Norwegian economy

Preliminary quarterly national accounts figures indicate that output growth in the Norwegian economy almost came to a halt in 2002. Annualized, growth from 2001 to 2002 was 1.3 per cent for the mainland economy and 1.0 per cent for the economy as a whole. This largely reflects growth through 2001. From the fourth quarter of 2001 to the fourth quarter of 2002, mainland GDP growth was as low as 0.5 per cent, while total GDP growth fell by 0.1 per cent. The real picture is not quite as dismal because in 2002 output was affected by the introduction of two additional vacation days, i.e. some of the growth was taken out in the form of increased leisure. On the whole, this may have pushed down mainland GDP growth by a few tenths of a percentage point between 2001 and 2002.

On the other hand, as a result of 3 per cent growth in productivity, the number of man-hours worked fell by 2.0 per cent over the year, with a decline in the number of employed in the same period. Even though growth in the labour force levelled off, unemployment moved up. According to Statistics Norway's Labour Force Survey (LFS), unemployment increased by 11 000 persons in the year to December 2002, bringing seasonally adjusted unemployment to 4.1 per cent of the labour force. In the same period, Public Employment Service figures for the number of registered unemployed showed an increase of 14 000, and 15 000 including persons participating in labour market programmes. According to Public Employment Service figures, the number has continued to rise into 2003.

Weak output growth primarily reflects the combined effects of the downturn among our main trading partners and a loss of market shares for Norwegian enterprises. The sharp appreciation of the krone in recent years, combined with high wage growth over several years, has led to a marked deterioration in competitiveness in the Norwegian business sector. While mainland demand expanded by 2.7 per cent in 2002 and aggregate domestic demand grew by as much as 3.7 per cent, exports fell markedly through the year, and import growth was relatively high, particularly for traditional merchandise imports.

The fall in exports is expected to reduce annualized growth in 2003. Domestic demand will hold up better, partly owing to continued growth in consumption but primarily as a result of higher petroleum investment. On the other hand, mainland investment will fall. As a result of the component effect on the demand side, import growth will remain relatively low and mainland GDP may grow at a modest rate of 0.7 per cent. For 2004 and 2005, both exports and domestic demand are projected to pick up, but import growth is

also expected to increase. GDP growth is projected to reach close to 2.5 per cent in both years. However, total GDP is expected show weaker growth at close to 1.5 per cent. Unemployment will continue to rise in 2003 to 4.8 per cent of the labour force in 2004, and then edge down in 2005.

Fiscal policy

According to quarterly national accounts figures, growth in general government consumption was 4.5 per cent in 2002. The main contribution to the increase comes from higher expenditure on product inputs, but the decline in the number of man-hours worked pushed down expenditure growth. Gross general government investment remained virtually constant between 2001 and 2002. The reorganization of hospitals makes it less relevant to break down growth between central and local government sectors in 2002. The uncertainty associated with the figures in this area may also have influenced the distribution of total expenditure between consumption and investment. All in all, general government consumption and investment increased by close to 4 per cent between 2001 and 2002.

The investment tax was removed from the fourth quarter of 2002. The revenue effects will be felt in 2003 in particular, and therefore limit the margin of manoeuvre in the central government budget in 2003. In the years ahead, the fiscal rule providing for the use of the return on petroleum wealth will in isolation reduce the room for increasing the structural and non-oil budget deficit on the central government budget compared with previous years. As a result, the impulses generated by fiscal policy may be more mod-

General government
Seasonally adjusted volume indices, 2000=100
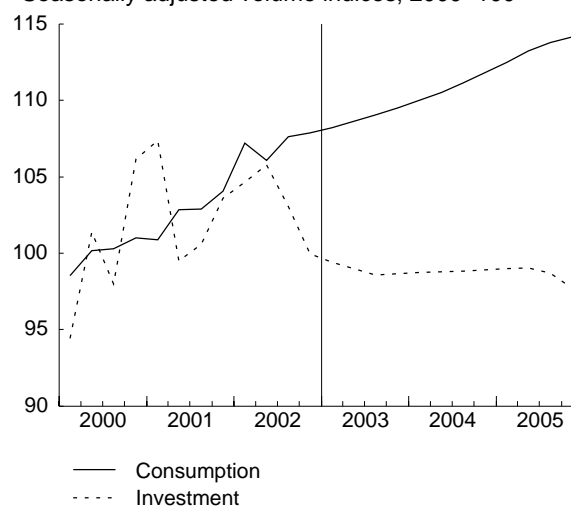
Source: Statistics Norway.

Macroeconomic indicators 2001-2002
Growth from previous period unless otherwise noted. Per cent

			Seasonally adjusted			
	2001	2002	02.1	02.2	02.3	02.4
Demand and output						
Consumption in households and non-profit organizations	2.6	3.3	1.3	0.4	0.7	1.6
General government consumption	2.7	4.5	3.0	-1.1	1.5	0.2
Gross fixed investment	-4.2	-3.3	-1.8	5.6	-6.3	2.6
- Mainland Norway	0.7	-4.2	-1.1	-0.5	-1.0	-0.5
-Extraction and transport via pipelines	-1.0	-4.4	-8.1	-12.0	8.8	2.3
-Services activities incidental to extraction	..	..	..	..	..	..
Final domestic demand from Mainland Norway	2.3	2.3	1.3	-0.1	0.6	0.9
Exports	4.1	-0.5	-5.7	4.9	-2.5	-1.4
- Crude oil and natural gas	5.2	0.2	-8.1	10.7	-3.6	-1.2
- Traditional goods	3.7	1.3	-1.4	1.0	-0.5	-3.5
Imports	0.9	1.7	-1.4	4.4	-2.5	2.6
- Traditional goods	2.9	4.7	4.3	-2.2	1.6	3.3
Gross domestic product	1.9	1.0	-0.5	0.8	-0.6	0.2
- Mainland Norway	1.7	1.3	0.3	0.0	0.3	0.0
Labour market[1]						
Man-hours worked	-1.0	-1.0	-1.2	1.2	-0.1	-0.3
Employed persons	0.5	0.3	-0.1	0.1	-0.1	-0.1
Labour force	0.7	0.6	-0.1	0.2	-0.1	0.2
Unemployment rate, level[2]	3.6	3.9	3.8	3.8	3.8	4.1
Prices						
Consumer price index (CPI)[3]	3.0	1.3	1.0	0.4	1.4	2.2
CPI adjusted for tax changes and excluding energy products (CPI-A28ATE)[3]	2.6	2.3	2.4	2.6	2.4	2.0
Export prices, traditional goods	-2.9	-8.7	-1.4	-3.1	-1.8	0.1
Import prices, traditional goods	-0.2	-8.0	-2.2	-2.5	-1.0	-0.8
Balance of payment						
Current balance, bill. NOK	238.5	211.1	58.0	55.0	48.3	49.9
Memorandum items (Unadjusted, level)						
Money market rate (3 month NIBOR)	7.1	6.9	6.5	6.9	7.2	7.0
Lending rate, banks	8.8	8.4	8.5	8.3	8.1	8.6
Crude oil price NOK[4]	220.2	197.4	186.1	205.2	202.3	196.1
Importweighted krone exchange rate, 44 countries, 1995=100	100.2	91.6	97.2	92.5	89.1	87.7
NOK per ECU/euro	8.05	7.51	7.8	7.5	7.4	7.3

[1] Figures for 2001 and 2002 are from national accounts. The quarterly figures are from Statistics Norway's Labour force survey (LFS), since the new quarterly national accounts series for employment are too short for seasonal adjustment.
[2] According to Statistics Norway's labour force survey (LFS).
[3] Percentage change from the same period the previous year.
[4] Average spot price, Brent Blend.
Sources: Statistics Norway and Norges Bank.

erate than in previous years. General government consumption and investment is projected to grow by only 1.2 per cent in 2003 and 1.6 per cent in 2004, with weak or zero growth in investment spending. This is in line with the projections in the National Budget for 2003. The approved central government budget for 2003 has been incorporated in the basis for our calculations using our best judgement, but it is assumed that the expenditure increases implied by quarterly national accounts figures for 2002 will continue to apply in 2003.

In 2004, fiscal policy will partly be determined by the margin of manoeuvre implied by the real return on the Petroleum Fund, and partly by the general economic situation ahead. At end-2002, the value of the

Petroleum Fund was about 10 per cent lower than estimated in the National Budget for 2003. A weakening of the krone exchange rate will contribute to increasing the value of the Fund in 2003. It also appears that the central government budget surplus will be higher than expected in 2003 as a result of high oil prices.

Rough estimates indicate that the value of the Petroleum Fund will amount to a good NOK 780 billion at the end of 2003. With a mechanical application of the fiscal rule, this would imply that there is no basis for a larger (structural and non-oil) central government budget deficit in 2004 than planned for 2003. A further, temporary weakening of the budget balance will either reflect the desire to spread the Petroleum

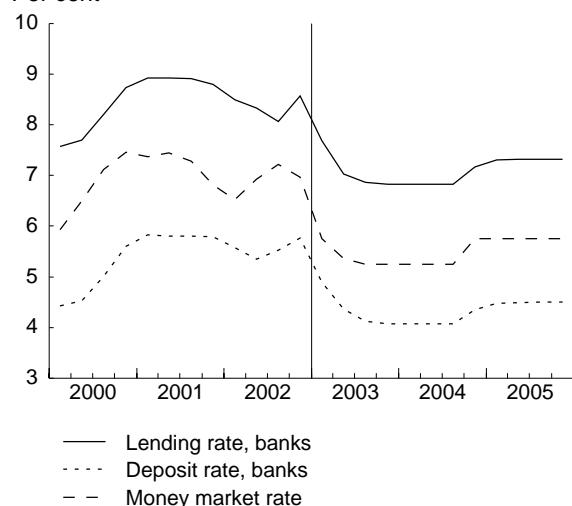**Interest rate and inflation differential between NOK, and the ECU/euro**
Percentage points

— Interest rate differential
- - - Inflation rate differential
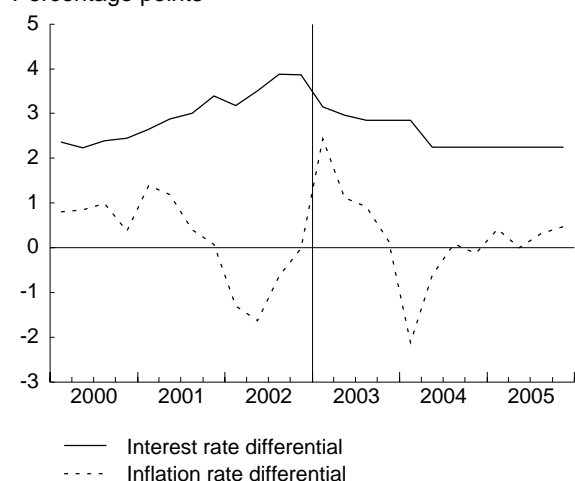
Sources: Norges Bank and Statistics Norway.

Lending rate and deposit rate
Per cent

— Lending rate, banks
- - - Deposit rate, banks
– – Money market rate

Sources: Norges Bank.

Development in import-weighted krone exchange rate and NOK per ECU/euro

— Import-weighted krone exchange rate
- - - NOK per ECU/euro
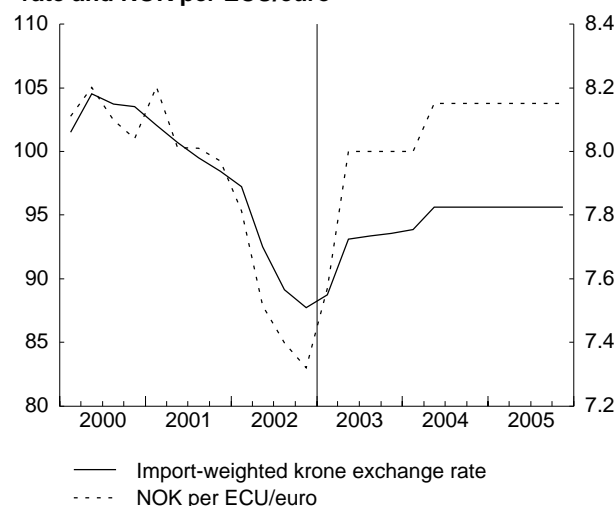
Sources: Norges Bank.

Fund's capital losses over a somewhat longer period or the general economic situation. Our projections have not incorporated such assumptions. However, the implementation of the so-called day care compromise between the opposition parties, which influences consumer prices among other things, is taken into account in our calculations.

General government purchases of goods and services for consumption are expected to show stronger growth (2.6 per cent) in 2005, while gross government investment is projected to show little growth. Tax rates are adjusted in pace with income growth, and specific taxes with price inflation in 2004. An increase in the Petroleum Fund through 2004 is expected to provide room for a budget weakening of a good NOK 5 billion in 2005 in the form of lower direct personal taxes and higher growth of approximately the same order in general government consumption.

In our baseline scenario, fiscal policy is broadly neutral based on the change in the budget balance. For 2003 and 2004 combined, the budget weakening is in line with the fiscal rule so that the extra consumption in 2003 will be compensated for in 2004. The fiscal rule in isolation will allow only limited economic stimulus in these two years. The increase in the budget deficit in 2005 – also in line with the fiscal rule – will have a somewhat more expansionary effect on the economy that year. Combined with a more expansionary monetary policy and an expected global upswing, this will result in higher growth in the Norwegian economy and a decline in unemployment after peaking in 2004.

At this stage, it is not easy to determine the most appropriate fiscal stance and the timing of fiscal policy over the coming years. A longer period of stagnation in the world economy than has been assumed here implies that the room for an expansionary fiscal policy in 2005 will be used already in 2004, with a reversal when the economy picks up again. Political ambitions concerning unemployment may also mean that a counter-cyclical fiscal policy will be used to a somewhat further extent than assumed here. We have illustrated the effects of a possible alternative scenario.

Lower interest rates and weaker krone
Since December last year, Norges Bank has reduced its key rate by 1.5 percentage points, most recently on 6 March. The key rate is now 5.5 per cent. Three-month money market rates fell from 7.1 per cent at the beginning of December last year to 5.5 per cent on 18 March. This is the lowest seen since 1998.

The Norwegian krone has weakened since January, after appreciating sharply in recent years. It appears that foreign investors' view of future developments in the krone exchange rate has changed, and the period

with a record-strong krone may be over. The recent interest rate cuts and signals of further rate cuts ahead have contributed to this.

The interest rate differential against trading partners has narrowed since last autumn. This may have contributed to the recent depreciation of the krone. The interest rate level in the US and the euro area is very low at 1.25 and 2.5 per cent, respectively. Further rate cuts may take place in the period to summer. This would increase the likelihood of further interest rate cuts in Norway.

The import-weighted krone exchange rate appreciated by around 13 per cent in 2002. The trend was reversed at the turn of the year when interest rate expectations showed a marked shift. Since January, the import-weighted krone exchange rate has depreciated by about 7 per cent. The krone has weakened against the euro by 8 per cent in the same period, and stood at NOK 7.90 on 18 March. We expect the krone to weaken further in the period ahead, and assume that the krone will depreciate to 8.15 against the euro through 2004.

The krone exchange rate is important for interest rate developments ahead. If the krone continues to depreciate markedly, there will be less room for further interest rate cuts. If the krone depreciates to a more limited extent, there is room for further interest rate cuts in the period to summer. We assume that three-month money market rates will fall to 5.25 per cent in the second quarter and remain at this level to the end of the year. This implies a somewhat weaker fall in interest rates than implied by forward interest rates. We also assume that interest rates will move up to 5.75 per cent towards the end of 2004, as growth in the Norwegian economy picks up.

Stronger impulses from petroleum investment in 2003

Oil production on the Norwegian continental shelf was lower in 2002 than in 2001 owing both to the production limits that were introduced in the first half of 2002 and unexpected production disruptions at several fields in the autumn. Production is expected to decline further in 2003, and remain unchanged in 2004. The start-up of several new gas fields in 2002 led to strong growth in overall gas production. In 2002, gas production was around 20 per cent higher than in the previous year. Production is expected to increase further through 2003 and 2004, and is projected to be about 8 per cent higher in 2004 than in 2002.

Oil prices showed an overall rise in 2002, averaging USD 25 per barrel or about NOK 200 per barrel. In the first quarter of 2003, the price of Brent Blend has generally hovered above USD 30 per barrel, but has fallen in recent days. From the second quarter to the

Demand from Mainland Norway and investment in petroleum activities
Seasonally adjusted volume indices, 2000=100

— Demand from Mainland Norway
···· Inv. in extraction and transport via pipelines
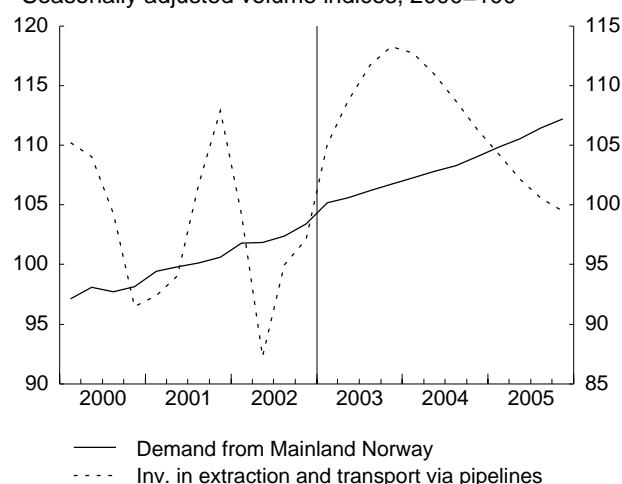
Source: Statistics Norway.

end of the projection period, the oil price is assumed to remain constant at USD 25. This implies an average oil price of close to USD 27 per barrel for 2003. On the basis of our assumptions concerning the dollar exchange rate, the average oil prices in Norwegian kroner will be a good NOK 190 in 2003 and a good NOK 180 per barrel in 2004 and 2005.

Gross investment relating to petroleum activity was somewhat lower in 2002 than assumed in our previous *Economic Survey*, which partly reflects the postponement of some investment projects partly because of increased uncertainty as a result of the low discovery rate over the year. Preliminary annual figures for 2002 show a decline in gross investment (measured in constant prices) of close to 5 per cent compared with the previous year.

In keeping with Statistics Norway's most recent investment intentions survey, the estimate for 2003 is higher than previously. This is primarily because we expect that the investment projects that were postponed in 2002 will take place this year, and because we have revised upwards our investment projections for on-shore installations, particularly relating to the terminal for the Snøhvit field on Melkøya. Investments relating to field development have also been adjusted upwards. For the year as a whole, petroleum investment is estimated to be more than 16 per cent higher than in 2002. Investments in connection with the Snøhvit field are of a nature that requires a larger than normal share of imports as there is limited expertise in the area of LNG installations in Norway. As a result, the impulses to the Norwegian economy are not expected to be as strong as that implied by the overall growth estimate.

The overall level of investment in 2004 is expected to be approximately the same as in 2003, and with the same import share. Exploration activity is then expect-
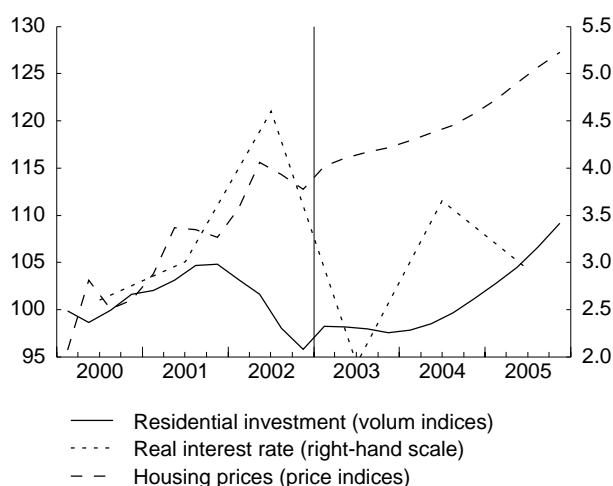
Income and consumption in households
Seasonally adjusted volume indices, 2000=100

    ——— Consump. in househ. and non-profit org.
    - - - - Household real disposable income
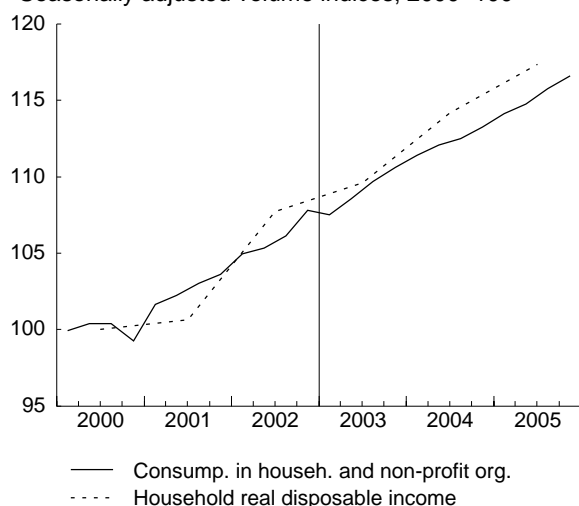
Source: Statistics Norway.

Residential investment and housingprices
Seasonally adjusted indices, 2000=100

    ——— Residential investment (volum indices)
    - - - - Real interest rate (right-hand scale)
    – – Housing prices (price indices)

Source: Statistics Norway.

Investment, Mainland Norway
Seasonally adjusted volume indices, 2000=100

    ——— Total   – – Manufacturing
    - - - - Services
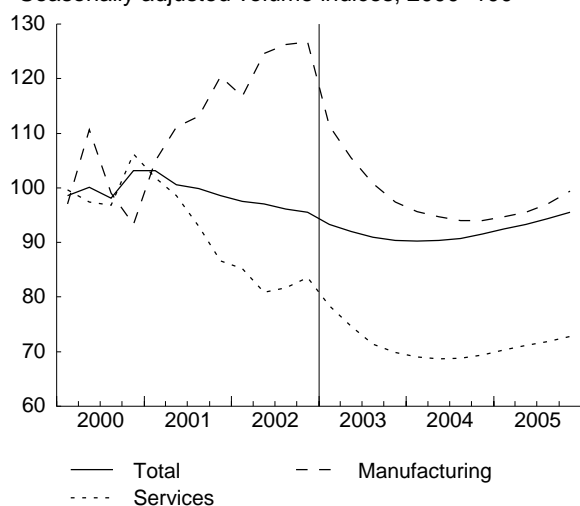
Source: Statistics Norway.

ed to pick up, and investments related to fields in operation to increase further. Investments related to Melkøya are gradually phased out, which is expected to bring the level of on-shore investments in line with the level in 2002, with a marked decline from the level in 2003. A general decline in petroleum investment is expected in 2005, with the level assumed to be 8 per cent lower than in 2004.

Income and consumption for households and non-profit institutions

Real disposable income for households and non-profits institutions rose by as much as 7.0 per cent between 2001 and 2002. High pay increases and a sharp increase in dividend payments are the main reasons behind the unusually high income growth. Consumption rose by 3.3 per cent in volume terms, and the saving ratio increased from 4.1 per cent in 2001 to 7.4 per cent in 2002.

The saving ratio may have increased because it takes some time to adapt to the higher level of income, rising unemployment and expectations of weaker economic growth. In addition, it is likely that the propensity to consume is only marginally affected by dividend payments. Moreover, the average real interest rate after tax was about 1.6 percentage points higher in 2002 than in 2001, which implies higher saving and lower consumption. The consumption deflator that is used in the national accounts to convert nominal figures to real figures is broader than the consumer price index, and the weights are updated regularly. The increase in the consumption deflator was 0.7 per cent last year, while CPI inflation was 1.3 per cent. By either measure, the rate of increase in consumer prices was low in 2002, which contributed to the strong increase in purchasing power.

Wage growth is expected to be more moderate in 2003, which implies that income growth will be lower. Lower nominal interest rates in 2003 will have the opposite effect as households and non-profit institutions combined have higher interest expenditure than interest income. We project real disposable income to grow by 1.7 per cent in 2003. Consumption is projected to grow by 3.0 per cent in volume terms. These projections imply a decrease in the saving ratio to 5.8 per cent. Consumption growth will thus be higher than income growth, which will be reflected in net lending growth. In nominal terms, household net lending (including non-profit institutions) increased from NOK 0.7 billion in 2001 to NOK 29.3 billion in 2002. In 2003, a reduction of about 26 per cent is expected.

These developments, with consumption varying more than income, are in line with what one can expect. A further explanation for the high growth in consumption in relation to income growth in 2003 is that the real interest rate after tax is expected to be a good 2.5 per-

centage points lower in 2003 than in 2002. This is due to both a lower nominal interest rate and a markedly higher rise in consumer prices. The consumption deflator in the national accounts is expected to increase by 2.6 per cent in 2003 and the CPI by 3.2 per cent.

In our baseline scenario, real income growth picks up again in 2004. We project growth of 4.2 per cent in real disposable income. Consumption is projected to grow by 2.9 per cent in volume terms, again in line with a path for consumption that varies less than the path for income. The saving ratio is projected to rise to 7.0 per cent. The consumption deflator and CPI inflation are projected at 1.1 and 1.3 per cent, respectively. Markedly lower price inflation is one of the main explanatory factors behind the sharp increase in real income in 2004 compared with 2003. Consumption and income growth is expected to be more or less the same in 2005.

Housing investment and house prices
After expanding in 2001, growth in housing construction came to a halt in early 2002, and fell through the remainder of the year. Housing starts showed a gentle downward tendency in the months to December last year. According to quarterly national accounts figures, housing investment fell by 3.9 per cent on an annual basis. Housing starts came to a good 22 400, a decline of 10.6 per cent on the previous year. Measured in terms of surface area, this represents a decrease of 11.3 per cent. The largest share of the decline was for Oslo and Akershus. The number of dwellings under construction was nevertheless 9.4 per cent higher in 2002 than in 2001, but was tending downwards. Holiday cottage building continued to rise in 2002.

The rise in house prices levelled off last summer. Adjusted for seasonal variations, house prices were relatively stable during the autumn of 2002 and into 2003. Prices were nevertheless 5.8 per cent higher on average in 2002 than in 2001. By way of comparison, building costs increased by 3.3 per cent, or at a somewhat slower pace through the year. It appears that building costs have reached a level that is restraining demand, in addition to the general economic downturn. The high overall rise in prices, the prospect of higher unemployment and moderate wage growth seem to be more than offsetting the positive impulses generated by expectations of lower real interest rates. At the same time, the scale of commercial buildings that have been converted to residential property has increased over the past 10 years. The demand for new dwellings may thus have been overestimated.

With rising unemployment and prospects for a moderate wage settlement, house prices are expected to show only a moderate increase this year, and at a slower rate than the rise in consumer prices. Lower real interest rates will have the opposite effect. A lower rise in house prices and a longer average turnover time in the housing market imply a lower level of activity in the housing market. Housing investment is expected to fall later in 2003, with an estimated reduction of close to 4 per cent, as in 2002. Growth is then projected to pick up to almost 3 per cent in 2004 and to close to 6 per cent in 2005. The rise in prices for existing dwellings is also expected to pick up in 2005, as a result of high real income growth in 2004 and a downward shift in unemployment in 2005.

Investment declines in mainland business sector
Since the cyclical peak was reached in 1998, gross mainland business investment has had a dampening impact on total growth in domestic demand. This is in line with a normal business cycle. The decline was particularly pronounced in 2002. The decline in investment has occurred in spite of a considerable increase in manufacturing investment in preceding years, which is estimated to have increased by about 8 per cent in 2002. It is conceivable that many enterprises decided to postpone investments until the investment tax was removed from the fourth quarter of last year. In isolation, this will restrain a further fall in investment.

In 2003, manufacturing investment is projected to fall, partly because of the pressure on profitability in this sector and partly because a number of large projects have been completed or are near completion. Manufacturing investment is thus expected to show a fairly marked fall in the period to end-2004, in line with Statistics Norway's investment intentions survey. Thereafter, an international upturn is expected to lead to weak growth in manufacturing investment again. Investment in electricity production is expected to continue to fuel growth in overall investment in the coming years. Investment in many service sectors is expected to show little growth. A decline is expected for commercial property investment; a high level of investment in preceding years has led to a substantial increase in capacity and lower rents for commercial property.

On balance, mainland business investment is still projected to contract at about the same pace in 2003 as in the preceding years, but the pace of decline will slow through 2004 and rebound in 2005, calculated on an annual basis.

Higher costs and stronger price competition reduce exports
Measured in constant prices, traditional merchandise exports grew by 1.3 per cent between 2001 and 2002, after expanding by 3.7 per cent in the previous year. Most components showed negative volume growth, however. The increase is solely ascribable to a 7.2 per cent increase in exports of engineering products (excluding ships and platforms). In 2001 the increase for this component was as high as 15.5 per cent.

Main economic indicators 2001-2005. Accounts and forecasts
Percentage change from previous year unless otherwise noted

| | Accounts | Forecasts | | | | | | |
| | | 2003 | | | 2004 | | 2005 | |
	2002	SN	MoF	NB	SN	NB	SN	NB
Demand and output								
Consumption in households and non-profit organizations	3.3	3.0	3.5	2 3/4	2.9	3 1/4	2.4	3.0
General government consumption	4.5	1.6	0.5	3/4	1.8	2.0	2.6	2.0
Gross fixed investment[1]	-3.3	-0.3	3.2	1.0	-0.3	1/4	0.2	1 1/2
Extraction and transport via pipelines[2]	-4.4	16.7	12.2	20.0	-0.6	0.0	-8.1	0.0
Mainland Norway	-4.2	-5.2	0.1	-4.0	-0.3	1/4	3.4	2.0
Firms	-6.0	-7.2	-1.0	-6.0	-2.2	-1.0	3.4	1.0
Housing	-3.9	-3.8	2.2	-3.0	2.8	2.0	5.9	5.0
General government	0.1	-1.9	0.3	1/4	0.2	2.0	0.3	2.0
Demand from Mainland Norway[3]	2.3	1.3	2.7	1 1/4	2.1	2 1/2	2.6	2 1/2
Stockbuilding[4]	-0.2	0.0	..	..	0.0	..	0.0	
Exports	-0.5	-2.3	0.8	-1.0	1.2	1 1/2	0.8	1 1/2
Crude oil and natural gas	0.2	-1.8	-2.1	-2.0	0.7	4.0	-1.8	0.0
Traditional goods	1.3	-2.2	2.7	-3.0	3.1	-1.0	4.0	2.0
Imports	1.7	1.5	2.9	1.0	1.3	1 1/4	1.7	3 1/2
Traditional goods	4.7	0.1	3.2	1 1/4	1.5	1 1/4	3.1	3 1/2
Gross domestic product	1.0	0.1	1.9	1.0	1.7	2 1/4	1.5	1 3/4
Mainland Norway	1.3	0.7	1.8	1 1/4	2.3	2.0	2.5	2 1/4
Labour market								
Employed persons	0.3	0.0	0.4	-0.5	-0.5	0.0	0.5	1/2
Unemployment rate (level)	3.9	4.3	4.0	4 1/2	4.8	4 3/4	4.6	4 3/4
Prices and wages								
Wages per standard man-year	5.3	4.6	5.0	5.0	4.6	4 1/2	4.4	4 1/2
Consumer price index (CPI)	1.3	3.2	2 1/4	3 1/4	1.3	1.0	2.3	2 1/4
CPI adjusted for tax changes and excluding energy products (CPI-ATE)	2.3	2.3	..	1 3/4	2.1	2.0	2.4	2 1/4
Export prices, traditional goods	-8.7	3.8	..	-5.0	7.6	1 1/4	2.0	1 3/4
Import prices, traditional goods	-8.0	1.5	..	..	6.1	..	1.9	
Housing prices	5.8	2.3	..	..	2.0	..	4.7	
Balance of payment								
Current balance (bill. NOK)	211.1	175.5	178.9	205.0	157.1	155.0	153.4	120.0
Current balance (per cent of GDP)	13.8	11.3	..	14.0	9.9	10.0	9.4	8.0
Memorandum items:								
Household saving ratio (level)	7.4	5.8	6.6	5.0	7.0	5 1/4	7.4	5 1/2
Money market rate (level)[5]	6.9	5.4	6.7	5.6	5.4	5.5	5.8	5.5
Lending rate, banks (level)[6]	8.4	7.1	..	..	6.9	..	7.3	
Crude oil price NOK (level)[7]	197.4	191.0	180.0	..	181.0	..	182.0	
Exports markets indicator	0.7	3.9	..	..	5.9	..	3.0	
Importweighted krone exchange rate (44 countries)[8]	-8.5	0.6	..	-3 3/4	3.2	0	0.5	0

[1] Forecasts from Norges Bank include stockbuilding.

[2] Forecasts from Ministry of Finance and Norges Bank include service activities incidental to extraction.

[3] Consumption in households and non-profit organizations + general government consumption + gross fixed capital formation in Mainland Norway.

[4] Change in stockbuilding. Per cent of GDP.

[5] NB technically assumes its rates to be constant through the forecast period.

[6] Households' borrowing rate in private financial institutions.

[7] Average spot price, Brent Blend.

[8] Increasing index implies depreciation.

Sources: Statistics Norway (SN), Ministry of Finance, St.meld. nr 1 2002-2003 (MoF), Norges Bank, Inflasjonsrapport1/2003 (NB).

Developments in traditional merchandise exports over the past two years must be seen against the background of weak growth in Norwegian export markets – around a half per cent annually – as a result of the global downturn. At the same time, the competitiveness of Norwegian enterprises has deteriorated sharply partly as result of high wage growth, but in particular as a result of a stronger krone, which reduces the international price level translated into Norwegian kroner. While higher labour costs push up prices for Norwegian products in NOK, a stronger krone pushes down prices. In recent years, the exchange rate effect has dominated. Prices for traditional merchandise exports fell by 2.9 per cent between 2000 and 2001 and by a further 8.7 per cent between 2001 and 2002. On the whole, this approximately corresponds to the weakening of foreign currencies against the Norwegian krone over the past two years, as measured both by manufacturing industry's trade-weighted index (-3.2 and -7.4 per cent in 2001 and 2002 respectively)

and by the import-weighted exchange rate index (-3.1 and -8.5 per cent respectively). The price decline was particularly pronounced for cyclically sensitive commodity-based products.

Seasonally adjusted figures show that the price decline for traditional merchandise exports levelled off through last year, while volume figures showed a downward shift, particularly in the fourth quarter. Export markets are expected to pick up in 2003, in line with our assumption of an upswing in the international economy. At the same time, if the krone weakens in line with our assumption for the coming year, the deterioration in competitiveness may be reversed to some extent, but not sufficiently to prevent Norwegian enterprises from losing market shares. The next years will finally bring to completion projects that will increase aluminium production capacity, which in isolation will push up exports. This implies that the volume of traditional merchandise exports will probably fall in 2003 and then grow by 3-4 per cent in 2004 and 2005. Prices are also expected to increase, primarily reflecting a cyclical increase in various commodity prices.

Moderate growth in imports despite higher import shares

The deterioration in Norwegian companies' competitiveness is also resulting in a loss of market shares on the import side. Prices for traditional import goods declined by 8 per cent measured in krone terms from 2001 to 2002, i.e. a little less than the fall in the import-weighted exchange rate. At the same time, the volume of imports rose by 4.7 per cent, considerably stronger than the total consumption of goods and services (1.2 per cent) and Norwegian output (total gross output growth of 0.9 per cent, 1.2 per cent for mainland Norway).

Viewed in connection with the particularly sluggish developments in exports and investment, two demand components that traditionally have a high import content, the increase in import shares was probably stronger than implied by import developments seen in relation to total consumption and production and an underlying trend due to increased foreign trade. Engineering products (excluding ships and platforms) also accounted for a substantial share of the increase in imports and import shares for these products must have increased considerably.

Despite the loss of market shares for Norwegian companies, import growth is expected to be virtually flat in 2003. This is partly due to a direct decline in exports and mainland investment, but is also ascribable to a projected shift in the composition of imports for petroleum activities from what is considered traditional goods to direct imports for petroleum activities. Total merchandise imports thus show somewhat stronger growth. The fall in investment will contribute

Exports
Seasonally adjusted volume indices, 2000=100

—— Total exports
- - - - Exports of traditional goods
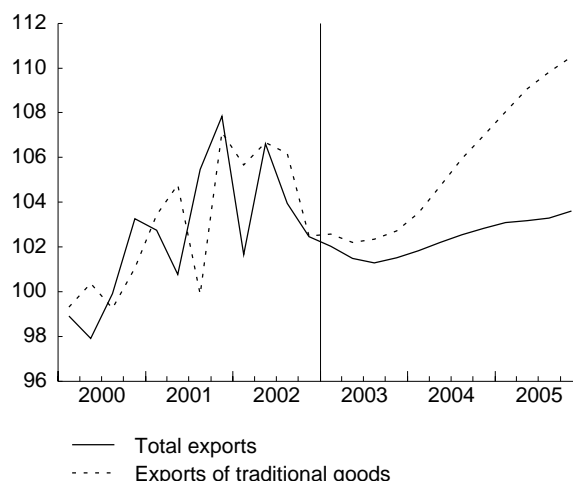
Source: Statistics Norway.

Imports
Seasonally adjusted volume indices, 2000=100

—— Total imports
- - - - Imports of traditional goods
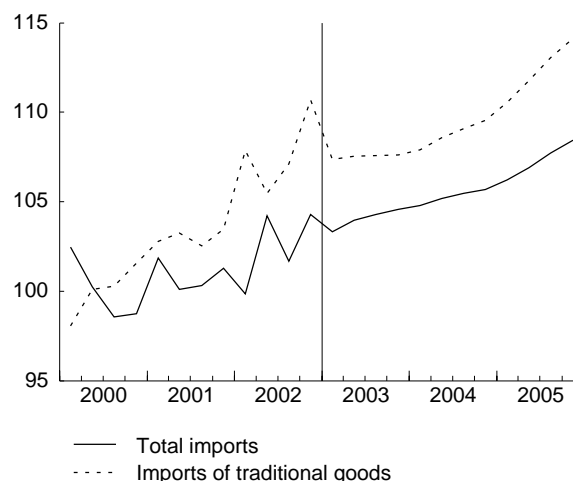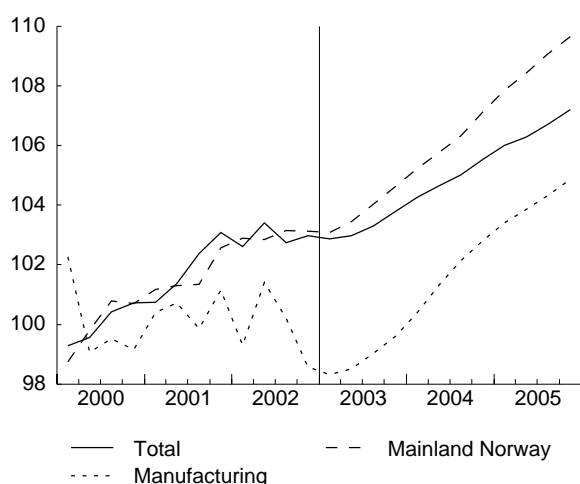
Source: Statistics Norway.

to keeping import growth close to growth in total demand and output in 2004, but imports will increase at a faster pace again in 2005.

Weak GDP growth in 2003, but higher thereafter

Total GDP expanded by 1 per cent from 2001 to 2002 and growth in the mainland economy was only slightly higher. Weak growth in mainland demand in both 2001 and 2002 has contributed to curbing growth impulses. This will continue in 2003. The decline in electricity production is expected to push down growth in the mainland economy by 0.3 percentage point in 2003 and push up growth to an equivalent extent in 2004. Lower electricity production will contribute to high electricity prices in 2003, which will result in slower growth in household real income and demand.

19

Gross domestic product
Seasonally adjusted volume indices, 2000=100

Source: Statistics Norway.

Output gap
Per cent

Source: Statistics Norway.

A pronounced global upturn has not yet materialized. We have again lowered our projections for market growth abroad in 2003, thereby contributing to lower growth for traditional exports and exports of some services. Admittedly, the krone has recently depreciated, which will help to reduce Norwegian exporters' loss of market shares. All in all, however, exports are projected to fall from 2002 to 2003. The decline in oil production will also contribute to this. Combined with weaker growth in mainland demand, this will push down growth further in 2003. Brisk growth in petroleum investment will have the opposite effect. On balance, mainland GDP growth is projected at only 0.7 per cent in 2003.

As a result of low output growth, growth in employment will come to a halt and growth in household income will be substantially lower than in 2002. Unemployment will rise further, which in turn will have an impact on the housing market. On the other hand, our assumptions of a sharper decline in interest rates than assumed earlier and slightly higher inflation in 2003, both of which will push down the real interest rate to a greater extent, will have the opposite effect. This means that the household saving ratio may fall, with the result that consumption growth shows little change compared with 2002. All in all, however, the Norwegian economy now appears to be facing a somewhat more pronounced cyclical downturn in 2003 than projected earlier.

For 2004, our growth projections show little change from the previous report. The projected rise in production in 2004 is related to both the global upturn, which will boost traditional exports, and somewhat weaker negative impulses from domestic demand. Lower electricity prices and higher electricity production are of particular importance, implying that consumer price inflation will be subdued in 2004. Household real income will thereby show higher growth and consumption growth edge up. Similarly, housing investment will be reversed from a decline in 2003 to an increase towards the end of 2004. The fall in manufacturing investment is expected to slow. The impetus from fiscal policy is assumed to be approximately the same in 2004 as in 2003, while the decline in interest rates in 2003 along with the depreciation of the krone will have a positive impact on demand and competitiveness. On balance, growth in 2004 will therefore be more on a par with trend mainland GDP growth.

The projections for 2005 indicate that growth may be even somewhat stronger. A more expansionary fiscal policy in keeping with the fiscal rule will contribute to this. Moreover, we may then experience a turnaround in mainland business investment following many years of decline. Employment growth will move up and unemployment may fall slightly. If these projections materialize, the cyclical trough might be passed towards the end of 2004. It should be emphasized, however, that the projections are very uncertain and depend not least on the actual materialization of the projected upturn in the global economy.

Continued rising unemployment
Unemployment, measured by the Labour Force Survey (LFS), has risen steadily since the beginning of 1999. Registered unemployment was more stable up to mid-2001 but has since risen sharply. For the period as a whole, however, both registered unemployment and the number of LFS unemployed have increased by about 30 000. As an average for 2002, LFS unemployment was 3.9 per cent as a share of the labour force, while registered unemployment stood at 3.2 per cent.

In addition, an average 9 300 persons participated in ordinary labour market programmes, a decline from 10 100 the previous year. There was a broad increase in registered unemployment in 2002. Unemployment rose for all occupational groups, in all counties and among both women and men in all age groups.

The working-age population will continue to rise by about 10 000 annually. However, a shift in the composition of the population towards age groups with lower participation rates and a more sluggish labour market will contribute to slower growth in the labour force, with the result that the participation rate in 2003 is projected to fall for the first time since 1993. It thus appears that the participation rate will have peaked in 2002 when 74.2 per cent of all persons in the age group 16-74 were either employed or unemployed. This is the highest participation rate ever registered in Norway and is also very high by international standards. The long period of growth in employment is expected to come to a halt in 2003 and is projected to show a decline at an annual rate in 2004 for the first time since 1992.

Continued problems with profitability in manufacturing will reduce employment further in this sector, and the spillover effects of problems in manufacturing will also contribute to low employment growth in other sectors of the economy. However, employment in the public sector will continue to rise, albeit at a slower pace in 2003 and 2004 than in recent years. The trend of rising LFS unemployment is thus expected to persist until 2004. Measured as a share of the labour force, unemployment is projected at 4.3 per cent in 2003 and 4.8 per cent in 2004. In 2004, however, it appears that the Norwegian economy will pass a cyclical trough and unemployment is expected to fall to 4.6 per cent as an average for 2005.

Weak profitability and higher unemployment will result in lower wage growth

According to preliminary national accounts figures, wages per normal man-year rose by 5.3 per cent in 2002, against 5.0 per cent in 2001. This resulted in real wage growth of 4.0 per cent in 2002, only 0.2 percentage point lower than in the record year 1998. For manufacturing, construction, retail trade, transport, hotels and restaurants and business services, growth in wages per normal man-year was between 5.0 and 5.3 per cent, i.e. approximately the same as the average for the economy as a whole. Wage growth came to 6.0 per cent in the financial services sector, while growth in wages per normal man-year in the public sector was 6.3 per cent.

Wage growth of 5.3 per cent in manufacturing was higher than what might be expected in view of the profitability problems in this sector through 2002. High wage growth was recorded in particular by white-collar employees in manufacturing, and in com-
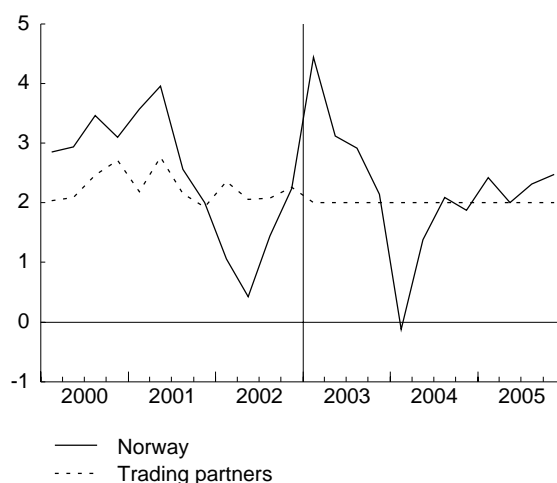
Labour force, employment and number of man-weeks
Millions. Seasonally adjusted and smoothed indices.

- Man-weeks, aver. per week (right-hand scale)
- ⋯⋯ Employed
- – – Labour force
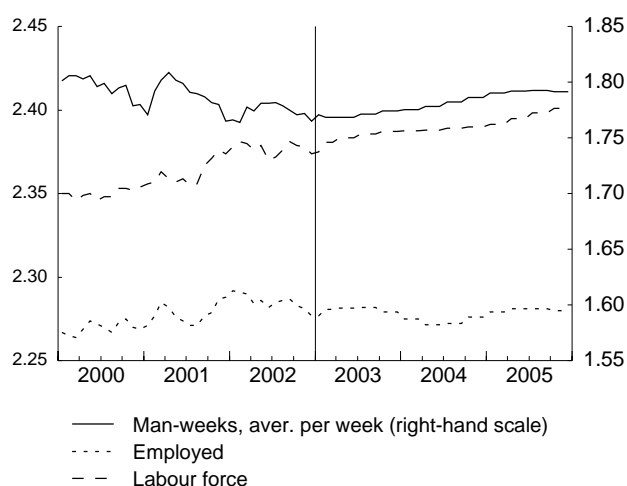
Source: Statistics Norway.

Consumer price indices
Percentage growth from the same quarter previous year

- Norway
- ⋯⋯ Trading partners

Sources: Statistics Norway, OECD and Eurostat.

panies that are members of the Confederation of Norwegian Business and Industry (NHO) wage growth for this group came to a little more than 6.0 per cent. However, an estimated 0.5 percentage point of this wage growth is ascribable to structural changes as a result of a lower share of white-collar employees with low pay. The Technical Reporting Committee on Income Settlements (TRC) estimates that manufacturing workers in NHO enterprises recorded one percentage point lower wage growth than full-time white-collar employees in manufacturing in 2002.

Manufacturing workers in NHO enterprises have recorded wage growth of 61.7 per cent since 1991, while wage growth for white-collar employees in NHO enterprises came to 75.4 per cent. In the same period, wage growth for central and local government employees was 64.8 and 61.2 per cent respectively. As

many employees in central and local government have qualifications similar to those of white-collar employees in the private sector, high wage growth for these groups in 2002 may have partly been due to a desire to narrow the differential in wage growth in recent years.

The TRC estimates that the carry-over into 2003 from pay increases awarded in 2002 will contribute to annual wage growth of 2½ per cent in 2003, compared with a carry-over of 1¾ per cent into 2002. At the same time, some pay increases have already been agreed for 2003, which will contribute an estimated ½ percentage point to annual wage growth this year. A projected rise in wages per normal man-year of 4.6 per cent for 2003, as in our forecasts, thus implies low pay increases in this year's interim settlement. The carry-over into 2004 may thus be noticeably lower than into 2003. This will provide greater scope for contractually agreed pay increases in the main settlement next year, even with total wage growth on a par with the level in 2003. Growth in wages per normal man-year is projected at 4.6 per cent in 2004 and 4.4 per cent in 2005.

Annual wage growth of about 4½ per cent in the period 2003-2005 reflects profitability problems in manufacturing in 2001 and 2002 and the increase in unemployment since the beginning of 1999. The projections presuppose that wage growth in manufacturing will serve as a benchmark for other sectors of the economy. More subdued wage growth, combined with our other projections, will curb the decline in manufacturing employment by improving profitability in the sector. After one year of continued squeezed profitability in manufacturing in 2003, profitability will then show an improvement in 2004 and 2005. Low wage growth and high output growth in 2004 and 2005 will also lead to an increase in total employment so that unemployment will be reduced in 2005.

Consumer prices – electricity prices dominate
Despite several years with growth of more than 6 per cent annually in hourly labour costs in Norway, the consumer price index (CPI) rose by only 1.3 per cent from 2001 to 2002. The rise in prices was 0.1 percentage point lower in 1996, but otherwise a lower rate of inflation has not been seen since 1960. The appreciation of the krone exchange rate and the absence of external inflationary impulses were important factors behind the subdued inflation rate. However, a reduction in indirect taxes and lower energy prices also made a marked contribution to the low rise in prices. The rise in the CPI adjusted for tax changes and excluding energy products (CPI-ATE) was 2.3 per cent in 2002.

The inflation rate varied considerably through 2002. In the first half of the year, changes in indirect taxes pushed down the rate of inflation. Through 2001,

electricity prices showed virtually no change, while the normal situation is that they fall in the spring and at the beginning of the summer and that they increase later in the autumn. In 2002, a far more normal path was observed. Electricity prices thereby contributed to reducing the rate of increase in prices in the spring and summer. Towards the end of the year and into 2003, however, the inflation rate rose as a direct result of higher electricity prices. In January 2003, electricity prices increased even more and were then 82.5 per cent higher than one year earlier. This contributed 3.2 percentage points to year-on-year CPI inflation, which then reached 5.0 per cent, the highest rate of inflation since January 1989. A slight decline in electricity prices contributed to reducing the rate of inflation to 4.8 per cent in February, and inflation is projected to fall markedly later in the spring.

The import-weighted krone exchange rate appreciated by as much as 8.5 per cent from 2001 to 2002. This helped to slow the rise in the CPI. The krone appreciation reduced Norwegian producers' product input prices in general and prices for imported consumer goods declined by 1.5 per cent. Three factors may explain why prices for these goods did not exhibit a greater fall:

- Long-term contracts stipulated in NOK as well as market assessments imply that it takes time before changes in the exchange rate fully feed through to import prices.

- Norwegian costs (margins in retail trade and indirect taxes) account for a considerable share of the costs associated with imported consumer goods.

- Margins in retail trade increase in the short term through a postponement of price reductions that follow from lower import prices.

In the forecasts, the krone exchange rate depreciates slightly from 2002 to 2003 and depreciates further over the next two years. In isolation, this will contribute to pushing up import prices and consumer price inflation. As a result of lags, however, these effects may be fairly modest this year, but they may be of greater importance in 2004 when import prices for traditional goods are projected to rise by 6 per cent. This increase is not only the result of exchange rate changes. It is assumed that the cyclical upturn abroad will push up prices for industrial commodities, and prices for finished goods may also edge up at a faster pace than in previous years. CPI-ATE inflation is projected to remain somewhat below 2.5 per cent this year and next, but is projected at about 2.5 per cent in 2005.

Electricity prices will obviously have an important influence on overall price developments in the period ahead. A sharp fall in electricity prices over the next few months will probably contribute to a marked re-

Effects of an expansionary fiscal policy

Unemployment is likely to continue to increase over the next few years. In 2002, the downturn shifted to a recession, albeit so far not particularly deep. A traditional instrument for reducing the depth of a recession is a more expansionary fiscal policy. The introduction of a fiscal rule and a monetary policy that is oriented towards an inflation target limit the possibility of pursuing an overall expansionary policy. According to the fiscal rule, however, it is possible to conduct a stabilizing fiscal policy. However, if the fiscal rule is to be adhered to, fiscal expansion presupposes a corresponding tightening of policy during the next upturn. If this does not occur, fiscal policy will contribute to a swifter increase in the use of petroleum revenues than implied by the long-term application of the fiscal rule.

The following presents scenarios based on Statistics Norway's macroeconometric model KVARTS that shed light on the effect of some possible expansionary measures, given the orientation of the division of responsibility between fiscal policy and monetary policy. The question that is posed is to what extent a more expansionary fiscal policy for a limited period will have to result in an increase in interest rates in order to ensure that the inflation target is achieved two years ahead. Moreover, if the interest rate has to be raised, how much higher must it be set to prevent inflation that is too high? Will there then be any effects on production and unemployment that can reduce the increase in unemployment assumed in our forecasts and which here are considered our baseline scenario?

Scenario A

In this scenario, public consumption is increased by about NOK 2.5 billion per quarter for six quarters from the third quarter of 2003 to end-2004. Public spending then returns to the level in the baseline scenario. The purpose of this temporary increase in public spending is to reduce the rise in unemployment in the period when the recession is amplified according to the baseline scenario. The increase in spending occurs through a proportional change in public sector employment and purchases of product inputs from the private sector. The interest rate is assumed to remain unchanged from the baseline scenario, while the exchange rate changes in line with exchange rate relationships that are presented in a separate box.

This type of expansionary fiscal policy quickly translates into reduced unemployment. Traditional multiplier mechanisms result in higher household income, with an attendant increase in household demand. Business investment also rises somewhat as a result of increased activity levels. The counterpart to this is that cost competitiveness, measured by relative labour costs in manufacturing compared with trading partners and measured in a common currency, deteriorates as a result of higher wage growth, but the deterioration is partly offset by a depreciation of the krone. However, inflation edges up, both as a result of

higher wage growth due to lower unemployment and gradually a depreciation of the krone because of the increase in the Norwegian price level. Inflation increases by 0.1 percentage point in both 2004 and 2005.

In the next scenario, it is assumed that the central bank is of the view that this rise in inflation is not consistent with the inflation target and responds by increasing the interest rate.

Scenario B

Fiscal expansion in this scenario is exactly the same as in scenario A, but the money market rate increases immediately by 0.25 percentage point. According to the calculations, this is sufficient to neutralize the effect on inflation after two years. Provided that inflation in the baseline scenario was the same as the inflation target that year, this interest rate change is what is necessary for a rigid achievement of the inflation target.

In isolation, the increase in the interest rate contributes to curbing household demand, and the exchange rate is also affected. After about four quarters, the krone exchange rate is stronger than in the baseline scenario and it is essentially this change that brings inflation back to target. Compared with fiscal policy expansion without an interest rate response, the expansionary effects are slightly smaller. The deterioration in cost competitiveness is somewhat greater in 2004 and 2005 as a result of the appreciation of the krone. In this case monetary policy has the effect of amplifying the deterioration in competitiveness initiated by fiscal expansion.

These two calculations indicate that it may be possible to conduct a stabilizing fiscal policy even when Norges Bank conducts a counteracting monetary policy in order to neutralize the inflation effect two years ahead. The effect of the interest rate response is that cost competitiveness deteriorates to a greater extent, whereas inflation is naturally reduced, but nevertheless in such a way that the increase in unemployment over the next two years will slow. Other types of expansion in government budgets, however, are far less effective in relation to a short-term stabilization policy objective concerning the level of unemployment. According to an article by Johansen and Holm, tax relief for households will not reduce unemployment to any extent within the short time horizon being analyzed here.

The quantitative effects are naturally dependent on how the model being used is constructed with regard to some key variables. The greatest uncertainty is perhaps associated with the exchange rate response to changes in inflation and the interest rate (see discussion in separate box). The effect of a higher interest rate on domestic demand is also important for the conclusions, and uncertainty surrounding this effect implies that these calculations should be interpreted with caution

A. Effects of an expansionary fiscal policy. No interest rate response. Deviation in per cent from baseline scenario unless otherwise specified

	2003	2004	2005
Public consumption	1.1	2.3	-0.1
Household consumption	0.1	0.6	0.6
Mainland gross inv.	0.1	1.0	1.7
Unemployment rate, percentage point	-0.3	-0.4	0.1
Mainland GDP	0.3	0.8	0.3
Inflation (CPI-ATE), percentage point	0.0	0.1	0.1
Import-weighted exchange rate[1]	0.0	0.2	0.3
Wages per normal man-year	0.3	0.9	0.5
Relative hourly labour costs in manufacturing in common currency	0.3	0.5	0.1

[1] Positive figure denotes a weaker krone.

B. Effects of an expansionary fiscal policy with an interest rate response. Deviation in per cent from baseline scenario unless otherwise specified

	2003	2004	2005
Public consumption	1.1	2.3	0.0
Household consumption	0.1	0.4	0.3
Mainland gross inv.	0.1	0.7	0.9
Unemployment rate, percentage point	-0.3	-0.4	0.2
Mainland GDP	0.3	0.7	0.1
Inflation (CPI-ATE), percentage point	0.1	0.1	0.0
Import-weighted exchange rate[1]	0.1	0.0	-0.2
Wages per normal man-year	0.3	0.9	0.4
Relative hourly labour costs in manufacturing in common currency	0.2	0.7	0.5
Money market rate, percentage point	0.1	0.3	0.3

[1] Positive figure denotes a weaker krone.

Relationship between the interest rate and exchange rate

Exchange rates are prices that ensure equilibrium in demand for and supply of currency. Demand and supply of currency may have a tendency to change in such a way that exchange rates in the long term contribute to balance in the external account.

A balanced external account will normally mean that price developments in one country cannot be independent of price developments in another country if the objective is to achieve a stable exchange rate. The theory of purchasing power parity states that prices in Norway in the longer term must shadow prices abroad measured in NOK on a one-to-one basis. According to the theory of purchasing power parity, Norway must therefore, over time, have the same rate of inflation as other countries if the exchange rate is to remain unchanged.

There are many reasons why purchasing power parity does not apply in the short term. Transport costs and the fact that domestic and foreign goods are not entirely identical are reasons for deviations in purchasing power parity in the short term. However, even if purchasing power parity is not always satisfied, it may nevertheless apply in the longer term.

Currency is not only traded for export and import settlements, but also in connection with cross-border financial investments. If there are wide differentials in money market rates between two countries, investors will invest funds in countries with a high interest rate and possibly borrow funds in the country with a low interest rate. This flow of funds may be countered by an expected change in the exchange rate between the two countries. The theory of uncovered interest parity implies that any interest rate differential between two countries is offset by expectations of an equivalent change in the exchange rate between the countries' currencies so that the return will be the same irrespective of where the funds are invested.

In practice, uncovered interest parity will not apply continuously either. A deviation in the expected return may be necessary to induce market participants to shift their funds so that the demand for a country's currency is equal to the supply of that country's currency.

Empirical studies have found little individual support for purchasing power parity and uncovered interest parity (except when very long data series are analyzed). It may therefore be necessary to combine these two theories in order to be able to explain and predict exchange rate movements.

In an empirical analysis of the exchange rate between Norway and its trading partners, Bjørnland and Hungnes (2002, 2003) conclude that sustained deviations from purchasing power parity may be explained by the interest rate differential back to the 1980s. In other words, a high interest rate differential against other countries will result in a permanent appreciation of the exchange rate. These results underscore the importance of the interest rate differential in the long term when drawing up forecasts for exchange rate movements. An exchange rate model that ignores the long-term effect of interest rates on the exchange rate and solely focuses on purchasing power parity in the long term will result in a considerably more inaccurate forecast.

According to the exchange rate model used by Bjørnland and Hungnes (2003), a permanent increase of one percentage point in the interest rate abroad will result in a depreciation of the krone of 1.7 per cent after four years. This also coincides with the long-term effect. A reduction in the domestic interest rate of one percentage point will have virtually the same effect in the short term and an identical effect in the long term.

A permanently lower price level of one percentage point in other countries will in the long term result in a one percentage point depreciation of the krone. The krone will depreciate by about 1.7 per cent in the first two years following the shift. This exchange rate overreaction must be viewed in connection with the fact that we are looking at an immediate change in the price level from one quarter to the next. When different price developments abroad have such a swift effect, this may give rise to expectations of greater deviations in price developments ahead and thus have an immediate impact on the exchange rate. The exchange rate is back to its new long-term level three years after the shift. A permanently higher level of prices in Norway of one percentage point will have approximately the same effect in both the short and longer term.

The exchange rate is obviously a variable that is difficult to predict in terms of changes. Substantial fluctuations in recent periods have provided room for large losses and gains on such speculation. Those who have found the "right" model may therefore be very wealthy. There are competing theoretical and empirical approaches. In order to be able to quantify the effect of various measures on the Norwegian economy, this is a variable that must be quantified. Deciding that a measure does not change the exchange rate may be just as wrong as choosing a model that is not perfect.

If we replace the exchange rate movements embodied in the baseline scenario with the above-mentioned equation, we obtain the following result for the exchange rate: the exchange rate against the euro depreciates gradually from the first quarter of 2003 until the end of the projection period. At the end of 2005, the exchange rate is up to 8.08, i.e. just blow the level assumed in the baseline scenario. Because the depreciation of the krone in this calculation takes place over a longer period, the rise in prices is somewhat lower in 2003 and 2004 and slightly higher in 2005. In isolation, a stronger krone has a contractionary effect on the economy, and on the whole all demand components that are determined in the model expand slightly less than in the baseline scenario. Unemployment is about 0.1 percentage point higher in these three years.

Sources:
Bjørnland, H.C. and H. Hungnes (2002): Fundamental determinants of the long run real exchange rate: The case of Norway, Discussion Papers 326, Statistics Norway

Bjornland, H.C. and H. Hungnes (2003): The importance of interest rates for forecasting the exchange rate, Discussion Papers 340, Statistics Norway

duction in the inflation rate. Through the autumn of 2003, electricity prices will probably not contribute to further changes in the inflation rate until December when we see the effect of high prices in December last year. CPI inflation is now projected at 3.2 per cent at an annual rate.

At the beginning of 2004, the inflation rate is set to be record low, perhaps negative, as a result of the extremely high electricity prices in this period in 2003. The introduction of maximum rates for day-care places, which we assume will contribute to pushing down CPI inflation by 0.4 percentage point, will further amplify this picture. However, the inflation rate will increase fairly quickly as a result of developments in electricity prices this year. A reduction in oil prices in the period ahead will also push down the inflation rate for a period. On an annual basis, CPI inflation is projected at 1.3 per cent in 2004 and 2.3 per cent in 2005.

Balance of payments – large but declining surpluses

Preliminary estimates show that the surplus on the current account came to NOK 211 billion in 2002, equivalent to almost 14 per cent of nominal GDP. The surplus was a good NOK 30 billion lower than in 2001. This primarily reflects a terms-of-trade loss since export prices, and particularly oil prices measured in krone terms, fell more than import prices.

Oil prices, measured in krone terms, are now projected to edge down from 2002 to 2003. Prices for service exports are also expected to move on a sluggish trend, which means that we will again record a terms-of-trade loss in 2003 and to a greater extent than in 2002. Moreover, growth in imports is expected to be considerably higher than growth in exports in 2003. This is partly due to assumptions concerning petroleum exports, but also reflects the effects of deteriorating competitiveness. All in all, the current account surplus is estimated at NOK 176 billion next year, which according to our calculations will be equivalent to a good 11 per cent of nominal GDP.

Our oil price projections entail a further deterioration in the terms of trade in 2004. A substantial increase in import prices on an annual basis as a result of a weaker krone exchange rate in 2004 compared with the average for 2003 points to the same. This means that the terms-of-trade loss is expected to be considerable in 2004, which will reduce the surplus on the balance of trade. A smaller deficit on the interest and transfers balance will offset this to some extent, but the current account surplus is now estimated at a good NOK 157 billion in 2004, or 10 per cent of GDP. For 2005, the calculations show only marginal changes in the current account surplus.

Considerable uncertainty, but small systematic errors in the forecasts

Statistics Norway presented its first quantified forecasts for the Norwegian economy in 1988, and has since 1990, with few exceptions, published forecasts each year. In the following, we provide an overall evaluation of these 15 years of forecasting activity. The evaluation is confined to the rise in the consumer price index (CPI), mainland GDP and unemployment as a percentage of the labour force (LFS). In particular, we examine whether the projections have deviated systematically from preliminary national accounts figures, and the spread in the deviations. The analysis also seeks to provide an indication of the uncertainty associated with the forecasts for 2003 and 2004.

Unemployment and CPI figures are not revised after publication. However, there are often deviations between preliminary GDP figures published in February/ March the year following the accounting year and the final figures that are normally available two years later. The "final" figures may also be revised in connection with individual censuses or changes in principles, etc. for calculating the national accounts. There are four reasons why we use preliminary GDP figures in the accounts presented in February/March. First, there are no final accounts figures available for the years after 2000. The estimates for these years must therefore be compared with preliminary accounts figures. Second, the forecasts are prepared using preliminary, not final accounts figures for recent history. Third, the figures may not be comparable as a result of changes in the base year between the preliminary national accounts and subsequent accounts. Fourth, the main revisions in 1995 and 2002 included definitional changes, which meant that forecasts and final figures were not linked to the same variables.

How accurate have our forecasts been?

Figures 1, 2 and 3 show the average deviation between forecasts at different points in time and figures for growth in mainland GDP, the rise in the CPI and unemployment. The figures also provide an indication of the spread in the deviations in that they include three intervals around the average. These intervals are calculated using the historical spread, but do not show how many of the deviations actually lie within the intervals. The intervals are still chosen because by making a reasonable assumption that all deviations belong to a given statistical distribution (normal distribution with the same expectations and spread) and are independent, we can calculate the probability that future deviations will lie within the interval. Under this assumption, the probability that the deviation between future estimates and accounts figures will lie within these intervals is 50, 80 and 90 per cent respectively.

On average, the forecasts for GDP growth two years ahead are 0.4 percentage point higher than actual growth, estimated on the basis of preliminary accounts figures. In the subsequent quarters, the forecasts have been on average 0.2, 0.1, 0.4 and 0.1 percentage point below actual growth. The last three forecasts have been more accurate. All in all, the deviations are small relative to normal GDP growth. Average estimates for the rise in the CPI have been even more accurate and are off the mark by no more than 0.3 percentage point. On average, the forecasts for unemployment are higher than the final figures at all the forecast points, albeit by no more than 0.2 percentage point. In the light of the wide spread in these forecasts and the relatively few observations in the analysis (between 10 and 15), it can be said that the forecasts for the three main variables only show small systematic errors.

The spread in the deviation between the forecast for GDP growth published in February of the year preceding the projection year and the preliminary accounts figure has been substantial. The forecasts in 1991 and 1993 were the least accurate, off by 2.6 and 1.8 percentage points respectively. Of the 13 forecasts published at that time, 6 deviate from the preliminary figures by more than 1 percentage point. At the next time of publication, however, the difference between the forecasts and the accounts figures is substantially smaller, and one year prior to the publication of accounts figures only 4 out of the 15 forecasts were off the mark by more than 1 percentage point. In the last three reports prior to the publication of the preliminary accounts figures, most of the forecasts deviate by less than 0.5 percentage point.

A similar pattern applies to the forecasts for the rise in the CPI. The first five forecasts show wide deviations from the final accounts, while the estimates from June of the same year are very accurate. Thereafter, there are no projections that deviate by more than 0.3 percentage point from actual CPI inflation. The variations in the preceding forecasts are 3-4 times as great. This is because the actual rise in the CPI is gradually known through the year.

The spread in the deviation between the forecasts for unemployment published in June the preceding year and the accounts figures shows a marked decrease compared with the forecast published the previous quarter. The average absolute deviation is 0.6 percentage point in February of the preceding year compared with 0.4 percentage point for the forecast published in June of the same year. Thereafter, the spread gradually declines. The forecast error for unemployment is also reduced substantially for the last three forecasts prior to the publication of the accounts. Thereafter, there are no forecasts that deviate by more than 0.3 percentage point from the accounts figures.

The forecasts for 2003 and 2004 are uncertain

Figures 3, 4 and 5 provide an assessment of the uncertainty attached to the forecasts for 2003 and 2004 published in this report. Mainland GDP is now expected to expand by 0.7 per cent in 2003 and 2.3 per cent in 2004. The analysis above shows that there is a 50 per cent probability that mainland GDP growth will range between 0.1 and 1.3 per cent in 2003 and 1.3 and 3.3 per cent in 2004. There is an 80 per cent probability that growth will range between 0.6 and 2.0 per cent in 2003 and 0.4 and 4.2 per cent in 2004. An interval of 3.3 percentage points in 2003 and 5.0 percentage points in 2004 covers percentage growth with a probability of 90 per cent.

The rate of increase in the CPI was 1.3 per cent in 2002. CPI inflation is projected at 3.2 per cent in 2003 and 1.3 per cent in 2004. There is a 50 per cent probability that the forecasts for 2003 and 2004 will be off the mark by less than 0.5 and 0.6 percentage point respectively. There is an 80 per cent probability that we will be off the mark by less than 0.9 percentage point in 2003 and 1.2 percentage points in 2004. There is a 90 per cent probability that the interval between 2.0 and 4.4 covers the actual rise in the CPI in 2003 and that the interval between –0.3 and 2.9 covers CPI inflation in 2004.

Unemployment is estimated at 4.3 per cent in 2003 and 4.8 per cent in 2004. While historical forecast errors imply that the forecast for 2003 is fairly accurate, there is considerable uncertainty associated with the forecast for 2004. For example, accounts figures will with a probability of 80 per cent be 0.4 percentage point below our forecast for 2003. In 2004, on the other hand, there is an 80 per cent probability that unemployment will lie in an interval of 1.1 percentage points above and below the forecast. The interval that covers the unemployment estimate for 2004 with 90 per cent probability ranges between 3.4 and 6.2, an interval of as much as 2.8 percentage points.

Figure 1. Estimates for percentage change in mainland GDP. Deviations from preliminary accounts figures and spread
The intervals show 50, 80 and 90 percent confidence intervals respectively

Figure 4. Estimates for percentage change in mainland GDP
The preliminary accounts figures will lie within the intervals with 50, 80 and 90 percent confidence respectively

Figure 2. Estimates for percentage change in the CPI. Deviations from accounts figures and spread
The intervals show 50, 80 and 90 percent confidence intervals respectively

Figure 5. Estimates for percentage change in the CPI
The accounts figures will lie within the intervals with 50, 80 and 90 percent confidence respectively

Figure 3. Estimates for unemployment in percent. Deviations from accounts figures and spread
The intervals show 50, 80 and 90 percent confidence intervals respectively

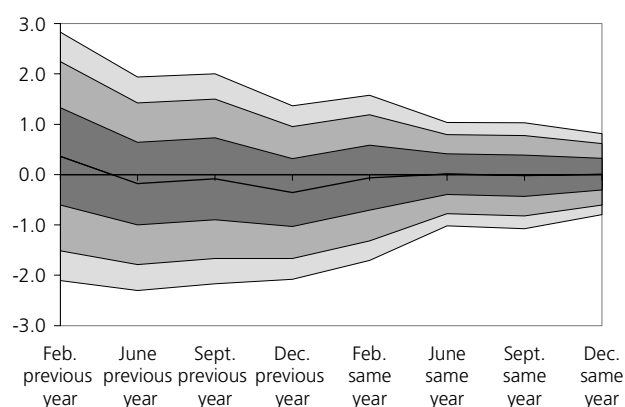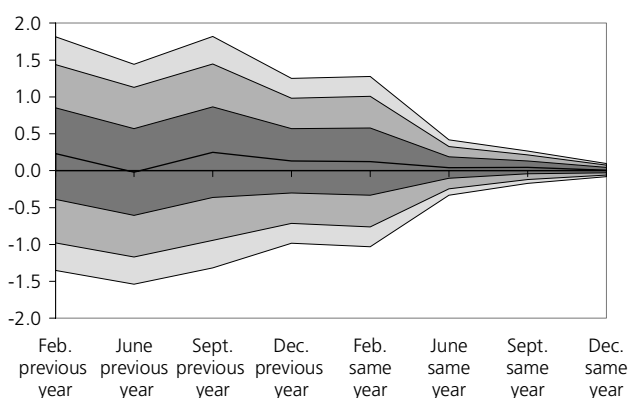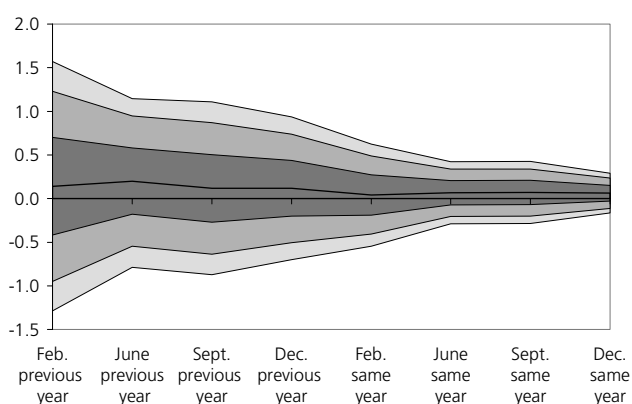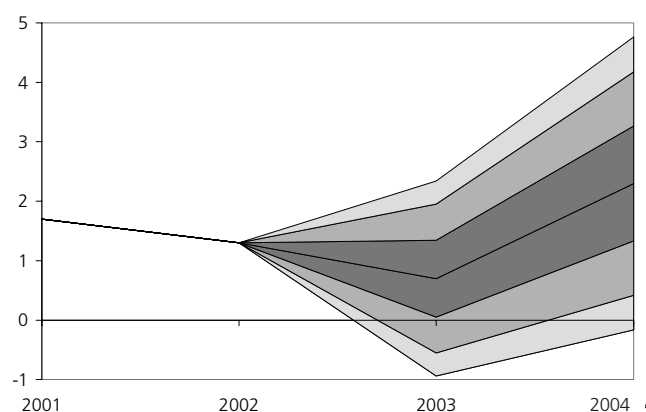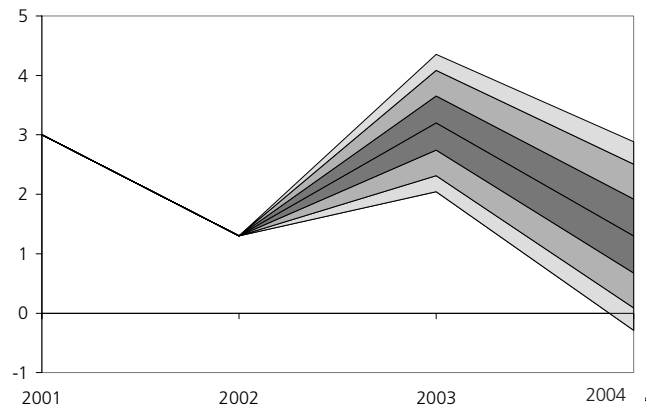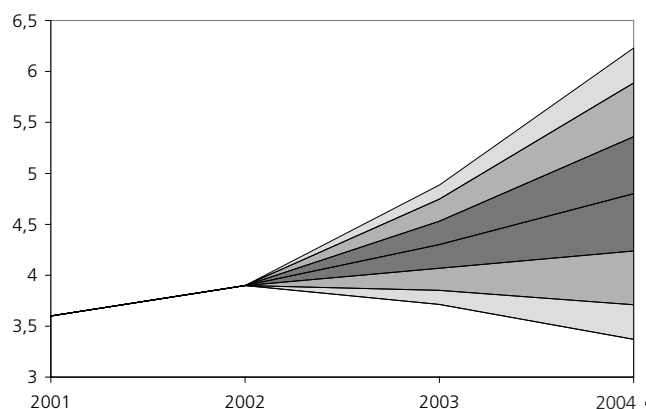**Figure 6. Estimates for unemployment in percent**
The accounts figures will lie within the intervals with 50, 80 and 90 percent confidence respectively

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How accurate were Statistics Norway's forecasts for 2002?

Statistics Norway's Economic Surveys have for the past two years presented forecasts for macroeconomic developments in 2002 eight times, starting with Economic Survey 1/2001. Several of the Economic Surveys included alternative scenarios, but these are not discussed here. Our analysis will be confined to the projections presented in detail in Economic Surveys and which may be considered our forecast path.

The projections for 2002 were generally too optimistic throughout 2001. The projections for global growth and international price inflation were gradually lowered. This resulted in downward adjustments of growth in exports of traditional goods. The tendency was the opposite, however, for oil and gas. Petroleum investment was also revised downwards, while the projections for total consumption growth were approximately unchanged. As a result, total GDP growth showed little change through 2001, while the projection for mainland GDP growth was gradually revised downwards. This contributed to lower projections for employment growth and higher projections for unemployment. On the whole, however, developments in both employment and unemployment were very close to our forecasts from the end of 2001.

However, the projection for inflation, measured by CPI inflation, was revised downwards, partly as a result of lower projections for the rise in import prices, while higher estimates for wage growth had the opposite effect. The fact that consumption growth showed little change partly reflects an underestimation of interest rates, while real wage growth was revised upwards. On the whole, the projections for growth in household real disposable income were therefore influenced by errors in two factors that had opposite effects and which may explain why consumption growth projections showed little change and were fairly accurate in both 2001 and 2002. It should be noted that as a result of the introduc-

tion of an inflation target for monetary policy, we began to publish inflation projections for the CPI adjusted for tax changes and excluding energy products (CPI-ATE), starting with Economic Survey 2/2001.

There was a fairly clear shift in the perception of the cyclical situation in spring 2002. The projection for interest rates was raised and the projections for global growth and export growth were lowered further. This also translated into lower mainland investment growth. The projection for wage growth was increased by about one percentage point after the results of the wage settlement in 2002 were generally known. However, the effect of this on the inflation forecast was offset by a further downward adjustment of the projection for the rise in import prices as a result of the appreciation of the krone, with the result that the projections for CPI inflation were very close to the outcome throughout 2002.

Towards the end of 2002, there was a further downward revision of oil and gas production, so that the projection for total GDP growth was lowered. As a result of higher oil prices, however, the forecast for the current account surplus was increased in spring 2002. To some extent this also reflected a downward revision of import growth in step with the fall in total demand. In connection with the publication of preliminary national account figures for 2002, the projection for general government consumption expenditure for 2002 was revised upwards markedly, but it should be noted that there is particular uncertainty surrounding the figures that year due to substantial structural changes in general government in connection with the hospital reform.

All in all, the forecasts for 2002 at the beginning of 2001 were fairly optimistic. Weak international developments and the shift to a new monetary policy gradually resulted in downward revisions in growth projections.

Statistics Norway's forecasts for 2002
Growth rates in per cent

	ES1/01	ES2/01	ES3/01	ES4/01	ES1/02	ES2/02	ES3/02	ES4/02	ES1/03
Consumption in households and non-profit organizations	2.7	3.2	3.2	2.9	3.0	3.1	2.9	3.0	3.3
General government consumption	1.9	2.9	2.5	1.6	1.7	1.8	2.5	2.6	4.5
Gross fixed investment	1.9	3.8	5.1	1.9	0.8	0.9	-0.1	-2.2	-3.3
Petroleum activities	7.4	5.4	4.6	2.8	-3.8	0.5	3.2	-1.2	-4.4
Mainland Norway	0.6	3.5	4.6	-0.4	-0.2	-1.3	-1.9	-4.4	-4.2
Exports	3.4	2.7	3.0	2.5	3.7	1.6	1.0	0.1	-0.5
Crude oil and natural gas	0.9	0.3	1.8	3.2	5.4	2.4	2.9	1.1	0.2
Traditional goods	5.2	4.5	3.5	2.7	2.1	0.8	1.6	3.5	1.3
Imports	5.0	6.3	5.5	4.1	3.7	3.7	1.8	0.9	1.7
Traditional goods	4.3	5.3	6.3	4.0	3.5	3.2	2.4	1.6	4.7
GDP	1.8	1.9	2.5	1.8	2.3	1.5	1.3	1.1	1.0
Mainland GDP	1.8	2.1	2.6	1.5	1.6	1.2	1.2	1.3	1.3
Employed persons	0.4	0.5	0.8	0.0	0.4	0.1	0.1	0.3	0.3
Unemployment rate (level)	3.6	3.3	3.4	3.9	3.8	3.9	3.9	3.9	3.9
Wages per man-hour	3.8	4.2	4.4	4.1	4.3	5.0	5.2	5.4	5.4
Consumer price index	1.4	1.8	1.7	1.0	1.1	1.1	1.2	1.2	1.3
CPI-ATE			2.0	2.4	2.4	2.3	2.4	2.3	2.3
Export prices, traditional goods	-1.7	-2.0	-2.8	-4.7	-3.1	-4.1	-8.9	-10.0	-8.7
Import prices, traditional goods	-0.9	-0.9	0.6	-2.2	-2.6	-6.7	-6.8	-7.2	-8.0
Money market rate (level)	6.1	6.6	6.5	6.0	6.1	7.3	7.0	6.9	6.9
Average borrowing rate (level)	8.1	8.8	8.4	7.4	7.5	8.6	8.6	8.5	8.4
Current balance, bill. NOK	161.4	202.3	170.8	167.3	170.9	205.0	221.3	207.0	211.1
Export market indicator	6.4	5.8	5.4	4.3	4.0	4.0	1.9	0.8	0.7
Crude oil price, NOK	190.0	227.0	218.9	192.5	174.4	199.7	195.5	196.6	197.4

Source: Statistics Norway.

Macroeconomic effects of a new monetary policy

Two years have now passed since Norway introduced an inflation target for Norges Bank's interest rate setting and a fiscal rule concerning the use of the real return on the Petroleum Fund. Against this background, it may be interesting to look at the effects of the new guidelines and what the effects may be in the period ahead. Using Statistics Norway's macroeconomic model KVARTS, this question is examined by calculating a counterfactual path for the Norwegian economy for the years 2001-2005 based on the assumption that interest rate setting shall contribute to maintaining a stable krone exchange rate against European currencies, as was the case in the former monetary policy regime. Moreover, it is assumed that Norway did not introduce the explicit rule on the use of petroleum revenues, which signalled a more expansionary fiscal policy in the years ahead, thereby providing scope for a real appreciation of the krone. It is nevertheless assumed that the fiscal policy stance, also in the counterfactual path, was the same as the actual stance and the stance that is assumed to be the case in 2003-2005. This is not unreasonable because so far the rule has only permitted a modest increase in the use of petroleum revenues. The difference between fiscal policy in the actual and counterfactual path is that the actual introduction of the rule may have had a signal effect which, among other things, may have influenced actual and expected interest rate setting and hence the exchange rate. This signal effect is not explicitly calculated, but is included as part of the difference in interest rates and the exchange rate between the two paths.

Some will point to the experience of autumn 1998 and be of the view that it would not have been possible to maintain the former monetary policy regime. On the other hand, the experience of the period 1993-2000 as a whole was that it was possible to stabilize the krone's value over time. These calculations thus apply the experience of the latter period and presuppose that at any point in time it would have been possible to stabilize the exchange rate with a suitable interest rate response following shocks to prices, euro rates and the current account balance (including oil prices). These are variables which, according to Statistics Norway's analyses, had an influence on Norwegian interest rates under the former regime. This means that shocks of the Asian crisis type, which probably contributed to the depreciation of the krone in 1998, have not been assumed; nor have similar shocks been experienced in 2001-2002. On the other hand, it has been demonstrated that the effects of other international events in these years are of importance to the krone exchange rate; for example, reduced possibilities for exchange gains in other international financial markets may in itself have led to greater emphasis being placed on the high interest rate differential between Norway and other countries than earlier. Such extraordinary effects have not been taken into account in the counterfactual analysis.

Specifically, it is assumed that monetary policy in the counterfactual analysis had been oriented towards keeping the euro exchange rate at the same level as in the first quarter of 2001 (NOK 8.20). In that case, the import-weighted exchange rate would have followed the dashed line in Figure a instead of the solid line, which shows actual/forecast developments according to the actual figures and forecasts that are presented in this publication. The figure shows that the

krone would have appreciated considerably even with a stable exchange rate against the euro. The main reason is the effect on the import-weighted exchange rate of a weaker dollar against the euro. The figure also shows that differences in the exchange rate between the two paths in 2004 and 2005 are small; this follows from the assumption concerning the depreciation of the krone to 8.15 against the euro, which is the assumption underlying the forecasts for the Norwegian economy in this publication.
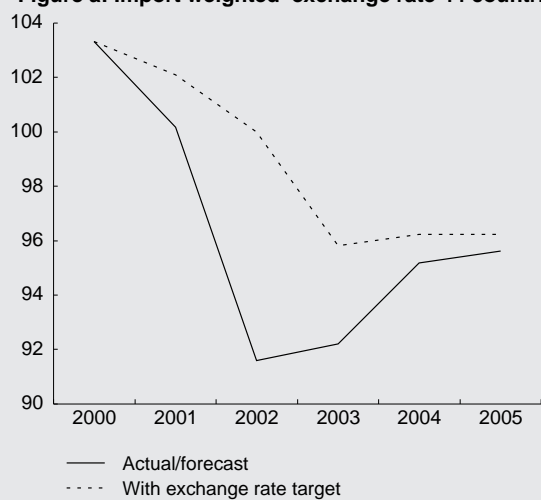
Since the model's relationships are quantified over periods with an exchange rate target for monetary policy, it is actually more appropriate to determine how the Norwegian economy would have developed under this regime than under the current regime. When the model is used to draw up forecasts under the current regime, it is necessary to evaluate how the change in regime has changed market participants' behaviour viewed in relation to the model's description. In an earlier version of the model there were problems in explaining why the decline in import prices resulting from the sharp appreciation of the krone last year only had a modest impact on consumer prices. Using a re-estimated equation, the model manages to explain this at the same time that the relationship also provides a good description of behaviour under the former exchange rate regime.

The dashed curve in Figure b shows CPI inflation in the counterfactual path. It shows that without the sharp appreciation against the euro, Norway would have had higher inflation in both 2001 and 2002, but about the same rate of inflation as indicated in Statistics Norway's forecasts for 2003-2005. Figure c shows that the underlying inflation rate, measured by CPI-ATE, would have shown similar developments in relation to actual developments and that this would have resulted in a considerably more variable inflation rate than under the new regime.

The wage settlement in 2002 in particular resulted in pay increases that were considerably higher than the level implied by normal wage determination, according to quantified relationships in KVARTS, and with consequences for wage growth in 2003 as well. Less emphasis - both directly and indirectly - was placed on manufacturing industry's competitiveness. This deviation from normal wage determination may have been linked to the introduction of the new guidelines when the need for a deterioration in manufacturing industry's competitiveness in the years ahead was emphasised so strongly. Or perhaps the change in the monetary policy objective may have led to a shift in employee organizations' priorities, away from competitiveness towards increased emphasis on real wages. In order to estimate the importance of a possible relationship between the policy change in 2001 and the observed deviation from normal wage determination, an alternative counterfactual inflation path has been calculated based on the assumption that the deviation in wage determination in 2001-2002 was caused by the change in regime. The dashed curves in Figures b and c show this alternative path. If the deviation in wage determination can be traced to the change in regime, inflation in the paths with an exchange rate target would have been lower than if the deviation were independent of the change in regime.

Cont.

Cont.

Figure a: Import weighted exchange rate 44 countries

——— Actual/forecast
- - - - With exchange rate target
Source: Statistics Norway.

Figure b: CPI growth

——— Actual/forecast
- - - - With exchange rate target
– – With exchange rate target (alternative path)
Source: Statistics Norway.

Figure c: CPI-ATE growth

——— Actual/forecast
- - - - With exchange rate target
– – With exchange rate target (alternative path)
Source: Statistics Norway.

Figure d: Interest rate, 3 month
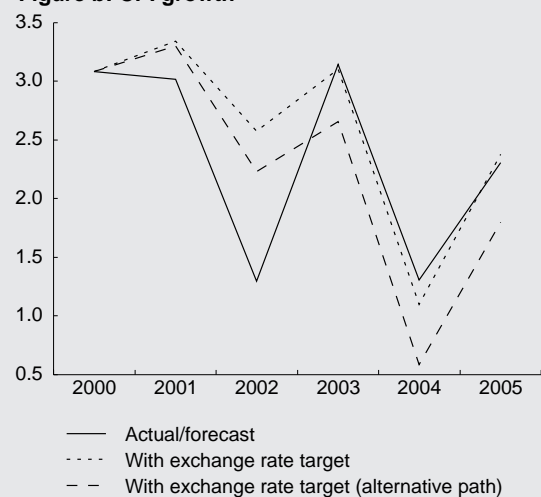
——— Actual/forecast
- - - - With exchange rate target
– – With exchange rate target (alternative path)
Source: Statistics Norway.

Figure e: Unemployment rate
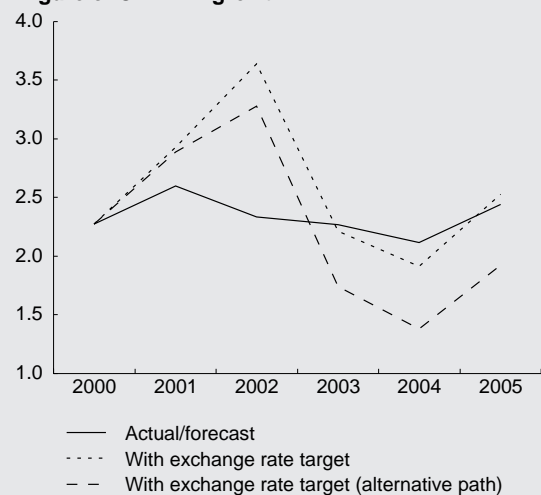
——— Actual/forecast
- - - - With exchange rate target
– – With exchange rate target (alternative path)
Source: Statistics Norway.

Figure f: Wages per standard man-year/ import weighted exchange rate 44 countries
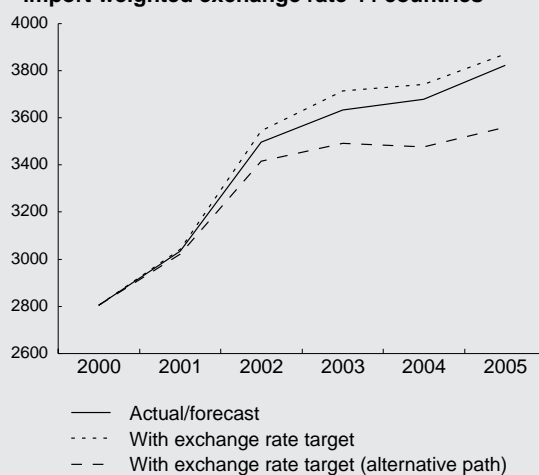
——— Actual/forecast
- - - - With exchange rate target
– – With exchange rate target (alternative path)
Source: Statistics Norway.

Cont.

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The consequences for interest rate setting, measured by three-month money market rates, are shown in Figure d. In both counterfactual paths the interest rate is lower in 2001 and 2002 than was actually the case, but noticeably higher in 2003 than assumed in Statistics Norway's forecasts. This is because inflation, measured by the consumer price index, has moved up swiftly over the past year due to higher electricity prices and because the inflation differential between Norway and euro area countries was an important factor when setting interest rates under the former exchange rate regime. On the other hand, the counterfactual path also shows a substantial interest rate differential between Norway and other countries. If the extraordinary international conditions noted in the introduction had led to extraordinary emphasis being placed on this interest rate differential also in the counterfactual case, this would have contributed to lower interest rates than shown in the calculations. On the other hand, without explicitly formulated expectations of an appreciation of the nominal krone - also on the part of Norges Bank - as a result of the introduction of the new guidelines, investor interest in the Norwegian krone would most likely not have been as strong as has actually been the case. The interest rate might also have been higher in 2004 and 2005 than the level assumed in Statistics Norway's forecasts, but only if we disregard the possibility that the change in regime may have influenced wage determination.

The consequences for unemployment and competitiveness, measured by the level of Norwegian wages converted into foreign currency with the help of the import-weighted exchange rate, are shown in Figures e and f. Here, the counterfactual path is highly dependent on whether wage determination was influenced by the change in regime or not. If the change in regime has not influenced wage determination, the rise in unemployment would have taken place at a later stage than has actually been the case, but unemployment would still have reached the same level in 2004 and 2005 as indicated by Statistics Norway's current forecasts. Lower unemployment in 2001-2003 would have resulted in higher wage growth, and in 2004 and 2005 - when the exchange rate in the two scenarios is almost identical - labour costs measured in foreign currency would have been somewhat higher than in the forecasts, i.e. deteriorating competitiveness. If, on the other hand, the change in regime has influenced wage determination, a continuation of the regime with an exchange rate target would have resulted in lower unemployment every year in the calculations. Wage growth would nevertheless have been noticeably lower and competitiveness would have been stronger than in the forecasts.

Statistics Norway's forecasts are otherwise based on the assumption that the deterioration in manufacturing industry's competitiveness over the last few years will only gradually result in a situation where Norwegian enterprises price themselves out of export and domestic markets. If enterprises assume that in the years ahead they may be facing a lasting deterioration in competitiveness as a result of the new policy rules, this may quickly result in decisions to relocate abroad well in advance while their equity capital is still intact. In that case, unemployment may increase at a faster pace than shown by our forecasts.

The calculations also show that the introduction of an inflation target may result in considerably more stable inflation in the years 2001-2005 than would have been the case under the former regime, at the expense of less stable developments in production and possibly in unemployment as well.

National accounts: Final expenditure and gross domestic product
At fixed 2000 prices. Million kroner

	Unadjusted		Seasonally adjusted							
	2001	2002	01.1	01.2	01.3	01.4	02.1	02.2	02.3	02.4
Final consumption exp. of housh. and NPISHs	641 829	663 207	158 880	159 819	161 091	161 996	164 044	164 673	165 891	168 504
Household final consumption expenditure	615 225	636 070	152 305	153 163	154 467	155 244	157 237	157 997	159 220	161 499
Goods	342 546	354 686	84 913	84 989	85 719	86 959	87 884	88 256	88 128	90 420
Services	263 866	270 238	65 456	65 884	66 100	66 613	67 096	67 218	67 729	68 402
Direct purchases abroad by resident househ.	27 131	28 901	6 780	6 852	6 984	6 398	6 777	7 112	7 591	7 164
Direct purchases by non-residents	-18 317	-17 755	-4 844	-4 563	-4 336	-4 727	-4 520	-4 589	-4 228	-4 487
Final consumption exp. of NPISHs	26 605	27 137	6 575	6 656	6 624	6 752	6 807	6 675	6 671	7 006
Final consump. exp. of general government	288 592	301 495	70 911	72 289	72 331	73 140	75 358	74 565	75 666	75 840
Final consump. exp. of central government	115 101	163 689	28 587	28 811	28 730	28 991	40 830	40 633	41 004	41 291
Central government, civilian	88 521	135 944	21 934	22 156	22 101	22 351	33 910	33 656	34 082	34 364
Central government, defence	26 579	27 745	6 653	6 655	6 629	6 640	6 919	6 976	6 922	6 927
Final consump. exp. of local government	173 491	137 805	42 324	43 478	43 600	44 149	34 528	33 932	34 661	34 549
Gross fixed capital formation	261 191	252 558	67 911	65 157	64 519	63 387	62 267	65 762	61 602	63 203
Extraction and transport via pipelines	54 837	52 405	12 779	13 007	14 067	14 929	13 723	12 074	13 136	13 435
Service activities incidental to extraction	-797	5 442	264	1 081	308	-2 450	98	4 868	277	199
Ocean transport	10 886	6 697	4 581	2 016	1 449	2 840	896	1 493	1 337	2 970
Mainland Norway	196 265	188 013	50 287	49 053	48 694	48 068	47 551	47 326	46 851	46 599
Mainland Norway ex. general government	156 189	147 901	39 815	39 353	38 886	37 965	37 347	37 010	36 801	36 850
Manufacturing and mining	21 163	22 887	4 916	5 203	5 300	5 638	5 467	5 837	5 916	5 936
Production of other goods	16 070	16 906	4 036	3 860	4 132	3 935	3 937	4 295	4 288	4 174
Dwellings	49 475	47 547	12 223	12 245	12 440	12 542	12 363	12 087	11 653	11 449
Other services	69 481	60 562	18 640	18 045	17 013	15 851	15 581	14 792	14 944	15 291
General government	40 077	40 112	10 472	9 700	9 809	10 104	10 203	10 316	10 050	9 749
Changes in stocks and stat. discrepancies	27 193	27 708	6 064	10 306	5 517	4 501	8 686	4 504	5 698	7 509
Gross capital formation	288 384	280 266	73 976	75 463	70 036	67 888	70 953	70 266	67 299	70 712
Final domestic use of goods and services	1218805	1244967	303 767	307 571	303 458	303 024	310 356	309 504	308 856	315 056
Final demand from Mainland Norway	1126687	1152714	280 079	281 161	282 117	283 204	286 953	286 564	288 407	290 943
Final demand from general government	328 668	341 607	81 383	81 989	82 139	83 244	85 561	84 881	85 715	85 589
Total exports	713 743	709 902	176 034	172 636	180 674	184 742	174 169	182 664	178 102	175 524
Traditional goods	222 201	225 163	55 358	56 076	53 448	57 325	56 543	57 082	56 821	54 851
Crude oil and natural gas	322 590	323 206	79 566	75 550	84 373	83 261	76 513	84 730	81 674	80 677
Ships and oil platforms	15 716	10 003	2 699	3 214	4 464	5 340	3 487	3 306	2 054	1 157
Services	153 236	151 531	38 411	37 795	38 389	38 816	37 626	37 546	37 554	38 840
Total use of goods and services	1932548	1954869	479 801	480 207	484 132	487 766	484 525	492 168	486 958	490 581
Total imports	435 146	442 536	109 782	107 906	108 133	109 166	107 632	112 359	109 598	112 398
Traditional goods	282 860	296 144	70 556	70 896	70 393	71 027	74 063	72 405	73 544	75 995
Crude oil	1 852	1 021	418	402	347	685	184	236	366	234
Ships and oil platforms	14 365	11 175	4 659	2 130	3 519	4 058	767	6 616	1 540	2 253
Services	136 068	134 196	34 149	34 478	33 875	33 395	32 617	33 101	34 148	33 916
Gross domestic product	1497402	1512334	370 019	372 301	375 999	378 601	376 893	379 809	377 360	378 183
Mainland Norway (market prices)	1119859	1134895	278 684	279 049	279 175	282 521	283 405	283 282	284 094	284 036
Petroleum activities and ocean transport	377 543	377 438	91 335	93 252	96 824	96 080	93 489	96 527	93 266	94 147
Mainland Norway (basic prices)	971 575	984 464	241 454	242 232	242 220	245 219	246 015	246 161	246 346	245 926
Mainland Norway excl. general government	754 528	765 140	187 982	187 923	187 769	190 449	190 662	191 734	191 587	191 219
Manufacturing and mining	145 143	144 126	36 239	36 351	36 048	36 506	35 840	36 604	36 169	35 582
Production of other goods	100 576	102 518	25 596	24 830	24 172	25 544	25 633	25 385	26 111	25 393
Service industries	508 808	518 496	126 146	126 742	127 549	128 399	129 189	129 745	129 307	130 244
General government	217 047	219 324	53 473	54 309	54 451	54 770	55 353	54 427	54 759	54 707
Correction items	148 284	150 432	37 230	36 817	36 955	37 302	37 390	37 122	37 748	38 110

Source: Statistics Norway.

National accounts: Final expenditure and gross domestic product
At fixed 2000- prices. Percentage volume change from previous period

	Unadjusted		Seasonally adjusted							
	2001	2002	01.1	01.2	01.3	01.4	02.1	02.2	02.3	02.4
Final consumption exp. of housh. and NPISHs	2.6	3.3	2.4	0.6	0.8	0.6	1.3	0.4	0.7	1.6
Household final consumption expenditure	2.6	3.4	2.4	0.6	0.9	0.5	1.3	0.5	0.8	1.4
Goods	2.8	3.5	2.9	0.1	0.9	1.4	1.1	0.4	-0.1	2.6
Services	2.4	2.4	0.9	0.7	0.3	0.8	0.7	0.2	0.8	1.0
Direct purchases abroad by resident housh.	-1.1	6.5	-2.2	1.1	1.9	-8.4	5.9	4.9	6.7	-5.6
Direct purchases by non-residents	-3.8	-3.1	-13.9	-5.8	-5.0	9.0	-4.4	1.5	-7.9	6.1
Final consumption exp. of NPISHs	1.7	2.0	1.2	1.2	-0.5	1.9	0.8	-1.9	-0.1	5.0
Final consump. exp. of general government	2.7	4.5	-0.1	1.9	0.1	1.1	3.0	-1.1	1.5	0.2
Final consump. exp. of central government	2.5	42.2	1.2	0.8	-0.3	0.9	40.8	-0.5	0.9	0.7
Central government, civilian	4.5	53.6	2.5	1.0	-0.2	1.1	51.7	-0.7	1.3	0.8
Central government, defence	-3.7	4.4	-2.9	0.0	-0.4	0.2	4.2	0.8	-0.8	0.1
Final consump. exp. of local government	2.8	-20.6	-1.0	2.7	0.3	1.3	-21.8	-1.7	2.1	-0.3
Gross fixed capital formation	-4.2	-3.3	3.3	-4.1	-1.0	-1.8	-1.8	5.6	-6.3	2.6
Extraction and transport via pipelines	-1.0	-4.4	1.0	1.8	8.1	6.1	-8.1	-12.0	8.8	2.3
Service activities incidental to extraction	-118.6	-782.5	-15.2	309.6	-71.5	-894.8	-104.0	..	-94.3	-28.3
Ocean transport	-40.0	-38.5	84.9	-56.0	-28.1	96.0	-68.5	66.7	-10.4	122.1
Mainland Norway	0.7	-4.2	0.0	-2.5	-0.7	-1.3	-1.1	-0.5	-1.0	-0.5
Mainland Norway ex. general government	0.1	-5.3	-0.3	-1.2	-1.2	-2.4	-1.6	-0.9	-0.6	0.1
Manufacturing and mining	13.6	8.1	12.5	5.8	1.9	6.4	-3.0	6.8	1.3	0.3
Production of other goods	-2.2	5.2	2.0	-4.4	7.1	-4.8	0.1	9.1	-0.2	-2.6
Dwellings	3.7	-3.9	0.3	0.2	1.6	0.8	-1.4	-2.2	-3.6	-1.8
Other services	-5.1	-12.8	-4.1	-3.2	-5.7	-6.8	-1.7	-5.1	1.0	2.3
General government	2.9	0.1	1.1	-7.4	1.1	3.0	1.0	1.1	-2.6	-3.0
Changes in stocks and stat. discrepancies	-22.4	1.9	-20.0	69.9	-46.5	-18.4	93.0	-48.1	26.5	31.8
Gross capital formation	-6.3	-2.8	0.9	2.0	-7.2	-3.1	4.5	-1.0	-4.2	5.1
Final domestic use of goods and services	0.4	2.1	1.4	1.3	-1.3	-0.1	2.4	-0.3	-0.2	2.0
Final demand from Mainland Norway	2.3	2.3	1.3	0.4	0.3	0.4	1.3	-0.1	0.6	0.9
Final demand from general government	2.7	3.9	0.0	0.7	0.2	1.3	2.8	-0.8	1.0	-0.1
Total exports	4.1	-0.5	-0.5	-1.9	4.7	2.3	-5.7	4.9	-2.5	-1.4
Traditional goods	3.7	1.3	2.3	1.3	-4.7	7.3	-1.4	1.0	-0.5	-3.5
Crude oil and natural gas	5.2	0.2	2.7	-5.0	11.7	-1.3	-8.1	10.7	-3.6	-1.2
Ships and oil platforms	51.5	-36.4	-19.4	19.1	38.9	19.6	-34.7	-5.2	-37.9	-43.7
Services	-1.0	-1.1	-8.6	-1.6	1.6	1.1	-3.1	-0.2	0.0	3.4
Total use of goods and services	1.7	1.2	0.7	0.1	0.8	0.8	-0.7	1.6	-1.1	0.7
Total imports	0.9	1.7	3.1	-1.7	0.2	1.0	-1.4	4.4	-2.5	2.6
Traditional goods	2.9	4.7	1.2	0.5	-0.7	0.9	4.3	-2.2	1.6	3.3
Crude oil	2.5	-44.9	-42.8	-3.8	-13.7	97.4	-73.1	28.3	54.9	-36.1
Ships and oil platforms	-45.4	-22.2	65.2	-54.3	65.2	15.3	-81.1	762.8	-76.7	46.3
Services	6.0	-1.4	3.0	1.0	-1.8	-1.4	-2.3	1.5	3.2	-0.7
Gross domestic product	1.9	1.0	0.0	0.6	1.0	0.7	-0.5	0.8	-0.6	0.2
Mainland Norway (market prices)	1.7	1.3	0.5	0.1	0.0	1.2	0.3	0.0	0.3	0.0
Petroleum activities and ocean transport	2.7	0.0	-1.3	2.1	3.8	-0.8	-2.7	3.2	-3.4	0.9
Mainland Norway (basic prices)	1.6	1.3	0.5	0.3	0.0	1.2	0.3	0.1	0.1	-0.2
Mainland Norway ex. general government	1.8	1.4	1.1	0.0	-0.1	1.4	0.1	0.6	-0.1	-0.2
Manufacturing and mining	0.5	-0.7	1.3	0.3	-0.8	1.3	-1.8	2.1	-1.2	-1.6
Production of other goods	-3.2	1.9	0.1	-3.0	-2.7	5.7	0.4	-1.0	2.9	-2.8
Service industries	3.2	1.9	1.3	0.5	0.6	0.7	0.6	0.4	-0.3	0.7
General government	1.0	1.0	-1.7	1.6	0.3	0.6	1.1	-1.7	0.6	-0.1
Correction items	2.1	1.4	0.3	-1.1	0.4	0.9	0.2	-0.7	1.7	.01

Source: Statistics Norway.

National accounts: Final expenditure and gross domestic product
Price indices. 2000=100

	Unadjusted		Seasonally adjusted							
	2001	2002	01.1	01.2	01.3	01.4	02.1	02.2	02.3	02.4
Final consumption exp. of households and NPISHs	102.4	103.1	102.0	103.0	102.2	102.4	101.7	102.8	103.1	104.1
Final consumption exp. of general government	107.3	111.6	105.2	106.5	107.6	109.3	109.1	110.8	112.1	114.6
Gross fixed capital formation	103.6	102.4	103.8	103.4	103.4	104.2	102.0	102.6	103.0	101.7
Mainland Norway	103.4	102.7	103.4	103.3	103.4	103.8	101.8	103.0	103.4	102.3
Final domestic use of goods and services	103.7	104.9	103.3	103.2	103.9	104.8	103.4	104.1	105.6	106.3
Final demand from Mainland Norway	103.8	105.2	103.1	104.0	103.8	104.4	103.7	104.9	105.5	106.6
Total exports	97.7	90.2	103.4	104.1	96.2	88.3	91.9	92.2	87.7	89.1
Traditional goods	97.1	88.7	100.3	99.3	95.8	92.8	91.6	88.8	87.2	87.3
Total use of goods and services	101.5	99.6	103.4	103.5	101.0	98.5	99.3	99.6	99.1	100.2
Total imports	100.0	93.8	102.6	101.5	98.8	97.5	96.2	94.5	92.9	92.0
Traditional goods	99.8	91.9	102.9	101.7	98.5	96.5	94.4	92.0	91.1	90.3
Gross domestic product	101.9	101.2	103.6	104.1	101.7	98.8	100.2	101.2	100.9	102.6
Mainland Norway (market prices)	103.8	106.3	102.4	104.2	103.8	104.9	104.6	105.8	106.6	107.8

Source: Statistics Norway.

National accounts: Final expenditure and gross domestic product
Price indices. Percentage volume change from previous period

	Unadjusted		Seasonally adjusted							
	2001	2002	01.1	01.2	01.3	01.4	02.1	02.2	02.3	02.4
Final consumption exp. of households and NPISHs	2.4	0.7	0.9	1.0	-0.8	0.2	-0.6	1.1	0.3	1.0
Final consumption exp. of general government	7.3	4.1	3.1	1.2	1.1	1.6	-0.2	1.6	1.1	2.3
Gross fixed capital formation	3.6	-1.2	1.8	-0.4	0.0	0.8	-2.2	0.6	0.4	-1.3
Mainland Norway	3.4	-0.7	2.4	-0.1	0.0	0.5	-2.0	1.2	0.4	-1
Final domestic use of goods and services	3.7	1.1	1.4	-0.1	0.7	0.8	-1.3	0.6	1.5	0.7
Final demand from Mainland Norway	3.8	1.4	1.7	0.9	-0.2	0.6	-0.7	1.2	0.6	1.0
Total exports	-2.3	-7.7	-3.0	0.6	-7.5	-8.3	4.1	0.3	-4.8	1.6
Traditional goods	-2.9	-8.7	-3.5	-0.9	-3.6	-3.1	-1.4	-3.1	-1.8	0.1
Total use of goods and services	1.5	-1.9	-0.3	0.2	-2.4	-2.5	0.8	0.4	-0.6	1.1
Total imports	0.0	-6.2	-0.1	-1.1	-2.7	-1.3	-1.4	-1.8	-1.7	-0.9
Traditional goods	-0.2	-8.0	0.8	-1.1	-3.2	-2.0	-2.2	-2.5	-1.0	-0.8
Gross domestic product	1.9	-0.7	-0.3	0.5	-2.3	-2.8	1.4	1.0	-0.3	1.7
Mainland Norway (market prices)	3.8	2.4	0.8	1.8	-0.3	1.0	-0.2	1.1	0.7	1.2

Source: Statistics Norway.

Technical comments on the quarterly figures

Quarterly calculations: The calculations are made on a less detailed level than the calculations for the annual national accounts, and are based on more simplified procedures.

Base year and chain linking of the data: In the quarterly national accounts (QNA) all volume measures are currently calculated at constant 2000 prices using weights from that year. The choice of base year influences the constant price figures and thus the annual rates of change in volume (growth rates). For the sake of comparison, all tables present growth rates with 2000 as the base year (common year of recalculation). The recalculation of prices is carried out at the sectoral level of the quarterly national accounts.