NORGES BANK

Reports from the Central Bank of Norway No 3/2003

# Inflation Report

2
03

June

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http://www.norges-bank.no.

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# Monetary policy in Norway

## Objectives

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. This time horizon also means that emphasis is placed on dampening fluctuations in the real economy. 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 available on http://www.norges-bank.no.

The *Inflation Report* discusses 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, and in §3[1] of the Central Bank Act. 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 Kredittmeldingen (Credit Report). As from autumn 2003, open hearings in the Standing Committee on Finance and Economic affairs are planned in connection with the Storting deliberation on the Credit Report.

[1] A new fourth paragraph is expected to come into force in the near future.

# Inflation Report 2/2003



Boxes



Annex



The cut-off date for the Inflation Report was 19 June 2003

# Editorial

## *Continued easing of monetary policy*

Over the past year, growth in the Norwegian economy has come to a halt. Inflation has fallen and is now substantially below Norges Bank's inflation target, which is an annual rise in consumer prices of close to 2.5 per cent over time.

Prospects for lower inflation emerged in late autumn 2002. The interest rate has been reduced in several steps since December and the krone has depreciated from a strong level.

Previously, an easing of monetary policy has had a considerable impact on demand, output and inflation. This applied to the interest rate cuts in 1993, 1997 and 1999. Even though the effects of monetary policy occur with a lag, the initial effects of the easing in these three cases came into evidence quickly. This has not occurred in 2003. Households and the business sector are still pessimistic. House prices have levelled off and are declining and credit demand is slowing. The krone fell markedly in the first quarter of 2003, but appreciated from March to end-May in spite of the prospect of additional interest rate reductions. This is partly because other countries have also reduced their interest rates. Moreover, it appeared for a time that the exchange rate effect of the narrowing of the interest rate differential between Norway and other countries in 2003 was smaller than the effect of the increase last year. In June, however, the krone again depreciated.

So far, oil prices have remained high during this international downturn. To some extent, this has insulated the Norwegian business sector. Global developments are nevertheless influencing the Norwegian economy. War, terrorism and the spread of disease have given rise to uncertainty. The markets for traditional exports are sluggish, and the major structural changes in international service industries, such as airlines and ICT, are still having a negative impact on output and employment in Norway. Intensified international competition has reduced the possibilities for companies to set prices on the basis of cost developments. The Norwegian business sector is also more vulnerable now because in the last six years labour costs have risen by 15% more than that of our trading partners. The effect of the interest rate reductions may also have been curbed by the very high level of house prices and household debt.

Even though inflation has been low in recent months, indicators suggest that inflation expectations are fairly stable at around 2½%. The fall in international inflation, with an increased focus on the risk of deflation in several countries, as well as persistently low inflation in Norway, may reduce expectations.

The outlook for the Norwegian and global economy therefore implies that the period of monetary policy easing will continue. Norges Bank is now also taking larger steps in interest rate adjustments. In money and foreign exchange markets, there are expectations of a relaxation of monetary policy both through lower interest rates and a weaker krone. This is reflected, for example, in Norwegian bond yields, forward interest rates and forward exchange rates. Market expectations may find support in the analyses being presented in this *Inflation Report*. The outcome of this year's wage settlement may provide a basis for expecting more moderate wage settlements in the period ahead than in the years from 1998 to 2002 and be in line with the target that has been set for developments in inflation over time. Given this outlook, there may also be a basis for an easing of monetary policy further than currently implied by expectations in money and foreign exchange markets.

Svein Gjedrem
23 June 2003

# Summary

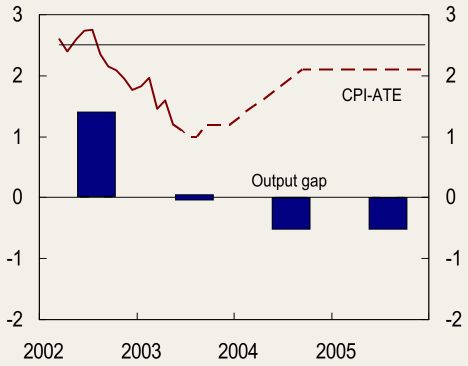
The economic outlook has deteriorated since the March *Inflation Report*. Global developments have been weaker than expected. Growth is low in the US and has stagnated in Japan and in the euro area. Over the last few years, the global economy has been influenced by a number of negative forces. Investment is low because production capacity expanded too swiftly during the upturn at the end of the 1990s. Energy prices have been high. Terrorism, war and the outbreak of SARS have given rise to uncertainty and curbed activity. Inflation is expected to be very low among our trading partners. In many countries, efforts have been made to sustain activity through interest rate reductions and an expansionary fiscal stance. We project that the stimulus imparted by economic policy will gradually boost growth in the global economy. It appears, however, that this will take longer than previously envisaged.

The situation in the Norwegian economy has changed over the past year. As a result of several years of demand-driven expansion, high capacity utilisation and relatively high cost inflation in Norway, monetary policy was tight in 2002 and tighter than in many other countries. Norwegian enterprises' competitiveness has deteriorated after many years of high wage growth in Norway relative to other countries. Monetary policy has contributed to moderating growth in household and enterprise demand. In the public sector, high wage payments have resulted in the lowest growth in activity for many years in spite of strong increases in budget limits. Many enterprises are cutting costs, which is reflected in both low investment activity and lower employment. In many service industries, the consolidation process seems to be taking longer than previously anticipated. So far this year, employment has moved on a weaker trend than projected in the March report. The weak global environment has amplified the downturn. Demand for labour is falling and unemployment has risen.

Higher unemployment and reduced profitability in many enterprises probably contributed to moderate pay increases in this year's interim wage settlement. The social partners may also have placed greater emphasis on the effects of pay increases on movements in the interest rate, krone exchange rate and employment. It appears that wage growth in 2003 will be appreciably lower than in previous years and lower than projected in the March report. Growth in consumption has been sustained by the sharp rise in real disposable income last year and the easing of monetary policy since December. Although developments in the labour market, in isolation, will have a dampening impact on consumption, we expect private consumption to be the main driving force in the Norwegian economy in the years ahead.

For a period ahead, underlying inflation will be lower than the inflation target even with the substantial easing of monetary policy in recent months. The period of a strong krone last year and early this year are still restraining the rise in prices. The effects are expected to peak this summer and in early autumn and will then start to unwind. In 2003, CPI-ATE inflation will

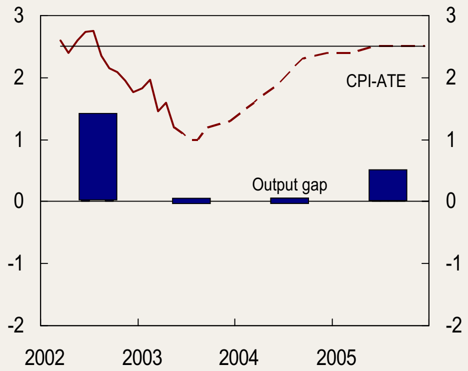
**Chart 1** Projected CPI-ATE and output gap[1)] with a sight deposit rate of 4 per cent and import-weighted krone exchange rate equal to the average for 3/6-19/6 (I-44= 93.5). Per cent




1) The output gap is a measure of the difference between actual and trend output. See box in IR 1/03

Sources: Statistics Norway and Norges Bank

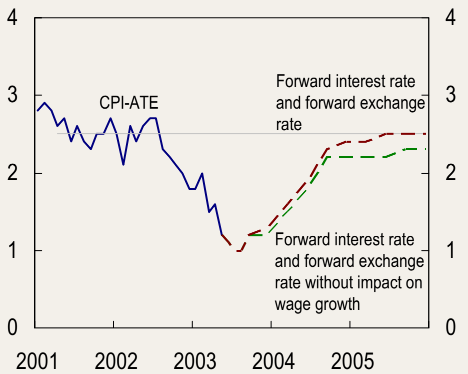
**Chart 2** Projected CPI-ATE and output gap[1)] with forward interest rate and gradual exchange rate depreciation of 3 per cent. Per cent




1) The output gap is a measure of the difference between actual and trend output. See box in IR 1/03

Sources: Statistics Norway and Norges Bank

**Chart 3** Projected CPI-ATE with forward interest rate and gradual exchange rate depreciation of 3 per cent. 12-month rise. Per cent




Sources: Statistics Norway and Norges Bank

be low. In subsequent years, low interest rates and the depreciation of the krone will contribute to higher inflation.

In this report we present two different scenarios for developments in the Norwegian economy applying different interest rate and exchange rate assumptions. One scenario is based on a sight deposit rate of 4% and a constant exchange rate equal to the average for the period 3-19 June. This period was selected because the krone exchange rate depreciated markedly following the speech given by the central bank governor at the Norwegian School of Management's Centre for Monetary Economics on 3 June. With these assumptions, growth in the Norwegian economy is projected to pick up gradually in the years ahead. With interest rate reductions totalling 3 percentage points since December last year, private consumption is projected to remain relatively high over the next two years. After a period of downscaling and redundancies in the business sector, investment is projected to recover gradually. The rise in unemployment is expected to level off next year. Mainland GDP growth is projected to pick up in 2004 and reach trend growth in 2005. Capacity utilisation in mainland enterprises will decline. These developments will be reflected in the output gap, which as measured here is expected to close this year and be slightly negative in the next two years (see Chart 1).

In spite of a gradual pick-up in economic growth, underlying inflation is expected, on the basis of these assumptions, to remain below the inflation target throughout the projection period. This reflects slower wage growth, subdued international inflation and the lagged effects of the appreciation of the krone during 2002. At the two-year horizon, CPI-ATE inflation is projected at a little more than 2% (see Chart 1).

The second scenario is based on the assumption that monetary policy is eased in line with that implied by forward interest rates and forward exchange rates for the krone. These assumptions imply a gradual reduction in the sight deposit rate towards 3% around the turn of the year and some increase thereafter. The krone exchange rate depreciates gradually by about 3% in the period to end-2005. Monetary policy easing of this magnitude will lead to a faster pick-up in growth in the Norwegian economy over the next few years. This will provide an impetus to private consumption. A weaker exchange rate will lead to a gradual improvement in profitability in the internationally exposed sector. Employment is projected to edge up next year. Unemployment may gradually fall somewhat.

Lower unemployment may lead to higher wage growth. If this occurs, a monetary policy easing in line with market expectations would be sufficient to bring CPI-ATE inflation back to the inflation target two years ahead (see Chart 2). If the expected easing of monetary conditions does not translate into higher wage growth, inflation is projected to remain somewhat below target also two years ahead (see Chart 3).

# 1 | Recent developments

## 1.1 The economic situation

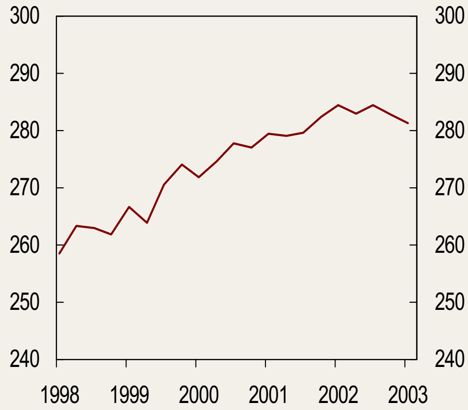
After a number of years of high growth in demand and labour shortages, the Norwegian economy is now in a cyclical downturn. As recently as one year ago, the Norwegian economy was marked by considerable optimism among employers and employees. This resulted in the highest wage growth in nearly 30 years, strong growth in private consumption, high and rising credit demand and a sharp increase in house prices. Growth in central government budget spending also increased and there was nascent optimism internationally. In 2002, mainland GDP growth slowed and has fallen since autumn 2002 (see Chart 1.1). Unemployment is rising. The output gap, which is an expression of the percentage difference between actual and trend GDP, has been clearly positive for a long period. The output gap, as measured here, is now closed. This means that the pressures that marked the Norwegian economy from 1998 to 2002 have subsided. The methods for calculating the output gap were discussed in a separate box in the March *Inflation Report.*

Growth in the global economy has been sluggish for a long period. The last half year, economic developments have again been weaker than expected. Very low interest rates and tax relief have sustained activity in a number of countries. In some countries, there are expectations of further reductions in interest rates.

The Norwegian economy diverged from cyclical developments among our trading partners for a number of years. Wage growth has been considerably higher in Norway than in other countries. Despite a pronounced slowdown among many of our trading partners last year, annual wage growth in Norway increased to 5¾%. Wage growth remained surprisingly high throughout the year, especially in some manufacturing sectors. The interest rate level in Norway has been high on an international scale (see Chart 1.2). Through 2001 and particularly in 2002, this resulted in a marked appreciation of the krone. As a result, inflation is now very low despite many years of high wage growth. Since December 2002, Norges Bank has reduced the sight deposit rate to a considerable extent. The krone has depreciated markedly so far this year.

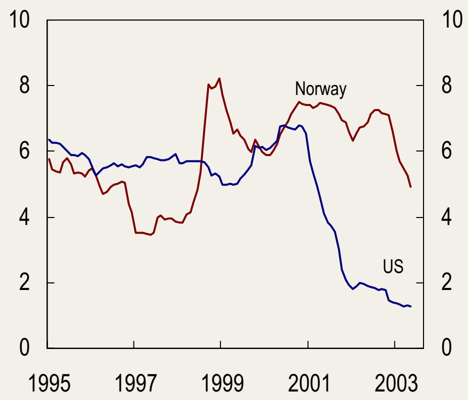
The global downturn and weak cost competitiveness are eroding profitability in Norway's internationally exposed sector. Companies are adapting by cutting costs, closing down or relocating. Restructuring is also taking place in many companies in the service sector. Some of this can probably be attributed to overinvestment at the end of the 1990s. At first, it was primarily the ICT sector that downscaled. The airline industry has also been cutting costs and downscaling for a period. The downturn has gradually

**Chart 1.1** Mainland GDP. In billions of 2000-NOK. Seasonally adjusted. 1998 Q1 - 2003 Q1



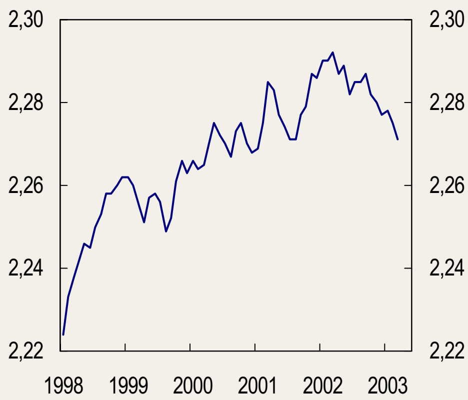

Source: Statistics Norway

**Chart 1.2** Three-month money market rates in the US and Norway. Jan 1995 - May 2003



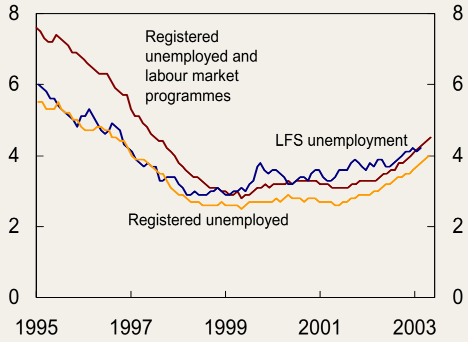

Sources: EcoWin and Norges Bank

**Chart 1.3** Employed persons according to LFS. In millions. Seasonally adjusted. Jan 98 - March 03




Source: Statistics Norway

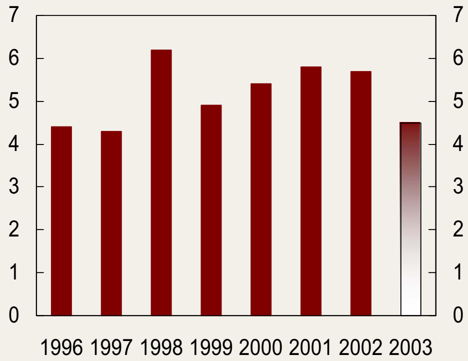
**Chart 1.4** Unemployed (LFS), registered unemployed and persons participating in labour market programmes. Percentage of labour force. Seasonally adjusted[1]. Jan 95 - May 03




[1] LFS unemployment: 3-month moving average

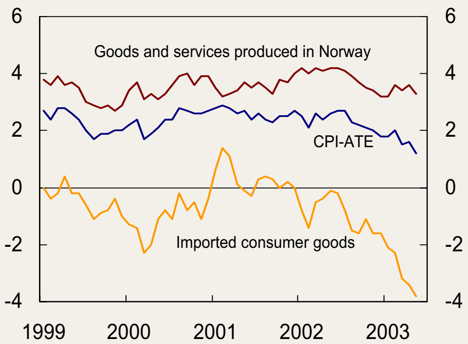
Sources: Statistics Norway and the Directorate of Labour

**Chart 1.5** Annual wage growth in Norway. Including costs of additional vacation days. Per cent. 1996-2003




Sources: Technical Reporting Committee on Income Settlements (TRCIS) and Norges Bank

**Chart 1.6** Prices for consumer goods adjusted for tax changes and excluding energy products (CPI-ATE). Total[1] and by supplier sector[2]. 12-month rise. Per cent. Jan 99 - May 03




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

[2] Norges Bank's estimates

Sources: Statistics Norway and Norges Bank

spread to traditionally more sheltered industries that supply goods and services to the manufacturing sector. At the same time, restructuring in the ICT sector and the airline industry has continued.

Industries that supply goods and services to households are still growing. The interest rate reductions since December are stimulating private consumption. Employment has risen in the distributive trades.

Overall employment has fallen during the last year (see Chart 1.3). In the first quarter of 2003, employment fell by 15 000 compared with one year earlier, i.e. by more than projected in the March *Inflation Report*. Weak developments in employment have led to an increase in unemployment (see Chart 1.4). Adjusted for normal seasonal variations, 4.0% of the labour force was registered as unemployed in May. The unemployment rate is now 0.9 percentage point higher than one year ago, but somewhat lower than the average for the 1990s. Unemployment has been rising at a faster pace this year. The average monthly rise in seasonally adjusted unemployment was more than 1000 persons from July 2001 to December 2002. From January to April, unemployment increased by an average of nearly 3000 persons per month, but this rise slowed in May. In the last few months, unemployment has increased sharply in manufacturing and construction, but there has also been a further increase in unemployment in most other industries. The number of job vacancies advertised has continued to decline.

Higher unemployment and deteriorating profitability in many companies probably contributed to moderate pay increases in this year's interim wage settlement. The social partners may also have placed greater emphasis on the effects of pay increases on future interest rate developments, the exchange rate and employment. Wage negotiations resulted in low or zero pay increases for large groups. Since last year's wage settlement resulted in high pay increases, some with effect this year, annual wage growth from 2002 to 2003 is projected at 4½% (see Chart 1.5). This is lower than projected earlier. The wage settlement is discussed further in Section 4.1.

## 1.2 Consumer price inflation

Underlying inflation is low. In May, the rise in consumer prices adjusted for tax changes and excluding energy products (CPI-ATE) was 1.2%. This is lower than projected in the March *Inflation Report*. A decline in prices for imported consumer goods is pushing down overall price inflation (see Chart 1.6). This must be seen in connection with the appreciation of the krone through 2002 and weak external inflationary impulses. The rise in prices for domestically produced goods and services has slowed somewhat since last year, but is still a little higher than 3%, partly as a result of high wage growth over several years.

## *Fall in prices for imported consumer goods*

Prices for imported consumer goods in the CPI have fallen in the last two years. Until the end of 2002, prices had fallen less than expected based on historical evidence concerning the effect of a stronger krone exchange rate on these prices (see box in the March *Inflation Report*). During recent months, the fall in prices has accelerated and been stronger than projected in the March *Inflation Report*. The projections in March took into account to some extent that prices until then had reacted less to exchange rate movements than implied by previous experience. The effects via the exchange rate have been stronger in recent months. The low level of inflation is examined in a box on page 15.

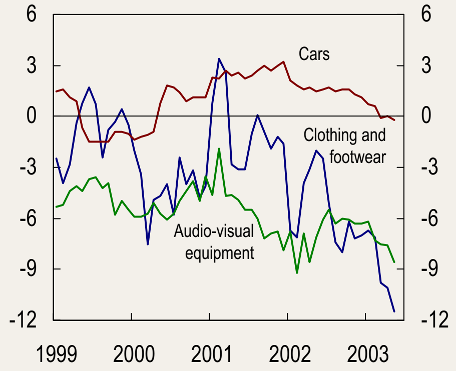
In May, prices for imported consumer goods were 3.8% lower than one year earlier. Prices for clothing and audio-visual equipment have shown a particularly strong decline (see Chart 1.7). In May, these prices had fallen by 12.2% and 8.6% respectively compared with the same month last year. The price decline can probably not be attributed to the krone exchange rate alone. Prices for these goods have declined continuously since the mid-1990s (see Chart 1.8). In May, clothing prices were 24% lower than the average price level in 1995, while prices for audio-visual equipment were 33% lower. Clothing prices account for 5.2% of the CPI and audio-visual equipment for 2.7%.

The fall in prices for these goods largely reflects factors other than the exchange rate. In the textile industry, the framework conditions for imports from developing countries and emerging economies have improved considerably in the last decade. This has led to a shift in imports away from high-cost countries towards low-cost countries and reduced purchasing costs for Norwegian importers. This is also the case for the audio-visual industry. International producers have moved production to low-cost countries and have thus been able to reduce their prices when selling to Norwegian importers. Technological advances and intensified international competition have also contributed to lower prices. The appreciation of the krone has come in addition to these international factors and has had a further dampening impact on inflation in the last two years.

According to information from our regional network, both the clothing and the audio-visual industries have experienced a decline in demand in the last half year. This has resulted in increased sales efforts and may contribute to explaining the fall in prices in recent months.

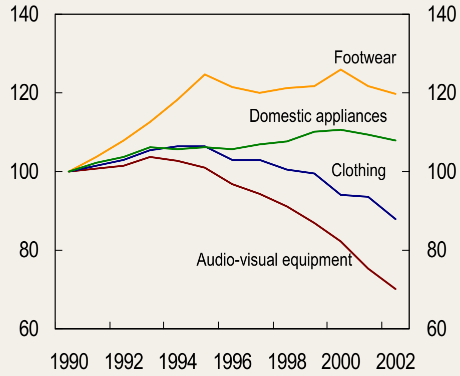
Prices for footwear have also fallen considerably in the last year. In May, prices were 6.8% lower than one year earlier.

**Chart 1.7** Prices for some imported consumer goods adjusted for tax changes. 12-month rise. Per cent. Jan 99 - May 03




Sources: Statistics Norway and Norges Bank

**Chart 1.8** Prices for some imported consumer goods adjusted for tax changes. Annual figures. Index. 1990=100



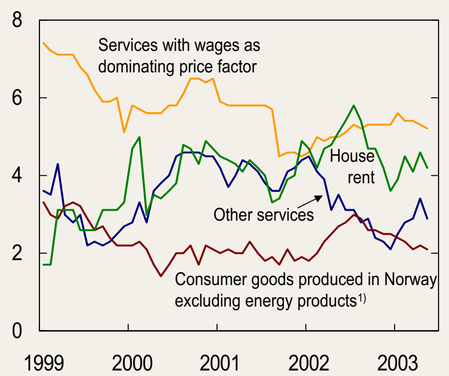

Sources: Statistics Norway and Norges Bank

Internationalisation and the shift in imports have also affected the footwear industry. Prices for these goods remained steady, however, until roughly one year ago. Therefore, a further reduction in footwear prices is fairly likely. Prices for white goods and household appliances have fallen by about 3% since May 2002.

The rate of increase in prices for cars, which account for 35% of imported consumer goods, has also slowed but was positive throughout the period during which the krone has appreciated. Car prices have remained broadly unchanged in the last year (see Chart 1.7). A box in the March *Inflation Report* looked at the experience of the UK, which also had a longer period of appreciation. Car prices did not begin to fall until two years after pound sterling started to appreciate. If the same trend applies in Norway, car prices should have started falling now. We expected car prices to start falling in the spring since many car dealers had announced price reductions at the beginning of the year. This has not been reflected in the consumer price index. One explanation may be that it is difficult to capture actual sales prices in the statistics. Some of the price reduction may have come in the form of free or discounted accessories. It is also possible that the planned price reductions have been reversed in response to the recent depreciation of the krone. Against this background, car prices in Norway may not fall to the same extent as they did in the UK. On the other hand, private car imports have increased substantially because of the considerable difference between prices in Norway and other neighbouring countries. This may force Norwegian dealers to reduce prices.

The appreciation of the krone does not seem to have pushed down prices for imports of alcoholic beverages. Adjusted for reductions in indirect taxes, prices for alcoholic beverages have risen somewhat in the last year.

**Chart 1.9** CPI-ATE. Goods and services produced in Norway. 12-month rise. Per cent. Jan 99 - May 03




1) Excluding agricultural and fish products

Sources: Statistics Norway and Norges Bank

## *Domestic inflation*

Chart 1.9 shows the rise in prices for domestically produced goods and services in the CPI by component. The rate of increase in prices for services with wages as a dominant cost factor has remained high and is in line with wage growth. For instance, prices for non-institutional health services increased by 6%, and prices for insurance services rose by 8% over the past year. The rate of increase in prices for services where wages are *not* a dominant cost factor slowed through 2002, but has picked up somewhat in the last few months. Culture and leisure prices have shown a particularly strong rise in recent months.

House rents are also holding up the high level of domestic price inflation. The rise in house rents accelerated in the first part of last year then fell during the autumn. Since the beginning of the year, the rise in house rents has again picked up. There are now signs that house prices are levelling off. As a result, the rise in house rents may edge down in the period ahead.

The rise in prices for domestically produced consumer goods has slowed. It is primarily goods that are affected by prices in the world market, either as a result of a large import content or strong foreign competition, that are restraining the rise in prices for domestically produced goods. This is an indirect effect of the strong exchange rate and low international inflation. In the same way, competition will probably induce Norwegian producers of consumer goods with imported inputs to share exchange gains with customers over time.

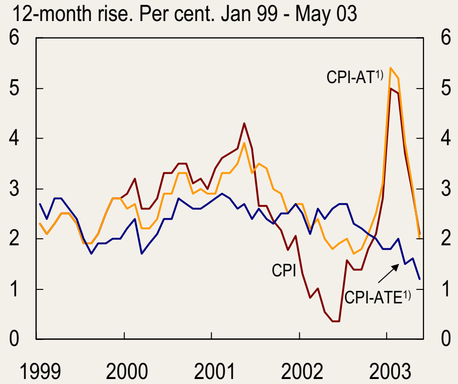


## *High electricity prices fuel CPI inflation*

The year-on-year rise in the consumer price index including tax changes and energy products (CPI) has been considerably higher than the year-on-year rise in the CPI-ATE (see Chart 1.10). A dry autumn last year left water reservoirs at a low level, and a particularly cold winter entailed high demand for electricity. This led to a sharp increase in electricity prices at around the turn of the year (see Chart 1.11). The year-on-year rise in electricity prices, as measured in the CPI, reached 82.5% in January. Since then, prices have fallen substantially and contributed to reducing the year-on-year rise in the CPI from 5% in January to 2.1% in May. Precipitation levels have been relatively high in the last few months and reservoirs are filling up. This should keep spot prices for electricity low in the period ahead. Petrol prices have also fallen as a result of the fall in oil prices. The year-on-year rise in petrol prices has receded from close to 10.5% in February to -2.8% in May.

Due to developments in energy prices, CPI inflation will be higher than CPI-ATE inflation over the next few months and lower in 2004. The year-on-year rise in electricity prices will probably be negative from the end of 2003 and well into 2004. The year-on-year rise in petrol prices is also expected to be negative for a period.

**Chart 1.10** Consumer prices. Total and adjusted for tax changes and excluding energy products. 12-month rise. Per cent. Jan 99 - May 03

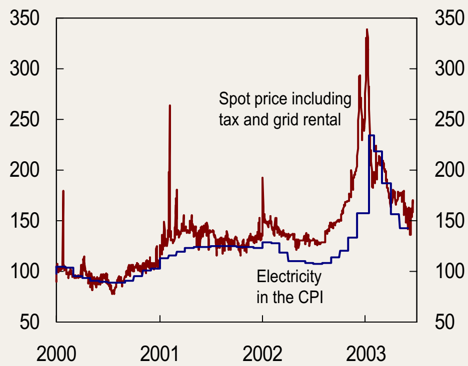



CPI-AT: CPI adjusted for tax changes
CPI-ATE: CPI adjusted for tax changes and excluding energy products

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

Sources: Statistics Norway and Norges Bank

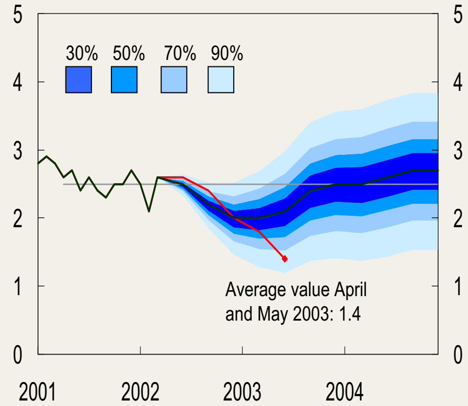
**Chart 1.11** Electricity prices. Index. 1 January 1998=100




Sources: Statistics Norway, Nordpool, the Norwegian Water Resources and Energy Directorate and Norges Bank

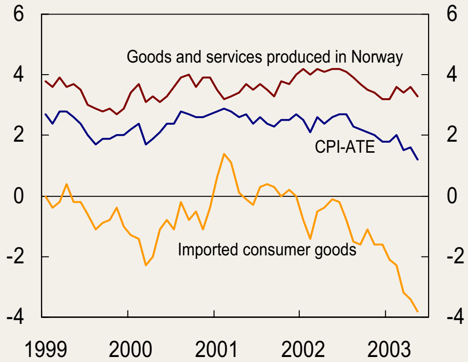
# Low consumer price inflation

**Chart 1** CPI-ATE, projections and uncertainty in IR 2/02. 12-month rise. Per cent




Sources: Statistics Norway and Norges Bank

**Chart 2** CPI-ATE
Total[1)] and by supplier sector[2)].
12-month rise. Per cent. Jan 99 - May 03.

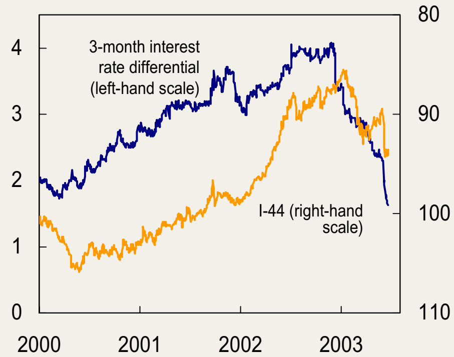



[1)] Norges Bank's estimates up to and including July 2000, thereafter figures published by Statistics Norway

[2)] Norges Bank's estimates

Sources: Statistics Norway and Norges Bank

**Chart 3** Import-weighted exchange rate (I-44)[1)] and interest rate differential against trading partners. Daily figures.




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

Source: Norges Bank

In May 2003, the year-on-year rise in consumer prices, as measured by the CPI-ATE, was 1.2%. This is lower than projected in the March *Inflation Report* and considerably lower than the inflation target. Compared with last summer's projection, inflation was higher than expected during the autumn, but has been lower than expected since this spring (see Chart 1).

CPI-ATE inflation has declined since summer 2002. The annual rise declined from 2.6% in May 2002 to 1.2% in May 2003, due in particular to a marked fall in prices for imported consumer goods (see Chart 2). The main reason for this is the depreciation of the krone through 2001 and 2002. In addition, prices for goods that are imported are showing a subdued rise or a decline. It is also likely that the period when the krone was strong may have indirect effects both via slower wage growth and a more subdued rise in prices for a number of goods and services.

## *1. Weak international developments*

Growth in the global economy has proved to be considerably weaker than projected last summer. Our projections for GDP growth among trading partners in 2003 have been revised downwards in the course of the past year from 2¾% to 1¼%. A series of negative news in the last half of 2002 fuelled pessimism (see discussion in Norges Bank's *Annual Report*). This year, the global economy has been subjected to new negative shocks such as the war in Iraq and fears of the SARS virus. In addition, bubbles in the equity market and overinvestment may mean that it will take longer than normal for a new upturn to take hold (see box in this *Inflation Report*). Price inflation among our trading partners is low, and the risk of deflation is being discussed in a number of countries.

The effects on the Norwegian economy have occurred through several channels. Wage growth in Norway has been higher than that of our trading partners for several years. This impression was reinforced when last year's wage settlement awarded the highest real wage increase for nearly 30 years. From the end of the 1990s, therefore, Norwegian interest rates were markedly higher than those of our trading partners. The result of the wage settlement confirmed the impression that this would persist. The interest rate differential widened. As a result, the krone appreciated last spring (see Chart 3).

It became clear during the last half of 2002 that the downturn in the global economy would be more pronounced. International interest rate expectations were revised downwards (see Chart 1.18 and 1.19). The interest rate differential remained high, resulting in continued appreciation of the krone. Weak developments in international equity markets and limited profit potential in the market for the dollar, euro and yen, induced many investors to invest in currencies with a relatively high interest rate. This amplified the appreciation of the krone (see box in *Inflation Report* 1/03).

As the outlook deteriorated, accompanied by clear indications of weaker developments in the Norwegian economy, Norges Bank reduced the interest rate. The first reduction was made on 11 December 2002. As international interest rate expectations were steadily revised downwards, the krone continued to appreciate. As a result of sluggish international developments, the effects of the interest rate reductions on the krone exchange rate were thereby reduced. Repeated interest rate cuts and indications of further reductions resulted in a depreciation of the krone in February and the beginning of March. However, the krone then appreciated up to the end of May in spite of the continued decline in interest rates. In June, the krone has depreciated sharply. Thus, the impact on the krone exchange rate occurred somewhat later than expected.



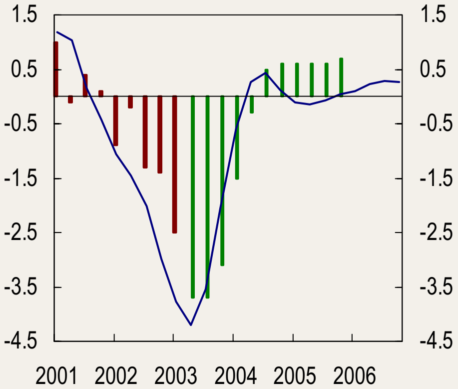
## *2. Delayed pass-through to consumer prices*

Experience has shown that it takes time for a change in the exchange rate to pass through fully to prices for imported consumer goods. The pass-through will, for example, depend on competition in retail trade and the opportunities for enterprises in this industry to increase their margins. We have assumed that, in isolation, an appreciation will have a moderating effect on consumer price inflation, and that the maximum impact will occur after 5-6 quarters (see box in *Inflation Report* 2/02). Thereafter, the effects will gradually unwind.

The direct effect of the appreciation of the krone is an important factor underlying the subdued rise in prices for imported consumer goods, particular clothing, footwear and audio-visual equipment. The rise in car prices is also moderate, but there has so far been no sign of a significant fall in prices, as might be expected after such a sharp appreciation of the krone. Our experience of the pass-through to prices is, however, largely based on periods of a depreciating krone. It cannot be ruled out that the effects will change over time or will be dependent on the direction taken by the krone exchange rate.

So far, the change in the krone exchange rate seems to have passed through at a more uneven pace than was first assumed. From September 2002 to end-February 2003, prices for imported consumer goods fell less than expected based on relationships quantified on the basis of historical data. This affected the projections in *Inflation Report* 1/03. The impact has occurred all the more strongly through spring (see Chart 4). The red columns show the actual rise in prices for imported consumer goods. The blue line in the chart shows the estimated cumulative direct contribution from previous changes in the krone exchange rate. The pass-through from the exchange rate seems to have been particularly pronounced in the course of the second quarter of 2003. There is therefore no longer any basis for claiming that the pass-through from exchange rate to consumer prices is appreciably weaker than historical relationships would indicate.

**Chart 4** Isolated effect of historical exchange rate movements on rise in prices for imported consumer goods (blue line) and actual rise in prices for imported consumer goods, historical (red) and projections (green). Percentage points




Source: Norges Bank

### *3. Weaker developments in the Norwegian economy*

Low price inflation may also be related to the decline in developments in the Norwegian economy. Unemployment has risen more rapidly than projected last autumn. In particular, developments in some service industries have been weaker than expected. This may in turn be related to sluggish global developments, for example in sectors such as the airline industry, tourism, the hotel sector and the ICT sector.

As a result of last year's high wage growth, particularly in the public sector, fiscal policy impact on demand was lower than projected, despite a substantial increase in public sector budgets. This led to the smallest increase in public sector employment for more than 30 years. The projections for 2003 have also been revised downwards considerably in the past year. High cost inflation has contributed to a low demand from the public sector. The counterpart has to some extent been high household real wage growth.

Limited pricing power and expectations of low price inflation in parts of the business sector have probably made it difficult to pass on costs to prices. Margins have been under pressure, forcing many enterprises to reduce their workforce rather than raise prices.

High electricity prices through the winter resulted in a reduction in private purchasing power that was not possible to foresee last summer. This may have curbed demand for some goods. According to information from our regional network, parts of the clothing and audio-visual industries experienced a decline in demand from November to April, followed by sales efforts in May. This is to some extent confirmed by our retail trade statistics. For some brown goods, unfavourable international market conditions may also have led to excess supply and low prices this spring.

### *4. Further developments in consumer prices*

The effect on consumer price inflation of last year's monetary policy has been amplified partly because developments in the global economy proved to be considerably weaker than expected, and partly because the pass-through from the exchange rate has not evolved as expected. Consumer price inflation may also remain low over the coming months.

Monetary policy has already been eased considerably with a view to bringing inflation back to the target. The interest rate has been reduced. The krone has depreciated by about 8% since the new year. Chart 4 shows the projected contribution from the exchange rate to prices for imported consumer goods in the period ahead. It is likely that the most recent depreciation will gradually have the effect of pushing up the rise in prices for imported consumer goods, and thereby overall consumer price inflation.

## *5. Changes in Norges Bank's projections in the past year*

With an interest rate of 4% and a constant exchange rate, consumer price inflation is projected to reach a good 2% at the two-year horizon. In *Inflation Report* 2/02, we expected inflation to be higher than the inflation target despite assumptions of a higher interest rate (see Chart 1).

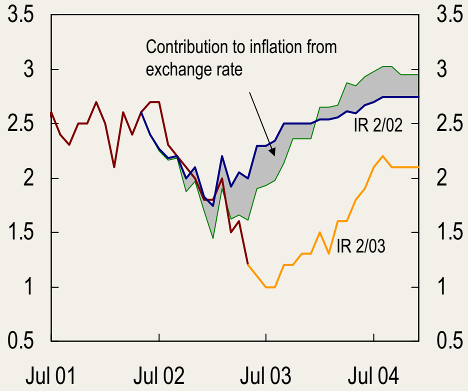
Changes in the inflation projection over the past year can be ascribed to two factors in particular. First, the krone exchange rate through the autumn and winter was stronger than had been assumed one year earlier. Recently, the krone has been weaker than assumed at that time. Had we known the actual path of the exchange rate, the inflation projection for the coming year would have been lower, while the isolated contribution from the exchange rate would have pushed it up thereafter (see Chart 5). The blue line shows the projection for the CPI-ATE a year ago. The green line shows how the actual exchange rate path would have influenced the projection. The grey area shows the isolated contribution from the change in the exchange rate. The effect is based on the pass-through to consumer prices from the exchange rate, which was described in a box in *Inflation Report* 2/02.

Second, the projection for future wage growth has been revised downwards. Wage growth last year was surprisingly high. The projection last summer was based on the assumption that wage growth would remain at 5¾%. This was based on an assumption of unchanged monetary policy and was consequently not a reasonable projection of the actual path since monetary policy was tightened. In the absence of such tightening, it was deemed likely that wage growth could stay at a high level.

In this *Inflation Report*, wage growth ahead is projected at 4-4½% on the assumption that the interest rate is constant at 4%. This year's wage settlement may indicate that the social partners to a greater extent took account of the connection between wage growth and interest rates, exchange rates and employment. The downward revision of the wage projection may therefore partly be viewed as an indirect effect of the appreciation of the krone. The contribution to a reduction in the inflation projection is illustrated by the grey area in Chart 6.

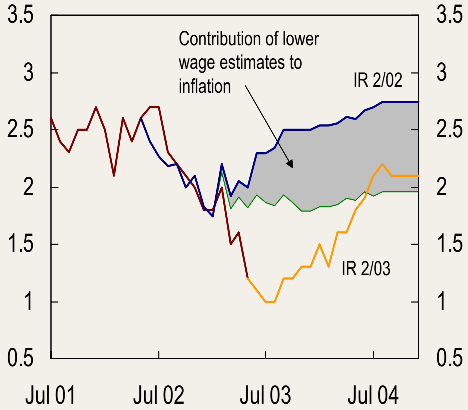
Chart 7 sums up the overall effect on the projection from *Inflation Report* 2/02 by incorporating both a lower wage projection and the actual exchange rate (the sum of Charts 5 and 6). The exchange rate ahead is maintained at its current level. Given these changes, the projection a year ago would have followed the green line, which is slightly higher than the current projection (orange line). The current projection is based on a considerably weaker global outlook and more slack in the Norwegian economy. The latter can explain why the current projection is lower.

**Chart 5** CPI-ATE projections in IR 2/02 and IR 2/03. Isolated effect of altered exchange rate.



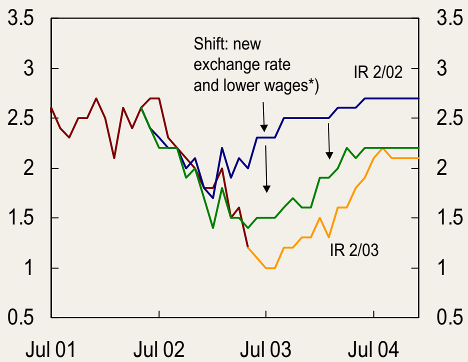

Sources: Statistics Norway and Norges Bank

**Chart 6** CPI-ATE projections in IR 2/02 and IR 2/03. Isolated effect of lower wage projections.




Sources: Statistics Norway and Norges Bank

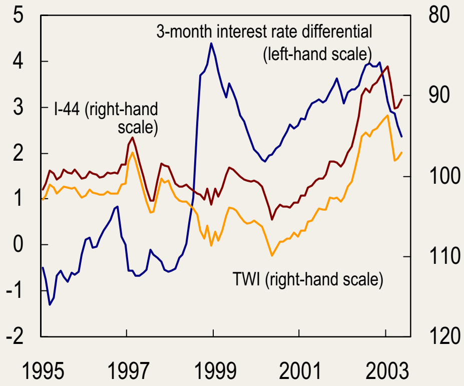
**Chart 7** CPI-ATE projections in IR 2/02 and IR 2/03. Combined effect of actual exchange rate and lower wage projections (sum of Charts 5 and 6)




*) The green line shows how the projection from IR 2/02 would be changed by incorporating the exchange rate path and wage developments as they are incorporated today.

Sources: Statistics Norway and Norges Bank

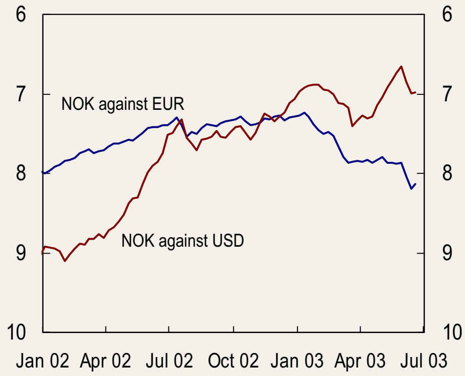
**Chart 1.12** Import-weighted exchange rate (I-44), trade-weighted exchange rate index[1)] and interest rate differential against other countries. Jan 95 - May 03




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

Source: Norges Bank

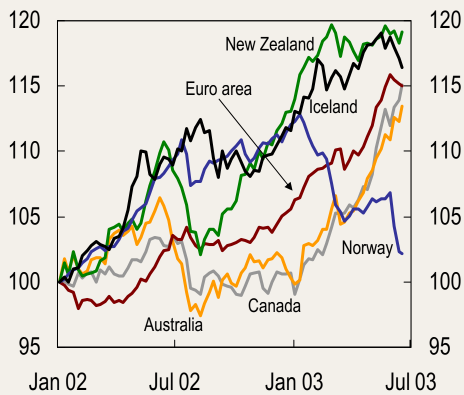
**Chart 1.13** The krone exchange rate against EUR and USD[1)]. Weekly figures. 12 Jan 02 - 19 June 03




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

Source: Norges Bank

**Chart 1.14** Effective exchange rates[1)]. Index. Week 1/2002=100. Weekly figures. 4 Jan 02 -18 June 03




[1)] A rising curve denotes an appreciation of the exchange rate

Source: EcoWin

## 1.3 Financial markets

The import-weighted krone exchange rate index (I-44) is about 6% weaker than assumed in the baseline scenario in the March *Inflation Report*. A significant share of the depreciation occurred after the central bank governor's speech at the Norwegian School of Management's Centre for Monetary Economics in Oslo on 3 June. The governor signalled in his speech that the easing of monetary policy will continue and that Norges Bank's Executive Board will carefully consider changing the interest rate in larger steps. After the speech, money market rates fell markedly and the krone depreciated.

The import-weighted krone exchange rate depreciated by close to 9% from the highest level at the beginning of the year until 19 June. This reflects the substantial narrowing in the interest rate differential between Norway and other countries in the same period (see Chart 1.12). The fall in oil prices, a recovery in international stock markets and higher expected variability between major currencies may also have had an impact. The March *Inflation Report* contains a more detailed discussion of the factors behind developments in the krone exchange rate.

Measured by the I-44, a substantial share of the krone appreciation through 2002 has been reversed this year. Krone movements against the US dollar and the euro, however, have been very different (see Chart 1.13). Measured against the euro, the krone is weaker than at the beginning of last year. This also applies when the krone is measured against the Swedish and Danish currencies. On the other hand, the krone has appreciated considerably against the dollar in the same period, reflecting a sharp decline in the value of the dollar against most currencies, particularly in the last half year. The euro/dollar exchange rate has returned to the level prevailing in January 1999 when the euro was introduced.

Although the interest rate has been reduced in Norway, the level is still higher than among many of our trading partners. The relatively high interest rate was probably the main reason behind the appreciation of the krone through last year. Weak developments in the equity market prompted some investors to withdraw and temporarily invest their capital in other assets. An evaluation of returns on currency holdings balanced against expected exchange rate movements may have led market participants to look upon Norwegian krone holdings as a favourable alternative.

Other countries with relatively high interest rates have also witnessed a marked currency appreciation since the beginning of 2002 (see Chart 1.14). Interest rates were also relatively high in New Zealand and Iceland and their trade-weighted exchange rate strengthened markedly through

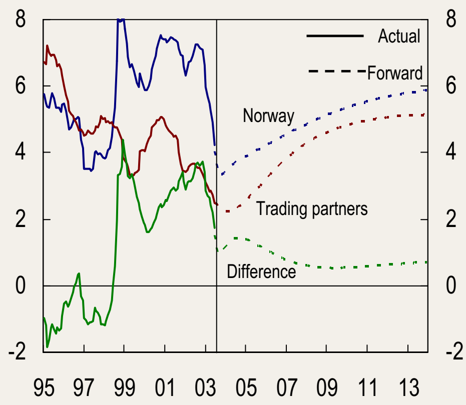
2002. These currencies continued to appreciate this year. The Australian, Canadian and euro area currencies have also appreciated markedly so far this year. These developments partly reflect the strong depreciation of the US dollar. Compared with the exchange rate movements of our trading partners' currencies, the appreciation of the krone since the beginning of 2002 no longer appears particularly pronounced.

The weakening of the Norwegian krone this year must be seen in the light of the substantial reduction in interest rates and the additional interest rate reductions that have been factored in by market participants. When Norwegian interest rates approach trading partners' interest rates, the Norwegian krone becomes a less attractive investment alternative. Advances in equity markets may also have induced investors to reduce holdings of interest-bearing assets.

Forward rates, estimated using the yield curve for money and bond markets, reflect expectations of further reductions in the interest rate in Norway. Since the March *Inflation Report*, implied forward rates in Norway have fallen further. Forward rates indicate that short-term money market rates are expected to fall to about 3¼-3½% towards the end of the year and then rise thereafter (see Chart 1.15). The pricing of FRAs shows virtually the same picture. Forward interest rates seem to be consistent with expectations of a decline in the sight deposit rate towards 3 per cent. A further fall in money market rates is also expected for Norway's main trading partners. Nevertheless, the difference between Norwegian and foreign forward rates is expected to narrow in the period ahead.

Both internationally and in Norway, yields on long-term government bonds have fallen to historically low levels since the March *Inflation Report* (see Chart 1.16). Falling long-term yields may indicate that market participants see an increased probability of a longer period of very low inflation. It may also indicate that market participants expect that it will take a longer period for economic activity to pick up. This would imply low real interest rates over a long period. Equity prices, however, have increased since the beginning of the year both internationally and in Norway. Since the beginning of the year, equity prices on the Oslo Stock Exchange have advanced by a good 17%, somewhat more than the rise internationally. The increase in equity prices may indicate expectations of higher profitability and improved corporate earnings ahead. On the other hand, the upswing in the stock market may be a sign of some increase in investors' willingness to take risk.

**Chart 1.15** Three-month money market rates and forward rates, 1995-2013. Monthly figures




Source: Norges Bank

**Chart 1.16** Developments on the Oslo Stock Exchange (OSEBX) and 5-year government bond yields. Daily figures, 01.06.02 -19.06.03

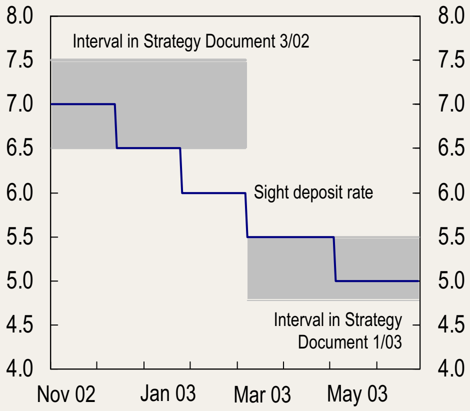

Sources: EcoWin and Norges Bank

## 1.4 Monetary policy

In 2002, monetary policy in Norway was relatively tight, primarily as a result of the strong krone. In order to counter inflationary pressures stemming from high wage growth, the sight deposit rate in Norway was kept at a high level. At the same time, international developments were weak and many of our trading partners sharply reduced interest rates. This resulted in a widening interest rate differential which contributed to strengthening the krone. Towards the end of last year, the outlook for the Norwegian economy weakened. Without an easing of monetary policy, inflation two years ahead was projected to be lower than the inflation target. The sight deposit rate was then reduced. The krone depreciated markedly in January and February of this year.

The easing of monetary policy has continued. Since the cut-off date for the March *Inflation Report*, Norges Bank has reduced the sight deposit rate twice by a total of one percentage point. The decisions were based on the analysis in the March *Inflation Report*, which presented two alternative scenarios for the Norwegian economy, based on different assumptions concerning the monetary policy stance. In the baseline scenario, where the sight deposit rate was held constant at 5.5% and the krone exchange rate was assumed to be equal to the average for February, consumer price inflation was projected to remain below 2½% over the projection period. In the other scenario, where monetary policy is relaxed in line with market expectations, inflation was projected to be somewhat higher than target at the two-year horizon. In both scenarios, inflation was projected to undershoot the target of 2½% through most of the projection period. This was because the marked appreciation of the krone in the preceding years would result in a slower rise in prices for imported consumer goods, which could last for 3-4 years. In the near term, this would more than counter the inflationary pressures resulting from high wage growth in Norway over a period of several years. Given these reference paths, a monetary policy strategy was drawn up for the period from March to June. A sight deposit rate in the interval 4¾ - 5½% at the end of this period was judged to be appropriate (see Chart 1.17). See Strategy Document 1/03 in Annex II on page 57 of this report for further details.

**Chart 1.17** Strategy intervals for the sight deposit rate and actual developments. Nov 02 - June 03




Source: Norges Bank

At Norges Bank's Executive Board meeting of 5 March, the sight deposit rate was reduced by 0.5 percentage point to 5.5 %. New information in March and April largely confirmed the picture of weak growth and the prospect of low inflation in the period ahead. Developments in the business sector were driven by high cost levels, low profitability and global stagnation. New national accounts figures indicated that economic growth had come to a halt towards the end of 2002. Current statistics did not indicate any improvement in the first months of 2003. The results of the wage settlement for manufacturing pointed to markedly lower wage growth in 2003 than in 2002.

International developments were weak and it appeared that the downturn would be more prolonged than projected earlier. Activity was sustained by low interest rates and an expansionary fiscal policy in a number of countries. Interest rates were reduced further in the euro area, Denmark, Sweden and New Zealand. There were expectations of additional interest rate cuts in a number of countries. The import-weighted krone exchange rate appreciated slightly through March and April.

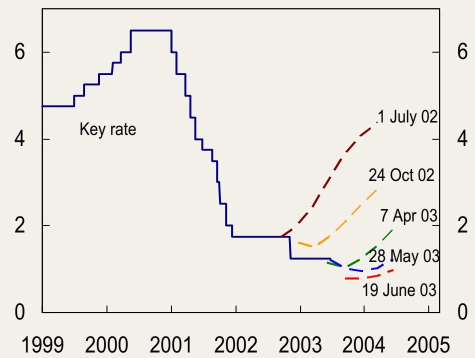
At Norges Bank's Executive Board meeting of 30 April, the sight deposit rate was reduced by 0.5 percentage point to 5.0%. This decision was in line with Strategy Document 1/03. With an interest rate of 5.0%, Norges Bank still assessed that the probability that inflation two years ahead would be lower than 2½% was greater than the probability that it would be higher.

New information in the period from 30 April to 3 June reinforced the perception of weaker-than-projected economic developments. The outlook for the global economy continued to deteriorate. As expected, interest rates were reduced in the euro area, Denmark, Sweden and New Zealand. Market expectations concerning interest rate developments ahead in the US and the euro area were revised further downwards (see Charts 1.18 and 1.19). In Norway, market interest rate expectations were also lowered (see Chart 1.20). The impact on the interest rate differential was mitigated by interest rate developments abroad, however. The krone exchange rate did not depreciate in the period to 3 June, following the reduction in the sight deposit rate 30 April, but rather showed a tendency to appreciate.

The wage settlements in the distributive trades and the central and local government sector were completed on 30 April and 1 May respectively. These settlements confirmed that annual wage growth appears to be lower than our earlier projection of 5%. In April and May, labour market developments were weaker than expected in the March *Inflation Report*. Information from Norges Bank's regional network confirmed the impression of low activity in many business sectors. The wage settlement in the financial industry was completed on 26 May and provided further confirmation of lower wage growth than projected in the March report.

The Revised National Budget was presented on 15 May. The budget proposal indicated that fiscal policy would be approximately neutral in 2003, 2004 and 2005. In the March *Inflation Report,* fiscal policy was assumed to have an expansionary effect over the next few years. It now appears that public sector employment growth will be appreciably lower than projected earlier.

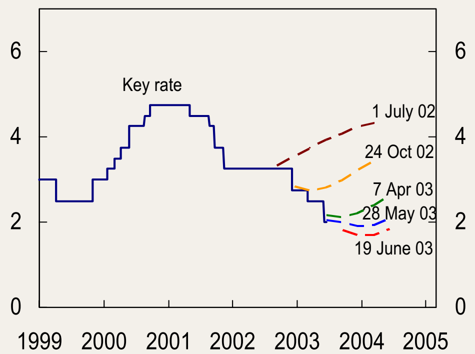
**Chart 1.18** Interest rate expectations in the US. Actual developments and expected key rate[1)]




[1)] Based on Fed Funds futures and Eurodollar futures adjusted for the estimated spread between 3-month Libor and Fed Funds rates

Source: Norges Bank

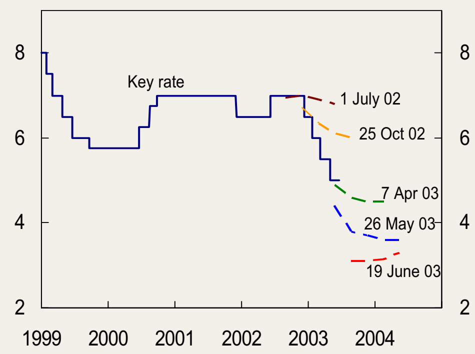
**Chart 1.19** Interest rate expectations in the euro area. Actual developments and expected key rate[1)]




[1)] Based on Euribor futures adjusted for the estimated spread between 3-month Euribor and Refi rates

Source: Norges Bank

**Chart 1.20** Interest rate expectations in Norway. Actual developments and expected key rate[1)].




[1)] Based on FRA and currency swap markets, adjusted for estimated difference in level and credit risk in relation to the sight deposit rate

Source: Norges Bank

On the whole, the information indicated that in the next two years wage growth and inflation would be lower than projected in the March *Inflation Report*. In a speech presented to the Norwegian School of Management's Centre for Monetary Economics on 3 June, Norges Bank's governor indicated that the period of easing of monetary policy will continue and that Norges Bank's Executive Board will carefully consider changing the key rate in larger steps. Following the speech, money market rates fell and the krone exchange rate depreciated markedly.

# 2 | International developments

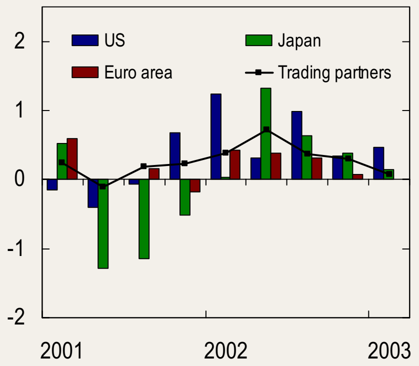
Global economic developments are weak (see Chart 2.1). So far, there are few clear signs that activity is picking up. Since the March *Inflation Report,* key rates have been further reduced in the euro area, Denmark and Sweden. Further interest rate cuts are expected in many countries. In the US, interest rates are very low from a historical perspective, while fiscal policy is having an expansionary effect. Economic policy stimulus is expected to boost growth gradually, initially in the US and in Europe and Japan at a somewhat later stage (see Table 2.1). The substantial depreciation of the US dollar will generate positive growth impulses in the US, but will have a negative impact on the euro area. Low growth in the euro area is also weakening the outlook for some of our other trading partners in Europe. We expect economic growth in most countries to be below trend growth this year. Consequently, the negative output gap will widen this year. In the euro area, this is likely to be the case next year as well.

Some of the factors that have had a negative impact on the global economy have subsided or dissipated in recent months. One source of uncertainty has been removed with the resolution of the conflict in Iraq. After falling sharply before and during the war in Iraq, consumer confidence has improved, particularly in the US. The resolution of the conflict has also had a positive impact on financial markets. Equity prices have moved up, and yield differentials between government and corporate bonds have narrowed. This indicates that the market considers it less risky to invest in the business sector (see Chart 2.2). The latest accounting figures also show that there has been some improvement in profitability in the US business sector. In addition, oil prices have fallen from very high levels last winter. This has a positive impact through higher real household income and lower costs for many enterprises. Higher gas prices in the US are having the opposite effect.

Despite substantial economic policy stimulus in many countries, there is still a risk of a fairly long period of weak growth or stagnation. This risk is reflected in very low bond yields for example. In many countries the scope for counteracting such developments is limited as key rates are already low and government budget deficits substantial. The considerable imbalances in the global economy, reflected in the sizeable current account deficit in the US, still constitute an element of uncertainty. The depreciation of the dollar may help to reduce the deficit, but will on the other hand have a negative impact for Europe. A further marked depreciation of the dollar may have substantial negative effects in a number of countries. The uncertainty surrounding developments in Germany is particularly pronounced.



**Chart 2.1** GDP growth in the US, Japan, the euro area and among Norway's trading partners combined. Seasonally adjusted growth in volume on previous quarter. Per cent




Sources: EcoWin, US Department of Commerce, ESRI (Japan), EURO-OP Eurostat and Norges Bank

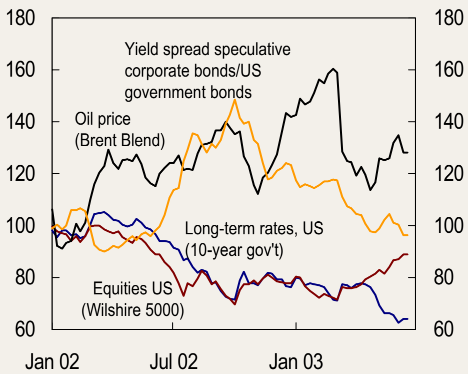
**Table 2.1** GDP projections.
Percentage change from previous year

| | 2003 | 2004 | 2005 |
|---|---|---|---|
| US | 2 | 3¼ | 3½ |
| Japan | ¾ | ¾ | 1¼ |
| Germany | 0 | 1¼ | 2¼ |
| France | 1 | 1½ | 2½ |
| UK | 1¾ | 2½ | 2½ |
| Sweden | 1½ | 2½ | 2½ |
| Norway's trading partners[1] | 1¼ | 2¼ | 2¾ |
| Euro area[2] | ¾ | 1½ | 2½ |

[1] Export weightings
[2] The IMF's GDP weightings adjusted for purchasing power

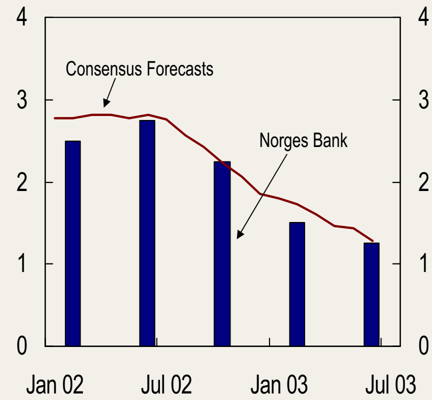
Source: Norges Bank

**Chart 2.2** The oil price and some financial market indicators. Index. Week 1 2002 = 100



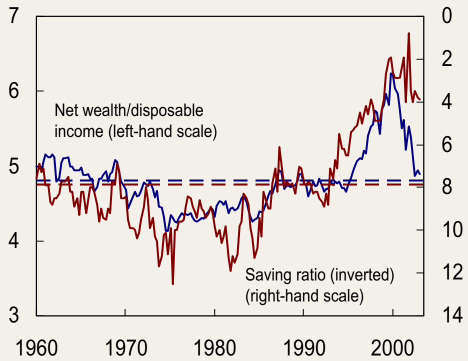

Sources: EcoWin, IPE, S&P Credit Indices, Wilshire Associates and Norges Bank

Chart 2.3 Projections for GDP growth among trading partners in 2003 made at different times



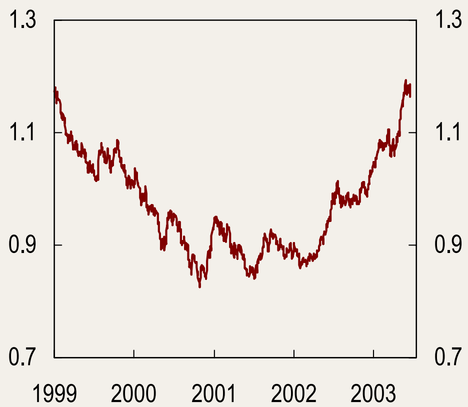

Sources: Consensus Forecasts and Norges Bank

**Chart 2.4** Net wealth/disposable income and saving ratio in the US. Quarterly figures 1960-2003. Dashed lines show period averages




Sources: EcoWin, US Department of Commerce, Federal Reserve Board and Norges Bank

**Chart 2.5** EUR/USD exchange rate. 1 Jan 1999 - 19 June 2003




Source: EcoWin

## *Expansionary policy promotes growth in the US*

An expansionary economic policy in the US, with tax cuts and lower interest rates, has contributed to sustaining growth in private consumption over the past few years. Further tax reductions have recently been adopted.

Low interest rates have underpinned a buoyant housing market. Rising house prices and falling long-term interest rates have enabled households to release wealth for consumption by refinancing or raising mortgage-backed loans. In isolation, this has led to a reduction in the saving ratio. Even though house prices are still high and long-term interest rates have fallen further, a substantial increase in the contribution from the housing market to consumption growth can hardly be expected. A decline in the saving ratio seems highly unlikely because it is already low (see Chart 2.4). In addition, household wealth has declined as a result of the fall in equity prices from spring 2000. Overall, it is projected that consumption will only increase moderately in the period ahead.

So far, an expansionary economic policy has not resulted in renewed growth in corporate investment. After a prolonged and marked decline, however, investment seems to have levelled off. Corporate profitability has improved somewhat, and demand is still showing moderate growth. With the depreciation of the dollar and continued growth in productivity, there are prospects for further improvements in profitability. Funding conditions are also more favourable. It appears that the excess capacity that was built up through high investment in the last half of the 1990s has been reduced. This points to a nascent recovery in investment in the US later this year. See separate box on investment in this business cycle on page 50 of this Report.

There is still uncertainty with regard to developments in the US in the period ahead. If saving shows a marked increase, for example as the result of a housing market correction, developments will be weaker than projected. Enterprises may not have completed the adjustment of real capital. There is limited economic policy leeway for stimulating demand further using orthodox measures. The key rate can, however, be reduced to some extent, and the Federal Reserve has stated that measures will be implemented, if necessary, to reduce long-term interest rates.

## *Weaker growth outlook for the euro area*

The euro has appreciated recently, particularly against the US dollar (see Chart 2.5). This has contributed to a decline in net exports from the euro area, where exports have so far been an important driving force behind growth. At the same time, rising unemployment is curbing household consumption. These conditions have exacerbated an already weak economic environment. Developments are particularly unfavourable in Germany, where GDP fell by 0.2% in the first quarter and current indicators at the beginning of the second quarter point to continued sluggish developments.

Low growth will result in a government budget deficit in a number of large countries of over 3% of GDP, which is the budget deficit limit set out in the EU Stability and Growth Pact. In the period ahead, emphasis will be placed on assessing the structural budget deficit, and higher deficits may be accepted if they are temporary and associated with major reforms or infrastructure investment. There will nevertheless be little scope for further fiscal stimulus in the euro area. Budget tightening is likely in some countries. With deteriorating budget positions, labour market reforms and cutbacks in various welfare budgets are becoming more relevant in several of these countries.

Monetary policy has been eased to a lesser extent than in the US, and the interest rate reductions in March and June will to some extent be negated by the appreciation of the euro. However, the interest rate level in the euro area still provides scope for reductions.

In spite of rising unemployment, growth in private consumption has remained steady, reflecting high growth in real wages and rising house prices in a number of countries. The saving ratio is relatively high in most countries in the area, so that consumption can increase more than implied by income growth in isolation. Consumer confidence is low, however. This may indicate that a marked fall in the saving ratio is unlikely, and points to only moderate consumption growth in the period ahead.

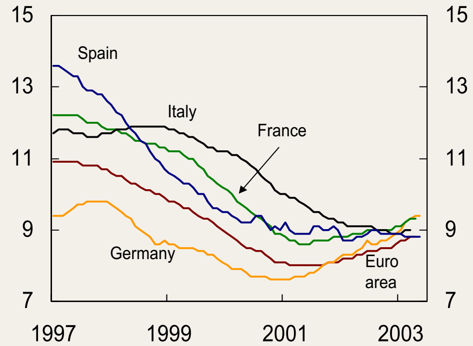
After levelling off at the end of 2002, investment fell again in the first quarter of 2003. Weak demand, low productivity growth and high oil prices have reduced corporate profitability, with an associated decline in investment. However, there are indications that companies have reduced costs to a certain extent, and productivity growth has shown a moderate rise. Consolidation in the enterprise sector does not seem, however, to have progressed as far as in the US. The appreciation of the euro has weakened earnings prospects. Investment is expected to remain weak in the period ahead.

### *Oil prices have fallen*

Oil prices have edged down since the March *Inflation Report* (see Chart 2.7). Even before the onset of the war in Iraq, production in Venezuela had almost returned to normal. Production also increased in other OPEC countries. Since oil prices declined in mid-March, prices have ranged between USD 23 and 29 per barrel. So far in the second quarter, the average oil price has been a good USD 5 lower than in the first quarter.

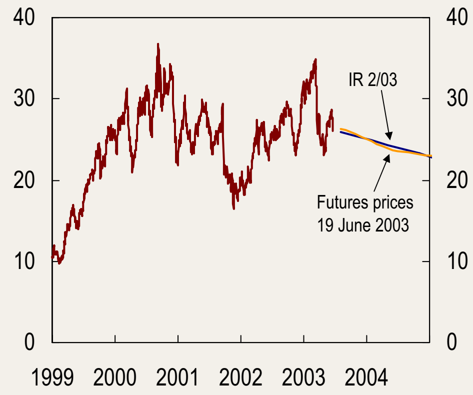
Iraq will resume oil exports during the summer, but it will probably take time for output to reach its pre-war level.

**Chart 2.6** Unemployment as a share of the labour force. Seasonally adjusted. Jan 97 - May 03



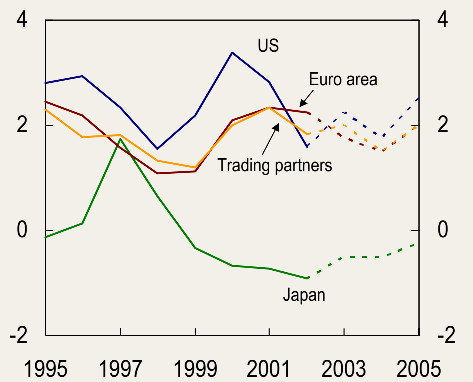

Sources: EcoWin, EUR-OP Eurostat, Federal Labour Office (Germany), National Employment Agency (France), Istat (Italy) and Norges Bank

**Chart 2.7** Oil price, Brent Blend. USD per barrel. Daily figures.



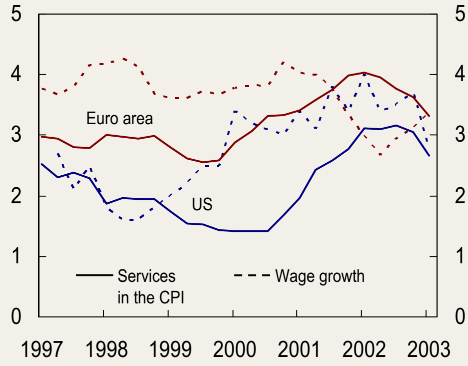

Sources: Telerate, IPE and Norges Bank

**Chart 2.8** Historical consumer price inflation and projections from Norges Bank. Annual percentage rise 1995-2005



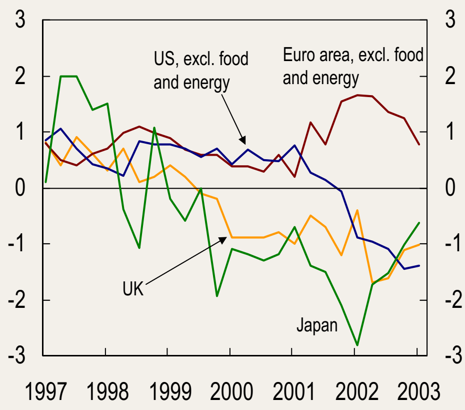

Sources: EcoWin, Bureau of Labor Statistics (US), Ministry of Public Management, Home Affairs, Posts and Telecom (Japan), EUR-OP Eurostat and Norges Bank

**Chart 2.9** Wage growth and rise in prices for services in the CPI. Percentage change on same quarter previous year



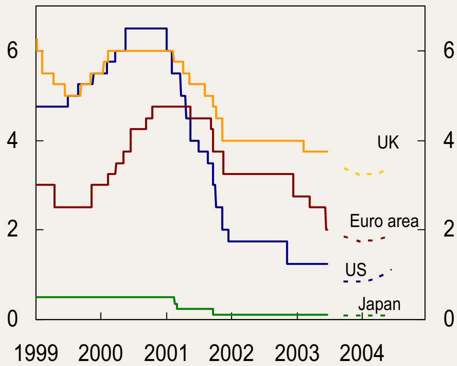

Sources: Datastream, EcoWin, EUR-OP Eurostat and Bureau of Labor Statistics (US)

**Chart 2.10** Rise in prices for goods in the CPI. Percentage change on same quarter previous year




Source: Datastream

**Chart 2.11** Historical and expected key rates as of 19 June 2003[1)]




1) See further details on calculation of interest rate expectations in Charts 1.18 and 1.19

Sources: EcoWin, Bloomberg, Bank of England, Bank of Japan and Norges Bank

OPEC members have indicated that they will reduce production when exports from Iraq pick up in order to prevent oil prices from dropping below USD 22. Global oil stocks are still low and it is expected that stock rebuilding will underpin demand during the second half of 2003 despite weak economic growth in many countries.

Our projections are based on the technical assumption that oil prices will fall to USD 20 three years ahead. This is equivalent to the average oil price over the past 15 years. The three-year horizon is in line with an empirical model for the oil price developed at Norges Bank.[1] We have assumed that oil prices will fall below the OPEC price band because Iraq's production may over time be substantially higher than earlier, and because increased non-OPEC production will be profitable at a high oil price.

## *Prospects for low price inflation and low interest rates*

It now appears that capacity utilisation will be lower than projected in the previous *Inflation Report* in many countries this year. Increased slack in the global economy implies a further decline in inflation next year (see Chart 2.8).

Despite low GDP growth, wage growth has so far remained steady in the US and Europe, even though it has recently shown signs of moderating. This is contributing to a continued rise in prices for services (see Chart 2.9). However, prices for goods are falling in a number of countries as a result of increased competition and high productivity growth in relation to wage growth (see Chart 2.10). In addition, commodity prices have exhibited a weak trend measured in most currencies. Because goods account for a very large share of exports, export prices among our trading partners will broadly follow the same pattern. Overall, these export prices are now projected to exhibit a slower rise than in the previous *Inflation Report*, and we expect underlying import price inflation measured in foreign currency to be very low over the next two years.

There is growing concern among market participants that a number of countries may experience a period of deflation. In the US, the increase in prices for services and the depreciation of the dollar will exert upward pressure on inflation. In some of the countries in the euro area, inflation is already very low, and the appreciation of the euro will exert downward pressure on inflation.

The prospects for very low inflation imply that key rates will remain low for some time ahead. Market participants expect further interest rate reductions in a number of countries (see Chart 2.11).

[1] Qaisar Farooq Akram (2002): "An econometric model of the world oil market". Unpublished paper, Norges Bank

# 3 | Domestic developments

The global downturn and a high cost level in the Norwegian business sector have contributed to lower activity in the Norwegian economy. Many business sectors are in the process of consolidating and reducing costs. The high rise in costs in the public sector has led to low growth in public employment in spite of considerable nominal spending increases. Overall unemployment is expected to continue to rise in the period ahead, even though monetary policy has been eased considerably over the past six months. The key rate was lowered by 2 percentage points in the period from December 2002 to the cut-off date for this report, and further rate cuts were expected. The krone is about 6% weaker than assumed in the baseline scenario in the March *Inflation Report*.



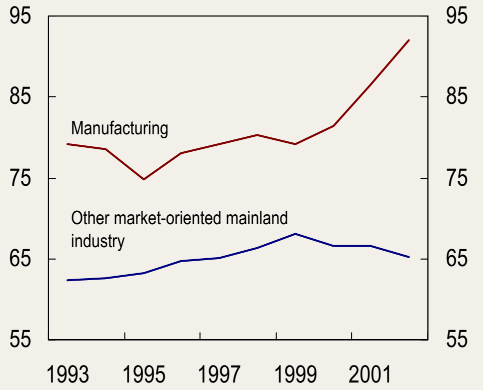
Weak competitiveness is adversely affecting manufacturing industry in particular. Many manufacturing enterprises are taking measures to improve profitability. As a result, employment and investment activity have declined in this sector. In some service industries, capacity has been built up to a level higher than that consistent with demand developments. Investment is contracting in these industries, particularly in the commercial building industry. This tendency is expected to continue in the period ahead. All in all, manufacturing activity is expected to fall through the projection period, while activity in service industries is expected to pick up. Continued solid growth in private consumption is expected to hold up activity in sectors that supply goods and services to households. Employment and investment are expected to continue to rise in the distributive trades.

Lower-than-expected tax receipts and higher expenditure growth entailed a higher use of petroleum revenues over the central government budget last year than was initially estimated. Fiscal policy is now geared towards bringing the deficit back into line with the expected real return on the Petroleum Fund. It appears that growth in public demand will be moderate in the years ahead, and lower than previously projected. It thus appears that private consumption will be the main driving force behind activity in the Norwegian economy. Mainland GDP growth is expected to be considerably lower than trend growth this year. The output gap, as measured here, is expected to close.

## *Mainland enterprises*

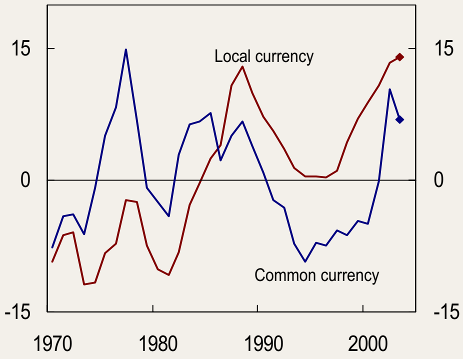
In recent years, labour costs have accounted for an increasing share of corporate earnings. In 2002, labour costs amounted to 90% of factor income in manufacturing industry (see Chart 3.1). The sharp growth in labour costs in Norway relative to other countries has persisted since 1997 (see Chart 3.2). In the years to 2000, a weaker krone contributed to countering the profitability effects of the sharp rise

**Chart 3.1** Wage shares. Labour costs as a percentage of factor income 1993-2002




Sources: TRCIS and Statistics Norway

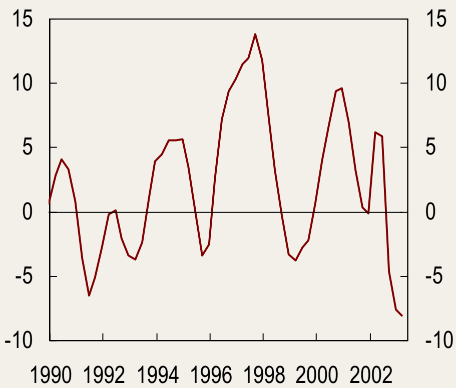
**Chart 3.2** Relative labour costs[1]: Norway and trading partners. Deviation from average since 1970. Per cent. 1970-2003[2]




[1] Hourly labour costs in manufacturing
[2] Estimates for 2003. The estimate for relative labour costs for 2003 in a common currency is based on the exchange rate on 19 June 2003.

Sources: TRCIS, Ministry of Finance and Norges Bank

**Chart 3.3** Business confidence indicator for manufacturing. Seasonally adjusted diffusion index[1]. 1990 Q1 - 2003 Q1




[1] A value of less than 0 implies that the majority of manufacturing leaders expect a weaker outlook in the next quarter.

Sources: Statistics Norway and Norges Bank

in labour costs. The krone subsequently appreciated. The underlying cost problem came into clearer evidence and was amplified. At the same time, Norwegian manufacturing felt the negative effects of lower global demand as a result of the international downturn.

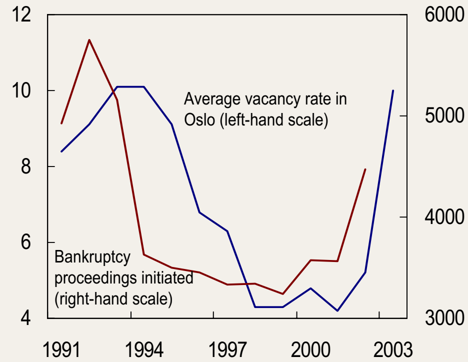
Even though this year's wage settlement will be relatively moderate, it appears that wage growth in Norway will be higher than among trading partners. In isolation, this entails a further deterioration in competitiveness. The deprecation of the krone in recent months has the opposite effect. If the krone remains constant at the current level to the end of the year, competitiveness may show some improvement in 2003 compared with 2002. Cost competitiveness is still weaker than the average for the past 30 years (see Chart 3.2).

It has long been expected that the internationally exposed sector will scale down activities as a result of the deterioration in competitiveness and low global demand. Manufacturing output has shown a continuous decline since 1998 and capacity utilisation is record low. Manufacturing employment has fallen over several years. Manufacturing leaders have very low expectations as to developments ahead (see Chart 3.3). According to Statistics Norway's business tendency survey for the first quarter of 2003, manufacturing leaders expect a further fall in employment, as reflected in falling inventories and new orders. Many enterprises are planning to make new investments abroad rather than in Norway due to the high cost level.

Petroleum investment will mitigate some of the negative effects of weak competitiveness this year. The development of the Kristin Field, the Snøhvit Field and Ormen Lange will continue to generate demand impulses in the shipbuilding and engineering industries in the coming years. Exploration and development of new fields are low and falling, but the market for operation and maintenance is growing. Petroleum investment is assumed to show strong growth this year, followed by a levelling off in the years thereafter. Even though a large share of petroleum investment translates into higher imports, Norwegian manufacturing will benefit from some demand stimulus from this source.

Service industries are feeling the negative impact of falling demand in the manufacturing sector. Moreover, some service sectors are still faced with excess capacity after the high level of fixed investment towards the end of the 1990s. Investment as a share of value added rose sharply up to 1998. The brisk growth in investment reflected expectations of high growth in demand. When this did not materialise and the global downturn took hold, capacity had to be reduced. Service sector investment has been declining since 2001. Intensified competition and extensive structural changes in industries such as the telecommunications and airline industries have also reduced profitability and increased the need for rationalisation. The financial industry appears to be continuing its consolidation efforts. In the last report from Norges Bank's regional network, services enterprises still report that capacity utilisation is lower than normal. Many enterprises have had to make capacity adjustments and will have to continue to do so. High capital costs last year, low demand and strong cost inflation have led to weak profitability and the need for efficiency measures. The number of bankruptcies is still on the rise, and the vacancy rate for commercial buildings is rising (see Chart 3.4). In some services sectors, particularly in ICT and the travel and airline industries, redundancies are still rising.

**Chart 3.4** Number of bankruptcies and vacancy rate in the office rental market[1]. 1991-2003[2]



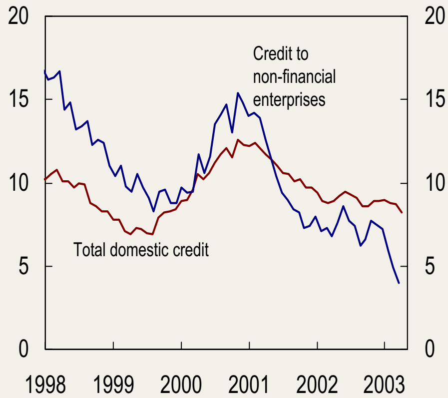

[1] Vacancy rate in office rental market in Oslo alone
[2] The vacancy rate figure for 2003 is as of February

Source: Statistics Norway and Eiendomspar AS

The fall in mainland business investment is reflected in credit statistics. Gross debt in the enterprise sector has expanded at a markedly slower pace in recent months. In April, year-on-year growth was 4.0% against 7.2% in January (see Chart 3.5).



**Chart 3.5** Total domestic credit (C2) and credit to non-financial enterprises. 12-month growth. Jan 98 - Apr 03



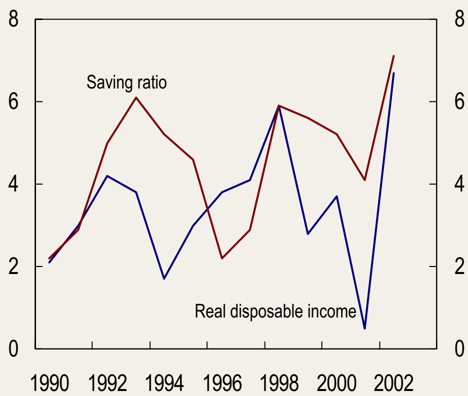

Source: Norges Bank

The negative trend in investment and employment in service industries is not expected to be reversed in the coming year in spite of the cuts in the key rate since December. Lower interest rates contribute in isolation to increasing investment demand. In a situation where enterprises are seeking to reduce capacity, the direct effects of monetary policy may, however, be more limited than when the decline is due to a fall in other demand components.

## *Households*

High real income growth over several years has been reflected in strong growth in private consumption. This has sustained activity in the Norwegian economy in recent years, and is expected to continue to do so in the period ahead. While many industries are struggling in the face of low demand and workforce cutbacks, the distributive trades are still enjoying growth in demand.

**Chart 3.6** Household saving ratio and growth in real disposable income. 1990-2002

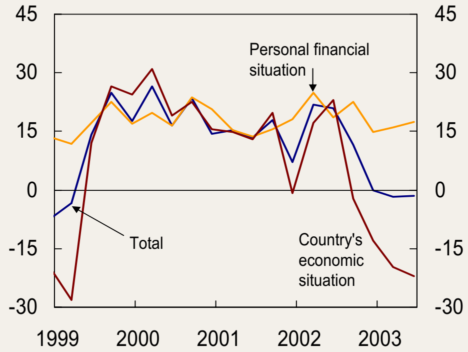



Sources: Statistics Norway and Norges Bank

In 2002, strong wage growth combined with cuts in taxes and excise duties resulted in high growth in household real disposable income (see Chart 3.6). According to the national accounts, some of the increased income was used to increase saving, but growth in private consumption remained buoyant. As expected, growth in private consumption was revised upwards in the national accounts for 2002. Household net lending figures from Norges Bank indicate, however, that the saving ratio did not rise markedly last year. Thus, there is still some uncertainty associated with the figures for consumption and saving last year.

This year's wage settlement appears to be more moderate than in recent years. At the same time, inflation as measured by the consumer price index is higher owing to the sharp rise in electricity prices at the beginning of the year. As a result, growth in real disposable income will be con-

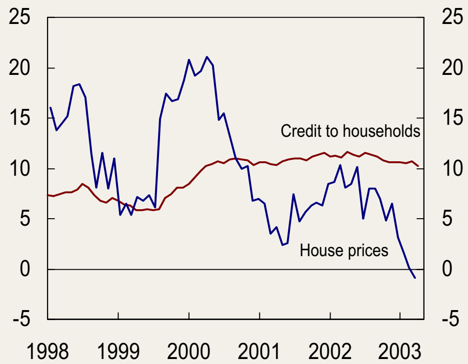
**Chart 3.7** Consumer confidence indicator[1]). Unadjusted figures. 1999 Q1 - 2003 Q2




[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

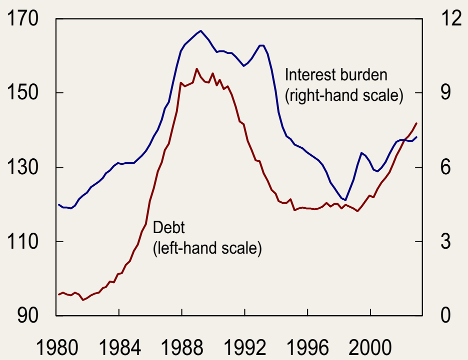
Source: TNS Gallup

**Chart 3.8** House prices and credit to households. 12-month rise. Per cent. Jan 98 - Apr 03




Sources: Norwegian Association of Real Estate Agents, Association of Real Estate Agency Firms, FINN.co, ECON and Norges Bank

**Chart 3.9** Household interest burden[1]) and debt as a percentage of disposable income. 1980-2002




[1]) Interest expenses after tax as a percentage of disposable income plus interest expenses

Sources: Statistics Norway and Norges Bank

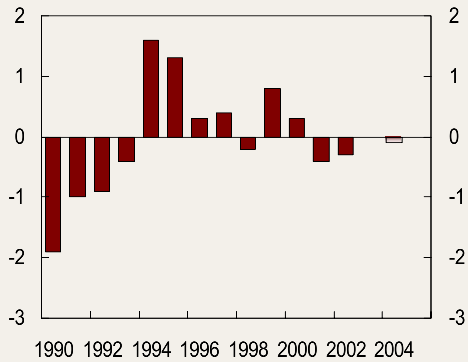
siderably lower in 2003 than in 2002. On the other hand, the key rate has been reduced considerably since December, and further reductions are expected. Lower interest rates release household income for consumption. Normally, it also contributes to lower saving. The saving ratio is projected to edge down this year, reflecting both lower interest rates and lower real income growth. However, in the first quarter of this year, consumption growth was fairly weak. High electricity prices during the winter months may have induced households to reduce spending on other goods and services for a period. Electricity prices have fallen during spring. In April, household spending on consumer goods increased sharply. However, there is some uncertainty associated with developments in goods consumption as a result of the calendar effects associated with the Easter holiday. Against the background of the fall in electricity prices and lower interest rates, consumption growth is expected to remain firm in the period ahead.

According to TNS Gallup's expectations survey, households have become far more pessimistic over the past year as to economic developments in Norway (see Chart 3.8). At the same time, a majority of the households included in the survey has a positive view of their financial situation, and the share has increased over the last quarters. The expectations survey normally provides a good indication of developments in private consumption over the coming months. However, there has been an abnormally wide divergence in their perception of their financial position and the domestic economy in recent months. What the survey indicates about private consumption ahead is therefore uncertain.

Household borrowing is holding up in spite of weak economic developments and the levelling off in house prices. Twelve-month growth in household gross domestic debt was 10.2% at the end of April (see Chart 3.8). Over the past years, household debt has increased at a faster pace than disposable income (see Chart 3.9) A substantial portion of household borrowing seems to be associated with resale home transactions. House prices have risen sharply since the beginning of the 1990s. Total household gross debt is rising because a steadily higher share of housing is sold at a higher price level. The price rise of the past decade is still sustaining credit growth. As long as house sales remain high, a levelling of in house prices will only entail a slow reduction in credit growth. If house sales should fall, however, credit growth is likely to slow at a faster pace. These relationships are discussed further in a box on page 47 of this report.

Private consumption is expected to be an important economic driving force in the period ahead. Interest rate developments will to some extent determine the rate of growth in consumption. Experience shows that private consumption is one of the components of aggregate demand that is the most sensitive to interest rate changes. In the absence of a further easing of monetary policy ahead, employment is expected to fall into next year and wage growth to be moderate. This would reduce household income growth and lead to lower consumption growth. On the other hand, low inflation will contribute to holding up growth in real income. At the same time, the interest rate cuts since December 2002 are making a positive contribution to consumption growth. On balance, consumption growth is projected to remain relatively strong in the years ahead. A further relaxation of monetary policy will generate additional stimulus to private consumption. The outlook for the years ahead is discussed further in Sections 4.2 and 4.3.

**Chart 3.10** Change in structural non-oil budget balance[1]). 1990-2005



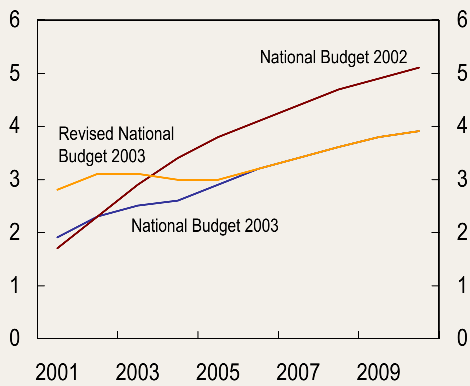

[1]) The budget balance as a percentage of trend mainland GDP; change on previous year.

Source: Revised National Budget 2003

## *Public sector*

In recent years, wage developments have influenced growth in public services production. Even though allocations over the central government budget have increased sharply, public entities have had limited scope for increasing employment because labour costs have risen markedly. In value terms, public expenditure growth was close to 7% in 2001 and 2002. A large share of this has been consumed by higher wage costs and transfers to households. Last year, growth in public employment was at the lowest level recorded in more than 30 years.

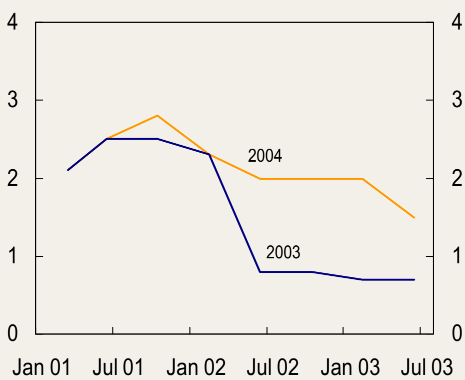
**Chart 3.11** Structural non-oil deficit. Percentage of trend mainland GDP.




Source: The Ministry of Finance

According to the guidelines for fiscal policy, the use of petroleum revenues over the central government budget shall over time correspond to the expected real return on the Government Petroleum Fund. When the guidelines were introduced in the spring of 2001, the estimates indicated that this fiscal rule would provide room for increasing the structural budget deficit by close to ½% of mainland GDP annually in the period 2001 to 2005. The estimates indicated that fiscal policy, through public expenditure and tax cuts, would generate a positive stimulus to demand in the Norwegian economy in every year for many years ahead.

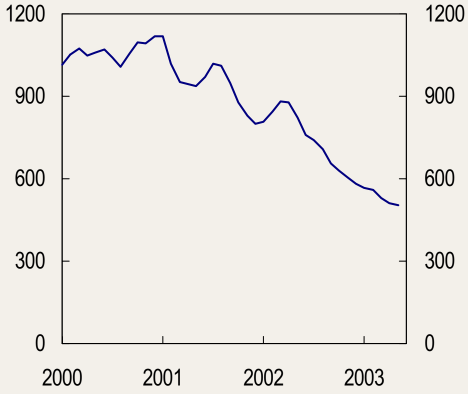
**Chart 3.12** Estimates for public consumption 2003-2004 made at different times. Annual percentage growth




Source: Norges Bank

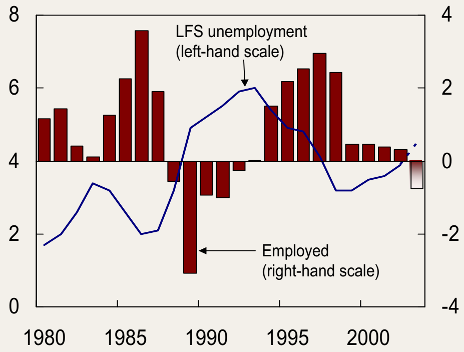
In 2001 and 2002, the use of petroleum revenues was higher than the expected real return on the Petroleum Fund. Expenditure was higher than initially assumed and underlying tax revenues lower than estimated. Even though the Revised National Budget proposal for 2003 implies a neutral fiscal stance this year, the budget proposal entails a structural deficit that is higher than the mechanical application of the fiscal rule would imply. At the same time, the estimate for the expected real return on the Government Petroleum Fund has been revised downwards, partly as a result of global stock market developments. If the structural budget deficit remains at the 2003 level, it will take three years before petroleum revenue spending is again brought into line with the expected real return on the Petroleum Fund. This would require a neutral fiscal stance in 2004 and 2005 as well (see Chart 3.11). Growth in public consump-

**Chart 3.13** Job vacancies advertised per business day. Seasonally adjusted. Jan 00 - May 03




Source: Directorate of Labour

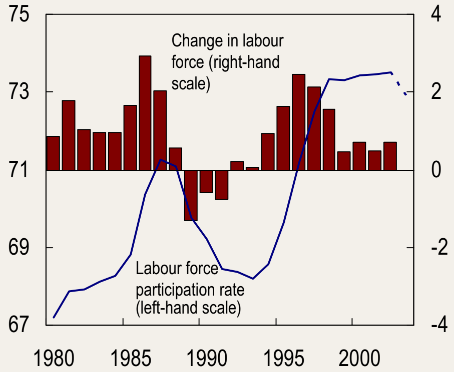
**Chart 3.14** Change in employment on previous year. Per cent. Unemployment[1)] as a percentage of the labour force. 1980-2003




[1)] LFS unemployment

Sources: Statistics Norway and Norges Bank

**Chart 3.15** Change in labour force on previous year. Per cent. Labour force as a percentage of population aged 16-74 (labour force participation rate) 1980-2003




Sources: Statistics Norway and Norges Bank

tion and employment, which has been a driving force behind overall employment growth, appears to be markedly lower than previously assumed (see Chart 3.12).

## *Labour market*

Employment has declined since the beginning of 2002, and it seems that a further fall is likely in the period ahead. Labour demand is weak. The number of job vacancies advertised has fallen steadily since 2001 (see Chart 3.13). A weaker labour market with fewer vacancies makes it difficult for job seekers to find employment. Owing to the fall in demand for labour, unemployment will show a pronounced increase between 2002 and 2003.

Unemployment developments ahead also depend on labour force growth. In the 1990s, the share of the working-age population that is either employed or seeking employment rose to a historically high level. In recent years, labour force participation has been stable at a high level. The high labour force participation rates place clear limits on labour force growth ahead. In addition, considerable outflows into various pension and social security schemes will have a dampening impact on growth in the effective labour force.

In periods of rising unemployment, experience shows that some workers choose to withdraw from the labour force, for example in order to pursue education. This is reflected in LFS figures, which show a 4 percentage point fall in the labour force participation rate for the age group 16-19 over the last year. As a result, labour force growth may prove to be lower than implied by demographic factors alone. This may restrain the rise in unemployment in the period ahead.

Even though labour force growth is fairly low, unemployment is projected to rise in the period ahead. So far this year, unemployment has shown a marked increase, and the share of long-term unemployed has risen. Since the beginning of the year, manufacturing unemployment and unemployment in the construction industry have been increasing at a faster rate. This reflects many years of weakening competitiveness, with sharp growth in labour costs and the appreciation of the krone through 2002. We have not witnessed the full effects of weak competitiveness in the manufacturing sector, and manufacturing unemployment is therefore expected to show a continued rise. In some service sectors, it appears that unemployment will continue to rise for a longer period than previously assumed. This partly reflects weak international developments in consultancy and audit companies and the ICT and travel industries.

# 4 Inflation projections

The underlying rise in prices is low and will in all probability remain below the inflation target over the coming year. The low rate of inflation primarily reflects weak international developments and a period of tight monetary conditions in Norway last year and into this year (see box on page 15). A wide interest rate differential against other countries contributed to an appreciation of the krone, particularly during 2002. Moreover, low external inflationary impulses have resulted in subdued inflation in Norway.

The impulses that will influence inflation in the near term are largely determined by the monetary policy conducted the previous two years and recent years' economic developments. These impulses are discussed in Section 4.1.

Our projections for inflation one to three years ahead depend in part on the future monetary policy stance. Since it takes time before monetary policy has an impact on inflation, various paths for movements in interest rates and exchange rates will influence the inflation projections with a certain lag. In this report, we look at two different paths for inflation ahead based on different assumptions concerning developments in the sight deposit rate and krone exchange rate (see Charts 4.1 and 4.2). In one alternative, the projections are predicated on the assumption of a sight deposit rate of 4% and a constant exchange rate. In the other alternative, the projections are based on market interest rate expectations and a depreciation of the krone in line with the narrowing of the interest rate differential against other countries. The assumptions applied and the inflation outlook are discussed further in Sections 4.2 and 4.3.

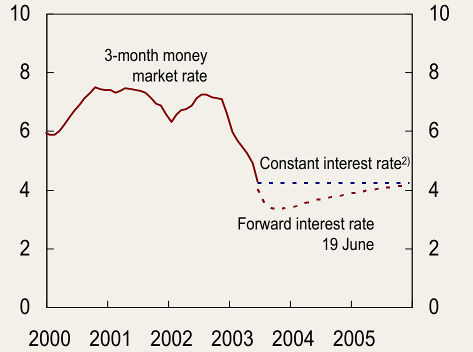
## 4.1 Inflationary impulses

### *Tight monetary policy in 2002 pushes down prices for imported goods*

Even though a substantial portion of the krone appreciation between 2000 and 2002 has been reversed in the first half of 2003, the depreciation of the krone will restrain the year-on-year rise in consumer prices for a fairly long period ahead (see box on low consumer price inflation on page 15).

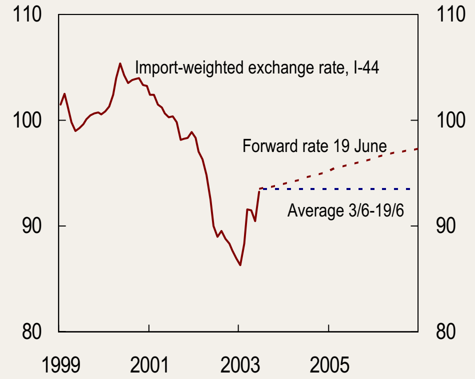
Changes in the krone exchange rate affect consumer price inflation in Norway with a certain lag. Historical relationships show that it takes several years for the price effects associated with a change in the exchange rate to unwind. In many industries there are costs associated with frequent price changes. Enterprises and importers will therefore tend to refrain from adjusting prices until they are more certain that an exchange rate change is long-lasting. In product markets without intense competition, importers or foreign exporters can take advantage of an appreciation of the krone

**Chart 4.1** Alternative assumptions for the money market rate. Forward rates[1)] and assumption of a sight deposit rate of 4 per cent[2)].




[1)] 3-month money market rates up to and including May 2003. 3-month forward rates are estimated using 4 money market rates and 5 government bond yields with different maturities as observed on 19 June.
[2)] The money market rate is normally about ¼ percentage point higher than the sight deposit rate.
Source: Norges Bank

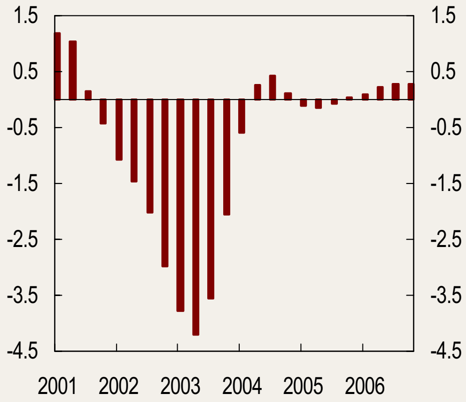
**Chart 4.2** Alternative assumptions for the krone exchange rate (I-44). Forward rate and stable exchange rate equal to average 3/6-19/6 (I-44= 93.5). Index




Source: Norges Bank

by increasing their profit margins for a period. Moreover, many enterprises and importers hedge against exchange rate movements either by using financial instruments or price agreements. However, these conditions will only apply for a limited period. Over time, exchange rate changes will feed through to consumer prices.

**Chart 4.3** Estimated effect of historical exchange rate movements on rise in prices for imported consumer goods. Contribution in percentage points to 4-quarter rise. 2001 Q1 - 2006 Q4



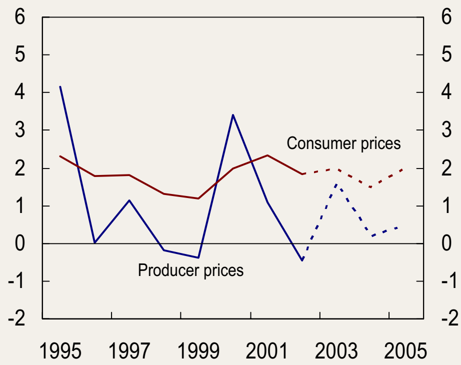

Source: Norges Bank

Prices for imported consumer goods have fallen since the beginning of 2002. The downward pressure on inflation from the krone appreciation in recent years is estimated to be at its strongest at present (see Chart 4.3). If we take into account the effects of the deprecation of the krone so far this year, the overall contribution from the exchange rate to consumer price inflation will be approximately neutral one year ahead.

## *Low international inflation*

International producer prices measured in foreign currency remained approximately unchanged in 2002, but rose in the first half of 2003 as a result of high oil prices (see Chart 4.4). Producer prices are the prices that Norwegian importers pay for goods in foreign currency. Moderate international growth prospects will contribute to restraining the rise in producer prices ahead. Oil prices have fallen in recent months and are expected to continue to decline. This will also have a moderating impact on international price inflation.

**Chart 4.4** Consumer prices and producer prices among trading partners. 1995-2005. Annual rise. Per cent




Sources: EcoWin and Norges Bank

International producer prices, as measured by a trade-weighted average of producer prices for our main trading partners, are expected to rise by ¼ % in 2004 and ½% in 2005. The rate of increase in producer prices is normally lower than international consumer price inflation. This is because productivity growth in internationally exposed goods-producing industries is normally higher than in other sectors. Against the background of the international downturn, our projections are somewhat lower than would be expected in a more normal cyclical environment.

External inflationary impulses may be weaker than the rise in these producer prices would imply. In recent years, the rise in prices for imported goods has slowed as a result of a shift in trade away from western countries with high prices to low-cost countries. This tendency has become more pronounced owing to improved framework conditions for imports from countries such as China. Higher imports from low-cost countries pushed down prices for clothing, footwear and audio-visual equipment last year, but the effects of this seem to be less pronounced than in the first years following the Asian crisis. Reports from the regional network may indicate that the potential for a further shift in imports has been reduced, at least for clothing. There is not sufficient evidence to expect a considerable fall in import prices as a result of a change in trade patterns or tariff reductions in the period ahead.

*Moderating wage growth will restrain domestic inflation*

Domestic inflation has been fuelled by high wage growth in recent years. Since 1998, annual wage growth has ranged between 5 and 6% (see Chart 4.5). In 2002, annual wage growth was 5¾%. High centralised pay increases were awarded in the spring wage settlement in 2002. The local settlements in the autumn did not weaken the impression of a tight labour market.

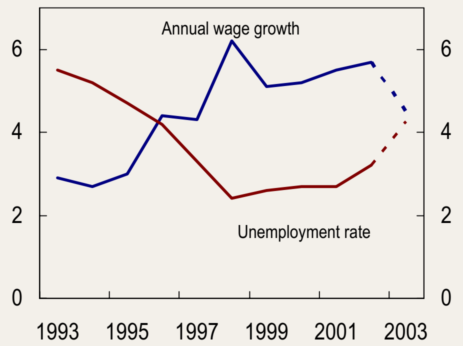
The wage settlement in 2003 appears to be more moderate than assumed in the March report. In last year's wage settlement, substantial pay increases were agreed with effect from this year. The carry-over into 2003 was therefore unusually high. Several of the industry-level settlements have resulted in zero pay increases. The increases that were awarded were generally low. The negotiating results probably reflected a tight monetary policy and the recent increase in unemployment. Against the background of weak labour market developments and falling profits in many business sectors, wage drift is expected to be low this year. This is predicated on the assumption that the recent years' tendency of higher wage growth for white-collar workers in relation to other workers will not continue. For the economy as a whole, annual wage growth is projected at 4½% in 2003, a decline of a little more than one percentage point on the previous year.

*Cyclical downturn and intensified competition keep inflation at a low level*

Weak economic developments and intensified competition make it more difficult for many enterprises to pass on higher costs to prices. With falling demand in the business sector and deteriorating conditions in export markets, enterprises are seeking to avoid further reductions in demand. Many enterprises are taking steps to improve profitability by cutting costs rather than increasing prices. When competition intensifies, this tendency is reinforced. This seems to be the case in many industries that were previously sheltered from foreign competition or that featured few operators with considerable market power. The airline industry and telecommunications sector are examples of industries where competition has intensified as a result of deregulation and new entries in recent years. The rate of increase in air fares receded considerable when the airline Norwegian started operations (see Chart 4.6).

Wide price differences across countries may also have intensified competition. During the upturn in Norway, domestic inflation was higher than among many of our trading partners. Moderating wage growth will have a dampening impact on domestic inflation, which has been

**Chart 4.5** Annual wage growth[1)] and unemployment rate[2)]. 1993-2003. Per cent



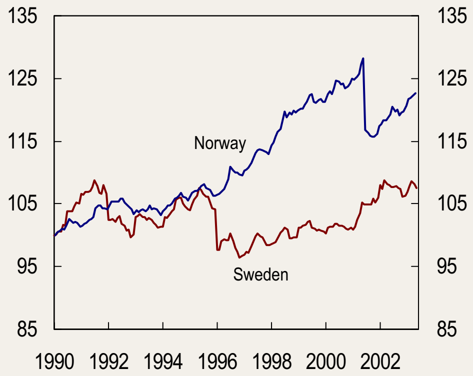

[1)] Average for all groups. Including costs of additional vacation days
[2)] Registered unemployed as a percentage of the labour force

Sources: TRCIS, Directorate of Labour and Norges Bank

**Chart 4.6** Air fares. Adjusted for taxes. 12-month rise. Jan 01 - May 03. Per cent


Sources: Statistics Norway and Norges Bank

**Chart 4.7** Consumer prices for food and non-alcoholic beverages in Norway and Sweden. Not adjusted for taxes. Index. Jan 1990 = 100



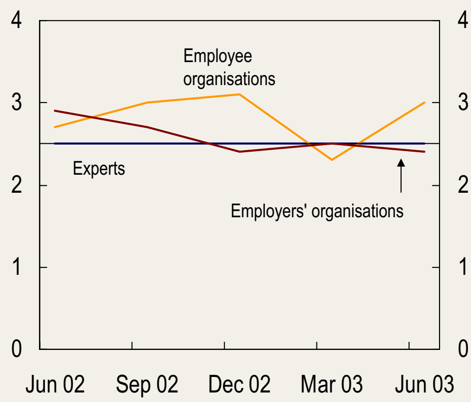

Sources: EcoWin, Statistics Sweden and Statistics Norway higher than among many of our trading partners. This led to a relatively wide price gap between Norway and other countries for a number of goods and services that were previously regarded as sheltered, such as food and travel services (see Chart 4.7). Border trade has expanded sharply in recent years and now includes a wider range of goods and services than previously. Some examples of this are furniture, cars, holiday trips and other types of services from countries such as Sweden. A steady improvement in the framework conditions for cross-border trade is also exerting downward pressure on the rise in prices for internationally tradable goods and services. Another effect of the price gap is that a rising number of foreign operators with lower operating costs have discovered the profit potential in Norway. For example, international low-fare airlines and low-price food chains have established activities in Norway. In the long run, free competition will contribute to narrowing the price gap.



**Chart 4.8** Expected consumer price inflation in 2 years


Source: TNS Gallup

**Chart 4.9** Expected consumer price inflation in 5 years




Source: TNS Gallup

### *Long-term inflation expectations do not deviate substantially from the inflation target*

On balance, inflation will remain low in the near term as a result of low external inflationary pressures, continued effects of the krone appreciation last year, moderating wage growth between last year and this year, output developments and intensified competition. When inflation deviates from the inflation target, there is a risk that confidence in the nominal anchor will weaken. On the basis of the information provided by expectations surveys and long-term interest rates, there are signs that inflation is expected to be lower over the next year. In the medium term, however, there are no clear signs that inflation expectations deviate considerably from the inflation target of 2½% even though underlying inflation is now low.

TNS Gallup conducts a quarterly survey of inflation expectations. Participants are surveyed about inflation expectations one year ahead, two years ahead and five years ahead. Respondents are divided into different groups: experts, employee/employer organisations and households. In the most recent survey, conducted in the second quarter of this year, inflation expectations were somewhat lower than the inflation target of 2½% at the two-year horizon (see Chart 4.8). Over the last year, experts and employee organisations have lowered their two-year ahead inflation expectations. However, these groups' inflation expectations five years ahead have remained fairly stable around the inflation target (see Chart 4.9). Employee organisations' inflation expectations seem to vary fairly widely from one survey to the next. Households report relatively high inflation expectations both one and two years ahead. Inflation expectations range between 3 and 4%.

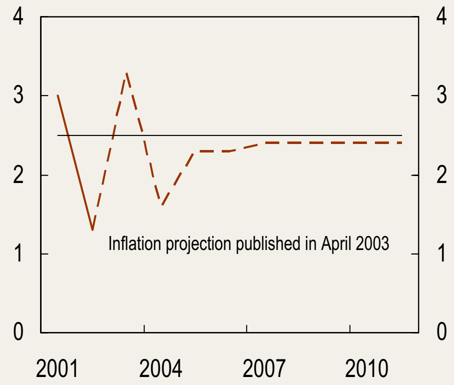
Information concerning inflation expectations is also provided by the US company Consensus Economics Inc. They conduct a monthly survey of analysts concerning expected inflation at various points in time. Twice a year, in April and October, the participants are surveyed about long-term inflation expectations. In April, the average forecast for inflation up to ten years ahead was 2.4%, i.e. a decrease of 0.1 percentage point compared with the long-term forecasts in October (see Chart 4.10). In the June survey, the average forecast for inflation in 2004 was 1.4%, down from 1.5% in May. The low forecast must be seen in connection with the abnormal path of electricity prices which will affect CPI inflation this year and next.

Developments in long-term interest rates can also provide information about inflation expectations. Using the yield curve at various maturities, implied forward rates can be calculated and provide an indication of market expectations concerning developments in short-term rates. This can be used to derive a measure of inflation expectations in Norway compared with other countries. In the long term, forward rate differentials between Norway and other countries should reflect the expected inflation differential between Norway and other countries. The forward rate differential against our main trading partners up to ten years ahead is about ½ percentage point (see Chart 1.15). This differential corresponds to the difference between the inflation targets in Norway and trading partners. If, in addition, we take into account a risk premium on NOK holdings, the forward rate differential has been somewhat smaller than implied by the monetary policy objectives. The forward rate estimates are uncertain, however, and in periods may be influenced by extraordinary supply and demand conditions in the bond market.

## 4.2 Inflation outlook with a sight deposit rate of 4% and constant exchange rate

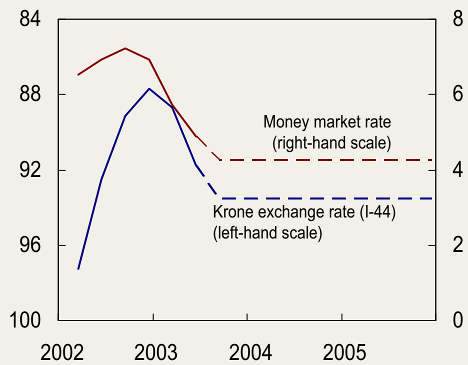
Monetary policy has been eased considerably over the last six months. Norges Bank's sight deposit rate was reduced by a total of 2 percentage points from December to April of this year. This brought the sight deposit rate down to 5% by end-April. Norges Bank has signalled a further reduction. The krone exchange rate has depreciated in pace with a lower interest rate differential between Norway and other countries. The import-weighted krone exchange rate has depreciated by nearly 9% since its strongest level in January this year. The relaxation of monetary policy will eventually contribute to somewhat higher inflation. In the short term, the effect will be channelled in particular through the depreciation of the krone. In the somewhat longer run, the interest rate reductions will also have an impact as a result of the positive effects on demand in Norway. At the

**Chart 4.10** Consumer price inflation. Historical developments and market participants' projections for future consumer price inflation according to a survey by Consensus Economics. Per cent




Sources: Consensus Economics and Statistics Norway

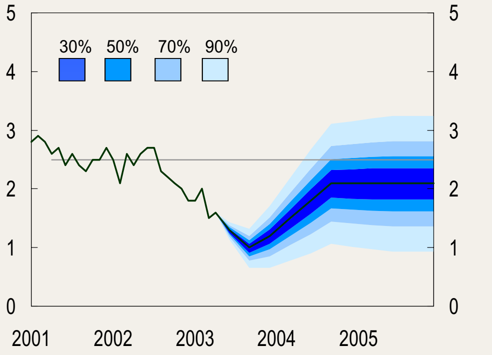
**Chart 4.11** Monetary policy assumptions. Sight deposit rate of 4 per cent and import-weighted krone exchange rate equal to the average for 3/6-19/6[1)] (I-44=93.5)




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

Source: Norges Bank

**Chart 4.12** Projections and uncertainty for CPI-ATE with a sight deposit rate of 4 per cent and import-weighted krone exchange rate equal to the average for 3/6-19/6 (I-44= 93.5). 12-month growth. Per cent




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

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

Sources: Statistics Norway and Norges Bank

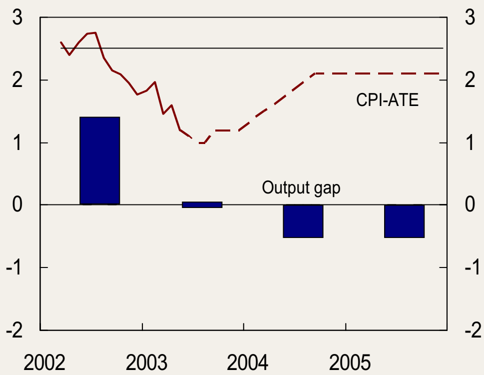
**Table 4.1** Projections with sight deposit rate of 4 per cent and krone exchange rate equal to average for 3-19 June. Percentage change from previous year.

| | 2003 | 2004 | 2005 |
|---|---|---|---|
| CPI-ATE[1)] | 1¼ | 1¾ | 2 |
| CPI[1)] | 2¼ | 1¼ | 2 |
| Annual wages | 4½ | 4 | 4½ |
| Registered unemployment (rate) | 4¼ | 4½ | 4½ |
| Employment | -¾ | 0 | ½ |
| Mainland demand | 1 | 2½ | 3¼ |
| Mainland GDP | 1 | 2 | 2½ |
| Output gap | 0 | -½ | -½ |

[1)] Not adjusted for the introduction of maximum prices for day-care places

Source: Norges Bank

**Chart 4.13** Projected CPI-ATE and output gap[1)] with a sight deposit rate of 4 per cent and import-weighted krone exchange rate equal to the average for 3/6-19/6 (I-44= 93.5). Per cent




[1)] The output gap is a measure of the difference between actual and trend output. See box in IR 1/03

Sources: Statistics Norway and Norges Bank

same time, international growth is expected to normalise gradually and external inflationary impulses to pick up somewhat, although these impulses will probably remain subdued.

In a speech given on 3 June this year, the central bank governor signalled that the period of monetary policy easing would continue, and stated that Norges Bank's Executive Board will also carefully consider changing the interest rate in larger steps. The krone depreciated fairly markedly following the speech on 3 June. This must be seen in connection with market expectations of a sharper reduction in interest rates than expected prior to the speech. We have therefore looked at a possible path for inflation ahead based on a sight deposit rate of 4% and a constant exchange rate equal to the average from 3-19 June.

Given these assumptions, inflation is expected to edge up but remain below target during the entire projection period. The depreciation of the krone this year will lead to a gradual reversal of the price effects of the previous appreciation. This will push up inflation from the current level. The overall effects of past movements in the krone are estimated to be approximately neutral as from the summer of next year. Growth in the Norwegian economy is projected to pick up gradually, but unemployment is still expected to be higher than the current level. Combined with lower inflation expectations, this will have a dampening impact on wage growth compared with recent years. Wage growth is projected to slow further next year to 4% and move up to 4½% in 2005. With stronger growth in domestic demand, mainland GDP is projected to expand by 2% next year, which is somewhat lower than trend growth of around 2½% (see Table 4.1). In 2005, growth may move up to trend growth. The output gap, as measured here, will thereby remain negative until the end of 2005.

With wage growth of 4-4½%, a neutral contribution to inflation from the exchange rate, moderate external inflationary impulses and continued capacity slack in the economy, inflation will not reach the inflation target of 2½%. With a sight deposit rate of 4% and a constant exchange rate equal to the average for the past three weeks, CPI-ATE inflation is projected at a good 2% two years ahead (see Chart 4.12).

The monetary policy easing since December has stimulated activity in the Norwegian economy, particularly via private consumption. This is partly because of the attendant reduction in interest expenses and partly as a result of higher house prices, higher real wealth and lower saving. In addition, a lower interest rate tends to boost optimism among households. With a sight deposit rate of 4%, growth in private consumption may reach 3½% in 2004 and 2005. Moreover, the depreciation of the krone and the cost reductions that are now being implemented will gradually improve profitability in the internationally exposed sector. Demand for goods and services from sub-contractors will pick up. In conjunction with lower interest rates and higher consumer spending, this may stimulate business investment. Labour demand may gradually pick up. Employment growth is expected to move up in the first half of 2004. In 2005, employment is expected to grow in line with the growth in the labour force implied by demographic trends. The increase in unemployment will gradually come to a halt. Registered unemployment may stabilise at around 4½% next year.

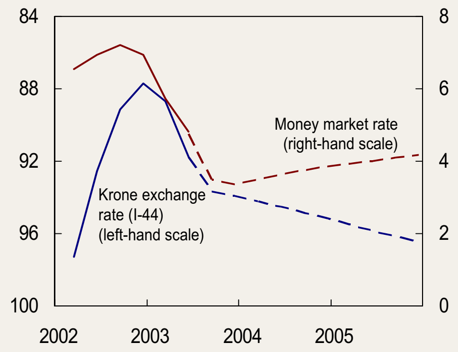
## 4.3 Inflation outlook given market interest rate expectations and a weaker exchange rate

Expectations concerning monetary policy easing exceed the assumption underlying the projections in Section 4.2. Forward rates reflect expectations of a reduction in Norges Bank's key rate down towards 3% at the end of 2003, and some increase thereafter. In the NOK forward market, this interest rate path implies a gradual depreciation of the krone of about 3% from the current level in the period to the end of 2005 (see Chart 4.14)

Our projections indicate that a monetary policy easing of this order will bring inflation two years ahead up to the inflation target of 2½% (see Chart 4.15). Several forces may push up inflation to a level that is higher than in the scenario with a constant sight deposit rate of 4% and a constant exchange rate. A further weakening of the krone implies that the exchange rate will gradually exert upward pressure on inflation. At the same time, an interest rate reduction totalling 4 percentage points over one year, as implied by market expectations, will generate a considerable stimulus to activity in the Norwegian economy. This may also lead to higher price inflation than in the path described in Section 4.2. A further easing of monetary policy may restrain the decline in wage growth from the level prevailing in recent years. Moreover, higher demand may influence margin-setting in the enterprise sector.

In particular, demand for goods and services that are supplied to households may increase. Interest rate reductions of this magnitude will provide a marked stimulus to private consumption. Consumption growth could exceed 4% in both 2004 and 2005. With consumption growth at this level, investment activity may pick up. At the same time, low interest rates entail lower financing costs, which will also boost investment. Moreover, a continued depreciation of the krone will improve manufacturing profitability and restrain downscaling. Demand for goods and services supplied by sub-contractors will receive an additional impetus.

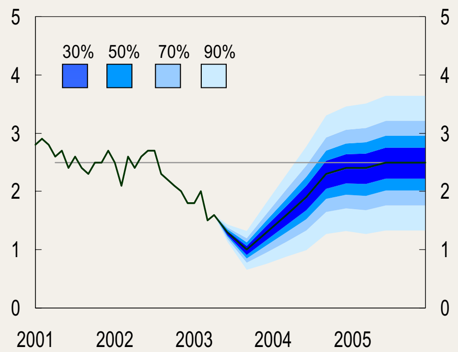
**Chart 4.14** Interest rate in line with forward interest rate and gradual exchange rate depreciation of 3 per cent[1)]




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

Source: Norges Bank

**Chart 4.15** Projections and uncertainty for CPI-ATE with forward interest rate and gradual exchange rate depreciation of 3 per cent. 12-month rise. Per cent




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

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

Sources: Statistics Norway and Norges Bank

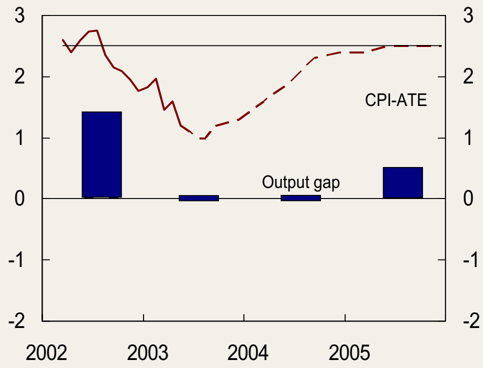
**Table 4.2** Projections based on forward interest rate and forward exchange rate. Percentage change from previous year.

| | 2003 | 2004 | 2005 |
|---|---|---|---|
| CPI-ATE[1)] | 1¼ | 2 | 2½ |
| CPI[1)] | 2¼ | 1½ | 2½ |
| Annual wages | 4½ | 4½ | 5 |
| Registered unemployment (rate) | 4¼ | 4½ | 4¼ |
| Employment | -¾ | ¼ | ¾ |
| Mainland demand | 1¼ | 3½ | 3¾ |
| Mainland GDP | 1 | 2½ | 3 |
| Output gap | 0 | 0 | ½ |

[1)] Not adjusted for the introduction of maximum prices for day-care places

Source: Norges Bank

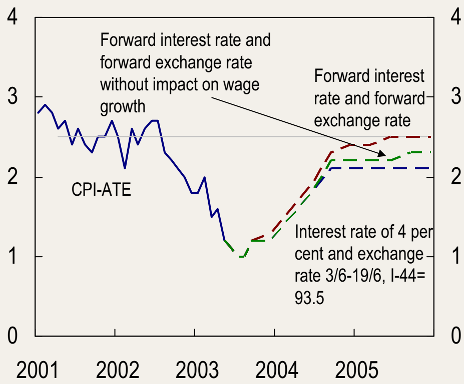
**Chart 4.16** Projected CPI-ATE and output gap[1)] with forward interest rate and gradual exchange rate depreciation of 3 per cent. Per cent




[1)] The output gap is a measure of the difference between actual and trend output. See box in IR 1/03

Sources: Statistics Norway and Norges Bank

**Chart 4.17** Projections for CPI-ATE based on different interest rate and exchange rate assumptions. 12-month rise. Per cent




Sources: Statistics Norway and Norges Bank

**Chart 4.18** Phillips curve. 2-year average


[1)] Estimates based on a sight deposit rate of 4 per cent and a constant krone exchange rate

Source: Norges Bank

As a result, employment is expected to show renewed growth next year. In 2005, employment is projected to grow at a somewhat faster pace than implied by demographic trends. This may result in a moderate fall in unemployment. Towards the end of the period, growth in the Norwegian economy may be higher than trend growth (see Table 4.2). The output gap is projected to remain at around zero this year and next and be slightly positive in 2005 (see Chart 4.16)

Historically, lower unemployment leads to higher wage growth. If this holds, a monetary policy easing in line with market expectations is sufficient for CPI-ATE inflation to be on target two years ahead. On the other hand, if the expected easing of monetary conditions does not translate into higher wage growth, inflation may remain somewhat below target also two years ahead (see Chart 4.17).

## 4.4 Risks to the inflation outlook

According to Norges Bank's assessment, there are two main risks to the projections presented in this *Inflation Report*. On the one hand, the assumptions imply considerable and rapid changes in the monetary policy stance. In the scenarios presented, the sight deposit rate is reduced by 3-4 percentage points over a relatively short period. We have little experience concerning the effects of such considerable changes and there is a risk that this will sustain the imbalances that have marked the Norwegian economy.

Growth in household borrowing, which has remained high for a long time, may accelerate again. Many households may adjust their debt position to an interest rate level that is considerably lower than normal. Moreover, there is a risk that this monetary policy impulse will push up wage growth again in spite of somewhat higher unemployment. Our projections are based on a continued increase in unemployment, which will restrain wage growth in the period ahead, in line with the historical relationship between labour market developments and wage growth (see Chart 4.18). The main wage settlement next year is therefore assumed to be moderate. However, there has been a tendency in recent years for a larger portion of pay increases to be agreed in the first year of the two-year period covered by the main agreement. It cannot be ruled out that the low pay increases awarded in this year's interim settlement is the result of a one-time effort to prevent a further deterioration in competitiveness. In addition, coordination on the employee side and the absence of balloting have made it easier to achieve a moderate settlement. The low pay increases and zero settlement in many industries may therefore entail a risk of a renewed pick-up in wage growth already next year.

On the other hand, the global outlook is still uncertain.

We assume that the expansionary economic policy will gradually lead to higher growth. Over the last year, however, most observers have been surprised by the duration of the international economic downturn. There is a risk that we are underestimating the effects of the structural imbalances in the global economy. If this is the case, it may take a long time for growth to normalise. Inflation may remain low in many countries. International interest rates may then remain low for many years ahead. The historically low bond yields are a reflection of this risk.

# Boxes

# Overview of boxes in Inflation Reports 2000-2003

**2 / 2003:**
*Low consumer price inflation*
*Evaluation of inflation reports in inflation-targeting countries*
*Why does household debt growth remain high?*
*Levels of real capital in enterprises still too high?*

**1 / 2003:**
*Factors behind developments in the exchange rate (*)*
*The output gap*
*Imported price inflation and the exchange rate – the UK experience*
*Evaluation of Norges Bank's projections for 2001 and 2002*

**3 / 2002:**
*The Scandinavia model of inflation – revisited*

**2 / 2002:**
*Why has the krone exchange rate appreciated*
*New expectations survey*
*Why have clothing prices fallen?*
*The impact of higher oil prices*
*How does the krone exchange rate influence the CPI? (*)*

**1 / 2002:**
*Evaluation of Norges Bank's projections for 2000.*
*Wage growth (*)*
*Have Norges Bank's interest rate decisions been anticipated?*

**3 / 2001:**
*Consumer price inflation adjusted for changes in real taxes and energy prices*
*Why has the rise in prices for imported consumer goods been low?*
*Uncertain oil prices and pressure on OPEC*
*Growth potential of the Norwegian economy*

**2 / 2001:**
*New regulation on monetary policy*
*Underlying inflation*
*Assessment of risks to the inflation projection*
*Effects of a sharper slowdown in the global economy*

**1 / 2001:**
*What are the effects on Europe of a cyclical downturn in the US?*
*The impact of interest rates on private consumption (*)*

**4 / 2000:**
*Price developments in Norway, Sweden and the euro area*
*Effects of a change in interest rates (*)*
*Uncertainty associated with the inflation projections*
*Evaluation of Norges Bank's projections for 1999*

**3 / 2000:**
*Low price inflation for imported consumer goods*
*Which factors influence the krone exchange rate?*
*Interest rates and expectations*

**2 / 2000:**
*Consumer confidence indicator*
*Underlying consumer price inflation*
*Continued low price and cost inflation in the euro area*
*Household net investments in financial assets (net lending)*

**1 / 2000:**
*New aspects of economic developments*
*Output gap in the years ahead*

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

# Evaluation of inflation reports in inflation-targeting countries

In most countries in which monetary policy is oriented towards low and stable inflation, inflation reports or similar publications are an important part of the central bank's communication. In its *Inflation Report*, published three times a year, Norges Bank provides an account of the assessments and analyses that lie behind the conduct of monetary policy. But what is a good inflation report? Naturally, quality control will require a comparison between different countries.

On assignment from Norges Bank, Andrea Fracasso, Hans Genberg and Charles Wyplosz of the Graduate Institute of International Studies in Geneva have written the report "How Do Central Banks Write?"[1]. After comparing and evaluating the inflation reports of 20 inflation-targeting countries, the authors propose a set of criteria specifying what a good inflation report should contain.

## *What should a good inflation report contain?*

Fracasso, Genberg and Wyplosz assume initially that inflation targeting requires transparency, and that central banks must be accountable for their assessments. According to the authors, a good inflation report contains:

1) an analysis of the economic situation
2) a forecast of inflation developments, and the uncertainty associated with the forecast
3) forecasts for key macroeconomic variables
4) an explanation of how the central bank assesses current evidence and forecasts in relation to previous analyses

In addition, an inflation report should:

- contain a summary
- show continuity: the different parts of the inflation reports, such as the summary, tables and inflation forecast should be comparable from one report to the next, and be in the same place each time, so it is easy for the reader to find them.
- not be too long
- contain boxes in which special topics and new ideas are discussed

## *Evaluation inflation reports*

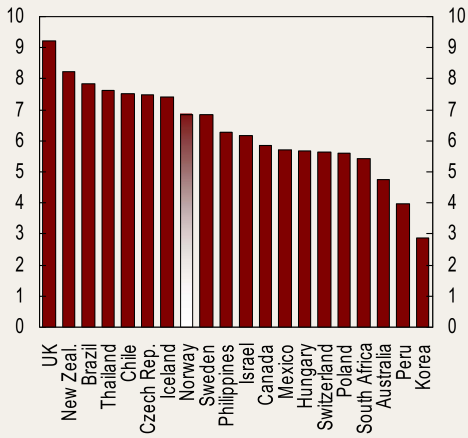
Inflation Reports from 20 countries have been evaluated in the survey. Five postgraduate students have reviewed one issue of the inflation report from each central bank and answered 85 questions on each report. The questions concerned the following:

- quality of information
- volume of information
- how clearly the assumptions concerning the macroeconomic variables are communicated
- how simple it is to find information on who makes decisions, when the decisions are made and the policy objectives
- how horizon, uncertainty, forecast errors and assumptions about the interest rate and exchange rate are presented
- how comprehensive and readable the summary is

Chart 1 shows the ranking of the various countries according to an overall evaluation. Overall, the Norwegian inflation report is rated the 8th best of the 20 inflation reports. The Norwegian report scored high because it seemed credible, gave insight into the central bank's expertise and provided sound information. It scored lower on discussions of previous monetary policy decisions and accounts of any differences of opinion or considerations taken into account in the Monetary Policy Committee.

[1] The report is published by Center for Economic Policy Research (CEPR) in London, which has previously published, among others, "How do central banks talk?" (CEPR 2001). The report is available on CEPR's website: www.cepr.org

Chart 1 Overall evaluation (1 = poor, 10 = good)




Source: "How Do Central Banks Write?"

Fracasso, Genberg and Wyplosz examine the relationship between the quality of the inflation report and the predictability of monetary policy, measured by the impact on market rates around the monetary policy meetings. They find a positive correlation between the quality of the inflation report and the degree of predictability of monetary policy. However, there are also examples of countries which have a predictable monetary policy, but whose inflation reports are not regarded as being of high quality. One possible explanation for this, according to the authors, is that the central banks in these countries communicate through media other than the inflation report.

### *Changes in Norges Bank's Inflation Report*

In the light of Fracasso, Genberg and Wyplosz's report, we have changed our *Inflation Report* in certain respects. Since *Inflation Report* 2/2002 (the report evaluated), we have added a summary of the report, a section on the conduct of monetary policy since the last report, and the strategy document which formed the basis for the previous period. We have also included a description of the decision-making process in the introduction to the report. The annexes have been expanded to provide greater insight into our choice of assumptions. We have also included a list of boxes published in previous reports, highlighting those that may be of interest over the longer term. In our view, these changes have helped our *Inflation Report* to provide the public with a better and broader basis for evaluating Norges Bank's conduct of monetary policy.

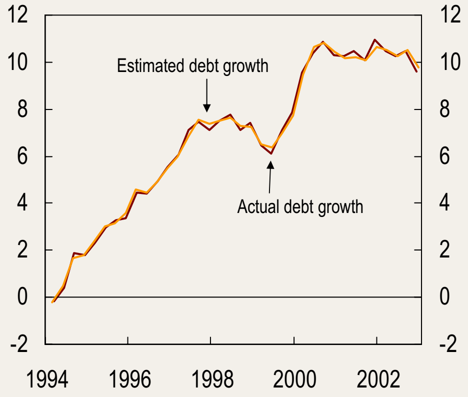
# Why does household debt growth remain high?

Household debt growth is high, with annual growth of over 10% since 2000. Debt growth has remained at a high level despite a weaker trend in the Norwegian economy recently. Norges Bank's analyses show that developments in the housing market can account for most of the growth in household debt. Although house prices have now levelled off or are declining slightly, the sharp price rise around 2000 is contributing to continued high debt growth (see Chart 3.8 in this report).

The value of dwellings constitutes by far the most important part of household wealth. When house prices climb sharply, as they did in the period 1993 to 2002, households' wealth initially increases at a higher pace than their debt. In due course, this will lead to higher debt growth through a number of channels. Some households may make use of the increase in mortgage value to raise loans for consumption and investment. However, the most important effect is related to the purchase and sale of dwellings. Households buying a dwelling for the first time or buying a more expensive home will normally finance a substantial portion of the purchase sum or the difference between the price obtained for their old dwelling and the price of the new one by means of a loan. The size of the loan required increases when house prices rise. Assets are released for households buying a less expensive home or exiting the housing market. However, the debt they have to pay off is not affected by the fact that the dwelling gained in value while they owned it. Higher house prices and turnover therefore contribute to increasing households' overall loan requirements. However, there is a long time lag associated with the effect of house prices on gross debt. This is because only a small share of the total stock of dwellings is sold at any time. Even if house prices stabilise following a sharp rise in prices, there will be a long period during which houses change hands at a higher price level than the last time they were sold. The rise in house prices over the past ten years, combined with continued high turnover, may therefore contribute to debt growth for a long period. Debt will also increase when new dwellings are built and bought.

In order to shed light on these relationships, Norges Bank has estimated a model for household gross debt (see annex to this box). The model takes account of the effects of household housing wealth (price and volume), the number of house sales, the real rate of interest, developments in the unemployment rate, growth in overall employment income and number of students and pupils aged 20-24 as a share of the total population. The analysis was conducted using quarterly data from the first quarter of 1994 to the fourth quarter of 2002. Chart 1 shows that the model explains debt growth well.

**Chart 1** Actual and estimated household gross debt. Percentage change over 4 quarters




Source: Norges Bank

In the model, household gross debt increases by 1% in the long term if house prices increase permanently by 1% and the other factors remain unchanged. About ¾ of the effect has worn off after 5 years, and 90% after 8-9 years. A 1 percentage point rise in the real interest rate will reduce debt by 0.4% after one year, and by 1.7% in the long term for given values of the other explanatory variables in the model. A change in the interest rate will also affect debt growth indirectly via a number of the other variables in the model. Household gross debt correlates positively with the share of students as mentioned above. It reflects demand for study loans, and the fact that persons with higher education normally have higher housing loans than those without higher education (all else being equal). In the short term, higher unemployment results in slower debt growth, whereas higher wage growth pushes up debt growth.

Table 1 decomposes the growth in household gross debt from 2001 to 2002. The decomposition is based on the econometric model and historical developments in the explanatory factors. The estimates show that the debt growth of 10¼% can be largely ascribed to the rise in house prices. Since the rise in house prices was appreciably lower than debt growth in 2001 and 2002, this illustrates the fact that higher house prices influence debt with a considerable time lag. The sharp rise in house prices through the 1990s, and particularly the 25-30% increase from 1998 to 2000, is contributing to holding up debt growth. Growth in house sales and a higher housing stock also contributed positively to debt growth in 2002. The other explanatory factors made little contribution to debt growth last year.

The time lag between house price developments and debt growth is also illustrated in Chart 2. The chart shows a projection for debt growth assuming that house prices remain constant in the years ahead. Unemployment and employment income are assumed to develop as shown in the scenario with a constant interest rate and krone exchange rate in this report (see section 4.2). The other explanatory factors are kept unchanged at the level of the fourth quarter of 2002. The projection indicates that it will take three years for debt growth to be halved if house prices should remain constant in the period ahead (given the other assumptions made here). The analysis that is presented here thus indicates that developments in house prices may be a leading indicator of household demand for loans. However, the analysis says nothing about the potential macroeconomic imbalances that result from a high build-up of household debt.

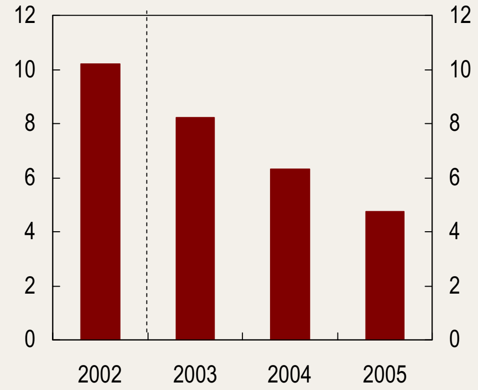


**Table 1.** Contributions to household debt growth in 2002. Percentage points

| | |
|---|---|
| Housing market factors | 11 |
| House prices | 9 |
| Number of house sales | ¾ |
| Value of housing stock in constant prices | 1¼ |
| Other factors | -¾ |
| Real interest rate | 0 |
| Share of students | ¼ |
| Employment income | 0 |
| Unemployment | -¼ |
| Unspecified factors | -¾ |
| Household debt growth | 10¼ |

The debt series used consists of foreign debt, government loans and loans from financial and non-financial enterprises. Household debt in C2 consists of loan debt from financial enterprises and the Public Sector Service Pension Fund and household bond debt.

**Chart 2** Projection of household gross debt. Percentage change from previous year.




Source: Norges Bank

## Technical annex: Estimation results

The model discussed above is defined as follows:

$$\Delta\, debt_t = \underset{(5.83)}{0.066}\, \Delta_2(houseprice + housevolume)_t - \underset{(13.60)}{0.087}\, (debt - houseprice - housevolume)_{t-1}$$

$$+ \underset{(5.51)}{0.017}\, housesales_{t-1} - \underset{(3.47)}{0.147}\, REAL\ INTEREST_t - \underset{(4.07)}{0.017}\, \Delta unemployment_{t-1}$$

$$+ \underset{(3.09)}{0.017}\, \Delta empincome_{t-1} + \underset{(4.62)}{0.037}\, studentshare_{t-1} - \underset{(3.38)}{0.270}\, \Delta debt_{t-1}$$

$$- \underset{(0.89)}{0.036} - \underset{(9.22)}{0.016}\, D1_t$$

Estimation period: 1994 Q1 - 2002 Q4 (quarterly figures).

Absolute t values are given in brackets under the estimates.
$\Delta$ is a difference operator: $\Delta X_t = (X_t - X_{t-1})$, $\Delta_2 X_t = (X_t - X_{t-2})$.

The variables are defined as follows:

| | |
|---|---|
| *debt* | = Household gross debt (Source: Norges Bank, NB) |
| *houseprice* | = House price index (Source: Statistics Norway) |
| *housevolume* | = Value of housing stock measured in constant prices (Source: Statistics Norway) |
| *housesales* | = Number of house sales (Sources: Statistics Norway and Norwegian Federation of Cooperative Housing Associations) |
| *REALINTEREST* | = $INTERESTRATE \cdot (1 - \tau) - \pi^e$ |
| *INTERESTRATE* | = Banks' average lending rate (Source: NB) |
| $\tau$ | = 0.28 = Tax deduction for interest on debt |
| $\pi^e$ | = 0.025 = Forecast for expected inflation rate (equivalent to inflation target of 2.5%) |
| *unemployment* | = Unemployment rate (LFS) (Source: Statistics Norway) |
| *empincome* | = Total employment income in the economy (Source: Statistics Norway) |
| *studentshare* | = No. of students aged 20-24 years as a share of the total pop. (weighted average over five quarters) (Source: Statistics Norway) |
| *D1* | = Variable which is equal to 1 in first quarter, otherwise 0. |

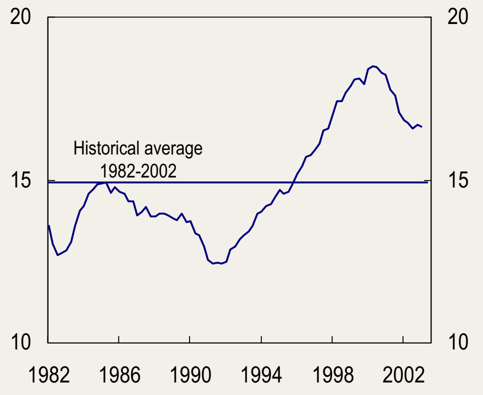
Small letters indicate that the variable is measured on a logarithmic scale.

# Levels of real capital in enterprises still too high?

In the last half of the 1990s, investment growth increased in a number of countries, driven partly by strong growth in the equity market and falling prices for capital goods in the ICT sector. Towards the end of the decade, this trend was reversed, and the fall in investment has been an important factor behind the economic downturn since 2000. Chart 1 shows that investment in the US decreased more this time than has been the case during previous downturns in the post-war period, in spite of a more moderate slow-down in GDP growth than earlier.

The sharp decline in investment may be a result of excessive rates of investment during the upturn due to unrealistic expectations concerning future earnings. Such developments bear similarities to an investment-driven business cycle, as described by the Austrian School.[1] According to this theory, a recession has its origin in a previous cyclical upturn, characterised by interest rates that are too low and strong credit-driven investment growth. When the return on capital proves to be lower than expected, actual capital stock will exceed the desired level and a capital overhang will develop. A correction will occur, and investment will decline. A number of factors indicate that among others the US has been in this situation. For example, Chart 2 shows that private investments

**Chart 2** Private investment in the US, excluding housing. As a percentage of GDP. Volume

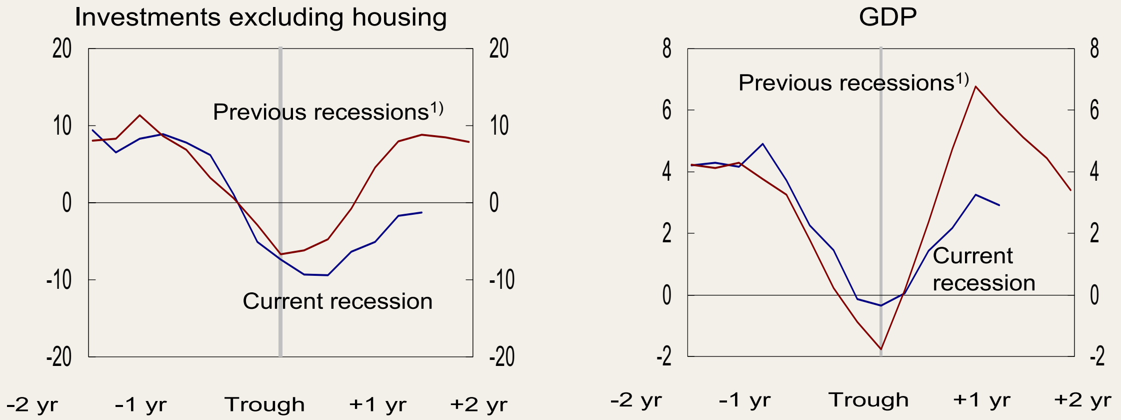



Sources: EcoWin, NBER and Norges Bank

(excluding dwellings) as a share of GDP increased by 6 percentage points from the trough of the business cycle in 1991 to its peak in 2000. In 2000, the share was over 3 percentage points higher than the historical average.

As a response to the downturn and diminishing inflationary pressures, the key rates were reduced in several countries. In the US, short-term interest rates have fallen by about 5 percentage points since 2000. Long-term interest rates have also fallen sharply. In addition, fiscal policy has been expansionary, partic-

**Chart 1** US GDP and investment.
Growth on same quarter previous year. Two years before and two years after the trough of the economic cycle.




1) Non-weighted average over the last 5 recessions

Sources: EcoWin, NBER and Norges Bank

1 See for example Friedrich Hayek's works from the 1930s.
For a good overview, see IMF WP 2/2002

ularly in the US, but also in other countries. So far, this has not resulted in an upturn in investment. In the US, investment has only very recently shown signs of levelling off after the decline of the past two years. This experience is consistent with the Austrian School theory about the use of demand-stimulating instruments: Expansionary monetary and fiscal policies cannot prevent a correction in the capital stock, only curb its effects by prolonging the time taken for stock to adjust.

Developments in investment in the period ahead will therefore to a considerable extent be determined by the size of this capital overhang. Measured by the expectations of leading market participants, investment growth is expected to pick up towards the end of this year and further next year.[2] This indicates that participants no longer believe the capital overhang will curb investment growth. The OECD[3] points out that investment in IT and telecommunications has a rapid rate of depreciation, requiring the capital stock to be replaced relatively frequently.

A number of factors suggest, however, that a substantial capital overhang still exists. In the US, investment as a share of GDP is still above its historical level, although the share has fallen considerably since peaking. In addition, there is still substantial excess capacity, particularly in manufacturing. This is reflected in a very low underlying rise in producer prices. Because of insufficient data, the situation in other industries is more difficult to assess. Overall, there is considerable uncertainty about the capital overhang. Investment is therefore an important element of uncertainty in growth projections.

[2] Consensus Forecasts for June 2003
[3] OECD Economic Outlook April 2003

# Annex I
# Regional network

# Norges Bank's regional network

Norges Bank's regional network was established in autumn 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 main basis for our perception 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 March Inflation Report

In the two contact rounds since the March *Inflation Report*, discussions were held with a total of approximately 450 contacts in the regional network. A summary for Norway as a whole and summaries for each region from the first of these contact rounds were presented on Norges Bank's website following the monetary policy meeting of 30 April. Summaries from the last round of contacts will be available on our website on 26 June (English version on 30 June). The main points below 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:

- Production and demand in the export industry with sub-contractors are showing signs of levelling off at a low level. Niche-oriented enterprises are winning market shares, however, despite high cost inflation.
- A very low level of exploration activity and development of new oil and gas fields in the North Sea is resulting in few new contracts to offshore-related businesses, but a number of contracts related to operations support and maintenance of existing installations is limiting the decline.
- Activity in the building and construction industry appears to be declining somewhat after a long period of high activity. New orders are falling. Regional differences are fairly substantial. The decline is most pronounced and became evident first in Eastern Norway. This is particularly true in the commercial building sector where overcapacity is increasing.
- Household demand is rising moderately. The retail trade sector is experiencing solid growth in demand for consumer goods, whereas demand for consumer durables is falling slightly. Demand has levelled off for companies supplying services to households.
- For companies supplying services to the business sector, demand is still falling, although not as sharply as in the last period,
- Growth in demand and low purchase prices are resulting in solid profitability and increased employment in the retail trade sector. Other private industry sectors continue to reduce employment in an attempt to maintain capacity utilisation and profitability.
- There are reports of falling employment in local government and the health sector.
- The supply of qualified labour is better than normal. The labour supply has increased substantially in all business sectors since the beginning of this year and represents no limitation to expansion.
- Fixed investment will probably be lower this year than in 2002. Investment is mainly motivated by the need to improve efficiency, whereas few companies are investing in increased capacity.
- Wage growth is estimated to be considerably lower in 2003 than in 2002. Squeezed profitability in many industries is expected to result in low wage drift.

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

7. himmel AS
3M Norge AS
ABB Flexible Automation
Adresseavisen ASA
Adviso AS
Aetat Elverum
Aetat Sogn og Fjordane
Aetat Sør-Trøndelag
Aetat Vest-Agder
AF Gruppen ASA
Air Products AS
Aker Brattvåg AS
Aker Gaard Gartneri
Aker Kværner
Aker Universitetssykehus
Aker Verdal
Akershus fylkeskommune
Akershus Universitetssykehus
Albert E Olsen AS
Alexandra Hotel AS
Alsvåg Plater AS
Amek AS
Amfi Drift AS
Apotekene Vest HF
Arntzen De Besche Advokatfirma AS
Artic Seafood Holding AS
Asker kommune
Asko Agder AS
Atlantic Auto AS
Aukra Midsund Offshore AS
Avinor AS
Baker Hughes Inteq
Bakers AS
Bakke El-Installasjon
Ballstad Slip AS
Barel AS
Barneland
Bennett BTI Nordic Norge AS
Berg Hansen Reisebyrå Bodø
Bilia Last og Buss AS
BioMar AS
Bjerke & Luther AS
Bjørn Bygg AS
BKK
Black Design AS
Block Bygg og Material
Block Berge Bygg AS
Block Watne AS
Bodø kommune
Bohus Møbelland Ålesund AS
Bomøbler AS
Bravida Nord AS, avd. Svolvær
Bravida Norge ASA
Bravida Sørøst AS
Bryggen gastronomi AS
Brødr. Røsand AS
Brødrene Flaarønning AS
Brødrene Pedersen AS
Buer Entreprenør AS
Busengdal Transport AS
Bussbygg
Bussen Trafikkselskap AS
Bygg og Maskin AS
Byggmester Grande AS
Byggservice Nord- Østerdal AS
Byhaven kjøpesenter
Byåsen Bakeri AS
Børset og Bjerkset AS
Børstad Transport AS
CC Martn
Choice Hotels AS
Clarion Hotel Ernst AS
Comfort Hotel Hammer AS
Conoco Phillips Norway
Consept AS
Coop Hordaland BA
Coop Inn-Trøndelag BA
Coop Jekta Handelssenter
Coop Nordfjord og Sunnmøre BA
Coop Vestfold og Telemark BA
CSC Solutions
Dale of Norway
Danzas ASG Eurocargo AS
De 3 Stuer Konsern AS
De Sandvigske Samlinger
Maihaugen
Delprodukt AS
Demex as
Den Norske Bank ASA
Dinamo Norge AS
Diplom-is AS
DNB eiendomsmegling AS
DNH Den Norske
Høyttalerfabrikk AS
EDB Business Consulting
Eidesvik Holding AS
Eiendomsmegler 1
Einar Valde AS
Elcon Finans
Elektro AS
Elixia Norway AS
Elkem Aluminium ANS
Elverum kommune
Ementor Norway ASA
Entreprenør M. Kristiseter AS
Ergoephorma AS
Ernst & Young AS
Eurosko
Eurospar Sogndal
Expert Norge AS
Falkanger Sko AS
Fatland AS
Felleseiet Austad ANS
First Victoria Hotel
Fjeldseth AS
Fjellpulken AS
Fjordline - Bergen
Flyspesialisten Trondheim AS
Flytoget AS
Fotosentralen AS
Franzefoss Pukk AS
Friele kaffehus
Funderud Gartneri AS
Fylkesmannen i Vest-Agder
Fylkesmannen i Østfold
Fædrelandsvennen AS
Gilde Vest BA
GITEK
Gjensidige NOR
Gjensidige NOR Næringseiendom AS
Gjestal Spinneri ASA
Glava AS
Grane kommune
Grieg Logistics
Grimstad kommune
Gro Industrier AS
Gromstads Leif Auto AS
Grunnarbeid AS
Gunnar Karlsen AS
Gunnar Klo AS
H & M Hennes & Mauritz AS
H.J Økelsrud
Hadsel kommune
Hafslund Sikkerhet Sør
Hagen og Godager
Hagen Treindustri A/S
Halliburton
Hammerfest kommune
Handels- og servicenæringens Hovedorganisasjon
Handleriet Skipsgården AS
Haram kommune
Harstad Sparebank
Hebos Interiør AS
Helgeland Holding AS
Helgeland Kraft AS
Helly Hansen Spesialprodukter AS
Helse Bergen HF
Helse Midt-Norge
Helse Stavanger
Hennig-Olsen Is AS
Herlige Stavanger AS
Hitec Framnæs AS
Holst & Hauge AS
Horns Slakteri AS
Hotell Norge AS
Hotell Refsnes Gods AS
HSD Buss AS
H-vinduet Vatne AS
Hydro Agri
Hydro Aluminium
Hydro Polymers AS
Høgskolen i Lillehammer
Høyskolen Molde
Håg ASA
Ikea AS
Industribeslag AS
InMedia AS
Innvik Sellgren Industrier AS
Invenia AS
ISS Norge AS
Ivar Mjåland AS
Iver Bil AS
J Kristiansen Gartneri AS
Jangaard Export AS
Jiffy
Joar Ryttervoll Tømmermester AS
Jotun AS
Jøtul ASA
Kewa Invest AS
Kimek AS
Kirkestuen Transport AS
Kitron Microelectronics AS
Kiwi Norge AS
Kjell Arnesen AS
Kommunenes Sentralforbund
Komplett ASA
Kongsberg Automotive ASA
Kongsberg kommune
Kongsberggruppen AS
KPMG Tromsø
Kragerø kommune
Kristiansand Jernstøperi AS
Kristiansand kommune
Kroken Caravan AS
Kruse Betong
Kruse Smith AS
Kvadrat Steen & Strøm
Langset AS
Lefdal Elektromarked AS Lade
Leiv Sand AS
Lerum Fabrikker
Lilleborg AS
Lindesnes kommune
Lindex AS
Link Arkitekter
Lofoten Næringshage AS
Lofotprodukt AS
Lopus AS
Lyse Energi AS
Løvenskiold Trelast AS
Løvenskiold-Fossum
Macks Ølbryggeri AS
Madsen Bil AS
Manpower AS
Marine Harvest
Maritex AS
Martin M.Bakken
Meglerhuset Nylander AS
Melby Snekkerverksted AS
Melhus Sparebank
Melhustorget
Meløy Næringsutvikling
Mercer Human Resource Consult AS
Mercuri Urval AS
Mesta AS
Microsoft Norge AS
Midsund Bruk AS
Midtre Gauldal kommune
Mills DA
Min Boutique Gruppen
Minde Sjokolade
Mjøsplast AS
Mortensen Taxi
Møre og Romsdal Kornsilo ANS
Mørenot AS
Naper Informasjonsindustri AS
Narud Stokke Wiig
NCC Construction AS
Nera Networks AS
Nesje AS
Nexans Norway AS
NOPAL
Nor Cargo AS
NorDan AS
Nordea Bank Norge ASA
Nordfjord Hotell
Nordlaks AS
Nordlandssykehuset
Nordmøre Revisjon AS
Norges Eiendomsmeglerforbund
Norgestaxi Trondheim AS
Norgesvinduet Svenningdal AS
Norisol Norge AS
Norlense AS
Norli Gruppen AS
NorSea AS
Norsk Kylling AS
Norsk Sjømat AS
Norske Skogindustrier Skogn
Nortrans Touring AS
Nortroll AS
Notar Eiendom Ålesund AS
NTNU
Nycomed Pharma
Nye Møre Tre AS
NYMO AS
Nøsted Kjetting AS
O. Kavli AS
Oasen
OBOS Eiendomsforvaltning AS
Oceanor AS

Odstøl Elektronikk AS
Oppland Fylkesskattekontor
Orkla Enskilda Securities ASA
OSK Elektrotilbehør AS
Oslo Lufthavn AS
Osram AS
Otto Koch AS
PA Consulting Group AS
Pareto Securities AS
PEAB AS
Pedersen Auto AS
Pedersen Lastebil AS
Per Solem Arkitektkontor AS
Petter Gagama AS
PGS Production Group
PipeLife Norge AS
Plasto AS
Polimoon AS
Porsgrunds Porselænsfabrik AS
Poseidon Sumulations AS
Proffice
Prosafe
Prosessindustriens
Landsforening
Quality Hotel Røros AS
Radisson SAS Hotel Tromsø
Rana Industriterminal AS
Rana kommune
Rapp Hydema AS /
Rapp Marine AS
Rauma kommune
Rema 1000
Rheinhold & Mahla Industrier AS
Rica Hotels ASA
Rieber & Søn ASA
Rolls-Royce Marine AS
Rosenborg Sport
Rotanor Bokproduksjon AS
Røros kommune
Røros Tweed AS
Saint Gobain Ceramic
Materials AS
Sandefjords Blad AS
Sandnes kommune
SAS Royal Garden Hotel AS
Scan Wafer ASA
Scandiaconsult
Scandic Hotel Arendal AS
ScanRope AS
Schlumberger
SEB Kort AB, Oslofilialen
Securitas - Regionkontor
Bergen
Selmer Skanska AS
Sikkerhetssenteret Aukra
Silvinova
SIVA Selskapet for
industrivekst SF
Sjåtil og Fornæss
Skagen Brygge Hotell
Skagen Fondene
Skjalg A. Pettersen
Skodje Byggvare AS
Skretting AS
Skårland AS
Slipen Mekansike AS
SND Sogn og Fjordane
Sogn og Fjordane Energi AS
Solhaug Entreprenør AS
Solstrand Fjord Hotell
Sortland Entreprenør AS
Sortland Reisebyrå AS
Sparebank 1 Midt-Norge
Sparebank1 Nord Norge
Sparebanken Hedmark
Sparebanken Møre region
Romsdal og Nordmøre
Sparebanken Sogn og Fjordane
Sparebanken Sør
Sparebanken Vest
Sparebanken Volda Ørsta
Sparebanken Øst
Sperre Støperi
Sportshuset AS
SR Bank
Stabburet AS
Stange kommune
Startour
Statoil
Stavanger Aftenblad
Stavanger kommune
Stavanger Rørhandel AS
Stavangerske AS
Stjørdal kommune
Stordal Møbler AS
Studentsamskipnaden i Agder
Støren Trelast AS
Subsea7 AS
Sulland Gruppen
Sunnmørsposten AS
Surnadal kommune
Surnadal Transport AS
Surnadal Utvikling AS
Sykehuset Innlandet HF
Lillehammer
Sørco AS
Sør-Trøndelag fylkeskommune
T.Stangeland Maskin AS
Team Trafikk AS
Technor ASA
Techteam AS
Teknisk Bureau AS
Teknologibedriftenes
Landsforening
Tibe Reklamebyrå AS
Tine Meieriet Øst Lom og Skjåk
Ting og Tang Flisa AS
Tommen Gram Folie AS
Topp Auto AS
Torleif Steiro AS
Toyota Hell Bil AS
Toyota M. Nordvik AS
Trafikk & Anlegg AS
Trebetong AS
Trioving AS
Trondheim kommune
TV 2 Gruppen AS
Tyrholm & Farstad AS
Tysvær kommune
Tønsberg kommune
Ullevål Universitetssykehus
Umoe Catering AS
United Pan-Europe
Communications
Vann og Varme AS
Varden AS
Veidekke ASA
Verdal kommune
Vestbase AS
Vesterålens Hermetikk-
fabrikk AS
Vestvågøy kommune
Veøy billag
Viadial AS
VIBO Entreprenør AS
Vikenco AS
Vinmonopolet, Ørnes
Vågå kommune
West Contractors AS
Westnofa
Widerøes Flyveselskap ASA
Windy Boats AS
Xerox AS
Yngve Steiro AS
Øksnes Bil og Maskin AS
Øksnes Entreprenør AS
Øksnes kommune
Østereng & Benestad AS
Ålesund Storsenter AS
Åmot kommune
Aas Mek. Verksted AS
Aasen Bygg AS

# Annex II
# Strategy Document 1/03

# Strategy Document 1/03

## Monetary policy in the period 5 March to 25 June 2003

*Discussed by the Executive Board at its meeting of 5 February 2003. Approved by the Executive Board at its meeting of 5 March 2003*

### Background

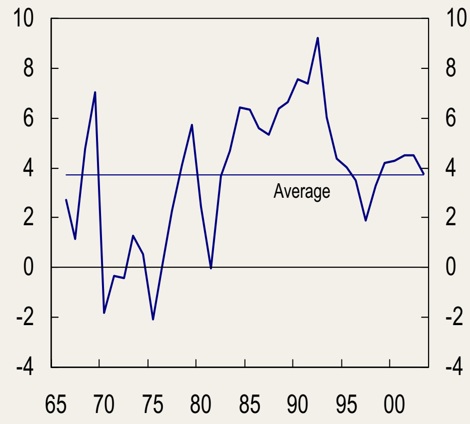
Norges Bank's operational conduct of monetary policy shall be oriented towards low and stable inflation. The inflation target is set at 2½ per cent. Monetary policy influences the economy with long and variable lags, and the Bank must be forward-looking in interest rate setting. The key interest rate (the sight deposit rate) is set on the basis of an overall assessment of the inflation outlook, normally two years ahead. 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 of monetary policy strategy on 8 October, the Executive Board considered that a sight deposit rate in the interval 6½-7½ per cent was appropriate at the end of February 2003. The interval was contingent on developments in the krone exchange rate and the projections for economic developments. The sight deposit rate was lowered by ½ percentage point at the monetary policy meetings of 11 December 2002 and 22 January 2003. In the press release following the monetary policy meeting on 22 January, the Bank stated: "According to Norges Bank's assessment, with an interest rate of 6.0 per cent, the probability that inflation two years ahead will be lower than 2½ per cent is greater than the probability that it will be higher." The krone has remained strong since the previous Strategy Document, but depreciated somewhat at the end of February.

### Economic developments, uncertainty and the inflation outlook

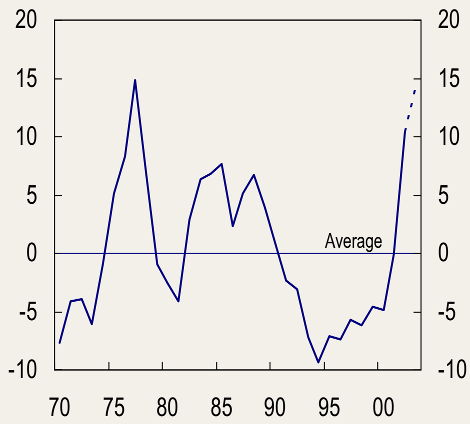
In recent years, following a long period of expansion, the Norwegian economy has been marked by a shortage of real economic resources and high domestic cost inflation. House prices have risen sharply, and household borrowing has been high. It has been appropriate to pursue a relatively tight monetary policy. The level of real interest rates has been ½ - 1 percentage point higher than the historical average (see chart). At the same time, the krone has appreciated, particularly in the past year. The impact of monetary policy has gradually intensified as interest rates abroad have fallen and demand for Norwegian krone has increased.

**Chart 1** Real interest rate. 1966-2002




Source: Norges Bank

**Chart 2** Real exchange rate. 1970-2002.




Source: Norges Bank

Global growth has been weak and unsteady over the last few years. The global downturn has generated negative impulses to the Norwegian economy through the appreciation of the krone and the decline in share prices. Oil prices have remained high. The interaction between high domestic wage growth, a strong krone and weak growth in export markets has squeezed profitability in most industries. Many enterprise must cut costs substantially. Unemployment in Norway edged up through last year, but unemployment is lower than the average for the 1990s. In recent months, house price inflation and credit growth have slowed, but growth in credit to households is still very high. Economic growth in the mainland economy is lower than potential growth, and the output gap as measured here is closing.

### *Important developments since the previous strategy discussion are:*

- Global growth has been somewhat weaker than projected, particularly in Germany and Sweden. Key rates have been reduced in the US, the euro area, Denmark, Sweden, Iceland and the UK. The US dollar has depreciated. Oil prices have increased measured in US dollars.
- Domestic demand has broadly been in line with projections.
- The central government budget compromise for 2004 was in keeping with the fiscal rule.
- The social partners agreed to show moderation in this year's interim wage settlements.
- Households are less optimistic about the outlook for the Norwegian economy and their own financial situation.
- Industrial leaders in Statistics Norway's business tendency survey expect negative developments between the third and fourth quarter of 2003.
- The underlying rise in prices has been broadly in line with projections.
- Electricity prices have risen sharply. This will result in high CPI inflation this year. CPI inflation may be very low next year.

The upswing abroad has still not materialised. Very low interest rates and tax cuts in the US and other countries are stimulating activity. The forecasts for economic growth this year have been revised downwards, but we expect growth to pick up next year. Inflation is expected to remain low among Norway's trading partners, and the projections remain unchanged in relation to the previous *Inflation Report*.

The international situation is marked by political uncertainty, reflecting fears of war in Iraq and the situation in North Korea. Fears of war, low oil production in Iraq and the oil production disruptions in Venezuela have pushed up oil prices to more than USD 30 per barrel. Crude oil stocks in the US and other OECD countries are low. Oil capacity utilisation in Saudi Arabia is high. In the short term, this will keep oil prices at a high level, but developments may also lead to a subsequent fall and wide oil price swings. We assume that oil prices will gradually fall to USD 20 in the course of 2004-2005. Continued high oil prices may have a dampening impact on global growth and fuel inflation.

There are other risks to the growth outlook. The effects of the sharp fall in equity prices and earlier overinvestment in several sectors have not yet been exhausted. House prices have risen sharply in the UK. There has also been a considerable increase in the US in recent years. A correction in house prices could have a substantial effect on the household saving ratio and restrain consumption growth. The US has been running a substantial trade deficit for several years. Sustained, sharp growth in debt increases the risk of a pronounced depreciation of the US dollar. If the US dollar continues to depreciate, growth may be negatively affected in Europe and Japan through lower exports. On the other hand, the Iraq conflict may be resolved peacefully or swiftly, which will reduce the uncertainty in the global economy, partly via lower oil prices.

Continued moderate and unsteady growth in the international economy will contribute to a further cooling of the Norwegian economy. Household confidence in the Norwegian economy and their own financial situation weakened considerable last autumn. This was followed by a marked increase in electricity prices. The rise in electricity prices may lead to lower growth in household real disposable income and weaker growth in private consumption in 2003 than projected in the previous *Inflation Report*. On the other hand, the interest rate cuts in December last year and January this year will contribute to holding up growth in private consumption. Higher electricity expenses in the private sector will to a large extent be offset by higher public sector revenues, probably limiting the effect on domestic demand over the next two to three years.

According to preliminary figures from the Technical Reporting Committee on income settlements, wage growth was 5.6 per cent in 2002. The figures for large collective bargaining groups are based on preliminary statistics. The final figures will probably show somewhat higher annual wage growth. We have therefore left our projection of 5¾ per cent in the previous *Inflation Report* unchanged. Due to a considerable carry-over, wage growth will reach 5 per cent this year even with low pay increases. Unemployment rose last year, particularly in service industries. Employment growth in internationally exposed industries is expected to be weak in the period ahead. The increase in allocations to public entities is being consumed by the high level of wage growth, which will probably result in low employment growth. The prospect of an easing of labour market implies that wage growth may be lower this year than projected in the previous *Inflation Report*. The projections for wage growth in 2004 are contingent on a number of factors such as labour market tightness and thus our assumptions concerning the interest rate and exchange rate.

### *Unstable relationship between the interest rate differential and the krone exchange rate*

The krone continued to appreciate after the previous strategy discussion. One reason why the krone has appreciated is that interest rates in Norway are higher than interest rates in most other countries. This is in turn due to the relatively high level of wage and cost inflation in Norway, which reflects the divergence between cyclical developments in Norway and abroad.  The possibility of war in Iraq and high oil prices may have increased the flow of short-term capital into Norway and contributed to the appreciation of the krone. The uncertain political situation will also have a bearing on developments in the coming months. As a result, there may be wide variations in the risk premium and an unstable relationship between the interest rate differential and the krone exchange rate. At the end of February, the krone had depreciated by more than 5 per cent from its strongest level in early January. The depreciation can be seen in the light of expectations of weaker developments in the Norwegian economy, as reflected in the interest rate reduction this winter and expectations of further interest rate cuts. In order to shed light on the significance of the unstable relationship between the interest rate differential and the krone, various scenarios for the Norwegian economy in the period to 2005, using different exchange rate and interest rate assumptions, are discussed below.

### *Alternative 1: The krone remains strong*

The real exchange rate is considerably stronger than the historical average for the last 30 years. With a continued, strong krone and higher wage growth than among our trading partners, cost competitive-

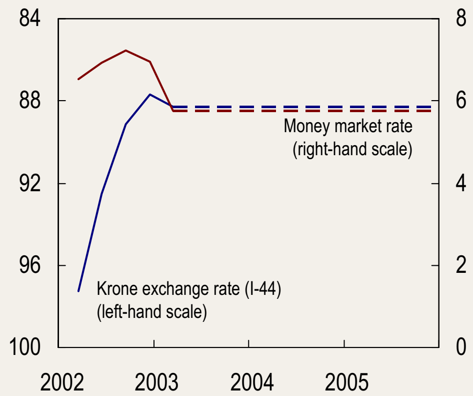
**Table 1** Projections for main macroeconomic aggregates with sight deposit rate of 5.5 per cent and krone exchange rate equal to avereage for February 2003. Percentage change from previous year. Change from previous Inflation Report in parenthesis.

| | 2003 | 2004 | 2005 |
|---|---|---|---|
| Mainland demand | 1¼ (-1) | 2½ (0) | 2½ |
| Private consumption | 2¾ (-¾) | 3¼ (0) | 3 |
| Public consumption | ¾ (0) | 2 (0) | 2 |
| Fixed investment | -4 (-3¾) | ½ (0) | 2 |
| Mainland GDP | 1¼ (-½) | 2 (-¼) | 2¼ |
| Employment | -½ (-½) | 0 (-½) | ½ |
| LFS-unemployment[1)] | 4½ (¼) | 4¾ (½) | 4¾ |
| Annual wages | 5 (-½) | 4½ (-¾) | 4½ |
| CPI | 3¼ (1¼) | 1 (-1¼) | 2¼ |
| CPI-ATE | 1¾ (-¼) | 2 (-¼) | 2¼ |

[1)] Percentage of labour force

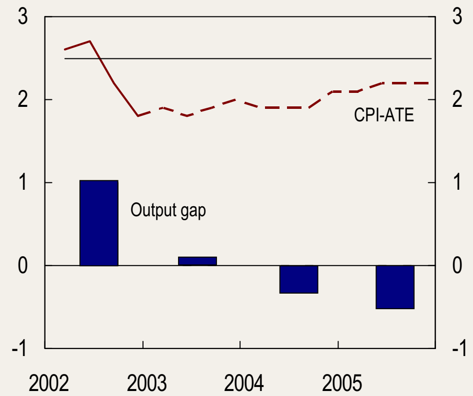
Source: Norges Bank

**Chart 3a** Alternative 1: The krone exchange rate remains strong.




Source: Norges Bank

**Chart 3b** Alternative 1: The krone exchange rate remains strong.




Source: Norges Bank

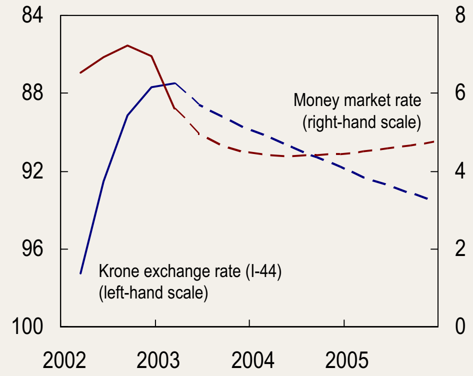
ness will have weakened by 15-20 per cent in relation to this average by the end of 2005. The scaling back of internationally exposed industries may intensify and expose more industries to international competition. Many enterprises will probably have to close or maintain operations through sharp cost cuts. This will also lead to lower activity in the sheltered sector. The strong krone has increased the price of Norwegian goods and service in relation to foreign prices, which is having a negative effect on demand for goods, services and labour.

With a constant interest rate of 5½ per cent, mainland economic growth in Norway may be lower than potential growth in the period to 2005. Pressures in the Norwegian economy will ease. The output gap, as measured here, will turn negative. Unemployment will edge up, and wage growth will be lower than projected (see Table 1). A strong krone will contribute to lower imported price inflation. Consumer price inflation may be below target over the next two years. In this scenario, inflation will also be below target three years ahead. This shows that with an interest rate of 5½ per cent and a constant exchange rate monetary policy is too tight.

## *Alternative 2. The krone depreciates*

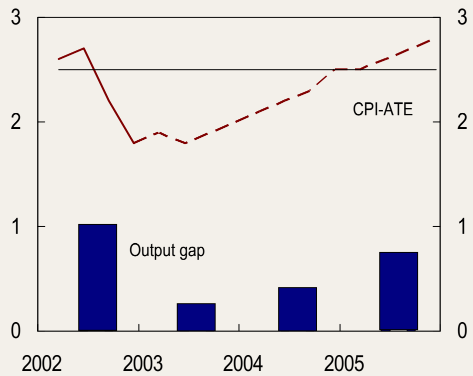
A gradual weakening of the krone has been priced into the forward foreign exchange market. The krone is expected to be 6-7 per cent weaker than the average for the last month towards the end of 2005. The money market has priced in an interest rate reduction of about 1 percentage point in the period to summer (see chart below). Lower interest rates may fuel household optimism and lead to an increase in purchasing power. Consumption growth could continue to provide a substantial growth impetus to the Norwegian economy. Combined with a weaker krone, this may limit downscaling in the manufacturing sector. Overall, this may entail a somewhat smaller increase in unemployment than in Alternative 1. In this alternative wage growth may remain somewhat higher than 5 per cent (see Table 2). The weakening of the krone may result in a somewhat higher rise in prices for imported consumer goods. At the two-year horizon, CPI-ATE inflation is projected at 2¾ per cent. Inflation continues to rise in 2005. The output gap will be positive at about last year's level in 2005. The inflation outlook and general economic developments imply that the interest rate should not be set as low as the level priced into the market if the krone depreciates in pace with the forward rate.

**Chart 4a** Alternative 2: The krone exchange rate weakens. Forward interest rate and forward exchange rate




Source: Norges Bank

**Chart 4b** Alternative 2: The krone exchange rate weakens. Forward interest rate and forward exchange rate




Source: Norges Bank

**Table 2** Projections for main macroeconomic aggregates with forward interest rate and forward exchange rate. Percentage change from previous year. Change from baseline scenario in table 1 in parenthesis.

| | 2003 | 2004 | 2005 |
|---|---|---|---|
| Mainland demand | 1½ (¼) | 3½ (1) | 3½ (1) |
| Private consumption | 3 (¼) | 4¼ (1) | 3¾ (¾) |
| Public consumption | ¾ (0) | 2 (0) | 2 (0) |
| Fixed investment | -3½ (½) | 2½ (2¼) | 4½ (2½) |
| Mainland GDP | 1½ (¼) | 2½ (½) | 2¾ (½) |
| Employment | -¼ (¼) | ¼ (¼) | 1 (½) |
| LFS-unemployment[1)] | 4½ (0) | 4½ (-¼) | 4 (-¾) |
| Annual wages | 5 (0) | 5¼ (¾) | 5¼ (¾) |
| CPI | 3¼ (0) | 1¼ (¼) | 2¾ (½) |
| CPI-ATE | 1¾ (0) | 2¼ (¼) | 2¾ (½) |

1) Percentage of labour force

Source: Norges Bank

## Monetary policy ahead

The past year has been marked by sharp wage growth, a global downturn and a pronounced appreciation of the krone. Over a somewhat longer horizon, it is fairly probable that the appreciation of the krone will be fully or partly reversed. As global growth prospects improve and the interest rate level normalises, other currencies will become more attractive as investment currencies. A resolution of the Iraq conflict may reduce the interest in Norwegian kroner. Domestic developments will also affect exchange rate developments ahead. Easing pressures in the Norwegian economy and clear signs that the inflation target is being incorporated as an anchor for wage formation may pave the way for lower interest rates and a weaker krone exchange rate. Experience shows that the real exchange rate tends to return to its long-term average fairly rapidly after periods of depreciation or appreciation. However, the economic policy regime has been changed. The new guidelines providing for a gradual and sustainable increase in the use of petroleum revenues in the Norwegian economy means that fiscal policy has a medium-term anchor. Fiscal policy is no longer used in the same way to stabilise domestic demand. The interaction between the various components of economic policy has changed. At the same time, it is possible that wage developments in the internationally exposed sector do not have the same impact on settlements in other sectors as was the case earlier. This may amplify exchange rate fluctuations, and it may take somewhat longer for the real exchange rate to return to a more normal level.

The appreciation of the krone and high wage growth over recent years has eroded cost competitiveness in the internationally exposed sector in Norway. The real exchange rate is also strong from a historical perspective. There is uncertainty associated with the effects of a strong krone on output and employment. At the same time, the appreciation of the krone has resulted in a subdued rate of increase in prices for imported consumer goods and low CPI inflation. On balance, our analyses indicate that monetary policy is too tight.

Developments in the krone are uncertain and are also influenced by other factors than Norwegian interest rates. Even if we lower the interest rate somewhat, the interest rate differential will be wide. The krone may remain strong for a period. Some analysts have argued that the krone will remain strong as long as there are hardly any other currencies that yield a return as high as the Norwegian krone. New Zealand with 5¾ per cent, Australia with 4¾ per cent and some central European countries have comparable interest rates. Unless the strong krone is due to new expansionary impulses to the Norwegian economy, substantial interest rate cuts will be needed to reach the inflation target two years ahead. Interest rate cuts will stimulate domestic demand, which may reach a historically high level. Consequently, there is a risk of a renewed acceleration in house a credit growth. The resulting tensions may trigger a marked depreciation in the krone if the special factors that led to a strengthening of the krone gradually cease to apply. In conjunction with high wage growth, the result may be substantial inflationary impulses.

The uncertainty ahead is also linked to economic developments abroad and in Norway. Employment in Norway is projected to fall in 2003. The deterioration in competitiveness may prove to have a greater impact than we have assumed. Forecasts for global economic growth have been revised downwards this winter. It cannot be ruled out that the world economy is facing a fairly long period of stagnation. This will have an impact on the Norwegian economy. Sooner or later the oil market will also feel the downturn, with downward pressure on oil prices.

Market participants expect interest rates to be reduced by about one percentage point in the period to summer, which may lead to a depreciation of the krone. If the krone depreciates in line with today's forward rate, inflation may be somewhat higher than the inflation target two years ahead, unless the krone depreciates even further as result of a more pronounced downturn in the Norwegian economy than we have assumed. At the same time, output growth may return to a level that is higher than trend growth.

A more moderate reduction in the interest rate may gradually lead to a weakening of the krone, but the krone may show a more limited depreciation than implied by the forward rate. This could push up the rise in prices for imported consumer goods. In 2004 and 2005, the output gap may become less positive than in the alternative where the interest rate and the exchange rate follow the forward interest rate and the forward exchange rate, but it is unlikely that it will close.

On balance, our projections imply that the sight deposit rate should be in the interval 4¾-5½ per cent at the end of June 2003. If the krone remains strong or appreciates further, it may be appropriate to reduce the interest rate to the lower range of the interval or below the interval. Likewise, it may be appropriate to consider an interest rate in the upper range of the interval or higher than the interval if the krone should depreciate sharply. Any interest rate reactions must be based on an analysis of the background for the exchange rate movements and an assessment of the duration of a change in the exchange rate.

The Taylor rate, which is not forward-looking, is now about 5¼ per cent, a decline of about 1 percentage point in relation to the previous strategy discussion. The reason behind the decline is that actual inflation, as measured by the CPI-ATE, has fallen and the output gap has narrowed.

Several factors warrant a gradual approach to the conduct of monetary policy:

- The relationships in the foreign exchange market are unstable. The effect of a change in interest rates on the exchange rate may vary.
- There is a risk of continued wage-wage spirals as a result of wage settlements and it takes time to address the problems associated with wage formation. It is still uncertain how quickly the social partners will incorporate the inflation target as an anchor in wage negotiations.
- The effects of changes in the exchange rate on inflation and economic developments are uncertain. The impact on output and employment may be greater than we have assumed. This would be reflected in the labour market and thereby have implications for interest rate setting.
- The long period of expansion in the Norwegian economy has resulted in high house prices and a high debt ratio in large parts of the private sector. The rise in house prices now appears to be levelling off. Developments in the housing market and lower household optimism may reduce credit growth in the period ahead. Further interest rate cuts may, on the other hand, lead to a renewed acceleration in house prices and credit growth. Developments in the housing market and credit market through the spring are therefore important when assessing further monetary policy action.

## Strategy

- Norges Bank's operational conduct of monetary policy shall be oriented towards low and stable inflation. The inflation target is set at 2½ per cent.
- The key rate is set on the basis of an overall assessment of the inflation outlook, normally two years ahead. The key rate will normally be changed gradually so that we can assess the effects of interest rate changes and other new information on economic developments.
- With financial market confidence in the inflation target, Norges Bank has greater scope for promoting stability in the real economy. This scope will increase further as the inflation target is incorporated as an anchor for wage formation.
- Economic developments broadly in line with projections and the current balance of risks imply a sight deposit in the interval 4¾-5½ per cent at the end of June 2003.
- Developments in the krone exchange rate and the effects of the appreciation of the krone on inflation and output are uncertain. If the krone remains strong or appreciates further, it may be appropriate to reduce the interest rate to the lower range of the interval or below the interval. If the krone depreciates sharply it may be appropriate with an interest rate in the upper range of the interval or higher than the interval. Any interest rate reaction must be based on an analysis of exchange rate movements and an assessment of the duration of the 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 | | | |
| **Previous monetary policy meetings** | | | |
| 30 April 2003 | 5 | -½ | Downside bias |
| 05 March 2003 | 5.5 | -½ | Downside bias |
| 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 | | Mainland GDP | Private cons-ump-tion | Public spending on goods and services | Mainland fixed investment | Petroleum investment[1)] | Exports trad. goods | Imports |
|---|---|---|---|---|---|---|---|---|
| 1997 | | 4.9 | 3,2 | 2,5 | 11,8 | 24,9 | 8,6 | 12,4 |
| 1998 | | 4.1 | 2,7 | 3,3 | 8,6 | 22,2 | 3,5 | 8,5 |
| 1999 | | 2.7 | 3.3 | 3.2 | -0.1 | -13.1 | 4.0 | -1.8 |
| 2000 | | 2.5 | 3.9 | 1.3 | -1.2 | -23.0 | 2.5 | 2.7 |
| 2001 | | 1.7 | 2.6 | 2.7 | 0.7 | -1.0 | 3.7 | 0.9 |
| 2002 | | 1.3 | 3.6 | 3.2 | -4.6 | -4.6 | 1.3 | 1.7 |
| 2002[2)] | Q1 | 0.7 | 1.3 | 3.1 | -3.7 | -13.0 | -0.3 | -1.4 |
| | Q2 | -0.6 | 0.5 | -3.2 | 1.6 | -5.0 | -0.8 | 5.3 |
| | Q3 | 0.5 | 1.1 | 2.4 | -2.1 | 2.9 | 0.4 | -2.9 |
| | Q4 | -0.6 | 1.3 | -0.2 | 0.8 | 6.2 | -3.7 | 2.3 |
| 2003 | Q1 | -0.6 | -0.2 | 0.5 | -0.8 | 6.5 | 0.3 | 2.3 |
| Level 2002, Nok bln | | 1207 | 685 | 332 | 193 | 53 | 200 | 415 |

1) Extraction and pipeline transport
2) Seasonally 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 | | | 2.3 | 2.6 |
| 1998 | | 2.3 | | | 2.9 | 2.0 |
| 1999 | | 2.3 | | | 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 | 5.0 | 1.8 | 5.4 | 1.6 | 4.2 |
| | Feb | 4.8 | 2.0 | 5.2 | 1.7 | 4.1 |
| | Mar | 3.7 | 1.5 | 3.9 | 1.3 | 3.2 |
| | Apr | 2.9 | 1.6 | 3.0 | 1.7 | 2.5 |
| | May | 2.1 | 1.2 | 2.0 | 1.2 | 1,8 |

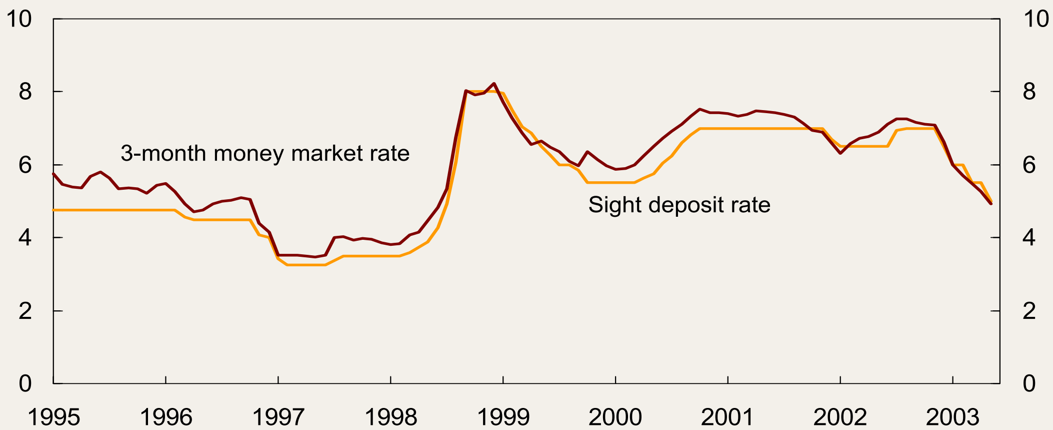
1) CPI-ATE: CPI adjusted for tax changes and excluding energy products
2) CPI-AT: CPI adjusted for tax changes
3) CPI-AE: CPI excluding energy products
4) HICP: The Harmonised Index of Consumer Prices. The index is based on international criteria drawn up by Eurostat.

## Table 3 Interest rates

| Per cent | | 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 | 4.2 | 5.9 |
| 1998 | | 5.5 | 5.9 | 5.8 | 5.7 | 5.4 |
| 1999 | | 6.3 | 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 |
| 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 | 7.1 | 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 |
| | Mar | 5.6 | 5.6 | 5.5 | 5.2 | 5.2 |
| | Apr | 5.5 | 5.6 | 5.3 | 5.0 | 5.3 |
| | May | 5.0 | 5.2 | 4.9 | 4.5 | 5.0 |
| 2003 | 30 May | 5.0 | 5.2 | 4.8 | 4.2 | 4.7 |
| | 06 Jun | 5.0 | 5.1 | 4.4 | 3.9 | 4.5 |
| | 13 Jun | 5.0 | 5.2 | 4.1 | 3.4 | 4.3 |
| | 19 Jun[3] | 5.0 | 5.0 | 3.9 | 3.5 | 4.4 |

1) NIBOR= Norwegian interbank offered rate.
2) Yield on representative 10-year government bond. The yield is calculated by weighting one or two government bonds with the residual maturity.
3) Average 16-19 June.

3-month money market rate and sight deposit rate. Monthly figures. Jan 1995 - May 2003



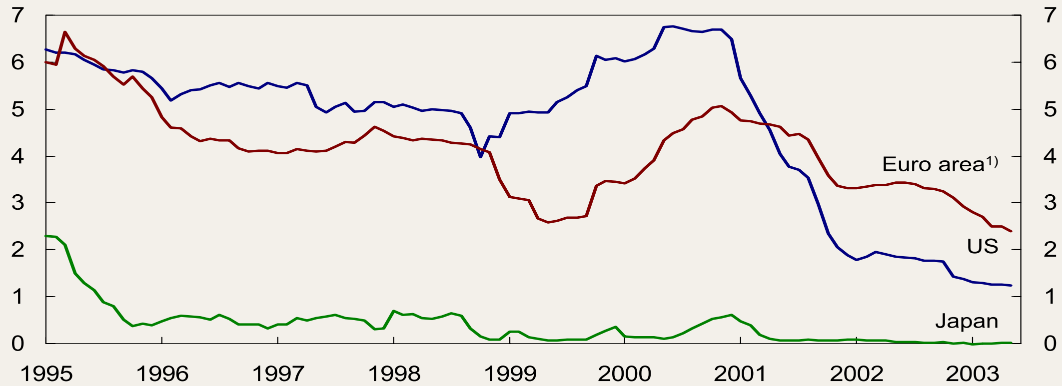

Source: Norges Bank

## Table 4 International interest rates

| | | Short term interest rates[1] for key currencies in the Euromarket | | | | | | Interest rate differential | Yield on government bonds[3] | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | USD | JPY | EUR | GBP | SEK | Trading partners[2]. | NOK/trading partners | US | Germany |
| 1997 | | 5.2 | 0.5 | | 6.8 | 4.2 | 4.1 | -0.5 | 6.4 | 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 |
| 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 | 1.8 | 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 | 1.7 | 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 |
| 2003 | Jan | 1.3 | 0.0 | 2.8 | 3.9 | 3.8 | 2.8 | 3.1 | 4.0 | 4.2 |
| | Feb | 1.3 | 0.0 | 2.7 | 3.7 | 3.7 | 2.7 | 2.9 | 3.9 | 4.0 |
| | Mar | 1.3 | 0.0 | 2.5 | 3.6 | 3.5 | 2.5 | 2.9 | 3.8 | 4.1 |
| | Apr | 1.3 | 0.0 | 2.5 | 3.6 | 3.5 | 2.5 | 2.6 | 4.0 | 4.2 |
| | May | 1.2 | 0.0 | 2.4 | 3.6 | 3.3 | 2.4 | 2.4 | 3.5 | 3.9 |
| 2003 | 30 May | 1.2 | 0.0 | 2.3 | 3.6 | 3.2 | 2.3 | 2.3 | 3.3 | 3.7 |
| | 06 Jun | 1.2 | 0.0 | 2.2 | 3.6 | 3.0 | 2.3 | 2.0 | 3.3 | 3.7 |
| | 13 Jun | 1.1 | 0.0 | 2.1 | 3.6 | 2.9 | 2.2 | 1.8 | 3.1 | 3.5 |
| | 19 Jun[4] | 1.0 | 0.0 | 2.1 | 3.6 | 2.9 | 2.2 | 1.6 | 3.2 | 3.6 |

1) 3-month rates. Per cent
2) 3-month interest rates in Norway's 25 most important trading partners (geometrical average weighted with the OECD's current trade weights). Per cent
3) Yield on government bonds with a residual maturity of 10 years. Per cent
4) Average 16-19 June

3-month rates in the US, the euro area and Japan. Per cent.
Monthly figures, Jan 1995 - May 2003




1) Theoretical ECU rate up to December 1998

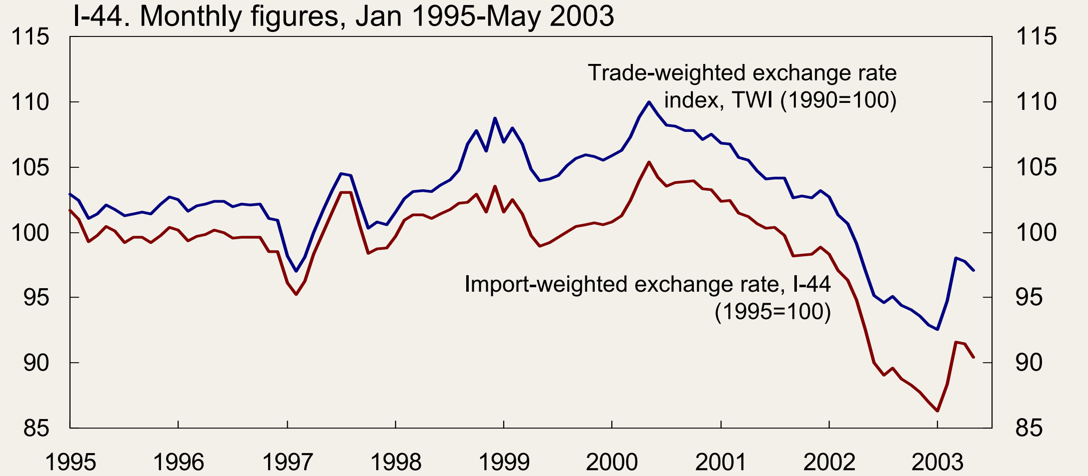
Source: Norges Bank

# Table 5 Exchange rates

| | | Effective exchange rates | | Bilateral exchange rates | | |
|---|---|---|---|---|---|---|
| | | Import-weigted exchange rate[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 | | 7.5 | 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 | 8.0 | 9.0 | 87.0 |
| 2002 | | 91.6 | 96.7 | 7.5 | 8.0 | 82.0 |
| 2002 | Jan | 98.3 | 102.7 | 7.9 | 9.0 | 85.8 |
| | Feb | 97.1 | 101.3 | 7.8 | 8.9 | 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 |
| | Mar | 91.6 | 98.0 | 7.8 | 7.3 | 85.0 |
| | Apr | 91.5 | 97.8 | 7.8 | 7.2 | 85.6 |
| | May | 90.4 | 97.1 | 7.9 | 6.8 | 86.0 |
| 2003 | 30 May | 89.8 | 96.6 | 7.9 | 6.7 | 85.8 |
| | 06 Jun | 92.1 | 98.9 | 8.0 | 6.9 | 88.2 |
| | 13 Jun | 93.9 | 101.0 | 8.2 | 7.0 | 90.0 |
| | 19 Jun[3)] | 94.0 | 101.0 | 8.2 | 7.0 | 90.1 |

1) Weights are calculated on the basis of imports from 44 countries which cover 97 per cent of 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)
3) Average 16-19 June.

Trade-weighted exchange rate index and import-weighted exchange rate I-44. Monthly figures, Jan 1995-May 2003

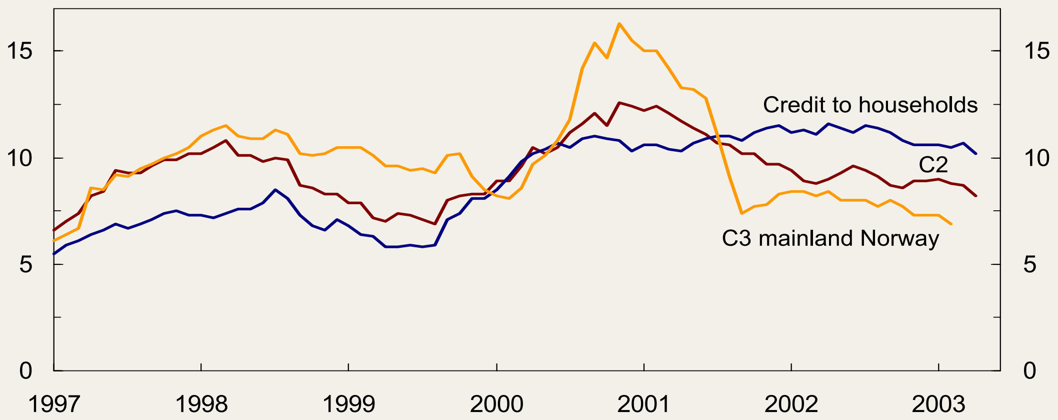



Source: Norges Bank

# Table 6 Monetary aggregates

| Annual growth / twelwe-month rise in per cent | | Money supply | Domestic credit (C2) | | | Total credit (C3) | |
|---|---|---|---|---|---|---|---|
| | | M2 | Total | To house-holds | To non-financial enterprices | Total | To mainland Norway |
| 1997 | | 2.2 | 8.8 | 6.7 | 13.8 | 8.9 | 8.7 |
| 1998 | | 4.9 | 9.6 | 7.5 | 13.9 | 11.3 | 10.9 |
| 1999 | | 6.5 | 7.6 | 6.6 | 9.6 | 10.5 | 9.6 |
| 2000 | | 9.9 | 10.9 | 10.3 | 12.3 | 9.4 | 11.8 |
| 2001 | | 9.2 | 11.0 | 10.9 | 10.5 | 8.3 | 10.8 |
| 2002 | | 8.4 | 9.0 | 11.2 | 7.4 | 7.3 | 7.5 |
| 2002 | Jan | 10.1 | 9.4 | 11.2 | 8.0 | 7.4 | 7.7 |
| | Feb | 8.1 | 8.9 | 11.3 | 7.1 | 7.3 | 7.6 |
| | Mar | 8.8 | 8.8 | 11.1 | 7.3 | 7.5 | 7.5 |
| | Apr | 8.7 | 8.9 | 11.6 | 6.8 | 7.4 | 7.7 |
| | May | 7.3 | 9.2 | 11.4 | 7.6 | 7.1 | 7.4 |
| | Jun | 9.8 | 9.5 | 11.2 | 8.6 | 7.3 | 7.6 |
| | Jul | 9.0 | 9.3 | 11.5 | 7.7 | 7.4 | 7.7 |
| | Aug | 7.6 | 9.1 | 11.4 | 7.4 | 7.8 | 7.5 |
| | Sep | 6.3 | 8.6 | 11.2 | 6.2 | 7.6 | 7.6 |
| | Oct | 8.6 | 8.6 | 10.8 | 6.6 | 7.1 | 7.5 |
| | Nov | 7.8 | 8.9 | 10.6 | 7.7 | 6.9 | 7.3 |
| | Dec | 8.3 | 8.9 | 10.6 | 7.5 | 6.9 | 7.3 |
| 2003 | Jan | 6.3 | 9.0 | 10.6 | 7.2 | 6.9 | 7.3 |
| | Feb | 6.2 | 8.8 | 10.5 | 5.9 | 6.9 | 6.9 |
| | Mar | 5.5 | 8.7 | 10.7 | 4.9 | 6.6 | 7.1 |
| | Apr | 5.9 | 8.2 | 10.2 | 4.0 | | |
| Level last month. In billions of NOK | | 845 | 1765 | 1024 | 607 | 2201 | 1986 |

The credit indicator (C2), credit to households and total credit to the non-financial private sector and municipalities, mainland Norway (C3). 12-month rise. Per cent. Monthly figures, Jan 1995 - Apr 03. 2003.




Source: Norges Bank

# Annex IV
# Detailed projections and assumptions

# Table 7 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 | 1.9 | 1.7 | 1.8 | 2.9 | 3.7 | 2.7 | 2.2 |
| 1996 | 3.6 | 3.4 | 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 | 0.1 | 2.0 | 3.2 | 2.4 | 4.5 | 3.2 | 2.8 |
| 2000 | 3.8 | 2.8 | 2.9 | 4.2 | 3.1 | 3.6 | 3.6 | 3.6 |
| 2001 | 0.3 | 0.4 | 0.6 | 1.8 | 2.1 | 1.1 | 1.3 | 1.5 |
| 2002 | 2.4 | 0.3 | 0.2 | 1.2 | 1.8 | 1.9 | 1.4 | 0.9 |
| Projections | | | | | | | | |
| 2003 | 2 | ¾ | 0 | 1 | 1¾ | 1½ | 1¼ | ¾ |
| 2004 | 3¼ | ¾ | 1¼ | 1½ | 2½ | 2½ | 2¼ | 1½ |
| 2005 | 3½ | 1¼ | 2¼ | 2½ | 2½ | 2½ | 2¾ | 2½ |

1) Export weights, Norway's 25 most important trading partners
2) The IMF's GDP weights adjusted for purchasing power

Sources: OECD and Norges Bank

# Table 8 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 | 2.9 | 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 | 1.5 | 1.8 | 2.1 | 1.3 | 2.2 | 2.4 |
| 2001 | 2.8 | -0.7 | 2.1 | 1.8 | 2.1 | 2.6 | 2.5 | 2.5 |
| 2002 | 1.6 | -0.9 | 1.3 | 1.9 | 2.2 | 2.4 | 2.0 | 2.4 |
| Projections | | | | | | | | |
| 2003 | 2¼ | -½ | 1 | 1¾ | 3 | 2¼ | 2 | 1¾ |
| 2004 | 1¾ | -½ | ¾ | 1½ | 2½ | 1¼ | 1½ | 1½ |
| 2005 | 2½ | -¼ | 1¾ | 2 | 2½ | 2 | 2 | 2 |

1) HICP, Harmonised Indices of Consumer Prices
2) RPIX, Retail Price Index excluding mortgage interest rates
3) Import weights, Norways 25 most important trading partners
4) HICP. Eurostat weights (each country's share of total euro-area consumption)

Sources: OECD and Norges Bank

# The fiscal rule and Norges Bank's assumptions

## *The fiscal rule*

In March 2001, a new guideline for fiscal policy (the fiscal rule) was introduced (Report no. 29 (2000-2001) to the Storting). According to the fiscal rule, the structural, non-oil budget deficit shall be approximately equivalent over time to the expected real return on the Petroleum Fund. The expected real return on the Petroleum Fund is estimated at 4%.

The guidelines for the use of the expected real return on the Fund's capital are based on a normal cyclical situation. The guidelines state that in a situation with high activity in the economy, the fiscal stance should be tightened accordingly, while a downturn may necessitate an increase in the use of petroleum revenues. It is also emphasised that in the event of extraordinary, substantial changes in the Fund's capital or in the structural, non-oil deficit from one year to the next, the change in the use of petroleum revenues must be distributed over several years based on an estimate of the size of the real return on the Fund a few years ahead.

The Government's Revised National Budget proposal implies a structural, non-oil budget deficit of NOK 37.6bn in 2003. This is NOK 13.4bn higher than the expected real return on the capital in the Government Petroleum Fund at the beginning of 2003. The use of petroleum revenues in 2002 was higher than estimated in the National Budget for 2003. At the same time, the estimates for underlying tax revenues have been revised downwards this year. Overall, the structural, non-oil budget deficit increased by NOK 8.9bn compared with the National Budget for 2003.

## *The assumptions in the Inflation Report*

We have based our projections on the estimates in the Revised National Budget for 2003. At constant prices, the structural deficit in 2003 is projected to remain unchanged from 2002. The deficit corresponds to 3.1% of trend mainland GDP both years. Measured in terms of the traditional budget indicator, fiscal policy thus has a neutral effect on the economy this year. Central government real underlying expenditure is projected to be approximately unchanged from 2002 to 2003. Total local government revenues are projected to rise by 2% or approximately NOK 4bn from 2002 to 2003. We assume that a substantial portion of this will be used for consumption. We apply the technical assumption that annual growth in public spending on goods and services will be about ¾% in 2003, 1½% in 2004 and 1¾% in 2005. The assumption implies that public spending as a share of trend mainland GDP will decline somewhat in 2003 and 2004 and remain approximately unchanged in 2005.

**Table: Change in the structural, non-oil deficit and in the Government Petroleum Fund in the medium term. In billions of NOK (unless otherwise stated)**

| | Government Petroleum Fund, at the beginning of the year | Expected return, 4 per cent rule | Structural, non-oil deficit | Structural, non-oil deficit, percentage of trend GDP for mainland Norway |
|---|---|---|---|---|
| 2001 | 386.6 | - | 33.2 | 2.8 |
| 2002 | 619.3 | 25.7 | 37.6 | 3.1 |
| 2003 | 604.6 | 24.2 | 37.6 | 3.1 |
| 2004 | 816.1 | 31.5 | 37.6 | 3.0 |
| 2005 | 984.4 | 36.6 | 37.6 | 3,0 |
| 2006 | 1136.3 | 40.7 | 40.7 | 3.2 |
| 2007 | 1281.4 | 44.3 | 44.3 | 3.4 |
| 2008 | 1424.0 | 47.4 | 47.4 | 3.6 |
| 2009 | 1565.7 | 50.2 | 50.2 | 3.8 |
| 2010 | 1689.4 | 52.2 | 52.2 | 3.9 |

Source: Revised National Budget 2003

## Table 9 Technical assumptions

| Historical developments | | I-44[1)] | Sight deposit rate |
|---|---|---|---|
| 1996 | | 99.6 | 4.5 |
| 1997 | | 99.2 | 3.4 |
| 1998 | | 101.7 | 5.5 |
| 1999 | | 100.4 | 6.3 |
| 2000 | | 103.3 | 6.2 |
| 2001 | | 100.2 | 7.0 |
| 2002 | | 91.6 | 6.7 |
| 2002 | Q1 | 97.3 | 6.5 |
| | Q2 | 92.5 | 6.5 |
| | Q3 | 89.1 | 7.0 |
| | Q4 | 87.7 | 6.9 |
| 2003 | Q1 | 88.7 | 6.0 |

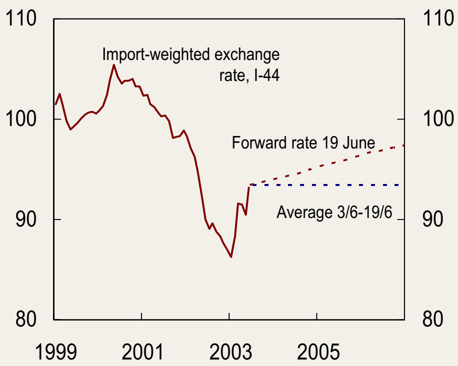
| Technical assumptions in two alternative scenarios for monetary policy | | Constant exchange rate | Forward exchange rate | Constant interest rate | Based on forward interest rates[2)] |
|---|---|---|---|---|---|
| 2003 | Q2 | 91.8 | 91.8 | 5.1 | 5.1 |
| | Q3 | 93.5 | 93.7 | 4.0 | 3.2 |
| | Q4 | 93.5 | 93.9 | 4.0 | 3.1 |
| 2004 | Q1 | 93.5 | 94.2 | 4.0 | 3.2 |
| | Q2 | 93.5 | 94.5 | 4.0 | 3.4 |
| | Q3 | 93.5 | 94.8 | 4.0 | 3.5 |
| | Q4 | 93.5 | 95.2 | 4.0 | 3.6 |
| 2005 | Q1 | 93.5 | 95.5 | 4.0 | 3.7 |
| | Q2 | 93.5 | 95.8 | 4.0 | 3.8 |
| | Q3 | 93.5 | 96.1 | 4.0 | 3.8 |
| | Q4 | 93.5 | 96.4 | 4.0 | 3.9 |

1) Import-weighted exchange rate, 44 countries. Weights are calculated on the basis of imports from 44 countries which cover 97 per cent of total imports. Current weights based on annual import shares.

2) Three-month forward rates are estimated using four money market rates and five government bond yields with different maturities as observed on 19 June. We have deducted 0.25 percentage points from the forward interest rates to provide an expression of the expected sight deposit rate.

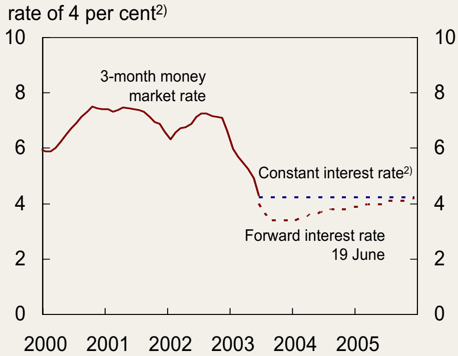
Source: Norges Bank

Alternative assumptions for the krone exchange rate (I-44). Forward rate and stable exchange rate equal to average 3/6-19/6 (I-44= 93.5). Index




Source: Norges Bank

Alternative assumptions for money market rate. Forward rates[1)] and assumption of a sight deposit rate of 4 per cent[2)]




1) 3-month money market rates up to and including May 2003. 3-month forward rates are estimated using 4 money market rates and 5 government bond yields with different maturities as observed on 19 June.
2) The money market rate is normally ¼ percentage point higher than the sight deposit rate.
Source: Norges Bank

## Table 10 Main macroeconomic aggregates with sight deposit rate of 4.0 per cent and krone exchange rate equal to average for 3 - 19 June

| | In billions of NOK | Percentage change (unless otherwise stated) | | | |
|---|---|---|---|---|---|
| | | | Projections | | |
| | 2002 | 2002 | 2003 | 2004 | 2005 |
| **Real economy** | | | | | |
| Mainland demand[1)] | 1211 | 2.1 | 1 | 2½ | 3¼ |
| - Private consumption | 685 | 3.6 | 3 | 3½ | 3½ |
| - Public consumption | 332 | 3.2 | ¾ | 1½ | 1¾ |
| - Fixed investment | 193 | -4.6 | -5½ | 1¼ | 4 |
| Petroleum investment[2)] | 53 | -4.6 | 15 | 0 | 0 |
| Traditional exports | 200 | 1.3 | -2½ | -¼ | 2¼ |
| Imports | 415 | 1.7 | 1½ | 1 | 3¾ |
| Mainland GDP[3)] | 1207 | 1.3 | 1 | 2 | 2½ |
| **Labour market** | | | | | |
| Employment | | 0.2 | -¾ | 0 | ½ |
| Labour force, LFS | | 0.7 | 0 | ¼ | ½ |
| Registered unemployment (rate) | | 3.2 | 4¼ | 4½ | 4½ |
| LFS-unemployment (rate) | | 3.9 | 4½ | 5 | 5 |
| **Prices and wages** | | | | | |
| CPI[4)] | | 1.3 | 2¼ | 1¼ | 2 |
| CPI-ATE[5)] | | 2.3 | 1¼ | 1¾ | 2 |
| Annual wages[6)] | | 5.7 | 4½ | 4 | 4½ |

## Table 11 Main macroeconomic aggregates with forward interest rate and forward krone exchange rate

| | In billions of NOK | Percentage change (unless otherwise stated) | | | |
|---|---|---|---|---|---|
| | | | Projections | | |
| | 2002 | 2002 | 2003 | 2004 | 2005 |
| **Real economy** | | | | | |
| Mainland demand[1)] | 1211 | 2.1 | 1¼ | 3½ | 3¾ |
| - Private consumption | 685 | 3.6 | 3¼ | 4½ | 4¼ |
| - Public consumption | 332 | 3.2 | ¾ | 1½ | 1¾ |
| - Fixed investment | 193 | -4.6 | -5 | 3 | 5¼ |
| Petroleum investment[2)] | 53 | -4.6 | 15 | 0 | 0 |
| Traditional exports | 200 | 1.3 | -2 | 1 | 2½ |
| Imports | 415 | 1.7 | 2 | 2¼ | 4¼ |
| Mainland GDP[3)] | 1207 | 1.3 | 1 | 2½ | 3 |
| **Labour market** | | | | | |
| Employment | | 0.2 | -¾ | ¼ | ¾ |
| Labour force, LFS | | 0.7 | 0 | ½ | ½ |
| Registered unemployment (rate) | | 3.2 | 4¼ | 4½ | 4¼ |
| LFS-unemployment (rate) | | 3.9 | 4½ | 5 | 4¾ |
| **Prices and wages** | | | | | |
| CPI[4)] | | 1.3 | 2¼ | 1½ | 2½ |
| CPI-ATE[5)] | | 2.3 | 1¼ | 2 | 2½ |
| Annual wages[6)] | | 5.7 | 4½ | 4½ | 5 |

1) Private and public consumption and mainland gross fixed investment
2) Extraction and pipeline transport
3) The estimates have not been corrected for fluctuations in electricity production. In 2003, electricity production push down GDP growth by approximately ½ percentage point.
4) Not adjusted for the introduction of maximum prices for day-care places.
5) CPI-ATE: CPI adjusted for tax changes and excluding energy products. Not adjusted for the introduction of maximum prices for day-care places.
6) Annual wage growth is based on the Technical Reporting Committee on Income Settlements' definitions and calculations.

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

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