SIKA Report
Summary

2005:8

Forecast for Swedish passenger transport for 2020

Swedish Institute for Transport and Communications Analysis

About SIKA

Swedish Institute for Transport and Communications Analysis, SIKA, is an agency working in the transport and communications sector. Our main tasks are to make analyses, descriptions of the current situation and other reports for the Government, to develop forecast and planning methods and to be responsible for the official statistics.

The reports are published in the series *SIKA Rapport* and *SIKA PM*. The statistics are published in the series *SIKA Statistik*, in the journal *SIKA Kommunikationer* and in the *Transport and Communications* yearbook. All publications are available on SIKA's website www.sika-institute.se.

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Background

SIKA has been commissioned by the Swedish Government to produce forecasts for the development of transport in Sweden through to 2020 in consultation with and with the help of the National Rail Administration, the National Road Administration, the Swedish Maritime Administration and the Civil Aviation Administration.

This report describes the development of passenger transport through to 2020. The reporting of this commission also includes an overall summary of the entire commission (SIKA Rapport 2005:6), a report on global environmental conditions (SIKA Rapport 2005:7) and a report on goods transport (SIKA Rapport 2005:9).

The report and forecasts have been produced by Sylvia Yngström Wänn (project leader and main author) and Peter Roming from SIKA. They have been assisted by Zara Bohlin, Henrik Edwards, Jenni Ranhagen and Anna Johansson from SIKA.

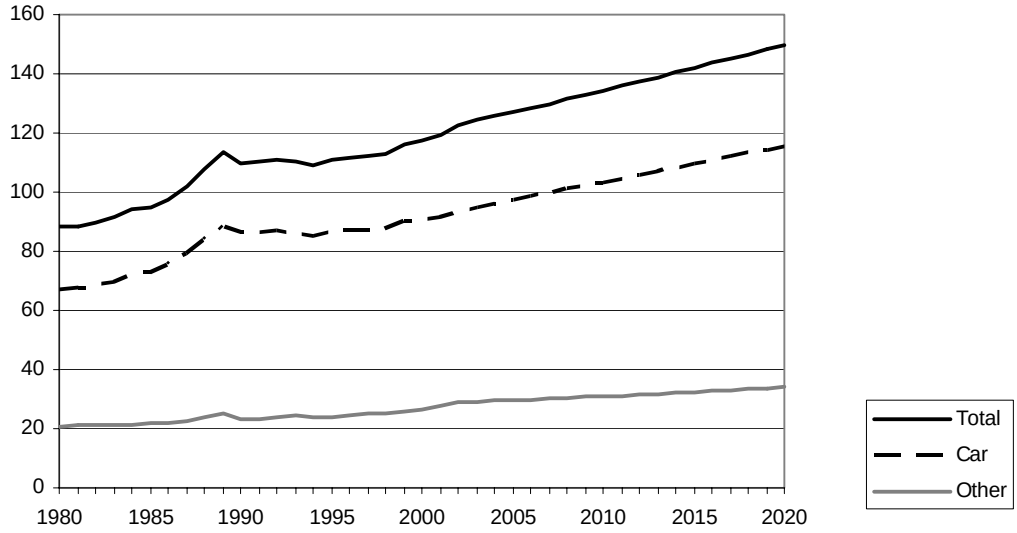
Forecast for passenger transport in 2020

This report contains a national forecast for passenger transport in Sweden in 2020 starting from the base year 2001. The forecasts were produced by SIKA during 2005. The forecasts have been produced for a macroeconomic main alternative supplemented by an alternative scenario for economic development and two sensitivity analyses with higher travel costs. The forecasts are intended for use as general information on the expected traffic development over the next 10–15 years.

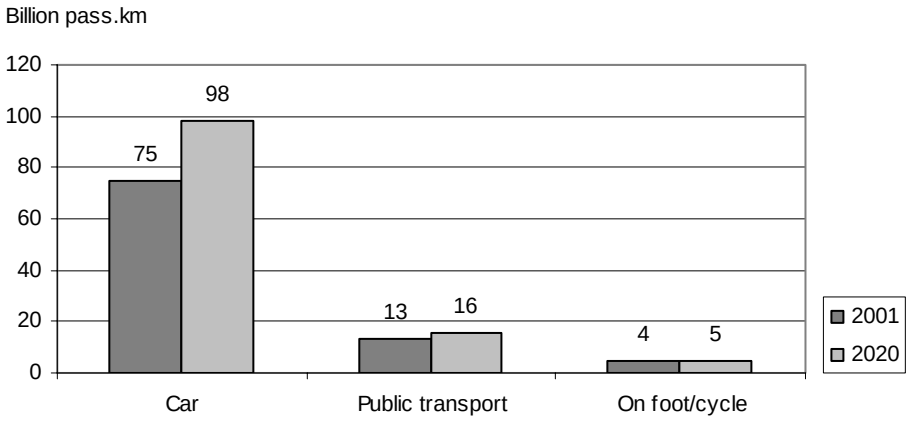
The report's description of transport performance and traffic performance includes all travel in Sweden, and also foreign travel, service and distribution travel, transit journeys etc for which there are no estimated figures in the passenger transport models. The results of the forecasts models are supplemented to include all travel, by enumerating the model results.

The main alternative is based on the macroeconomic development from the Ministry of Finance's Swedish Long-term Survey (LU 03/04) and is referred to in this report as the LU scenario. LU includes the assumption that the national carbon dioxide target is achieved during the years 2008–2012. This means in turn that the carbon dioxide taxes in the LU scenario will be higher in 2020 than today. The alternative scenario for the economic development (referred to here as the BS scenario) includes the carbon dioxide taxes at 2004 levels in 2020, i.e. lower than in the main scenario. A sensitivity analysis has been carried out with higher ticket prices for public transport and higher fuel prices for car journeys. A sensitivity analysis has also been carried out with a "high crude oil price" where only the price of car journeys has been raised.

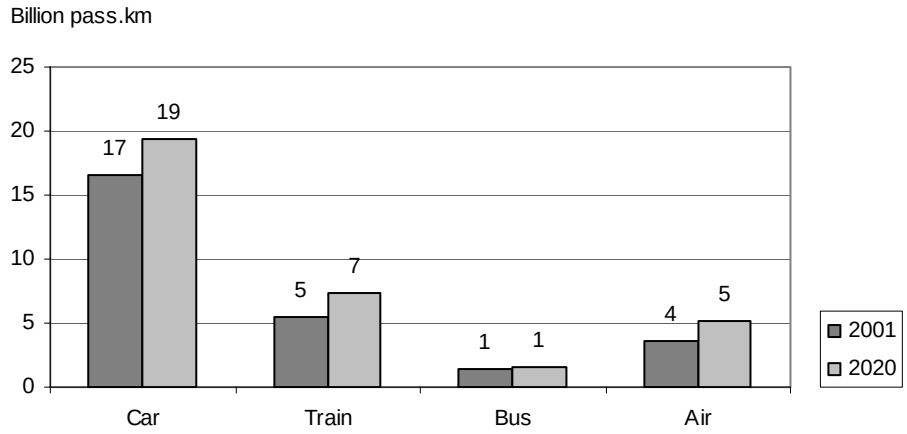
In the LU scenario the total travel measured in transport performance is expected to increase by 27 per cent between 2001 and 2020. Car travel accounts for the highest absolute proportion of the increase in transport performance, 26 billion passenger kilometres. Air travel, however, is the form of travel that sees the greatest increase in relative terms, with a figure of 39 per cent, 1 billion passenger kilometres.



Development of passenger transport performance 2001–LU 2020, billion passenger kilometres.



Short-distance transport performance, 2001 and 2020.



Long-distance transport performance, 2001 and 2020.

Development according to the alternative scenario

The alternative BS scenario differs from the LU scenario in that incoming data for the forecasts for 2020 has a slightly higher GDP development, a slightly higher real income development, a slightly higher proportion of employed and a higher car ownership. This in turn means more passenger transport than in the LU scenario.

The pattern of traffic increases from 2001–2020 is very similar in the BS and LU scenarios. Here too, therefore, car travel has the dominant share of the transport performance and accounts for the largest absolute increase, 27 billion passenger kilometres. The increases in travel from 2001–2020 are overall slightly higher in the BS scenario, 29 per cent in total transport performance during the forecast period. The greatest difference in increase between LU and BS is found in the short-distance car travel.

The sensitivity analysis with higher ticket prices for public transport and higher fuel prices gives as the result for transport performance a considerably lower development of travel between 2001–2020, 17 per cent as against 27 per cent in the LU scenario. The passenger transport performance in 2020 will be 140 billion passenger kilometres, while the LU scenario has a figure of 152 billion passenger kilometres. Long-distance rail travel and short-distance car travel are most affected by the increased prices and see a substantially reduced development through to 2020, long-distance trains with 11 per cent instead of 37 per cent. Foot and cycle travel increase their share of travel at the expense of short-distance public transport.

The sensitivity analysis with a higher oil price, 50 dollars per barrel, is expected to lead to a fuel cost in Sampers of SEK 0.84/km in 2020. The LU scenario assumed a crude oil price of 24 dollars per barrel and a fuel cost of SEK 0.73/km in 2020. [1]

[1] The crude oil price in 2001 according to Brent, see *Statistical review of world energy full report workbook 2004*.

We have assumed that the prices for air, rail and bus travel are constant over the period, in a corresponding way as in the LU scenario; only the fuel price for car travel has been changed in this sensitivity analysis.

Car travel increases less over the forecast period with a higher oil price than in LU, while air, rail and bus travel increase more. The transport performance increases between 2001–2020 by 23 per cent with the higher petrol price as against 27 per cent in the LU scenario.

With the higher crude oil price the transport performance in 2020 is expected to be 147 billion passenger kilometres, while the figure in the LU scenario was 152 billion passenger kilometres. The development of travel through to 2020 is therefore affected relatively little by a higher oil price if this is only assumed to affect the fuel cost for car travel. Sensitivity analyses with an even higher oil price, 74 and 102 dollars per barrel respectively, have been separately carried out and are recorded in *Känslighetsanalyser av transportprognoser 2020 med högre oljepris*, SIKA PM 2005:17 [Sensitivity analyses of transport forecasts 2020 with a higher oil price, in Swedish]. In the analyses with the 74 and 102 dollar prices the price of air travel has also been raised, which means that air travel has a substantially lower development than in the LU scenario.

Notes on the forecast

The forecast results show a continuing increase in passenger transport and this to a large extent follows the trend we have seen over many years. We are making more journeys and each journey is quicker and longer. Private leisure travel also continues to increase more than travel undertaken for other purposes.

The car is at present the dominant form of passenger transport and given the conditions upon which the forecast is based, it will maintain this special position over the next fifteen years. Air and rail travel will increase far more quickly and bus, foot and cycle travel more slowly than the average trend.

The main explanation for the differences between these new and earlier forecasts produced by SIKA lies in differences in the assumed development of the macroeconomic variables of real income and fuel cost. In an earlier 2010 forecast real income development was assumed to be 2.2 per cent/year, whereas in the current LU forecast it is 1.5 per cent/year and lower. The fuel cost development in the 2010 forecast was a reduction of 1.0 per cent/year, but it now falls by 0.75 per cent/year. Both these factors contribute substantially to lower increase in travel.