NORGES BANK

Reports from the Central Bank of Norway No 4/2002

Inflation Report

3
02

October

Norges Bank's Inflation Report

In accordance with the Government regulation of 29 March 2001, Norges Bank's implementation of monetary policy shall be oriented towards maintaining low and stable inflation. The inflation target is set at 2½ per cent. The key interest rate is set on the basis of an overall assessment of the inflation outlook, normally two years ahead.

The *Inflation Report* discusses developments in the Norwegian economy and other factors that influence the inflation outlook. In addition, the balance of risks and uncertainty associated with the inflation projections are assessed. The main aspects of the *Inflation Report* are presented to the members of the Executive Board who discuss the contents of the report before it is published. The analyses in Norges Bank's *Inflation Report*, together with the Bank's current assessment of the outlook for price and cost inflation and developments in the money market and foreign exchange market, provide a basis for decisions concerning monetary policy instruments.

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

The series of reports is included in the subscription for *Economic Bulletin*. To subscribe please write to:

Norges Bank Subscription Service
PO Box 1179 Sentrum
N-0107 Oslo
Norway

Telephone: +47 22 31 63 83
Fax: + 47 22 41 31 05
E-mail: central.bank@norges-bank.no

Editor: Svein Gjedrem
Design: Grid Strategisk Design AS
Setting and printing: Reclamo grafisk senter AS
The text is set in 11½ point Times

ISSN 0807-8521

Inflation Report 3/2002

The cut-off date for the Inflation Report was 24 October 2002

A divergent cycle

Developments in the global economy have been weak over the summer and autumn. Both in the US and Europe economic growth has stagnated following strong growth at the beginning of the year. Share prices exhibited a sharp fall through the summer.

Oil prices have been high, however. In Norway, this is generating solid income for the petroleum industry and for the state. Norwegian households are generally optimistic about the outlook for their financial situation. Households are borrowing heavily and house prices are high. Private consumption appears to be growing at a fast pace. Annual real wage growth is the highest for close to a generation. Since 1998, nominal wage growth has shown an annual rise that is 2 percentage points higher in Norway than among our trading partners.

The Norwegian business cycle and the corresponding wage cycle are divergent from international developments. As a result, the interest rate differential between Norway and other countries has widened and the krone has appreciated markedly. This autumn, investors may also have taken krone positions to hedge against the effects of a possible war in Iraq on oil prices and growth.

The relatively high rise in costs in Norway, a strong krone and sluggish developments in international markets are exerting pressure on many Norwegian companies exposed to competition at home and abroad. The prospects for these companies have therefore deteriorated considerably compared with companies that supply goods and services to households.

Taking into account the effects of a higher interest rate, developments in the Norwegian economy through the summer have been approximately in line with the projections in the July *Inflation Report*. The appreciation of the krone will probably result in a fall in inflation next year. When the effects of the strong krone gradually unwind, inflation will move up. Consumer price inflation is now projected at 2½ per cent at the end of 2004. The risks to the projection are considered to be balanced.

A time horizon of two years when setting interest rates allows monetary policy to contribute to stabilising production. The choice of this horizon prevents monetary policy from contributing to unnecessary volatility in the economy. As an alternative, we could have sought to achieve the inflation target of 2½ per cent using a time horizon of six months to one year. We would then have had to reduce the interest rate sharply this summer. This would have amplified pressures in the Norwegian economy that are so clearly reflected in wage developments and household credit demand. In all likelihood, this would have required marked interest rate increases one to one and a half years ahead. Strict inflation targeting of this type would thus have resulted in more pronounced fluctuations in the interest rate and in aggregate demand and production.

Svein Gjedrem
28 October 2002

1 Recent developments

The outlook for global economic developments deteriorated over the summer and autumn. Equity prices fell sharply up to the beginning of October but have recently edged up again. Medium and long-term interest rates have also fallen. At the same time, oil prices have risen. The krone has appreciated further since the July *Inflation Report* (see Chart 1.1). The trade-weighted index is now 2¾% stronger and the import-weighted krone exchange rate is 4% stronger than assumed in the July report.

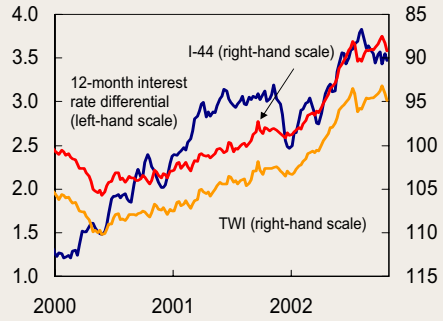
Norges Bank raised the sight deposit rate by 0.5 percentage point to 7% in July. Growth in household borrowing has been high and house prices have risen. Households are expecting strong income growth in the period ahead. The outcome of this year's wage settlement points to nominal annual wage growth of 5½% to 6%. It appears that real wage growth will reach its highest level in more than 25 years. Since 1998, annual wage growth has on average been around 2 percentage points higher than among our trading partners.

Strong krone restrains consumer price inflation

The value of the krone exhibited a sharp rise through the first half of 2002. After fluctuating in both directions in July and August, the krone has strengthened further this autumn. The movements in the krone exchange rate reflect developments in Norwegian interest rates and international factors. Interest rates have been cut internationally. In spite of growing expectations in the market of a reduction in interest rates in Norway, the expected interest rate differential between Norway and other countries has remained wide. The sharp fall in the stock market has also induced many investors to shift out of international equities into positions with lower risk. In addition, the fear of war in Iraq has probably prompted some investors to hedge against a sharp rise in oil prices and a global downturn. These factors have probably at times increased investor interest in the krone. Future developments in the krone exchange rate are discussed further in section 4.4.

A stronger krone has contributed to falling prices for imported consumer goods. This has pushed down consumer price inflation in Norway over the last two months in spite of high growth in Norwegian labour costs. The rise in the consume price index adjusted for tax changes and excluding energy products (CPI-ATE) has therefore slowed (see Chart 1.2). In September, the year-on-year rate of increase was 2.2% after having reached 2.7% in June and July. The rate of increase in the total CPI has also been pushed down by reductions in excise duties and lower energy prices. In September, the year-on-year increase in the CPI was 1.4% (see Chart 1.3).

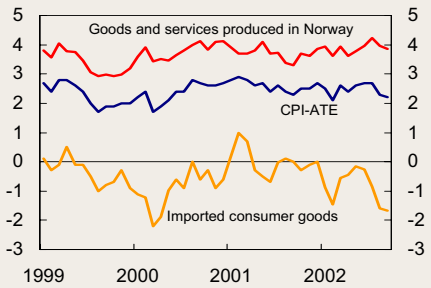
Chart 1.1 Import-weighted exchange rate (I-44), trade-weighted exchange rate[1] and interest rate differential against other countries[2]. Weekly figures



[1] A falling curve denotes an appreciation of the krone
[2] The US, the euro area, the UK and Sweden

Source: Norges Bank

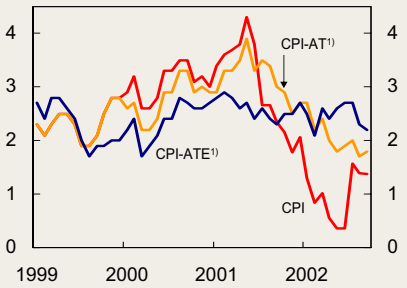
Chart 1.2 Consumer prices adjusted for tax changes and excluding energy products (CPI-ATE). Total[1] and distributed by imported and domestically produced goods and services[2]. 12-month rise. Per cent



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

Sources: Statistics Norway and Norges Bank

Chart 1.3 Consumer prices. Total and adjusted for tax changes and excluding energy products. 12-month rise. Per cent

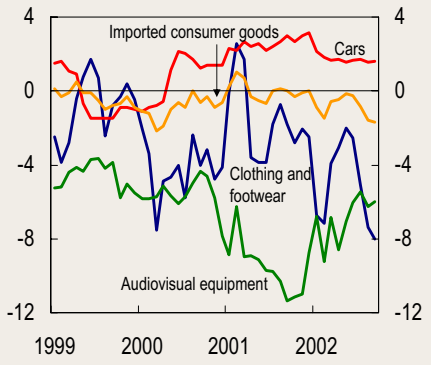


CPI-AT: CPI adjusted for tax changes
CPI-ATE: CPI adjusted for tax changes and excluding energy products

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

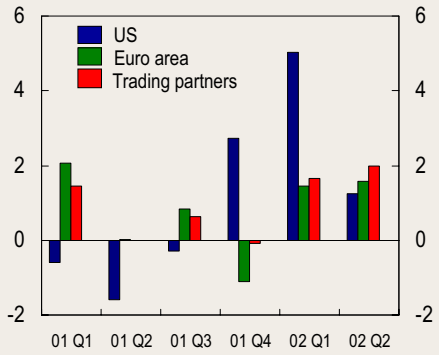
Sources: Statistics Norway and Norges Bank

Chart 1.4 Consumer prices for some imported goods adjusted for tax changes. 12-month rise. Per cent



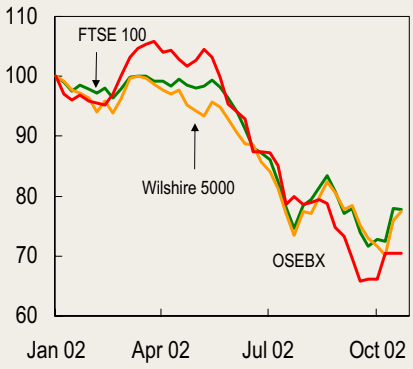
Sources: Statistics Norway and Norges Bank

Chart 1.5 GDP growth in the US, the euro area and among Norway's trading partners. Percentage change from previous quarter. Annual rate



Sources: National sources of statistics and EcoWin

Chart 1.6 Equity prices in Norway, the US and the UK. Index, Week 1 in 2002 = 100.



Source: EcoWin

During the summer inflation was somewhat higher than expected but has since slowed to the path projected in the July *Inflation Report*. Some service prices showed a particularly strong rise. The rise in house rents accelerated through the first half of the year, to almost 6%, but has since moved down somewhat. Prices for services with wages as a dominant cost factor are rising approximately in pace with the rise in labour costs. The rate of increase in prices for domestically produced goods is more moderate. On the whole, prices for domestically produced goods and services rose by a little less than 4% over the last year after adjusting for tax changes and energy prices (see Chart 1.2).

As expected, prices for imported consumer goods fell at a faster pace during the summer and autumn. In September, prices were almost 2% lower than one year earlier, which probably means that a stronger krone is now having an impact. The overall rise in consumer prices has, however, been influenced by subdued or negative price impulses from imported consumer goods over several years. Consumer price inflation is being curbed in particular by falling prices for clothing and audio-visual equipment, which combined account for 30% of imported consumer goods (see Chart 1.4). In addition to the generally low rate of increase in prices for these goods internationally, the fall in clothing prices is attributable to trade liberalisation. Reduced tariffs have resulted in lower consumer prices. At the same time, the removal of the quota regulations has contributed to a shift in imports away from high-cost countries to countries where production costs are substantially lower (see box in the July *Inflation Report* and the article "Effects of trade liberalisation on clothing prices and the overall rise in consumer prices" to be published in the December *Economic Bulletin*). However, there are still no clear signs that car prices, which account for about 35% of imported consumer goods, have been influenced by developments in the exchange rate. This may be because it takes time before competition at the import stage has an impact, but also because foreign producers engage in price discrimination between countries and allow the appreciation of the krone to translate into higher margins.

Weaker global growth but high oil prices

In the July report, global developments were assessed as somewhat more positive than in the February report. Growth was surprisingly high in the US in the first quarter, primarily fuelled by private consumption and stockbuilding. However, during the summer and autumn there have been signs that the recovery has not yet materialised. Growth in both the US and the euro area was weaker than expected in the second quarter. At the same time, share prices have exhibited a steep fall. After picking up somewhat at the beginning of the year, stock markets fell again, particularly in the US, in response to

uncertainty in connection with the publication of corporate results. A weaker growth outlook for the world economy has also had a substantial impact. The decline in share prices on the major stock exchanges has spread to stock exchanges in most countries. The Oslo Stock Exchange all-share index has declined by about 30% since the beginning of the year, reaching its lowest level since 1998 at the beginning of October (see Chart 1.6). In recent weeks, share prices have recovered somewhat.

Oil prices have risen by a little less than 40% since the beginning of the year and are currently at around USD 27 per barrel. There are several reasons for the rise in oil prices. During the first three quarters of 2002 compared with the same period last year, both OPEC and non-OPEC countries have made production cuts that more than offset the fall in global oil demand. Commercial crude oil stocks in the US and other OECD countries have fallen considerably while strategic reserves have increased. The tense situation with regard to Iraq has fuelled fears of a further fall in oil production. Towards the end of October oil prices edged down again after considerable overproduction in OPEC countries in relation to quotas.

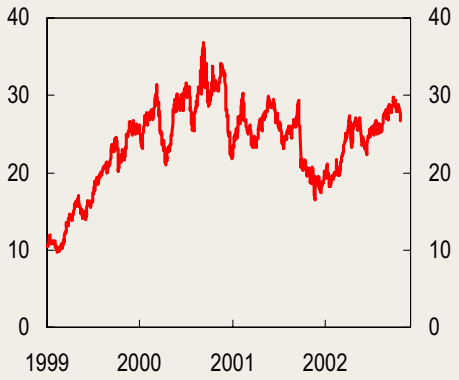
Forward rates no longer indicate expectations of a tightening of monetary policy internationally over the coming months (see Chart 1.8). Long-term interest rates fell markedly during summer and autumn, reflecting growing uncertainty in financial markets, portfolio shifts out of shares and lower growth and inflation expectations. The recent recovery in stock markets has, however, resulted in a slight rise in long-term interest rates from the historically low levels observed at the beginning of October.

Contraction in some manufacturing sectors

Production in Norwegian manufacturing remained more or less at the same level in the first half of 2002 compared with the first half of 2001. Employment has edged down. There have been considerable variations across manufacturing sectors. Both the ferro-alloy industry and parts of the furniture industry have scaled back activity in Norway over several years. These developments reflect persistently high wage growth and a considerably higher cost level than in competing countries, in addition to lower global prices. The appreciation of the krone has led to a further deterioration in competitiveness. The pulp and paper industry has reduced production and employment considerably over the last year.

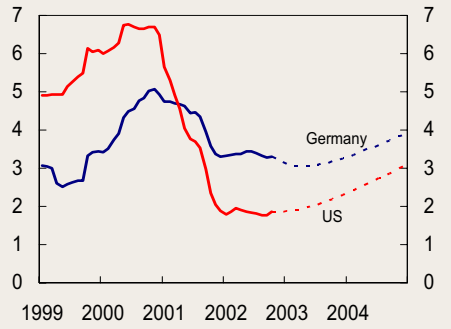
On the other hand, some segments of the shipbuilding and engineering industry are exhibiting growth thanks to the high level of activity and investment in the petroleum sector. Investment activity in the aluminium industry is also high, with sizeable investments in Norsk Hydro's plant in Sunndalsøra and Elkem's plant in Mosjøen.

Chart 1.7 Oil price, Brent Blend. USD per barrel. Daily figures



Source: Norges Bank

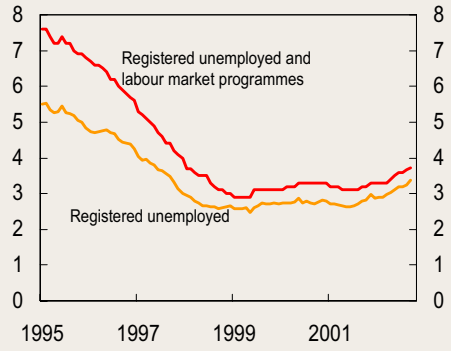
Chart 1.8 Three-month forward rates[1)] for Germany and the US. Monthly figures. Per cent



[1)] Three-month forward rates are estimated using money market rates and government bond yields with different maturities as observed on 24 October.

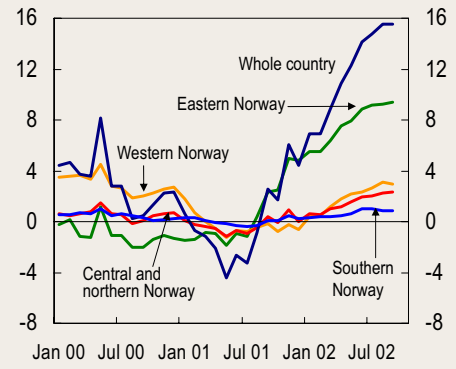
Source: Norges Bank

Chart 1.9 Registered unemployed and persons on labour market programmes. Percentage of labour force. Seasonally adjusted



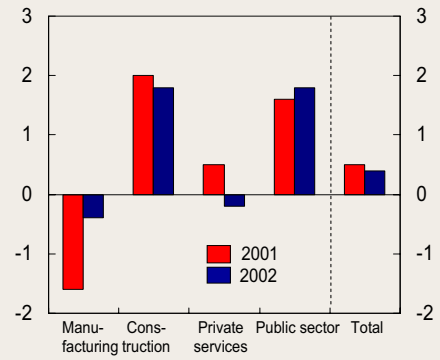
Source: Directorate of Labour

Chart 1.10 Change in unemployment on same month previous year. In thousands of persons



Source: Directorate of Labour

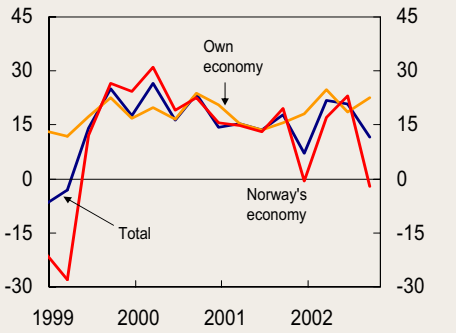
Chart 1.11 Change in employment 2001 and 2002[1]. Per cent



[1] Change first half of 2001 to first half of 2002

Source: Statistics Norway

Chart 1.12 Consumer confidence indicator.[1] Unadjusted figures. 1999 Q1 - 2002 Q3



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

Source: Norsk Gallup Institutt AS

Weak developments in some service industries, but high growth in the public sector

Registered unemployment has edged up over the last year, and stood at a seasonally adjusted 3.4% in September (see Chart 1.9). This is about half a percentage point higher than one year earlier. Even though unemployment in manufacturing has edged up in recent months, the increase in unemployment so far is primarily the result of restructuring and reduced activity in some service sectors. Unemployment has shown the highest rise in the southeastern part of the country where these industries are concentrated (see Chart 1.10). The aviation industry is in the process of restructuring. The ICT industry has reduced activity considerably over the last year. A sharp fall in earnings expectations has led to considerable reductions in the workforce in this industry.

Investment in service industries fell by close to 15% between the first half of 2001 and the first half of 2002. Investments may have been postponed pending the removal of the investment tax on 1 October this year. At the same time, industries such as IT and telecommunications have been adversely affected by weak global developments. Global operators have also scaled back capacity in Norway.

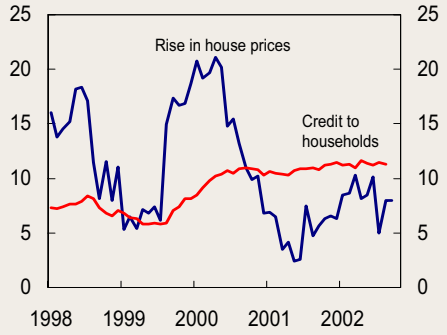
While developments in some parts of the Norwegian business sector have been sluggish, public sector demand and employment have continued to show brisk growth (see Chart 1.11). Employment is also rising in the construction industry and private services that are primarily produced for households. In the first half-year, total employment was 0.4% higher than in the same period last year. As a result of additional vacation days and higher sickness absence, the number of person-hours worked in mainland Norway nevertheless continued to fall in the first six months of the year. Mainland GDP growth was around 1% annualised between the second half of last year and the first half of this year.

High income growth and low consumption growth, but some uncertainty associated with consumption figures

According to Norsk Gallup's confidence indicator, household expectations regarding their financial situation are still high (see Chart 1.12). This may reflect the high level of wage growth. Household expectations concerning the domestic economy fell in the third quarter, however. This probably reflects the sharp fall in share prices, slightly higher unemployment, the focus on profitability in internationally exposed industries, in addition to weak global economic developments. Households continue to borrow heavily. In August this year, gross debt was 11.3% higher than in the same period last year (see Chart 1.13). House prices are now 8% higher than one year earlier.

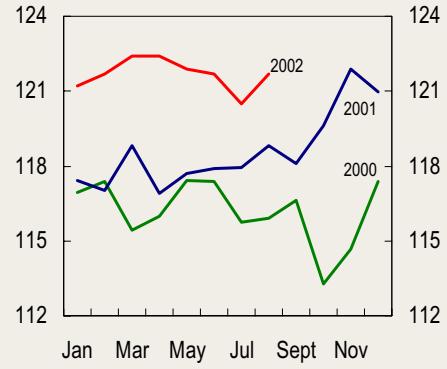
Household real income is rising sharply this year as a result of high wage growth, lower income taxes, reductions in indirect taxes and cheaper imports. Preliminary figures for consumption nevertheless show relatively low volume growth in the first half of this year, even though the indicators of goods consumption picked up in August and September. According to the quarterly national accounts, household consumption increased by 2.2% between the first half of last year and the first half of this year. Spending on services increased at a much slower rate than in recent years, according to the statistics. Overall growth in consumption seems unexpectedly low in the light of the strong growth in income. This should imply a pronounced increase in household saving, either in the form of housing investment or financial investment. Available data, however, show little or no growth in housing investment and housing starts are declining. Furthermore, Norges Bank's figures do not show any increase in household net lending in the first half of the year.

Chart 1.13 House prices and credit to households. 12-month rise. Per cent



Sources: Norwegian Association of Real Estate Agents and Norges Bank

Chart 1.14 Goods consumption index. 1995 = 100. Seasonally adjusted volume



Source: Statistics Norway

Given our estimates for income growth and available data for consumption and saving, there are now inconsistencies in the income accounts for households. It seems fairly clear that household income growth will be high. In our assessment, there is thus considerable uncertainty surrounding the figures for consumption and saving so far this year.

Several factors indicate that consumption may have been somewhat higher than estimated in the national accounts so far. First, only the turnover of petrol, and not other goods sold at petrol stations, is captured in the statistics on goods consumption. Strong growth in this turnover in the first half-year has therefore not been recorded as consumption. Second, it is uncertain whether the consumption figures provide a correct picture of household consumption abroad. A data source for this item in the national accounts is foreign exchange statistics from Norges Bank. No distinction is made between household and business consumption abroad, and the distribution is made afterwards using a set allocative key. Many companies have probably reduced business travel. During the same period, households recorded substantial growth in income. In addition, the strong krone made it relatively cheaper to go on foreign holidays and buy goods abroad. These factors suggest that households have increased their share of imports between 2001 and 2002. Third, it may be sensible to wait until there is a broader data source for services consumption.

On the basis of an overall assessment of the sources for the statistics, growth in private consumption so far this year is estimated to be around half a percentage point higher than the level estimated in the national accounts.

Table 2.1 GDP estimates.
Percentage change from previous year.

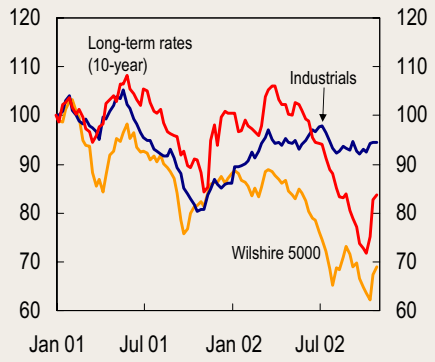
	2002	2003	2004
US	2¼	2½	3¾
Japan	-¾	½	1
Germany	½	1½	2½
France	1	2	2¾
UK	1½	2½	2½
Sweden	1¾	2½	2½
Norway's trading partners[1)]	1¼	2¼	2½
Euro area[2)]	¾	2	2½

[1)] Weighted by export weightings

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

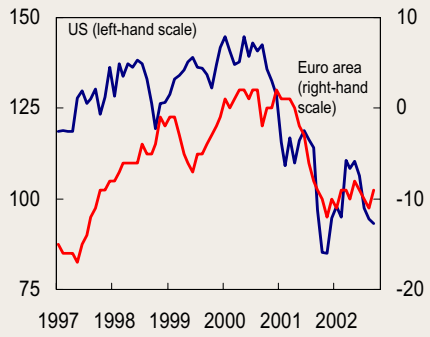
Source: Norges Bank

Chart 2.1 Equity prices and long-term interest rates in the US, and prices for industrials. Index, Week 1 in 2001 = 100. Weekly figures



Sources: EcoWin, The Economist, Wilshire Associates

Chart 2.2 Consumer confidence indicators in the US and the euro area. Seasonally adjusted diffusion index. Monthly figures



Sources: European Commission and the Conference Board Inc.

The international growth outlook has become less favourable since the July *Inflation Report*. Global growth is still expected to pick up, but the strength of the recovery may be weaker than previously assumed. The growth rate among Norway's trading partners is not expected to near the underlying growth potential until mid-2003. Moderate growth in domestic demand in the US means that the US economy will not provide the same stimulus to the world economy as previously. Developments in investment may be decisive for the strength of the recovery. A substantial level of excess capacity in several sectors suggests that it may take time before investment picks up appreciably.

Lower growth in household demand

Household financial wealth in many countries has diminished as a result of falling equity prices on world stock markets. In the US and the UK, the fall in equity prices has been offset by the continued rise in house prices. Households have taken advantage of higher house prices and lower interest rates to refinance housing loans and free up capital. So far, this has contributed to consumption growth. In the euro area and Japan, the direct wealth effects of the fall in equity prices are probably relatively limited, but they may contribute to slower consumption growth as a result of weaker growth prospects.

Real wage growth internationally has remained steady as a result of low price inflation. Productivity growth is assumed to remain high in the US. This provides room for continued growth in real wages, but without a rise in employment consumption growth will be moderate. Over time, the saving ratio may also have to rise from the current relatively low level. In the euro area, the financial situation in the household sector is by and large sound. Nevertheless, a rise in unemployment and financial market unrest will probably result in a high saving ratio and slow consumption growth.

In Japan, a decline in employment and increased unemployment will contribute to continued sluggish consumption. Wages have recently fallen more sharply than prices. Continued deflation will also contribute to postponing consumption.

Delayed investment recovery

US companies have a relatively high level of debt. Because of the slide in share prices, the value of companies in relation to debt has declined, reducing their possibilities for debt-financing new investments. At the same time, borrowing costs are rising. As a result of the decline in equity markets, equity financing has also become more difficult. Uncertainty may lead to a postponement of investment. High produc-

tivity growth and some improvement in corporate profits may gradually contribute to a rise in investment. However, low utilisation of existing buildings may indicate that it is primarily investment in machinery and equipment that will pick up. The introduction of extraordinary, but temporary depreciation possibilities will also boost investment.

Corporate profits have remained firmer in the euro area than in the US, and capacity utilisation has not dropped as much. Coupled with low interest rates and some rise in private consumption, this may pave the way for investment growth. Sizeable structural problems in a number of euro area countries and profitable investment alternatives in eastern Europe will probably result in a fairly moderate rise in investment in the euro area. In Japan, excess capacity in the corporate sector is hampering investment. Because of very low interest rates, companies with poor profitability are still able to service their debt. At the same time, the problems in the banking sector limit the possibilities for financing new investment. Moderate global growth also implies that investment activity will remain sluggish in the period ahead.

Positive monetary and fiscal impulses

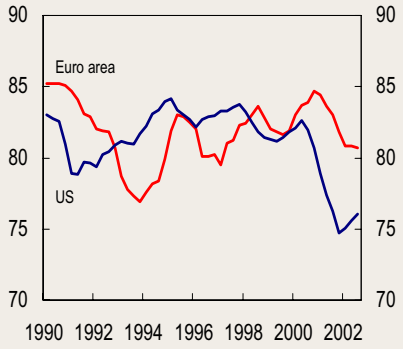
Monetary policy was relaxed in response to slowing activity through 2001. Interest rates in the US are the lowest for 40 years. The monetary policy easing will continue to have an effect in the period ahead. Monetary policy may also be relaxed further, although the scope for further interest rate cuts is limited by the low level of interest rates in some countries.

A more expansionary fiscal policy has fuelled growth in a number of countries. In the US, substantial tax reductions have been accompanied by higher public spending. The objective of reducing the federal budget deficit will probably limit any further stimulation of the economy in the period ahead. In the euro area, budget balances are also generally weaker, largely because of slower growth and hence lower-than-expected tax revenues. Some countries have cut taxes or increased public spending. In several euro area countries, large deficits and a high level of government debt will limit the room for manoeuvre in fiscal policy. The EU's Stability and Growth Pact also sets out budget deficit limits.

Uncertain economic outlook

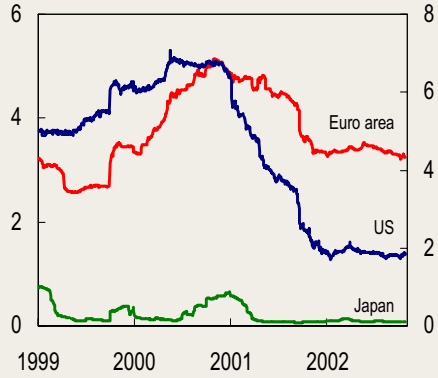
At the moment the global economy is vulnerable to further negative shocks. There is limited confidence in a swift economic recovery. Households and enterprises could easily decide to postpone consumption and investment.

Chart 2.3 Capacity utilisation in industry in the US and the euro area. Per cent of capacity. Seasonally adjusted. Quarterly figures



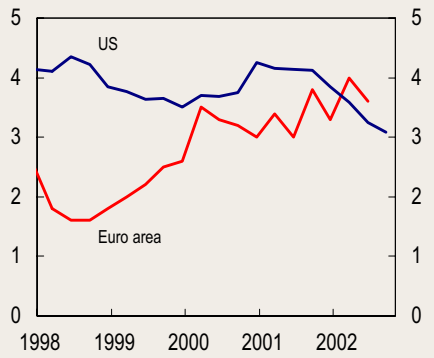
Sources: Federal Reserve and European Commission

Chart 2.4 Three-month interest rates in the US, the euro area and Japan



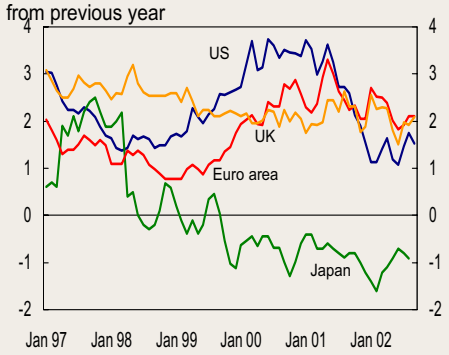
Source: EcoWin

Chart 2.5 Wage growth in the US and the euro area. Percentage rise on same quarter previous year



Source: EUROSTAT and Bureau of Labor Statistics

Chart 2.6 Consumer price inflation[1]) in the US, the euro area, Japan and the UK. Percentage change from previous year



[1]) CPI in the US and Japan, HICP in the euro area and RPIX in the UK

Sources: EcoWin and national statistics sources

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

	2002	2003	2004
USA	1½	2¼	2½
Japan	-1	-½	-¼
Germany	1½	1¼	1½
France	1¾	1½	1½
UK	2	2¼	2½
Sweden	2½	2¼	2¼
Norway's trading partners[1])	2	1¾	2
Euro area[2])	2	1¾	1¾

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

Source: Norges Bank

It is uncertain when investment growth will pick up. Optimistic expectations about returns drove up investment rates in many countries in the 1990s. Excess capacity may therefore be greater in many sectors than assumed in this report. A war in Iraq could lead to a further jump in oil prices and add to international uncertainty. The US current account deficit is historically high, and will be gradually reduced. A sudden shift as a result of a loss of confidence in the US economy and the dollar could have substantial adverse effects.

On the other hand, a rapid clarification of the situation in Iraq could push down oil prices and increase the willingness to take risks in financial markets. In recent weeks, equity markets have recovered to some extent, partly thanks to better-than-expected results in some large companies. However, it is too early to determine whether economic growth is picking up.

Price inflation remains low

Price inflation among Norway's trading partners has been moderate and has slowed somewhat in recent months. Sluggish economic growth and relatively high unemployment could restrain wage growth. Price inflation is expected to remain subdued in the period ahead. However, higher oil prices may lead to a temporary rise in producer and consumer price inflation.

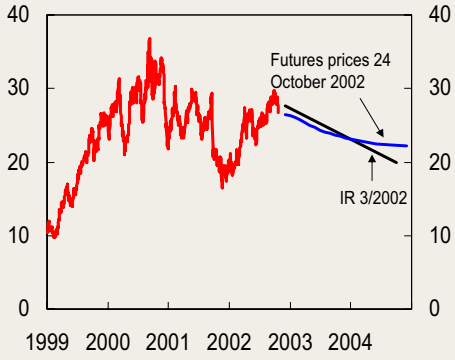
In the US, idle capacity and high productivity growth are still helping to curb inflation. Nevertheless, higher oil prices and the depreciation of the dollar may result in somewhat higher inflation. In the short term, inflation in the euro area will be influenced by transitory factors such as the after-effects of floods and higher energy prices. Underlying inflation, which is now at about 2½%, may gradually edge down as a result of lower wage growth and a slower rise in prices for services. The appreciation of the euro will also curb inflation. Japan is experiencing deflation, but a rise in activity has limited the fall in prices. The high level of excess capacity implies that prices will continue to fall. Inflation in the UK remains moderate. However, the utilisation of economic resources is relatively high. Unemployment is at a record low level, and wage growth has drifted up.

High oil prices

Prices for oil futures indicate that the oil price may remain high during the winter. So far, OPEC has not increased quotas to meet the seasonal rise in demand for oil during the winter, but will be meeting again in December to assess the situation. Oil stocks in the OECD area are now very low, particularly in the US. Because of unrest in the Middle East, there may be a substantial war premium priced into

oil. Such a premium could make oil prices unusually volatile in the period ahead. Oil prices are now higher than what is assumed to be a long-term equilibrium level. Although world economic growth is now picking up, growth and hence demand for oil will probably be weaker than assumed earlier. Moreover, OPEC has considerable excess capacity, and in recent years has lost market shares. The oil supply from non-OPEC countries, particularly Russia, has increased. We assume that oil prices will remain relatively high through the winter, and then fall gradually to USD 20 towards the end of 2004.

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



Sources: International Petroleum Exchange, London and Norges Bank

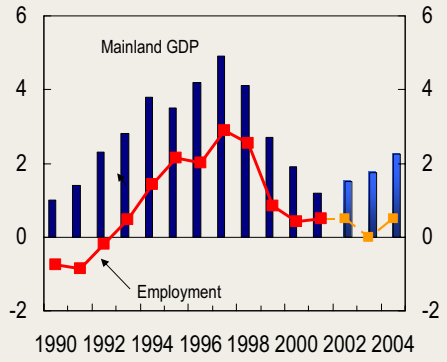
Table 3.1 Key aggregates for Norway 2002-2004
Percentage change from previous year

	2002	2003	2004
Mainland demand	2½	2¼	2½
Private consumption	3¾	3½	3¼
Public consumption	1¾	¾	2
Fixed investments	-¼	½	1½
Enterprises	-4¼	¾	1¼
Dwellings	4	¾	1¾
General government	6	¼	2
Petroleum investment	2	15	-5
Traditional exports	½	-1	0
Imports	1¾	3¾	1¼
GDP	1¾	2	2½
Mainland GDP	1½	1¾	2¼
Employment	½	0	½
LFS unemployment[1)]	4	4¼	4¼

[1)] Percentage of labour force

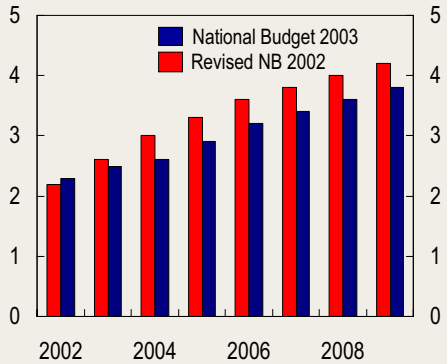
Source: Norges Bank

Chart 3.1 Mainland GDP and number of employed. Percentage change from previous year, 1990-2004



Sources: Statistics Norway and Norges Bank

Chart 3.2 Structural non-oil deficit. Percentage of trend mainland GDP. 2002-2009



Sources: National Budget 2003, Revised National Budget 2002

The projections for growth in the Norwegian economy have been revised downwards somewhat in relation to the previous *Inflation Report*, primarily as a result of the interest rate increase in July, weaker global developments and a stronger krone. Mainland GDP is projected to grow below its potential, rising by 1¾% in 2003 and 2¼% in 2004. This is a downward revision of ½ percentage point for next year and ¼ percentage point for 2004. Unemployment is projected to edge up.

Many export companies and other businesses in the internationally exposed sector will find that their earnings decline as a result of a deterioration in competitiveness and sluggish growth in the global economy. Traditionally sheltered enterprises in the service sector and retail trade will also feel the effects of international competition, primarily from Sweden. Due to the fall in share prices, investments may be postponed and activity curtailed, also in some service industries. Closures in manufacturing industry, efficiency measures that have already been implemented in some service industries and the fall in share prices may affect household expectations and lead to some increase in household saving. High real wage growth is nonetheless expected to result in robust growth in private consumption. Combined with further growth in petroleum investment in 2003, this will provide a substantial impetus to aggregate demand, although imports will account for a large share.

Employment is projected to remain unchanged between this year and next. The high level of wage growth is forcing businesses to rationalise and cut costs. We may have underestimated the negative effects of this on employment, both in the internationally exposed and sheltered sectors. On the other hand, fiscal policy is contributing NOK 17bn in indirect and direct tax reductions this year and next. This may have a more positive impact on activity in service industries and domestic industry than assumed in our projections.

Positive fiscal impetus to demand is sustaining activity

The fiscal policy guideline implies that the use of petroleum revenues over the central government budget will increase in the years ahead. However, the increase up to 2010 is now estimated to be more moderate than in the Revised National Budget for 2002 (see Chart 3.2). The value of the Government Petroleum Fund has declined sharply this year as a result of the fall in global stock markets and a stronger krone. The value of the Fund at the end of the year is now projected at NOK 666bn, NOK 110bn less than projected in May. This means that fiscal policy has less room for manoeuvre. The central government budget proposal is based on a real increase in the use of petroleum revenues of about NOK 2bn in 2003 following an increase of NOK 5bn

this year. Direct and indirect tax reductions totalling NOK 17bn are also proposed for this year and next. A substantial share of the tax reductions was approved in 2002, but will not have a full effect until 2003. This applies in particular to the investment tax, which was removed with effect from 1 October 2002.

Consequently, the structural non-oil government budget deficit will be 2.5% of trend mainland GDP. Measured as a share of mainland GDP, the structural deficit will increase by just over 0.1 percentage point from 2002 to 2003 (see Chart 3.3). For 2004, we have based our projections on the fiscal policy guidelines and assumed that the level of public expenditure as a share of mainland GDP will remain fairly constant.

In the central government budget proposal for 2003, nominal growth in government expenditure has been reduced from about 7% this year to about 4½% next year. We expect real growth in public sector employment and service production to be low. The Government puts real growth in local government sector revenues at ¾%. At the same time, the local government budget deficit is expected to be a little more than NOK 6bn. This is approximately on a par with previous years even though the state has taken over hospitals from the municipally sector. Historically, expenditure in the local government sector and in regional hospitals tends to be higher through the year than adopted in the budget. Growth in public consumption is projected at 1¾% this year and ¾% next year. This is on a par with the previous *Inflation Report*.

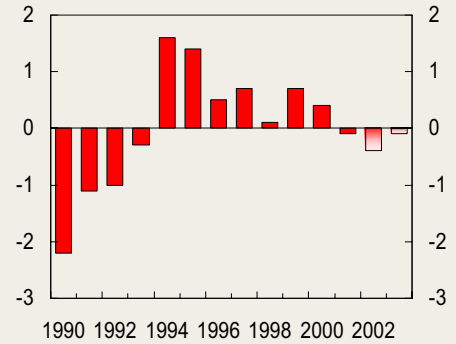
The central government budget proposal is based on real underlying spending growth in the central government budget of ½% next year. Investments in roads funded through PPP (Public Private Partnership) will account for a substantial share of road construction investment next year.[1] The budget also includes an increase of NOK 1bn in debt-financed investment in regional hospitals and a substantial increase in the operating credit limit for regional hospitals.

Strong growth in private consumption

Pressures in the Norwegian economy have resulted in the highest level of real wage growth in Norway since 1975. Growth in household real disposable income appears to be approaching 5%. Continued relatively high wage growth and further tax reductions for households will also result in brisk growth in real income over the next two years. The fall in stock markets and lower capital income will nonetheless contribute to a slight decline in income growth next year. Historically, income growth does not immediately

[1] Funding via a PPP model means that the government's share of the construction costs is paid over a number of years instead of in the form of high single allocations during the construction phase. The activity occurs immediately, but is not captured in the budget figures.

Chart 3.3 Change in the structural non-oil budget balance[1]. 1990-2003



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

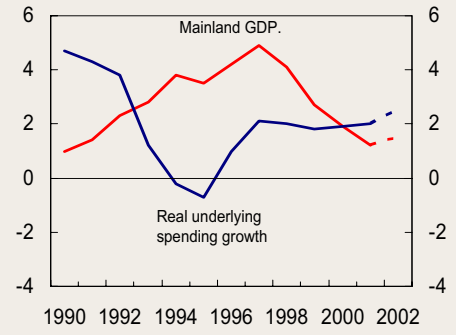
Source: National Budget 2003

Table 3.2 Real growth in the underlying expenditure in the central government budget. Percentage change from previous year

	2002	2003
Underlying growth in central government budget expenditure	7	4½
- Rise in prices for expenditure	4½	4
= Underlying real spending growth	2½	½

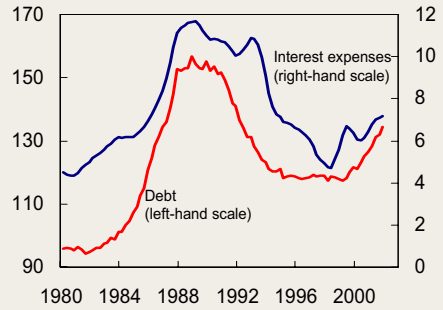
Source: Ministry of Finance

Chart 3.4 Real underlying spending growth in the government budget and growth in mainland GDP. Percentage change from previous year. 1990-2002



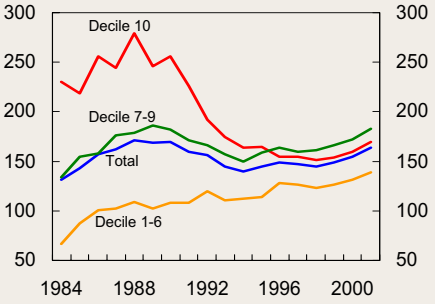
Sources: Statistics Norway, Ministry of Finance and Norges Bank

Chart 3.5 Household debt as a percentage of disposable income[1] and household interest expenses after tax as a percentage of cash income. 1980-2001



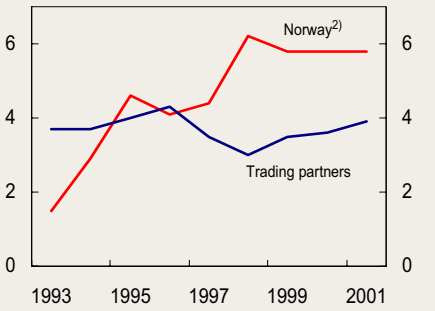
[1] Figures for household disposable income taken from the national accounts
Sources: Statistics Norway and Norges Bank

Chart 3.6 Debt in relation to disposable income[1] for households distributed by income level [2]. Per cent. 1984-2001



[1] Figures for household disposable income are taken from Statistics Norway's income and wealth survey, which is based on tax return statistics. The figures from and including 2000 are projections
[2] Decile 10 consists of the 10 per cent of households with highest household income (over NOK 490 000 after tax in 1999), decile 9 consists of the next 10 per cent etc.
Sources: Statistics Norway and Norges Bank

Chart 3.7 Labour costs[1] in Norway and among trading partners. Percentage change from previous year. 1993-2001



[1] Hourly labour costs in manufacturing
[2] Including costs of additional vacation days in 2000 and 2001
Sources: Ministry of Finance, TRCIS/IMF and Norges Bank

pass through to consumption. The saving ratio is therefore projected to increase this year and fall somewhat next year. Overall, however, saving is expected to rise. Consumption growth is projected at 3¾% this year, 3½% next year and 3¼% in 2004.

Consumption projections are lower than in the previous *Inflation Report*. The downward revision is mainly due to the increase in the key rate in July. It is uncertain to what extent the fall in share prices will affect household demand. The fall in share prices has substantially reduced household financial wealth. The bulk of household wealth in the form of shareholdings is owned by the share of the population with relatively high income. This group accounts for a small share of total consumption in relation to their portion of shareholdings. The sharp decline in share prices may nonetheless influence household expectations concerning their own financial situation and the Norwegian economy and thus contribute to an increase in saving. On the other hand, housing wealth continues to grow, reflecting rising house prices. Housing wealth accounts for a far larger share of total household wealth than financial wealth.

Growth in credit to households has been very high and on the rise over the past couple of years. High credit growth primarily reflects the increase in house prices and strong income growth. The debt burden has increased (see Chart 3.5). In relation to income, debt is as high or higher than it was before the debt crisis in the 1980s for all income groups except the highest income bracket (decile 10) (see Chart 3.6). The interest burden, i.e. interest expenses as a share of income, is nonetheless lower than it was 15 years ago.

Weak outlook for internationally exposed sectors

For the past five years, wage growth in manufacturing has on average been around 2 percentage points higher than wage growth among trading partners (see Chart 3.7). Up to mid-2000, this was countered by a depreciation of the krone, so that cost competitiveness remained fairly stable. The krone has appreciated markedly since summer 2000. The combination of high wage growth and a stronger krone has resulted in a considerable deterioration in competitiveness in the Norwegian business sector within a relatively short period. The strong krone has contributed to a decrease in the value of exports and a reduction in net exports.

At the same time, global cyclical developments have been weaker. Low economic growth among trading partners affects Norwegian export markets through lower demand and falling prices. Weak performance among export companies may in turn have an impact on subcontractors, who operate to a greater extent in the domestic market.

Manufacturing accounts for approximately 90% of Norway's traditional merchandise exports. The processing industry is by far the most export-oriented, exporting over 70% of its production (see Table 3.3). Consequently, this industry is at the outset vulnerable to the effects of an international downturn and a strong krone. Many enterprises have, however, hedged against exchange rate fluctuations through currency positions and long-term price contracts. This can to some extent mitigate the negative effects. However, parts of the processing industry, especially ferro-alloys, but also pulp and paper, will probably be scaled back in Norway. In other parts of the metal industry, particularly aluminium, several large investment projects are under way or planned both in Norway and abroad. Enhanced efficiency, through fixed investment and the use of new technology, will reduce the need for labour also in these industries.

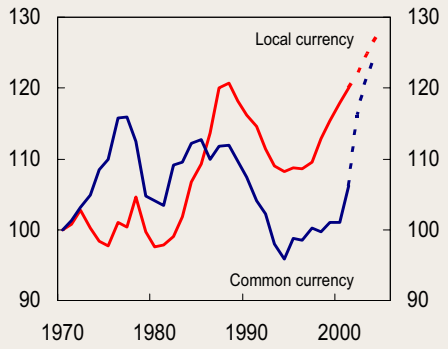
Some industries, such as the textile and furniture industries, are more labour-intensive with less mass production than the processing industry. High labour costs have a more direct impact on profitability than in capital-intensive industry. Developments in cost competitiveness may have a substantial effect on employment.

For other industries, such as transport equipment (ships, oil platforms) and the engineering industry, the outlook is more mixed. Production and investment are being sustained as a result of an increase in activity in the petroleum sector. Petroleum investment, already at a high level, is projected to rise sharply next year (see Chart 3.9), primarily as a result of major development projects, such as the Kristin and Snøhvit fields. Oil prices have also risen over the past year. Persistently high oil prices may contribute to increased exploration investment and may render some unutilised reservoirs at existing installations profitable, so that they are put into production fairly quickly.

In recent years, a rising cost level in Norway has made it more profitable to use foreign subcontractors in the petroleum sector and to award contracts to producers in low-cost countries. This tendency is likely to intensify. This would imply weaker impulses from higher petroleum investment to mainland demand. In addition, some of the projected increase in petroleum investment from this year to next is related to installations that normally have a high import share, particularly the Snøhvit field.

In addition to cyclical fluctuations and the competitive environment, improvements in productivity will probably also lead to a reduction in manufacturing employment. Both in Norway and in other OECD countries, manufacturing industry's share of total employment has moved on a downward trend over the past 30 years. Manufacturing showed a renewed decline in 1999, partly driven by a substantial fall in petroleum investment. Manufacturing employment was

Chart 3.8 Relative labour costs in Norwegian manufacturing compared with trading partners. Index, 1970=100. 1970-2004



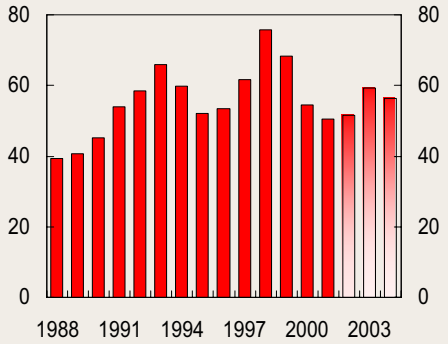
Sources: Statistics Norway, TRCIS/IMF and Norges Bank

Table 3.3 Norwegian manufacturing industry, 2001

	Number employed[1]	Share of manufacturing output[2]	Export share of output[2]
Domestic industry	**106**	**33**	**19**
Wood products	16	4	16
Publishing and printing	37	7	2
Food products, beverages and tobacco	53	22	25
Process industry	**56**	**32**	**73**
Refined petr., chemicals and mineral products	23	13	71
Pulp and paper	10	5	63
Basic chemicals	9	5	56
Basic metals	15	9	91
Other industry	**135**	**35**	**37**
Furniture	15	3	39
Textiles	8	1	48
Machinery	78	19	60
Building of ships, oil platforms and modules	35	12	13
Sum	**296**	**100**	**43**

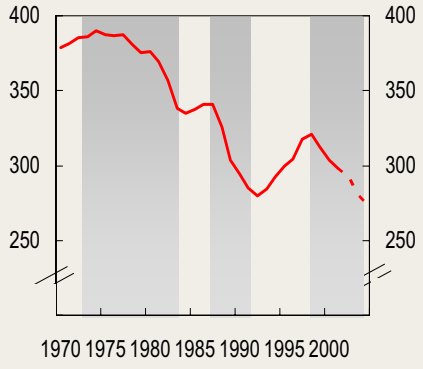
1) In thousands
2) Per cent
Source: Statistics Norway

Chart 3.9 Petroleum investment. Actual investment and projections. In billions of NOK. Constant 1999 prices.



Sources: Statistics Norway and Norges Bank

Chart 3.10 Manufacturing employment, 1970-2004. In 1000s employed



Sources: Statistics Norway and Norges Bank

reduced by 13 000, or 4%, in one year. The decline continued, although not at the same pace, in 2000 and 2001. Next year may prove to be another year of substantial reductions in manufacturing employment. However due to higher capital intensity and high productivity growth, the decline in value added in manufacturing will be relatively smaller.

Manufacturing industry's contribution to the economy varies widely from one region to another. Manufacturing industry's share of GDP by county varies from below 5% in Finnmark to close to 30% in Telemark. The consequences of scaling back manufacturing will thus vary from region to region. A rapid decline in manufacturing employment may also have a negative impact on private services. Manufacturing enterprises are also expected to intensify their efforts to reduce costs. This may have consequences for local suppliers of goods and services.

Moderate growth in service industries

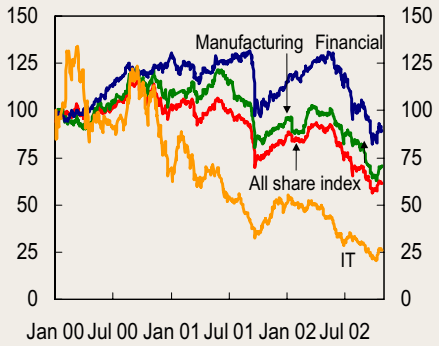
In the course of the past year, considerable restructuring has taken place in many service industries. Low demand and excess capacity have reduced activity in the ICT industry, the aviation industry and other parts of the travel industry. The decline has been amplified by the downturn in the global economy. Global operators have scaled back their capacity in Norway, and Norwegian subcontractors have been affected by bankruptcies in other countries.

A large part of the consolidation process in the ICT and aviation industries has probably been completed, although individual enterprises will still need to cut costs and reduce their workforce. The decline in the equity market may affect the financial industry and parts of the consulting business.

A substantial fall in investment in service industries is expected this year. The removal of the investment tax from 1 October will reduce corporate taxes by about NOK 6bn. However, in the light of the fall in share prices and the uncertainty surrounding developments in the global economy, investment is not likely to pick up appreciably in the period ahead. Indeed, one possible explanation for the fall in share prices is overinvestment, perhaps particularly in some service sectors. The sharp fall in share prices is also hampering corporate funding in the form of equity and loans.

Growth among our trading partners is expected to pick up towards mid-2003. This may boost growth in some service industries in Norway that have been particularly hard hit by the global downturn. In addition, household consumption is to a great extent oriented towards service industries in the private sector. Sustained strong growth in private consumption may therefore fuel activity in the service sector in the period ahead.

Chart 3.11 Developments in some indices on the Oslo Stock Exchange. Daily figures, 03.01.00 - 24.10.02. Index, 3 January 2000 = 100



Source: EcoWin

Overall, we project low growth in investment and moderate growth in production and employment in service industries over the next two to three years. This projection is, however, uncertain, particularly in the light of projected developments in manufacturing. On the other hand, the removal of the investment tax may push up investment more than assumed.

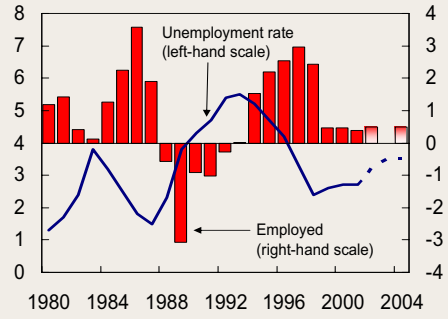
Unemployment may edge up

A further increase in unemployment is projected next year. Growth in public service production and employment is projected to be lower than in previous years, although still positive. At the same time, demand for labour in other parts of the sheltered sector will probably increase. However, as a result of developments in manufacturing, on balance we expect no growth in employment next year.

In the past year, the labour force has expanded more than demographic factors would imply. This is partly because of a reduction in outflows to disability schemes in the youngest age groups and to early retirement. In addition, high real wage growth may have increased labour market entry. The labour force is expected to expand at a slower pace next year. There will probably be considerable outflows to various pension schemes, particularly from manufacturing industry. The exit from the labour market may limit the rise in both unemployment and employment. We therefore project that registered unemployment as a share of the labour force will remain lower than the average for the 1990s, which was 4¼% .

There is a risk of higher-than-projected frictional unemployment both in manufacturing and service industries. Higher unemployment normally leads to lower wage growth, which in turn provides room for an increase in employment. Wage-wage spirals and continued demand for labour in the sheltered sector may, however, keep wage growth at a high level, while unemployment increases in other parts of the economy.

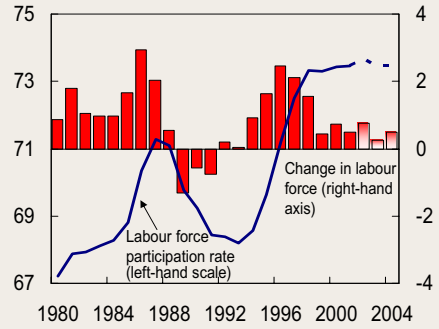
Chart 3.12 Change in employment from previous year. Per cent. Unemployment[1)] as a percentage of the labour force. 1980-2004



[1)] Registered unemployed

Sources: Statistics Norway, the Directorate of Labour and Norges Bank

Chart 3.13 Change in the labour force from previous year. Per cent. The labour force as a percentage of the population aged 16-74 (labour force participation rate). 1980-2004

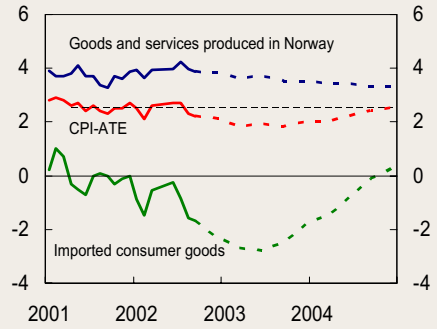


Sources: Statistics Norway and Norges Bank

4 Inflation projections

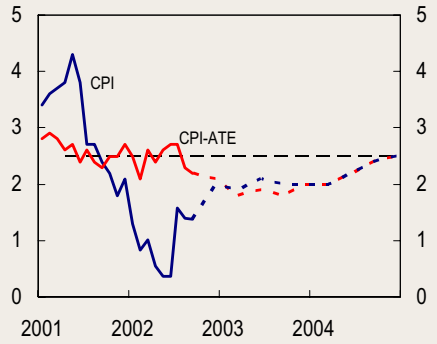
4.1 The inflation outlook

Chart 4.1 Consumer prices adjusted for tax changes and excluding energy products (CPI-ATE). Total and distributed by imported and domestically produced goods and services. 12-month rise. Per cent



Sources: Statistics Norway and Norges Bank

Chart 4.2 Consumer prices (CPI). Total and adjusted for tax changes and excluding energy products (CPI-ATE). 12-month rise. Per cent



Sources: Statistics Norway and Norges Bank

Table 4.1 CPI and factors contributing to CPI inflation. Percentage change from previous year

	2002	2003	2004
Annual wages	5¾	5½	5¼
Productivity[1)]	2	2	2
Prices import consumer goods[2)]	-1¼	-2½	-½
CPI	1¼	2	2¼
CPI-ATE	2¼	2	2¼

[1)] Mainland Norway
[2)] Excluding directe effects of tax changes

Source: Norges Bank

The inflation outlook for the next two years is marked by two opposing forces. High wage and cost inflation will, on the one hand, sustain the rise in prices for domestically produced goods and services. On the other hand, the appreciation of the krone will temporarily exert downward pressure on prices for imported goods. If the krone remains at the level prevailing in recent months, the effect of the appreciation on price inflation will be strongest in mid-2003. Thereafter, the effects will start to unwind.

CPI-ATE inflation is projected at 2¼% in 2002, 2% in 2003 and 2¼% in 2004.[1] CPI-ATE inflation may fall to 1¾% next summer. Thereafter, inflation is projected to edge up. At the end of 2004, inflation is projected at 2½%. However, the annual rise in 2004 may be somewhat lower than this as a result of a lower rate of increase at the beginning of the year.

CPI inflation is being temporarily restrained this year by lower excise duties and low energy prices in the first half-year. CPI inflation is projected at 1¼% in 2002. Both oil prices and electricity prices showed a higher-than-expected rise through the summer. Measured in USD, oil prices are now around 35% higher than one year earlier. Our projections are based on the assumption of a gradual decline in oil prices, although the high level of oil prices is still expected to have an impact on consumer prices. The first-round effects will be to push up prices for petroleum products. This will be followed by indirect effects, such as higher transport prices, which will also exert some upward pressure on CPI-ATE inflation.

The inflation projections for the next two years have been revised downwards on the July report. The downward revision must be seen in connection with higher interest rates and a stronger krone. Norges Bank's key rate (the sight deposit rate) was raised by 0.5 percentage point to 7% in July. The projections in the report are based on the technical assumption of an unchanged interest rate. Another technical assumption is that the import-weighted krone exchange rate will remain stable at the average for the past three months. On the cut-off date for this report the krone exchange rate was in line with this average. Our assumptions imply an import-weighted krone exchange rate that is 4% stronger and a sight deposit rate that is 0.5 percentage point higher than assumed in the July report. An overview of key assumptions underlying the inflation projections is provided in Table 1 in Annex II.

[1)] The central government budget for 2003 includes a proposal to increase government grants to day-care centres by NOK 750m from 1 August. A reduction in user fees will have a temporary impact on consumer price inflation in 2003 and 2004. This has not been taken into account in our projections.

4.2 Domestic inflationary impulses

It appears that this year's wage settlement will result in the highest annual wage growth since 1998. In real terms, the rate of growth is at its highest level since 1975. Wage growth has accelerated in spite of some increase in unemployment, moderate activity in some service industries and a marked deterioration in manufacturing competitiveness. The results of this year's wage settlements suggest that the social partners considered the labour market to be very tight this spring.

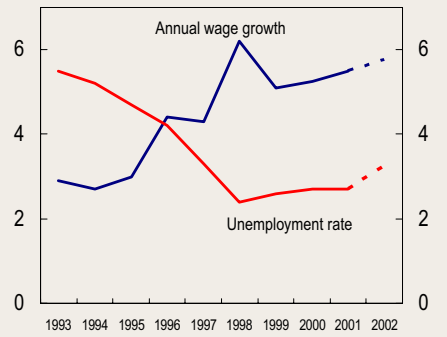
Annual wage growth averaged 5½% in the period 1998-2002 when taking into account the effect of additional vacation days introduced last year and in 2002. Growth in hourly labour costs was even somewhat higher, partly as a result of the steady increase in sickness absence. Domestic inflationary impulses are stronger than the level that is consistent with the inflation target over time. The wage share, i.e. the ratio of labour costs to total income, is high in many enterprises. This is one of the reasons behind the more subdued demand for labour.

Wage settlements in Norway have traditionally been characterised by a relatively high degree of coordination. Up to 1997, a stable exchange rate and wage growth abroad served as an anchor for the social partners. In 1998, the rise in labour costs jumped (see Chart 4.3), and have since been 1½ -2 percentage points higher than among our trading partners.

The degree of centralised coordination in the settlements seems to have gradually weakened over the last three years. Differences in wage growth across groups have resulted in relatively high pay compensation demands and wage-wage spirals.

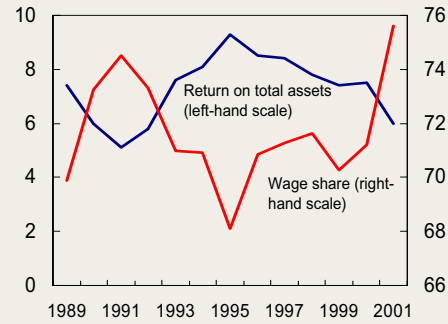
Wage growth is projected at 5½% in 2003. This year's wage settlements resulted in considerable variations in wage growth across different groups. Substantial pay increases were awarded to some groups with effect from next year. Including these increases, the carry-over into 2003 will be high, and is estimated at a little more than 3%. Even if pay increases prove to be moderate next year, for example in line with the increases in 1999 when the recommendations of the Arntsen Commission were applied, total annual wage growth will still be high next year, most likely not less than 5%. However, if pay increases and wage drift turn out to be the same as the average for the past five years, total wage growth will be in the 6% range in 2003. Wage growth for the groups that have already been awarded pay increases with effect from next year may also be well above the average for 2003. However, it cannot be ruled out that these groups will be awarded correspondingly lower pay increases in the settlement next spring. This could push down wage growth.

Chart 4.3 Annual wage growth[1] and unemployment rate[2]. 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, the Directorate of Labour and Norges Bank

Chart 4.4 Wage share[1] and return on total assets[2] in manufacturing. Per cent



[1] Labour costs as a percentage of value added
[2] Ordinary profit/loss after tax + depreciation - write-downs as a share of total assets. Excluding oil companies
Sources: Statistics Norway and Norges Bank

If pay increases are the same for all groups in the wage settlement in 2003, the differences in wage growth across groups will persist until the main settlement in 2004. The experience of recent years shows that this could result in pay compensation demands among groups that are lagging behind. A slight rise in unemployment since 1998 has come hand in hand with rising annual wage growth. Over time, high cost inflation will lead to workforce reductions in companies, not only in the manufacturing sector but also in service industries and the public sector. All in all, some increase in unemployment and weak profitability in the internationally exposed sector are expected to have a dampening impact on wage growth in the years ahead. Wage growth is projected to slow to 5¼% in 2004.

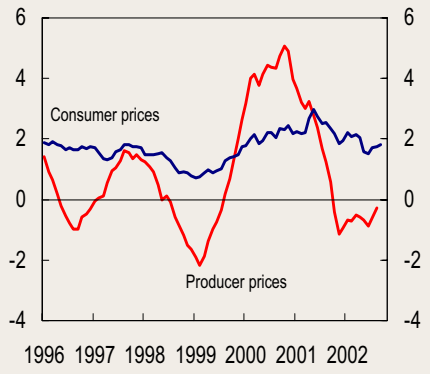
4.3 International inflationary impulses

In recent years, high domestic inflation has been countered by a low and at times negative rise in prices for imported consumer goods in the CPI. It appears that this tendency will be more pronounced next year. As a result of the appreciation of the krone, the rate of increase in prices for imported consumer goods is not likely to be positive until the end of 2004.

Consumer price inflation among our trading partners is projected to hover below 2% annually in the years ahead. In Norway, prices for goods paid by Norwegian importers are projected to rise at a somewhat slower pace than this because the rise in prices for goods is normally lower than the rise in prices for services. This is because goods production normally features higher productivity growth than services production. International producer prices have shown little change over the last year. Developments this summer indicate that the economic recovery will take place at a later stage than expected earlier. In isolation, this will result in somewhat lower international price inflation than projected in the July report. On the other hand, oil prices have been higher than assumed in the previous report. In isolation, this will contribute to higher externally generated inflationary impulses because oil prices are an important cost component. Commodity futures prices indicate a slight rise in commodity prices. This is consistent with a pick-up in global demand. Against the background of a gentle upturn in global production, continued excess capacity and slower wage growth, producer prices among our trading partners are expected to show a moderate increase. On balance, international producer prices measured in foreign currency are projected to rise by around ½% in 2004.

The appreciation of the krone is probably the main factor behind the faster fall in prices for imported consumer goods in the CPI in recent months. The price fall has been approximately in line with expectations based on the exchange rate path and our projections of its impact on consumer prices.

Chart 4.5 Producer prices and consumer prices. 25 trading partners. 12-month rise. Per cent



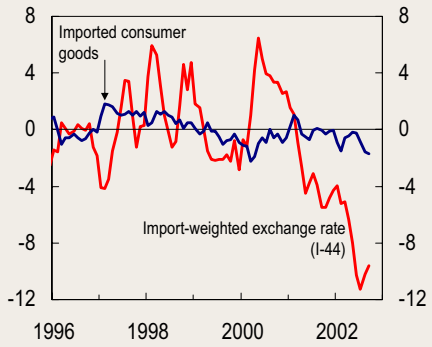
Sources: EcoWin, Datastream, the OECD and Norges Bank

According to our calculations, the effect of exchange rate changes on consumer price inflation is strongest one year after the change has occurred. The effects then start to unwind.

There are several reasons why it takes time for an appreciation of the krone to feed through to prices for imported consumer goods. Many enterprises and importers will have hedged against movements in the exchange rate in the short and medium term. There can be costs associated with changing prices. Enterprises that are faced with such costs will only change prices when there is a sustained change in the exchange rate. With considerable daily and monthly variations in the exchange rate, it may be difficult for enterprises to determine whether a change is long-lasting or not. Moreover, prices in markets with weak competition are often set on the basis of the market's willingness to pay, which would favour price stickiness, particularly in response to an appreciation of the krone. This is reflected in car prices, for example. It would seem that it takes even longer for any indirect effects, through prices for imported intermediate goods and thereby prices for domestically produced goods and services, to feed through to inflation.

From the beginning of 1997 to mid-2000, the import-weighted krone exchange rate depreciated by around 10%. Since May 2000, it has appreciated by about 18%. These changes first pushed up inflation and thereafter had the opposite effect. According to our calculations, the overall impact has been to push down consumer prices since the first quarter of this year. The projections in this report imply that the appreciation of the krone over the last two years will have its strongest impact on inflation next summer, when the contribution may be to push down overall consumer price inflation by a good 1 percentage point. The negative contribution will thereafter decline. However, if the krone remains at the current level, it will take several years for the dampening effects on consumer price inflation to be fully exhausted. It should be emphasised that these calculations are uncertain. Several countries have observed that the feed-through from the exchange rate to consumer prices has been smaller than expected. It can take a long time for the effects to unwind if economic agents are slow to adapt.

Chart 4.6 Import-weighted exchange rate and prices for imported consumer goods adjusted for tax changes. 12-month rise. Per cent

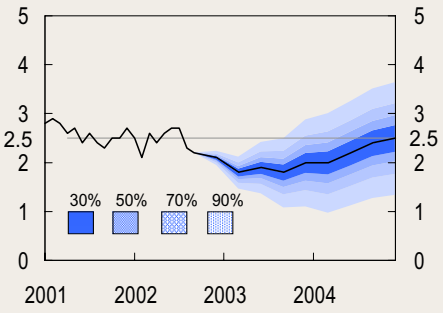


Sources: Statistics Norway and Norges Bank

4.4 Alternative assumptions and risks to the inflation outlook

The inflation projections in this report indicate the most probable path over the next two-three years, given the technical assumptions of a sight deposit rate of 7% and a krone exchange rate equal to the average for the last three months. Price inflation is projected to slow in the period to next summer, followed by a gradual rise. At the end of 2004,

Chart 4.7 Consumer price inflation[1]. Projection and uncertainty. 12-month rise. Per cent



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

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

Sources: Statistics Norway and Norges Bank

price inflation could reach 2½%. The projection for inflation two years ahead corresponds to the inflation target.

The most important developments since the July report are summarised in section 1. Growth forecasts for trading partners have been adjusted downwards. Oil prices are assumed to be higher than in our last report as a result of developments this autumn, but prices are still expected to fall to USD 20 per barrel over the next two years. Against this background, the uncertainty surrounding oil prices and global growth is considered to be balanced. Growth in production and demand in Norway has been revised down and unemployment adjusted upwards somewhat as a result of higher interest rates, a stronger krone, a weaker outlook for the world economy and the sharp decline in share prices. The projections for both wage and price inflation are thus somewhat lower than in the July report. On the basis of the description provided in sections 3 and 4, the risks surrounding the projections for the Norwegian economy are considered fairly balanced. Given the interest rate and exchange rate assumptions, the risks to the inflation projection are thus also considered to be balanced. Chart 4.7 shows the overall uncertainty surrounding the inflation projection on the basis of our historical accuracy in inflation forecasting.

Effects of changes in interest rate and exchange rate assumptions

Even though the overall risks to the projections are judged to be balanced, the outturn may prove to be different.

If the exchange rate moves on a path that is different from the assumption underlying this report, this will have an effect on price developments. There is little empirical basis for assessing the impact of a pronounced and sustained appreciation of the krone on the Norwegian economy. Our analysis must therefore primarily be based on the effects observed when the krone has moved in the opposite direction. This empirical basis suggests that a sustained change in the effective krone exchange rate of 5% could change the rise in consumer prices by a quarter percentage point the first year, by close to half a percentage point the second year and about a quarter percentage point the third year.[2]

The *krone exchange rate* has strengthened considerably since spring 2000. The appreciation can be partly explained by a shift in portfolios in international financial markets where investors have been seeking other positions with high returns. The interest rate differential between Norway and other countries has been wide and rising. A wide interest rate differential in turn reflects a shortage of real economic resources in Norway and available resources among our trad-

[2] See box in *Inflation Report* 2/2002

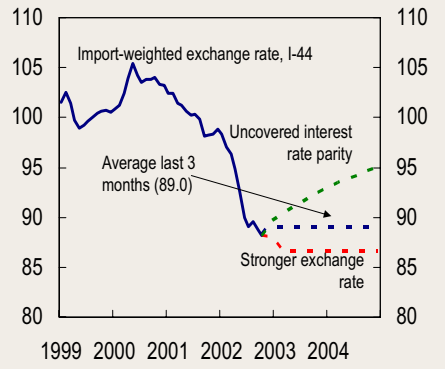
ing partners. Moreover, oil prices have risen sharply since the beginning of the year, and it may appear that the sharp rise has been accompanied by an appreciation of the krone. The fiscal policy guidelines imply that central government spending of petroleum revenues will increase gradually in the years ahead. Increased demand in private and public service sectors means that the sheltered sector will use an increasing share of available labour. In an economy with full capacity utilisation, this can only be achieved through a transfer of resources from the internationally exposed sector to the sheltered sector. This implies a real appreciation of the krone. This autumn, investing in the Norwegian krone may have been perceived as a good hedge against a downturn in the world economy that is due to high oil prices and fear of war.

A depreciation of the krone cannot be ruled out. The theory of uncovered interest rate parity implies that a positive differential between domestic and foreign interest rates today is consistent with an expected depreciation of the krone. This is reflected in the forward rate in the foreign exchange market, which implies a depreciation of the krone by about 7% in the period to end-2004 (see Chart 4.8). The krone may also weaken if oil prices fall. A recovery in global equity markets and renewed optimism concerning the international economy may also contribute to weakening the krone. Should the krone depreciate approximately in line with the forward rate, the dampening effects of the appreciation on inflation will more or less be countered in two years time. If this proves to be the case, inflation may move up to 3% in two years time (see Chart 4.9).

Nor can a further appreciation of the krone be ruled out. If global developments turn out to be weaker than assumed in this report, and interest rates in other countries are lowered, the differential between domestic and foreign interest rates will continue to widen. We have therefore looked at the effects of a continued appreciation of the krone at approximately the same pace observed this autumn up to the end of the first quarter of 2003. The krone would then be about 3% stronger than the assumption underlying the projections in this report (see Chart 4.8). A further appreciation of this magnitude will bring price inflation down to 2¼% at the end of 2004, i.e. around a quarter percentage point lower than in the baseline scenario (see Chart 4.9).

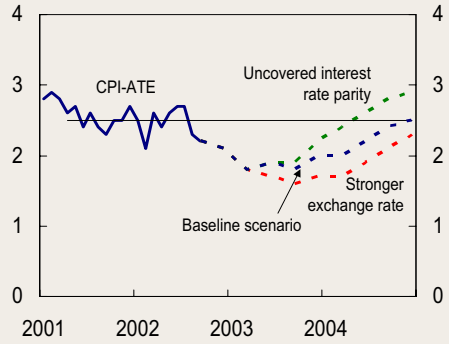
In the baseline scenario in this report, the inflation target will be attained with a combination of a relatively strong krone, a sight deposit rate of 7% and relatively high wage growth. There are many different combinations of a krone exchange rate, interest rate and wage growth that will result in an inflation rate of 2½% two years ahead. Developments in these three variables cannot be viewed separately. With overall growth in labour productivity equal to the average for the last 20 years of 2%, wage growth of around 4½% could

Chart 4.8 Different scenarios for the krone exchange rate (I-44)



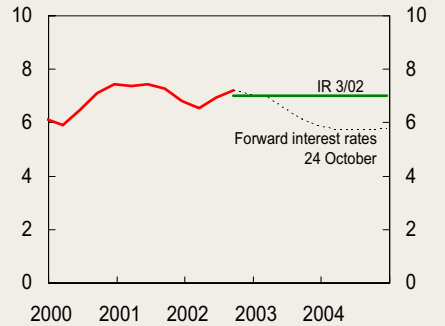
Source: Norges Bank

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



Sources: Statistics Norway and Norges Bank

Chart 4.10 Technical assumption[1] and expectations concerning short-term money market rates[2]. Per cent

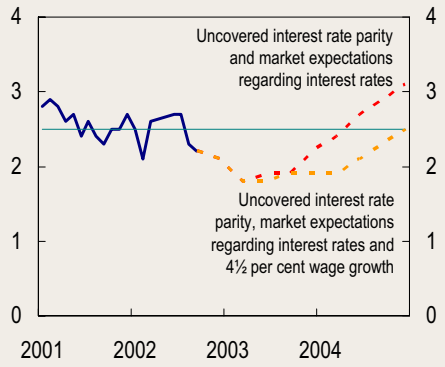


[1] Sight deposit rate

[2] Three-month money market rates up to and including Q3. Three-month forward rates are estimated using four money market rates and five government bond yields with different maturities as observed on 24 October.

Source: Norges Bank

Chart 4.11 Projected rise in CPI-ATE under various assumptions. 12-month rise. Per cent



Sources: Statistics Norway and Norges Bank

be consistent with the inflation target and stable profitability and employment over time (see box "The Scandinavian model of inflation – revisited"). With an inflation target for monetary policy, there is a general tendency for unexpected high wage growth to fuel expectations of higher interest rates and thereby a stronger exchange rate. Income settlements therefore influence interest rate expectations and the exchange rate.

The forward rate in the foreign exchange market can under certain conditions be assumed to reflect market participants' average exchange rate expectations even though experience suggests that it often proves to be a poor gauge of actual developments in the short run. In addition to a depreciation of the exchange rate, the market expects a decline in interest rates. The market has recently priced in a decline in the three-month rate of about a quarter percentage point to the end of the year and a further ¾ percentage point in the first half of 2003 (see Chart 4.10).

This scenario for the krone exchange rate and interest rates would drive up demand and inflation in the Norwegian economy. In relation to the baseline scenario in this report, this alternative path for the interest rate and krone exchange rate would result in both higher imported price inflation and higher wage growth. This might push up the inflation rate to a little more than 3% two years ahead. Lower wage growth than estimated in this report might, however, counter higher inflation as a result of lower interest rates and a weaker krone exchange rate. Our calculations indicate that wage growth must fall towards 4½% over the next two years for lower interest rates and a weaker krone exchange rate, as reflected in the forward rate and the market's interest rate expectations, to be consistent with the inflation target (see Chart 4.11). This rate of wage growth is in line with the expectations among market participants and academics in Norsk Gallup's expectations survey. With the pay increases that have already been agreed for 2003, this implies a close to zero settlement in centralised settlements next spring and very low increases in local wage settlements. For export companies, competitiveness would improve by around 10% over the next two years under this scenario compared with the baseline scenario.

The Scandinavian model of inflation-revisited

Since the 1960s, the Scandinavian model of inflation, also known as the Aukrust model, has served as a basis for our analysis of the factors determining price and wage developments in Norway in the long run. The theory was developed by Statistics Norway in the 1960s.

The model showed that under a *fixed exchange rate* inflation is primarily determined by inflation abroad in the long term. Given approximately the same growth in productivity in Norwegian and foreign manufacturing, wage growth in Norway had to be in line with wage growth abroad for competitiveness to be stable. Wage growth abroad thereby established an equilibrium level for wage growth in Norway. The theory supported the model where the internationally exposed manufacturing sector negotiates first and provides a benchmark for subsequent wage settlements.[1)]

With an *inflation target* for monetary policy and a *floating exchange rate*, it is the inflation target, not wage growth abroad, that determines the level of wage growth which is consistent with stable profitability in the business sector over time. Inflation in Norway will over time be determined by the inflation target that the Government has set for monetary policy and not inflation abroad. Exchange rate developments are determined by inflation differentials between Norway and other countries.

A key assumption in the model is that operating margins, or profitability, in the sheltered sector (s) and the internationally exposed sector (k) are stable over time. In addition, it is assumed that there is a fixed relationship between wage levels in the two sectors. The rise in prices for internationally traded goods in foreign currency is determined in the world market. The model can be set up as follows:

$$(1) \qquad \Delta p_k = \Delta p_k^* + \Delta v$$

$$(2) \qquad (\Delta w - \Delta p_k) = \Delta z_k$$

$$(3) \qquad (\Delta w - \Delta p_s) = \Delta z_s$$

$$(4) \qquad \pi = \alpha \Delta p_k + (1-\alpha)\Delta p_s$$

Equation (1) states that the rise in prices in internationally traded goods in a common currency must over time be the same across countries. This follows from the law of one price. The rise in prices for internationally traded goods in NOK (Δp_k) must then be equal to the rise in prices on the world market (Δp_k *) plus the relative depreciation of the krone (Δv). Equations (2) and (3) state that real wage growth in the two sectors must be equal to productivity growth (Δz) for operating margins or profitability to be stable in both sectors. Productivity growth is partly determined by technology and is taken as a given in the model. Equation (4) states that the overall rise in prices (π) is by definition a weighted average of the rise in prices in the two sectors, where α denotes the weight of internationally traded goods in the consumer price index.

The model (1)-(4) specifies relationships that must be assumed to apply in the long term. The model-based results are therefore to be looked upon as long-term solutions. First we look at the model's solution for wage and price inflation under a *fixed exchange rate*:

$$(A1) \qquad \Delta w = \Delta p_k^* + \Delta v + \Delta z_k$$

$$(A2) \qquad \pi = \Delta p_k^* + \Delta v + (1-\alpha)\,(\Delta z_k - \Delta z_s)$$

With $\Delta v = 0$ (fixed exchange rate), wage growth is determined by price inflation abroad and productivity growth in the internationally exposed sector (see (A1)). If productivity growth in the exposed sector is the same in Norway as abroad and competitiveness is to remain stable, wage growth in Norway must be in line with wage growth abroad. (A2) indicates that price inflation in Norway is determined by imported price inflation and the difference between productivity growth in the exposed and sheltered sector. A sustained increase in productivity growth in the exposed sector will provide room for higher wage growth and contribute to higher price inflation. A sustained increase in productivity growth in the sheltered sector will not increase wage growth but contribute to lower price inflation.

[1)] The Scandinavian model of inflation was first presented in "Recommendation II from the Commission on income settlements in 1966".

We then look at the solution of the model under a *floating exchange rate* and an *inflation target* for monetary policy. Price inflation is considered to be a given, determined by the inflation target of 2½%. The solution for wage growth is then:

$$(B1) \qquad \Delta w = \pi + \alpha \Delta z_k + (1-\alpha)\, \Delta z_s$$

(B1) indicates that wage growth is now determined by domestic conditions alone. In the long term, wage growth will be equal to inflation plus a weighted sum of productivity growth in the two sectors. A sustained increase in productivity growth in both the sheltered and exposed sectors will increase the room for wage growth. The solution for the exchange rate is then:

$$(B2) \qquad \Delta v = \pi - \Delta p_k^{*} - (1-\alpha)\,(\Delta z_k - \Delta z_s)$$

To give (B2) a more intuitive content, the concept abroad can be conceived of as one country. We can then construct a model for abroad which is the same as the model for Norway. With the same productivity growth in Norway as among trading partners and given a more or less equal rise in the total price index for internationally traded goods, we obtain the following equation for the nominal krone exchange rate:[2)]

$$(B2) \qquad \Delta v = \pi - \pi^{*}$$

where π^* is consumer price inflation abroad. In the long term, the exchange rate will thus be determined by the difference in inflation between Norway and abroad.

Even if the model is a simplified presentation of economic relationships, an attempt to quantify it can provide a reference for developments in nominal wages and the exchange rate in the longer run. In practice, it is not trivial to divide the economy into a sheltered and exposed sector. We have defined the sheltered sector as public and private services, retail trade and manufacturing sectors that are exposed to limited foreign competition because of trade barriers. Using national accounts figures, average growth in labour productivity can be estimated at 1¾ % over the past 20 years for this group. Productivity growth in the exposed sector is normally higher than in the sheltered sector. Among trading partners, productivity growth in manufacturing has been around 3% over the past 20 years. This could provide a basis for estimating productivity growth in the exposed sector. As a result of the free flow of capital, goods and technology, productivity growth across countries tends to converge over time. Productivity growth in Norwegian manufacturing was in line with the level prevailing abroad in the 1970s and much of the 1980s. Growth has been weaker in the 1990s, primarily as a result of weak growth in productivity in some relatively sheltered areas of manufacturing.

As a point of departure, we have set $\alpha = 0.25\text{-}0.30$.[3)] With $\Delta z_k = 3$ and $\Delta z_s = 1¾$, wage growth must according to (B1) average 4½% over time, when the inflation target is 2½%.[4] The rise in prices for sheltered goods in Norway will then be about 2¾% over time, while the rise in prices for internationally traded goods (imported goods) in NOK will average 1½% over time. In the model, a portion of imported price inflation will be attributable to a continuous depreciation of the nominal krone exchange rate. This is because the inflation target in Norway is higher than in many other countries. A review shows that among Norway's trading partners the inflation target is 1¾-2% on average. Since the inflation target is 2½% in Norway, the nominal exchange rate will depreciate by ½-¾% per year. This will ensure that competitiveness remains stable.

2) The full solution of the model gives the following equation for changes in the exchange rate:

$$(B2)'' \quad \Delta v = \pi - \pi^{*} + (1-\alpha^{*})(\Delta z_k^{*} - \Delta z_k) + (1-\alpha^{*})(\Delta z_s - \Delta z_s^{*}) + (\alpha^{*} - \alpha)(\Delta z_k - \Delta z_s)$$

where * denotes abroad. With $\Delta z_k^{*} = \Delta z_k$, $\Delta z_s = \Delta z_s^{*}$ *and* $\alpha = \alpha^{*}$ the equation is reduced to (B2)'

3) The weight of imported consumer goods in the consumer price index is about 0.25 and the weight for domestically produced goods and services is about 0.75. If we also take into account domestically produced consumer goods that are influenced by the global market due to foreign competition, the share of internationally traded goods in the CPI comes to 0.35. However, prices for these goods are heavily influenced by domestic factors such as margins and wage growth. In addition, specific taxes account for a significant share of prices for imported consumer goods.

4) $\Delta w = \pi + \alpha \Delta z_k + (1-\alpha)\Delta z_s$
$= 2.5 + (0.25\text{-}0.3) \times 3 + (0.7\text{-}0.75) \times 1.75 \approx 4½$

Annex I
Regional network

Norges Bank's regional nettwork

This autumn Norges Bank established a regional network of enterprises, organisations and municipalities throughout Norway. We will have six rounds of talks each year with business and community leaders concerning 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 associated with the network will rise to about 1000 persons, who will be contacted once or twice a year.

Regular discussions with local contacts in Norway's business and community life will provide us with information earlier and more often than available government statistics. It will also give us access to 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.

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 elsewhere.

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

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

3T Produkter AS
ABB Installasjon
Aberdeen Property Investors Norway AS
Accenture
Aetat Molde
Aetat Sogn og Fjordane
Aker Kværner MMO
Aker Kværner Stord
Albert E Olsen AS
Alexandra Hotel AS
Ankerløkken Lys og Data AS
ASKO Agder AS
Aust-Agder sykehus HF
Berendsen Tekstil Service AS
BioMar AS
Bjørn Bygg AS
BKK AS
Borgstein AS
Borregaard Industrier
Bravida Vest AS
Bravida Sørøst AS
Brekke Industrier AS
Brunvoll AS
Bryggen Gastronomi AS
Brønnysundregistrene
Bunnpris
Bygger'n Orkdal
Byggmester Grande AS
Båtsfjordbruket AS
Coop Inn-Trøndelag BA
COOP NKL BA
Daldata AS
De 3 Stuer konsern AS
Den Norske Bank ASA
EDB Business Consulting
Ekornes Møbler AS
Elektro AS
Elkem Aluminium Lista
Elkem ASA Salten Verk
Esso Norge AS
Eurospar Sogndal
FAFO
Fatland AS
Fauske Hotell AS
Fauske kommune
Fjord Seafood ASA
Franzefoss Pukk AS
Frost Entreprenør AS
Furnes Hamjern Scandinavian Cast AS
Fundamus AS
Fædrelandsvennen AS
Geoservice AS
Gilde Nord Norges Salgslag
Gilde Vest BA
Gilstad Trelast
Gresvig ASA
Hammerfest kommune
Handicare Produksjon AS
Hansa Borg Bryggerier ASA
Harsjøen Brødrene Entreprenørforretning
Harstad Elektro AS
Hauans AS
Havsølv AS
Hedalm Boliger AS
Hedmark fylkeskommune
Helse Bergen HF
Hotel Norge AS
Hov Dokka AS
HSD Buss AS
Handels- og servicenæringens hovedorganisasjon
Hunton Fiber AS
Huse IP AS
Hydro Automotive Structures AS
Høyskolen i Molde
IBM Norge
ISS Renhold Region Vest
Ivar Mjåland AS
J Kristiansen Gartneri AS
J. M. Johansen AS
Jørstad AS
Kitron Arendal AS
Kommunenes Sentralforbund
Kongsberg Spacetec AS
Kraft Foods Norge AS
Kristiansand kommune
Krogsveen AS
Kvadrat Steen & Strøm
Kverneland ASA
Kaarbøverkstedet AS
LO
Langsten AS
Lerum Fabrikker AS
Lofoten Trålrederi AS
Lofotprodukt AS
Luftfartsverket Region Sørvest Norge
Madshus AS
Marine Harvest
Maskinagentur AS
Match Woman Roseby
Melhuus Schrøder AS
Miljøbygg AS
Molde kommune
Moss kommune
Moxy Trucks AS
Multimaskin AS
Møre og Romsdal Fylkesbåtar AS
NCC Norge AS
NHO
NHO Trøndelag
NOFI Tromsø AS
NorCargo Trondheim AS
Nordlaks Produkter AS
Nordlandssykehuset
Norgesmøllene DA
Norisol Norge AS
Norsk Gallup Institutt AS
Norsk Hydro ASA
Norske Skogindustrier ASA
Norsvin
O. Kavli AS
Oasen Storsenter
Oceanor AS
Odda smelteverk
Orkdal Installasjon AS
Orkdal kommune
Orkla Media AS
Os Husdyrmerkefabrikk AS
OSK Elektrotilbehør AS
PEC Installasjon AS
Plasto
Proffice Vestfold AS
Prosafe ASA
Prosessindustriens Landsforening
Quality Solutions AS
Rana Gruber AS
Rana Industriterminal AS
Rapp Marine AS
Rautaraukki Profiler AS
Re Landbrukstjenester
Revisorkonsult AS
Rica Maritim Hotel Haugesund
Rikshospitalet
Ringnes AS
Rogaland Trafikkselskap
Rolls-Royce Marine AS
Salten Kraftsamband AS
SAS Royal Garden Hotel AS
Savalen Fjellhotell AS
Scandic Hotel Arendal AS
Scanfish AS
Selmer Skanska AS
Sikkerhetssenteret Aukra
Sjøbruk AS
Sjøvik AS
Skretting AS
SND Sogn og Fjordane
Sortland Auto AS
Sparebank 1 Midt-Norge
Sparebank 1 Nord-Norge
Sparebanken Sogn og Fjordane
Sparebank 1 SR-Bank
Statens Vegvesen Aust-Agder
Statoil ASA
Stavanger Aftenblad
Stavanger kommune
Stenqvist AS
Swix Sport AS
Sylteosen Betongvarefabrikk AS
Sør-Norge Aluminium AS
TBL
Telenor Mobile AS
Teleplan AS
TFDS ASA
Thune Produkter AS
Tibe Reklamebyrå AS
Timpex
Tine Meierier Sør
Tine Meierier Vest
Torghatten Trafikselskap AS
Tromsø Skipverft AS
Trondheim Stål AS
Trønder-Mat AS
TV 2 Gruppen AS
Tønsberg kommune
Ulstein Verft AS
Umoe Mandal AS
Umoe Ryvingen AS
Universitet i Bergen
Vakt & Kontrollselskapet AS
Vestbase AS
Vikenco AS
Vital Forsikring ASA
Volmax AS
Wenaas AS
Westnofa
Wikborg Rein & Co
Windy Boats AS
Østereng & Benestad AS

Annex II
Tables

Table 1 Technical assumptions

Historical developments		I-44[1)]	TWI[2)]	Deposit rate	Oil price[3)]
1995		100.0	101.8	4.8	17.0
1996		99.6	102.0	4.5	20.6
1997		99.2	101.0	3.4	19.2
1998		101.7	104.7	5.5	12.8
1999		100.4	105.6	6.4	18.1
2000		103.3	107.8	6.2	28.6
2001		100.2	104.4	7.0	24.4
2001	Q1	102.1	106.3	7.0	25.8
	Q2	100.7	104.8	7.0	27.2
	Q3	99.4	103.7	7.0	25.4
	Q4	98.5	102.9	6.9	19.5
2002	Q1	97.2	101.6	6.5	20.9
	Q2	92.5	97.1	6.5	24.8
	Q3	89.2	94.7	7.0	26.9
Technical assumptions					
2002	Q4	88.8	94.5	7.0	27.6
2003	Q1	89.0	94.6	7.0	26.7
	Q2	89.0	94.6	7.0	25.7
	Q3	89.0	94.6	7.0	24.8
	Q4	89.0	94.6	7.0	23.8
2004	Q1	89.0	94.6	7.0	22.9
	Q2	89.0	94.6	7.0	21.9
	Q3	89.0	94.6	7.0	21.0
	Q4	89.0	94.6	7.0	20.0

1) Import weighted exchange rate, 44 countries
2) Trade-weighted exchange rate index - a trade-weighted average of exchange rate against our 25 most important trading partners
3) Brent Blend, USD per barrel, spot price

Source: Norges Bank

Guideline for the use of petroleum revenues

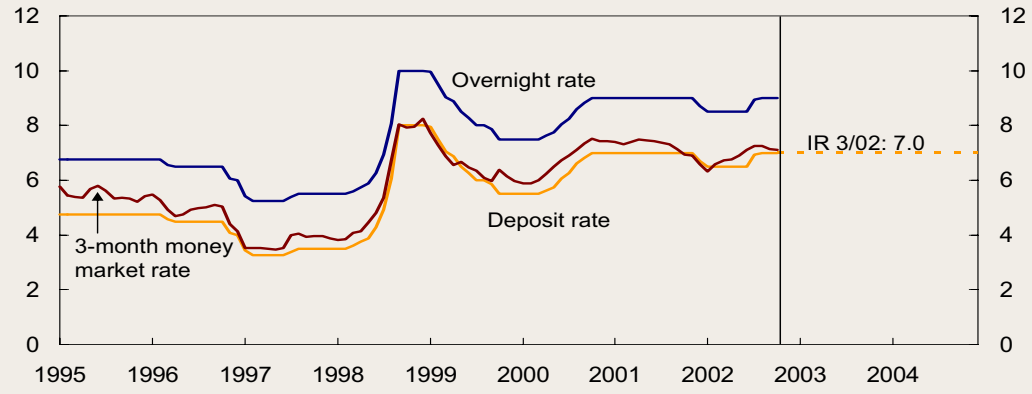
In March 2001 a guideline was established for the use of petroleum revenues over the central government budget. According to the guideline, the structural, non-oil budget deficit for each fiscal year shall be equivalent to the expected real return on the Petroleum Fund at the start of the fiscal year. Report no. 29 (2000-2001) to the Storting states 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 expected real return on the Petroleum Fund is estimated using a real interest rate of 4%. In the National Budget for 2003, the expected real return on the capital in the Petroleum Fund was estimated at NOK 26.6 billion, a real decline of NOK 2 billion compared with 2002. A mechanical application of the fiscal guideline would then imply a decline in the use of petroleum revenues from 2002 to 2003 of NOK 2 billion (in 2003 prices) and thereafter an increase of about NOK 6 billion in 2004. However, the Government is planning an increase of NOK 2 billion, or 0.1 per cent of trend GDP for mainland Norway, both from 2002 to 2003 and from 2003 to 2004.

Table 2 Interest rates

		Norges Bank's key rates (average)		Money market rates NIBOR[1]			Yield on government bonds[2]
		Deposit rate	Overnight lending rate	1-week	3-month	12-month	10-year
1995		4.8	6.8	5.5	5.5	5.9	7.4
1996		4.5	6.5	5.0	4.9	5.1	6.8
1997		3.4	5.4	3.6	3.7	4.1	5.9
1998		5.5	7.5	5.9	5.8	5.6	5.4
1999		6.4	8.4	6.9	6.5	6.0	5.5
2000		6.2	8.2	6.6	6.7	7.1	6.2
2001		7.0	9.0	7.2	7.2	7.1	6.2
2001	Mar	7.0	9.0	7.3	7.4	7.4	6.0
	Apr	7.0	9.0	7.6	7.5	7.4	6.2
	May	7.0	9.0	7.3	7.5	7.5	6.5
	Jun	7.0	9.0	7.3	7.4	7.6	6.6
	Jul	7.0	9.0	7.3	7.4	7.5	6.7
	Aug	7.0	9.0	7.1	7.3	7.3	6.5
	Sep	7.0	9.0	7.1	7.1	7.0	6.4
	Oct	7.0	9.0	7.2	6.9	6.6	6.1
	Nov	7.0	9.0	7.1	6.9	6.4	5.9
	Dec	6.7	8.7	6.9	6.6	6.2	6.2
2002	Jan	6.5	8.5	6.6	6.3	6.2	6.2
	Feb	6.5	8.5	6.7	6.6	6.7	6.4
	Mar	6.5	8.5	6.6	6.7	6.9	6.6
	Apr	6.5	8.5	6.7	6.8	7.0	6.7
	May	6.5	8.5	6.7	6.9	7.3	6.8
	Jun	6.5	8.5	6.8	7.1	7.5	6.8
	Jul	6.9	8.9	7.1	7.3	7.4	6.6
	Aug	7.0	9.0	7.1	7.3	7.3	6.3
	Sep	7.0	9.0	7.1	7.2	7.0	6.1
2002	27. Sep	7.0	9.0	7.1	7.1	6.8	6.0
	4. Oct	7.0	9.0	7.2	7.2	6.9	6.1
	11. Oct	7.0	9.0	7.2	7.1	6.8	6.0
	18. Oct	7.0	9.0	7.1	7.1	6.8	6.2
	24. Oct	7.0	9.0	7.1	7.1	6.8	6.3

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



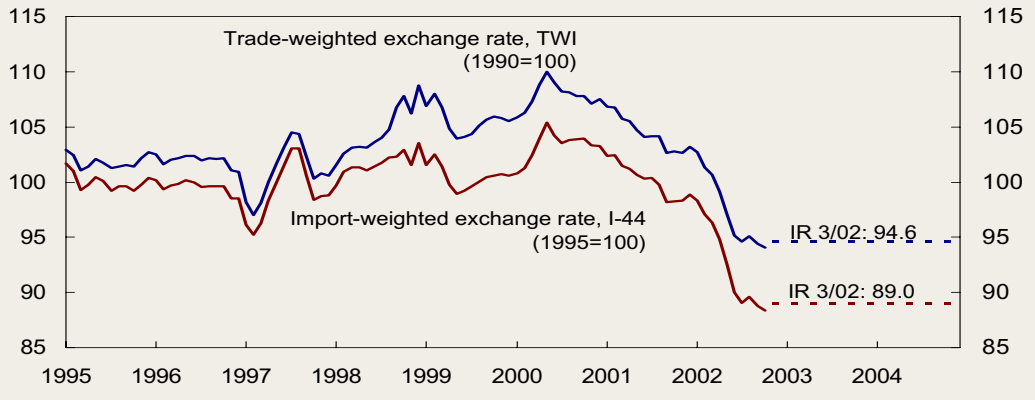
Source: Norges Bank

Table 3 Exchange rates

		Effective exchange rates		Bilateral exchange rates		
		Import-weighted exchange rates[1]	Trade-weighted exchange rate index[2]	NOK/EUR	NOK/USD	NOK/SEK
1996		99.6	102.0		6.5	96.3
1997		99.2	101.0		7.1	92.7
1998		101.7	104.7		7.6	94.9
1999		100.4	105.6	8.3	7.8	94.4
2000		103.3	107.8	8.1	8.8	96.0
2001		100.2	104.4	8.1	9.0	87.0
2001	Jan	102.4	106.8	8.2	8.8	92.5
	Feb	102.4	106.7	8.2	8.9	91.5
	Mar	101.5	105.7	8.2	9.0	89.4
	Apr	101.2	105.5	8.1	9.1	89.0
	May	100.6	104.7	8.0	9.1	88.2
	Jun	100.3	104.1	7.9	9.3	86.2
	Jul	100.3	104.1	8.0	9.3	86.1
	Aug	99.8	104.2	8.1	8.9	86.5
	Sep	98.2	102.6	8.0	8.8	82.7
	Oct	98.3	102.8	8.0	8.8	83.5
	Nov	98.3	102.6	7.9	8.9	84.1
	Dec	98.9	103.2	8.0	9.0	84.8
2002	Jan	98.3	102.7	7.9	9.0	85.8
	Feb	97.1	101.3	7.8	9.0	84.8
	Mar	96.3	100.7	7.7	8.8	85.2
	Apr	94.8	99.2	7.6	8.6	83.4
	May	92.5	97.1	7.5	8.2	81.5
	Jun	90.0	95.1	7.4	7.8	81.3
	Jul	89.0	94.6	7.4	7.5	79.9
	Aug	89.6	95.1	7.4	7.6	80.3
	Sep	88.8	94.4	7.4	7.5	80.3
2002	20. Sep	88.8	94.4	7.3	7.6	80.7
	27. Sep	88.4	94.0	7.3	7.5	80.6
	4. Oct	88.0	93.7	7.3	7.4	80.3
	11. Oct	87.5	93.2	7.3	7.4	79.7
	18. Oct	88.3	94.1	7.3	7.5	80.8
	24. Oct	89.2	94.9	7.4	7.6	81.2

1) Weights are calculated on the basis of imports from 44 countries, which cover 97 % of total imports.

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)

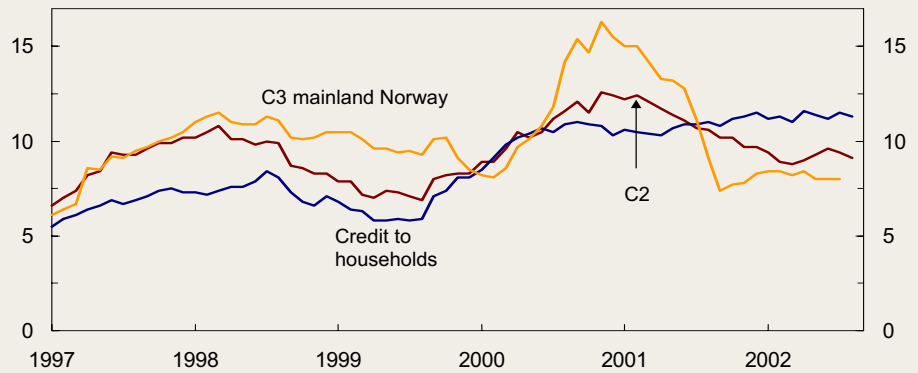


Source: Norges Bank

Table 4 Monetary aggregates

Percentage growth from previous year		Money Supply	Domestic credit (C2)			Total credit (C3)	
		M2	Total	To households	To non-financial enterprises	Total	To mainland Norway
1997		2.8	8.8	6.7	13.9	9.0	8.7
1998		5.3	9.6	7.4	13.9	11.3	10.8
1999		6.7	7.6	6.6	9.7	10.5	9.7
2000		10.3	10.8	10.3	12.3	9.5	12.0
2001		8.9	11.0	10.8	10.6	8.8	11.2
Twelve-month rise Per cent							
2001	Jan	10.9	12.2	10.6	14.0	10.1	15.0
	Feb	10.7	12.4	10.5	14.2	10.5	15.0
	Mar	10.1	12.1	10.4	13.8	9.7	14.2
	Apr	8.6	11.7	10.3	12.6	10.2	13.3
	May	10.0	11.4	10.7	11.5	10.9	13.2
	Jun	8.6	11.1	10.9	10.5	10.5	12.8
	Jul	8.6	10.7	10.9	9.5	9.4	11.1
	Aug	8.1	10.6	11.0	9.1	6.8	9.1
	Sep	6.5	10.2	10.8	8.5	5.8	7.4
	Oct	8.4	10.2	11.2	8.3	6.3	7.7
	Nov	7.7	9.7	11.3	7.4	7.2	7.8
	Dec	8.6	9.7	11.5	7.5	7.9	8.3
2002	Jan	9.5	9.4	11.2	8.0	8.4	8.4
	Feb	7.5	8.9	11.3	7.1	8.1	8.4
	Mar	8.1	8.8	11.0	7.3	8.4	8.2
	Apr	8.0	9.0	11.6	6.9	8.3	8.4
	May	6.5	9.3	11.4	7.8	7.8	8.0
	Jun	8.9	9.6	11.2	9.0	8.0	8.0
	Jul	8.2	9.4	11.5	8.2	8.2	8.0
	Aug	7.0	9.1	11.3	7.7		
Levels last month. In billions of NOK		826	1685	964	600	2113	1922

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



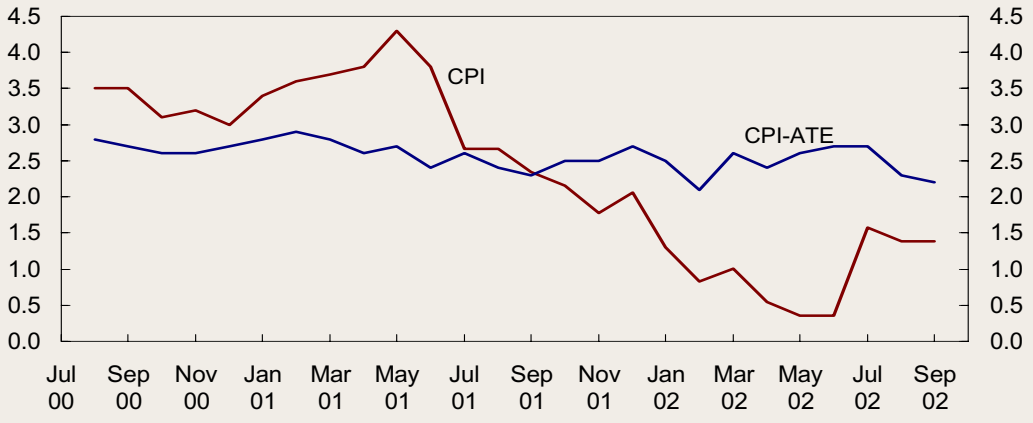
Source: Norges Bank

Table 5 Consumer prices

Twelve-month rise. Per cent		CPI	CPI-ATE[1)]	CPI-AT[2)]	CPI-AE[3)]	HICP[4)]
1997		2.6				2.6
1998		2.2				2.0
1999		2.3				2.1
2000		3.1			2.3	3.0
2001		3.0	2.6	3.2	2.4	2.7
2001	Jan	3.4	2.8	2.9	3.2	3.1
	Feb	3.6	2.9	3.3	3.3	3.5
	Mar	3.7	2.8	3.3	3.2	3.5
	Apr	3.8	2.6	3.5	3.0	3.6
	May	4.3	2.7	3.9	3.1	4.0
	Jun	3.8	2.4	3.3	2.8	3.3
	Jul	2.7	2.6	3.5	1.8	2.2
	Aug	2.7	2.4	3.4	1.6	2.2
	Sep	2.4	2.3	3.0	1.6	1.9
	Oct	2.2	2.5	2.9	1.8	1.8
	Nov	1.8	2.5	2.5	1.7	1.3
	Dec	2.1	2.7	2.7	2.1	1.6
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

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

Consumer prices (CPI and CPI-ATE). 12-month rise. Per cent



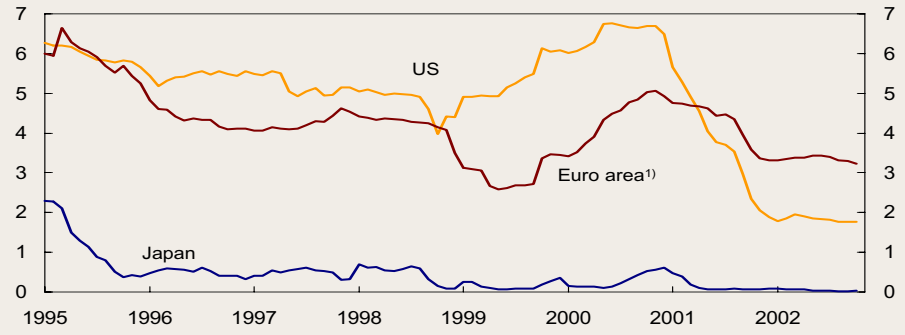
Source: Norges Bank

Table 6 International interest rates

		Short-term interest rates[1] for key currencies in the Euromarket						Interest rate differential[2]	Yields on government bonds[3]	
		USD	JPY	EUR	GBP	SEK	Trading-partners	NOK/trading-partners	US	Germany
1995		6.0	1.2		6.6	8.7	6.1	-0.7	6.7	6.9
1996		5.4	0.5		6.0	5.9	4.5	0.3	6.5	6.3
1997		5.2	0.5		6.8	4.2	4.1	-0.5	6.5	5.7
1998		4.8	0.5		7.3	4.2	4.2	1.5	5.3	4.6
1999		5.4	0.2	2.9	5.5	3.3	3.3	3.0	5.8	4.6
2000		6.5	0.3	4.4	6.1	4.0	4.4	2.2	6.1	5.3
2001		3.7	0.1	4.2	5.0	4.0	4.0	3.2	5.2	4.9
2001	Mar	4.9	0.2	4.7	5.5	4.0	4.4	2.9	5.2	4.8
	Apr	4.6	0.1	4.7	5.3	4.0	4.3	3.1	5.2	4.9
	May	4.0	0.1	4.6	5.2	4.0	4.2	3.1	5.4	5.1
	Jun	3.8	0.1	4.4	5.2	4.3	4.1	3.2	5.3	5.1
	Jul	3.7	0.1	4.5	5.2	4.4	4.2	3.1	5.3	5.1
	Aug	3.5	0.1	4.3	4.9	4.3	4.1	3.1	5.1	4.9
	Sep	3.0	0.1	4.0	4.6	4.1	3.7	3.3	4.9	4.9
	Oct	2.4	0.1	3.6	4.4	3.8	3.4	3.5	4.6	4.7
	Nov	2.1	0.1	3.4	3.9	3.8	3.2	3.6	4.7	4.5
	Dec	1.9	0.1	3.3	4.0	3.8	3.1	3.3	5.1	4.8
2002	Jan	1.8	0.1	3.3	4.0	3.8	3.1	3.1	5.2	4.9
	Feb	1.9	0.1	3.3	4.0	3.9	3.2	3.3	5.0	5.0
	Mar	2.0	0.1	3.4	4.1	4.1	3.2	3.4	5.4	5.2
	Apr	1.9	0.1	3.4	4.1	4.3	3.3	3.4	5.3	5.2
	May	1.9	0.0	3.4	4.1	4.4	3.3	3.5	5.2	5.2
	Jun	1.8	0.0	3.4	4.1	4.4	3.3	3.7	4.9	5.1
	Jul	1.8	0.0	3.4	4.0	4.4	3.3	3.9	4.6	4.9
	Aug	1.7	0.0	3.3	3.9	4.3	3.2	4.0	4.2	4.7
	Sep	1.8	0.0	3.3	3.9	4.3	3.2	3.9	3.9	4.5
2002	27. Sep	1.8	0.0	3.3	3.9	4.3	3.1	3.9	3.7	4.4
	4. Oct	1.7	0.0	3.2	3.9	4.3	3.1	3.9	3.5	4.4
	11. Oct	1.7	0.0	3.2	3.9	4.3	3.1	3.9	3.7	4.4
	18. Oct	1.8	0.0	3.3	3.9	4.3	3.1	3.8	4.0	4.6
	24. Oct	1.8	0.0	3.2	3.9	4.3	3.1	3.8	4.3	4.7

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

Three-month interest rates in the US, the euro area and Japan. Per cent



1) Theoretical ECU rate up to December 1998

Sources: EcoWin and Norges Bank

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	1.6	1.7	1.8	2.9	3.7	2.7	2.2
1996	3.6	3.5	0.8	1.1	2.6	1.1	2.2	1.4
1997	4.4	1.8	1.4	1.9	3.4	2.1	3.0	2.3
1998	4.3	-1.1	2.0	3.5	2.9	3.6	3.2	2.9
1999	4.1	0.7	2.0	3.2	2.4	4.5	3.2	2.8
2000	3.8	2.4	2.9	4.2	3.1	3.6	3.6	3.6
2001	0.3	-0.2	0.6	1.8	2.0	1.2	1.2	1.5
Projections								
2002	2¼	-¾	½	1	1½	1¾	1¼	¾
2003	2½	½	1½	2	2½	2½	2¼	2
2004	3¾	1	2½	2¾	2½	2½	2½	2½

1) Export weights
2) GDP weights from IMF 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	2.8	2.3	2.6
1996	2.9	0.1	1.2	2.1	2.9	0.8	1.8	2.3
1997	2.3	1.7	1.5	1.3	2.8	0.9	1.7	1.7
1998	1.6	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	2.1	1.8	2.1	1.3	2.2	2.4
2001	2.8	-0.7	2.4	1.8	2.1	2.6	2.5	2.5
Projections								
2002	1½	-1	1½	1¾	2	2½	2	2
2003	2¼	-½	1¼	1½	2¼	2¼	1¾	1¾
2004	2½	-¼	1½	1½	2½	2¼	2	1¾

1) HICP
2) RPIX
3) Import weights
4) Eurostat's weights (country's share of euro area's consumption)

Sources: OECD and Norges Bank

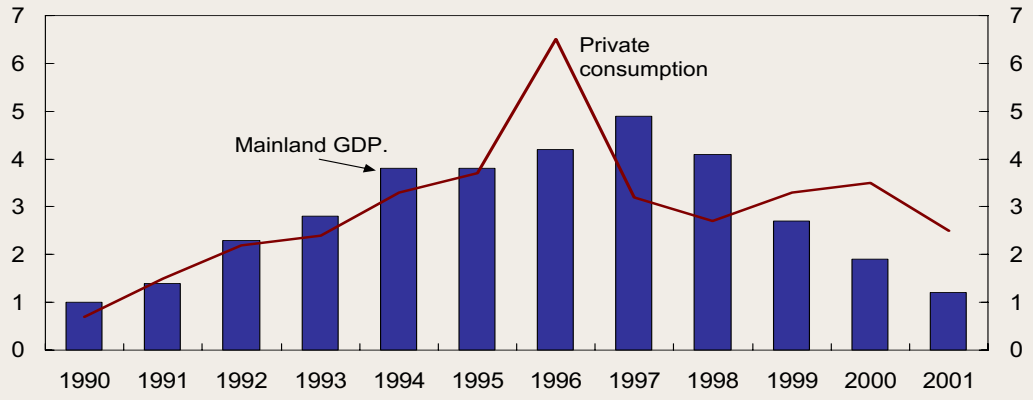
Table 9 Main macroeconomic aggregates

Percentage change from previous year/quarter	GDP	Main-land GDP	Private cons-ump-tion	Public spending on goods and service	Private mainland fixed investment	Petroleum investment[1]	Exports trad. goods	Im-ports
1995	4.6	3.5	3.7	1.5	15.9	0.9	4.4	5.7
1996	5.3	4.2	6.5	3.1	13.3	3.1	10.5	8.8
1997	5.2	4.9	3.2	2.5	10.2	17.6	8.6	12.4
1998	2.6	4.1	2.7	3.3	8.6	24.5	3.5	8.5
1999	2.1	2.7	3.3	3.2	-0.3	-17.4	4.0	-1.8
2000	2.4	1.9	3.5	1.2	6.7	-20.1	1.7	3.2
2001	1.4	1.2	2.5	2	0.7	-7.4	4.0	0
2001[2] Q1	0.3	0.6	1.9	1.2	1.2	5.0	2.7	2.5
Q2	0	-0.2	0.4	0.4	1.6	1.8	0.3	-0.2
Q3	0.8	0.2	0.7	0.2	-5.0	5.3	-3.9	-1.8
Q4	0.4	0.7	0.0	0.8	-0.4	-5.3	6.5	2.4
2002 Q1	-0.3	0.5	1.3	1.3	-1.7	0.3	-2.3	-3.5
Q2	0.8	-0.7	0.6	1.0	0.4	-2.8	2.7	0.5
Level 2001, NOK bn	1511	1152	651	306	171	56	216	442

1) Including services
2) Sesonally adjusted quarterly figures

Source: Norges Bank

Mainland GDP and private consumption. Percentage change from previous year.



Source: Statistics Norway

Table 10 Main macroeconomic aggregates

	In billions of NOK	Percentage change (unless otherwise stated)			
			Projections		
	2001	**2001**	**2002**	**2003**	**2004**
Real economy					
Private consumption	651.5	2.5	3 ¾	3½	3¼
Public consumption	306.1	2.0	1¾	¾	2
Total gross investment	280.0	-4.6	0	3½	0
- Petroleum activities (incl. services)	56.2	-7.4	2	15	-5
- Mainland Norway	211.3	-0.3	-¼	½	1½
Enterprices	115.5	-1.3	-4¼	¾	1¼
Dwellings	55.7	5.1	4	¾	1¾
General government	40.1	-4.3	6	¼	2
Mainland demand[1)]	1168.9	1.8	2½	2¼	2½
Total domestic demand[2)]	1225.1	1.4	2½	2¾	2¼
Exports	698.9	4.2	0	1½	1¾
- Crude oil and natural gas	301.6	5.2	-1¾	4½	2
- Traditional goods	215.9	4.0	½	-1	0
Imports	441.9	0.0	1¾	3¾	1¼
- Traditional goods	285.4	4.0	2½	3¾	1¼
GDP	1510.9	1.4	1¾	2	2½
- Mainland Norway	1152.0	1.2	1½	1¾	2¼
Labour marked					
Employment		0.5	½	0	½
Labour force, LFS		0.4	¾	¼	½
Registered unemployment (rate)		2.7	3¼	3½	3½
LFS-unemployement (rate)		3.6	4	4¼	4¼
Prices and wages					
CPI		3	1¼	2	2¼
CPI-ATE[3)]		2.6	2¼	2	2¼
Annual wages[4)]		5½	5¾	5½	5¼
Prices imported consumer goods		0.6	-1¼	-2½	-½
Export prices, traditional goods		-3.1	-8¾	-2¾	2½
External account[6)]					
Trade surplus, NOKbn (level)		257.0	230	203	185
Current account surplus, NOKbn (level)		233.4	210	185	170
Current account surplus, % of GDP		15.4	14	12	11
Memorandum item					
Household saving ratio		4.6	5½	5	5
Technical assumptions					
Norges Bank's sight deposit rate (annaul average [7)]		7	6¾	7	7
Import-weighted exchange rate[8)]		-3.0	-9,0	-3½	0
Oil price in USD/barrel		24.4	26	25	21

1) Private and public consumption and mainland gross fixed investment
2) Private and public consumption, mainland gross fixed investment and petroleum investment
3) CPI-ATE: CPI adjusted for tax changes and excluding energy products
4) Annual wage growth is based on the Technical Reporting Committee on Income Settlements' definitions and calculations. For 2001, the costs associated with 2 additional vacation days are included
5) Adjusted for changes in real taxes
6) Current prices
7) The sight deposit rate is assumed to remain unchanged in the projection period
8) Annual percentage change. Positive figures denote a depreciation of NOK. The import-weighted exchange rate includes 44 countries. Technical assumption: unchanged exchange rate on average for the last three months.

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

Inflation Report No. 3 - October 2002