

Reports from the Central Bank of Norway No 3/2002



Inflation Report

2
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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:
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The cut off date for the *Inflation Report* was 27 june 2002

A changing economy

In recent years, domestic demand has expanded sharply, while capacity growth in the economy has been low. Resource availability is limited. Employment in service industries is rising. Pressures in the labour market are therefore increasing, leading to high wage growth, a tight monetary stance and deteriorating profitability in internationally exposed sectors. These industries must therefore reduce employment and increase productivity to a further extent than earlier. This in turn frees up the labour resources that are necessary to provide for growth in service industries and public service production.

An important driving force behind these structural changes is the increased use of petroleum revenues. The central government is increasing the use of petroleum revenues over government budgets. Household financial saving is close to zero. Household consumption is rising as a result of record-high growth in real income and expectations of continued high growth in the years ahead.

A real appreciation is the mechanism for achieving a change in the economy involving a shift of resources from the exposed to the sheltered sector. A real appreciation takes place when inflation in Norway is higher than abroad or when the nominal exchange rate appreciates. Both developments will weaken profitability and gradually lead to a contraction in the internationally exposed sector.

Monetary policy is oriented towards low and stable inflation. The inflation target is set at 2½%. If there is confidence that the inflation target will be attained, a considerable share of the real appreciation is likely to occur through a strengthening of the krone exchange rate. Such an appreciation will then be based on confidence that Norges Bank will set the interest rate so that the inflation target is achieved. The prospect of growing pressures will then result in higher interest rates and not in higher inflation. A survey of inflation expectations among financial experts and academics (see box in this report) indicates that this confidence exists.

The Norwegian krone has in fact appreciated markedly this year. Expectations of a higher interest rate as a result of developments in this year's wage settlements have probably been an important driving force. However, as described in a separate box in this report, there are several factors that may have contributed to this.

A marked appreciation of the krone exchange rate and a low rise in prices for imported goods, can keep inflation at a relatively low level over a period even with high growth in labour costs. This would seem to be the situation in Norway today.

But the shift in the economy away from the exposed sector and towards the sheltered sector will continue even if inflation is on target, and this process will occur at a faster pace the higher wage growth is.

However, this is not a tenable situation over time. The restructuring that is to take place is, after all, of a limited scale. Oil provides us with the basis for some shift in the use of resources, but petroleum wealth cannot be looked upon as income. It is only the return on this wealth that represents income. Even if petroleum wealth is entirely invested abroad – including untapped reserves – the return can finance no more than a third of today's imports. Even in the oil age Norway is essentially dependent on a viable and competitive business sector that can finance our imports and create growth opportunities. All experience indicates that this will not be possible if competitiveness continues to deteriorate at the pace observed in recent years. The contraction of internationally exposed industries cannot persist. When sufficient resources are freed up for use in other activities, competitiveness must be stabilised to prevent serious imbalances in the external account.

Over time, growth in real wages must be consistent with labour productivity. With an inflation target of 2½% and trend productivity growth of about 2%, according to revised national accounts figures, this implies annual nominal wage growth of around 4½%.

It is possible that the foundation for most of the restructuring that we will be facing has already been laid with the real appreciation that has taken place. However, this would imply that wage growth must be rapidly reduced to a level that is acceptable in the long term in order to prevent an excessive contraction of the internationally exposed sector.

Monetary policy will remain tight as long as wage growth is high. When there is confidence in monetary policy's ability to keep inflation at a low and stable level, high wage growth will in periods be accompanied by a strong krone. When pressures in the economy subside and wage growth gradually slows, the current tight monetary stance may be reversed.

Jarle Berge
1 July 2002

1 | Recent developments

Growth in the Norwegian economy picked up towards the end of 2001 and into 2002. Consumption growth is edging upwards. Pressures in the economy are strong. The rate of increase in labour costs is stronger than expected, and the rise in prices for domestically produced goods and services is high.

The international economy showed incipient signs of recovery again in the winter and spring, but developments in equity and bond markets reflect continued uncertainty. In Norway, some service industries, such as the ICT sector, business consultancy services and various segments of the travel industry, are still in a period of low activity and downscaling. The krone exchange rate has continued to appreciate and is contributing to a further deterioration in competitiveness in internationally exposed sectors.

Consumer price inflation adjusted for tax changes and excluding energy products (CPI-ATE) has been fairly stable at around 2.5% the last few years in spite of high domestic cost inflation (see Chart 1.1). This is because low and in periods negative price inflation for imported goods is pushing down the overall rise in consumer prices. In May, the year-on-year rise in the CPI-ATE was 2.6%.

Including tax changes and energy products, the consumer price index (CPI) in May was 0.4 % higher than one year earlier (see Chart 1.2). The low year-on-year rate of increase primarily reflects the reduction in indirect taxes. Energy prices are also exerting downward pressure on CPI inflation (see Chart 1.3).

Fall in prices for imported goods is restraining consumer price inflation

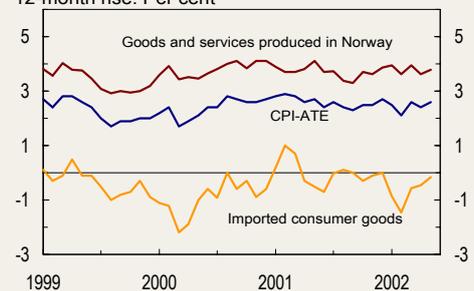
Prices for imported consumer goods have moved on a falling trend since mid-1999. Adjusted for tax changes, prices for these goods were 0.2% lower in May than in the same month one year earlier. Recently, the fall in prices has been somewhat more subdued than anticipated in the February *Inflation Report*.

Cars, clothing and footwear account for 60% of imported consumer goods. Clothing prices have shown a particularly steep fall in recent years (see Chart 1.4). In addition to a relatively weak global economic environment and the appreciation of the krone over the past two years, the fall in clothing prices mainly reflects changes in trade conditions, such as reduced tariffs and the dismantling of quota regulations. Trade patterns have also changed (see box in Annex I).

High domestic price inflation

Norwegian produced goods and services account for about ¾ of the consumer price index. The rise in prices for these

Chart 1.1 Consumer prices adjusted for tax changes and excluding energy products (CPI-ATE). Total¹⁾ and distributed by imported consumer goods and domestically produced goods and services²⁾. 12-month rise. Per cent

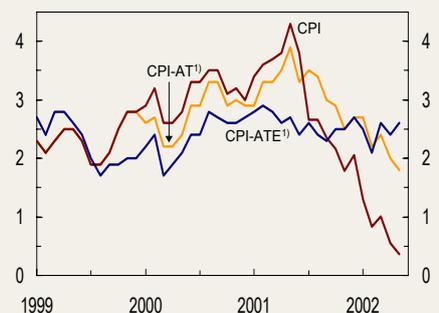


¹⁾ Norges Bank's estimates up to July 2000, thereafter figures published by Statistics Norway

²⁾ Norges Bank's estimates

Sources: Statistics Norway and Norges Bank

Chart 1.2 Consumer prices (CPI). Total and adjusted for tax changes and excluding energy products. 12-month rise. Per cent

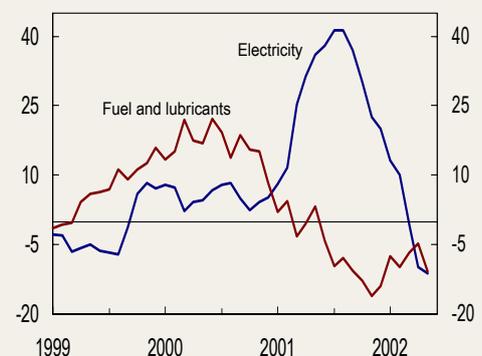


CPI-AT: CPI adjusted for tax changes
CPI-ATE: CPI adjusted for tax changes and excluding energy products

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

Sources: Statistics Norway and Norges Bank

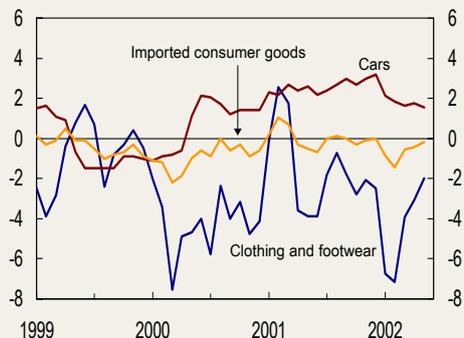
Chart 1.3 Consumer prices. Energy products¹⁾. 12-month rise. Per cent



¹⁾ Electricity accounts for 3.3% of the total CPI. Fuel and lubricants account for 4.2% of the total CPI

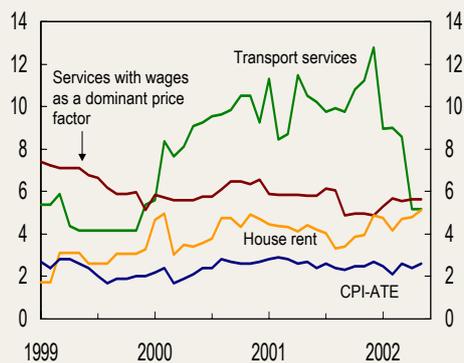
Sources: Statistics Norway and Norges Bank

Chart 1.4 Consumer prices adjusted for tax changes. Cars, clothing and footwear and imported consumer goods. 12-month rise. Per cent



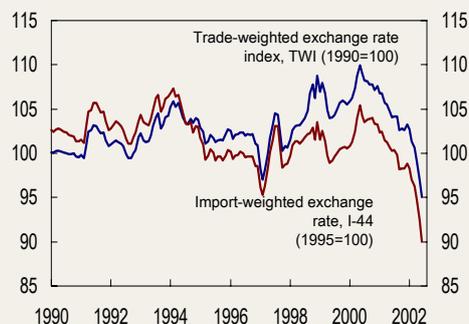
Sources: Statistics Norway and Norges Bank

Chart 1.5 Consumer prices adjusted for tax changes and excluding energy products (CPI-ATE) by supplier sector. 12-month rise. Per cent



Sources: Statistics Norway and Norges Bank

Chart 1.6 Effective NOK exchange rates. Import-weighted exchange rate¹⁾ and trade-weighted exchange rate index. A falling curve denotes an appreciation of the krone



¹⁾ The import-weighted exchange rate index was revised on 27 May 2002. See www.norges-bank.no "News archive" for further information.

Source: Norges Bank

goods picked up last autumn, but has recently remained relatively stable at a little less than 4%, excluding tax changes and energy prices (see Chart 1.1). The high rise in prices, particularly service prices, reflects the persistently high rate of growth in wages. Hourly labour costs have risen at an annual rate of close to 6% for five consecutive years. Prices for services with wages as a dominant cost factor have shown a comparable rate of increase (see Chart 1.5).

The year-on-year rise in the house rent index has moved up since autumn and was higher than 5% in May. Higher prices for transport services have been pushing up domestic price inflation over a longer period. Fuel prices exhibited a sharp rise through 1999 and 2000. The rate of increase in transport services has slowed since last year.

Higher-than-expected wage growth

This year's wage settlement indicates that the social partners continue to perceive the labour market as tight. The outcome of the various settlements points to total annual wage growth of between 5½% and 6% this year. The wage settlement for manufacturing and distributive trades indicates that wage growth for these sectors will be somewhat lower than the average. In many sheltered industries, wage growth may be higher than the average this year. Several of the settlements include pay increases that will take effect from next year, even though pay increases for 2003 are also to be negotiated.

In the February *Inflation Report*, labour costs were projected to rise by 5 % this year. The estimate was based on the assumption that the internationally exposed sector would act as a wage leader to a large extent. Moreover, the uncertainty associated with this year's wage settlement was cited as the most important factor that could result in higher-than-projected price inflation. We pointed to a clear risk that wage formation in Norway could to a further extent than earlier be influenced by labour shortages in the sheltered sector, and the risk of reduced emphasis on manufacturing industry's competitiveness. The fact that wage growth in the sheltered sector turned out to be highest may indicate that wage formation is changing.

The krone has continued to appreciate

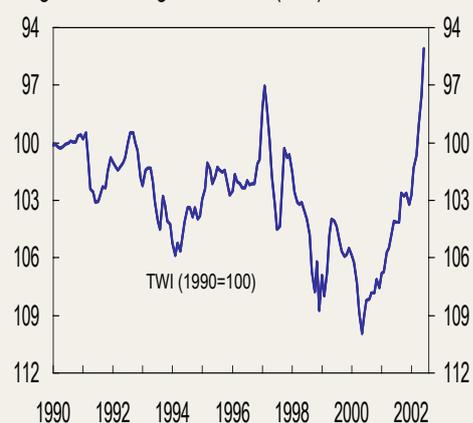
The krone has appreciated against other currencies since summer 2000 (see Chart 1.6). The trend has intensified since the beginning of the year, and the krone is now considerably stronger than assumed in the February *Inflation Report*.

As measured by the I-44, an import-weighted average of exchange rates against 44 countries, the krone has strengthened by around 7½% since end-February. As measured by the trade-weighted index, a trade-weighted average of exchange rates against our 25 most important trading partners, the krone has appreciated by 6%. The appreciation of the krone is discussed in a separate box.

Why has the krone exchange rate appreciated?

The krone exchange rate has appreciated markedly the past two years, particularly in 2002 (see Chart 1). At the end of June 2002, the effective krone exchange rate was about 14% stronger than at its weakest level in May 2000. Over a longer time period, however, the appreciation of the krone is not as pronounced, albeit significant. The current level is about 7% stronger than the average in the 1990s.

Chart 1 Effective NOK exchange rate. Trade-weighted exchange rate index (TWI)¹⁾



¹⁾ A rising curve denotes an appreciation of the krone

Source: Norges Bank

Developments in the krone exchange rate may be due to many factors. Relationships in the foreign exchange market are unstable. The krone exchange rate is influenced by actual and expected developments in variables such as the interest rate differential between Norway and other countries, price and wage inflation compared with other countries, fiscal policy, commodity prices, the terms of trade and productivity differences. Moreover, the krone exchange rate can be influenced by more short-term financial factors, such as portfolio shifts and financial uncertainty.¹ In this box, we look at the factors that can help to explain exchange rate movements over the last few years, with particular emphasis on the appreciation in 2002.

The Petroleum Fund mechanism has been weakened because the central government is using NOK 23bn domestically for the purchase of hospitals, thereby reducing capital outflows. This increases the sup-

¹ For a further analysis of factors that influence the krone exchange rate, see Akram, F. "When does the oil price affect the Norwegian exchange rate?", Working Paper 8/2000, Norges Bank, and Bernhardsen, T. and Røisland, Ø. "Factors that influence the krone exchange rate", *Economic Bulletin* 4/2000, Norges Bank.

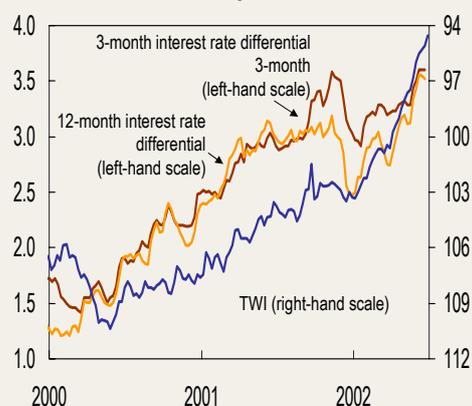
ply of foreign exchange by a few billion kroner per month to the Norwegian foreign exchange market. However, this effect is temporary.

In recent months, developments in the interest rate differential between Norway and other countries seem to have contributed to strengthening the krone. The wide differential also reflects shortages of economic resources in Norway and available resources among our trading partners. With monetary policy credibility, economic agents will assume that Norges Bank will set the interest rate at the level necessary to attain the inflation target of 2½%. Prospects of growing pressures in the Norwegian economy will then fuel expectations of higher interest rates and not higher inflation. In isolation, this will lead to expectations of a wider interest rate differential and an appreciation of the krone.

In 2002, the wage settlement in particular seems to have led to higher interest rate expectations and thereby contributed to strengthening the krone. The appreciation of the krone acts as an automatic stabiliser for inflation to the extent that there is confidence in continued low and stable inflation. At the same time, this means that the wage settlement squeezes profitability in internationally exposed sectors through two channels, both through higher costs and a stronger krone exchange rate.

Chart 2 shows how a wider interest rate differential has been accompanied by a stronger krone exchange rate the last few years. The chart shows developments in the krone exchange rate and the

Chart 2 Trade-weighted exchange rate index¹⁾ and interest rate differentials against other countries²⁾



¹⁾ A rising curve denotes an appreciation of the krone

²⁾ US, euro area, the UK and Sweden

Source: Norges Bank

interest rate differential between Norway and its main trading partners both for three- and twelve-month maturities.

Since January 2002, it seems that the krone has appreciated more than implied by the widening of the three-month interest rate differential. In this period, however, the difference between somewhat longer interest rates in Norway and other countries increased sharply, as illustrated in the chart by the difference in twelve-month rates. In Norway, the twelve-month rate has increased by about 1.1 percentage point since the beginning of the year, or close to twice as much as the three-month rate. This indicates that the expected level of short-term rates has increased.

The correlation between the krone exchange rate and the interest rate differential has increased since 2000. The table below shows correlation coefficients between the trade-weighted exchange rate index (TWI) and various segments of the yield curve in the money market. A positive correlation denotes that a higher interest rate differential has been accompanied by a stronger krone exchange rate.

Table 1 Correlation coefficients between trade-weighted krone exchange rate index (TWI) and various interest rate differentials

	3-mth spot rate diff.	3-6 mth forward rate diff.	6-9 mth forward rate diff.	9-12 mth forward rate diff.
2000	0,00	-0,14	-0,23	-0,29
2001	0,91	0,69	0,48	0,15
2002	0,80	0,86	0,83	0,68

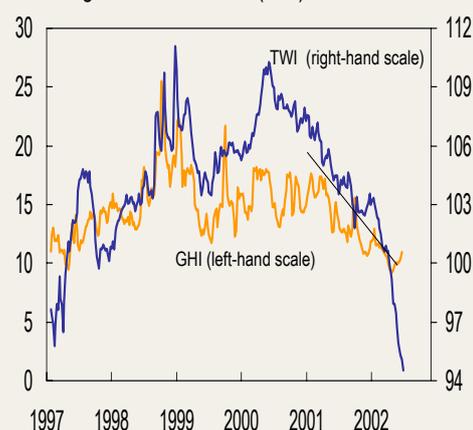
² Forward rates are implied rates. For example, the 3-6 month forward rate can be interpreted as the expected three-month difference three months ahead. Similarly, the 9-12 month differential can be interpreted as the expected three month differential in nine months. The coefficients in the table are based on weekly data.

The table shows the correlation between the effective krone exchange rate and the three-month interest rate differential in addition to the correlation between the effective krone exchange rate and various forward rate differentials.² The figures may indicate that expectations about the future short-term interest rate differential has had a strong impact on developments in the krone exchange rate in 2002. In particular, we see that the correlation between the exchange rate and the three-month forward rate differential nine months ahead has more than quadrupled, from 0.15 to 0.68.

Two factors may shed light on why interest rate differentials, both actual and expected, seem to have had a greater impact on the krone exchange rate in 2001 and 2002 than earlier. One factor is the degree of uncertainty in international foreign exchange markets. Another is the long-term effects of the phasing in of petroleum revenues into the Norwegian economy.

The level of uncertainty in international foreign exchange markets, as measured by the global hazard indicator GHI³, has moved on a falling trend since the beginning of 2001 (see Chart 3). Expectations of small exchange rate fluctuations between major currencies may be perceived by some investors as reducing potential gains. Under these conditions, they may shift their focus to interest rate differentials and invest in high-interest currencies.

Chart 3 The trade-weighted exchange rate index¹⁾ and the global hazard index (GHI)



¹⁾ A falling curve denotes an appreciation of the krone

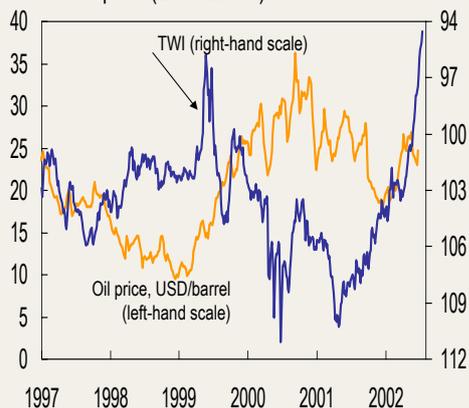
Source: Norges Bank

The Government and the Storting (Norwegian parliament) adopted the guideline for the use of petroleum revenues in March 2001. The rule implies a gradual increase of the use of petroleum revenues over the central government budget in the years ahead. Higher demand for private and public services means that the sheltered sector will absorb a greater share of available labour resources. In an economy with full capacity utilisation this can only occur through a transfer of resources from the internationally exposed sector to the sheltered sector. This implies a real appreciation of the krone.

³ The GHI is derived from prices for currency options (implied volatility) for the US dollar, the euro and the Japanese yen. The GHI falls when expected volatility between the main currencies is reduced. For a further discussion of the Global Hazard Indicator, see Bernhardsen and Røisland (2000).

Investors may therefore consider it to be less likely that the nominal krone exchange rate will weaken in the period ahead. If this is the case, the risk investors associate with krone investments is now lower. Lower risk will, in isolation, lead to a strengthening of the krone exchange rate for a given interest rate differential. When, in addition, the interest rate differential widens, the krone may be looked upon as an attractive investment alternative.

Chart 4 The trade-weighted exchange rate index¹⁾ and the oil price (Brent Blend)



¹⁾ A rising curve denotes an appreciation of the krone

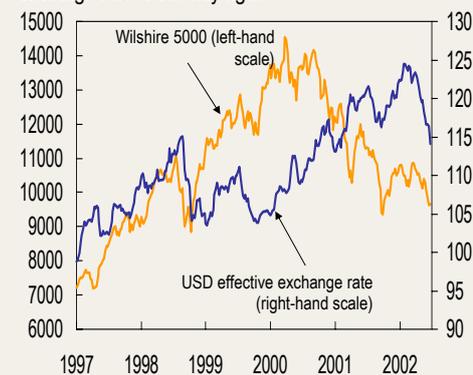
Source: Norges Bank

Since the beginning of the year, oil prices have risen markedly and it would appear that the sharp increase has been accompanied by an appreciation of the krone exchange rate. However, the relationship between the krone exchange rate and oil prices has not been particularly strong in recent years (see Chart 4). It is possible that extraordinary factors associated with the unrest in the Middle East may have affected the krone. For example, the krone exchange rate may have been influenced by hedging transactions on the part of international investors to protect themselves against a sharp rise in oil prices.

Changes in the krone exchange rate may also reflect developments in the global economy and international capital movements. International equity prices fell sharply through 2002, particularly in the second quarter. When equity prices are expected to fall, investors make portfolio shifts and move into safe markets. Money and bond markets are good alternatives to the equity market. In this situation, NOK investments where interest rate are relatively high may appear particularly attractive. The opposite may occur if international equity prices are expected to rise. In this case, the equity market will be more attractive than money and bond markets. This could lead to a depreciation of the krone. Against this background, the krone exchange rate is likely to fluctuate widely as a result of developments in international financial markets.

The appreciation of the krone from mid-2000 may to some extent be related to the marked fall in the value of the Swedish krona. Since the beginning of the year, the US dollar has depreciated (Chart 5). Several countries, such as Canada, Australia and New Zealand, have therefore seen their effective exchange rates appreciate. This has also had an impact on the Norwegian krone. In the period ahead, we must therefore be prepared for fluctuations in the value of our currency that are more in line with the currency fluctuations we have observed for small, open economies.

Chart 5 Share prices in the US and effective USD exchange rate¹⁾. Weekly figures

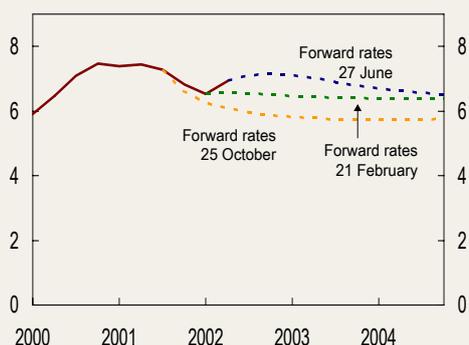


¹⁾ A rising curve denotes an appreciation of the krone

²⁾ Equity price index consisting of all limited companies with head office in the US for which share prices are quoted. There are currently over 6500 companies.

Source: Norges Bank

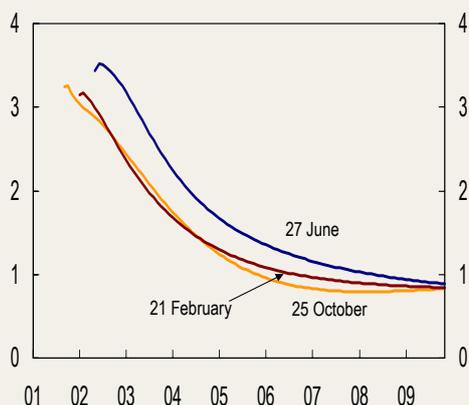
Chart 1.7 Expectations concerning short-term money market rates.¹ Quarterly figures. Per cent



¹ Three-month money market rates up to end-Q2 (27 June). Three-month forward rates are estimated using four money market rates and five government bond yields with different maturities as observed on 27 June.

Source: Norges Bank

Chart 1.8 Forward rate differential against Germany. Percentage points



Source: Norges Bank

Chart 1.9 Goods consumption index. 1995 = 100. Seasonally adjusted volume.



Source: Statistics Norway

Market expects higher interest rates

Market participants revised up their expectations concerning Norwegian interest rates in the first half of 2002 (see Chart 1.7). An improved global economic outlook, upward adjustments in interest rate expectations internationally and increases in key rates in several countries have influenced interest rate expectations in Norway. Among domestic factors, the outcome of the wage settlement appears to have fuelled expectations of higher interest rates. The appreciation of the krone is cited as the main factor that will curb the magnitude of the expected increase in interest rates. International unrest in connection with the crisis in WorldCom reduced global interest rate expectations on 26 June.

Forward rates, calculated using the yield curve in money and bond markets, may provide an indication of expected short-term rates. Forward rates ten years ahead are now about 6½%, i.e. unchanged on the previous *Inflation Report* (see Chart 1.8). The forward rate differential between Norway and Germany may reflect differences in expected inflation and a risk premium for investing in Norwegian bonds. This differential has remained at about one percentage point since last summer. The differential is probably due to Norway's inflation target, which is higher than the target for the euro area, and the risk premium for investments in Norway.

Growth in mainland economy and high oil prices

Mainland GDP growth has picked up in the last six months. In the fourth quarter of 2001, mainland GDP expanded by an annualised 3.2% compared with the previous quarter. In the first quarter of 2002, growth reached an annualised 4.5%.

Growth in private consumption has accelerated. Goods consumption picked up sharply towards the end of last year and has continued to rise in 2002 (see Chart 1.9). Stronger growth in household consumption reflects high wage growth and substantial tax reductions. It appears that real income growth may reach 5% this year. Households also have high expectations concerning their own personal finances. Growth in household debt has remained high (see Chart 1.10). House prices have continued to rise.

The international downturn through 2001 has had little impact on the Norwegian economy. Oil prices have remained firm. Developments in the volume of exports have been somewhat more favourable than estimated earlier. So far this year, export prices measured in foreign currency have drifted up. However, earnings in internationally exposed industries have been negatively affected by high cost inflation in Norway over a long period, reinforced by a stronger krone over the past year. Manufacturing employment is falling, although manufacturing unemployment has remained low. This may indicate that manufacturing workers who lose their jobs, relatively quickly find employment in other sectors or shift to social security systems and early retirement. Employment

is expanding at a brisk pace in the construction sector, in the local government sector and in many private service industries.

Some service industries, however, are experiencing a period of low activity, especially the ICT sector. Since spring 2000, the Oslo Stock Exchange's IT index has declined by a little more than 75%. General uncertainty about developments in the global economy in 2001, which culminated in the wake of the terrorist attacks in the US last autumn, amplified this decline. The fall had a contagion effect on such industries as advertising, media, consultancy services and insurance. Considerable restructuring is also taking place in the aviation industry.

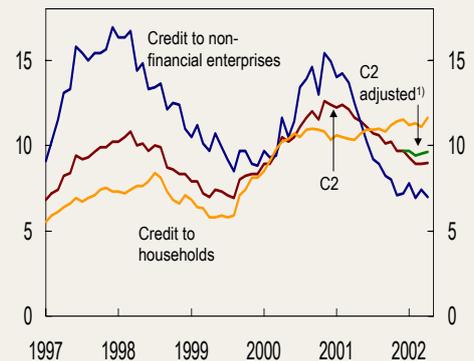
Several of these industries were probably already characterised by excess capacity. The downturn last autumn made the need to reduce capacity more visible. In addition, it is likely that activity is being curbed by corporate decisions to postpone new investment until the investment tax is removed on 1 October 2002. Somewhat lower growth in credit to non-financial enterprises probably reflects weak investment growth (see Chart 1.10).

Unemployment in Norway has edged up, primarily as a result of restructuring and reduced activity in some service industries. According to the Directorate of Labour, registered unemployment, including those participating in labour market programmes, stood at a seasonally adjusted 3.5% in May 2002, an increase of about half a percentage point compared with May last year (see Chart 1.11). The Directorate of Labour's statistics show that unemployment continued to rise through the spring months. Statistics Norway's labour force survey indicates that the increase in unemployment mainly occurred last autumn. The rise in unemployment has primarily been confined to the eastern part of Norway (see Chart 1.12).

Mixed international picture

Last winter, the uncertainty surrounding international developments was considered to be the main downside risk. However, developments in winter and spring support evidence of a recovery in growth. In the first quarter, GDP growth in the US and Japan was surprisingly strong (see Chart 1.13), while growth remained weak in Europe. However, developments in international financial markets have recently been marked by considerable uncertainty (see Chart 1.14). In recent weeks, stockmarkets have fallen and there have been wide fluctuations between major currencies. The US dollar has depreciated considerably against the euro. There is still a risk that weaker confidence in US companies will affect developments in production and employment.

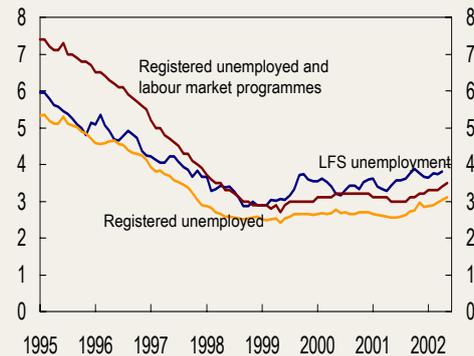
Chart 1.10 Credit from domestic sources (C2). Total and by borrowing sector. 12-month rise. Per cent



¹⁾ Adjusted for central government transfer of capital to local government in January to repay debt in connection with the state takeover of hospitals.

Source: Norges Bank

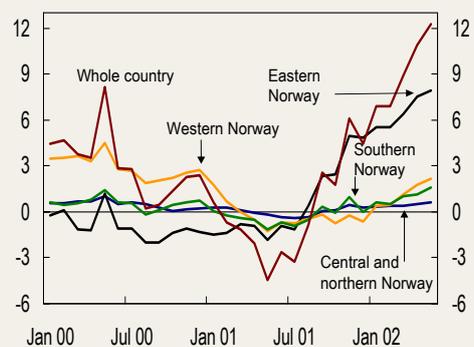
Chart 1.11 Unemployed (LFS), registered unemployed and persons participating in labour market programmes. Percentage of labour force. Seasonally adjusted¹⁾



¹⁾ LFS unemployment: 3-month moving average

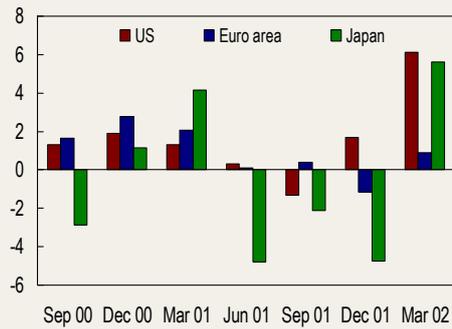
Sources: Statistics Norway and the Directorate of Labour

Chart 1.12 Change in unemployment on same month previous year. In thousands of persons



Source: Directorate of Labour

Chart 1.13 GDP growth in the US, the euro area and Japan. Percentage change from previous quarter (annualised)



Sources: National sources of statistics and EcoWin

Oil prices exhibited a sharp rise between February and May, reflecting several factors. Brighter prospects for the world economy fuelled expectations of higher demand for oil. Cuts in oil production by non-OPEC countries have reduced the supply of oil. Political and military unrest in areas such as the Middle East has also been an important factor in periods. The oil price was about USD 25 per barrel at end-June.

The easing of monetary conditions internationally came to a halt towards the end of last year. Over the past four months, key rates have been raised in Sweden, New Zealand, Canada and Australia, while interest rates in other countries have been very low, particularly in Japan, Switzerland and the US. Forward rates indicate expectations of higher interest rates in many countries, although interest rate expectations have fallen somewhat recently.

Chart 1.14 Equity prices and long-term interest rates in the US, and prices for industrials (USD). Index, Week 1 in 2001 = 100.



Sources: Norges Bank, EcoWin, *The Economist* and Wilshire Associates

2 | International developments

Developments in international financial markets are marked by uncertainty. Our projections are based on the assumption of a moderate upturn in world economic growth. Monetary policy has generally been revised in an expansionary direction. Automatic stabilisers were allowed to function in most countries, and a more expansionary fiscal stance was adopted in some countries. Private consumption has remained buoyant in many countries. Therefore, stronger demand impulses from higher consumption growth are not expected. GDP growth among Norway's trading partners is projected at 1½% this year, 2¾% in 2003 and 2½% in 2004.

Moderate growth in the US

The projection for GDP growth in the US for 2002 has been revised upwards from ¾% to 2¾%, primarily because first-quarter growth was substantially higher than we expected in the February report. Growth projections further ahead remain virtually unchanged.

There are still imbalances in the US economy. The saving ratio is low, and the level of household debt-servicing is high despite low interest rates (see Chart 2.2). Consumption has been underpinned in part by the rise in house prices. We assume that the strong stimulus generated by fiscal and monetary policy will contribute to consumption growth in line with income growth in the period ahead. Investment growth is expected to pick up and reinforce the recovery.

Investment in the US is relatively high, even after the decline through the past year. Low capacity utilisation suggests that it may take time before investment picks up. However, there is still uncertainty as to whether corporate accounting figures overestimate underlying profitability. The fall in share prices indicates uncertainty with respect to future earnings.

Growth in Europe may also pick up

So far, growth in the euro area has been weak, but an expansionary monetary policy and the turnaround in the US have improved the outlook. However, the recovery is fragile. Capacity utilisation in enterprises is low. Despite solid profitability, it may take time for investment growth to pick up. The strengthening of the euro may dampen export growth.

The recovery in other European countries has also been weak. In the UK, GDP remained approximately unchanged in both the fourth quarter of 2001 and the first quarter of this year. High house prices are expected to continue to fuel

Table 2.1 GDP estimates.
Percentage change from previous year.

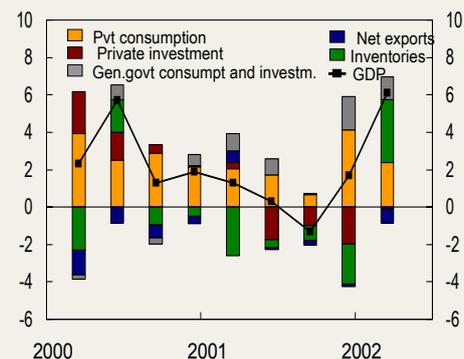
	2002	2003	2004
US	2¾	3½	3½
Japan	-¼	¾	1½
Germany	¾	2¼	2½
France	1	2¾	2¾
UK	1½	2¾	2½
Sweden	1½	2¾	2¾
Norway's trading partners ¹⁾	1½	2¾	2½
Euro area ²⁾	1	2¾	2½

¹⁾ Weighted by export weightings

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

Source: Norges Bank

Chart 2.1 Quarterly change in US GDP, annualised. Contribution to growth in volume. Per cent Seasonally adjusted



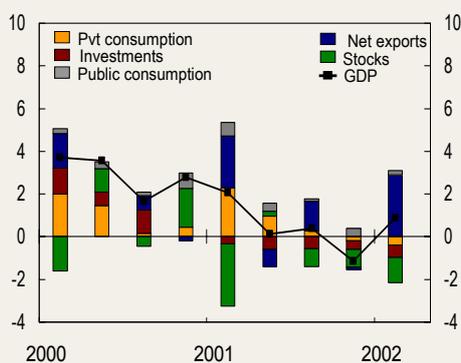
Sources: Bureau of Economic Analysis and Norges Bank

Chart 2.2 US: Household debt-servicing capacity. Interest and principal as a percentage of disposable income



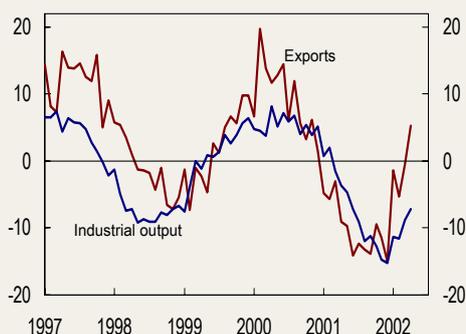
Source: The Federal Reserve

Chart 2.3 Quarterly change in euro area GDP, annualised. Contribution to growth in volume. Per cent. Seasonally adjusted



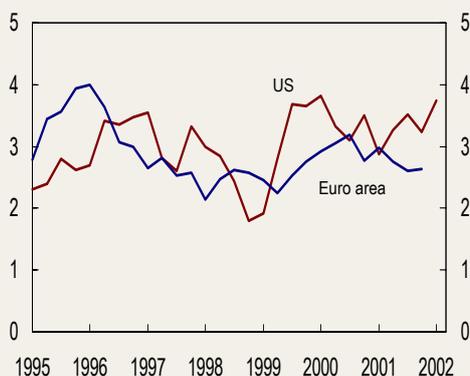
Sources: Bureau of Economic Analysis and Norges Bank

Chart 2.4 Japan: industrial output and exports. Percentage growth compared with same month previous year



Sources: Japanese Ministry of Finance and Ministry of International Trade and Industry

Chart 2.5 Growth in hourly wages in industry in the US and the euro area. Growth on same quarter previous year. Per cent



Source: OECD

growth in private consumption, and public consumption and investment are rising sharply. Growth in Sweden has been moderate since autumn 2000, partly as a result of weak developments in the ICT sector. Private demand is expected to pick up somewhat in the period ahead as a result of increased optimism among households and higher real income, partly due to tax cuts.

Stabilisation in Japan and turnaround in many Asian countries

There are now signs that the economic situation in Japan has stabilised. The recent global upturn and the depreciation of the Japanese yen last year have made a positive contribution to exports. As a result of substantial structural problems in enterprises and banks, growth is expected to be sluggish in the period ahead. The recent appreciation of the yen may have a dampening impact on export growth.

The recovery in the US has had a positive impact on developments in a number of Asian countries. Demand in some of these countries has also been stimulated by monetary and fiscal policy.

Low international price inflation

The projection for consumer price inflation in the US this year has been revised upwards somewhat because of higher oil prices, but inflation is expected to remain moderate. Unemployment will probably remain at the current level, nominal wage growth is moderate and competition in product markets is strong. In the short term, brisk productivity growth will also have a dampening impact on prices. Imported inflation as a result of the depreciation of the US dollar may push up inflation to some extent.

Inflation in the euro area has been somewhat higher than expected this year. This is largely attributable to temporary factors such as higher food prices due to weather conditions and increased oil prices. Wage growth in the manufacturing sector in the euro area is just under 3% (see Chart 2.5). Trend-setting wage agreements in the German manufacturing sector may point to somewhat higher wage growth. Productivity growth was low in 2001, but may gather pace with a cyclical upturn. The strengthening of the euro, if it persists, may also contribute to dampening price inflation.

Continued uncertainty surrounding oil prices

The risk of lower oil production as a result of military conflicts in the Middle East and Iraq appears to have subsided somewhat. However, the experience of recent years has shown that the situation in these areas is highly unstable. Oil prices may surge again. The box in Annex I provides a further analysis of the impact of higher oil prices. Oil prices are also influenced by supply and demand. Demand for oil will increase in pace with the expected global recovery. On the supply side, Russia, Mexico, Oman and Norway are expected to lift production limits. OPEC will keep limits at the current level through the third quarter.

Our calculations are based on the technical assumption that the oil price will fall gradually to USD 20 two years ahead (see Chart 2.6).

International producer prices may edge up

Our projections are based on the assumption that prices for industrials will rise somewhat from the current level, measured in USD. Our estimates are consistent with forward commodity prices. Approximately half of these commodities are metals. Metal prices move in tandem with activity in the world economy (see Chart 2.7). World economic growth will probably pick up, but pressures are not expected to build up. Enterprises have excess capacity and wage growth remains moderate. Overall, this implies a weak rise in producer prices through 2003 and 2004.

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

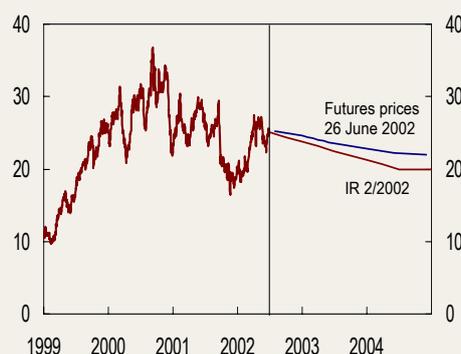
	2002	2003	2004
USA	1½	2¼	2½
Japan	-1	-½	0
Germany	1¾	1½	1½
France	2	1¾	1½
UK	2¼	2½	2½
Sweden	2½	2¼	2
Norway's trading partners ¹⁾	2	2	1¾
Euro area ²⁾	2¼	2	1¾

¹⁾ Import weights

²⁾ Eurostat weights (country's share of euro area's consumption)

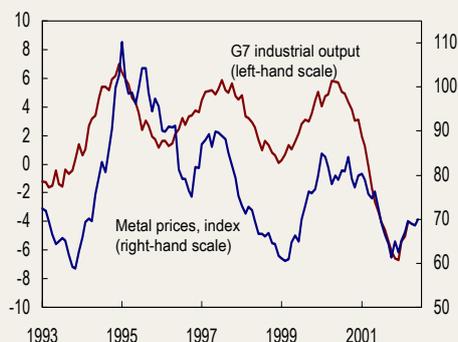
Source: Norges Bank

Chart 2.6 The oil price, Brent Blend. USD per barrel
Daily figures



Sources: International Petroleum Exchange, Telerate and Norges Bank

Chart 2.7 Metal prices (level) and industrial output in G7 countries¹⁾. 12-month rise. Per cent



¹⁾ US, Japan, Germany, France, UK, Canada and Italy

Sources: OECD and *The Economist*

3 | Domestic developments

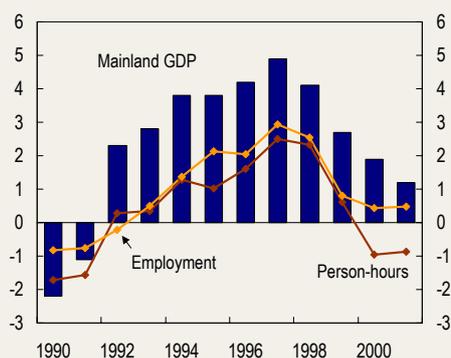
Table 3.1 Key aggregates for Norway 2002-2004
Percentage change from previous year

	2002	2003	2004
Mainland demand	3	2½	3
Private consumption	4¼	4	3½
Public consumption	1½	¾	2
Fixed investments	¼	1	1¼
Enterprises	-3	1½	1¼
Dwellings	4	2¾	2¼
General government	6¾	-2	2
Petroleum investment	0	15	-5
Traditional exports	0	1	1
Imports	3	4½	2
GDP	2¼	2¼	2¼
Mainland GDP	2	2¼	2½
Employment	½	¼	½
LFS unemployment ¹⁾	3¾	4	4

¹⁾ Percentage of labour force

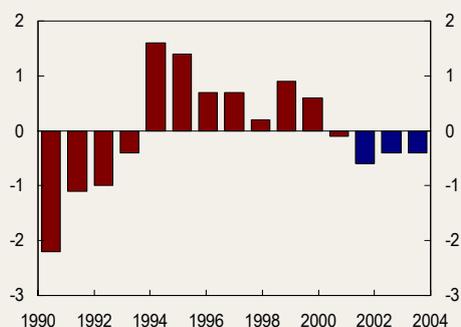
Source: Norges Bank

Chart 3.1 Mainland GDP, person-hours and employment. Percentage change from previous year



Source: Statistics Norway

Chart 3.2 Change in structural non-oil budget balance¹⁾



¹⁾ Budget balance as a percentage of trend mainland GDP; change on previous year.

Source: Revised National Budget, Ministry of Finance

Growth in domestic demand is projected to pick up over the next few years, mainly as a result of higher household income growth partly through an expansionary fiscal policy. Mainland GDP is expected to expand by 2% in 2002, 2¼% in 2003 and 2½% in 2004. Growth in 2002 will be pushed down by the introduction of two additional vacation days.

Over the last two years, production growth in mainland Norway has been low at only 1½% per year. The sluggish growth rate primarily reflects weak growth in the supply of labour. Labour force participation has reached a record-high level, and the demographically-determined supply of labour is limited. Unemployment is low. In recent years, the supply of labour has also been reduced by extensive working hour reforms and increased sickness absence. The number of man-hours worked in the Norwegian economy has decreased since 1999, despite an increase in employment and growth in both public and private demand. As a result, there is a shortage of labour in many sectors. Economic resources are under considerable pressure.

Limited production capacity in the Norwegian economy has contributed to an increase in imports. With stronger growth in total demand and high Norwegian costs, this trend is likely to continue.

Fiscal policy has an expansionary effect

The guideline for fiscal policy implies that the use of petroleum revenues over the central government budget will increase steadily for many years to come. Fiscal policy will thus contribute to maintaining pressures in the Norwegian economy. Increased use of petroleum revenues over the central government budget, through higher spending on goods and services, high real wage growth in the public sector, cuts in direct and indirect taxes for the private sector and transfers to households, will stimulate activity in the Norwegian economy. According to the fiscal policy guideline, the use of petroleum revenues over the central government budget is estimated to increase annually by approximately ½% of GDP over the next few years (see Chart 3.2.)

The Revised National Budget for 2002 was deliberated in the Storting in June. Spending of petroleum revenues, measured by the structural budget deficit, is still estimated to increase by approximately ½% of mainland GDP. However, a sharp upward adjustment was made in estimated tax revenues for this year, partly as a result of higher payments of deferred taxes for the income year 2000. As a result, public spending over the central government budget could be increased to a comparable extent. A rise in central government underlying expenditure of approximately 7% is planned for this year. Real underlying growth in expenditure was doubled in the

Revised National Budget compared with the budget adopted towards the end of last year. Real expenditure growth is now estimated at 2½%, exceeding growth in the economy for the second consecutive year (see Chart 3.3). Growth in public consumption is estimated at 1½%. The considerable difference between the increase in allocations and growth in public service production reflects high nominal and real wage growth and sharp growth in central government transfers to households.

Overall tax cuts amount to almost NOK 13 billion at accrued values in 2002. A substantial share of this amount will not be recorded until 2003. Unless tax revenues increase more in 2003 than currently estimated, a substantial portion of the overall margin for manoeuvre for the use of petroleum revenues in 2003 has already been exhausted.

Strong growth in household income

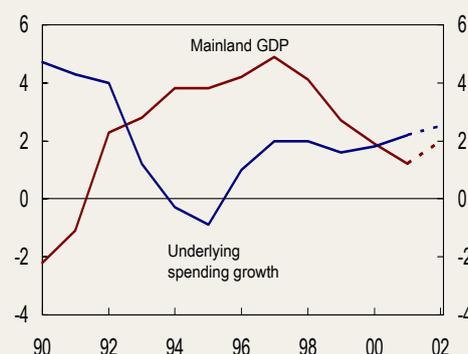
Household real income growth will be very high this year at close to 5%, reflecting strong wage growth and substantial tax cuts. Wage growth is also likely to be high in the years ahead. It would therefore seem that the current strong income growth will persist. Private consumption is estimated to expand in real terms by 4¼% in 2002 and 4% in 2003. Strong growth in private consumption will make a substantial contribution to overall growth in domestic demand.

The projections for growth in private consumption have been adjusted upwards since the previous report, mainly as a result of higher wage growth estimates. Historically, it takes some time for higher income growth to feed fully through to consumption. The saving ratio is therefore estimated to rise this year. The saving ratio is expected to remain stable in the period ahead.

Revised national accounts figures show that the saving ratio is markedly lower than previously projected (see Chart 3.4). Consumption growth was higher in the latter half of the 1990s than assumed earlier. The composition of saving has also been revised. Housing investment is higher and net lending lower than indicated by earlier figures. Household net lending was close to zero last year. The revision of the national accounts figures has led to improved conformity between Norges Bank's and Statistics Norway's estimates of household net lending.

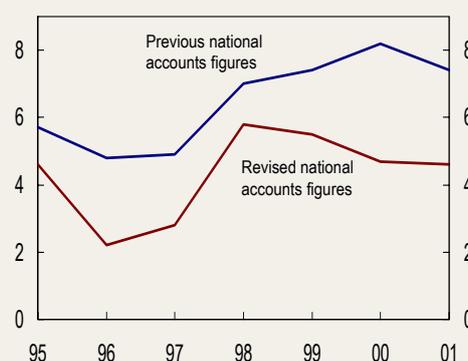
Household debt has risen as a proportion of income (see Chart 3.5). Although the household debt burden continues to rise sharply, it is on the whole lower than at the end of the 1980s. However, there are substantial differences between household income groups. Low and middle-income households have increased their debt burden and are thus more vulnerable to periods of rising interest rates and unemployment. For a more detailed discussion, see Norges Bank's *Financial Stability Report 1/2002*.

Chart 3.3 Real underlying spending growth in the government budget and growth in mainland GDP. Percentage change from previous year



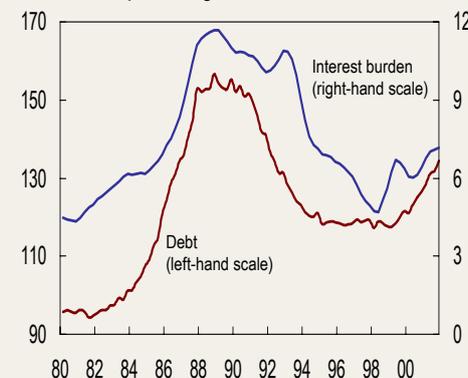
Sources: Statistics Norway, the Ministry of Finance and Norges Bank

Chart 3.4 Household saving as a percentage of disposable income.



Source: Statistics Norway

Chart 3.5 Household debt as a percentage of disposable income and household interest expenses after tax as a percentage of cash income



Source: Norges Bank

Increased domestic demand will contribute to continued tightness in the labour market

An expansionary fiscal policy and strong growth in private consumption imply an increase in demand for services and consequently for labour in the sheltered sector. Domestic demand may grow by an average of close to 3% in the period 2002-2004. Demand growth is estimated to be particularly strong next year as a result of increased petroleum investment. At the same time, mainland business investment may be postponed until 2003 as the investment tax will be eliminated on 1 October 2002. This may lead to an upswing in investment in 2003.

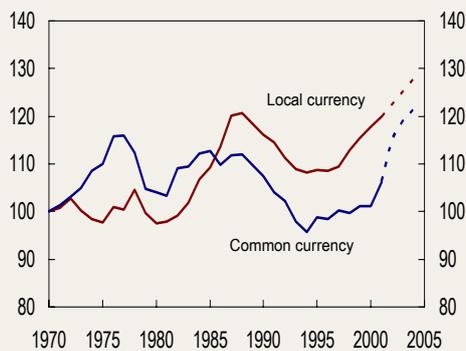
Manufacturing is exempt from the investment tax. Estimates by industrial leaders indicate that investment will exhibit strong growth this year, mainly due to Norsk Hydro's plant in Sunndalsøra and Årdal and Elkem's plant in Mosjøen. Growth in manufacturing investment is expected to be weak in the longer term. This is due partly to falling investment in the metallurgical industry, and partly to weak profitability in Norwegian manufacturing.

A strong krone and high wage growth increases the pace of downscaling in the internationally exposed sector

Increased demand for labour in the sheltered sector of the Norwegian economy, such as private and public services, distributive trades and the construction industry, may be matched by reduced demand for labour in industries that are more exposed to international competition. Over the past five years, growth in hourly wages has been a total of 10 percentage points higher than the average for Norway's trading partners (see Chart 3.6). In the past two years, the krone has appreciated considerably. When competitiveness deteriorates, profitability is eroded in the export industry and other industries exposed to strong international competition, resulting in a loss of market shares. This applies to manufacturing, but also to other industries that are heavily exposed to competition or that are affected in some other way by high and rising prices measured in foreign currency. Distributive trades may be affected by an increase in border trade, particularly in relation to Sweden. It is relatively more expensive to take a holiday in Norway due to high wage levels and a stronger krone. This may have an impact on the tourist industry.

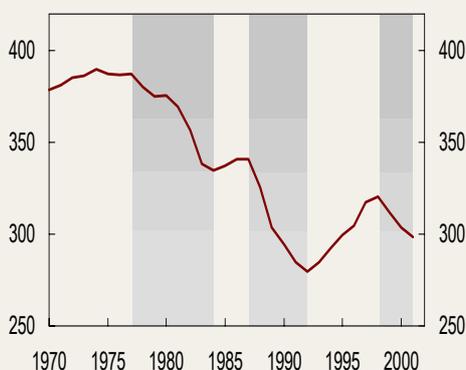
Manufacturing employment began to decline in 1998 (see Chart 3.7). Up to the end of 2001, employment declined by over 20 000, or a good 5000 a year. With the technical assumption of an unchanged krone exchange rate, Norges Bank's estimates for wage growth indicate that competitiveness will deteriorate further in the years ahead. This may amplify the decline in manufacturing employment.

Chart 3.6 Relative labour costs in Norwegian manufacturing compared with trading partners. Index: 1970=100



Sources: Statistics Norway, TBU and Norges Bank

Chart 3.7 Manufacturing employment, 1970-2001. In 1000s of people employed.



Source: Statistics Norway

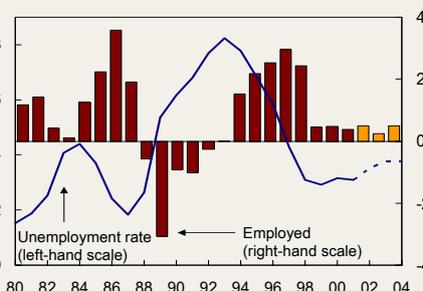
Norwegian manufacturing companies could still be profitable even if manufacturing industry's role in terms of employment diminishes. Some enterprises could be at the forefront of technological developments and increase efficiency more rapidly than their competitors. Many enterprises will relocate large portions of production to countries where production costs are lower. Some enterprises will also focus more on various niche activities, as this tends to provide them with greater leeway in price-setting. Nonetheless, it is likely that several years of strong wage growth combined with a strong krone exchange rate will result in a considerable competitive disadvantage for some sectors of Norwegian business and industry. Growth in Norwegian merchandise exports is expected to be very moderate in the years ahead.

Extensive restructuring

Lower manufacturing employment in the last four years has been more than offset by increased employment in the sheltered sector. Unemployment has therefore remained relatively stable and low. It seems likely that workers have shifted to sectors seeking the same type of skills, such as the construction industry. Others previously employed in manufacturing have probably found new jobs in the service sector. Outflows from the labour market into early retirement and disability schemes have probably also made a significant contribution.

Growth in demand for goods and services in the sheltered sector will be sufficiently strong to confine unemployment to around the present level. However, with increasing duality in the economy, it is no longer a given that the labour market will function with as much flexibility as earlier. This may result in growing mismatches between the qualifications in demand in the labour market and the qualifications offered. Competitiveness has been deteriorating sharply and rapidly in recent months, increasing the risk of structural unemployment.

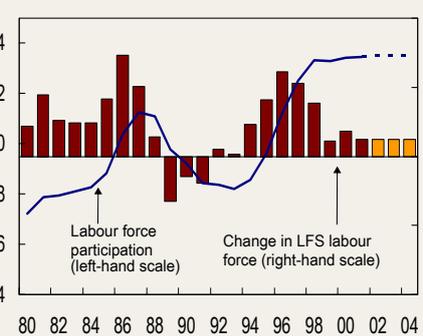
Chart 3.8 Percentage change in employment from previous year and unemployment¹⁾ as a percentage of the labour force



1) Total of registered unemployed and persons participating in labour market programmes

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

Chart 3.9 Percentage change in labour force from previous year, and labour force as a percentage of population aged 16-74 (labour force participation rate).



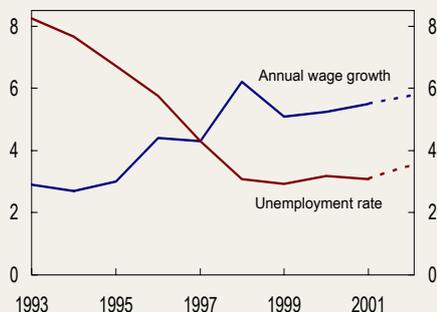
Sources: Statistics Norway and Norges Bank

4 | Inflation projections

4.1 Domestic inflationary impulses

Continued high rise in labour costs

Chart 4.1 Annual wage growth¹⁾ and unemployment rate²⁾. Per cent

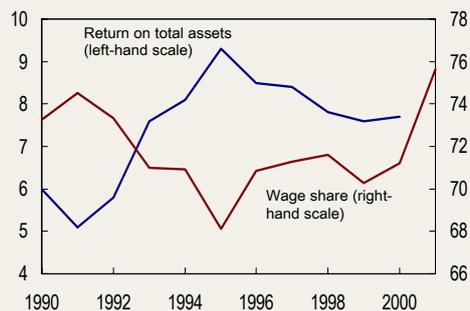


¹⁾ Average for all groups. Including costs of additional vacation days in 2000 and 2001

²⁾ Registered unemployed and persons on labour market programmes as a percentage of the labour force

Sources: TBU, Directorate of Labour and Norges Bank

Chart 4.2 Profitability in manufacturing. Wage share¹⁾ and return on total assets²⁾.



¹⁾ Labour costs as a percentage of value added

²⁾ Result for the year + net interest and financial costs as a share of total assets. Excluding oil companies

Sources: Statistics Norway and Norges Bank

The labour market is tight and has resulted in stronger wage growth than previously assumed. Historically, weak profitability in manufacturing industry has contributed to restraining growth in wages, also in the sheltered sector. Manufacturing has served as a wage leader.

This year's wage settlement indicates that profitability in internationally exposed sectors has had less influence on wage negotiations in other industries than was the case earlier. If this is the case, the shortage of labour in more sheltered industries could be of greater importance to overall wage growth than earlier. This would also mean that changes in the exchange rate would have a smaller impact on overall wage growth. Inflation developments would then be determined by domestic factors to a greater extent than earlier.

One feature of this year's wage settlement is that wages in some labour market segments will be determined locally to a somewhat greater extent. This applies in particular to the local government sector where, for example, the Federation of Norwegian Professional Associations will negotiate pay increases only at a local level as from this year. Another feature of this year's settlement is that substantial centralised pay increases were awarded to groups that negotiate at a centralised level. At the same time, in some settlements emphasis was placed on extraordinary factors that are not related to labour market conditions.

Annual wage growth has been moving on a rising trend since 1999. It may seem paradoxical that wage growth is accelerating while unemployment is edging up. This year's wage settlement may indicate that the labour market, in spite of some increase in unemployment, is tighter than previously assumed. It may seem that enterprises and some sectors consider the supply of labour to be limited and that employee organisations are of the view that there is little risk of higher unemployment. Our projections for developments in the Norwegian economy imply a continued rise in demand for labour in some sectors of the economy. This year's wage settlement resulted in different increases for different groups and substantial pay increases that will take effect from next year for some groups, particularly in distributive trades and local government. This may easily trigger and amplify wage-wage spirals.

As to wage growth, the main elements of uncertainty are how high wage growth will be as a result of the tight labour market and the scale of wage-wage spirals that may emerge. Profitability in some business sectors is, however, under

strong pressure as a result of the appreciation of the krone and persistently high wage growth. In the medium term, weaker profitability in some business sectors is expected to continue to restrain overall wage growth to some extent. However, it is highly uncertain to what extent low profitability will influence total wage growth.

Wage growth is now projected at 5¾% in 2002, 2003 and 2004, i.e. an upward adjustment of ¾ percentage point for each year compared with the projections in the February *Inflation Report*. Other things equal, and before taking account of any effects on the krone, this shift in wage growth will after a period push up consumer price inflation by an estimated half a percentage point.

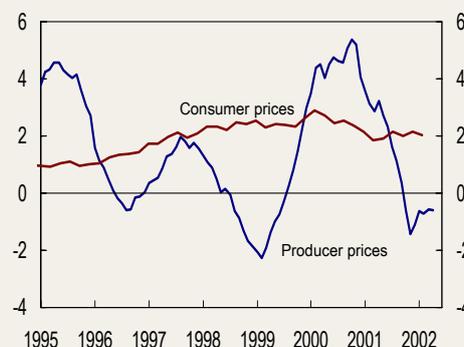
4.2 International inflationary impulses

Whereas the rise in prices for domestically produced goods and services is likely to remain at a high level in the years ahead, imported price inflation may be weak. World economic growth seems to have picked up, but will probably be moderate. Consumer price inflation among trading partners is projected to range between 1¾% and 2% in the years ahead. Historically, the rise in prices for imported goods will be lower than this level as a result of relatively high productivity growth for the production of goods that are sold on global markets. Measured in foreign currency, international producer prices are expected to show some rise, edging up towards ½-1% in 2004.

So far, the appreciation of the krone does not seem to have exerted significant downward pressure on price inflation in Norway (see Chart 4.4). This may partly be because the appreciation over the last two years occurred after a period when the krone depreciated virtually to the same extent, i.e. between 1997 and spring 2000. To a large extent the appreciation in the last half of 2000 and most of 2001 may have been perceived as a correction. When the krone is floating, it may also show wide fluctuations. It may therefore take time for participants to perceive changes in the exchange rate as lasting. Changes in the krone exchange rate will therefore be reflected to a large extent in profit margins among producers, importers and dealers.

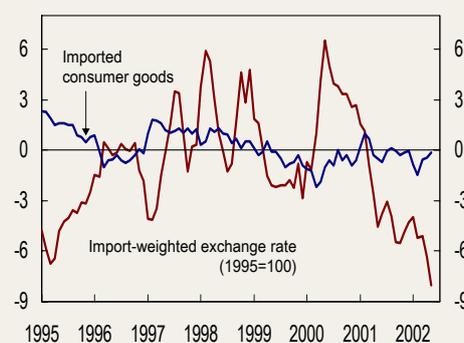
However, the appreciation of the krone observed so far is likely to contribute to a pronounced fall in prices for imported consumer goods. The estimates in this report are based on the technical assumption that the import-weighted krone exchange rate will remain stable at the average for the past three months (see Section 4.3). Compared with the assumptions in the previous *Inflation Report*, this implies a 5% appreciation of the krone. Excluding possible downward price-wage spirals as a result of a stronger krone, such an appreciation will in isolation contribute to pushing down CPI inflation by a little less than ¼ percentage point this year, close to ½ percentage point in 2003 and ¼ percentage point in 2004 (see box in Annex I).

Chart 4.3 Producer and consumer prices for Norway's trading partners. 12-month rise. Per cent



Sources: EcoWin, Datastream, the OECD and Norges Bank

Chart 4.4 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

4.3 The inflation outlook

In the last few years, inflation has been relatively stable at around 2.5%, excluding extraordinary temporary factors. The rise in prices for Norwegian produced goods and services has ranged between 3.5% and 4%, while prices for imported consumer goods have generally fallen or remained unchanged. Developments since the February *Inflation Report* indicate that this gap may widen over the next year (see Chart 4.5). Strong wage growth and high domestic demand will result in a continued high rise in prices for domestically produced goods and services. The appreciation of the krone will contribute to reducing prices for imported consumer goods.

The projections in this report are based on the technical assumption of an unchanged sight deposit rate of 6.5%. The recent appreciation of the krone partly reflects an upward revision of interest rate expectations (see box in Section 1). On the assumption of an unchanged key rate, we have therefore based our projections on the technical assumption of an import-weighted krone exchange rate equal to the average for the past three months. These assumptions are discussed further in Section 4.4.

In Norges Bank's assessment of the inflation outlook, the appreciation of the krone will not fully counteract stronger wage growth and higher growth in domestic demand. Over the next year, the impact of the krone exchange rate will dominate, pushing inflation under 2½%. In the longer term, the appreciation of the krone will have less impact and the effects of strong wage growth will gradually dominate.

On the basis of our assumptions, the rise in consumer prices adjusted for tax changes and excluding energy products (CPI-ATE) is projected at 2½% both this year and next and 2¾% in 2004. The projection for 2003 has been revised downwards by ¼ percentage point compared with the February *Inflation Report*, while the estimate for 2004 has been revised upwards by ¼ percentage point.

This year the rise in the consumer price index (CPI) is being curbed temporarily by a reduction in indirect taxes. On the whole, tax changes are projected to reduce consumer price inflation by nearly 1½ percentage points in the first half of 2002 and ½ percentage point in the second half of the year. Energy prices are also dampening CPI inflation slightly in 2002.

As a result of developments in indirect taxes and energy prices, CPI inflation is projected to be about 1¼ percentage points lower than the rise in the CPI-ATE this year. CPI inflation may jump considerably in July this year because the reduction in VAT on food (on 1 July 2001) will no longer have a direct impact on the year-on-year rise (see Chart 4.6). Projections for 2003 and 2004 are based on the assumption that CPI inflation will be the same as the rise in the CPI-ATE.

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

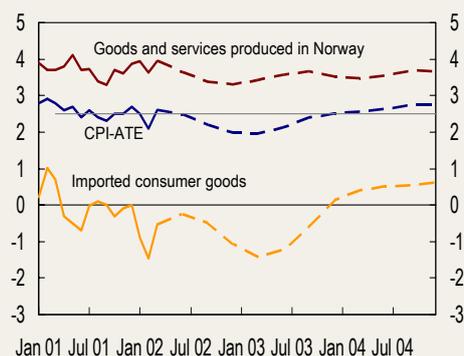
	2002	2003	2004
Annual wages	5¾	5¾	5¾
Productivity ¹⁾	2	2	2
Import prices, consumer goods ²⁾	-¾	-¾	½
CPI	1	2¼	2¾
CPI-ATE	2¼	2¼	2¾

¹⁾ Mainland Norway

²⁾ Excluding direct effects of tax changes

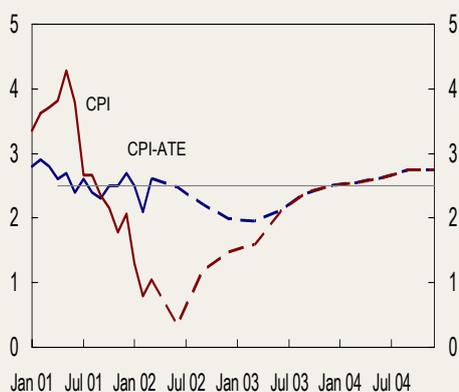
Source: Norges Bank

Chart 4.5 Consumer prices adjusted for tax changes and excluding energy products (CPI-ATE). Total and distributed by imported consumer goods and domestically produced goods and services. 12-month rise. Per cent



Sources: Statistics Norway and Norges Bank

Chart 4.6 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

4.4 Risks to the inflation outlook

The inflation projections in this report indicate the most probable path for inflation the next two to three years, given the technical assumptions of a krone exchange rate equal to the average for the last three months, and an unchanged sight deposit rate of 6.5%. Applying these assumptions, the two-year ahead inflation projection is higher than the inflation target. The effects of a change in the assumptions concerning the interest rate and exchange rate are discussed below. There is also uncertainty with regard to other assumptions and to what extent our economic models and our use of them capture actual relationships and changes in the economy.

The February *Inflation Report* pointed to a risk of a higher-than-estimated increase in labour costs. The projections for *wage growth* have been revised upwards considerably compared with the February *Inflation Report*. In our assessment, the probability that wage growth will be higher than 5¾% ahead is now the same as the probability that it will be lower.

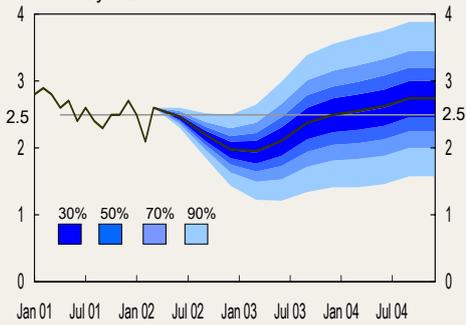
The risks surrounding *private domestic demand and production* are still regarded as balanced. Higher estimates for household income growth have resulted in an upward revision of estimates for growth in private consumption. The saving ratio is projected to edge up this year and to remain stable thereafter. If households base their consumption and saving decisions on expectations of a more sustained rise in income growth and strong confidence in the Norwegian economy, the saving ratio may fall. On the other hand, we may have underestimated the effects of a steadily increasing share of the population in age groups where historically saving has been high. This may push up the saving ratio and lead to lower-than-projected consumption.

The estimates for *public demand* in the years ahead are based on the Revised National Budget for 2002 and the fiscal policy guideline. The risks associated with the projections for public demand are regarded as balanced, as in the February report.

In the previous *Inflation Report*, uncertainty regarding international developments was the factor that weighed most heavily in favour of lower-than-projected price inflation. The projections for growth in the *global economy* and the projections for price inflation show little change since the February *Inflation Report*. Developments in the global economy through winter and spring by and large support the picture of a pick-up in growth. On the other hand, financial markets are marked by uncertainty. The risks to the forecasts for the global economy are now regarded as balanced.

Our projections are based on the technical assumption that the *oil price* will fall steadily to USD 20 per barrel over the next two years. Futures prices two years ahead have risen since February and are somewhat higher than our path for oil prices. This may indicate that oil prices will be higher than estimated. On the other hand, there is excess production capacity both in

Chart 4.7 Consumer price inflation¹⁾. Projections and uncertainty. 12-month rise. Per cent

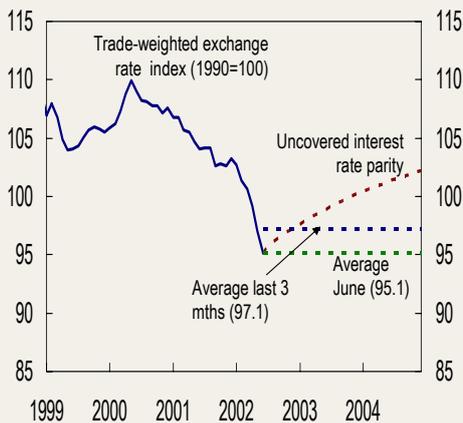


¹⁾ Adjusted for tax changes and excl. energy products (CPI-ATE).

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

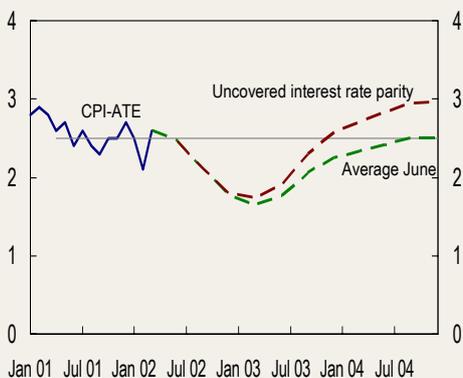
Sources: Statistics Norway and Norges Bank

Chart 4.8 Various scenarios for the trade-weighted exchange rate index (TWI)



Source: Norges Bank

Chart 4.9 Projected rise in the CPI-ATE assuming that the interest rate follows market expectations, and different assumptions regarding the krone exchange rate. 12-month rise. Per cent



Sources: Statistics Norway and Norges Bank

OPEC and non-OPEC countries, so that the supply of oil can be increased quickly. On the whole, the risks associated with the oil price assumptions are regarded as balanced.

The overall uncertainty surrounding the inflation projection, given the technical assumptions regarding the interest rate and the exchange rate, is illustrated in Chart 4.7. Combined, the risk factors indicate that the risks to the inflation projection of 2¾% are balanced. In relation to the inflation target of 2½%, it is more likely that inflation two years ahead will be higher than the target.

Effects of changes in interest rate and exchange rate assumptions

As an alternative to analysing the inflation outlook applying the assumption of unchanged interest rates, we have applied the assumption of an increase in the interest rate in line with market expectations. An increase of about ½ percentage point has recently been priced into 3-month money market rates (see Chart 4.8) A majority of financial institutions in Norway expect a half percentage point increase in the key rate by September.

An interest rate increase of half a percentage point could reduce growth in mainland GDP by about ¼ percentage point in 2003 and 2004 compared with a situation where the deposit rate remains unchanged at 6.5%. Higher interest rates will reduce demand growth in the Norwegian economy, especially through lower growth in private consumption. Higher interest rates make saving more attractive and also push down income growth as a result of households' net debt position. Higher interest rates thus contribute to reducing the demand for labour. This may have a dampening impact on wage growth and thereby price inflation.

Price inflation will also depend on the krone exchange rate. In the path with higher interest rates, we have considered two different alternatives for the krone exchange rate. In the first alternative, we have applied the assumption that the exchange rate remains at the average for June. Such an assumption implies a krone exchange rate that is a good 2% stronger than assumed in the baseline scenario (see Chart 4.8). In that case, prices for imported goods may fall even more than projected in this report. This combination of higher interest rates and a stronger exchange rate could lead to price inflation of about 2½% at the end of 2004 (see Chart 4.9).

Another alternative is that the krone depreciates in line with the theory of uncovered interest parity (UIP) (see Chart 4.8). According to this theory, a positive differential between domestic and foreign interest rates is consistent with an expected depreciation of the krone. In this scenario, the impact of the recent appreciation of the krone on price inflation two years ahead will be more than offset by the depreciation of the krone in the period ahead. Despite higher interest rates and lower wage growth than assumed in the baseline scenario, such changes in the krone exchange rate may, under this scenario, push up price inflation to 3% from mid-2004.

Annex I Boxes

New expectation survey

Norges Bank has taken the initiative to have a quarterly expectations survey conducted with respect to inflation, wage growth and exchange rate developments among financial experts and academics in Norway. The survey is conducted by Norsk Gallup. The reason for the survey is that Norges Bank orients monetary policy towards attaining the objective of low and stable inflation. Expectations about future price developments may have an impact on actual price developments. A regular survey may provide greater insight into this area. Norges Bank is planning to expand the expectations survey to include households and enterprises next year.

Close to 50 academics and financial experts participate in this survey, which is conducted via e-mail four times a year. Two surveys have already been carried out. The first survey was conducted at the beginning of February this year and the second at the beginning of May. The results of the survey will be published by Norsk Gallup each quarter as from the second quarter of 2002. The survey consists of eight questions: three about price developments, three about wage developments and two about exchange rate developments.

Inflation expectations

The survey results show that consumer price inflation is expected to be 2.4% 12 months ahead, i.e. the same as in February. Expectations concerning consumer price inflation two years ahead have moved up by 0.2 percentage point, from 2.5% in February to 2.7% in May. Consumer price inflation expectations five years ahead remain stable at 2.5%.

Wage growth expectations

Wage growth is on average expected to be 5.1% in 2002, 4.8% in 2003 and 4.2% five years ahead. In the first quarter, experts on average expected wage growth of 4.5% in 2002, 4.3% in 2003 and 4.1% five years ahead.

Exchange rate expectations

In the May survey, most experts expected the krone, as measured by the trade-weighted exchange rate index, to appreciate one year ahead. In February, 58.7% expected the krone exchange rate index to appreciate one year ahead, while this figure dropped to 50.0% in May. However, there was still about twice as many who expected an appreciation of the krone exchange rate 12 months ahead than those who expected a depreciation.

Why have clothing prices fallen?

Clothing prices, as measured in the consumer price index, have fallen by about 16% since 1995.¹ Trade liberalisation over the past few years has probably been a significant factor behind this. The Uruguay Round of the GATT² committed member countries to reduce trade barriers to imports of textiles and other goods.

Up to the completion of the Uruguay Round (1988), the textile industry was among the manufacturing sectors affected by extensive trade barriers. As a result of the Uruguay Round, Norwegian quota restrictions on textile imports have gradually been phased out. The last quotas for clothing were removed in 1998. The Storting also decided to reduce tariff rates gradually from 1994 to 2004. Tariffs on certain products from developing countries were eliminated. There has been and still is a significant difference between trading partners in the average tariff imposed on imports (see table).

Tabell 1 Average tariff rate on clothing for various groups of countries. Per cent

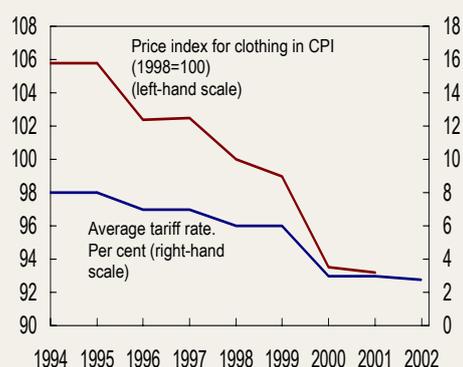
	1993	1996	1999	2002
Countries in Eastern Europe that signed a free trade agreement with EFTA early in the 1990s	20	2	0	0
EEA/EFTA-countries	0	0	0	0
Developing countries	20	19	16	7
Others (mainly the US)	20	19	16	14

The calculations shown in the table are based on around 300 different product categories with varying tariff rates. The products are weighted according to their importance for clothing imports in each year. When we also take into account the countries from which Norway imports goods, we obtain a measure of the average tariff burden for Norwegian clothing importers in recent years (see Chart 1). The chart illustrates that clothing prices fall most in the years with the sharpest decline in the average tariff rate. There was a particularly marked decline in the average tariff rate from 1999 to 2000 as a result of the elimination of tariffs on certain products from developing countries. This alone contributed to a decline in overall consumer price inflation of an estimated ¼ percentage point in the same period.

In addition to the direct effect of lower tariff rates on clothing prices, trade liberalisation has prompt-

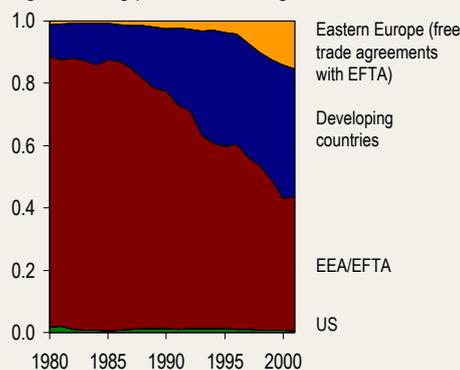
ed a shift in imports from high-cost countries to low-cost countries such as China and eastern Europe. Chart 2 illustrates the marked increase since the completion of the Uruguay Round in the percentage of clothing imported from developing countries, and eastern European countries, which concluded a free trade agreement with EFTA in the early 1990s.

Chart 1 Direct effect of reduced tariff rates



Sources: Statistics Norway, Norges Bank, the Ministry of Finance and the Ministry of Foreign Affairs

Chart 2 Import shares by country for the 25 largest trading partners, clothing.



Sources: Statistics Norway and Norges Bank

Developments in producer prices are usually measured as a weighted average of the increase in producer prices in the countries from which we import goods. In addition, import prices will as a whole be pushed down by differences in price levels between

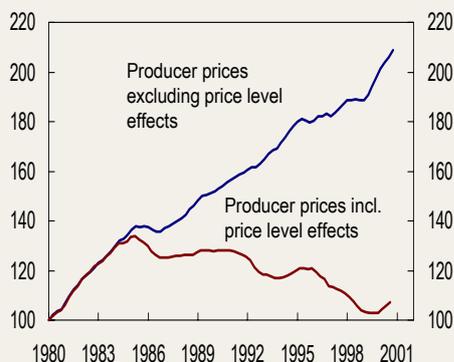
¹ In 2001, clothing had a weight of around 5% in the consumer price index (CPI).

² General Agreement on Tariffs and Trade.

producer countries when there are substantial changes in import patterns. For example, the share of Norwegian clothing imports from China increased from 20% in 1990 to approximately 30% in 2000. This was matched by a reduction in imports from EU countries, where the price level is five times higher than in China.

Chart 3 illustrates developments in a weighted average of producer prices for clothing with and without price level effects. The effects of varying price levels in the exporting countries have been estimated using PPP-corrected³ price levels based on figures from the World Bank.

Chart 3 Foreign producer prices for clothing. Indices, 1980 Q1 = 100



Sources: Statistics Norway, Datastream and Norges Bank

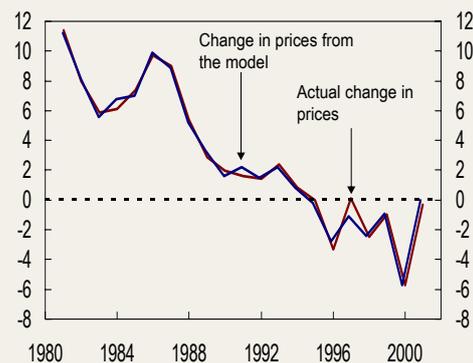
A model for clothing prices in the CPI has been estimated, taking into account changes in tariff rates and the effects of changes in patterns of trade on price levels.⁴ Chart 4 illustrates how the model has explained the developments in clothing prices since 1981. According to the model, reductions in tariff rates immediately result in lower clothing prices. Changes in the exchange rate also affect prices in the short term, although it takes some time before the full effect feeds through. In the long term, the level of clothing prices in Norway, when measured in a common currency, will be the same as the level prevailing in trading partner countries.

³ Purchasing Power Parity

⁴ The model has been estimated using data from the first quarter of 1980 to the first quarter of 2002: $dp_t = -0,34 - 0,31dp_{t-1} + 0,49dp_{t-2} + 0,22de_{t-2} + 0,01dT_t - 0,08(p-p^*-e)_{t-1} - 0,03S_t$ where p is the price of clothing in the CPI, e is the exchange rate, p^* is the price level in the countries clothing is imported from, T is the average tariff rate and S is a seasonal dummy for the first quarter. Small letters are logarithms. d is a difference operator.

⁵ See Melchior (1993) for a more detailed analysis of the welfare effects of trade liberalisation..

Chart 4 The fit of the model. Rise in prices for clothing in the CPI



Sources: Statistics Norway and Norges Bank

Trade liberalisation has been a significant factor behind the fall in clothing prices. Clothing prices have fallen by 16% since the peak year 1995. This has resulted in substantial welfare gains. Based on figures from the Confederation of Norwegian Commercial and Service Enterprises, clothing consumption in 2001 was close to NOK 31bn. Compared with a scenario where clothing prices had remained at the 1995 level, a rough estimate would indicate a gain for Norwegian consumers of approximately NOK 5bn a year.⁵

The Storting adopted a schedule for reducing tariff rates in the period up to 2004 (Proposition No. 3 (1996-1997) to the Storting). During its deliberations on the Revised National Budget for 2002, the Storting decided to phase out 630 tariff rates on manufactured goods, including textile goods. Customs revenues will be reduced by a total of approximately NOK 100m in the 2002 budget.

References:

Inflation Report 3/2001, Norges Bank

Melchior, A. (1993): "Helping your industry at the greatest cost. The story of Norwegian textile quotas". NUPI Report No. 171, Norwegian Institute of International Affairs

Moe, M.W. (2002): "Faktorer bak prisutviklingen på klær" (factors behind changes in clothing prices). *Økonomiske analyser*, No. 2, pp. 48-55, Statistics Norway

Proposition No. 3 (1996-1997) to the Storting: "Om endring-er i tolltariffen som følge av GATT/WTO-avtalen" (concerning changes in customs tariffs as a result of the GATT/WTO Agreement), the Storting

The impact of higher oil prices

Since the February *Inflation Report* oil prices have risen by about USD 5. High oil prices represent an important risk to the recovery of the world economy. The experience of the past 30 years shows that oil price shocks can lead to high inflation and low economic growth (see Chart). The effects may come through several channels:

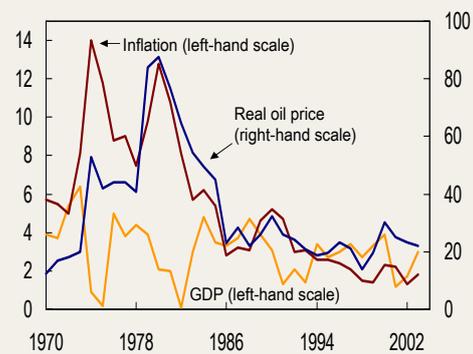
- Inflation is influenced directly through higher prices for petrol and other refined petroleum products that are included in the consumer price index. Inflation is influenced indirectly through inflation expectations and higher production costs, partly because petroleum products are inputs in production and partly because employees demand compensation for a fall in real income as a result of higher oil prices.
- Growth is influenced through lower supply and demand for goods and services. Supply falls when production costs rise. Demand falls when real income in oil-importing countries is reduced. Demand may also fall if monetary conditions are tightened to counteract inflationary impulses from increased oil prices.

There is also a strong interaction between the oil market and the world economy. For example, strong economic growth can lead to higher oil prices, which in turn leads to reduced demand for oil. The supply of oil also increases when oil prices rise. In other words, the rise in oil prices is not permanent.

Norges Bank has constructed an econometric model that captures the interplay between the world economy and the oil market. The model is relatively aggregated where OPEC and non-OPEC countries supply oil to the world market. The model takes account of OPEC countries' role as a swing producer with a view to stabilising oil prices. Total demand for oil is influenced by global economic growth, oil prices and a number of other variables such as weather conditions. Economic growth is directly influenced by oil prices, but also indirectly as a result of interest rate changes in the wake of inflationary impulses from oil prices. In the model, oil prices also tend to converge towards a stable average level in the longer run.

¹ Qaisar Farooq Akram (2002): "An econometric model of the world oil market" Unpublished paper, Norges Bank, see www.norges-bank.no.

Correlation between the oil price, GDP growth and inflation in industrial countries. Annual figures, 2002 and 2003 IMF projections



Source: IMF and Norges Bank

We have used the model to assess the effect of an increase in oil prices of USD 5 per barrel.² According to the model-based calculations, inflation will increase and growth decelerate, albeit not dramatically (see Table).

A rise in the oil price of USD 5, deviation from baseline scenario

Impact on	Years after price rise					
	0	1	2	3	4	5
Global inflation, percentage points	0,7	0,5	0,4	0,3	0,2	0,2
Global GDP growth, percentage points	0,0	-0,2	-0,2	-0,2	-0,1	-0,1
Oil price, USD	5,0	3,8	2,3	1,5	0,6	0,6

Some of the slowdown in growth is due to tighter monetary conditions as a result of higher inflationary impulses. Within a time horizon of three years, the impact on inflation and economic growth is closely in line with the findings of the IMF in comparable shift analyses.³ The model-based calculations show that the rise in oil prices is gradually reversed. Both reduced global demand for oil as a result of slower economic growth and higher oil supply from non-OPEC countries contribute to pushing down oil prices. This is in line with the expectations reflected in oil futures. As a swing producer, OPEC must cut production to prevent a further fall in oil prices. This is in line with developments in 2001 when global economic growth

² The oil price is an endogenous variable in the model. Shift analyses are made by changing the residual variables in the oil price

³ The Impact of Higher Oil Prices on the Global Economy, Working Paper, IMF 2000.

slowed after a sharp rise in oil prices. Moreover, this shows that OPEC can be exposed to growing pressures ahead if growth in the global economy is weaker than expected. Pressures may intensify when non-OPEC countries lift production limits.

The model's results should also be assessed in relation to prevailing structural and cyclical features:

- The model may overestimate the impact on economic growth and inflation because the use of oil as an input in production and consumption has diminished to a fairly large extent during the estimation period (1972-1998). According to the OECD, the oil intensity in GDP has fallen by close to 50% in OECD countries and 15% in non-OECD countries since 1970.
- The indirect impact on inflation may also be weaker than implied by the model. Stronger monetary policy credibility in terms of its ability to maintain inflation at a low and stable level may reduce employees' interest in demanding wage compensation as a result of increased oil prices. The current economic environment with moderate growth and low inflation also means that the possibilities for wage compensation are more limited than during previous oil price shocks when growth was generally higher. On the one hand, this may reduce the need for monetary policy tightening. On the other hand, increased focus on low inflation may induce central banks to react more rapidly and strongly to inflationary impulses than was the case earlier.

On the whole, the rise in oil prices observed since February will probably have a fairly moderate impact on the global economy.⁴ Moreover, the rise in oil prices has been considerably smaller than during earlier oil price shocks. Today's real oil price is not higher than the average for 1986. However, if oil prices were to increase to the same extent as during previous oil price shocks, the expected recovery may be seriously threatened. During previous shocks, growth was high, but the world economy seems to be emerging from a downturn.

⁴ In the last economic reports from the IMF (World Economic Outlook, April 2002) and the OECD (Economic Outlook no. 71) growth forecasts for the world economy were revised upwards at the same time that oil price assumptions were revised up. This is primarily because the causality also goes the other way, i.e. when growth picks up, demand for oil rises and oil prices move up.

How does the krone exchange rate influence the CPI?

Developments in the krone exchange rate are an important factor for price inflation in a small, open economy like Norway. The effects on consumer price inflation may occur through several channels:

- I: Through a *direct effect* on prices for *imported consumer goods* in the CPI.
- II: Through an *indirect effect* via prices for *imported intermediate goods*, which in turn influence prices for domestically produced goods and services in the CPI.
- III: Through a *profitability effect*. Changes in the exchange rate may influence the profitability of internationally exposed industries and thereby wage growth. Changes in wage growth will in turn influence the CPI.
- IV: Through a *price-wage spiral*. Traditionally, higher inflation has been met by demands for compensation in order to maintain a given growth in real wages. This has in turn resulted in higher inflation. Similarly, lower inflation may lead to lower nominal wage growth, which in turn results in lower inflation.

Over time, it is likely that a lasting change in the krone exchange rate passes through fully to the level of prices for imported goods, when adjusted for indirect taxes, duties and freight costs. There are many reasons, however, why import prices are not adjusted immediately in response to a change in the exchange rate. First, the exchange rate may fluctuate more from one day to the next when monetary policy is oriented towards price stability and the krone is floating than when monetary policy is oriented towards exchange rate stability. With wider daily and monthly variations in the exchange rate, it is difficult for enterprises to assess the duration of a change in the exchange rate. It may therefore take longer than earlier for a change in the exchange rate to pass through to prices (effect I).

Second, many enterprises and importers hedge against movements in the exchange rate in the short to medium term, either by means of financial instruments or price agreements. This is another reason why it takes time for changes in the exchange rate to feed through to consumer prices.

Third, markets with monopolistic competition will often be subject to strategic price setting. One example of this is the car market where foreign producers often price cars in NOK in the short term, thereby assuming full or partial exchange rate risk. In this case, it may take time before the direct effects of changes in the exchange rate are reflected in the CPI.

It would appear that it takes even somewhat longer for any indirect effects, through prices for imported intermediate goods and thereby prices for domestically produced goods and services, to feed through (effect II).

Any effects on wages, and thereby on prices, of changes in the krone exchange rate (effect III and IV) will probably depend on how wage formation functions and the inflation expectations applied by the social partners in the wage settlements. With a credible inflation target, the social partners are likely to apply an inflation rate equal to the inflation target, and not actual or projected inflation, as a basis for wage negotiations. In this case, it is less likely that a stronger krone exchange rate will trigger a downward price-wage spiral.

If manufacturing industry's role as wage leader diminishes, profitability developments in internationally exposed manufacturing will have less influence on wage growth in more sheltered sectors than was the case earlier. In this case, changes in the exchange rate will also have less impact than earlier on total wage growth. Intensified international competition in markets that were previously more or less sheltered may have the opposite effect, however.

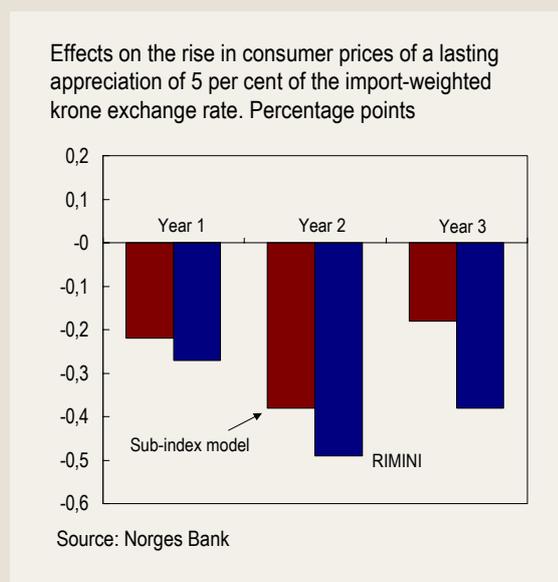
On the basis of developments in recent years, we have quantified the most direct effects of a change in the krone exchange rate on prices using various models (effect I and II). Possible effects on profitability and price-wage spirals have been excluded (effect III and IV). The introduction of an inflation target in March 2001 may have changed these relationships.

Imported consumer goods account for about 20% of the CPI adjusted for specific taxes.¹ By modelling these prices separately (in a model for various sub-indices in the CPI), we capture the direct

effects of a change in the exchange rate on the CPI (effect I).² The exchange rate is incorporated as a direct explanatory factor in the estimated equations for imported consumer goods. Changes in the exchange rate also have an indirect impact on prices for domestically produced goods and services in the CPI, but it is difficult to find strong support for this by modelling these prices separately.

In the more comprehensive RIMINI model, the exchange rate operates through a broader definition of import prices, i.e. through an aggregate for import prices that includes both intermediate goods and finished goods. Developments in these import prices, which measure prices “at the docks”, in turn influence consumer prices that are modelled together. The RIMINI model thereby captures direct and indirect effects (effect I and II) combined.

Using the two models we have looked at the effects of a sustained appreciation of the effective krone exchange rate of 5%. The chart shows the pass-through to consumer price inflation.



Our analyses, which are based on relationships in the Norwegian economy over the past 20-30 years, indicate that it takes some time for the effects of a lasting change in the exchange rate to pass through to consumer price inflation. The effect seems to be strongest the second year and then shows a gradual decline. This applies to both models.

The two models show somewhat different results over time, however. In the model using sub-indices, the main emphasis is placed on the direct effects (effect I). Over time, a 1% change in the exchange rate will change the CPI by a good 0.2%.

The RIMINI model captures to a further extent the indirect effects of a change in the exchange rate (effect II). Over time, the effect on the CPI will here be 0.4%.

The model using sub-indices may underestimate the indirect effects of a change in the exchange rate, for example because prices for imported intermediate goods may change. On the other hand, it is difficult to find empirical support for a direct effect of an exchange rate change on prices for domestic goods and services (72% of the CPI). This may indicate that the RIMINI model to some extent overestimates the indirect effects.

On the basis of the analyses using both models, a sustained appreciation of the effective krone exchange rate of 5% may contribute to reducing CPI inflation by about ¼ percentage point the first year, close to ½ percentage point the second year and about ¼ percentage point the third year. If we also assume that a stronger krone will trigger downward price-wage spirals, the effects will be somewhat stronger, approximately in line with previous estimates published by Norges Bank.

Internationally, it has been argued that the pass-through from the exchange rate to inflation is diminishing.³ New Zealand, Australia and Canada have experienced wide exchange rate fluctuations in recent years. A weaker pass-through in these countries has been explained in part by the introduction of an inflation target which provides an anchor for expectations formation and thereby contains price-wage spirals. Wider exchange rate fluctuations have probably also induced enterprises to take a more wait-and-see attitude towards changing prices. In Norway, the period of a floating exchange rate and inflation targeting is still too short to provide empirical evidence of such effects.

¹ Imported consumer goods account for 27% of the CPI, of which specific taxes and VAT on these account for about 7 percentage points. For example, prices for cars and alcohol include specific taxes that are not influenced by the exchange rate. In principle, a change in the exchange rate will therefore not lead to a comparable change in consumer prices.

² With the breakdown of the CPI by supplier model, we have modelled group 4.1 (imported consumer goods without Norwegian competition) and 4.2 (imported consumer goods with Norwegian competition).

³ “That pass-through seems to have taken longer to occur than was the case in earlier episodes, leading us to believe (perhaps erroneously) that inflation is no longer very sensitive to exchange rate developments.” (Reserve Bank of New Zealand; *Monetary Policy Statement, May 2002*). “Since the import share of the core CPI has risen from about 15 per cent in 1976 to about 27 per cent in 1997, one might have expected the direct effect of the *pass-through* of exchange rates to the core CPI to have risen as well. Instead, it seems to have diminished since the mid-1980s, based both on econometric evidence and on event analysis.” (Bank of Canada, *Monetary Policy Report – November 2000*)

Annex II Tables

Table 1 Technical assumptions¹⁾

Historical developments		I-44 ²⁾	TWI ³⁾	Deposit rate	Oil price ⁴⁾
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
Technical assumptions					
2002	Q3	92.5	97.1	6.5	24.2
	Q4	92.5	97.1	6.5	23.6
2003	Q1	92.5	97.1	6.5	23.0
	Q2	92.5	97.1	6.5	22.4
	Q3	92.5	97.1	6.5	21.8
	Q4	92.5	97.1	6.5	21.2
2004	Q1	92.5	97.1	6.5	20.6
	Q2	92.5	97.1	6.5	20.0
	Q3	92.5	97.1	6.5	20.0
	Q4	92.5	97.1	6.5	20.0

1) Average

2) Import weighted exchange rate, 44 countries

3) Trade-weighted exchange rate index - a trade-weighted average of exchange rate against our 25 most important trading partners

4) 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. In the *Inflation Report*, it is assumed that this guideline is adhered to.

The expected real return on the Petroleum Fund is estimated using a real rate of 4%. In the Revised National Budget for 2002, the expected real return on capital in the Petroleum Fund was estimated at NOK 24.8bn in 2002. This implies an increase in the use of petroleum revenues of NOK 6.2bn in 2002 prices, or 0.6% of trend mainland GDP, from 2001.

In both 2003 and 2004, the use of petroleum revenues over the central government budget is projected to increase by 0.4% of trend mainland GDP.

Table 2 Interest rates

		Norges Bank's key rates (average)		Money market rates NIBOR ¹⁾			Yield on govern- ment 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
2000	Nov	7.0	9.0	7.3	7.4	7.5	6.2
	Dec	7.0	9.0	7.6	7.4	7.3	6.0
2001	Jan	7.0	9.0	7.4	7.4	7.2	6.0
	Feb	7.0	9.0	7.3	7.3	7.2	6.0
	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
2002	31 May	6.5	8.5	6.7	7.0	7.5	6.8
	7. Jun	6.5	8.5	6.8	7.1	7.6	6.9
	14. Jun	6.5	8.5	6.8	7.2	7.6	6.8
	21. Jun	6.5	8.5	6.9	7.2	7.4	6.7
	27. Jun	6.5	8.5	6.8	7.0	7.3	6.6

1) NIBOR = Norwegian interbank offered rate, average of daily quotations

2) Yield on representative 10-year government bond. Average of daily quotations. The yield is calculated by weighting one or two government bonds with the residual maturity.

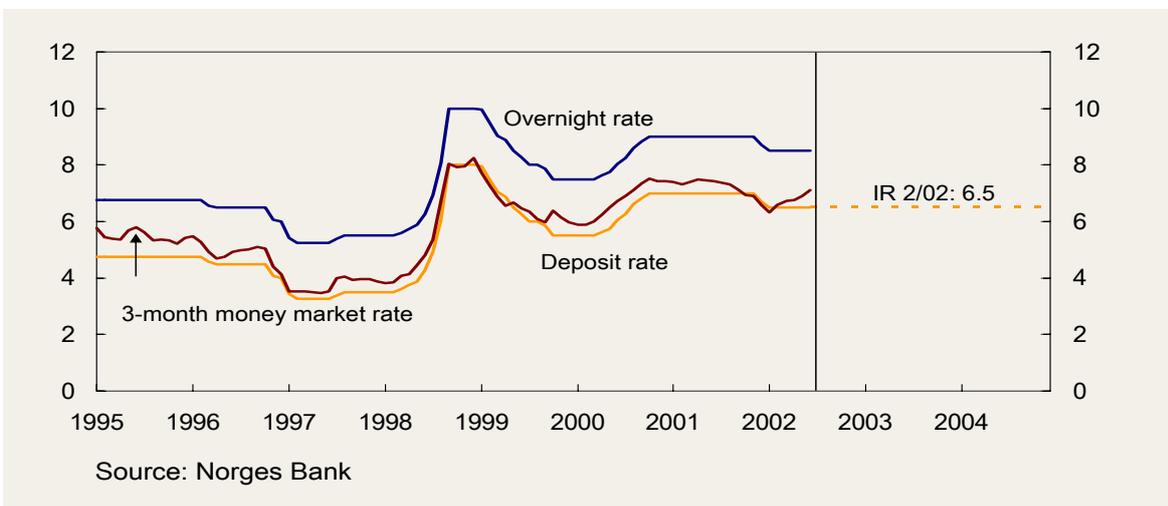


Table 3 Exchange rates

		Effective exchange rates		Bilateral exchange rates		
		Import-weighted exchange rates ¹⁾	Trade-weighted exchange rate index ²⁾	NOK/EUR	NOK/USD	NOK/SEK
1995		100.0	101.8		6.3	89.0
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
2000	Nov	103.3	107.1	8.0	9.3	92.7
	Dec	103.3	107.6	8.1	9.1	93.9
2001	Jan	102.4	106.8	8.2	8.8	92.5
	Feb	102.4	106.8	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	100.4	104.2	8.0	9.3	86.1
	Aug	99.8	104.2	8.1	9.0	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
2002	31 May	91.5	96.4	7.5	8.0	82.1
	7. Jun	90.5	95.5	7.4	7.9	80.7
	14. Jun	90.2	95.3	7.4	7.8	80.9
	21. Jun	89.5	94.8	7.4	7.7	81.6
	27. Jun	89.3	94.8	7.4	7.5	81.5

1) Weights are calculated on the basis of imports from 44 countries, which cover 97 % of total imports. Weights are based primarily on shares for the years 1996 to 1998

2) Nominal effective krone exchange rate calculated on the basis of exchange rates for NOK against the currencies of Norway's 25 most important trading partners (geometrical average weighted with the OECD's current trade weights)

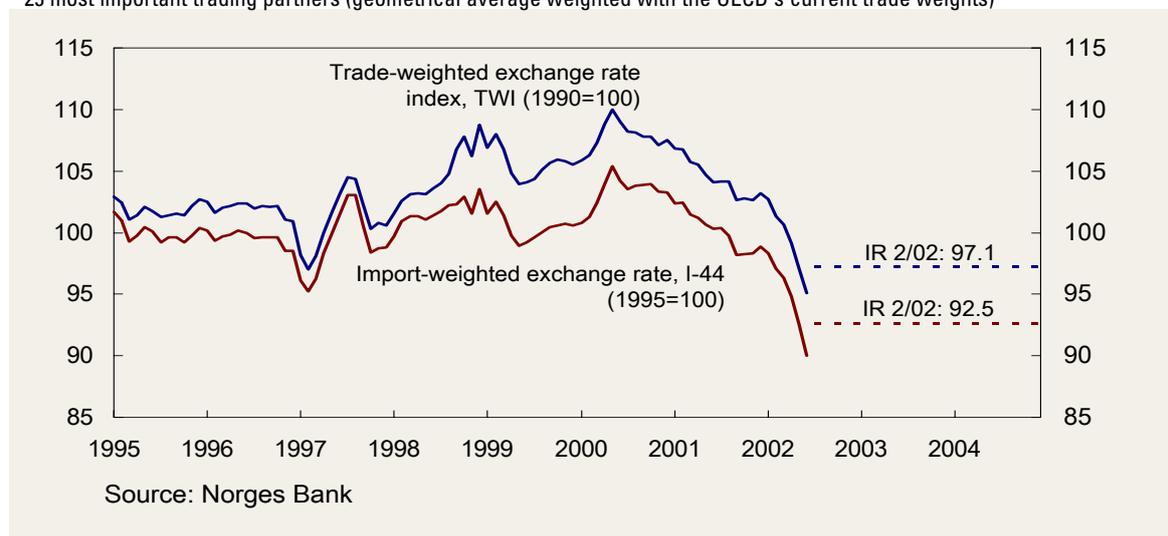
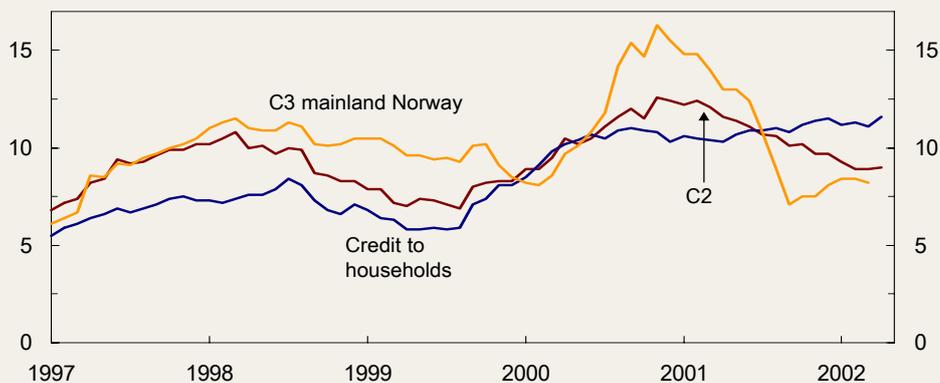


Table 4 Monetary aggregates

Twelve-month rise Per cent		Money Supply	Domestic credit (C2)			Total credit (C3)	
			M2	Total	To house- holds	To non-financi- al enterprises	Total
Des 1996		6.4	6.0	5.3	7.0	5.3	5.1
Des 1997		2.5	10.2	7.3	16.9	10.2	10.5
Des 1998		4.6	8.3	7.1	11.0	12.3	10.5
Des 1999		10.7	8.3	8.1	8.8	8.0	8.5
Des 2000		9.2	12.4	10.3	14.9	10.8	15.5
Des 2001		8.6	9.7	11.5	7.3	7.9	8.1
2000	Nov	10.7	12.6	10.8	15.4	12.2	16.3
	Dec	9.2	12.4	10.3	14.9	10.8	15.5
2001	Jan	10.9	12.2	10.6	14.0	10.1	14.8
	Feb	10.7	12.4	10.5	14.2	10.5	14.8
	Mar	10.1	12.1	10.4	13.7	9.6	14.0
	Apr	8.6	11.6	10.3	12.5	10.1	13.0
	May	10.0	11.4	10.7	11.3	10.9	13.0
	Jun	8.6	11.1	10.9	10.4	10.5	12.4
	Jul	8.6	10.7	10.9	9.3	9.3	10.8
	Aug	8.1	10.6	11.0	9.0	6.8	8.9
	Sep	6.5	10.1	10.8	8.3	5.8	7.1
	Oct	8.4	10.2	11.2	8.1	6.3	7.5
	Nov	7.7	9.7	11.3	7.2	7.1	7.5
	Dec	8.6	9.7	11.5	7.3	7.9	8.1
2002	Jan	9.5	9.3	11.2	7.8	8.2	8.4
	Feb	7.5	8.9	11.3	6.9	8.1	8.4
	Mar	8.1	8.9	11.1	7.4	8.4	8.2
	Apr	8.0	9.0	11.6	7.0		
Levels last month. In billions of NOK		800	1648	932	598	2095	1886

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



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
2000	May	2,8			2,1	2,9
	Jun	3,3			2,2	3,5
	Jul	3,3			2,3	3,3
	Aug	3,5	2,8	3,3	2,8	3,5
	Sep	3,5	2,7	3,3	2,6	3,6
	Oct	3,1	2,6	2,9	2,5	3,1
	Nov	3,2	2,6	3,0	2,6	3,1
	Dec	3,0	2,7	2,9	2,6	2,7
	2001	Jan	3,4	2,8	2,9	3,2
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

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

2) CPI-AT: CPI adjusted for tax changes

3) CPI-AE: CPI excluding energy products

4) HICP: The harmonised index of Consumer Prices. The index is based on international criteria drawn up by EUROSTAT.

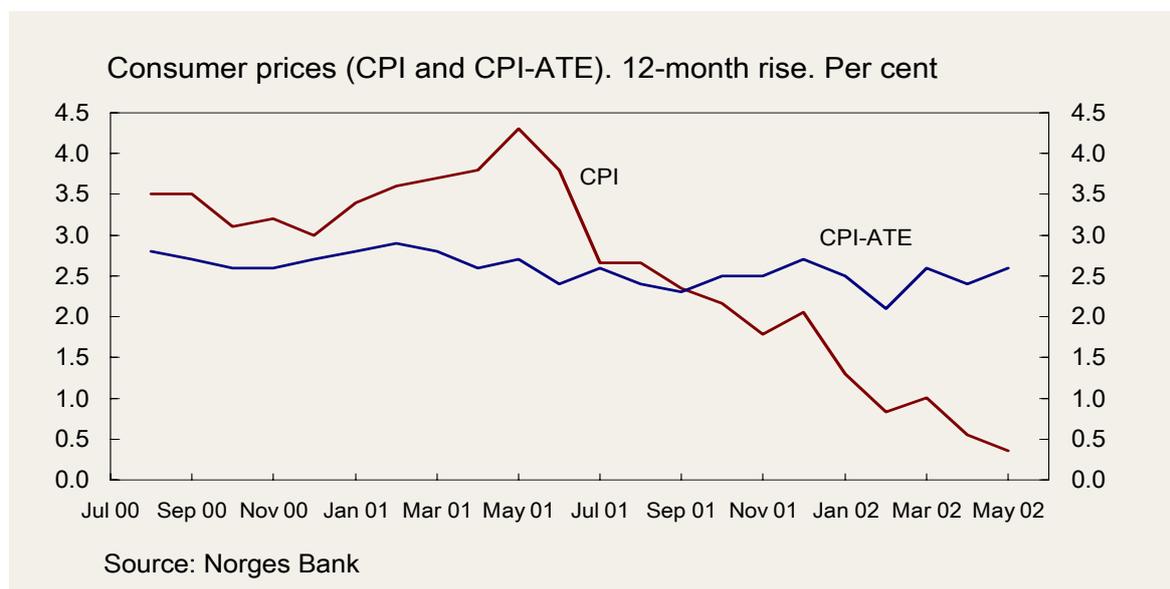


Table 6 International interest rates

		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	6.4	5.7
1998		4.8	0.5		7.3	4.2	4.2	1.5	5.3	4.6
1999		5.4	0.2	2.9	5.5	3.3	3.3	3.0	5.8	4.6
2000		6.5	0.3	4.4	6.1	4.0	4.4	2.2	6.1	5.3
2001		3.7	0.1	4.2	5.0	4.0	4.0	3.2	5.2	4.9
2000	Nov	6.7	0.6	5.1	6.0	3.9	4.8	2.5	5.9	5.2
	Dec	6.5	0.6	4.9	5.9	4.1	4.7	2.6	5.6	5.0
2001	Jan	5.7	0.5	4.7	5.7	4.1	4.5	2.8	5.7	4.9
	Feb	5.3	0.4	4.7	5.7	4.0	4.5	2.7	5.6	4.9
	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	5.2	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
2002	31. May	1.8	0.0	3.5	4.1	4.4	3.3	3.8	5.1	5.2
	7. Jun	1.8	0.0	3.4	4.1	4.4	3.3	3.7	5.1	5.2
	14. Jun	1.8	0.0	3.4	4.1	4.4	3.3	3.7	4.8	5.0
	21. Jun	1.8	0.0	3.4	4.1	4.4	3.3	3.7	4.8	5.1
	27. Jun	1.8	0.0	3.4	4.1	4.4				5.0

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.

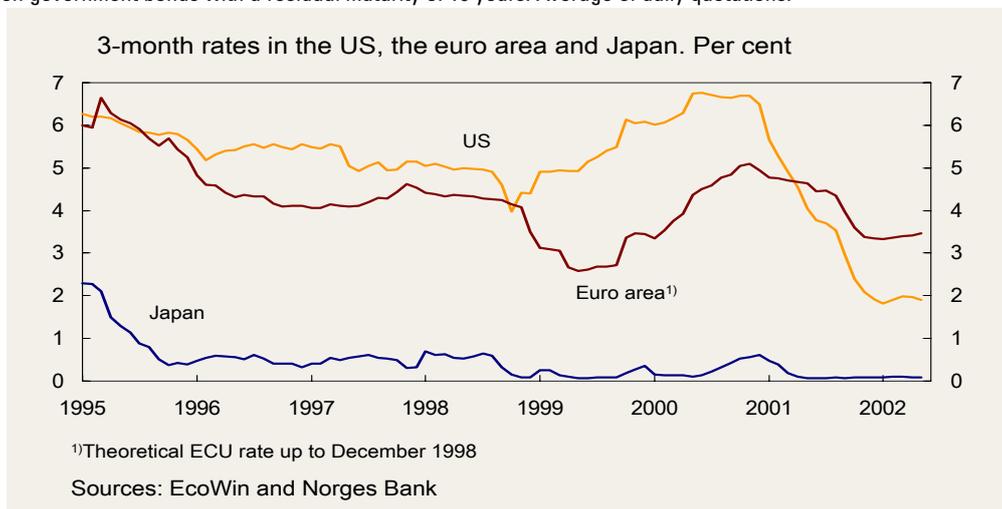


Table 7 GDP growth in other countries

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	2.3
1996	3.6	3.5	0.8	1.1	2.6	1.1	2.2	1.5
1997	4.4	1.8	1.4	1.9	3.4	2.1	3.0	2.4
1998	4.3	-1.1	2.0	3.5	3.0	3.6	3.2	2.9
1999	4.1	0.7	1.8	3.0	2.1	4.5	3.1	2.6
2000	4.1	2.4	3.0	3.6	3.0	3.6	3.6	3.5
2001	1.2	-0.6	0.6	2.0	2.2	1.2	1.3	1.5
Projections								
2002	2¾	-¼	¾	1	1½	1½	1½	1
2003	3½	¾	2¼	2¾	2¾	2¾	2¾	2¾
2004	3½	1½	2½	2¾	2½	2¾	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	2.9	2.2	2.8
1996	3.0	0.1	1.2	2.1	2.9	0.8	1.8	2.4
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	1.3	1.4
1999	2.2	-0.3	0.6	0.6	2.3	0.3	1.3	1.2
2000	3.4	-0.7	2.1	1.8	2.1	1.3	2.3	2.4
2001	2.8	-0.7	2.4	1.8	2.1	2.6	2.5	2.6
Projections								
2002	1½	-1	1¾	2	2¼	2½	2	2¼
2003	2¼	-½	1½	1¾	2½	2¼	2	2
2004	2½	0	1½	1½	2½	2	1¾	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	Mainland GDP	Private consumption	Public spending on goods and services	Private mainland fixed investment	Petroleum investment	Mainland exports	Imports
1995	3.8	3.7	1.5	15.7	0.9	3.2	5.7
1996	4.2	6.5	3.1	13.2	3.1	9.5	8.8
1997	4.9	3.2	2.5	9.8	17.6	9.7	12.4
1998	4.1	2.7	3.3	9.9	24.5	4.4	8.5
1999	2.7	3.3	3.2	-1.1	-17.4	3.2	-1.8
2000	1.9	3.5	1.2	6.1	-21.4	3.4	3.2
2001	1.2	2.5	2	0.7	-7.4	2.2	0
2001 ¹⁾ Q1	0.6	1.4	0.9	1.0	7.0	-1.2	2.5
Q2	-0.3	1.2	0.8	1.9	1.2	0.2	-0.2
Q3	0.3	0.8	0.8	-5.0	6.3	-1.7	-1.8
Q4	0.8	-0.5	0.7	-0.4	-7.9	3.3	2.3
2002 Q1	1.1	1.2	2.0	-0.4	2.7	-2.9	-4.1
Level 2001, NOK bn	1152	651	306	171	56	380	442

1) Sesonally adjusted quarterly figures

Source: Norges Bank

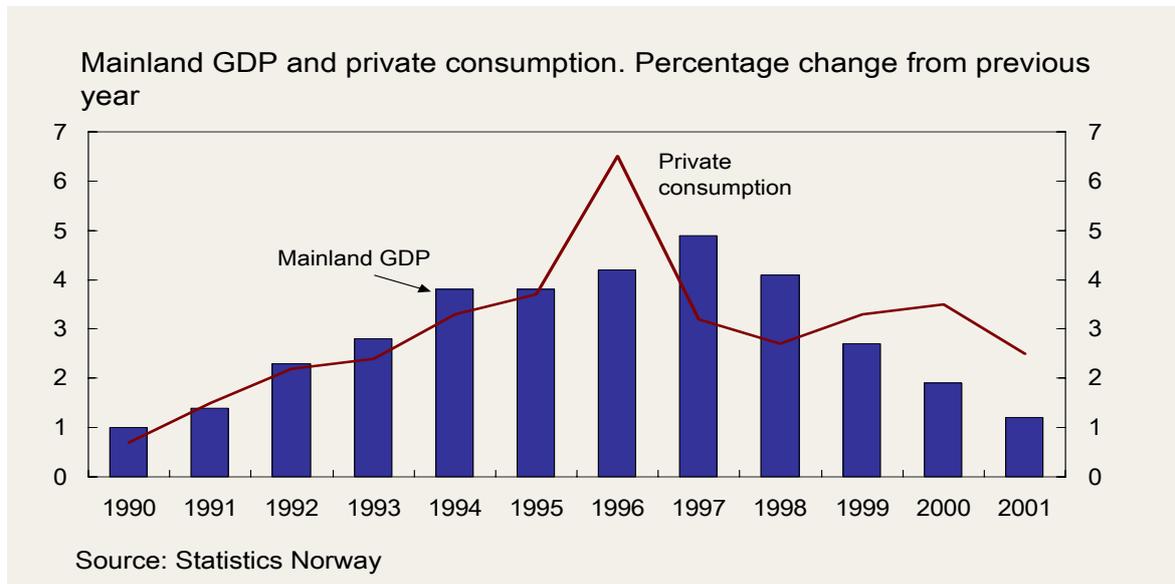


Table 10 Main macroeconomic aggregates

	In billions of NOK		Percentage change (unless otherwise stated)		
	2001	2001	2002	2003	2004
Real economy					
Private consumption	651.5	2.5	4¼	4	3½
Public consumption	306.1	2.0	1½	¾	2
Total gross investment	296.3	-7.7	½	4	0
- Petroleum activities	56.2	-7.4	0	15	-5
- Mainland Norway	211.3	-0.3	¼	1	1¾
Enterprices	115.5	-1.3	-3	1½	1¼
Dwellings	55.7	5.1	4	2¾	2¼
General government	40.1	-4.3	6¾	-2	2
Mainland demand ¹⁾	1168.9	1.8	3	2¾	3
Total domestic demand ²⁾	1225.1	1.4	2¾	3¼	2½
Exports	698.9	4.2	1½	1¾	1¼
- Crude oil and natural gas	301.6	5.2	3	2½	¾
- Traditional goods	215.9	4.0	0	1	1
Imports	441.9	0.0	3	4½	2
- Traditional goods	285.4	4.0	3	4½	2
GDP	1510.9	1.4	2¼	2¼	2¼
- Mainland Norway	1152.0	1.2	2	2¼	2½
Labour marked					
Employment		0.5	½	¼	½
Labour force, LFS		0.4	½	½	½
Registered unemployment (rate)		2.7	3	3¼	3¼
LFS-unemployment (rate)		3.6	3¾	4	4
Prices and wages					
CPI		3	1	2¼	2¾
CPI-ATE ³⁾		2.6	2¼	2¼	2¾
Annual wages ⁴⁾		5½	5¾	5¾	5¾
Import prices, consumer goods ⁵⁾		0.6	-¾	-¾	½
Export prices, traditional goods		-3.1	-8½	-2½	2½
Resale home prices ⁶⁾		4.5	7½	5½	5½
External account⁷⁾					
Trade surplus, NOKbn (level)		257.0	210	180	155
Current account surplus, NOKbn (level)		233.4	190	165	140
Current account surplus, % of GDP		15.4	12	11	9
Memorandum item					
Household saving ratio		4.6	5	5	5
Technical assumptions					
Norges Bank's sight deposit rate (annual average ⁸⁾)		7.2	6.5	6.5	6.5
Import-weighted exchange rate ⁹⁾		-3.0	-6.5	-1.1	0
Oil price in USD/barrel		24.4	23	22	20

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) ECON's house price index with Norges Bank's weighting set

7) Current prices

8) The sight deposit rate is assumed to remain unchanged in the projection period

9) 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.

