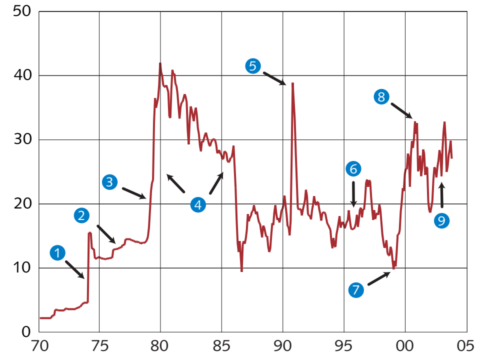
Oil Prices

Changes in oil prices affect inflation in Sweden both directly and indirectly. The direct effect comes through price changes for petrol and fuel oils. These components comprise almost 5 per cent of CPI. The indirect effect on CPI comes from price changes for input goods and manufactured products that are imported or produced in Sweden. Oil prices therefore have considerable significance for inflation trends. At the same time, oil prices are very volatile and not merely steered by economic factors but also by political factors. This makes it difficult to forecast oil prices. Over the past two years, oil prices have fluctuated between 17 and 34 USD per barrel. Below follows a review of how oil prices have been influenced by structural and political changes in recent decades. This is followed by a discussion of how the Riksbank's forecasts for oil prices have been revised in recent years.

Oil prices – a retrospective

Prior to 1973, oil prices were very stable and controlled by the large international oil corporations. During the 1970s, the oil industries in the OPEC countries were nationalised and the cartel gained increasing influence over the oil market.[7] The oil crises during the 1970s gave rise to several structural changes in the oil market. Firstly, the high oil prices made it profitable to produce oil even in, for instance, the North Sea area, which had previously been regarded as too costly. Norway and the United Kingdom now account for 8 per cent of the world's total oil production. Moreover, during the 1990s former Soviet Union countries have doubled their exports. The OECD countries' dependence on oil from OPEC countries has thus declined. Secondly, the oil price shocks have led to industrial nations choosing to reduce their oil dependence in favour of other energy sources. At the end of the 1970s, oil accounted for more than half of the OECD countries' energy consumption. This share has now fallen to around 40 per cent. Over the past decade, global consumption of oil has only increased by an average of one per cent a year, most of which has come from countries in Asia. This can be compared with an annual rate of increase around 8 per cent during the period 1966 to 1972. OPEC has thus been exposed to pressure on both the supply and demand side.

Figure B4. Political and economic factors affecting oil prices 1970-2003. USD/barrel



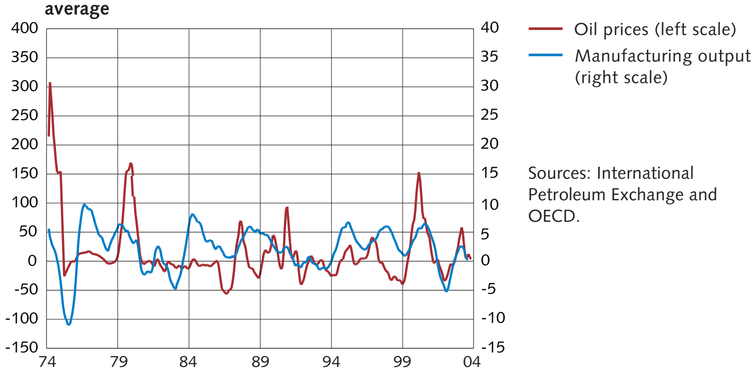
1. October War
2. Saudi Arabian oil industry nationalised
3. Revolution in Iran
4. 3 mill. barrels/day less in supply from Iran & Iraq
5. Gulf War
6. Some recovery in Kuwait's supply. OPEC increases capacity.
7. Asia crisis and mild winter. Saudi Arabia produces according to quota. Iraq resumes oil exports.
8. OPEC reduces production quotas
9. Iraq/USA

Sources: International Petroleum Exchange and Center for Global Energy Studies.

Between 1973 and 1986, oil prices reacted very little to changes in economic activity. It was political concerns that lay behind the large fluctuations in price (see Figure B4). OPEC had also chosen to take on the role of swing producer during this period. This meant that the cartel, in practice Saudi Arabia, would provide the remaining oil required after the other producers had sold their oil.

After 1986 oil prices became even more volatile.[8] OPEC had changed its pricing policy and moved over from the earlier policy of setting oil prices and allowing production to fluctuate, to applying production quotas and letting prices fluctuate. Saudi Arabia also abandoned its role as "swing producer". A growing spot market for oil also contributed to greater fluctuations in oil prices.

Figure B5. OECD manufacturing output and oil prices. Percentage 12-month change, 3-month smoothed average

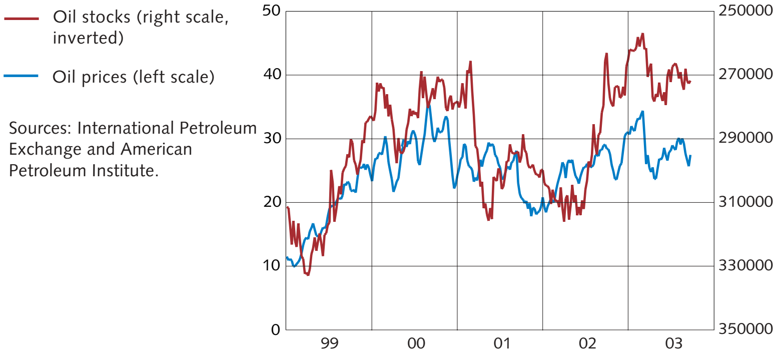


Sources: International Petroleum Exchange and OECD.

7 OPEC was formed in 1960 by Iran, Iraq, Kuwait, Saudi Arabia and Venezuela. Over the course of the years more countries have joined. Today, Algeria, Libya, Indonesia, Nigeria, United Arab Emirates and Qatar are also members.
8 See, for instance, Lynch, M.C.,"A new era of oil price volatility", WEFA, 2001.

Since the mid-1990s volatility has continued to increase. Oil prices now appear to react more to changes in the economic cycle than they did before (see Figure B5). The reason for this is that surplus capacity in all areas (production, transport, refining and distribution) has declined and the industry has reduced its oil stocks. The average level of stocks (measured as the number of days of consumption) has fallen over a long period of time, but the decline has intensified since the mid-1990s. This means that changes in demand have a much more rapid and larger impact on oil prices. Previously, it was possible to parry these fluctuations in demand to a great extent with the aid of changes in stocks.

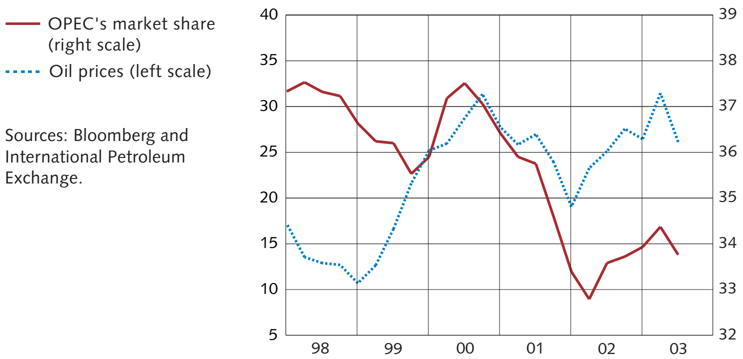
Figure B6. Oil prices and oil stocks in the USA. USD/barrel and 1000s of barrels



Sources: International Petroleum Exchange and American Petroleum Institute.

At the end of the 1990s, OPEC changed its policy. The Asia crisis lead to a greater check in economic activity in Asia, and thus also demand for oil, than most analysts had expected. Demand for oil fell by 1.7 million barrels a day. At the same time, the OPEC countries had been experiencing problems with internal discipline for some time, in that certain countries increased their production over official quotas. Saudi Arabia decided to take a more aggressive line and increased its production substantially. The result was a severe fall in oil prices. Oil prices fell during the course of one year from a total of around USD 19 per barrel at the end of 1997, to approximately USD 10 per barrel. This increased the incentive for OPEC members to hold together and they reduced their official production quotas. OPEC's strategy in recent years has been to prevent build-up of stocks in order to control prices (see Figure B6). In 2000, OPEC launched a price interval of USD 22-28 per barrel, with a preferred price of USD 25 for oil. The cartel has thus once again changed its price policy; from having stabilised production to stabilising prices.

Figure B7. OPEC's market share and oil prices. Per cent and USD/barrel



Sources: Bloomberg and International Petroleum Exchange.

As a result of the change in price policy, OPEC's market share has fallen from around 37 per cent of total world oil production in 1999 to around 33 per cent (see Figure B7). Other oil-producing countries, mainly Russia and Angola, have increased their production by an average of one million barrels a year in recent years. At the same time, the global demand for oil has only increased by an average of 0.6 million barrels a year.

The international economic downturn in 2001 put pressure on oil prices. In spring 2001, OPEC implemented a series of quota reductions. At the end of the summer the market showed concern that the cartel had squeezed supply too far and feared that a shortage would arise during the autumn when demand for fuel oils usually increases. Oil prices had therefore already begun to rise when the act of terrorism occurred in the United States on 11 September 2001. The first reaction in the market was soaring oil prices. However, poorer growth prospects, which indicate lower demand for oil, weighed more heavily than concern over disruptions in supply. Oil prices fell below OPEC's lower interval and were down to USD 17 per barrel at their lowest point. After taking contact with other countries, the cartel implemented production cuts in January 2002, together with Norway and Russia.

Political tensions related to the conflict in Iraq, an uneasy Easter period in the Middle East, improved economic prospects and the winter's reduction in supply pushed up oil prices in spring and summer 2002. The general impression in the market was that there was a risk premium of around USD 3-4 in the oil prices. Simple estimates showing the correlation between stocks levels and oil prices also support this theory (see Figure B8). In September, oil prices were up around USD 28 per barrel. Later in the autumn, however, oil prices began to fall. The reason for this was that the immediate risk of a war in Iraq appeared more remote following disagreement in the UN Security Council, while OPEC's production above the official quotas increased. In November oil prices touched OPEC's lower limit of USD 22 per barrel. However, a widespread strike in Venezuela, which paralysed the country's entire oil industry, made oil prices climb to above USD 30/barrel at the end of December 2002. Oil stocks in the United States were then at their lowest levels in 30 years.

At the beginning of 2003, oil prices rose as a result of uncertainty over a possible war in Iraq and its outcome. Prices were in the interval of USD 34-35 per barrel at the beginning of March. After that prices fell heavily once again, to USD 22-23 per barrel at the end of April, when the war in Iraq proved to have a rapid outcome. At the same time, the market believed that all of the Iraqi oil fields had been secured for continued production. However, production has not proceeded as smoothly as hoped, partly as a result of sabotage to oil fields and pipelines. This is an important explanation for the renewed price increases in summer 2003, to around USD 30 per barrel at the end of August. The low crude oil stocks in the United States also contributed to higher prices. During September, oil stocks began to rise, which led to falling oil prices. However, this was offset by an unexpected cutback in production by OPEC at the end of the month. Oil prices amounted to an average of USD 27 per barrel in September.

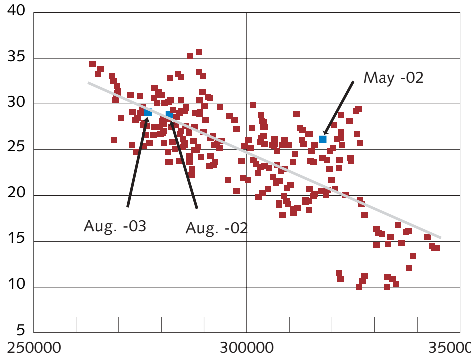
To summarise, oil prices have amounted on average to USD 26 per barrel during the period 2000-2003, which is within the set interval of USD 22-28 per barrel. However, price fluctuations have been fairly substantial, with a lowest price of USD 17 per barrel and a highest of USD 35 per barrel.

The Riksbank's forecasts of oil prices

The description of oil prices in recent years shows the difficulties of forecasting oil prices. It will never be possible to fully predict the short-term fluctuations. One basis for forecasts of oil prices is that medium term fluctuations in recent years have followed relatively closely fluctuations in global economic activity. In addition, the oil price has to a large extent been driven by factors which are difficult to forecast, and which are politically affected.

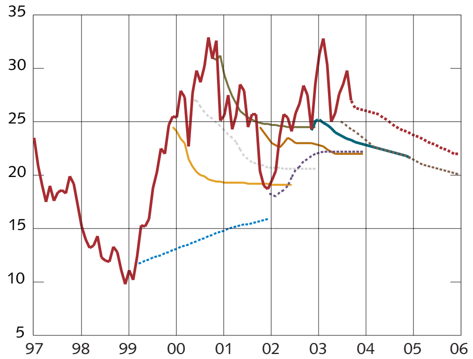
At the beginning of 1999 it was assumed that oil prices would recover and amount to around USD 16 per barrel at the end of 2001. However, the strength of the recovery was underestimated and at each forecast up to Inflation Report 2000:2 the assumption was that the highest level had been passed and that oil prices would fall (Figure B9). As oil prices continued to rise unexpectedly, the final point was gradually revised upwards. The forecast in Inflation Report 2000:2 was that oil prices would reach around USD 20/barrel at the end of 2001, which is the historical average. Structural changes in international supply and demand conditions, such as falling production

Figure B8. Correlation between US oil stocks and oil prices,1999-2003.
Millions barrels/day and USD/barrel



Sources: International Petroleum Exchange and American Petroleum Institute.

Figure B9. A selection of historical oil forecasts and outcomes.
USD/barrel



Sources: International Petroleum Exchange and the Riksbank.

costs and a deterioration in cooperation within the cartel, were expected to cause oil prices to fall back to a level more sustainable in the long term. Forward prices had also risen during 1999 and 2000 and indicated long-term oil prices of around USD 20 per barrel.

When it became clearer that OPEC could manage to cooperate to keep prices up and when the cartel launched its price band of USD 22-28 per barrel during 2000, a review was made of long-term price levels. The long-term level was assumed to be USD 22/barrel instead of USD 20/barrel, i.e. in the lower interval of OPEC's band. Forward prices had also risen for the longer maturities. The reason the final price level was not considered to be higher, perhaps USD 25 per barrel, which is the cartel's benchmark, was that the supply from other oil-producing countries was estimated to increase.

However, it is always difficult to interpret data and to know which changes are temporary and which are more permanent. During 2002 it became increasingly clear that supply might not increase at the same rate as assumed earlier, which could motivate higher long-term oil prices. At the same time, however, it appeared more probable that the United States would attack Iraq, which has a very large unutilised potential, and this had the opposite effect. The final price was therefore revised downwards slightly during 2003, from around USD 22 per barrel to just over USD 20 per barrel. As a result of the continued unrest in Iraq, the market's assessment is now much more pessimistic with regard to Iraq's future oil production and there are indications that it will be many years before production returns to earlier levels. At the same time, the international economic climate means that demand for oil can be expected to rise in the near future. There is therefore reason to expect long-term oil prices at a slightly higher level, around USD 22 per barrel.