NORGES BANK

Reports from the Central Bank of Norway No 1/2003

Inflation Report

1
03
March

The *Inflation Report* is published three times a year, and together with *Financial Stability,* is part of Norges Bank's series of reports. The report is also available on Norges Bank's website: http://www.norges-bank.no.

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Monetary policy in Norway

Objective

The Government has defined an inflation target for monetary policy in Norway. The operational objective is an inflation rate of 2½% over time. In general, the direct effects on consumer prices resulting from changes in interest rates, taxes, excise duties and extraordinary temporary disturbances are not taken into account. Norges Bank places particular emphasis on CPI inflation adjusted for tax changes and excluding energy products (CPI-ATE) when assessing underlying inflation.

Horizon and implementation

The effects of monetary policy occur with long and variable lags, and Norges Bank is forward-looking in interest rate setting. The key rate (the sight deposit rate) is set on the basis of an overall assessment of the inflation outlook, normally with a view to achieving an inflation rate of 2½% two years ahead. If extraordinary conditions prompt Norges Bank to apply a different time horizon than two years, the Bank will provide an assessment of this. The same applies if special emphasis is placed on developments in financial markets.

The decision-making process

The key interest rate is set by Norges Bank's Executive Board. Decisions concerning interest rates and other important changes in the use of instruments will normally be taken at the Executive Board's monetary policy meeting every sixth week. The analyses in Norges Bank's *Inflation Reports*, together with assessments of price and cost developments and conditions in the money and foreign exchange markets, form the basis for monetary policy decisions.

The assessment of the inflation outlook is presented in the *Inflation Report,* which is published three times a year, normally in February/March, June and October. The main content of the *Inflation Report* is presented to and discussed by the Executive Board before the report is published. The Central Bank Governor is the editor of the *Inflation Report*. On the basis of the analyses and discussion, the Executive Board assesses the consequences for the monetary policy strategy in the period to the next *Inflation Report*. These assessments are set out in a strategy document which is published at the end of the period.

Communication and reporting

The monetary policy decision is announced on the same day at 2pm. The Bank gives a press conference at 2.45pm on the same day, also when interest rates are left unchanged. The press release and the press conference are made available on http://www.norges-bank.no.

The *Inflation Reports* discuss monetary policy in the preceding four-month period. In addition, Norges Bank reports on the conduct of monetary policy in its annual report. The Bank's reporting obligation is set out in § 75c of the Constitution, which stipulates that the Storting shall supervise Norway's monetary system. The annual report is submitted to the Ministry of Finance and communicated to the King in Council and to the Storting in the Government's credit report.

Inflation Report 1/03

The cut-off date for the Inflation Report was 28 February 2003

Editorial

Gradual relaxation

During the autumn and winter, developments in the global economy have proved to be weaker than expected by Norges Bank and many other observers. Many central banks have responded by reducing interest rates further. Interest rates in the US and Europe are unusually low.

The Norwegian economy is not unaffected by the external environment. Unemployment has increased, primarily in service industries. The outlook for manufacturing is deteriorating. High wage growth is forcing many industries and municipalities to reduce costs and their workforces.

In 2002, inflation came to 2.3%, which is close to the inflation target, but has been somewhat lower in recent months. The strong krone has made the main contribution to low inflation. The rise in prices for domestically produced goods and services is being influenced by markedly higher wage growth in Norway relative to trading partners. Wage growth moved up further last year, even in industries where profitability had weakened considerably. A situation where wage growth does not react to the labour market outlook can give rise to substantial real economic costs.

Developments over recent years show that monetary policy is effective and that inflation can be kept at a low and stable level also in periods with high domestic cost inflation. However, if developments in the real economy are to be satisfactory over time, real wage growth must be adapted to underlying productivity growth.

In this Inflation Report, we present two alternative paths for the Norwegian economy. In one scenario, the tight monetary policy stance remains unchanged. Inflation is then below target over the next few years. In the alternative scenario, monetary policy is relaxed in line with market expectations. Inflation is then likely to pick up and be above target at the two-year horizon.

Actual developments may, however, deviate from both paths. Norges Bank will continuously assess developments in the global economy, the Norwegian economy and the krone exchange rate, and set the interest rate with a view to achieving the inflation target. According to Norges Bank's current assessment, a gradual easing of monetary policy would seem appropriate.

Jarle Bergo
3 March 2003

Summary

The outlook for growth in the global economy has deteriorated since the October *Inflation Report*. There are no clear signs of an imminent, self-driven recovery. The outlook for the Japanese economy is weak. The major economies in Europe, particularly Germany, are stagnating. Heightened uncertainty surrounding growth prospects has weakened consumer confidence and the business sector's willingness to invest. Global growth is still projected to pick up gradually towards a more normal level, but the recovery is expected to take place at a later stage. However, it cannot be ruled out that the world economy will experience a long period of stagnation. This risk is reflected in low interest rates in the US and Europe.

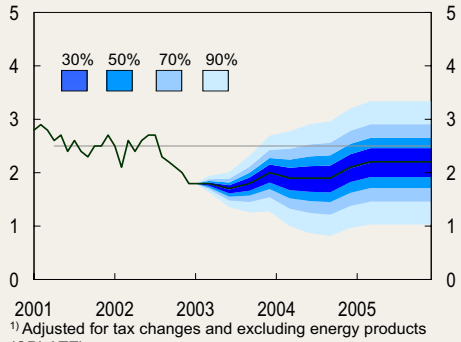
Developments in the Norwegian economy also appear to be weaker than projected in October. In spite of interest rate cuts and a stimulatory government budget, overall economic policy has been tight as a result of the strong krone. The sharp erosion of competitiveness over several years will have a dampening impact on growth in the period ahead. Norwegian industrial leaders have become increasingly pessimistic in recent months. Manufacturing employment is expected to show a considerable decline, which will have spillover effects on other industries. Sluggish developments in some service industries in Norway have persisted for a longer period than previously assumed. Higher wage growth has also reduced demand for labour in the public sector.

Household income growth is expected to slow this year and next, partly as a result of low growth in employment and lower wage growth. The sharp rise in electricity prices has reduced real disposable income. Households' financial position is still solid. Increased uncertainty in the labour market will nevertheless lead to greater caution among households. Households' confidence in their own financial situation and the domestic economy has fallen over the last half year. The interest rate cuts this winter will contribute to stimulating household demand in the period ahead and curb the negative effects of higher electricity prices and increased uncertainty. Private consumption may nevertheless move on a weaker path than previously assumed.

In the coming, underlying price inflation will be influenced by the appreciation of the krone over the past two years. In spite of high wage growth, CPI-ATE inflation will most likely range between 1½ and 2% in the period to the summer. This has been expected since last summer. Developments thereafter are partly contingent on wage growth, the krone exchange rate and the interest rate.

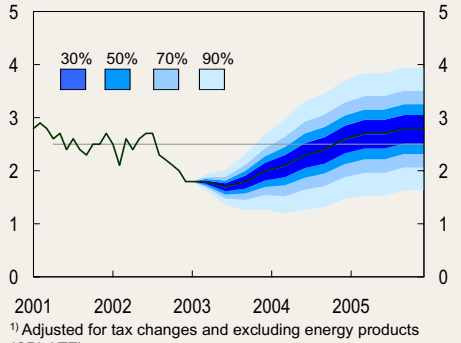
A technical assumption underlying the baseline scenario is a constant sight deposit rate of 5½% and a constant krone

Chart 1 Consumer price inflation[1]. Projection and uncertainty based on a sight deposit rate of 5 ½ per cent and the average exchange rate for February. 12-month rise. Per cent.



[1] Adjusted for tax changes and excluding energy products (CPI-ATE)
The bands in the fan indicate different probabilities for consumer price inflation.
Sources: Statistics Norway and Norges Bank

Chart 2 Consumer price inflation[1]. Projection and uncertainty based on market expectations of the sight deposit rate and a weaker exchange rate. 12-month rise. Per cent.



[1] Adjusted for tax changes and excluding energy products (CPI-ATE).
The bands in the fan indicate different probabilities for consumer price inflation.
Sources: Statistics Norway and Norges Bank

exchange rate equal to the average for the last month. On the basis of these assumptions for the interest rate and the krone exchange rate, economic growth will be lower than growth in production capacity. This may contribute to moderating wage growth. If the krone remains strong, the fall in prices for imported consumer goods is likely to continue. However, towards the end of the year, the effects of the strong krone on inflation will gradually unwind, and inflation will edge up. Given the assumptions concerning the interest rate and the exchange rate, inflation will probably remain below the inflation target over our forecast horizon. CPI-ATE inflation is then projected to move up to 2¼% two years ahead (see Chart 1).

Developments in the krone exchange rate are uncertain. At end-February, the krone had depreciated by 5% from its strongest level in January. The import-weighted exchange rate was thus about 2¼% weaker than assumed in the baseline scenario. The depreciation can be seen in the light of expectations of weaker developments in the Norwegian economy, as reflected in the interest rate reductions this winter and expectations of further cuts in interest rates.

The forward exchange market has priced in a continued depreciation of the krone. The forward exchange rate for the Norwegian krone indicates a weakening of about 7% in the period to end-2005 compared with the assumption in the baseline scenario in this report. Financial markets have priced in a further reduction in the key rate, towards 4¼% by the end of this year.

In this report, we therefore present a possible path for the Norwegian economy if the key rate is reduced further and the krone exchange rate depreciates in line with the forward exchange rate. A further fall in interest rates may fuel optimism and increase household purchasing power. This might hold up consumption growth. A weaker krone will probably reduce the extent of downscaling in the internationally exposed sector. The spillover effects on other business sectors may then be more limited. If the labour market outlook improves before the main settlement in 2004, there is a risk that wage growth will remain close to the level recorded in recent years. In conjunction with a higher rate of increase in prices for imported consumer goods, CPI-ATE inflation may in this scenario turn out to be higher than the inflation target at the two year horizon (see Chart 2).

Market expectations of lower interest rates and a depreciation of the krone may be attributable to a more pessimistic view of developments in the Norwegian and global economy than depicted in this report. Another possible interpretation may be that market participants have a more optimistic view of how quickly wage growth will respond to the outlook.

1 Recents developments

1.1 The economic situation

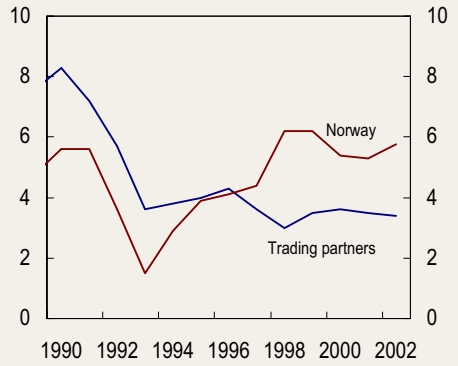
In recent years, the Norwegian economy has been marked by a shortage of economic resources and strong growth in domestic costs. Since 1996, the rise in labour costs has been markedly higher in Norway than among our trading partners. Annual wage growth is estimated at 5¾% in 2002. Real wage growth reached the highest level recorded in almost 30 years. House prices have exhibited a sharp rise in recent years, and household borrowing has been high. As a result, monetary policy has been relatively tight. The krone has appreciated. The real rate of interest moved up in 2000 and was thereafter somewhat higher than the average for the past 30 years. With the interest rate reductions this winter, the real interest rate is no longer particularly high. The tight monetary stance is reflected in the strong krone.

The Norwegian economy has diverged from cyclical developments among our trading partners. Global growth has been sluggish and well below growth potential. World equity prices have been declining since mid-2000. Monetary policy has been relaxed internationally in response to the weak outlook. Interest rates among our trading partners are now historically low. In the US, interest rates have not been lower since the early 1960s. It does not appear that interest rates in the US and Europe will increase in the near future.

Developments during the winter and spring of last year seemed to suggest that global growth would pick up again. Equity markets and long-term interest rates moved up (see Chart 1.3). Equity prices declined sharply during the summer of 2002, however. This increased the likelihood of a deeper and more prolonged downturn. Since then, world stock markets have continued to fall. Growth forecasts for trading partners have gradually been revised downwards. There are fears of recession in major economies such as the US, Germany and France. The Japanese economy has been in a deflationary recession for a long period. At the same time, the international geopolitical situation is highly uncertain, with fears of war with Iraq. This is affecting international financial markets and some commodity markets. Oil prices are higher than USD 30 per barrel. The price of gold has risen markedly.

The tightening effect of monetary policy in Norway gradually increased as external interest rates fell and demand for the Norwegian krone rose. The Norwegian krone appreciated markedly up to January 2003 (see Chart 1.4). The appreciation was particularly strong last spring. In conjunction with a wide and rising interest rate differential, weak global stock markets, fears of war and sustained high oil prices have contributed to the strengthening of the krone (see box page 37). Following the interest rate cuts in

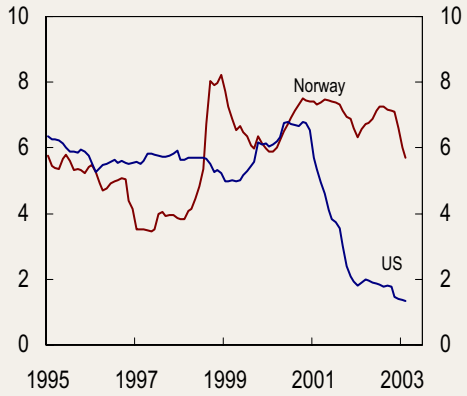
Chart 1.1 Labour costs[1)] in Norway and among trading partners. Percentage change from previous year.



[1)] Hourly labour costs in manufacturing

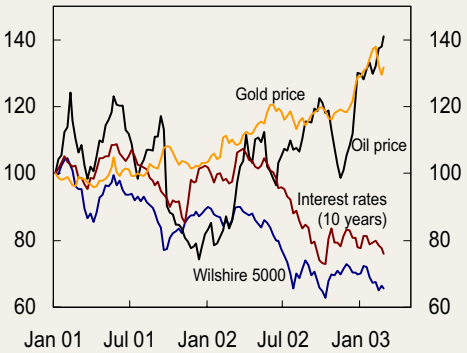
Sources: Ministry of Finance, TRCIS and Norges Bank

Chart 1.2 Three-month money market rates for Norway and the US.



Sources: EcoWin and Norges Bank

Chart 1.3 Equity prices, long-term interest rates in the US, oil prices in USD and price of gold. Index, week 1 2001=100. Weekly figures.



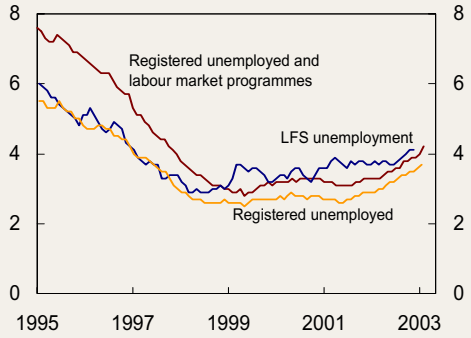
Sources: EcoWin, The Economist and Wilshire Associates

Chart 1.4 Import-weighted exchange rate (I-44), trade-weighted exchange rate[1] and interest rate differential against other countries[2]. Weekly figures

[1] A rising curve denotes an appreciation of the krone

Source: Norges Bank

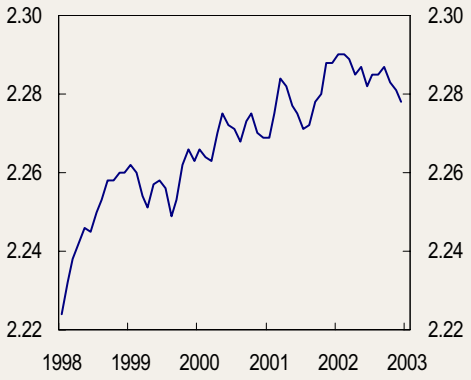
Chart 1.5 Unemployed (LFS), registered unemployed and persons participating in labour market programmes. Percentage of labour force. Seasonally adjusted[1]



[1] LFS unemployment: 3-month moving average

Sources: Statistics Norway and the Directorate of Labour

Chart 1.6 Employed persons according to LFS. Jan 1998 - Dec 2002. In millions. Seasonally adjusted



Source: Statistics Norway

December and January, the movement in the krone exchange rate was reversed. In February, the krone depreciated sharply. However, as a result of six years of markedly higher wage growth in Norway than among trading partners, combined with the exchange rate, competitiveness in internationally exposed industries has deteriorated considerably. Cost competitiveness is substantially weaker than the average from 1970.

Weak external developments have had negative spillover effects on the Norwegian economy through the appreciation of the krone, the fall in equity prices and lower demand for Norwegian exports. The effects have come gradually. In the first round, expectations concerning future earnings in some service industries were lowered markedly, particularly in the ICT sector. Many companies went from expansion towards downscaling and rationalisation. Excess capacity in what had earlier been global growth industries was reduced from 2001. Investment contracted sharply. Since the autumn of 2001, unemployment has moved up, to a large extent for ICT-related occupations. So far, the increase in unemployment has been highest in Oslo and Akershus.

The combination of high domestic wage growth, a stronger krone and weak growth in export markets has gradually squeezed profitability in some industries. Manufacturing enterprises have reported a fall in production, employment and orders both for export and domestic markets in the fourth quarter of 2002. Manufacturing unemployment has exhibited a substantial rise over the past three months. Industrial leaders expect negative developments in 2003. Reports from Norges Bank's regional network indicate that manufacturing is reducing the use of goods and services from Norwegian suppliers. This is also exerting pressures on profitability in industries that are normally considered to be sheltered from direct international competition. Developments in the business sector have resulted in excess capacity in the commercial building industry over the past year. This has contributed to reducing activity in the construction industry.

While developments in some business sectors have been weak, other sectors have benefited from the appreciation of the krone. Import firms have been able to increase profits without raising prices. Household and public sector demand has been holding up. Even though there has been substantial growth in government allocations, growth in public services production is low. This is due to high wage growth and growth in social security spending. Enterprises that sell goods and services to Norwegian households are reporting positive growth. This is confirmed via our regional network (see Annex I page 47). As projected, high income growth contributed to sharp growth in private consumption into the autumn of last year. Households' confidence in the general economic situation fell markedly in the fourth quarter of

last year and showed a further fall in the first quarter of this year. Electricity prices exhibited a pronounced increase in December and January and have resulted in lower real income growth. Growth in credit to households has eased somewhat in recent months, but is still a little higher than 10% on an annual basis. The rise in house prices seems to be levelling off.

Economic growth in the mainland economy is now lower than trend growth. Mainland GDP rose by 1.3% in the first three quarters of 2002 compared with the same period one year earlier. It appears that growth was low in the fourth quarter of last year. Manufacturing output has fallen over the past three months. Total employment is lower than one year earlier (see Chart 1.6). Unemployment has now increased for most occupational groups and in large parts of the country. Seasonally adjusted, registered unemployment was 3.7% in February, 0.8 percentage point higher than one year earlier. Economic pressures are easing in Norway. The output gap, as measured here, is closing (see Chart 1.7 and box).

1.2 Consumer price inflation

Lower underlying rise in prices

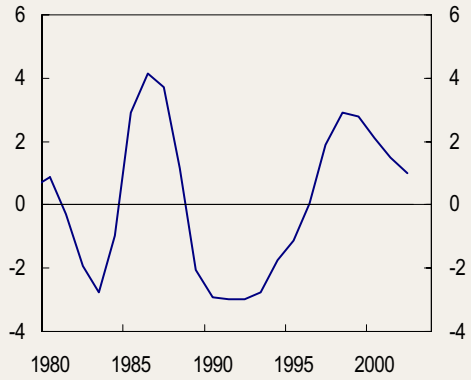
The underlying rise in prices has slowed since last summer. The year-on-year rise in consumer prices adjusted for tax changes and excluding energy products (CPI-ATE) was 1.8% in January, compared with a peak of 2.7% in June and July of last year (see Chart 1.8). Price inflation is lower both for imported consumer goods and domestically produced goods and services.

Chart 1.9 shows the rise in prices for domestically produced goods and services by component. The rate of increase in prices for services with wages as a dominant cost factor has remained high and is rising broadly in line with wage growth. Prices for health services have increased by more than 5% over the past year. Prices for insurance services have shown a rise of almost 7%. Prices for craftsmen services have risen by 4.7% over the past year.

The rise in prices for other services has edged down. Over the past year, the year-on-year rise in prices for services where wages are not a dominant cost factor has slowed from more than 4% to less than 2%. Lower air fares have made the largest contribution to pushing down the rise in prices for this group of services. Air fares were 15% lower in January 2003 than one year earlier. The fall in prices is primarily attributable to tax reductions and intensified competition in the airline industry.

The rise in house rents, which account for 17% of the CPI, has also softened since the summer, after moving up in the first half of last year. House price inflation was high in 2001

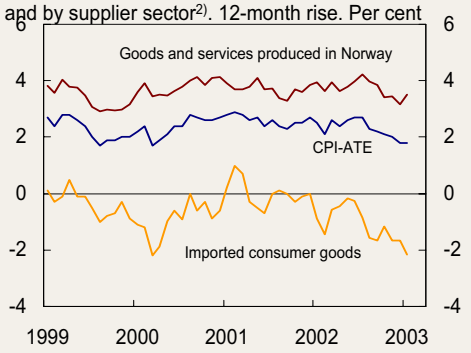
Chart 1.7 The output gap[1] in the Norwegian economy. 1980-2002



[1] See box page 40.

Source: Norges Bank

Chart 1.8 Consumer prices adjusted for tax changes and excluding energy products (CPI-ATE). Total[1] and by supplier sector[2]. 12-month rise. Per cent

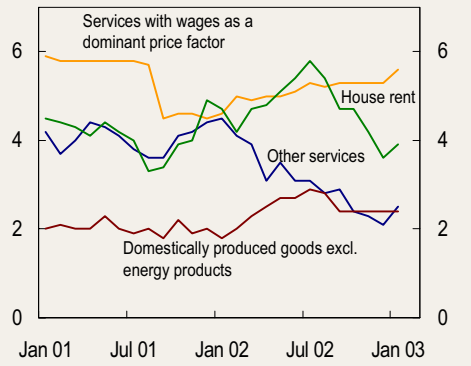


[1] Norges Bank's estimates up to July 2000, thereafter figures published by Statistics Norway

[2] Norges Bank's estimates

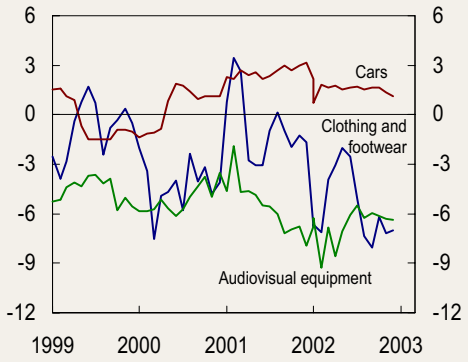
Sources: Statistics Norway and Norges Bank

Chart 1.9 Consumer prices adjusted for tax changes and excluding energy products (CPI-ATE). Domestic components. 12-month rise. Per cent



Sources: Statistics Norway and Norges Bank

Chart 1.10 Consumer prices for some imported goods adjusted for tax changes.
12-month rise. Per cent.



Sources: Statistics Norway and Norges Bank

and in the first half of last year, but stagnated somewhat in the autumn. This may have had an impact on the rental market. In January, the year-on-year rise in house rents was 3.9%.

In the year to end-January, prices for imported consumer goods fell by 2.2%. This price fall was somewhat more moderate than expected on the basis of previous experience with the feed-through via the krone to imported price inflation. Price developments for various imported consumer goods vary widely (see Chart 1.10).

Prices for clothing and footwear have dropped since 1995. The price decline over the past year cannot be attributed to the krone exchange rate alone. The textile industry has been marked by increased globalisation for many years. There has been a considerable improvement in the framework conditions for imports from developing countries and emerging economies. There has been a shift in imports away from high-cost countries towards low-cost countries. This has reduced purchasing costs for Norwegian importers. Tariff rates for clothing and footwear are still being scaled back. Clothing and footwear prices fell by 6.7% in the year to end-January. Prices for audiovisual equipment fell by 6.2% in the same period. Steady technological improvements and strong competition have led to a fall in prices for these goods in international markets. The appreciation of the krone has come in addition to developments in international competition. On balance, prices for these goods have reacted to the appreciation of the krone broadly in line with expectations.

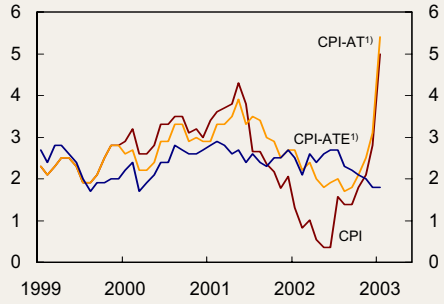
In Norway, prices for new cars have remained largely unaffected by the sharp appreciation of the krone. The exchange gains associated with the strengthening of the krone have primarily benefited car producers and/or car importers. As a result of an increase in private car imports, Norwegian importers have lost market shares. Because of this competition, importers of some car brands have recently reduced or announced a reduction in prices for new cars. It seems that prices will therefore decline, but at a later stage than expected. In the UK, it also took time for car prices to fall after the sharp appreciation of sterling in 1996/1997 (see box page 42).

The appreciation of the krone does not seem to have pushed down prices for imports of alcoholic beverages. Adjusted for tax reductions, prices for alcoholic beverages have remained virtually unchanged over the last year.

Sharp rise in electricity prices has pushed up CPI inflation

The year-on-year rise in the consumer price index including tax changes and energy products (CPI) has moved up sharply in recent months (see Chart 1.11). In the year to end-January, CPI inflation was 5.0%. As late as November, the year-on-year rise was as low as 2.1%. The entire rise in CPI inflation is attributable to developments in electricity prices. Low levels of rainfall and reservoir levels far below normal this autumn resulted in a pronounced rise in electricity prices towards the end of 2002 and into 2003. In December, electricity prices in the CPI were about 28% higher than one year earlier. In January, the year-on-year rise exceeded 80%. Spot prices on Nord Pool were at their highest level in the first week of January this year. On the cut-off date for this report, spot prices had fallen by about 50% since the beginning of January. Prices were still markedly higher than the normal level for this time of year. Electricity prices are expected to fall, but remain above the normal level for a period. The year-on-year rise in the CPI is likely to fall in February.

Chart 1.11 Consumer prices (CPI). Total and adjusted for tax changes and excluding energy products.
12-month rise. Per cent



CPI-AT: CPI adjusted for tax changes
CPI-ATE: CPI adjusted for tax changes and excluding energy products

¹⁾ Norges Bank's estimates up to July 2000, thereafter figures published by Statistics Norway

Sources: Statistics Norway and Norges Bank

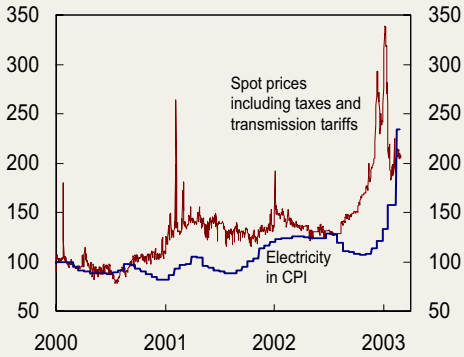
1.3 Financial markets

Developments on global stock markets have been weak since the October *Inflation Report*. Stock indices have declined considerably since mid-January. The Oslo Stock Exchange has shadowed international developments. Since the beginning of the year, the all-share index has declined by close to 12% (see Chart 1.13).

Year-on-year growth in C2 (private sector and municipal gross domestic debt) was 9.1% at end-January compared with 8.9% in December. For the enterprise sector, year-on-year growth fell from 7.6% in December to 7.4% in January (see Chart 1.14). Growth in credit to households has eased in recent months, but is still showing double-digit growth. In the year to end-January, household gross domestic debt grew by 10.6%. Household credit growth is higher than growth in household disposable income. This means the debt/income ratio is still on the rise. At the same time, the rise in house prices seems to be levelling off. Annual growth in M2 was 6.2% at the end of January, compared with 8.2% at end-December.

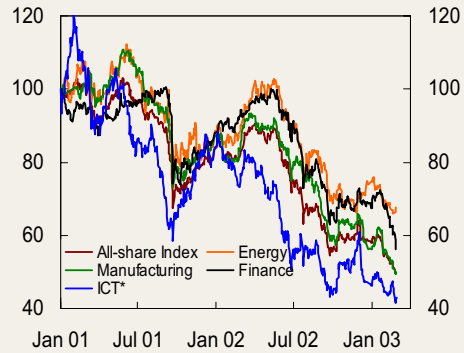
In December and January, Norges Bank lowered its key rate by a total of 1 percentage point (see Chart 1.15). Since the October *Inflation Report,* three-month money market rates have fallen by 1½ percentage points. Short-term rates have also fallen abroad since the October *Inflation Report*. Official interest rates have been reduced in the US, the euro area, the UK, Denmark and Sweden. The difference between interest rates in Norway and our trading partners has nevertheless narrowed. Measured by three-month

Chart 1.12 Electricity prices. Index.
1 January 1998= 100



Sources: Statistics Norway, Nord Pool, The Norwegian Water Resources and Energy Directorate and Norges Bank

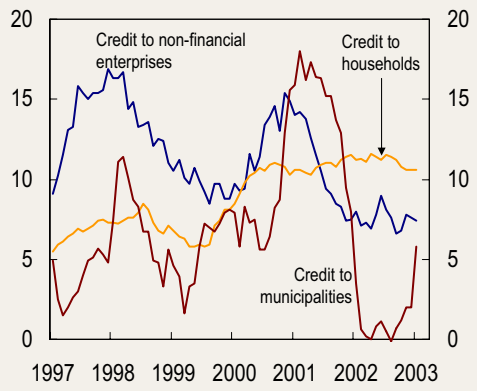
Chart 1.13 Developments in some indices on the Oslo Stock Exchange.
Daily figures, 01.01.01. – 27.02.03



* The ICT (Information and Communication Technology) index is calculated as the average sum of the IT and Telecom indices.

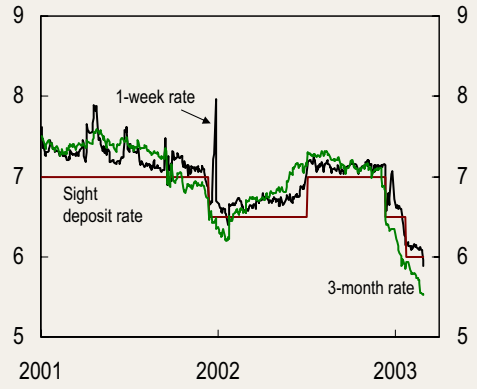
Source: EcoWin

Chart 1.14 Credit from domestic sources (C2). 12-month growth. Per cent



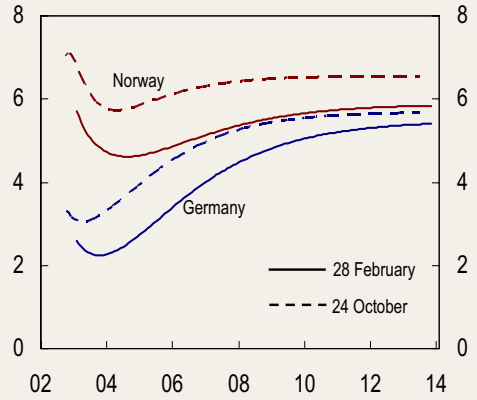
Sources: Statistics Norway and Norges Bank

Chart 1.15 Norges Bank`s sight deposit rate and short-term money market rates. Nominal market rates. Daily figures, 01.01.01 – 28.02.03.



Source: Norges Bank

Chart 1.16 Forward rates for Norway and Germany. Calculated future short-term rates 2002-2013.



Source: Norges Bank

interest rates, the interest rate differential has narrowed from 3.9 percentage points at the end of October 2002 to 2.8 percentage points at the end of February 2003.

Forward interest rates estimated on the basis of the yield curve in the money and bond markets may reflect interest rate expectations for the years ahead. Since the October *Inflation Report*, estimated forward rates in Norway have fallen markedly (see Chart 1.16). This indicates that the market has lowered its expectations as to developments in the Norwegian economy. Forward rates fall to about 4½% in the period to mid-2004 before rising and stabilising at around 5¾% ten years ahead.

In the long term, around ten years ahead, the forward interest rate differential between Norway and Germany reflects differences in expected inflation plus a risk premium on investments in Norwegian bonds. Since the October *Inflation Report*, the ten-year forward rate fell to a greater extent than comparable interest rates in Germany. The small difference between Norwegian and German rates reflects confidence that the inflation target will be achieved. In the absence of such confidence, the difference between forward rates would probably have been considerably wider.

The interest rate differential is an important factor behind the appreciation of the krone over the last two years. In spite of the 0.5 percentage point reduction in the sight deposit rate on 11 December last year, the krone continued to appreciate until the end of the year. At end-2002, the import-weighted krone exchange rate index (I-44) was about 3% stronger and the trade-weighted index (TWI) about 2½% stronger than on the cut-off date for the October report. The sight deposit rate was lowered by a further 0.5 percentage point on 22 January. Since the beginning of the year, the effective krone exchange rate, measured in terms of both the I-44 and the TWI, has depreciated by nearly 5%. The krone has depreciated against both the US dollar and the euro, but in particular against the euro.

1.4 Monetary policy

In the October *Inflation Report*, the rate of increase in consumer prices was projected at 2½% at the two-year horizon. The projections were based on the assumption of a constant sight deposit rate of 7% and a stable import-weighted krone exchange rate equal to the average for the preceding three months. The inflation outlook was marked by two opposing forces. On the one hand, high wage and cost inflation would sustain the rise in prices for domestically produced goods and services. On the other hand, the appreciation of the krone would result in a temporary fall in the rise in prices for imported consumer goods. Against this

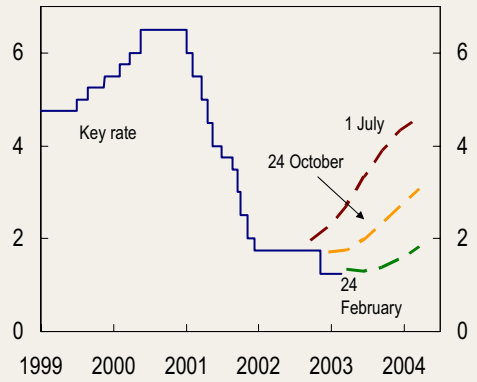
background, a monetary policy strategy was drawn up for the subsequent four months (from November 2002 to end-February 2003). On the assumption that the krone exchange rate would remain broadly unchanged, a sight deposit rate in the interval 6.5-7.5% was judged to be appropriate at the end of this period (see Strategy Document 3/02 in Annex II in this report).

Our assessment in October was marked by the uncertainty surrounding labour market tightness and cost developments. Earlier in the year, the wage settlement resulted in surprisingly high pay increases. There were no signs of lower wage growth later in the autumn and private consumption was expected to show a sharp increase through the autumn. There was also substantial uncertainty associated with developments in the krone exchange rate, the effects of the appreciation of the krone on CPI inflation and output, and developments in the global economy. The uncertain environment warranted a cautious approach in interest rate setting. A pronounced change in the krone exchange rate could imply that the interest rate should be set outside the interval indicated in the Strategy Document. It was pointed out in the *Inflation Report* that if global developments proved to be weaker than assumed, and official rates in other countries were reduced, the interest rate differential against trading partners would widen further. This could have resulted in a further appreciation of the krone at about the same pace witnessed during the autumn. If the krone had continued to appreciate at the same pace, the krone would have been about 3% stronger at the end of the first quarter of 2003 than the assumption underlying the projections in the *Inflation Report* and the Strategy Document. This movement in the krone exchange rate would have brought price inflation down to 2¼% two years ahead, or an estimated ¼ percentage point below the level in the baseline scenario.

Interest rates were left unchanged at Norges Bank's Executive Board meeting on 30 October, the same day *Inflation Report* 3/02 was published. According to Norges Bank's assessment, with an unchanged interest rate, the probability that inflation two years ahead would be higher than 2½% was the same as the probability that it would be lower.

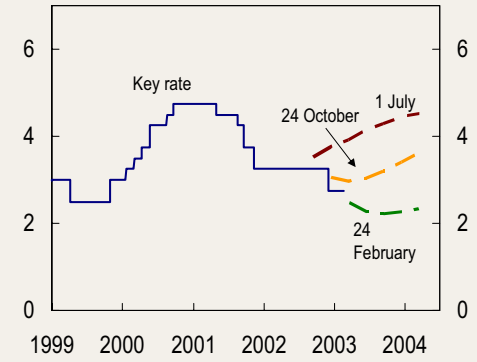
In November and up to mid-December, the krone was on average 1½-2% stronger than the exchange rate assumption in the baseline scenario. Signs of a deteriorating outlook for the global economy had gradually emerged. Official interest rates were lowered in the US, the euro area, Denmark and Sweden. In Norway, there were also signs of somewhat weaker activity than projected in the October *Inflation Report*. The sharp rise in household demand had taken place

Chart 1.17 Interest rate expectations in the US. Actual development and expected key rate.



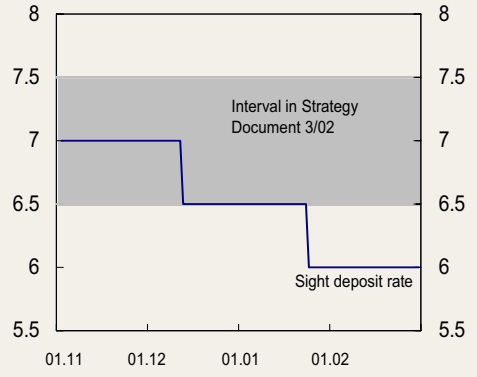
Source: Norges Bank

Chart 1.18 Interest rate expectations in the euro area. Actual development and expected key rate.



Source: Norges Bank

Chart 1.19 Interval for the sight deposit rate in Strategy Document 3/2002 for November 2002 to the end of February 2003 and actual development.



Source: Norges Bank

in line with expectations, but came to a halt as a result of a sharp rise in electricity prices. Households had grown more pessimistic.

Norges Bank's regional network reported that many enterprises were seeking to reduce costs following the costly wage settlement. The strong krone was expected to reduce profitability in the export industry. It was also reported that demand and profitability were falling in many industries, even though the picture was more positive for retail trade and some private services. The rise in house prices appeared to be levelling off. Rents for commercial property were declining.

On 11 December, Norges Bank's Executive Board decided to lower the sight deposit rate by 0.5 percentage point with effect from 12 December. Growth forecasts for the world economy had been revised downwards and official interest rates had been cut in several countries. The krone had continued to appreciate at about the same pace as earlier in the autumn. At the same time, the outlook for the Norwegian economy had weakened. This brought the sight deposit rate down to 6.5%. With a sight deposit rate of 6.5%, Norges Bank judged that the probability that inflation two years ahead would be lower than 2½% was greater than the probability that it would be higher.

The krone continued to appreciate after the reduction. In the period to the next monetary policy meeting on 22 January, the krone had appreciated by about 3% more than assumed in the baseline scenario for the *Inflation Report* and the Strategy Document. Industrial leaders had become more pessimistic. The perceived weakness in the world economy persisted. Expectations of lower interest rates internationally had increased substantially over the last six months.

In Norway, inflation was still projected to fall below target two years ahead. At the meeting on 22 January, Norges Bank's Executive Board therefore decided to lower the sight deposit rate by a further 0.5 percentage point, to 6.0%. The krone was judged to be considerably stronger than the assumption underlying Strategy Document 3/02. Combined with the downward revision of growth forecasts for both the Norwegian and international economy, the sight deposit rate was set lower than the interval indicated in the Strategy Document. It was Norges Bank's assessment that developments implied low price inflation in the period ahead. Norges Bank's bias remained unchanged, i.e. with an interest rate of 6.0%, the probability that inflation two years ahead would be lower than 2½% was greater than the probability that it would be higher.

2 International developments

The international growth outlook has continued to deteriorate since the October *Inflation Report*. In 2003, growth among most of our main trading partners will remain below trend. There are no clear signs of an imminent recovery. Although Japan showed some growth through 2002, the outlook for the Japanese economy is weak. The large European economies, in particular Germany, are stagnating. Increased uncertainty surrounding growth prospects has weakened consumer confidence and the business sector's willingness to invest. Global growth is still expected to rise gradually to a more normal level, but the recovery will come later than previously expected. The US economy, which has been the driving force behind growth in the global economy, has historically been very resilient. Growth has tended to pick up rapidly after short periods of contraction, which will most likely be the case this time as well. Monetary policy has shifted in an expansionary direction in many countries. Many central banks have cut interest rates to the lowest levels in several decades. There is some evidence of a recovery in investment.

However, we cannot exclude the possibility of a fairly long period of stagnation in the global economy. Low interest rates in the US and Europe are a reflection of this risk. The level of investment in the US was high through the expansion, and this may have led to excess capacity in the business sector. The fall in equity prices has a negative effect on household wealth. In addition, US household saving is low and low interest rates have induced households to accumulate debt. The fall in the value of the US dollar may contribute to a rise in net exports, but growth in the business sector is not yet self-driven. The depreciation of the dollar is also adversely affecting other countries' exports. The impetus from the US economy may be weak for several years ahead.

Continued uncertainty regarding investment recovery

Investment in both the euro area and the UK fell at a slower pace during 2002 (see Chart 2.2). Investment increased through much of the year in Japan, and rose slightly in the fourth quarter in the US. Capacity utilisation in manufacturing remains low in many countries. Investment as a share of GDP has fallen, however, although the level remains relatively high in some countries. The ICT sector accounted for a substantial share of investment in the 1990s. These goods are assumed to have a relatively short life, which may imply that investment will pick up soon. At the same time, there is still some growth in demand in the US, the euro area and the UK. We assume that investment will pick up somewhat during the course of the year in these areas.

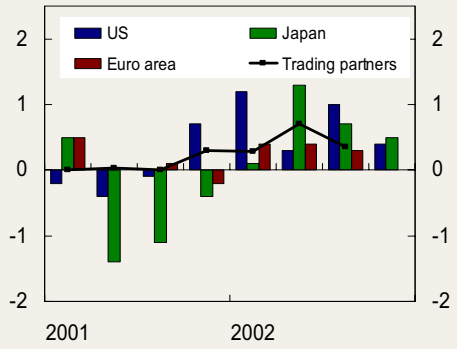
Table 2.1 GDP estimates.
Percentage change from previous year.

	2003	2004	2005
US	2½	3½	3
Japan	½	¾	1
Germany	½	1½	2¼
France	1½	2¼	2½
UK	2¼	2½	2½
Sweden	1¾	2½	2½
Norway's trading partners[1)]	1½	2¼	2½
Euro area[2)]	1¼	2	2½

[1)] Weighted by export weightings
[2)] Weighted by the IMF's GDP weightings adjusted for purchasing power

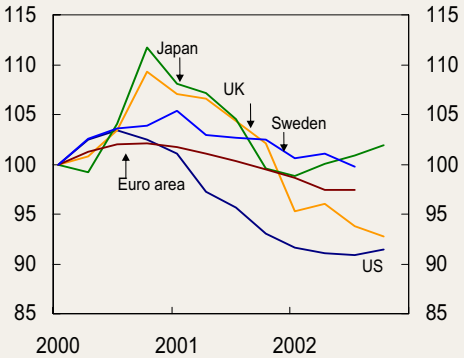
Source: Norges Bank

Chart 2.1 GDP growth in the US, Japan and the euro area. Seasonally adjusted volume growth from the previous quarter. Per cent.



Sources: BEA, EU Com., Eurostat, Economic Planning Agency, National Statistics, EcoWin and Norges Bank

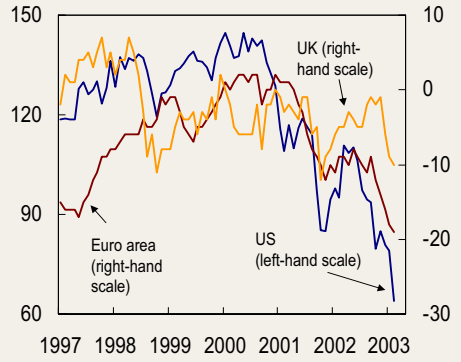
Chart 2.2 Gross business investment. Volume[1)] .
Index Q1 2000 = 100.



[1)] Figures for Sweden and the euro area include dwellings

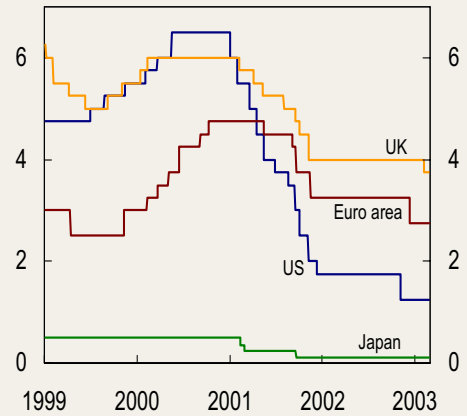
Sources: EcoWin, US Department of Commerce, National Statistics, ESRI, EUROSTAT and Statistics Sweden

Chart 2.3 Consumer confidence indicators in the US, the UK and the euro area. Seasonally adjusted diffusion index. Monthly figures



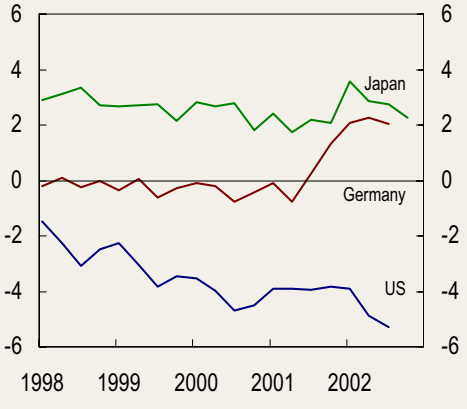
Sources: European Commission and The Conference Board

Chart 2.4 Key rates.



Source: EcoWin

Chart 2.5 Current balance in Japan, Germany and the US. Per cent of GDP. Quarterly figures.



Source: EcoWin

Moderate growth in private consumption

Household real disposable income among Norway's most important trading partners increased last year. Weak employment developments in the euro area and the US were more than offset by growth in real wages and, in the US, by substantial tax cuts. This has provided room for some growth in private consumption, while saving has increased.

However, the fall in equity prices has probably acted as a drag on consumption. At the same time, rising house prices and falling mortgage interest rates have had a positive effect on consumption in the US and the UK, where the fall in equity prices has probably had the largest impact.

In the US, productivity growth and further tax cuts will fuel continued growth in real disposable income. This may provide scope for moderate growth in consumption, although a low saving ratio and an uncertain labour market suggest that saving may also increase. Real wage growth also appears to be holding up in the euro area and the UK, providing room for continued growth in private consumption. However, a weak labour market in the euro area will dampen growth in consumption. In the UK, low unemployment will fuel continued growth in consumption, but the low saving ratio indicates that growth will slow. In Japan, income developments will remain weak, despite higher government transfers. Growth in consumption will remain weak. In Sweden, growth in consumption will probably hold up, despite an increase in some taxes. The household saving ratio is relatively high, and house prices are still on the rise.

Monetary and fiscal policy will stimulate growth this year, but less scope for further stimulus

Fiscal policy is expected to generate positive growth impulses in the US and the UK this year. In Japan, fiscal policy will also provide some stimulus, despite a large deficit and high government debt. In the euro area, there appears to be little scope for fiscal stimulus, and the fiscal stance in some countries may be tightened. Most countries face considerable challenges in meeting future pension obligations. Therefore, some fiscal retrenchment should be expected in 2004 and 2005 if growth picks up. Although bond yields are currently low compared with levels in recent decades, it must be assumed that government deficits and the growing focus on the long-term financial challenges facing governments are contributing to keeping long-term yields higher than they would otherwise have been.

Key rates have been cut in the US, the euro area, the UK, Sweden and Denmark since the October *Inflation Report*. Viewed in isolation, this will have a positive effect on growth this year. In the US, a weaker dollar will also contribute to growth, whereas exchange rate movements

will have the opposite effect in the euro area. The key rate in Japan has long been close to zero. However, the central bank has supplied liquidity by buying government bonds, thereby contributing to a fall in government bond yields to very low levels in recent months. There is still some scope for interest rate reductions in most countries. Markets are expecting a further marginal interest rate reduction in the euro area, the UK, Sweden and Denmark.

International imbalances persist

The US posted a record-high current account deficit last year. There has been some fear that the rising deficit would undermine confidence in the US economy, which might lead to a sudden, sharp fall in the dollar. The dollar weakened somewhat through 2002, and the depreciation has continued this year. So far, the depreciation must be characterised as moderate and not unexpected in the light of the large and growing US deficit. In the short term, the depreciation of the dollar implies an increase in the US current account deficit, but after a period a weaker dollar and reduced growth rate differentials between the US and the other main areas will probably result in a more slowly rising deficit. The deficit may even stabilise or decline somewhat. This means that US demand will no longer provide the same stimulus to the rest of the world. Even though strong growth in Eastern Europe and Asia may continue to generate some stimulus to the euro area and Japan, growth will increasingly be contingent on domestic factors.

Uncertain economic outlook

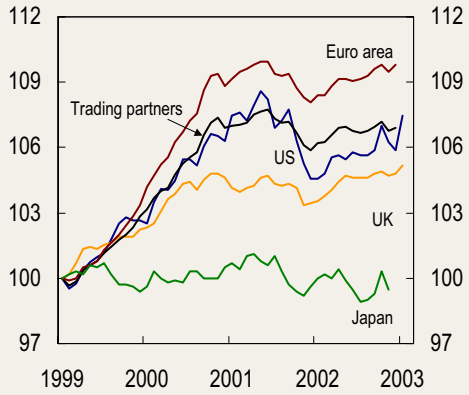
Growth is weak, and the world economy is vulnerable to new shocks. As long as the situation in Iraq has not been resolved, it can be expected to act as a drag on both private consumption and investment. Should the conflict be resolved swiftly without a war, this may contribute to a faster pick-up in growth than we have assumed. On the other hand, the effects of the fall in equity markets may be greater than we have assumed. A turnaround in the housing market in the UK or the US could have a negative impact on the economy.

Low and stable inflation

Extensive idle capacity and weak growth prospects will result in moderate consumer price inflation internationally. On the other hand, oil prices have been high for a period. Other commodity prices have also edged up. As a result, producer prices showed a moderate rise last year, following a period of decline.

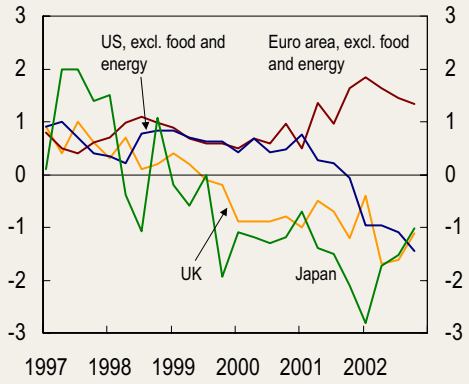
High productivity growth and weak growth in demand are nevertheless contributing to a low or negative rise in prices for goods. Wage growth appears to be holding up in the

Chart 2.6 Producer prices.
Index, Jan.1999 = 100. Monthly figures.



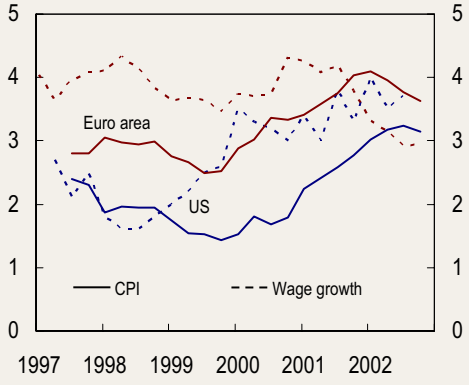
Sources: Datastream and Norges Bank

Chart 2.7 Rise in prices for goods in the consumer price index. Percentage change from the same quarter the previous year.



Source: Datastream

Chart 2.8 Rise in prices for services in the consumer price index and wage growth. Percentage change from the same quarter last year.



Sources: EcoWin and Datastream

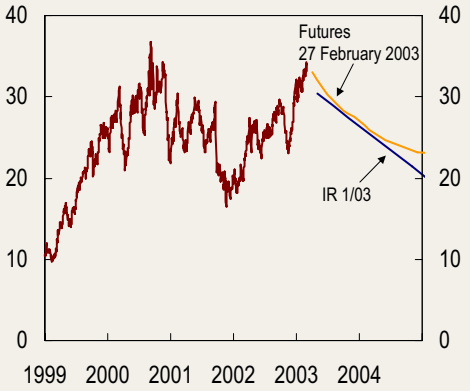
Table 2.2 Estimates for consumer price inflation in other countries. Percentage change from previous year

	2003	2004	2005
US	2¼	2¼	2½
Japan	-½	-½	-¼
Germany	1¼	1½	1¾
France	1¾	1½	2
UK	2½	2½	2½
Sweden	2½	2	2
Norway's trading partners[1)]	2	1¾	2
Euro area[2)]	1¾	1¾	2

[1)] Import weights
[2)] Eurostat weights (country's share of euro area's consumption)

Source: Norges Bank

Chart 2.9 Oil prices Brent Blend. USD per barrel. Daily figures.



Sources: Telerate, IPE and Norges Bank

euro area, the UK and the US, which points a continued rise service prices. In the US, a weaker dollar will contribute to a continued rise in prices, whereas the appreciation of the euro will dampen inflation in the euro area. In Japan, wages have fallen more than prices. Demand remains weak, and continued deflation can be expected.

On balance, this points to moderate consumer price inflation this year. Oil prices are assumed to fall approximately in line with market expectations, which will have a dampening impact on inflation over the next few years. However, economic growth is then expected to pick up and reduce slack in the economy. The overall picture is one of fairly stable consumer price inflation over the next few years, roughly in line with the official monetary policy objectives of various countries.

High oil prices

In recent weeks, oil prices have been higher than USD 30 per barrel. The rise in oil prices since the beginning of December last year is largely due to supply-side factors. Oil production in Venezuela dropped sharply as a result of political unrest and the strike. Mounting fears of a military campaign against Iraq have led to expectations of a further reduction in global oil production and a higher war premium on oil prices. Higher oil production in other OPEC countries did not compensate for this. Coupled with higher demand for oil so far this winter, partly as a result of the cold winter in the northern hemisphere, this has contributed to reducing oil stocks in the US and OECD countries combined.

Future developments will depend largely on the situation in Iraq. If the conflict is resolved swiftly without major damage to oil installations in the area, oil prices could fall substantially. However, a fall in prices could be restrained by the need to build up commercial oil stocks again. A prolonged war involving the destruction of important infrastructure could lead to a considerable oil shortage. In the short term, OPEC countries have fairly limited idle capacity. Oil stocks are also at a low level today. As a result, the current situation is different from oil market conditions prior to the Gulf war in the early 1990s.

On the other hand, a rise in oil prices as a result of military action in Iraq would probably be moderated by an early release of strategic oil stocks in the US and other OECD countries. However, these reserves are not sufficient to compensate for a large-scale and prolonged war.

In the longer term, both supply and demand are expected to normalise, and the oil prices are expected to fall gradually to USD 20 per barrel.

3 Domestic developments

Continued moderate growth in the global economy will contribute to a further cooling of the Norwegian economy. The effects of the strong deterioration in competitiveness will curb growth ahead. A substantial decline in manufacturing employment is expected. This will spill over to other industries. Fiscal policy will be expansionary as a result of the fiscal rule. This, coupled with a continued rise in private consumption, will stimulate growth in domestic demand, although the projections have been revised downwards since the October *Inflation Report.*

The projections in this report are based on the technical assumptions of a constant key rate of 5½% and a constant krone exchange rate equal to the average for the past month.

On the basis of these interest rate and krone exchange rate assumptions, the outlook points to diminished pressures in the Norwegian economy and an easing of labour market conditions. Despite the reductions in the sight deposit rate and an expansionary fiscal policy which is stimulating activity, overall economic policy is tight as a result of the strong krone. Growth in mainland GDP is projected to be lower than trend growth, at 1¼% in 2003 and 2% in 2004. In 2005, growth is projected at 2¼%. Aggregate output, which has been high for a long time, is projected to return to a level that is more consistent with a long-term output trend. The output gap is projected to be slightly negative in 2005 (see Chart 3.1). The unemployment rate (LFS) is projected to rise to around 4¾%.

Companies in mainland Norway

Since 1996, cost inflation in Norway has been considerably higher than among our trading partners (see Chart 3.2). With the krone exchange rate at the average for February, competitiveness had deteriorated by a little less than 22% since 1996. Of this, cost inflation contributed close to 15 percentage points and the appreciation of the krone 7½ percentage points. In the years around the millennium, the depreciation of the krone veiled the underlying deterioration in competitiveness. In May 2000, the krone exchange rate fell to its lowest level in six years.[1] In the subsequent period to end-2002, the krone appreciated and the effects of high wage growth have gradually come into evidence in company accounts.

[1]Measured in terms of the monthly average of an import-weighted exchange rate against 44 countries, the krone was at its weakest level in May 2000 since May 1994. Measured in terms of the monthly average of the trade-weighted exchange rate index, the krone was at its weakest level in May 2002 since the series was started in January 1971. Measured in terms of both indices, there were a few days in autumn and winter 1998 when the krone was weaker than in May 2000.

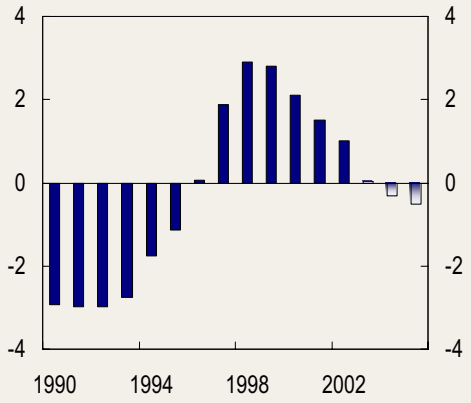
Table 3.1 Key aggregates for Norway 2003-2005
Percentage change from previous year

	2003	2004	2005
Mainland demand	1¼	2½	2½
Private consumption	2¾	3¼	3
Public consumption	¾	2	2
Fixed investments	-4	½	2
Enterprises	-6	-1	1
Dwellings	-3	2	5
General government	¼	2	2
Petroleum investment	20	0	0
Traditional exports	-3	-1	2
Imports	1	1¼	3½
Mainland GDP	1¼	2	2¼
Employment	-½	0	½
LFS unemployment[1)]	4½	4¾	4¾

[1)] Percentage of labour force

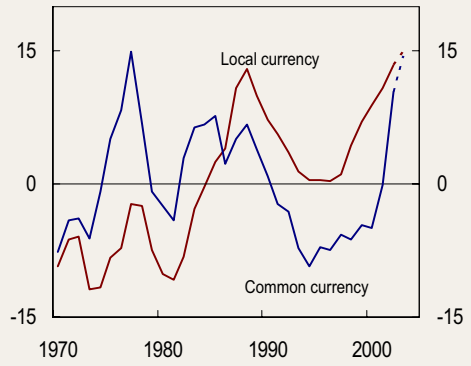
Source: Norges Bank

Chart 3.1 The output gap in the Norwegian economy. 1990-2005



Source: Norges Bank

Chart 3.2 Relative labour costs. Divergence from the average since 1970.
Per cent. 1970 – 2003.

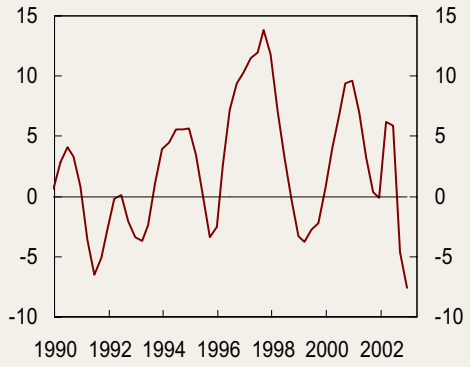


Sources: Ministry of Finance, TRCIS and Norges Bank

Currency hedging by companies has contributed to limiting the consequences of the krone's appreciation so far. As these contracts gradually expire, it will be necessary to enter into new hedging agreements at a considerably stronger exchange rate. Profitability is also marked by low demand and lower prices in the world market. A sharp contraction of the exposed sector is expected. This will have spillover effects on other industries in Norway. Since manufacturing currently accounts for a smaller share of the total economy than in the 1970s and 1980s, a decline in manufacturing may have a relatively smaller impact on overall employment than earlier. At the same time, there are probably more industries that were completely sheltered from international competition earlier that are now more exposed to competition. As a result, high labour costs and a strong krone exchange rate may also have a fairly direct impact on employment in sectors of the economy which have traditionally been more sheltered.

Statistic Norway's business tendency survey shows that manufacturing leaders' expectations regarding future developments are negative (see Chart 3.3). Companies report a decline in output, employment and order backlogs for both export and domestic markets. Many companies have moved or have plans to move entire or parts of their production out of Norway. Statistics Norway's investment intentions survey points to a decline in investment this year. Investment in the aluminium industry will be reduced as new installations are completed. In addition, many manufacturing companies have idle production capacity, which indicates weak growth in mainland businesses' demand for capital goods such as machinery, equipment and new buildings.

Chart 3.3 Industrial confidence indicator. Seasonally adjusted diffusion index[1)].

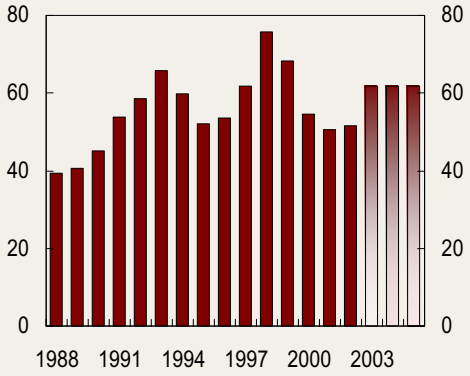


[1)] Values below zero indicate that the majority of the industrial leaders expect weaker development the coming three months.

Source: Statistics Norway and Norges Bank

In recent years, the shipbuilding and engineering industries have sustained the activity level in Norwegian manufacturing. Shipyards experienced a sharp increase in new orders before end-2000 prior to the elimination of support to the shipbuilding industry in Norway and many European countries. The level of new orders since then has been very low, and the order backlog is nearly exhausted. A sharp increase in petroleum investment could provide positive growth impulses to the offshore-related industry. The demand impulses from petroleum investment to the mainland economy may, however, be weaker than has been the case earlier. Construction and installations with a high import content will account for a large share of the increase in investment from 2002 to 2003. Due to the high cost level in Norway, a growing number of contracts are being awarded to foreign companies. At the same time, Norwegian shipyards are increasingly using foreign subcontractors in low-cost countries. This is having an impact on the Norwegian engineering industry.

Chart 3.4 Petroleum investment. Actual investment and projections. Billions of NOK. Constant 1999 prices.



Sources: Statistics Norway and Norges Bank

For manufacturing as a whole, employment remained unchanged through 2002 and unemployment has been low. Manufacturing unemployment has risen, however, in the last few months. The number of lay-offs is also high and rising, which may indicate that the expected decline in employment has started.

Many service industries have had to adjust capacity in pace with changes in operating parameters. Service sector investment has declined sharply (see Chart 3.5). A continued decline in investment is expected. There is considerable excess capacity in the commercial building market. Over the past year, there has been extensive restructuring and downscaling, especially in the ICT sector and the airline industry. With the prospect of continued weak developments in the global economy and an uncertain stock market, reductions in capacity may still be necessary.

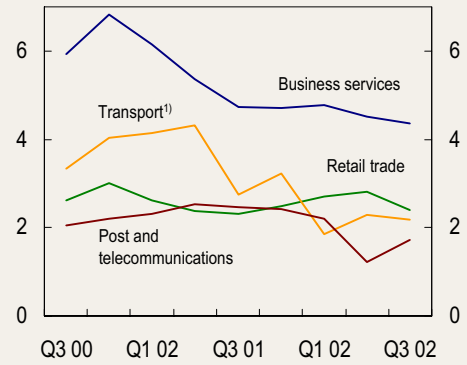
The fall in share prices reflects weaker expectations concerning future earnings. This may prompt enterprises to postpone or cancel investment plans. When share prices are low, companies may also find that raising capital by means of new issues is not an attractive alternative.

Households

Strong growth in private consumption has contributed to sustaining activity in the Norwegian economy. Sharp wage growth, combined with reductions in direct and indirect taxes, resulted in close to 5% growth in household real disposable income last year. Real income growth will be considerably lower in 2003 and probably lower than projected earlier. Imbalances in the Norwegian energy market have resulted in a sharp increase in electricity prices. Compared with the previous *Inflation Report*, the projections for electricity prices ahead imply that real income growth will, in isolation, be reduced by 1½ percentage points in 2003. The reductions in the sight deposit rate this winter have the opposite effect, but without offsetting the effect of higher electricity prices. In addition, developments in employment are expected to be weaker and wage growth somewhat lower this year than previously projected.

During the last six months, households have become less optimistic about the economic outlook (see Chart 3.6). Increased uncertainty in the labour market and lower confidence point to heightened caution and increased saving in the household sector. Lower interest rates have the opposite effect. Household saving behaviour may also be affected by high electricity prices. If households consider this to be a temporary situation, there may be a tendency to draw on savings or save less in order to pay electricity bills. On the whole, the projections are based on a moderate, temporary decline in household saving in 2003.

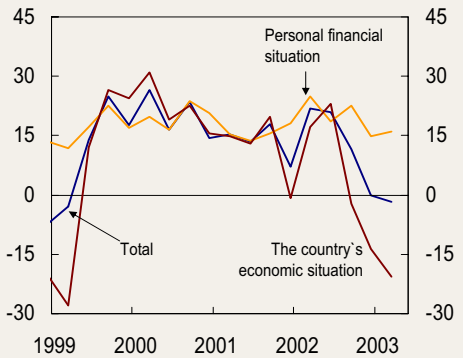
Chart 3.5 Gross investment in the service sector. Billions of NOK. Constant 1999 prices.



1) Excluding pipeline transport and foreign shipping

Sources: Statistics Norway and Norges Bank

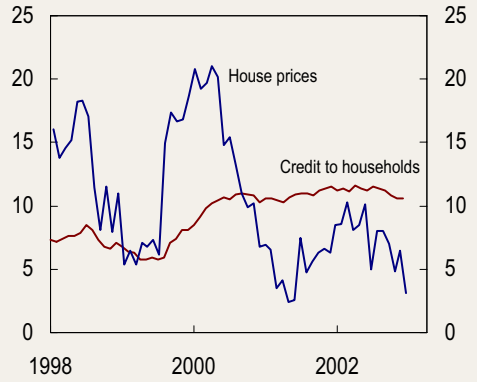
Chart 3.6 Consumer confidence indicator1). Unadjusted figures. 1999 Q1 - 2002 Q3



1) Provides an expression of the share with a positive assessment of the current situation and outlook for the future less the share with a negative assessment.

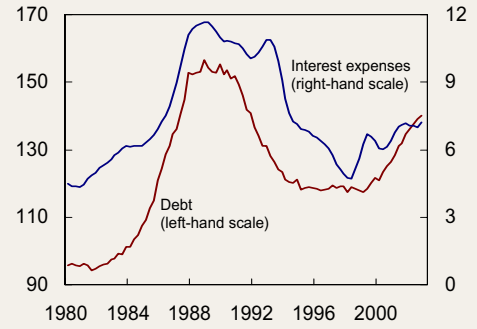
Source: Norsk Gallup Institutt AS

Chart 3.7 House prices and credit to households. 12-month rise. Per cent



Sources: Norwegian Association of Real Estate Agents, FINN.no, ECON and Norges Bank

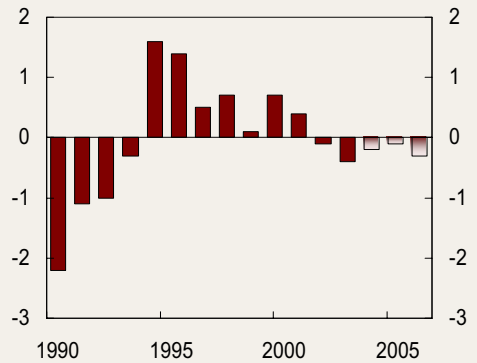
Chart 3.8 Household debt as a percentage of disposable income[1]) and household interest expenses after tax as a percentage of cash income. 1980-2002



[1]) Figures for household disposable income taken from the national accounts

Sources: Statistics Norway and Norges Bank

Chart 3.9 Change in the structural non-oil budget balance[1]). 1990-2003



[1]) The budget balance as a percentage of trend mainland GDP; change from previous year.

Source: National Budget 2003 and Norges Bank

Next year, a normalisation of electricity prices will contribute to increasing real income growth compared with 2003. At the same time, we have assumed that a share of the increased use of petroleum revenues over the central government budget will entail increased transfers or tax cuts for households. These factors, combined with lower interest rates, may fuel relatively brisk growth in private consumption in the next few years.

In the last few months, house prices have risen at a slower pace than in previous years. Activity in the housing market has been lower and it takes longer to sell a dwelling. Growth in household borrowing remains high, but has eased somewhat recently. Weaker developments in house prices and reduced household optimism may further restrain credit growth in the future.

Growth in household debt has been far stronger than income growth for several years. Debt as a percentage of disposable income has increased rapidly. Although the overall household debt burden is still lower than at the end of the 1980s, the debt burden for low and average income households is higher than ever. Overall, interest expenses as a share of income have increased in the last four to five years, but is still lower than at the end of the 1980s and beginning of the 1990s.

Fiscal policy

The guidelines for fiscal policy, as formulated in the fiscal rule, imply that the use of petroleum revenues over the central government budget will over time be equivalent to the expected real return on the Government Petroleum Fund. The expected real return is estimated at 4%. The use of petroleum revenues over the central government budget will thus increase in pace with the accumulation of capital in the Petroleum Fund. The projections in this report are based on the assumption that the fiscal rule is adhered to.

A mechanical application of the rule about using 4 per cent of the capital in the Fund would then imply a decline in the use of petroleum revenues from 2002 to 2003 of NOK 2bn and thereafter an increase of about NOK 6bn between 2003 and 2004. This was because the estimated value of the Petroleum Fund at the end of 2002 was markedly reduced through the year as a result of the sharp decline in equity prices and the appreciation of the krone.

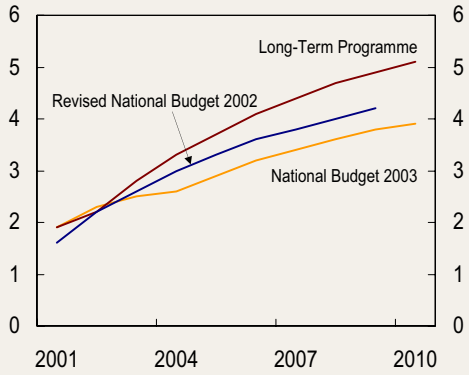
The budget projections in the National Budget for 2003 entail, however, steadier budget impulses in the period ahead than implied by this mechanical rule of using 4% of the Fund's capital each year. The structural non-oil budget deficit was projected at NOK 30.7bn in the approved budget for 2003 compared with NOK 28.7bn (in 2003 prices) in

2002. This implies a real increase in petroleum revenue spending of about NOK 2bn in 2003. According to the fiscal rule, this will provide room for an equivalent increase in 2004. Spreading spending of petroleum revenues in this way is in keeping with the fiscal rule.
In the central government budget for 2003, the projections for the use of petroleum revenues up to 2010 have been revised downwards considerably since the fiscal rule was first introduced. This may mean that petroleum revenues will be phased in more gradually than has been assumed earlier. This is because the value of the Petroleum Fund is assumed to be lower as a result of weak developments in the stock market, an appreciation of the krone exchange rate and lower expected net cash flows from petroleum activities in the years ahead.

In the National Budget for 2003, the Government calls for a spending increase of 4.6% in relation to 2002. At the same time, real growth in public consumption is estimated at ½%. Even with a sharp increase in central government allocations, there will be fairly low growth in the production of public services. This is due partly to high wage growth in the public sector and partly to the increase in transfers to the household sector.

Historically, expenditure in the local government sector and in the regional hospitals tends to be higher through the year than the level adopted in the budget. Reports from our regional network suggest, however, that the budgets are perceived to be less flexible than earlier. Growth in public consumption is projected at ¾% this year. For 2004 and 2005, we assume that the increased use of petroleum revenues over the central government budget will be spread between tax cuts and increased public spending. Growth in public consumption is projected at 2% in 2004 and 2005.

Chart 3.10 Structural non-oil deficit.
Per cent of trend mainland GDP.



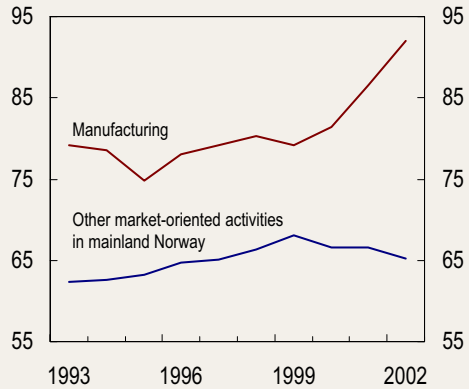
Sources: Long-Term Programme 2002 – 2005, Revised National Budget 2002 and National Budget 2003

Labour market

Growth in real wages is far higher than the underlying growth in productivity in the Norwegian economy. If higher costs cannot be passed on to customers, earnings decline and the wage share increases. Many businesses will have to adjust their workforces to maintain profitability. This leads to a fall in employment and increased productivity. For some companies, this may be a prerequisite for maintaining operations in Norway. The alternative is to close down or relocate to another country.

Chart 3.11 shows developments in wage shares in the business sector, i.e. labour costs' share of value added after direct and indirect taxes (factor income). While the wage share has risen sharply in manufacturing, it has remained fairly stable in other industries. Import firms have increased their margins, suggesting that the appreciation of the krone has not fully benefited consumers. We also know that

Chart 3.11 Wage shares. Labour costs as a share of factor costs. Per cent.



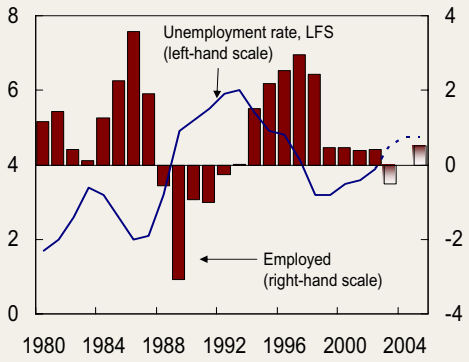
Sources: TRCIS and Statistics Norway

employment in some service industries has fallen. Many companies in the service sector have adjusted their workforces to maintain profitability. To some extent, higher costs can also be passed on to customers through higher prices in this sector.

Manufacturing employment is declining. In the public sector, where employment growth has been strong the last few years, budgets will only allow a moderate increase in employment in 2003. Overall, employment is projected to fall by ½% in 2003 and remain unchanged in 2004. Employment followed a similar course in the early 1980s. At that time, unemployment rose markedly as a result of continued strong growth in the labour force. Labour force participation in Norway is currently at a record-high level, and the demographically determined supply of labour is low. At the same time, labour force growth may be lower than implied by demographic trends for various reasons. More people may choose to study until the situation in the labour market improves. Some of the unemployed may exit the labour market on retirement schemes. Outflows from the labour market and low labour force growth as a result of demographic trends may limit the increase in unemployment.

Nevertheless, unemployment is projected to rise, especially in manufacturing. The increase through 2002 primarily reflects a rise in unemployment in the service sector. Manufacturing unemployment remained stable until end-2002, but has increased substantially in the last few months. More lay-offs and lower expectations regarding manufacturing employment point to increased unemployment in the manufacturing sector ahead. In addition, statistics show a 40% reduction in the number of vacancies in manufacturing advertised in the last year. Demand for labour, measured in terms of the number of advertised vacancies, is also low in other industries, indicating that unemployment may also increase further in the sheltered sector in the period ahead. Long-term unemployment has risen at a faster pace than overall unemployment in the last year, which suggests that it is more difficult for the unemployed to find jobs. LFS unemployment is projected to increase from close to 4% in 2002 to 4½% in 2003 and up to 4¾% in 2004. Unemployment is projected to stabilise at this level in 2005. If labour force growth remains steady, unemployment might be higher than projected.

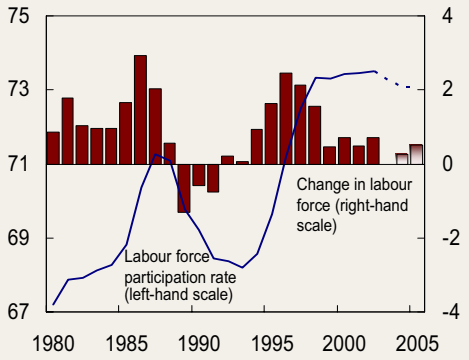
Chart 3.12 Change in employment from previous year. Per cent. Unemployment[1)] as a percentage of the labour force. 1980-2005



[1)] According to LFS

Sources: Statistics Norway and Norges Bank

Chart 3.13 Change in the labour force from previous year. Per cent. The labour force as a percentage of the population aged 16-74 (labour force participation rate). 1980-2005



Sources: Statistics Norway and Norges Bank

4 Inflation projections

The underlying rise in prices in the coming year will be marked by the appreciation of the krone over the last two years. Despite high wage growth, the year-on-year rise in consumer prices adjusted for tax changes and excluding energy products (CPI-ATE) will most likely range between 1½ and 2% until the summer. Subsequent developments will partly depend on externally generated inflationary impulses, changes in the exchange rate and how these changes feed through to consumer prices in Norway. The sharp rise in electricity prices may also affect other consumer prices. Wage developments this year and next will play an important role over the next one to two years. The inflation projections depend on the assumptions concerning the interest rate and the exchange rate.

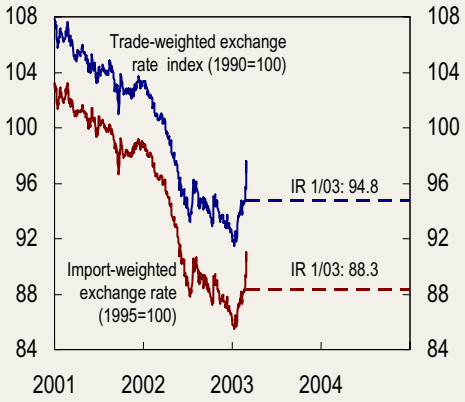
In the baseline scenario, our calculations are based on the technical assumption of a constant sight deposit rate of 5½ per cent and a constant krone exchange rate equal to the average for the past month. Norges Bank's projections are therefore conditional on the assumptions concerning the interest rate and the exchange rate. The assumption for the exchange rate is based on a shorter average than in the last two reports. On the cut-off date for this *Inflation Report*, the import-weighted krone exchange rate was a good 2% weaker than assumed in the baseline scenario. In section 4.2, we look more closely at the effects of alternative assumptions for the interest rate and the exchange rate.

4.1 The inflation outlook in the baseline scenario

Low external inflationary impulses

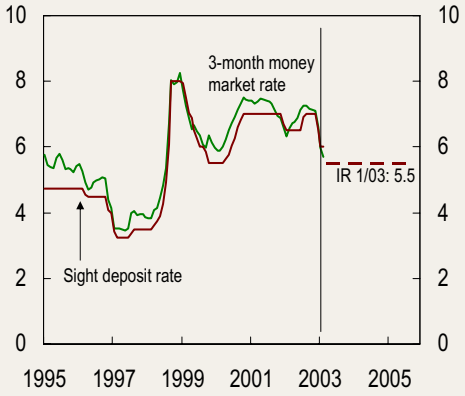
External inflationary impulses will probably be subdued in the period ahead. International producer prices measured in foreign currency have remained broadly unchanged over the past year. The rise in producer prices is normally lower than international consumer price inflation because of high productivity growth in internationally exposed goods-producing industries. Weak international growth prospects suggest a continued subdued rise in producer prices. High oil prices, on the other hand, have the opposite effect. Producer prices among our 25 largest trading partners are expected to rise by around ½% a year. The rise in import prices in Norway may be lower, however. In the past few years, the rise in prices for imported consumer goods has slowed as trade has shifted away from Western countries with high price levels towards low-cost countries. At the same time, there has been a considerable improvement in the framework conditions for imports from low-cost countries. So far, this has been the case for textiles in particular.

Chart 4.1 Technical assumption for the exchange rate in the baseline scenario.



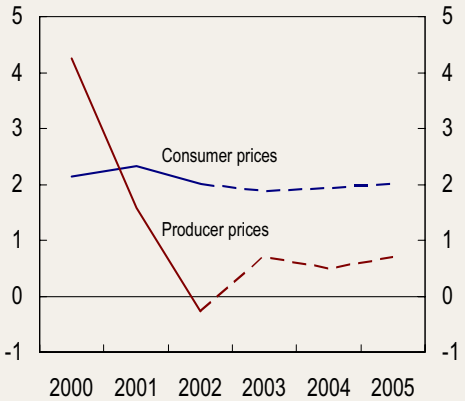
Source: Norges Bank

Chart 4.2 Technical assumption for the sight deposit rate in the baseline scenario.



Source: Norges Bank

Chart 4.3 Consumer and producer prices. Trading partners. Percentage rise.



Source: Datastream, OECD and Norges Bank

The strong krone is pushing down price inflation

With an exchange rate equal to the average for February, prices for imported consumer goods are projected to exhibit a marked fall. The appreciation of the krone affects consumer price inflation with a lag. The downward contribution is expected to increase up to the summer and into late autumn. In the course of 2004 and 2005, the contribution will gradually be reduced.

So far, the fall in prices for imported consumer goods has been somewhat more moderate than we have been expecting based on the past experience of the Norwegian economy. In particular, prices for new cars, which account for 35% of imported consumer goods in the CPI, have risen in the past year. Our analysis of the impact of the exchange rate is based on the assumption that a sustained change in the krone exchange rate over time will pass through fully to prices for imported goods when adjusted for indirect taxes, duties and freight costs. However, there are several reasons why consumer prices do not change immediately when the exchange rate changes. First, it can be difficult for enterprises and importers to determine the duration of changes in the exchange rate. Second, many enterprises and importers may have hedged against movements in the exchange rate in the short and medium term, either by means of financial instruments or price agreements. Third, markets with monopolistic competition will often be subject to strategic pricing. The car market is an example of this. Foreign producers often price cars in NOK, thereby assuming full or partial exchange rate risk. In open markets, this would probably be corrected over time by a shift in demand. An increase in private car imports may lead to a reduction in car prices in Norway in the period ahead (see box page 42). A number of car importers have announced reductions in car prices.

The strong krone exchange rate may also affect domestic price inflation in addition to the potential effects of weaker activity in the Norwegian economy. Producers of Norwegian goods that compete with imported consumer goods may find it necessary to match developments in import prices in order to maintain market shares. At the same time, costs will be lower for domestically produced goods with a large import component, and this should have a dampening effect on price inflation. Some service industries, such as the tourist industry, will also feel the effects of lower international demand because of the krone exchange rate. This may also have an impact on prices.

Moderating pressures in the Norwegian economy may lead to lower wage growth and lower domestic price inflation

Domestic price inflation will nevertheless be dominated by developments in labour costs. The Technical Reporting Committee on Income Settlements has provisionally estimated annual wage growth in 2002 at a little higher than 5½%. On the basis of new information on high wage growth in manufacturing since the Committee's report was presented, annual wage growth in 2002 is projected at 5¾%, the same as in the previous *Inflation Report*. Wage growth in 2002 was highest for the school sector, at 8%, and among workers in the petroleum industry, at almost 10%. But wage growth has also been high in manufacturing. In the internationally exposed engineering industry, total annual wage growth reached 6.1%, which was higher than in the central and local government sector. Wage growth was driven up in particular by white-collar workers, who make up about half of those employed in manufacturing.

Wage growth in 2003 may be lower than previously projected because labour market conditions are expected to ease. However, even with very moderate centralised pay increases, as for example in line with the 1999 settlement, annual wage growth may be around 5% this year. The Committee has calculated that the wage carry-over into 2003 will average about 2½% for all groups. This substantial carry-over is related to the fact that a large share of last year's wage growth came at the end of the year. In addition, pay increases in 2003 had already been agreed for several groups in the spring 2002 wage settlement. In total, these increases will contribute about ½ percentage point to annual wage growth in 2003. The increases were awarded in particular to employees in the local government sector, hospitals under the regional health authorities and employees in retail trade who are members of the Confederation of Norwegian Commercial and Service Enterprises.

There is some uncertainty associated with the actual wage formation process in Norway. Although it is too early to draw any final conclusions, a number of factors indicate that wage formation is changing. The experience of last year's wage settlement indicates that less emphasis than previously was placed on profitability in the internationally exposed sector. Some aspects of the wage settlement point to a somewhat greater degree of decentralisation in wage formation. One example of this is the local government sector where the Federation of Norwegian Professional Associations will negotiate pay increases locally in future. In public sector wage settlements, little emphasis appears to have been placed on the assumptions concerning wage growth on which government allocations are based. It

would also appear that the social partners have given less emphasis to developments in overall unemployment, and the attendant consequences, when determining wages.

In important segments of the labour market, there appears to have been a shift in the social partners' strategic position in negotiations in favour of employees. Technological changes, increased demands for stable supplies and intensified international competition have made enterprises in many industries increasingly vulnerable to even short operational disruptions. The employers' ability and willingness to take on open labour conflicts have therefore diminished. On the other hand, corporate boards and management are responsible for decisions on expansions, closures, rationalisation, location and workforce increases. If company costs increase, either productivity must be improved or production closed or relocated to another country. Decisions concerning operations, investment and location are in turn determined by the required rate of return that owners set to keep their capital in the company.

We have assumed that both actual and expected developments in the labour market will influence wage growth in the years ahead. In the baseline scenario, pressures in the Norwegian economy are expected to ease. There may be a further rise in unemployment. We expect wage growth to moderate as job uncertainty increases. Annual wage growth is projected to decline from 5% this year to an average 4½% in 2004 and 2005. On the other hand, should labour market prospects improve before the main wage settlement in 2004, there is a risk that wage growth will be sustained at a rate close to that of the past years.

In recent years, higher pay increases have tended to be agreed for the first year of the two-year period covered by the Basic Agreement. This was the case in 1998-1999 when very high pay increases in the 1998 main settlement were followed by a moderate interim wage settlement in 1999. In 2000-2001, the total pay increase was agreed in 2000. In 2002-2003, wage growth in the first year covered by the Agreement was far higher than expected, and the social partners have now again agreed on a policy of moderation in the interim wage settlement this spring. Some groups have already indicated that they will be demanding high pay increases in the 2004 settlement.

Last year's wage settlements resulted in wide differences in pay increases across different groups. This may give rise to renewed tension between occupational groups and trigger new wage spirals. With a moderate settlement this year, differences in annual wage growth between different groups may be substantial. The wage carry-over into 2003 including already negotiated pay increases varies

Table 4.1 Projections with sight deposit rate of 5½ per cent and krone exchange rate equal to average for February. Percentage change from previous year.

	2003	2004	2005
CPI-ATE	1¾	2	2¼
CPI	3¼	1	2¼
Annual wages	5	4½	4½
LFS unemployment rate	4½	4¾	4¾
Mainland GDP	1¼	2	2¼
Output gap	0	-¼	-½

Source: Norges Bank

from 2½% for manufacturing employees to 5% in the school sector and 5¼% for regional hospital employees. Compensation for higher wage growth in other groups seems to have been an influential argument in previous wage negotiations.

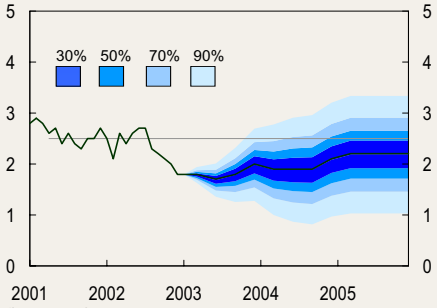
Price inflation may be lower than the inflation target two years ahead

With a krone exchange rate equal to the average for February and a sight deposit rate of 5½%, consumer price inflation is projected to be low in the years ahead. The rise in prices for domestically produced goods and services is projected to edge down as a result of lower wage growth. At the same time, the fall in prices for imported consumer goods will accelerate in the short term as a result of the strong krone. The fact that car prices only appear to be falling now illustrates this. However, over a longer period the effects of the appreciation of the krone will fade, contributing to somewhat higher inflation. In this scenario, CPI-ATE inflation two years ahead may approach 2¼%. It is also likely that inflation will be below target through 2005. As an annual average, CPI-ATE inflation is projected at 1¾% in 2003, 2% in 2004 and 2¼% in 2005.

Total CPI inflation may deviate substantially from CPI-ATE inflation both this year and next, primarily reflecting electricity price developments. Electricity prices rose sharply at the beginning of 2003. Some of the increase was reversed in February, but electricity prices are expected to remain high throughout 2003. Water reservoir levels are at a historical low and a return to normal levels may take a long time. Electricity prices are expected to rise by 40% from 2002 to 2003, pushing up CPI inflation by 1½ percentage points this year. Electricity prices are expected to return to normal in the course of 2004, pushing down CPI inflation by about 1 percentage point next year. In the period ahead, indirect taxes are expected to rise in pace with CPI-ATE. Tax changes will not have any significant effect on consumer price inflation in 2003.

With the assumption of a constant exchange rate and a constant interest rate, total CPI inflation is projected at 3¼% in 2003, 1¼% in 2004 and 2¼% in 2005.

Chart 4.4 Consumer price inflation[1]. Projection and uncertainty based on a sight deposit rate of 5½ per cent and the average exchange rate for February. 12-month rise. Per cent.

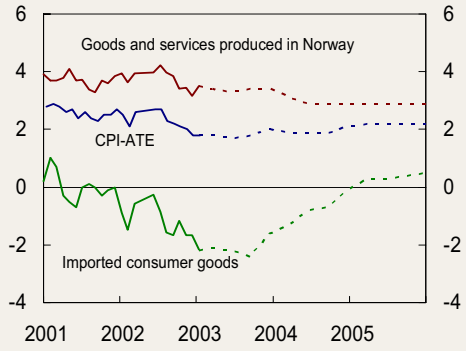


[1] Adjusted for tax changes and excluding energy products (CPI-ATE)

The bands in the fan indicate different probabilities for consumer price inflation.

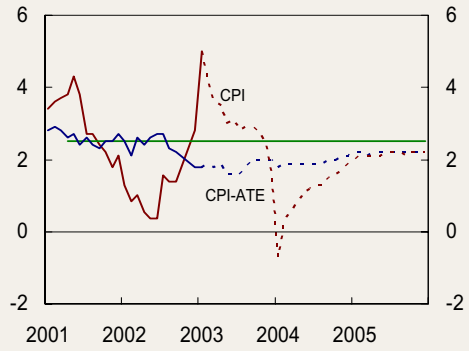
Sources: Statistics Norway and Norges Bank

Chart 4.5 Consumer prices adjusted for tax changes and excluding energy products (CPI-ATE) in the baseline scenario. Total and distributed by supplier sector. 12-month rise. Per cent



Sources: Statistics Norway and Norges Bank

Chart 4.6 Consumer prices (CPI) in the baseline scenario. Total and adjusted for tax changes and excluding energy products (CPI-ATE). 12-month rise. Per cent.

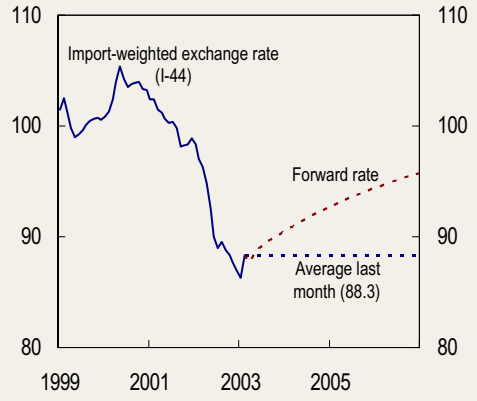


Sources: Statistics Norway and Norges Bank

4.2 Inflation outlook using alternative interest rate and exchange rate assumptions

Exchange rate developments are uncertain. The wide interest rate differential between domestic and foreign interest rates reflects the cyclical divergence between Norway and other countries. As international growth prospects improve and interest rates reach a more normal level, the Norwegian krone will be less attractive as an investment currency than was the case in 2002. A resolution of the conflict with Iraq and lower oil prices may also weaken demand for the Norwegian krone. In the somewhat longer term, it is fairly likely that the krone will depreciate from the level prevailing at the beginning of the year. However, it is difficult to make accurate projections for the exchange rate in the short term. Themes in the foreign exchange market can shift rapidly.

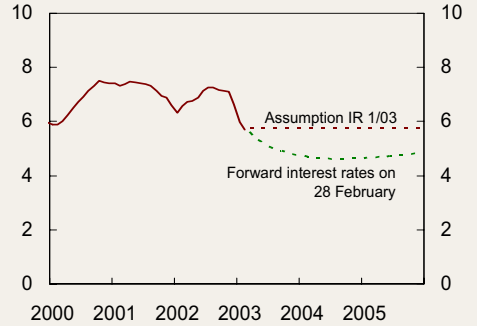
Chart 4.7 Forward rate for NOK (I-44) and technical assumption in the baseline scenario. Index.



Source: Norges Bank

The krone has weakened since January, depreciating considerably in the last few days of February. When the work on this *Inflation Report* was concluded on 28 February, the import-weighted krone exchange rate index (I-44) stood at 90.4. This was 2¼% weaker than the average for February, which is the average on which the projections in the baseline scenario are based. A weaker krone exchange rate would, in isolation, have pushed up the inflation projection. The impact on inflation will depend on the reasons behind the depreciation. Fluctuations in the krone exchange rate can be temporary and random. Should a weaker krone lead to stronger economic growth and higher wage growth, the impact of the depreciation may be amplified. If the depreciation of the krone reflects a weaker outlook for the Norwegian economy, however, the impact on price inflation is likely to be reduced.

Chart 4.8 Expectations concerning short-term money market rates[1] and technical assumption in the baseline scenario. Per cent.



[1] Three-month money market rates up to and including Q4. Three-month forward rates are estimated using four money market rates and five government bond yields with diffrerent maturities as observed on 28 February.

Source: Norges Bank

As an alternative to the baseline scenario, in which the sight deposit rate is kept at 5½% and the krone remains constant at a level equal to the average for the past month, we have also examined a possible scenario for the Norwegian economy which includes further reductions in the interest rate and a depreciation of the krone in line with the forward rate. In the forward exchange market, a gradual depreciation of the krone has been priced in. The forward rate for the Norwegian krone indicates a depreciation of about 7% up to end-2005 compared with the assumption in the baseline scenario in this report. Even though the forward rate is not necessarily a good gauge of actual developments, a depreciation of the krone of this magnitude is reflected in the expectations survey conducted by Consensus Forecasts. A depreciation of the krone in line with the forward rate will restrain the fall in prices for imported consumer goods this year and next so that the rate of increase in prices for imported consumer goods will be clearly positive in the course of 2005. If the krone continues to depreciate,

importers that have not yet allowed the appreciation of the krone to benefit consumers may refrain from reducing prices. In the event, this could rapidly result in higher price inflation than projected in the baseline scenario.

At the same time, market participants are expecting the sight deposit rate to be reduced down towards 4¼% in the course of 2003. If the krone depreciates and the interest rate is reduced in line with market expectations, confidence in the general economic situation may again improve. A sustained decline in the interest rate may fuel optimism and lead to an increase in household purchasing power. Consumption growth may then generate stronger growth impulses to the Norwegian economy. A weaker krone will limit downscaling of internationally exposed activity. The repercussions for the rest of the business sector will be more moderate. In such a scenario, the output gap is projected to be positive in 2005. Unemployment may again gradually move down to 4 per cent. Wage growth in this scenario is projected at around 5¼% on average for 2004 and 2005. In combination with a more rapid rate of increase in prices for imported consumer goods, CPI-ATE inflation may reach 2¾% two years ahead. Looking beyond the two-year horizon, inflation may edge up further.

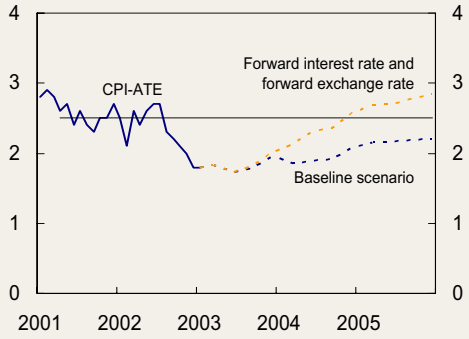
Market expectations of lower interest rates and a depreciation of the krone may be attributable to a more pessimistic view of developments in the Norwegian and global economy than depicted in this report. Another possible interpretation may be that market participants have a more optimistic view of how quickly wage growth responds to the outlook.

Table 4.2 Projections based on market expectations of sight deposit rate and a weaker exchange rate. Percentage change from previous year.

	2003	2004	2005
CPI-ATE	1¾	2¼	2¾
CPI	3¼	1¼	2¾
Annual wages	5	5¼	5¼
LFS unemployment rate	4½	4½	4
Mainland GDP	1½	2½	2¾
Output gap	¼	½	¾

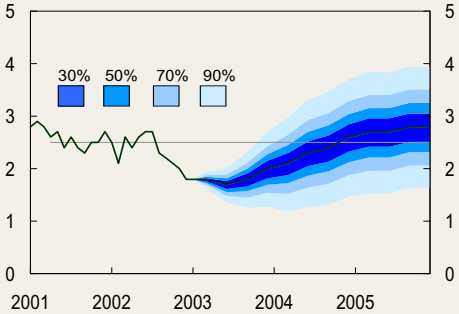
Source: Norges Bank

Chart 4.9 Different scenarios for consumer prices adjusted for tax changes and excluding energy products (CPI-ATE) with different assumptions for interest rate and exchange rate. 12-month rise. Per cent



Sources: Statistics Norway and Norges Bank

Chart 4.10 Consumer price inflation[1]. Projection and uncertainty based on forward interest rates and exchange rates. 12-month rise. Per cent.



[1] Adjusted for tax changes and excluding energy products (CPI-ATE)

The bands in the fan indicate different probabilities for consumer price inflation.

Sources: Statistics Norway and Norges Bank

Boxes

Overview of boxes in Inflation Reports 2000-2003

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Factors behind developments in the exchange rate, p. 37-39 (*)
The output gap, p. 40-41
Imported price inflation and the exchange rate – the UK experience, p 42-43.
Evaluation of Norges Bank's projections for 2001 and 2002, p. 44-45.

3 / 2002:
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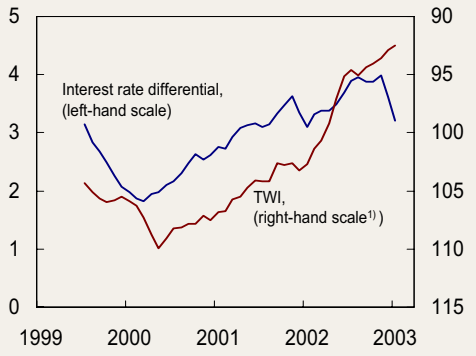
(*) = Boxes with special discussion of the effects of monetary policy and the functioning of the economy

Factors behind the development in the krone exchange rate

The krone appreciated markedly from May 2000 until January 2003. The appreciation was particularly pronounced through 2002. Market participants have pointed to several factors that contributed to the strengthening of the krone:

The appreciation occurred in tandem with a high and widening interest rate differential between Norway and other countries (see Chart 1). Foreign interest rates fell while Norwegian interest rates remained high. This boosted demand for the Norwegian krone.

Chart 1 Trade-weighted exchange rate index (TWI) and three-month interest rate differential. July 1999 – Jan 2003.



[1] A rising curve denotes an appreciation of the krone

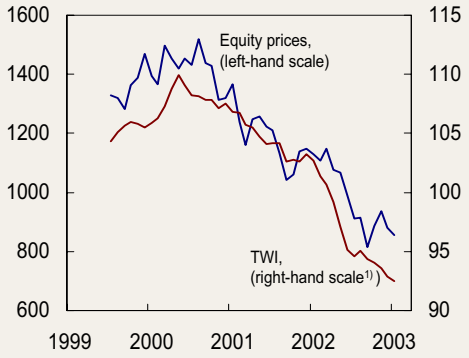
Source: Norges Bank

The fall in international stock markets led to increased risk aversion and expectations of a further decline in equity prices. Many investors therefore wanted to shift into interest-bearing securities. According to market participants, the Norwegian krone, with a relatively high interest rate, was a good alternative. The krone exchange rate has been highly correlated with US equity prices over the last few years (see Chart 2).

Market expectations concerning fluctuations between major currencies, measured by an indicator based on options prices (GHI[1]), fell (see Chart 3). According to market participants, expectations of reduced exchange rate fluctuations for major currencies provide less scope for speculative gains in the foreign exchange market. Investors have

[1] The GHI is derived from prices for currency options (implied volatility) for the euro, the US dollar and Japanese yen. The GHI falls when expected volatility between major currencies is reduced. See article by Bernhardsen and Røisland in *Economic Bulletin* 4/00 for a further description of GHI.

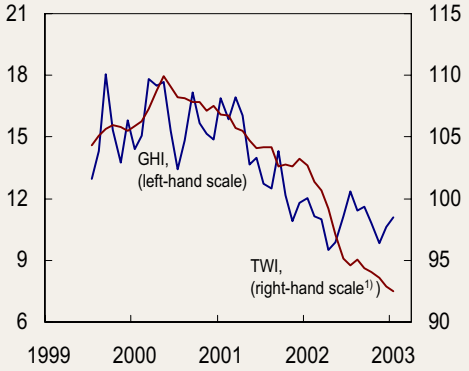
Chart 2 Trade-weighted exchange rate index (TWI) and equity prices in the US (S&P 500). July1999 – Jan 2003.



[1] A falling curve denotes an appreciation of the krone

Sources: EcoWin and Norges Bank

Chart 3 Trade-weighted exchange rate index (TWI) and GHI. July1999 – Jan 2003.



[1] A falling curve denotes an appreciation of the krone

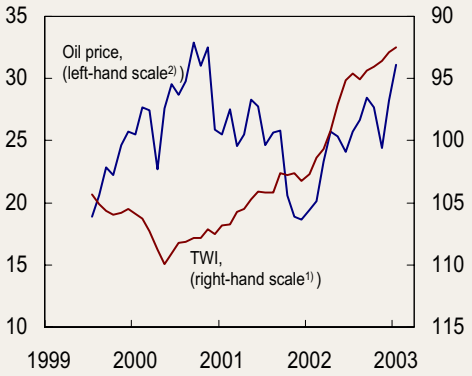
Source: Norges Bank

therefore placed greater emphasis on interest rate differentials than earlier and invested a higher portion of their portfolios in high interest rate currencies, such as the Norwegian krone.

Oil prices rose markedly from the end of 2001 (see Chart 4). Market participants point out that, in isolation, higher oil prices make the Norwegian krone more attractive.

Over the past year, the Norwegian krone has in periods been considered a safe-haven currency. During turbulent periods, investors seek out safe investments. Traditionally, such investments have

Chart 4 Trade-weighted exchange rate index (TWI) and oil price (Brent Blend). July 1999 – Jan 2003.



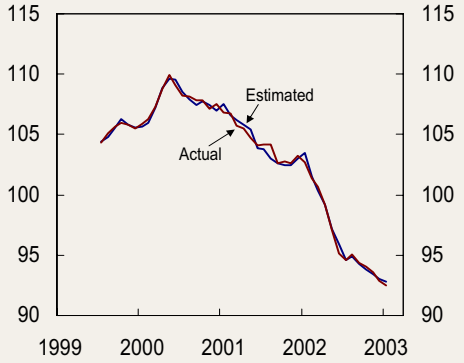
1) A rising curve denotes an appreciation of the krone
2) USD per barrel

Source: Norges Bank

been gold, the Swiss franc and the US dollar. Many investors perceived the Norwegian krone as a temporary, safe alternative as a result of the considerable uncertainty associated with a possible war in Iraq and its impact on oil prices.

In order to take the market seriously and examine the importance of these factors for the krone exchange rate, Norges Bank has attempted to shed light on developments in the trade-weighted exchange rate index by means of an econometric model. The model includes effects of interest rate differentials against other countries, developments in US equity prices, the magnitude of expected variability between major currencies (GHI) and the oil price (see technical annex). The model is estimated using monthly data from July 1999 to January 2003 and provides a good explanation for developments in recent years (see Chart 5).

Chart 5 Actual and predicted value of the trade- weighted exchange rate index (TWI). July 1999 – Jan 2003.



1) A falling curve denotes an appreciation of the krone

Source: Norges Bank

Table 1. Contribution to appreciation of the krone from May 2000 to Januar 2003[1]

Effects related to the interest rate differential against other countries	95%
Wider interest rate differential	40%
Lower equity prices and exchange rate fluctuations in the global market[2]	55%
Effects of higher oil prices	5%

1 The figures have been rounded off.

2 Lower equity prices and exchange rate fluctuations have strengthened the krone because the interest rate differential has been positive.

The model indicates that the widening interest rate differential can explain about 40% of the krone appreciation between May 2000 and January 2003 (see Table 1). The stock market decline and falling variability between major currencies can explain about 55% of the krone appreciation in the period. These factors contributed because the interest rate differential was positive (see discussion above). Higher oil prices also made some contribution to the appreciation of the krone from May 2000 until January 2003.

Table 2. Contribution to appreciation of the krone from December 2001 to Januar 2003[1]

Effects related to the interest rate differential against other countries	65%
Wider interest rate differential	30%
Lower equity prices and exchange rate fluctuations in the global market[2]	35%
Effects of higher oil prices	35%

1 The figures have been rounded off.

2 Lower equity prices and exchange rate fluctuations have strengthened the krone because the interest rate differential has been positive.

The factors make a varying contribution over time. According to the model, higher oil prices can explain about 35% of the appreciation between December 2001 and January 2003 (see Table 2). This contribution can capture the effects of the perception of the krone as a safe-haven currency. Developments in the interest rate differential can explain about 30% of the appreciation of the krone in the period, while the stock market decline and falling variability between major currencies can explain about 35%.

Table 3. Effect of a change in the interest rate differential at different points in time. Percentage change in the krone exchange rate after one year when the interest rate differential increases by one percentage point[1]

March 2000	March 2001	March 2002	January 2003
-2¾	-4¼	-5½	-6

1 Lower exchange rate denotes an appreciation of the krone.

The model implies that the interest rate differential has a greater impact on the exchange rate the more equity prices are falling and the lower expected variability is between major currencies. The expected gain from speculating in equities or currencies may be limited when equity prices are falling and when exchange rates are relatively stable. In this situation, market participants will place greater emphasis on interest rate differentials than when equity prices are rising and exchange rates fluctuate widely. Table 3 indicates that the interest rate effect increased markedly between March 2000 and January 2003. In March 2000, there was high expected variability between major currencies and equity prices had risen sharply. In January 2003, on the other hand, expected variability between major currencies was low and equity prices had fallen sharply.

Themes in foreign exchange markets shift. The autumn of 1998 was marked by turbulence in international financial markets. Despite a high interest rate in Norway, investors shifted out of the Norwegian krone and into the Swiss franc and US dollar. In the last half of the 1990s, capital flows were heavily influenced by investor focus on stock market returns until the downturn set in. During the period of the krone appreciation, which began in May 2000, investors have placed considerable emphasis on interest rate differentials. The effect of the high and widening interest rate differential on the krone has been intensified by conditions in international capital markets.

The interest rate cuts in December and January and a narrowing interest rate differential have been followed by a depreciation of the krone. This is in accordance with prior perceptions and is also consistent with the model predictions. Even though the model can provide a good explanation for historical developments, it is not necessarily suitable as a forecasting model. In general, it is difficult to explain developments in the exchange rate and predict future developments using the same explanatory model. Relationships in the foreign exchange market are unstable. In addition to the pure return in the form of interest, the current exchange rate reflects market participants' expectations concerning the future exchange rate and their assessment of risk. Market participants' expectations, their perception of risk and the information that is used in expectations formation are conditions that cannot be directly observed. Moreover, all three factors vary over time. This makes it difficult to find stable relationships for the exchange rate.

Technical annex: Estimation results

The model discussed above is defined as follows:

$$\Delta e_t = \text{constant} + \underset{(1,73)}{0{,}192}\,\Delta e_{t-1} - \underset{(6,50)}{0{,}330}\,e_{t-1} - \underset{(6,03)}{0{,}042}\,oilprice_t + \underset{(2,63)}{0{,}020}\,\Delta ghi_t$$

$$- \underset{(3,67)}{0{,}019}\,\Delta RDIFF_t - \underset{(6,01)}{0{,}043}\,\Delta_2 RDIFF_{t-1} - \underset{(6,71)}{0{,}053}\,\Delta_2 RDIFF_{t-3}$$

$$- \underset{(7,67)}{0{,}064}\,RDIFF_{t-5} + \underset{(6,12)}{0{,}018}\,(ghi \cdot RDIFF)_{t-1} + \underset{(2,98)}{0{,}012}\,(\Delta_6 share_t) \cdot RDIFF_t$$

Estimation period: 1999.7 – 2003.1 (monthly figures).
Absolute *t*-values are given in brackets under the estimates.
Δ is a difference operator; $\Delta = (X_t - X_{t-1})$, $\Delta_2 = (X_t - X_{t-2})$ og $\Delta_6 = (X_t - X_{t-6})$.
The difference between the actual and modelled exchange rate is 0.4% of the exchange rate on average.

The variables are defined by:

e	= Logarithm of the trade weighted exchange rate index
oilprice	= Logarithm of the oil price (Brent Blend measured in USD)
ghi	= Logarithm of GHI
RDIFF	= 3 months interest rate differential against other countries
share	= Logarithm of the S&P 500 – index

Share prices are measured at the end of each month. The other variables are the average for the month.

The output gap

The output gap as an indicator

The output gap is defined as the difference between the actual level of output in the economy and the output level that is consistent with stable inflation over time. This level is often referred to as *trend output* or, somewhat misleadingly, as *potential output*.

During the business cycle, actual output will be both above and below trend output. An increase in demand can translate into higher output in the short term so that actual output rises more than trend output, resulting in a positive output gap. A positive output gap implies an activity level that generates pressure on economic resources and accelerating price and cost inflation. The output gap is zero if total output corresponds to the activity level that can be achieved over time without an increase in price and cost inflation. However, this interpretation is based on a simplified picture of reality. It is not certain that trend output is always a good measure of the output level that is consistent with stable inflation. It is also uncertain which calculation method is the most appropriate.

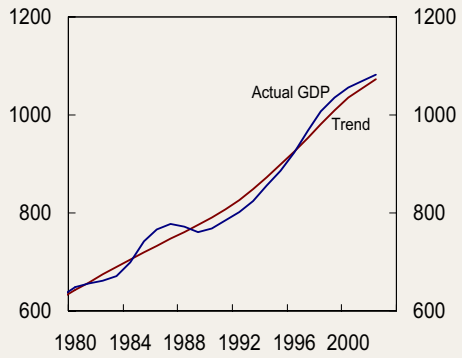
In reality, trend output depends on a number of factors. Normally, it is assumed that trend growth in total output moves in line with demographic developments and productivity, but with short-term variations around this trend. Over time, there are changes in technology and the supply of resources, which in turn lead to changes in trend output. For example, an increase in sickness absence and an increase in vacation days will reduce the supply of labour and have a dampening impact on trend output.

It is important to exercise caution when interpreting the output gap. A positive output gap may occur in parallel with falling inflation for a period if import prices fall. This may be the case if there are prospects of falling import prices as a result of a considerable appreciation of the exchange rate. The indicator then provides a starting point for summing up domestic inflationary pressures in the economy.

Estimating trend output using the Hodrick-Prescott filter

The use of the indicator involves a number of practical problems. While actual output (measured by mainland GDP) is registered in official statistics, trend output is not observable and must be estimated. Various methods yield different results. The uncertainty associated with different methods means that it is important to use discretion when estimating trend output.

Chart 1 Actual GDP and trend GDP. Billions of NOK. Constant 1999-prices. 1980-2002[1)]



1) GDP figures for 2002 are estimates. Figures for trend output up to and including 1999 are calculated by using the Hodrick-Prescott filter. Thereafter the trend is an estimate.

Sources: Statistics Norway and Norges Bank

A simple and widely used method for estimating trend output is the *Hodrick-Prescott filter* (HP).[1] The HP method assumes that it is possible to decompose a time series into a trend component and a cyclical component. The method allows gradual changes in trend output over time, while more short-term fluctuations are assumed to reflect cyclical variations in demand (see Chart 1). When using the HP method, a parameter must be chosen to express the degree of variance in trend output, i.e. how rigid the trend should be. There is no absolute answer as to what value this parameter should have.[2]

Potential output can then be looked upon as the economy's supply side, determined by the input factors mentioned. A problem with the production function method is that it is highly data intensive and that normal total factor productivity and the level of equilibrium unemployment have to be estimated. The OECD uses this method, for example. See, for

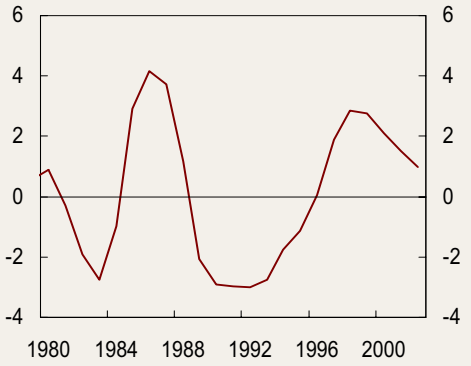
[1] See Hodrick and Prescott (1997). Another method for calculating the output gap is the production function method. With this method, trend levels for labour, capital and available technology are inserted into a further specified production function. Potential output can then be looked upon as the economy's supply side, determined by the input factors mentioned. A problem with the production function method is that it is highly data intensive and that normal total factor productivity and the level of equilibrium unemployment have to be estimated. The OECD uses this method, for example. See, for example, Frøyland and Nymoen (2000) and Giorno *et al.* (1995) for further information concerning methods for calculating the output gap.

[2] This parameter is denoted as λ. A high λ implies that trend growth moves very little and as an extreme moves towards the average for the period. A low λ implies wide swings in trend output. Pure discretionary evaluations suggest the use of λ =100 for annual data for Norway.

example, Frøyland and Nymoen (2000) and Giorno *et al.* (1995) for further information concerning methods for calculating the output gap.

We have used the HP method for calculating trend output on the basis of annual national accounts figures for mainland GDP for the period 1970-2001, extended using our own estimates for the period 2002-2005. A shortcoming in the HP method is that economic fluctuations at the end of the calculation period are given considerable weight when estimating trend output. If, for example, actual output falls at the end of the period, trend output will also decline so that it will be underestimated. The problem can be partially solved by extending the series using estimates where growth in the economy picks up to what would have been the long-term trend.

Chart 2 The output gap in the Norwegian economy. Deviations from trend mainland GDP in per cent. 1980-2002.



Source: Norges Bank

If the output gap is used as an indicator for the conduct of monetary policy, the estimates for recent years are the most interesting. The observations for recent years are also those that are the most uncertain. Experience shows that national accounts figures for GDP are subject to fairly extensive revision. This is a substantial drawback in using the output gap as a cyclical indicator.[3] Because of the high degree of uncertainty associated with the HP method at the end of the calculation period, we do not use the figures for recent years, but stop in 1999.

Discretionary evaluations

Discretionary estimates for trend growth are made for the years after 1999. These estimates are used to calculate the output gap in subsequent years. The change in the output gap from year to year is equal to the difference between actual output and estimated growth in trend output.

By using the output gap for 1999 as a starting point for estimating the output gap in subsequent years, the estimates are less sensitive to revisions to GDP figures and the uncertainty in GDP estimates. The HP method indicates an output gap of about 2¾% in 1999.

For 2000-2002, we have estimated trend output growth using estimates for demographic changes in the labour force and estimates for trend growth in productivity. Adjustments have been made for changes in working time. The increase in the number of vacation days in 2001 and 2002 reduced trend growth by an estimated ½ percentage point each year. In our view, discretionary evaluations of trend growth provide a better estimate for the output gap than a mechanical use of the HP method.

The output gap has narrowed from a relatively high level in 1998 (see Chart 2). This indicates that domestic inflationary pressures have subsided in recent years. The estimates indicate that the output gap was about 1% in 2002. As a result of the uncertainty, however, caution should be exercised in drawing conclusions on the basis of figures for a single year. In practice, it is important to look at the output gap together with cyclical indicators that are less influenced by revisions, such as wage growth, unemployment, credit growth, etc.

References

Frøyland, E. and R. Nymoen (2000): "Output gap in the Norwegian economy – different methodologies, same result*?"*, *Economic Bulletin* 2/2000, Norges Bank

Giorno, C., P. Richardson, D. Roseveare and P. van den Noord (1995): "Estimating potential output, output gaps and structural budget balances", *Working Papers* No. 152, OECD.

Hodrick, R. J. and E.J. Prescott (1997): "Post-war US business cycles: An empirical investigation", *Journal of Money, Credit and Banking*, Vol. 29, No.1, 1-16

Olsen. K., J.F. Qvigstad and Ø. Røisland (2003): "Monetary Policy in Real Time. The Role of Simple Rules" To be published in *BIS papers*. Bank for International Settlements

[3] See Olsen *et al.* (2003) for further details about the output gap as a cyclical indicator.

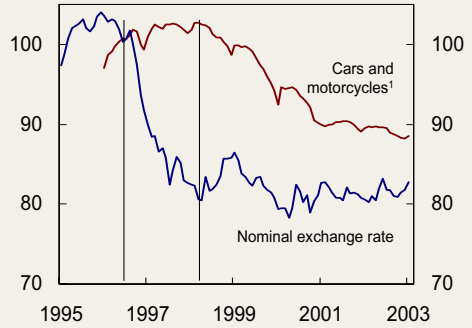
Imported price inflation and the exchange rate - the UK experience

The import-weighted krone exchange rate appreciated by a little more than 20% between May 2000 and January 2003. As a result of this, prices for imported consumer goods have started to fall. However, the price fall has been somewhat smaller than implied by the empirical evidence showing the isolated effect of the krone exchange rate on prices for imported consumer goods.

While prices for goods exposed to strong competition both at home and abroad, such as audiovisual equipment and clothing and footwear, have fallen markedly, car prices have continued to rise. The UK experience shows that there can be a considerable lag before the effects of a stronger currency feed through to car prices.

Sterling appreciated by about 20% between the autumn of 1996 and the end of 1997. Thereafter, sterling remained fairly stable at the higher level. However, it took almost two years from the time sterling began to appreciate until prices for new cars and motorcycles started to fall. Prices for cars and motorcycles are still falling, albeit at a somewhat slower pace. At the end of 2002, prices were 16% lower than in the summer of 1998. Annualised, the most pronounced decline in prices for cars and motorcycles occurred three and a half years after sterling started to appreciate.

Chart 1 Sterling. Consumer price inflation, cars and motorcycles. UK. Index 1996=100.
Jan. 95/ Jan.96 - Jan. 03.

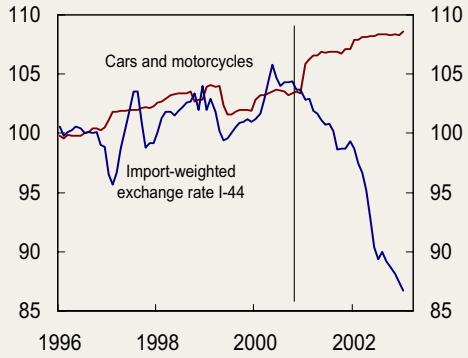


[1]Price index for purchase of Vehicles in Harmonised Index of Consumer Prices (HICP).

Sources: National Statistics, Bank of England and Norges Bank

The car market is marked by monopolistic competition and a share of the exchange gains associated with the appreciation of sterling initially benefited car producers. Car importers also increased their margins in the early part of this period. Import prices for cars, as measured "at dock", fell by 7% between August 1996 and November 1997. In the same period, consumer prices for cars and motorcycles rose by about 1%. As a result of this, the UK Competition Commission started conducting surveys and studies on how competition functioned in the car market. This work generated expectations of a fall in car prices and demand fell. This fall in demand induced both car manufacturers and car importers to reduce their margins again.

Chart 2 Import-weighted exchange rate (I-44) and consumer price inflation for cars and motorcycles. Index.
1996=100. Jan. 96 - Jan. 03.



Sources: Statistics Norway and Norges Bank

According to our calculations, the effect of the appreciation of the krone on prices for imported consumer goods in Norway will be the most pronounced in the third quarter of 2003, about three and a half years after the krone began to appreciate. The estimates build on the assumption that the krone will remain constant at the February level and take into account the effects of the depreciation of the krone between the beginning of 1997 and May 2000. Excluding car prices, the feed-through from the exchange rate to prices for imported consumer goods has been broadly in line with our calculations.

However, car prices are continuing to rise three years after the krone started to appreciate. The appreciation of the krone has so far resulted in higher margins for car producers and/or importers.

The experience of the UK is that an appreciation in the exchange rate will result in lower consumer prices for cars, but that it will take time for the effect to feed through owing to the lack of competition.

It has become more profitable to import cars privately as a result of the appreciation of the krone and higher car prices in Norway. This has increased competition in the Norwegian car market. Imported used cars accounted for 20% of all new car registrations in 2001. Last year, this share increased to 30%. It would appear that private imports of new cars have also increased. The higher share of private car imports means that Norwegian importers of new cars have lost market shares. In response to this, importers of some car brands have recently reduced or announced a reduction in prices for new cars. It would therefore appear that a fall in prices will occur, but at a later stage than we had expected.

Evaluation of Norges Bank's projections for 2001 and 2002[1]

The rise in consumer prices adjusted for tax changes and excluding energy products (CPI-ATE) was 2.3% in 2002. This was broadly in line with Norges Bank's projections two years earlier. An assessment of previous projections is important to achieving a better understanding of the functioning of the economy and evaluating monetary policy. The projections may be inaccurate for many reasons, or they may be accurate in spite of unexpected developments in important explanatory factors. The purpose of our projections is not necessarily to be as accurate as possible, but to provide an optimal decision-making basis for monetary policy. The projections in the *Inflation Report* are conditional on technical assumptions concerning the interest rate and the exchange rate. The interest rate will often be changed in relation to the assumption in an attempt to achieve a different path than the one projected.

Charts 1 and 2 show the projections for 2001 and 2002 published at the end of 2000 and actual developments in some important macroeconomic variables. Unemployment remained low through 2001 as expected, but increased more than projected in 2002. Developments in output and employment were also broadly in line with projections. The projection for consumer price inflation was accurate in 2001 and ¼ percentage point lower than projected in 2002. However, this must be seen in the light of a number of other developments:

- Growth in the global economy was markedly weaker than projected. This was primarily due to an unexpectedly sharp downturn in the US which spilled over to Europe. International prices, however, developed approximately as projected. Oil prices fell somewhat more in 2001 than assumed, but rose sharply through 2002. At the end of 2002, oil prices were markedly higher than assumed two years earlier.

- Although our projections for output and demand in the Norwegian economy were fairly accurate, unemployment rose more than projected through 2002. At end-2002, the unemployment rate was close to ¾ percentage point higher than projected two years earlier.

Chart 1 Projections for some main macroeconomic aggregates for 2001 and actual developments. Annual growth. Per cent.

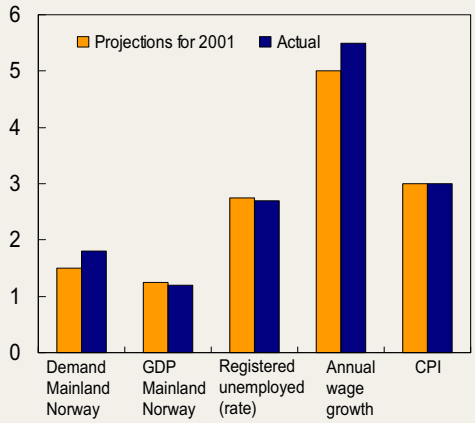
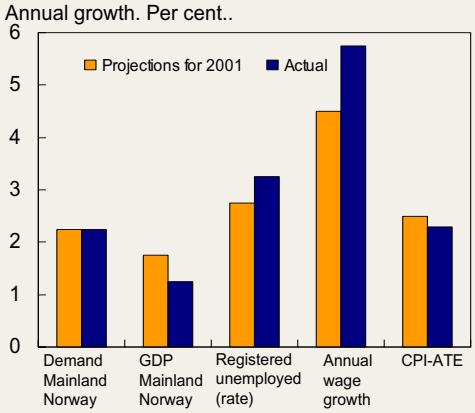


Chart 2 Projections for some main macroeconomic aggregates for 2002 and actual developments[1)]. Annual growth. Per cent..



[1)] Actual developments based on estimates in IR 1/03

- Wage growth was considerably higher than expected both in 2001 and 2002, in spite of higher-than-projected growth in unemployment.

- In autumn 2000, the projections were based on the assumption that the interest rate would fall in line with market expectations and the exchange rate would remain constant. On the basis of markedly higher wage growth than projected, interest rates had to be kept at a higher level in order to achieve price stability. The money market rate was on average 0.2 percentage point

[1] A more thorough analysis will be published in *Economic Bulletin* 1/2003.

higher than projected in 2001 and 0.9 percentage point higher than projected in 2002.

- The projections were based on the technical assumption of a constant krone exchange rate. In December 2002, however, the import-weighted krone exchange rate was on average 13% stronger than projected two years earlier. The appreciation of the krone was especially pronounced in 2002.

Thus, wage growth was higher than expected and the krone exchange rate was stronger than expected. These two factors have opposite effects on price inflation, but cannot be viewed separately. Unexpectedly strong wage growth led to higher-than-expected interest rates and probably to expectations of a continued wide interest rate differential between Norway and other countries. Expectations of a wide interest rate differential against other countries appear to have been an important explanatory factor behind the appreciation of the krone. Developments in the global economy and financial markets contributed to amplifying the effect of the wide interest rate differential. Higher oil prices also made a contribution.

Wage growth raises the issue of whether our understanding of the functioning of the economy has been correct. Norges Bank underestimated wage growth for both 2001 and 2002. Wage growth also tended to be higher than expected for several of the previous years. It would appear that we have overestimated the effects of weak profitability in manufacturing, which has traditionally been the wage leader in Norway, and underestimated the effects of the tight labour market. In a box in *Inflation Report* 1/2002, we described a model for wage growth which places less emphasis on profitability in manufacturing and more emphasis on conditions in the labour market than is the case in the wage equations in the macroeconomic model RIMINI. This alternative wage model would have been considerably more accurate in forecasting wage growth than our projections from 2000.

Annex I
Regional network

Norges Bank's regional network

Norges Bank's regional network was established in the autumn of 2002, and consists of enterprises, organisations and local authorities throughout Norway. In six rounds of talks each year, we will engage in discussions with business and community leaders on financial developments in their enterprises and industries, with about 200 visits in each round. The selection of contacts reflects the production side of the economy, both industry-wise and geographically. In the course of 2003, the number of contacts in the network will rise to about 1000 persons, who will be contacted once or twice a year.

The regional network is primarily intended to serve as a source of up-to-date information on the state of the Norwegian economy. Regular communication with local contacts in Norway's business and community life will provide us with information earlier and more frequently than available official statistics. It will also provide us with supplementary information on areas not covered by other statistical sources, and we will learn which issues are of particular concern to enterprises. In addition, the regional network will provide us with insight into the effects of specific events and enable us to study relevant issues. Official statistics will continue to form the basis for our perceptions of the state of the economy, but the time lags and revisions associated with these statistics make supplementary sources such as our regional network useful.

The information obtained from the regional network, along with other available information on economic developments, will form a basis for Norges Bank's projections as presented in the *Inflation Report* and other published material.

We have divided Norway into seven regions, and have engaged regional research institutes in six of them to be responsible for the network in their respective regions and to have meetings with contacts on behalf of Norges Bank. The following institutes have been selected:

Region North (Nordland, Troms, and Finnmark)	Kunnskapsparken Bodø
Region Central Norway (Nord-and Sør-Trøndelag)	Allforsk in Trondheim
Region North-West (Møre-and Romsdal, Sogn and Fjordane)	Møreforskning Molde
Region South-West (Rogaland and Hordaland)	Rogalandsforskning
Region South (Aust- and Vest-Agder, Telemark, and Vestfold)	Agderforskning
Region Inland (Hedmark and Oppland)	Østlandsforskning
Region East (Buskerud, Akershus, Oslo, and Østfold)	Covered by Norges Bank

Summary of the two contact rounds since the October Inflation Report

In the two contact rounds since the October *Inflation Report*, discussions were held with a total of 440 contacts in the regional network. A summary for Norway as a whole and summaries for each region from the last round of contacts will be presented on Norges Bank's website on 6 March (English version on 10 March). The following main points are based on the regional reports from the institutes responsible for the various regions, and thus do not necessarily reflect Norges Bank's view of economic developments:

- The *export industry* is experiencing a decline in demand and production. Companies describe a situation with deteriorating competitiveness as a result of high wage growth and a strong krone exchange rate.
- The problems in export-oriented manufacturing are spreading to enterprises supplying products to the domestic market. Demand in the *Norwegian business sector* for both goods and services is declining.
- *Offshore-related businesses* are now also reporting a reduction in contracts. Activity is at a particularly low level in exploration and development of new fields, while activity in connection with existing fields remains high.
- Demand for manufacturing, retail trade and services for *Norwegian households* appears to be continuing to grow at a moderate pace.
- There are fairly substantial regional differences in the *building and construction* industry which give an overall impression of a high, but declining level of activity. Demand is expected to fall in 2003.
- Private sector capacity utilisation is perceived to be somewhat lower than normal, and *fixed investment* in manufacturing is expected to fall this year.
- A feature common to many business sectors is that growth in turnover is not keeping pace with the rise in costs. Attempts are being made to maintain profitability through cost cuts, for example *workforce cutbacks*.
- Employment in *retail trade and other services* for households is shows moderate or stable growth, however.
- There are reports of stagnating to falling employment in the *health sector* and *local government*. Government budgets are perceived as being less flexible than previously.
- *The supply of qualified labour* has improved for most occupational groups in all regions, and is now regarded as better than normal in most industries.
- In both the private and the public sector, *wage growth* for 2002 is reported to have been very high, with negative consequences for competitiveness and employment. Somewhat lower wage growth is expected in 2003.

Enterprises and organisations that have been contacted in the work on this Inflation Report

ABB AS
ACNielsen Norge AS
Advanced Production and Loading AS
Aetat Kongsvinger
Aetat Vestfold
Airlift AS
Aker Kværner ASA
Aksel L. Hansson
Allianse ASA
Alta Kommune
Altaposten
Alvdal og Tynset Sport AS
Alvdal Skurlag AL
Amersham Health AS
Amfi Namsos
Amfi Narvik
Andøy Energi AS
Ankerske Naturstein AS
Anleggsgartnerfirma Strandman AS
Apokjeden AS
Apotek 1 Kirkenær
Apropos Internett AS
Arendal Kommune
Ark Bruns
Arki Arkitektar AS
Arne Rustand AS
AS Block Berge Bygg
Asko Kjeldsberg AS
Asplan Viak Bergen
Atlantic Auto AS
Auster Frisør ANS
Avisa Glåmdalen
Baker Hughes Inteq
Bakers AS
Banetele AS
Barel AS
Barnekompaniet AS
BB Servicesystem Sogn og Fjordane AS
Berg Jacobsen Gruppen AS
Bergen Kommune
Bergene Holm AS
Bergens Tidende
Betong Øst AS
BeWi Produkter AS
Bilhuset AS
Bilsenteret Namsos AS
Bjørge-Gruppen AS
Bodø Sildoljefabrikk AS
Bordsølv Design AS
BP Norge AS
Br. Reme AS
Brevik Construction AS
Brunvoll AS
Brødrene Bakk AS
Brødrene Dahl AS
Brødrene Røsand AS
Bygg og Maskin AS
Byggcon AS
Byggservice Nord-Østerdal AS
Båtservice Mandal AS
Cad Net Øst
CHC Helikopterservice AS
City Syd AS
Clarion Hotel Ernst AS
Color Group ASA
Comrod AS
ConsultIT
Coop Ofoten BA
Coop Sambo BA
Coop Sogn Og Fjordane BA
Coop Sunndalsøra BA
Coop Trondheim og omegn BA
Coop Vestfold og Telemark BA
Creato
Dale Bruk AS
Dale of Norway
DARK Arkitekter AS
Demas AS
DnB Kongsvinger
DnB Tønsberg
DFDS Seaways AS
DHL International AS
Diplom-Is AS
DNH Den Norske Høytalerfabrikk AS
Domstein Måløy ASA
E. Flasnes Transport AS
EFD Induction AS
Egersund Trål AS
Eidesvik AS
Eiendomsdrift Nord AS
Eiendomsmegler 1
Einar Torjesen AS
Elcon Finans AS
Elektrikeren AS
Elektro AS
Elkem Aluminium ANS
Elkjøp Giganten Forus
Elkjøp Stormarked Skien
ELTEL Networks
Elvemo og Hjertås Bygg AS
Emma EDB AS
Engum Elkjøp AS
Entra Eiendom AS
Eramet Norway
ErgoRunit AS
Ernst&Young
Esmeralda AS
Exact Eiendomsmeglere AS
Fabelaktiv AS
Falkanger Sko AS
Farveringen AS
FAV Gruppen
Fesil ASA
Figgjo AS
Finansnæringens Hovedorganisasjon
Finnsnes VVS Senter AS
Finny Sirevaag AS
Finsbråten AS
First Rent A Car Norway AS
First Securities ASA
Fiskeridirektoratet
Flatsetsund Møbel- Og Trevarefabrikk AS
Flatøy Møbler AS
Flextronics Network Service AS
Flisekompaniet AS
Flowtite Norway AS
Fokus Bank ASA
Fosen Trafikklag ASA
Fosnavåg Notbøteri AS
Fundia Armeringsstål AS
Fylkesbåtane i Sogn og Fjordane
Gaden & Larsen AS
Gjensidige NOR Forsikring Region Oppland
Gjensidige Nor Forsikring Trondheim
Gjensidige NOR ASA
Gjøco AS
Glamox ASA
Glava AS
Glåma Bygg AS
Godstrafikk & Bilspedisjon AS
Grieg Logistics
Grieg Seafood AS
Grimstad Planteskole AS
Grytnes Entreprenør AS
Gudbrandsdalen Uldvarefabrik AS
Gunnar Hippe AS
H & M Hennes & Mauritz AS
Hakon Distribusjon AS
Hakon Gruppen AS
Handelsbanken Liv
Hansa Borg Bryggerier ASA
Harald Haltvik AS
Harila Midt-Troms AS
Harstad Elektro AS
Harstad Kommune
Harstad Tidende AS
Havforskningsinstituttet
Havsølv AS
Hegra Sparebank
Heimdal Gruppen AS
Helgeland Kraft AS
Helgeland Sparebank
Helkama Grepa AS
Helse Nordmøre og Romsdal HF
Helse Stavanger HF
Hemnes Kommune
Hemnes Mek. Verksted AS
Hepro AS
Herlige Stavanger AS
Hilmers Company AS
Hitec Vision
HOFF Norske Potetindustrier BA
Holm Grafisk AS
Holst & Hauge AS
Hotel Augustin AS
Hotell Frøya AS
Hotell Maritim AS
Hovden Møbel AS
Hustad AS
Hustadmarmor AS
Hydro Aluminium AS Karmøy
Hydrotech-Gruppen AS
Høgskolen i Harstad
Iglo-gruppen
IKEA Åsane
Industriverktøy AS
IPEC Instrumentering AS
ISS Norge AS
J. M. Nilsen AS
Johan Vinje AS
Jotun AS
Julius Maske AS
Kaffebrenneriet AS
Kid Interiør AS
Kirkenes Bil AS
Kleven Florø AS
Klaastad Brudd DA
Knut Olsen Ing. AS
Knutsen OAS Shipping AS
Kosberg Arkitektkontor AS
KPMG AS
Kran og Industriservice Nord AS
Kristiansand Jernstøperi AS
Kristiansund Havn KF
Kristiseter M Entreprenør AS
Kristoffer Johnsen Grafiske Senter AS
Krogsveen Raknes AS
Kroken Caravan AS
Kruse Smith AS
Kährs Brumunddal AS
Kaarbøverkstedet AS
Lærdal Medical AS
Landskapsentreprenørene AS
Langmorkje Almenning
Lefdal Elektromarked AS Lade
Leiv Eriksson Nyfotek AS
Leonhard Nilsen Sønner AS
Lindesnes Kommune
Linjegods AS
Litra AS
Lom Møbelindustri AS
Lom og Skjåk Sparebank
Luftsfartsverket Region Midt-Norge
Luxo Industrier AS
Lycro AS
Lyng Gruppen AS
Malvik Kommune
Mandal Reberbane Christiansen & CO
Mandal Sykehus
Manpower AS
Maritech AS
Maritime Hydraulics AS
Media Direct Norge AS
Meglerhuset Nylander AS
Melby Snekkerverksted AS
Meyer AS
Midnor Group AS
Midt-Norge Regnskap AS
Midt-Troms Kjøleservice AS
Mjosundet Båt og Hydraulikk AS
Moelven Van Severen AS
Molab AS
MTU Telecom AS
Multimaskin AS
Møkster Shipping Simon AS
Møre og Romsdal Fylkeskommune
Namsen Motor Hotell
Namsos Kommune
Narvesen
Narvik Kommune
Narvik Storsenter Drift AS
Navigator AS
Neptun Apartementhotell AS
Nera Networks AS
Nerland Granitindustri AS
Netcom AS
Nettbuss Sør AS
Nexans AS
Nexans Norway AS
NextCon
Norac AS
NorDan AS
Nordea Bank Norge ASA
Nordfjord og Sunnmøre Billag AS
Nordic Comfort Products AS
Nordland Betongindustri AS
Nordlandsforskning
Norgesbuss AS
Norgesbuss Vestfold AS
Norgesgruppen ASA
Norpower Brødr. Malo AS
Norsk Tipping AS
Norsk Gjenvinning Region Sør
Norsk Mottaksdrift
Norsk Stein AS
Norsk Stål AS
Nor-Team Entreprenørforretning AS

Nortelco Teledialog AS
Nothuset AS
Nova-Print AS
Novatex AS
Nycomed Pharma AS
Nyman & Schultz Forretningsreiser AS
NYMO AS
Næringsforeningen i Trondheim
Næringshagen i Sandnessjøen AS
Næringsmiddelbedriftenes Landsforening
Næringsmiddeltilsynet for Nord Gudbrandsdal
Nøsted Kjetting AS
O. Olsen Snekkerifabrikk AS
Odfjell ASA
Odstøl Elektronikk AS
Oljedirektoratet
Olympic Shipping AS
Oppegård Kommune
Opus AS
Oras AS
Orkideekspressen Østerdal Reisebyrå AS
Oslo Kommune
Ottadalen Mølle AL
Otteren Gullsmed og Urmaker
Outokumpu Norzink
Overhalla Cementvare AS
Owens Corning Fiberglas Norway AS
P4 Radio Hele Norge ASA
Partner Reisebyrå AS
Pedersen Birger AS
Per Solem
Per Aaland AS
Peterson Emballasje AS
Petrolia Drilling ASA
Petter Bakøy AS
Plus Reiser
Prepan Norge AS
PriceWaterhouseCoopers DA
Protech AS
Protek TELsoft AS
Radio 1 AS
Rana Plast AS
Rana Trevarefabrikk AS
Rapp Bomek ASA
Reidar Flokkmann Eftf.
Reime Prosess AS
Reinertsen Gruppen AS
Remøy Shipping AS
Rica Hell Hotel
Rica Hotel Alta
Rica Park Hotel
Rieber & Søn ASA
Ringen Reahbiliteringssenter AS
Ringnes AS
Risa AS
Rissa Kommune
Rockwool AS
Rogaland Kunnskapspark
Romsdal Budstikke AS
Rosenborg Malerforretning AS
S.O.T. Trafikk AS
Saga Solreiser AS
Saint Gobain Ceramic Materials AS
SalMar AS
Salten Kraftsamband AS
Sandefjord Kommune
Sandefjords Blad AS
Sandnes Kommune
Saxlund AS
Scandiaconsult AS
Scandic Hotels AS
ScanPartner AS
Selje Hotel AS
Selmer Skanska AS
Sentrum Regnskap - Hitra
Servi Cylinderservice AS
Setsaas AS
Siemens AS
Sigdal Kjøkken AS
SINTEF konsernstab
Sivesind KI AS
Skagerak Energi AS
Skjalg A. Pettersen AS
Skjåkheimen
Slipen Mekansike AS
SM Triplex AS
Smurfit Norpapp AS
SND Invest AS
Snillfjord kommune
Sortland Entreprenør AS
Sparebanken Pluss
Sparebanken Sør
Sparebanken Vestfold
Spis Norge AS
St. Olavs Hospital
Statoil Stjørdal
Stiftelsen Barnehageforbundet
Stiftelsen Betanien Bergen
Stillasservice AS
Stjørdal Entreprenør AS
Stoa Storkjøp AS
Stokkegruppen AS
Stordal Møbler AS
Storebrand ASA
Stormoa
Storvik AS
Strålfors AS
Studentsamskipnaden Sundvolden Hotel AS
Sykehusene Asker og Bærum HF
Sykehuset Telemark HF
Søgneheimen bo- og aktivitets-senter
Sør-Varanger Kommune
T Belsvik AS
T. Stangeland Maskin AS
Tandberg Data ASA
Taubåtkompaniet AS
Tine Midt-Norge AS
Titania AS
Tor & Bjørns Autoservice AS
Torgkvartalet kjøpesenter
Toyota Norge AS
Trelleborg Viking AS
Tverås Maskin & Transport AS
Tyrholm & Farstad AS
Uldal Vinduer og Dører AS
Universal Sodexho Norway AS
Ventelo Norge AS
Vest Busscar Stryn AS
Vest Inkasso AS
Vest Sandblåsing AS
Vev - al - plast AS
Vinmonopolet AS
VINN
Visma Services Norge AS
Volvat Medisinske Senter AS
Vågå Rekneskapslag AL
Wennberg Trykkeri AS
Westaff Vikartjenester
Westre Bakeri AS
Wiederøe
Wist Last og Buss
WM-Data
Ø.M. Fjeld AS
Økonor Sandnessjøen AS
Aarbakke AS
Aarsland Møbelfabrikk AS
Åsen & Øvrelid AS

Annex II
Strategy Document 3/02

Strategy document 3/02

Implementation of monetary policy in the period to March 2003.

Discussed at the meeting of the Executive Board on 30 October 2002

Background

Norges Bank shall orient monetary policy towards low and stable inflation. The inflation target is set at 2½ per cent. Monetary policy influences the economy with considerable and variable lags, and the Bank must be forward-looking in interest rate setting. The key rate is set on the basis of an overall assessment of the outlook for inflation, normally a couple of years ahead in time. A medium-term horizon also contributes to dampening fluctuations in the real economy. The key rate will normally be changed gradually so that we can assess the effects of an interest rate change and other new information about economic developments.

In the discussion on monetary policy strategy on 3 June, the Executive Board considered a sight deposit rate between 7-8 per cent to be appropriate at the end of September this year. The sight deposit rate was increased by 0.5 percentage points to 7 per cent at the monetary policy meeting of 3 July 2002. The key rate was left unchanged at the monetary policy meetings of 7 August and 18 September. In the press release on the monetary policy meeting of 18 September, the Bank stated: "It is Norges Bank's assessment that, with an unchanged interest rate, the probability that inflation two years ahead will be higher than 2½ per cent is the same as the probability that it will be lower." The krone has appreciated by about 2 per cent since the previous strategy discussion and is slightly stronger than the average for June.

Economic developments and the inflation outlook

Important developments since the previous strategy discussion are:

- Inflation was somewhat higher than projected this summer, but fell in August and September.
- Growth prospects for several of our most important trading partners are weaker.
- Oil prices have increased.
- Equity prices have decline markedly.
- Growth in credit to households is very high.
- The national accounts for the Norwegian economy have been revised and show that growth over the last three years has been considerably stronger than previously assumed.

In the previous *Inflation Report*, inflation two years head was projected at 2¾ per cent with an interest rate of 6½ per cent and a krone exchange rate equal to the average for the second quarter. The inflation forecast has now been revised downwards, partly as a result of a change in the assumptions for the krone exchange rate and the interest rate. The key rate is 0.5 percentage point higher and the krone 4 per cent stronger than in the baseline scenario in the previous *Inflation Report*. The projections are shown in table 1.

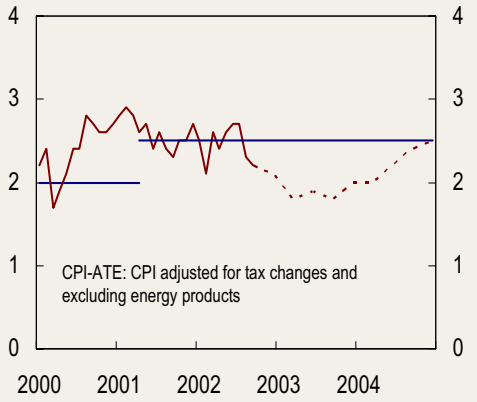
Table 1. Provisional projections for Inflation Report 3/02 based on constant interest rate and exchange rate. Changes from previous report in brackets.

	2001	2002	2003	2004
Consumer price inflation (CPI)	3.0	1¼ (¼)	2 (-¼)	2¼ (-½)
Inflation adjusted for tax changes and excl. energy products (CPI-ATE)	2.6	2¼ (0)	2 (-¼)	2¼ (-½)
Rice in prices for imported consumer prices	0.6	-1¼ (-½)	-2½ (-1¾)	-½ (-1)
Rise in labour costs	5	5¾ (0)	5½ (-¼)	5¼ (-½)
Mainland GDP growth	1.0	1½ (-½)	1¾ (-½)	2¼ (-¼)
Employment growth	0.4	½ (0)	0 (-¼)	½ (0)
Unemployment	3.6	4 (¼)	4¼ (¼)	4¼ (¼)

Inflation, as measured by the CPI-ATE, was somewhat higher than expected this summer, but fell in in August and September. The krone is stronger than it was last summer. Combined with low inflation abroad, this will contribute to a fall in prices for imported consumer goods this year and next. These effects will then gradually unwind. Because of the high oil price level, import prices may rebound faster than expected. The subdued rise in import prices is countering the high rise in prices for domestically produced goods and

services. Based on the average exchange rate for the past three months and today's interest rate, inflation is projected at 2¼ per cent in 2002, 2 per cent in 2003 and 2¼ per cent in 2004 (see chart 1). Inflation is projected to reach 2½ per cent at the beginning of 2005.

Chart 1 Inflation (CPI-ATE). Actual and projected. 12-month rise. Per cent.



Source: Statistics Norway

The high rate of increase in prices for domestically produced goods and services reflects the strong growth in labour costs over recent years. It appears that unemployment will edge up, which may in turn have a dampening impact on wage growth. On the other hand, high pay increases with effect from 2003 have already been awarded in this year's wage settlements. This will contribute to maintaining overall wage growth at a high level next year and create tensions between groups covered in the main settlement (main employer and employee organisations) in 2004. The risk of wage-wage spirals is thus considerable. Wage growth is projected at 5¾ per cent in 2002 and 5¼-5½ per cent in 2003 and 2004.

Household income is rising sharply as a result of high wage growth and tax cuts. In addition, household borrowing is high. The growth in credit is accompanied by rising house prices and reflects household expectations of high future income. So far, households do not appear to be increasing the share of income spent on housing investment or financial investment. Against this background, we expect strong growth in private consumption in the period ahead. Consumption abroad may, however, account for a share of the growth in consumption.

Several years of high wage growth combined with the appreciation of the krone will probably result in a decline in manufacturing employment next year. This is the reason for the slow growth in employment and the rise in unemployment that we expect next year.

Weak corporate earnings over several years, partly as a result of the strong growth in costs in Norway relative to other countries, will result in sluggish growth in mainland business investment in the period ahead. The fall in equity prices will also have a dampening impact. On the other hand, the removal of the investment tax as from 1 October may have led to a postponement of investments. Petroleum investment will show sharp growth next year. The development of the Snøhvit field has a considerable import component. Other petroleum investments will boost activity in parts of the shipping and engineering industries and other sectors of the mainland economy.

In addition to private consumption and petroleum investment, growth in public expenditure will fuel demand for labour in the years ahead. The projections for public sector demand for the coming years are based on the guidelines for fiscal policy as set out in the Fiscal Budget. The stock market decline and the appreciation of the krone have considerably reduced the value of the Government Petroleum Fund measured in NOK. However, the Government has proposed that particularly substantial changes in the Fund's capital should not be allowed to affect the use of petroleum revenues in one single year, but should be spread to give a more even effect over several years. The proposal calls for a structural budget deficit that is higher in 2003 and lower in 2004 than implied by the four-per-cent-rule in isolation. Financing public investment and expenditure using sources other than the central government budget will have the same effect.

Equity prices have shown a marked decline since the previous strategy discussion. This can partly be explained by a loss of confidence in the wake of the accounting scandals, and partly by a bleaker outlook for the US economy. The effects have spread to stock markets in most countries, including Norway. Even though shareholdings account for a very small share of household wealth in Norway, saving behaviour among the most heavily exposed groups may be affected. For the local government sector and some enterprises, requirements to add capital to top up pension funds may lead to higher costs. Moreover, the fall in share prices will make it more difficult for companies to raise fresh equity capital. This may have a dampening impact on fixed investment.

The global economy is expanding at a moderate pace. Developments in the US economy have a substantial impact on global growth. The outlook for the US economy deteriorated over the summer. The slide in share prices will probably reduced the strength of the recovery in the latter half of this year and next year. Furthermore, the record-high current account deficit in the US and a strong element of uncertainty may lead to further corrections in foreign exchange and stock markets. This may restrain growth in the period ahead. The prospects for the euro area are also weaker than they were before the summer. Important trading partners such as Sweden and the UK show somewhat stronger growth than the euro area. Key rates are expected to remain unchanged or to be lowered in several countries. As a result, the interest rate differential between Norway and other countries is wide and the krone has remained strong. Foreign producer prices will continue to be moderate in an environment of sluggish economic growth.

Oil prices rose during the summer, and the market has factored in a higher oil price than assumed in our previous strategy document. A considerable risk premium has been priced into oil prices as a result of the situation in the Persian Gulf. If the situation is not resolved in the near future, oil prices are likely to stay at a high level for a somewhat longer period. On the other hand, the relatively weak outlook for the world economy may reduce demand for oil, with downward pressures on oil prices. We expect oil prices to edge down from the current level, and to near USD 20 per barrel about two years ahead. Oil prices are discussed further in Annex 3.[1] Persistently high oil prices will have a negative impact on growth among our trading partners, and push up international producer prices. In Norway, on the other hand, a continued high oil price will fuel domestic activity and inflation.

Risks to the inflation projection for a given krone exchange rate

It is our assessment that, with an unchanged interest rate and an unchanged krone exchange rate, the probability that inflation two years ahead will be lower than 2½ per cent is the same as the probability that it will be higher. The risks to the projections for wage growth, the world economy, oil prices, public demand, private domestic demand and output are considered to be balanced.

[1] Annexes to Strategy Document are available on Norges Bank's website.
[2] Different concepts of balance or equilibrium in the economy are discussed in an annex to this paper.

Monetary policy ahead

Since the end of the 1990s, the domestic economy has been marked by pressures on real economic resources and high cost inflation. Labour costs have increased at a rate that is inconsistent with achieving the inflation target in the long term. Monetary policy is thus oriented with a view to gradually restoring balance in the real economy.[2]

The fiscal guideline implies a steady increase in the use of petroleum revenues over the central government budget, which will generate positive demand impulses to the Norwegian economy over many years ahead. This may entail a persistent shortage of real economic resources, which increases the demands on monetary policy to curb demand for domestically produced goods and services so that balance in the real economy, once restored, can be maintained.

The cyclical downturn in the world economy has, however, led to low demand growth abroad, even though the effects of this on the Norwegian economy have been relatively modest so far thanks to high oil prices. The appreciation of the krone will also have a negative impact on activity in the Norwegian economy and keep inflation at a subdued level in the period ahead.

With a sight deposit rate of 7 per cent and a credible inflation target of 2½ per cent, the real interest rate is 4½ per cent. This is ½ - 1½ percentage points higher than what we previously estimated to be a neutral real interest rate.[3] Our analyses indicate that inflation will be 2½ per cent two years ahead with today's interest rate and krone exchange rate. This would imply that the current monetary stance is appropriate. We have estimated two variants of the Taylor rule. The estimates do not justify a change in the current monetary policy stance (see Annex 2).

Financial market confidence in the inflation target provides Norges Bank with greater scope for promoting stability in the real economy. Developments in forward rates and the krone exchange rate indicate that such confidence exists. However, the previous wage settlements may imply that wage growth is adrift. As long as this uncertainty persists, we have limited scope for allowing aggregate demand to rise further and accommodate the high rate of wage growth.

[3] The concept neutral interest rate is discussed further in an article in *Penger og Kreditt* 2/2000 by Grete Hammerstrøm and Ingunn Lønning: "Kan vi tallfeste den nøytrale renten?"(Can we quantify the neutral interest rate?)

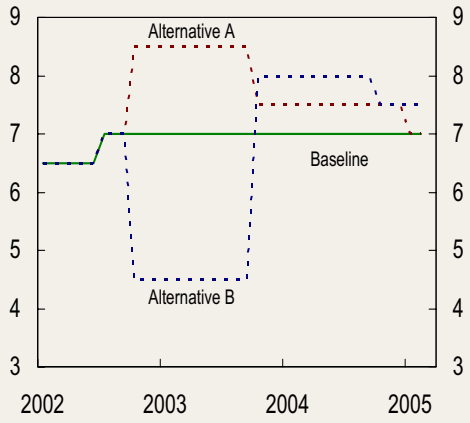
An interest rate change affects inflation gradually. A considerable share of the effects occurs in the course of the first two years. This is why Norges Bank has chosen a forecast horizon of two years. A shorter horizon for attaining the inflation target would have resulted in greater interest rate variations and wider swings in the real economy. Promoting stability in inflation, output and interest rates are therefore important considerations when the Bank decides how fast inflation should be brought back to the target.

When inflation drifts away from the inflation target, the features of the disturbance will also determine how fast inflation should be brought back to the target. Factors that influence the choice of horizon are discussed further in Annex 1. In Annex 2, using model-based interest rate rules, we illustrate that placing weight solely on the inflation target may entail costs in the form of wider variations in output.

Alternative paths for the key interest rate – with an endogenous krone exchange rate

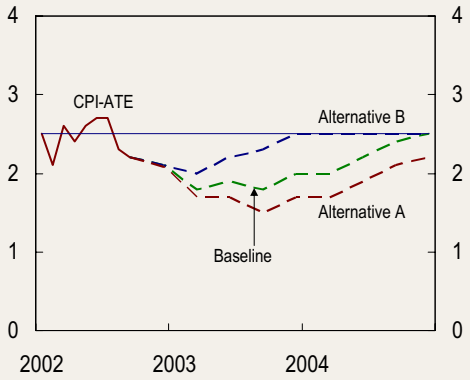
The fall in prices for imported consumer goods is restraining the strong growth in domestic costs. This will not continue to be the case. With a more normal price rise for imported goods, wage growth will eventually have to be brought down to a level that is consistent with the inflation target. A faster reduction in wage growth would have required a more aggressive monetary policy. Alternative A in chart 2 shows a path where the key rate is kept 1½ percentage points higher through 2003, and thereafter gradually reduced towards 7 per cent. The associated inflation path is shown in chart 3, and the changes in GDP in relation to the baseline scenario are shown in chart 4. The activity level, as measured by GDP, falls rapidly in relation to the baseline scenario and wage growth is brought down at a faster pace. Compared with the baseline scenario, balance in the real economy is achieved faster. Changes in the key rate influence the krone exchange rate. In line with uncovered interest rate parity, the krone promptly appreciates, and then gradually depreciates. The effect on the exchange rate contributes to a further fall in prices for imported consumer goods. Inflation remains below the level in the baseline scenario and does not approach the inflation target of 2½ per cent until the end of 2005. With this interest rate path, output stability is given such high priority that it is achieved at the cost of stability in inflation and interest rates.

Chart 2 Alternative scenarios for the interest rate.



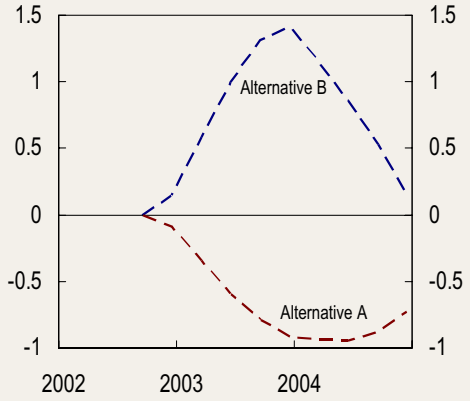
Source: Norges Bank

Chart 3 Inflation with different scenarios for the interest rate. Actual and projected. 12-month rise. Per cent.



Source: Statistics Norway and Norges Bank

Chart 4 GDP with alternative scenarios for the interest rate. Deviations from GDP in per cent.



Source: Norges Bank

Our projections show that inflation will be lower then 2½ per cent this year and next (see chart 1). This is because the effects of a stronger krone on inflation are strongest after 1-2 years. A sharp cut in the key rate could bring inflation up to 2½ per cent as early as next year. This interest rate path is illus-

trated in alternative B in chart 2. We assume that an interest rate reduction of 2½ percentage points will be immediately followed by a deprecation, which will gradually be reversed in accordance with the theory of uncovered interest parity. The effects of the exchange rate change will push inflation up to 2½ per cent at the end of 2003. If the effects are milder than assumed, the key rate must be reduced further. The interest rate reduction will intensify the pressures on real economic resources and deepen the imbalance between domestic demand and output. Strong growth in domestic activity implies that the key rate must be increased relatively rapidly to a level that is higher than in the baseline scenario. This has a substantial impact on the activity level. The interest rate increase towards the end of 2003 results in a comparable appreciation. With this interest rate path, the costs associated with the attendant swings in the real economy and sharp variations in interest rates are considerable in relation to the benefits in the form of stable inflation.

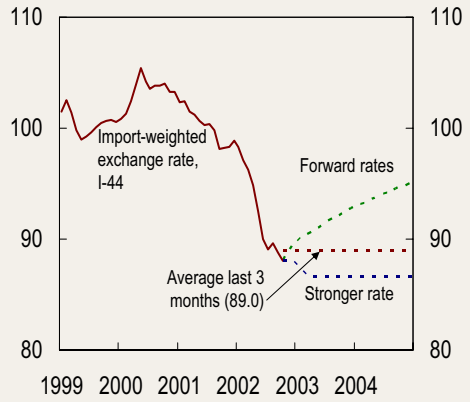
Alternative paths for the krone exchange rate - with unchanged interest rates

Developments in the nominal exchange rate are uncertain. The krone exchange is likely to fluctuate at least as widely ahead as it has over the past few years. Chart 5 illustrates three possible paths for the krone exchange rate. In the baseline scenario, the krone remains constant at the average for the past three months. Forward rates imply that the krone will depreciate by about 7 per cent two years ahead. In an alternative path, the krone appreciates by 3 per cent in the course of the first quarter of 2003.

In the baseline scenario, inflation is projected at 2½ per cent two years ahead. The effects on inflation of the alternative paths are illustrated in chart 6. Only the exchange rate assumption has been changed in relation to the baseline scenario. If the forward exchange rate materialises, inflation may rise to almost 3 per cent two years ahead. In the scenario with a stronger exchange rate, inflation may be about 2¼ per cent two years ahead. The key rate will have to be changed to attain the target of 2½ per cent. The changes in the key rate will have an impact on the krone exchange rate. The illustrated paths for exchange rate developments will therefore not materialise.

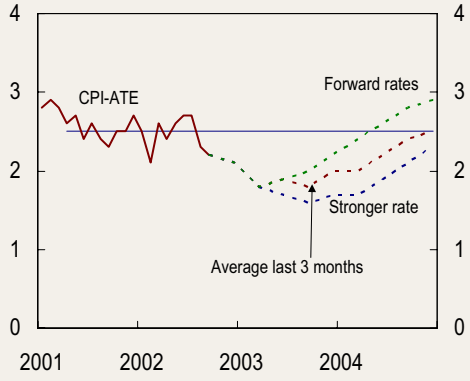
A further appreciation of the krone from the current level will in isolation imply that inflation will be lower than projected at the end of 2004. The inflation path through 2003 will be very low. If the krone's appreciation is perceived as sustained, this would in isolation imply a lower interest rate. If the krone weakens, the monetary stance must be tightened accordingly by raising the interest rate. However, it is important to assess the reasons behind a change in the exchange rate before the interest rate is changed.

Chart 5 Alternative scenarios for the import-weighted exchange rate (I-44).



Source: Norges Bank

Chart 6 Inflation with alternative scenarios for the import-weighted exchange rate. Actual and projected. 12-month rise in per cent.



Source: Statistics Norway and Norges Bank

Other considerations – financial stability

International share prices, as measured by the JP Morgan Global Index, have dropped by about 25 per cent over the last six months. There is a risk of a further decline. Bank losses have increased somewhat. However, banks' capital adequacy ratios rose in 2001. Against this background, supply-side conditions are not likely to restrain credit growth.

In spite of continued strong growth in household indebtedness, strong growth in real disposable income implies that credit risk in this sector has not increased noticeably. Housing wealth is still on the rise. However, this trend could pose a threat to

financial stability in the long run, and will in isolation imply higher interest rates if it is not rapidly restrained. For a large portion of the household sector (the 8 lowest-income deciles) the ratio of gross debt to income is now higher than prior to the banking crisis. The stock market decline has primarily affected households in the highest income brackets. These households are less exposed to debt than in the period preceding the banking crisis. Credit risk linked to loans to enterprises has increased somewhat since the previous strategy document. The outlook for enterprises' earnings capacity is now more uncertain and the financing situation more difficult. The number of bankruptcies has increased.

Financial markets both internationally and in Norway have been characterised by growing pessimism and risk aversion in recent months. It is difficult to point to conditions in the financial sector that in the short term would place particular demands on interest rate setting. Over the summer, life insurance companies reduced their holdings of both Norwegian and foreign shares, and have thereby substantially reduced their exposure to a further fall in equity prices. Given the unstable situation in the financial sector, the likelihood of a situation arising where Norges Bank would have to supply liquidity and cut interest rates to ensure the smooth functioning of the financial market has increased slightly, but the risk of this occurring remains low. Annex 5 provides a more detailed discussion of developments that have a bearing on financial stability.

Assessment

The growth forecasts for the world economy have been revised downwards since the previous strategy discussion. Oil prices are higher. The krone has remained strong. With an unchanged interest rate and krone exchange rate, inflation is projected at 2½ per cent two years ahead. The probability that inflation two years ahead will be lower than 2½ per cent is the same as the probability that it will be higher.

This may imply that the monetary policy stance is now appropriate given the present economic situation. With a krone exchange rate equal to the average for the past three months, an interest rate of about 7 per cent is a sufficiently tight monetary policy stance given our current assessment of economic developments and the balance of risks. The sight deposit rate should therefore be set in the interval 6.5-7.5 per cent at the end of February 2003. If the krone appreciates and the appreciation is perceived as sustained, this would in isolation justify a lower interest rate. Similarly, a higher interest rate level may be appropriate if the krone depreciates. A substantial change in the exchange rate may imply that the interest rate is set outside the interval. It is important to assess the reasons behind changes in the krone. If the krone depreciates in response to a less expansionary fiscal stance or other negative demand shocks, the shock itself will counter the effect of a weaker krone on inflation. The need for an interest rate increase would then be reduced.

Strategy

- Monetary policy shall be oriented towards low and stable inflation. The operational objective is an annual rate of increase in consumer prices of 2½ per cent.
- The key rate is set on the basis of an overall assessment of the inflation outlook, normally two years ahead.
- Financial market confidence in the inflation target provides Norges Bank with greater scope for promoting stability in the real economy. The scope will also be increased as the inflation target is adopted as the anchor for wage formation.
- Our projections for economic developments and assessment of the balance of risks imply that the sight deposit rate should be set in the interval 6.5-7.5 per cent at the end of February 2003.
- There is substantial uncertainty surrounding developments in the krone exchange rate and the effects of the appreciation of the krone on inflation and output. This implies a measured approach to interest rate setting. If the krone depreciates, an interest rate in the upper end of the interval may be appropriate. If the krone appreciates, an interest rate in the lower end of the interval may be appropriate. A substantial change in the exchange rate may imply that the interest rate is set outside the interval. Any interest rate responses must be based on an analysis of the reasons behind exchange rate movements and an assessment of the duration of a change in the exchange rate.

Recommendation

The Executive Board endorses the conclusions above.

Monetary policy meetings in Norges Bank

with changes in the sight deposit rate and a statement regarding the inflation outlook

Date	Sight deposit rate[1]	Change	Bias[2]
Future meetings			
17 December 2003			
29 October 2003			
17 September 2003			
13 August 2003			
25 June 2003			
30 April 2003			
05 March 2003			
Previous interest rate meetings			
22 January 2003	6	-½	Downside bias
11 December 2002	6.5	-½	Downside bias
30 October 2002	7	0	Neutral bias
18 September 2002	7	0	Neutral bias
07 August 2002	7	0	Upside bias
03 July 2002	7	+½	Upside bias
22 May 2002	6.5	0	Upside bias
10 April 2002	6.5	0	Neutral bias
27 February 2002	6.5	0	Neutral bias
23 January 2002	6.5	0	Downside bias
12 December 2001	6.5	-½	Downside bias
31 October 2001	7	0	Downside bias
19 September 2001	7	0	Neutral bias
07 August 2001	7	0	Neutral bias
20 June 2001	7	0	Neutral bias
16 May 2001	7	0	Neutral bias
04 April 2001	7	0	Neutral bias
21 February 2001	7	0	Neutral bias
10 January 2001	7	0	Neutral bias

[1]The sight deposit rate is Norges Bank's key rate. The sight deposit rate is the interest rate on banks' deposits in Norges Bank. The sight deposit rate forms a floor for money market rates. By managing banks' access to liquidity, the central bank ensures that short-term money market rates are normally a little higher than the sight deposit rate.

[2] A *neutral bias* indicates that according to Norges Bank's assessment, with an unchanged interest rate (at the level after the change approved the same day), the probability that inflation two years ahead will be higher than 2½ per cent is the same as the probability that it will be lower. A *downside bias* indicates that according to Norges Bank's assessment, with an unchanged interest rate (at the level after the change approved the same day), the probability that inflation two years ahead will be lower than 2½ per cent is greater than the probability that it will be higher. An *upside bias* indicates that that according to Norges Bank's assessment, with an unchanged interest rate (at the level after the change approved the same day), the probability that inflation two years ahead will be higher than 2½ per cent is greater than the probability that it will be lower.

Annex III
Statistics

Table 1 Main macroeconomic aggregates

Percentage change from previous year/quarter		GDP	Main-land GDP	Private cons-ump-tion	Public spending on goods and services	Private main-land fixed investment	Petroleum investment[1]	Exports trad. goods	Im-ports
1997		5.2	4.9	3.2	2.5	10.2	17.6	8.6	12.4
1998		2.6	4.1	2.7	3.3	8.6	24.5	3.5	8.5
1999		2.1	2.7	3.3	3.2	-0.3	-17.4	4.0	-1.8
2000		2.4	1.9	3.5	1.2	6.7	-20.1	1.7	3.2
2001		1.4	1.2	2.5	2	0.7	-7.4	4.0	0
2001[2]	Q1	0.3	0.6	1.7	2	0.7	5.0	2.5	2.6
	Q2	-0.1	-0.2	0.5	-0.1	1.8	3.7	0.8	-0.2
	Q3	1.0	0.2	0.9	1	-4.6	1.8	-4.4	-2.0
	Q4	0.3	0.7	-0.1	-0.2	-1.0	-12	6.8	2.5
2002	Q1	-0.2	0.5	1.7	2.1	-3.3	7.4	-0.6	-2.9
	Q2	1.0	0.6	0.6	0.2	0.7	28.5	1.2	5.1
	Q3	-0.2	-0.2	0.5	0.7	-1.0	-22	1.2	-4.3
Level 2001, NOK bn		1511	1152	651	306	171	56	216	442

1) Including services
2) Sesonally adjusted quarterly figures

Table 2 Consumer prices

Twelve-month rise. Per cent		**CPI**	**CPI-ATE[1]**	**CPI-AT[2]**	**CPI-AE[3]**	**HICP [4]**
1997		2.6				2.6
1998		2.2				2.0
1999		2.3				2.1
2000		3.1			2.3	3.0
2001		3.0	2.6	3.2	2.4	2.7
2002		1.3	2.3	2.2	1.6	0.8
2002	Jan	1.3	2.5	2.7	1.2	0.9
	Feb	0.8	2.1	2.2	0.9	0.4
	Mar	1.0	2.6	2.4	1.3	0.4
	Apr	0.5	2.4	2.0	1.0	-0.1
	May	0.4	2.6	1.8	1.3	-0.4
	Jun	0.4	2.7	1.9	1.3	-0.4
	Jul	1.6	2.7	2.0	2.4	1.2
	Aug	1.4	2.3	1.7	2.1	1.1
	Sep	1.4	2.2	1.8	1.9	1.2
	Oct	1.8	2.1	2.1	1.9	1.3
	Nov	2.1	2	2.5	1.7	1.8
	Dec	2.8	1.8	3.1	1.5	2.6
2003	Jan	5	1.8	5.4	1.6	4.2

1) CPI-ATE: CPI adjusted for tax changes and excluding energy products
2) CPI-AT: CPI adjusted for tax changes
3) CPI-AE: CPI excluding energy products
4) HICP: The Harmonised Index of Consumer Prices. The index is based on international criterial drawn up by EUROSTAT.

Table 3 Interest rates

		Norges Bank's key rate (average)	Money market rates NIBOR[1]			Yield on government bonds[2]
		Sight deposit rate	1-week	3-month	12-month	10-year
1997		3.4	3.6	3.7	4.1	5.9
1998		5.5	5.9	5.8	5.6	5.4
1999		6.4	6.9	6.5	6.0	5.5
2000		6.2	6.6	6.8	7.1	6.2
2001		7.0	7.2	7.2	7.1	6.2
2002		6.7	6.9	6.9	6.9	6.4
2001	Aug	7.0	7.1	7.3	7.3	6.5
	Sep	7.0	7.1	7.1	7.0	6.4
	Oct	7.0	7.2	6.9	6.6	6.1
	Nov	7.0	7.1	6.9	6.4	5.9
	Dec	6.7	6.9	6.6	6.2	6.2
2002	Jan	6.5	6.6	6.3	6.2	6.2
	Feb	6.5	6.7	6.6	6.7	6.4
	Mar	6.5	6.6	6.7	6.9	6.6
	Apr	6.5	6.7	6.8	7.0	6.7
	May	6.5	6.7	6.9	7.3	6.8
	Jun	6.5	6.8	7.1	7.5	6.8
	Jul	6.9	7.1	7.3	7.4	6.6
	Aug	7.0	7.1	7.3	7.3	6.3
	Sep	7.0	7.1	7.2	7.0	6.1
	Oct	7.0	7.1	7.1	6.8	6.2
	Nov	7.0	7.1	7.1	6.7	6.1
	Dec	6.7	6.9	6.6	6.1	5.9
2003	Jan	6.3	6.4	6.0	5.6	5.7
	Feb	6.0	6.1	5.7	5.3	5.3
2003	7 Feb	6.0	6.1	5.8	5.4	5.4
	14 Feb	6.0	6.1	5.8	5.4	5.3
	21 Feb	6.0	6.1	5.7	5.3	5.4
	28 Feb	6.0	6.0	5.5	5.1	5.2

1) NIBOR = Norwegian interbank offered rate, average of daily quotations
2) Yield on representative 10-year government bond. Average of daily quotations. The yield is calculated by weighting one or two government bonds with the residual maturity.

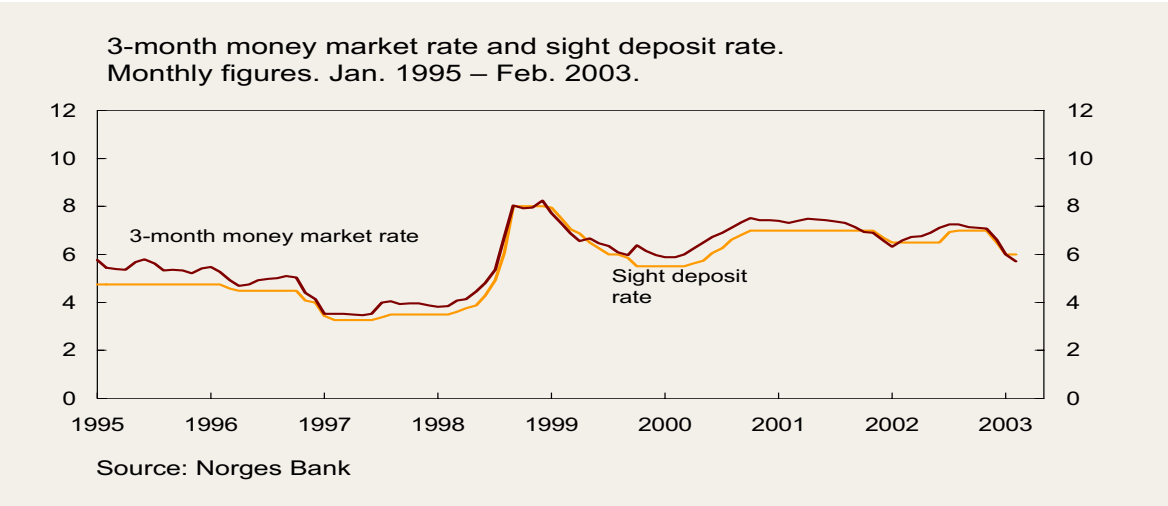
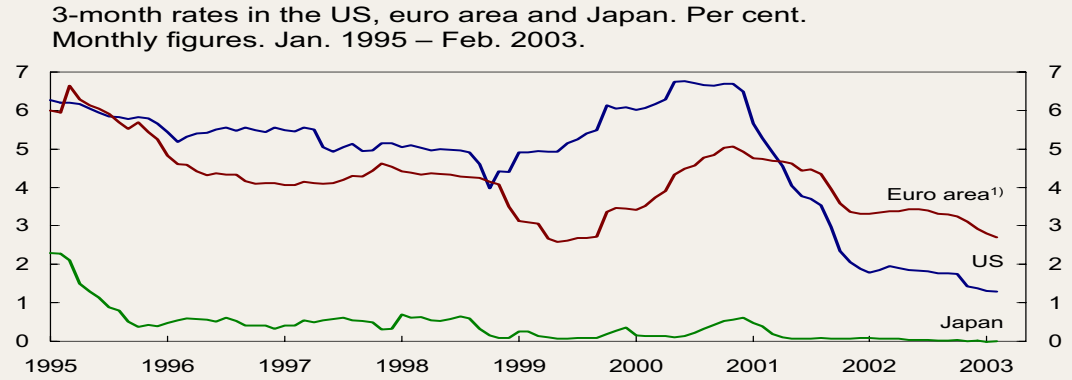


Table 4 International interest rates

		Short-term interest rates[1] for key currencies in the Euromarket						Interest rate differential[2]	Yields on government bonds[3]	
		USD	JPY	EUR	GBP	SEK	Trading-partners	NOK/trading-partners	US	Germany
1997		5.2	0.5		6.8	4.2	4.1	-0.5	6.5	5.7
1998		4.8	0.5		7.3	4.2	4.2	1.5	5.3	4.6
1999		5.4	0.2	2.9	5.5	3.3	3.3	3.0	5.8	4.6
2000		6.5	0.3	4.4	6.1	4.0	4.4	2.2	6.1	5.3
2001		3.7	0.1	4.2	5.0	4.0	4.0	3.2	5.2	4.9
2002		1.8	0.0	3.3	4.0	4.2	3.2	3.6	4.6	4.9
2001	Aug	3.5	0.1	4.3	4.9	4.3	4.1	3.1	5.1	4.9
	Sep	3.0	0.1	4.0	4.6	4.1	3.7	3.3	4.9	4.9
	Oct	2.4	0.1	3.6	4.4	3.8	3.4	3.5	4.6	4.7
	Nov	2.1	0.1	3.4	3.9	3.8	3.2	3.6	4.7	4.5
	Dec	1.9	0.1	3.3	4.0	3.8	3.1	3.3	5.1	4.8
2002	Jan	1.8	0.1	3.3	4.0	3.8	3.1	3.1	5.2	4.9
	Feb	1.9	0.1	3.3	4.0	3.9	3.2	3.3	5.0	5.0
	Mar	2.0	0.1	3.4	4.1	4.1	3.2	3.4	5.4	5.2
	Apr	1.9	0.1	3.4	4.1	4.3	3.3	3.4	5.3	5.2
	May	1.9	0.0	3.4	4.1	4.4	3.3	3.5	5.2	5.2
	Jun	1.8	0.0	3.4	4.1	4.4	3.3	3.7	4.9	5.1
	Jul	1.8	0.0	3.4	4.0	4.4	3.3	3.9	4.6	4.9
	Aug	1.7	0.0	3.3	3.9	4.3	3.2	4.0	4.2	4.7
	Sep	1.8	0.0	3.3	3.9	4.3	3.2	3.9	3.9	4.5
	Oct	1.8	0.0	3.2	3.9	4.3	3.1	3.9	3.9	4.6
	Nov	1.4	0.0	3.1	3.9	4.1	3.0	4.0	4.1	4.6
	Dec	1.4	0.0	2.9	4.0	3.8	2.9	3.6	4.1	4.4
	Jan	1.3	0.0	2.8	3.9	3.8	2.8	3.1	4.1	4.3
	Feb	1.3	0.0	2.7	3.7	3.7	2.7	2.9	3.9	4.0
2003	7 Feb	1.3	0.0	2.7	3.8	3.8	2.7	2.9	3.9	4.0
	14 Feb	1.3	0.0	2.7	3.7	3.7	2.7	3.0	3.9	4.0
	21 Feb	1.3	0.0	2.7	3.7	3.7	2.7	2.9	3.9	4.0
	28 Feb	1.3	0.0	2.5	3.6	3.6	2.6	2.8	3.8	3.9

1) 3-month rates, average of daily quotations. Per cent
2) 3-month interest rate differential against Norway's 18 most important trading partners (geometrical average weighted with the OECD's current trade weights). Percentage points
3) Yields on government bonds with a residual maturity of 10 years. Average of daily quotations. Per cent



1) Theoretical ECU rate up to and including Dec 98

Source: Norges Bank

Table 5 Exchange rates

		Effective exchange rates		Bilateral exchange rates		
		Import-weighted exchange rates[1]	Trade-weighted exchange rate index[2]	NOK/EUR	NOK/USD	NOK/SEK
1997		99.2	101.0		7.1	92.7
1998		101.7	104.7		7.6	94.9
1999		100.4	105.6	8.3	7.8	94.4
2000		103.3	107.8	8.1	8.8	96.0
2001		100.2	104.4	8.1	9.0	87.0
2002		91.6	96.7	7.5	8.0	82.0
2001	Aug	99.8	104.2	8.1	8.9	86.5
	Sep	98.2	102.6	8.0	8.8	82.7
	Oct	98.3	102.8	8.0	8.8	83.5
	Nov	98.3	102.6	7.9	8.9	84.1
	Dec	98.9	103.2	8.0	9.0	84.8
2002	Jan	98.3	102.7	7.9	9.0	85.8
	Feb	97.1	101.3	7.8	9.0	84.8
	Mar	96.3	100.7	7.7	8.8	85.2
	Apr	94.8	99.2	7.6	8.6	83.4
	May	92.5	97.1	7.5	8.2	81.5
	Jun	90.0	95.1	7.4	7.8	81.3
	Jul	89.0	94.6	7.4	7.5	79.9
	Aug	89.6	95.1	7.4	7.6	80.3
	Sep	88.8	94.4	7.4	7.5	80.3
	Oct	88.3	94.1	7.3	7.5	80.6
	Nov	87.7	93.6	7.3	7.3	80.6
	Dec	87.0	92.9	7.3	7.2	80.2
2003	Jan	86.3	92.5	7.3	6.9	79.9
	Feb	88.3	94.8	7.5	7.0	82.5
2003	7 Feb	87.8	94.2	7.5	6.9	81.4
	14 Feb	87.7	94.1	7.5	7.0	82.0
	21 Feb	88.2	94.6	7.5	7.0	82.6
	28 Feb	89.6	96.0	7.6	7.1	83.9

[1] Weights are calculated on the basis of imports from 44 countries which cover 97 per cent og total imports. Current weights based on annual import shares.
[2] Nominal effective krone exchange rate calculated on the basis of exchange rates for NOK against the currencies of Norway's 25 most important trading partners (geometrical average weighted with the OECD's current trade weights)

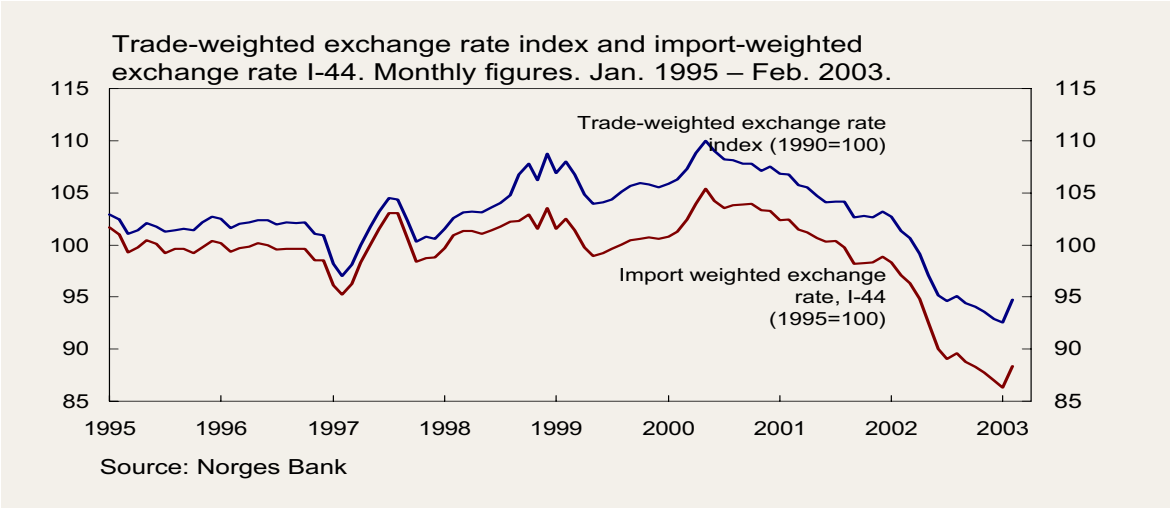
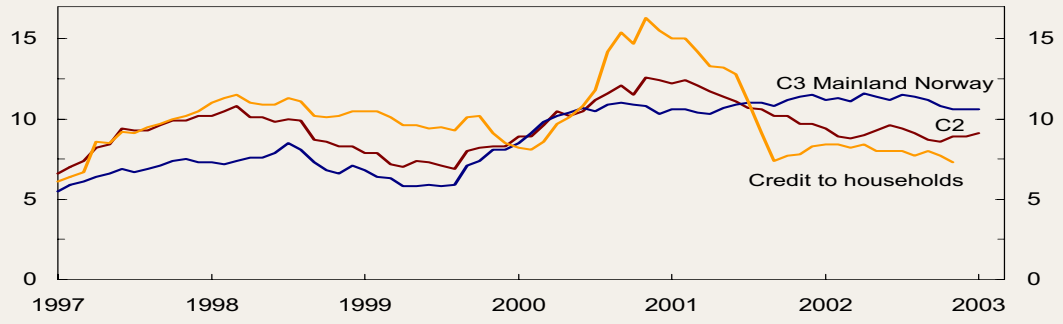


Table 6 Monetary aggregates

Percentage growth from previous year		Money Supply M2	Domestic credit (C2) Total	To house-holds	To non-financi-al enterprises	Total credit (C3) Total	To mainland Norway
1997		2.8	8.8	6.7	13.9	9.0	8.7
1998		5.3	9.6	7.4	13.9	11.3	10.8
1999		6.7	7.6	6.6	9.7	10.5	9.7
2000		10.3	10.8	10.3	12.3	9.5	12.0
2001		8.9	11.0	10.8	10.6	8.8	11.2
2002		8.3	9.1	11.2	7.6		
Twelve-month rise Per cent							
2001	Aug	8.8	10.6	11.0	9.1	6.8	9.1
	Sep	7.2	10.2	10.8	8.5	5.9	7.4
	Oct	9.1	10.2	11.2	8.3	6.3	7.7
	Nov	8.4	9.7	11.4	7.4	7.2	7.8
	Dec	9.3	9.7	11.5	7.5	8.0	8.4
2002	Jan	10.1	9.4	11.2	8.0	8.2	8.4
	Feb	8.1	8.9	11.4	7.1	8.0	8.3
	Mar	8.8	8.8	11.1	7.3	8.2	8.1
	Apr	8.7	9.0	11.6	6.9	8.1	8.4
	May	7.3	9.3	11.4	7.8	7.6	7.9
	Jun	9.8	9.6	11.2	9.0	7.8	8.1
	Jul	9.0	9.4	11.5	8.1	7.9	8.0
	Aug	7.6	9.1	11.4	7.6	8.2	7.7
	Sep	6.3	8.7	11.2	6.6	8.1	8.0
	Oct	8.6	8.6	10.8	6.8	7.4	7.7
	Nov	7.7	8.9	10.6	7.8	7.0	7.3
	Dec	8.2	8.9	10.6	7.6		
2003	Jan	6.2	9.1	10.6	7.4		
Levels last month. In billions of NOK		866	1736	1001	606	2152	1964

The credit indicator (C2), credit to households and total credit to the non-financial private sector and municipalities, mainland Norway (C3). 12-month growth. Per cent. Jan. 1995 – Jan. 2003.



Source: Norges Bank

Annex IV
Detailed projections and assumptions

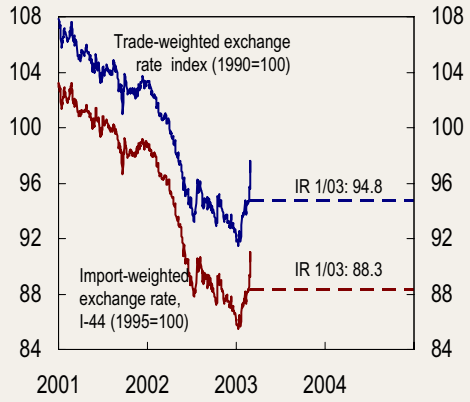
Table 7 Technical assumptions

Historical developments		I-44[1]	TWI[2]	Sight deposit rate	Oil price[3]
1996		99.6	102.0	4.5	20.6
1997		99.2	101.0	3.4	19.2
1998		101.7	104.7	5.5	12.8
1999		100.4	105.6	6.4	18.1
2000		103.3	107.8	6.2	28.6
2001		100.2	104.4	7.0	24.4
2002		91.6	96.7	6.7	25.0
2001	Q1	102.1	106.3	7.0	25.8
	Q2	100.7	104.8	7.0	27.2
	Q3	99.4	103.7	7.0	25.4
	Q4	98.5	102.9	6.9	19.5
2002	Q1	97.2	101.6	6.5	20.9
	Q2	92.5	97.1	6.5	24.8
	Q3	89.2	94.7	7.0	26.9
	Q4	87.7	93.5	6.9	26.8
Technical assumptions					
2003	Q1	87.7	94.0	5.9	32.0
	Q2	88.3	94.8	5.5	30.5
	Q3	88.3	94.8	5.5	29.0
	Q4	88.3	94.8	5.5	27.5
2004	Q1	88.3	94.8	5.5	26.0
	Q2	88.3	94.8	5.5	24.5
	Q3	88.3	94.8	5.5	23.0
	Q4	88.3	94.8	5.5	21.5
2005	Q1	88.3	94.8	5.5	20.0
	Q2	88.3	94.8	5.5	20.0
	Q3	88.3	94.8	5.5	20.0
	Q4	88.3	94.8	5.5	20.0

1) Import weighted exchange rate. Weights are calculated on the basis of imports from 44 countries which cover 97 per cent og total imports. Current weights based on annual import shares.
2) Trade-weighted exchange rate index - a trade-weighted average of exchange rate against our 25 most important trading partners
3) Brent Blend, USD per barrel, spot price

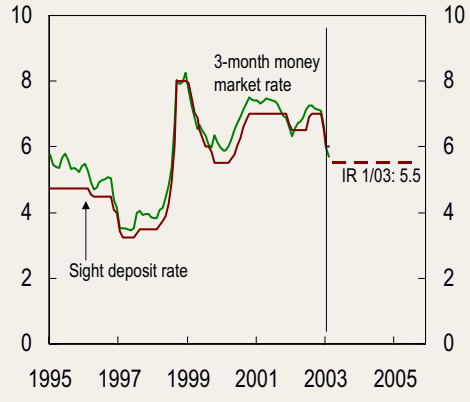
Source: Norges Bank

Technical assumption for the exchange rate in the baseline scenario.



Source: Norges Bank

Technical assumption for the sight deposit rate in the baseline scenario.



Source: Norges Bank

The fiscal rule and Norges Bank's assumptions

The fiscal rule

In March 2001, new guidelines for budgetary policy were introduced (Report no. 29 (2000-2001) to the Storting). A fiscal rule was laid down for the use of petroleum revenues over the government budget. According to the fiscal rule, the structural, non-oil budget deficit shall correspond over time to the expected real return on the Petroleum Fund. The expected real return on the Petroleum Fund is estimated using a real interest rate of 4%.

The guidelines on the use of the expected real return on the Fund's capital are based on a normal cyclical situation. The guidelines stipulate that in a situation with high activity in the economy, fiscal policy should show restraint in relation to this while there may be a need for somewhat higher use of petroleum revenues in response to a cyclical downturn. It is also emphasised that in the event of extraordinary large changes in the Fund's capital or factors that influence the structural non-oil deficit from one year to the next, the phasing in of petroleum revenues must be spread over several years. On the basis of an estimate of the size of the real return on the Petroleum Fund a few years ahead, the fiscal rule has been adhered to.

In the National Budget for 2003, the expected real return on the capital in the Petroleum Fund was estimated at NOK 26.6bn, a real decline of NOK 2bn compared with 2002. This was because the estimated value of the Petroleum Fund at the end of 2002 was markedly reduced through the year as a result of the sharp decline in equity prices and the appreciation of the krone. A mechanical application of the rule on using 4 per cent of the capital in the Fund would then imply a real decline in the use of petroleum revenues from 2002 to 2003 of NOK 2bn.

However, the National Budget and the approved budget for 2003 call for a real increase of NOK 2bn from 2002 to 2003. Spreading the use of revenues in this way is in accord with the fiscal rule. The structural non-oil budget deficit in 2003 is estimated at NOK 30.7bn on this basis (see Table).

The assumptions in the Inflation Report

The adopted government budget for 2003 and the projections in the National Budget for 2003 form the basis for our assumptions. For subsequent years we have assumed that the fiscal rule is adhered to. The use of petroleum revenues over the government budget will increase in the future in pace with the accumulation of capital in the Petroleum Fund. Fiscal policy is thus assumed to have a slightly expansionary effect. The increased use of petroleum revenues over the government budget is assumed to be distributed between tax cuts and higher public spending. We apply the technical assumption that annual growth in public spending will be about 2% in both 2004 and 2005. These assumptions imply a marginal increase in public spending as a share of mainland GDP.

Table: Medium-term implications of the fiscal rule

	Structural budget deficit in 2003 prices. NOK billion	Structural budget deficit. Per cent of trend-GDP for Mainland Norway	Market value of the Government Petroleum Fund. Per cent of GDP
2001	23.4	1.9	41.0
2002	28.7	2.3	43.7
2003	30.7	2.5	54.2
2004	32.8	2.6	62.8
2005	37.7	2.9	69.2
2006	41.8	3.2	74.4
2007	45.5	3.4	79.7
2008	48.9	3.6	84.8
2009	52.2	3.8	89.4
2010	55.3	3.9	93.2

Source: National Budget 2003

Table 8 GDP growth in other countries

Percentage change from previous year

	US	Japan	Germany	France	UK	Sweden	Trading-partners[1)]	Euro-area[2)]
1995	2.7	1.6	1.7	1.8	2.9	3.7	2.7	2.2
1996	3.6	3.5	0.8	1.1	2.6	1.1	2.2	1.4
1997	4.4	1.8	1.4	1.9	3.4	2.1	3.0	2.3
1998	4.3	-1.1	2.0	3.5	2.9	3.6	3.2	2.9
1999	4.1	0.7	2.0	3.2	2.4	4.5	3.2	2.8
2000	3.8	2.6	2.9	4.2	3.1	3.6	3.6	3.6
2001	0.3	-0.3	0.6	1.8	2.0	1.2	1.2	1.5
Projections								
2002	2½	¼	¼	1¼	1¾	1¾	1¼	¾
2003	2½	½	½	1½	2¼	1¾	1½	1¼
2004	3½	¾	1½	2¼	2½	2½	2¼	2
2005	3	1	2¼	2½	2½	2½	2½	2½

1) Export weights
2) GDP weights from IMF adjusted for purchasing power

Sources: OECD and Norges Bank

Table 9 Consumer prices in other countries

Percentage change from previous year

	US	Japan	Germany[1)]	France[1)]	UK[2)]	Sweden	Trading-partners[3)]	Euro-area[4)]
1995	2.8	-0.1	1.7	1.8	2.8	2.8	2.3	2.6
1996	2.9	0.1	1.2	2.1	2.9	0.8	1.8	2.3
1997	2.3	1.7	1.5	1.3	2.8	0.9	1.7	1.7
1998	1.5	0.7	0.6	0.7	2.7	0.4	1.2	1.2
1999	2.2	-0.3	0.6	0.6	2.3	0.3	1.4	1.1
2000	3.4	-0.7	1.4	1.8	2.1	1.3	2.1	2.1
2001	2.8	-0.7	2.0	1.8	2.1	2.6	2.4	2.4
2002	1.6	-0.9	1.4	1.9	2.2	2.4	2.1	2.1
Projections								
2003	2¼	-½	1¼	1¾	2½	2½	2	1¾
2004	2¼	-½	1½	1½	2½	2	1¾	1¾
2005	2½	-¼	1¾	2	2½	2	2	2

1) HICP, Harmonized Index of Consumer Prices
2) RPIX, Retail Price Index excluding mortage interest rate
3) Import weights, Norway's 18 most important trading partners
4) HICP for the Euro-area

Sources: OECD and Norges Bank

Table 10 Main macroeconomic aggregates with sight deposit rate of 5.5 per cent and krone exchange rate equal to average for February 2003

	In billions of NOK	Percentage change (unless otherwise stated)			
		Projections			
	2001	2002	2003	2004	2005
Real economy					
Private consumption	651.5	3¾	2¾	3¼	3
Public consumption	306.1	2½	¾	2	2
Total gross investment	280.0	-4	1	¼	1½
- Petroleum activities (incl. services)	56.2	2	20	0	0
- Mainland Norway	211.3	-2¼	-4	½	2
Enterprises	115.5	-8	-6	-1	1
Dwellings	55.7	4	-3	2	5
General government	40.1	5	¼	2	2
Mainland demand[1)]	1168.9	2¼	1¼	2½	2½
Total domestic demand[2)]	1225.1	2¼	2	2½	2½
Exports	698.9	½	-1	1½	1½
- Crude oil and natural gas	301.6	¾	-2	4	0
- Traditional goods	215.9	1	-3	-1	2
Imports	441.9	2	1	1¼	3½
- Traditional goods	285.4	2½	1¼	1¼	3½
GDP	1510.9	1¼	1	2¼	1¾
- Mainland Norway[3)]	1152.0	1¼	1¼	2	2¼
Labour market					
Employment		½	-½	0	½
Labour force, LFS		¾	0	¼	½
Registered unemployment (rate)		3¼	4	4¼	4¼
LFS-unemployment (rate)		4	4½	4¾	4¾
Prices and wages					
CPI		1,3	3¼	1	2¼
CPI-ATE[4)]		2,3	1¾	2	2¼
Annual wages[5)]		5¾	5	4½	4½
Prices, imported consumer goods[6)]		-1	-2	-¾	¼
Export prices, traditional goods		-9	-5	1¼	1¾
External account[7)]					
Trade surplus, NOKbn (level)		223,7	220	170	135
Current account surplus, NOKbn (level)		209,6	205	155	120
Current account surplus, % of GDP		14	14	10	8
Memorandum item					
Household saving ratio		5½	5	5¼	5½
Technical assumptions					
Norges Bank's sight deposit rate (annaul average [8)]		6.7	5.6	5.5	5.5
Import-weighted exchange rate[9)]		91.6	88.2	88.3	88.3
Oil price in USD/barrel		25.0	30	24	20

1) Private and public consumption and mainland gross fixed investment
2) Private and public consumption, mainland gross fixed investment and petroleum investment
3) Not adjusted for fluctuations in energy production
4) CPI-ATE: CPI adjusted for tax changes and excluding energy products
5) Annual wage growth is based on the Technical Reporting Committee on Income Settlements' definitions and calculations.
6) Adjusted for changes in real taxes
7) Current prices
8) The sight deposit rate is assumed to remain unchanged in the projection period
9) The import-weighted exchange rate includes 44 countries. Technical assumption: unchanged exchange rate on average for the last month.

Sources: Statistics Norway, the Technical Reporting Committee on Income Settlements and Norges Bank