share of energy consumption (final consumption)	34%	2008
Transport's share of CO_2 emissions	37%	2008
Growth rate of transport's CO_2 emissions	17%	1995–2008

The benefit of mobility (Chapters 8 and 9) comes at the cost of undesirable effects. These include the use of scarce energy resources, noise, air pollutants and greenhouse gases that affect the climate. Transport accounts for 34% of total final energy consumption, and, as 96% of transport energy requirements are covered by petroleum products, for as much as 60% of petroleum consumption.

A large proportion of air pollution and the greenhouse gas carbon dioxide therefore comes from road and air transport. Road transport is also the main source of nitrogen oxide NOx, a precursor substance of low-level ozone and acid rain. Particulates that can penetrate deep into the lungs (PM10) are a major health threat as they can cause breathing problems and coughing attacks particularly in risk groups such as children, asthmatics and the elderly.

Technical developments have brought improvements, but NOx and PM10 concentrations are still often above the threshold values set.

Energy consumption from transprt

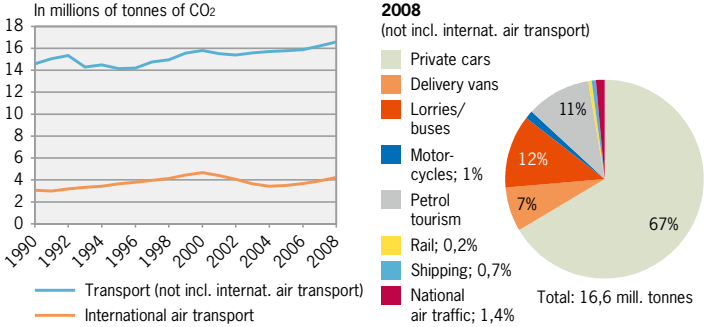


Source: FOE, Overall energy statistics

Fine particulate matter (PM10)

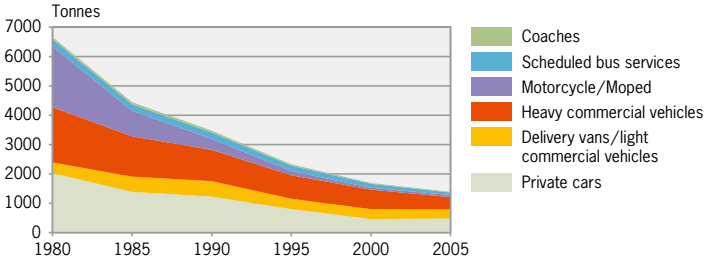
PM10 is the term for particulates with a diameter of less than one 10000th of a millimetre. They can penetrate deep into the lungs leading to serious effects on health. The carcinogenic components of emission from diesel engines cause particular problems.

CO_2-emissions from transport



Source: FOEN

PM10-emissions from road transport



Source: FOEN

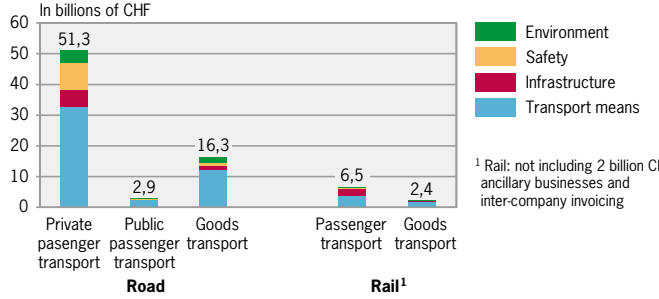
13 Costs

External costs of road transport many times higher than those of rail transport

Costs of private road transport	CHF 51 bn	2005
Cost coverage in road passenger transport	90%	2005
Costs of goods transport by road	CHF 16 bn	2005
Cost coverage in goods transport by road	96%	2005
Road passenger transport's share of external passenger transport costs	96%	2005
Road goods transport's share of external goods transport costs	92%	2005

The economic costs of transport, that is the actual sums paid by causers, the state or third parties, as well as the non-monetary costs such as damage to the environment and noise, amounted to CHF 82 billion in 2005. In comparison, the GDP then stood at CHF 463 billion. Mobility thus costs us more than, for instance, the health care service or the public education system. And road transport accounts for six times more of these costs than rail transport. Around 8.4 of the CHF 82 billion are external costs, which are borne by people other than the causers.

Economic costs of traffic
(2005)

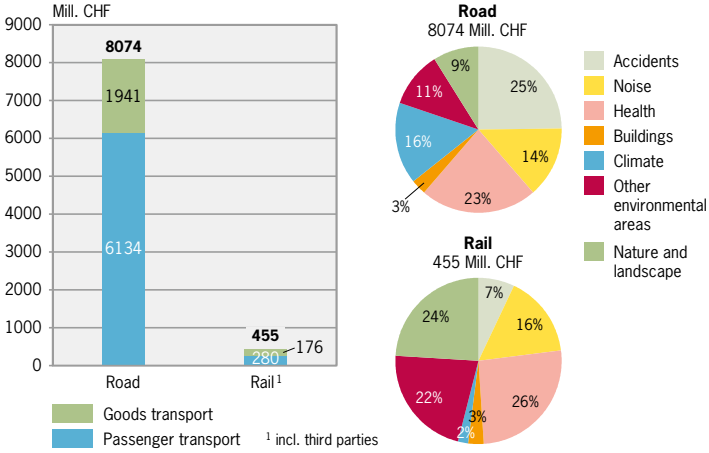


Source: FSO

External costs of transport

People choose their mode of transport on the basis of the cost they have to bear themselves (fuel, maintenance and depreciation of their own vehicles, the price of tickets and season-tickets, payments to transport companies). However, the so-called external costs, which are borne by third parties (often the community as a whole), are not taken into account. These include in particular the consequential costs in the form of damage to the environment and health, as well as damage to buildings and loss in value. In passenger transport, travelling with one's own car causes many more external costs than travelling by public transport. The same applies to goods transport by road compared with rail. Most transport in Switzerland is by road. The result is transport structures which impose great burdens on the community and do not achieve an economic optimum.

External costs of transport
(2005)



Source: ARE

External costs

Costs which are not borne by the causer but by other users or by the general public (inter alia: part of the costs of accidents, noise, air pollution etc.).

International economic interdependence

Average value of imports and exports of goods and/or services as a percentage of GDP.

Kilometre performance

Distance covered by vehicles within a specific period of time (in vehicle-kilometres).

Means of transport group

Inclusion of different means of transport in the categories of public, private and non-motorised traffic.

Modal sharing

Distribution of transport service among various transport modes (e.g. road, rail).

Non-motorised traffic

On foot, bicycle.

PM10

Dust particles less than 10 micrometres in diameter that can penetrate into the lungs (particulate matter).

Stage

Part of a trip covered using the same means of transport, with going on foot regarded as a means of transport. A new stage begins with every change of means of transport.

Transport mode

The medium by which means of transport move (road, rail, water, air)

Transport performance

Total distance covered by persons or goods within a specific period of time (in kilometres per person or tonne-kilometres). Depending on the occupancy of capacity rate of the vehicles, differing kilometre performances are set for achieving a specific transport performance.

Trip

A trip begins when a person sets off for a specific place or a specific purpose. A trip ends when the place is reached or the purpose changes, or when a person stays in the same place for over one hour.

Trip purpose

Purpose for which individual stages or journeys were undertaken (commuting to work, education/training, shopping, leisure, service/escort, travel on business/official travel).

Internet links

Transport statistics (summaries)	www.transport-stat.admin.ch
Transport policy (summaries)	www.are.admin.ch
Roads	www.astra.admin.ch www.strasseschweiz.ch
Public transport	www.bav.admin.ch www.litra.ch
Aviation	www.bazl.admin.ch
Finances	www.efv.admin.ch
Accidents	www.bfu.ch
Energy	www.bfe.admin.ch
Environment	www.bafu.admin.ch www.environment-stat.admin.ch

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