

Economic Survey

Volume 13

4/2003

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Print: Statistics Norway/960

Economic Survey

is published four times a year by the Research Department of Statistics Norway. The Research Department was established in 1950. The Department has about 70 employees. The Research Department is organized in eight units. Head of Department is Ådne Cappelen.

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The next edition of Economic Survey will be published at the end of March 2004.

Symbols in tables	Symbol
Data not available	..
Not for publication	:
Nil	0
Provisional or preliminary figure	*

Economic trends*

The Norwegian economy is now in a clear cyclical upswing. Output growth is stronger than trend growth in the economy, and the labour market is showing signs of improvements. If this means that unemployment has peaked, the turnaround in the labour market will occur one to two quarters earlier than previously projected. We expect the cyclical upswing to continue through 2004, and then gradually moderate through 2005 and 2006. Unemployment will nevertheless only show a moderate decline over the next two years partly because productivity growth is expected to be relatively high and because higher employment and lower unemployment will lead to an increase in the supply of labour.

The main driving forces behind the turnaround in the Norwegian economy have been strong growth in petroleum investment over the past year and the sharp reduction in interest rates through 2003. The decline in interest rates led to a marked upswing in private consumption through the summer and autumn, and the weakening of the krone in the wake of the interest rate reductions has partly reversed the contractionary effects of the strong krone in 2002. Both impulses will persist in the period ahead, with particularly strong growth in private consumption. Moreover, the international cyclical upturn that appears to have taken hold will generate clear growth impulses until a new slowdown in 2006. Fiscal policy is expected to generate only moderate impulses.

In spite of clear growth in the economy, price inflation is projected to be low in Norway and other industrial countries in the years ahead. A higher share of service and goods imports from low-cost countries is a contributory factor. In a calculation, we show that a shift towards increased imports of Chinese goods will alone contribute to pushing down the inflation rate in Norway by about 0.3 percentage point. It is uncertain whether we have managed to take full account of such effects in our projections. As far as Norway is concerned, the contribution from lower wage growth as result of weak profitability comes in addition, as well as the past increase in unemployment.

It may therefore appear difficult to attain the inflation target of 2.5 per cent in the course of the next three years, unless the key interest rate is set at such a low level that the krone depreciates markedly. Given our assumptions, this can be achieved if the key rate is reduced by 0.5 percentage point in the first quarter of next year, and kept unchanged at this level to the end of the projection period. The Norwegian krone is then assumed to depreciate gradually to little more than 8.40 against the euro to the end of 2006. A weaker krone will have a positive impact on international exposed industries and unemployment will fall at faster pace. An interest rate that is too low during a consumption-led upswing may, on the other hand, lead to imbalances in the economy that will be difficult to redress in the somewhat longer term. Our projections are based on the assumption that the key rate is not reduced further, but rather increased somewhat from the end of next year in pace with an increase in international interest rates. The Norwegian krone is assumed to stabilise at around euro 8.20 and inflation is assumed to remain slightly below the inflation target throughout the projection period.

* Translated from Økonomiske analyser 6/2003 by Janet Aagenæs and Helle Snellingen.

International economy

Global economic activity has picked up appreciably through the autumn. All of the major economies are again expanding after the euro area also recorded positive GDP growth in the third quarter. In the US, the economic upswing has been in evidence through the summer and autumn, and the US is at the forefront in the international cyclical recovery. Some Asian countries are also showing strong growth, particularly China. In the euro area, on the other hand, growth is still relatively weak, but the international upswing will result in higher activity in these countries as well.

US

Fragile growth in the US economy through 2002 and the beginning of 2003 was largely fuelled by substantial monetary and fiscal policy stimulus. The business sector has now finally started to invest again. This is the key to a self-driven upturn, indicating that the upswing has moved into a more robust phase.

In the third quarter, the US economy gathered considerable momentum, with GDP expanding by 8.2 per cent at an annual rate after showing a more moderate rise in the second quarter. Growth was broadly based, with household consumption, investment and exports making the strongest contribution. Household demand has been particularly focused on car purchases, motivated by very favourable financing terms made possible by low interest rates. Exports rose for the first time in four quarters, underpinned by the depreciation of the US dollar. Housing investment has picked up over the last two quarters, and investment in machinery and IT equipment has shown a sharp rise.

There is, however, some uncertainty associated with private consumption, which has been the main growth factor through the downturn. Consumption growth was strong in the third quarter as a whole. However, consumption fell somewhat in September, a development that continued in October. The decline was due to lower car sales. Retail trade, excluding cars, also rose somewhat in these two months, but growth slowed markedly compared with previous months. This may be because the possibility of refinancing home mortgages at steadily lower interest rates has been exhausted as we have probably reached an interest rate trough, and the effect of the tax cuts this summer may have waned. In addition, demand for cars may be approaching a «saturation point» inasmuch as many households may have purchased cars «in advance» due to favourable funding terms.

Industrial output rose for the fourth consecutive month in October, and several factors will underpin manufacturing in the period ahead. The depreciation of the dollar will boost global demand. New orders are moving up. Moreover, inventories are very low, which means that it will not take very long before production increases when demand picks up. There are signs that capacity utilization is rising, but it is still so low that there is no risk of inflationary pressures in manufacturing in the near future.

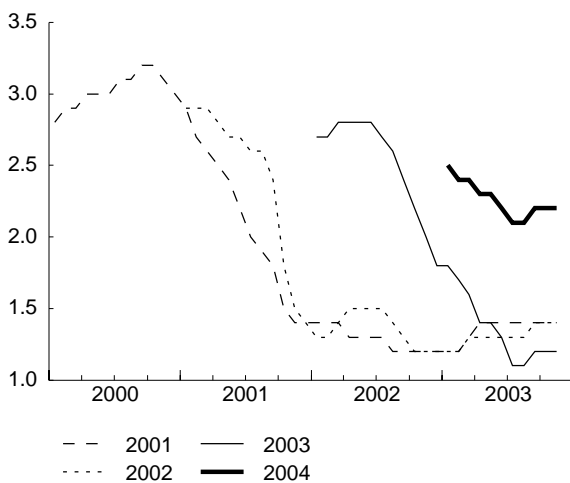
Employment has started to rise, and unemployment has fallen by 0.5 percentage point since peaking in June, standing at 5.9 per cent in October. So far, the increase in employment has taken place in service industries. Manufacturing employment is still falling, but the decline appears to be slowing. Continued strong productivity growth and the relocation of jobs to low-cost countries may, however, limit employment growth in the short term.

Domestic demand is being buoyed by an expansionary fiscal and monetary policy. The tax cuts for households and the business sector this summer contributed to vigorous economic growth in the third quarter. Military spending rose sharply in the second quarter as a result of the war in Iraq, and spending has been maintained at approximately the same level through the autumn. The budget balance has deteriorated considerably and there is limited scope for new stimulus. Some tightening of fiscal policy is not likely before 2005.

The US dollar has depreciated substantially since the beginning of 2002, by about 22 per cent on a trade-weighted basis and 35 per cent against the euro. This has provided a considerable stimulus to the business sector. Several Asian central banks, particularly the banks in China and Japan, have intervened extensively in the foreign exchange market to prevent their own currency from strengthening against the dollar in order to protect business sector competitiveness. The Japanese yen has nevertheless appreciated by 10 per cent against the dollar since mid-August. The Chinese currency, however, is pegged to the dollar at least for the time being. The dollar exchange rate against the euro is assumed to be 1.17 through the projection period. This corresponds to the level in October and November and is in accordance with estimates from Consensus Forecasts.

In isolation, the depreciation of the dollar will lead to higher inflation. As a result of excess capacity in the economy, however, the Federal Reserve does not fear inflationary pressures and will keep interest rates low

GDP growth forecasts for Norway's main trading partners for 2001 - 2004 given on different dates



Source: Consensus Forecasts.

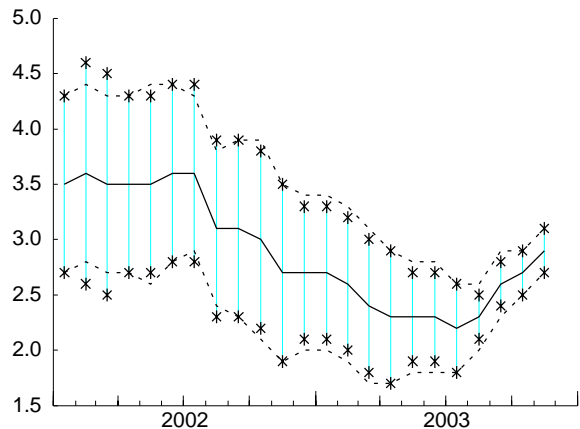
for a considerable period. The current key rate of 1 per cent is the lowest in more than 40 years. However, interest rates are expected to increase from the summer of next year.

Financial imbalances in the US economy continue to mount, with large government budget and current account deficits and the build-up of household debt. The tax cuts and high level of government spending are important factors behind the ongoing upswing, but are not sustainable in the long run. It is therefore essential that other sectors in the economy can provide some growth momentum in the period ahead. Global demand for the US dollar depends on how long the build-up of US debt can continue. Previously, foreign investment in the US business sector financed a large share of the deficit, but Asian central banks' purchases of government bonds now account for a large share of US dollar demand. If demand for US securities declines due to waning confidence in the US economy and policy, this may lead to a further depreciation of the dollar. This would contribute to improving the balance of payments, but may also undermine the fragile recovery we are observing in the euro area and Japan, which would also have repercussions for the US economy as a result of lower demand for US goods.

Growth in the US economy is being stimulated by temporary factors, such as tax cuts in the form of discount cheques and the conversion of loans at steadily lower interest rates. Growth is therefore expected to slow somewhat in the period ahead, but will not bring the economic upswing to a halt. As a result of low interest rates and a weaker dollar, the rise in investment is expected to contribute to a self-driven upturn. Based on a normal cyclical pattern, the US economy will pass a cyclical peak during the first half of 2005. Against this background, a clear slowdown is projected in 2006.

GDP growth forecasts for the US for 2003 at different points in time

Average forecast (solid line) with ± 2 standard deviation (star points) and ± 2 "normal" deviation (dashed line)



Source: Consensus Forecasts.

Euro area

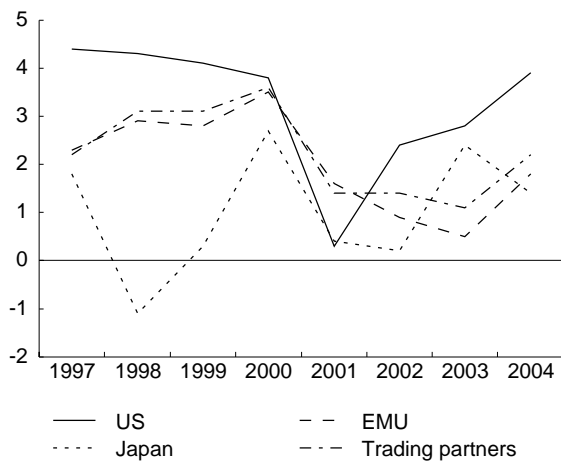
It appears that the euro area is finally expanding again after Germany, Italy and France recorded positive GDP growth in the third quarter. The three largest economies in the euro area all experienced a decline in GDP in the second quarter and in Germany's case the first quarter as well. The euro area as a whole also showed positive growth in the third quarter, at 0.4 per cent. Growth is primarily being fuelled by exports. Unemployment remains high and household consumption growth is weak.

Global economic developments represent the key to the turnaround in the euro area. Higher demand will help to sustain the positive trend for European export industries and will spread to the rest of the economy and contribute to a gradual pick-up in domestic demand. In particular, developments in the US are important, which is the main export market for the euro area. The strong euro, however, is curbing demand, but so far it appears that strong global growth is dominant.

Unemployment stood at 8.8 per cent in October for the euro area as a whole, the highest level since unemployment began to rise in autumn 2001. However, unemployment has not risen since May and appears to have stabilized. Unemployment varies considerably across member states, from Luxembourg and the Netherlands with 3.9 and 4 per cent (in September) respectively, to Germany and Spain with 10.5 and 11.2 per cent. Unemployment is expected to decline in the wake of the economic upturn that appears to be materializing.

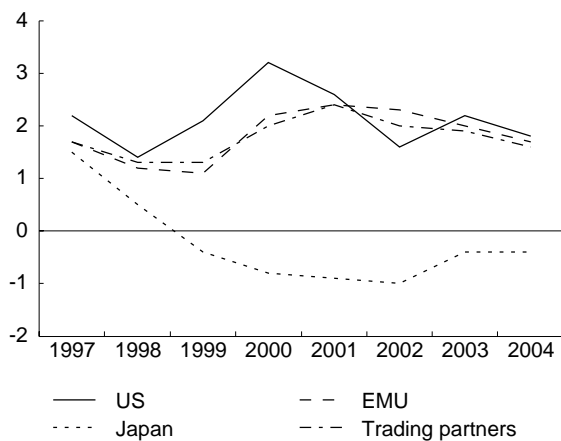
Household demand is expected to show moderate growth. Households want to see an improvement in the labour market and falling unemployment before consumption is increased. Reforms in the labour market, which will involve restructuring in the business

GDP growth for the US, Japan, the euro area and Norway's trading partners



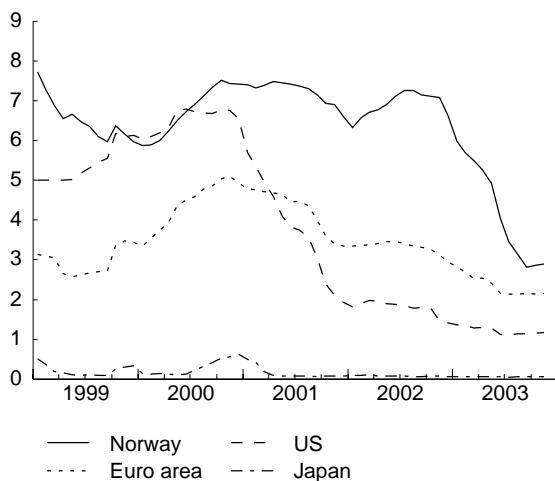
Sources: Average of projections from the NIESR in October 03, CF, the EC and the OECD in November 03.

Consumer price inflation for the US, Japan, the euro area and Norway's trading partners



Sources: Average of projections from the NIESR in October 03, CF, the EC and the OECD in November 03. NIESR estimates apply to the consumption deflator.

**International interest rates
3-month Eurorate**



Source: Norges Bank.

sector and reduced unemployment benefits, may increase uncertainty among households and limit consumption in the short term. Unlike the US, however, European consumers have tightened their belts through the downturn. Pent-up needs may therefore have arisen, which may provide an extra boost to consumption.

The Stability and Growth Pact has been under considerable pressure over the past year. In October, the German and French authorities announced that they would exceed the pact's budget deficit ceiling of 3 per cent of GDP for the third consecutive year in 2004. At a meeting on 25 November, a majority of the euro area's ministers of finance supported a suspension of the pact's sanction mechanism, which would have entailed sizeable fines for the two countries. Instead, a declaration was adopted in which Germany and France have been instructed to bring their budget deficits below the ceiling in 2005. However, this requirement may be waived if economic growth is lower than expected. The decision, which in practice means that the Stability and Growth Pact has been substantially diluted, was met with severe criticism from the EU Commission and several of the small countries. Germany and France, which combined account for about half of the euro economy, will thereby avoid a considerable tightening of fiscal policy, which might have jeopardized the fragile growth taking place in the euro area. The budget deficits, which also generate demand impulses to the rest of the euro area, have contributed to limiting the downturn.

In October, the year-on-year rise in prices was 2 per cent. This is identical to the upper limit for the European Central Bank's price stability objective. In Germany, which accounts for a third of the euro economy, inflation was a little more than 1 per cent. Several factors point to subdued inflation in the euro area in the period ahead despite the fact that economic growth appears to be moving up. The recovery is still sluggish, unemployment is high and there is excess capacity in the economy. The appreciation of the euro will also contribute to restraining inflation ahead.

The European Central Bank's key rate is now 2 per cent, unchanged since June. The Central Bank wants to see that an upturn is well under way before considering an increase in interest rates. The appreciation of the euro in itself represents a tightening of monetary policy. The recovery is at an early stage and there is a need for low interest rates for a considerable period ahead. The suspension of the Stability and Growth Pact's budget requirements may in isolation point to higher interest rates in the medium term. The key rate is expected to remain unchanged in the period to summer 2004. The three-month money market rate is projected to edge up from autumn 2004, but the increase in interest rates is expected to be moderate against the background of low inflation expectations.

Macroeconomic projections according to selected sources

Annual change in per cent

	GDP-growth						Consumer prices					
	1999	2000	2001	2002	2003	2004	1999	2000	2001	2002	2003	2004
USA												
NIESR	4.1	3.8	0.3	2.4	2.7	3.4	1.6	2.5	2.0	1.4	2.0	2.9
ConsF	4.1	3.8	0.3	2.4	2.9	4.2	2.2	3.4	2.8	1.6	2.3	1.7
EC	4.1	3.8	0.3	2.5	2.8	3.8	2.2	3.4	2.8	1.6	2.3	1.4
OECD	4.1	3.8	0.3	2.4	2.9	4.2	2.2	3.4	2.8	1.6	2.3	1.7
Japan												
NIESR	0.2	2.8	0.4	0.2	2.5	0.9	-0.7	-1.3	-1.5	-1.5	-0.9	-0.5
ConsF	0.2	2.8	0.4	0.2	2.4	1.3	-0.3	-0.7	-0.7	-0.9	-0.3	-0.4
EC	0.2	2.8	0.4	0.2	2.6	1.7	-0.3	-0.7	-0.7	-0.9	-0.3	-0.4
OECD	0.2	2.8	0.4	0.2	2.7	1.8	-0.3	-0.7	-0.7	-0.9	-0.2	-0.2
EMU												
NIESR	2.8	3.5	1.6	0.8	0.4	1.8	1.2	2.2	2.4	2.3	1.9	1.6
ConsF	2.8	3.5	1.6	0.9	0.5	1.7	1.1	2.2	2.4	2.3	2.0	1.6
EC	2.8	3.5	1.6	0.9	0.4	1.8	1.1	2.2	2.4	2.3	2.1	2.0
OECD	2.8	3.5	1.6	0.9	0.5	1.8	1.1	2.2	2.4	2.3	2.0	1.5
Trading partners												
NIESR	3.0	3.5	1.4	1.4	1.1	2.1	1.2	1.8	2.3	1.9	1.7	1.6
ConsF	3.1	3.5	1.4	1.4	1.2	2.2	1.3	2.2	2.5	2.0	2.0	1.7
EC	3.1	3.5	1.4	1.4	1.1	2.2	1.3	2.2	2.5	1.9	1.9	1.6
OECD	3.1	3.5	1.4	1.4	1.1	2.3	1.3	2.2	2.5	2.1	2.0	1.5

Sources: EC from October, OECD from November, NIESR from October and Consensus Forecasts from November 2003. All the inflation projections from the NIESR apply to the consumption deflator.

Interest rates are projected to fall again from the second quarter of 2006, in line with the expected slowdown in the euro area through 2006.

The upswing in the US and some Asian countries is the most important driving force behind the moderate turnaround in the euro area. The strong euro, however, is curbing growth. High unemployment is contributing to sluggish growth in household demand, and new fiscal stimulus may be limited even though the Stability and Growth Pact has been put on hold. However, confidence indicators show increased optimism in the business sector. Investment in production equipment has been low since 2001, and expectations of stronger growth may lead to higher investment. Moreover, unemployment is expected to edge down and higher household demand will contribute to underpinning growth ahead. Growth is projected to be higher in 2004 and 2005, but the upswing will be moderate. The projected slowdown in the US economy from the first half of 2005 will spread to the euro area where growth is expected to slow from the beginning of 2006.

Asia

The Japanese economy has improved to a greater extent through 2003 than assumed earlier. GDP expanded by 0.6 per cent in the third quarter, primarily fuelled by investment and exports. Growth in household consumption was moderate, but public sector demand fell by 4.1 per cent annualized. Even though GDP growth was somewhat weaker than in the sec-

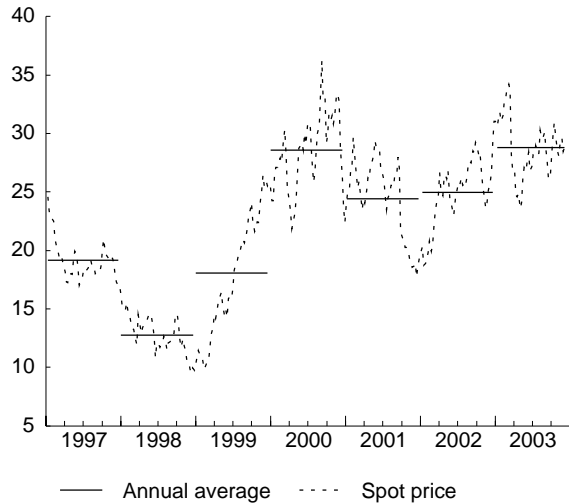
ond quarter, the Japanese economy still grew at a faster pace than trend growth.

Export growth remains buoyant despite the considerable appreciation of the yen against the dollar. This is primarily due to higher demand from other Asian countries, particularly China. Exports to China area show rapid growth and China is in the process of taking over the role of the US as the most important source of export growth if we disregard cars. As the Chinese economy is modernized, the growth potential for demand for Japanese technological products will be enormous.

Industrial output moved on a sluggish trend through the summer, but has picked up somewhat through the autumn. Higher global demand provides some hope that industrial output will pick up further in the period ahead. Investment has risen sharply this year, but the Japanese business sector is reporting plans to reduce investment. Moreover, capacity utilization is not particularly high, and uncertainty surrounding developments in the medium term means that investment growth is expected to slow in the period ahead. Earnings in the business sector are already showing signs of decline. Economic growth is therefore expected to be lower in 2004 and 2005 than this year.

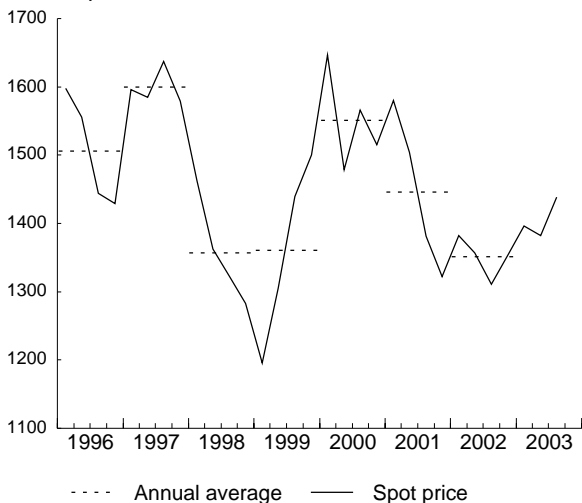
The greatest threat to developments in Japan is the yen. A sharp appreciation will undermine competitiveness and push down prices further. The yen has appreciated by 10 per cent against the US dollar since Au-

Spot price crude oil, Brent Blend
Dollar per barrel



Source: Norges Bank.

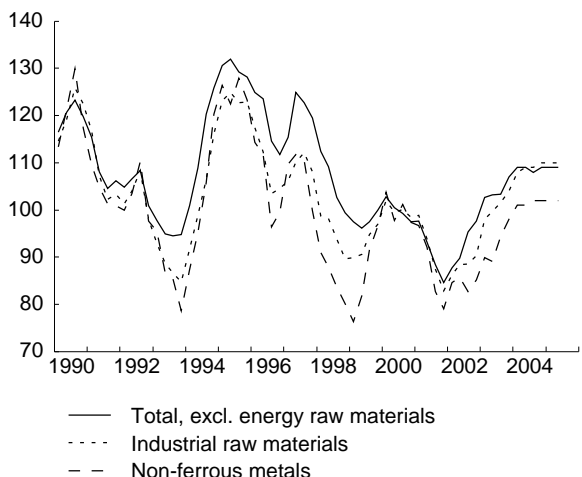
Spot price aluminium. 1996 - 2003
Dollar per 100 lbs.



Source: IMF.

Commodity prices on the world market
1990 - 2005

Dollar based indices. 2000 = 100



Sources: HWWA-Institut für Wirtschaftsforschung and AIECE.

gust and 19 per cent since the «peak» at the beginning of 2002 despite repeated interventions of the Japanese central bank in the foreign exchange market. The Japanese authorities are also facing considerable political pressures from the US to refrain from further interventions.

China appears to be recording continued sharp growth. Growth picked up again in the third quarter, fuelled by exports, household demand and investment, following a somewhat weaker second quarter as a result of the SARS epidemic. GDP expanded by 9.1 per cent at an annual rate in the third quarter, against 9.9 and 6.7 per cent respectively in the first two quarters.

Inexpensive Chinese export goods are contributing to low inflation throughout the western world. The fact that the currency is pegged to the US dollar, which has depreciated considerably against most other currencies, has amplified this. Exports grew by about 30 per cent from October 2002 to October 2003. Growth is being underpinned by a nascent recovery in neighbouring countries and higher demand from the US. Chinese exports are no longer confined to clothing, footwear and toys. Information technology, such as computers and communication equipment, is the fastest growing segment, rising by around 45 per cent in October compared with the same month a year earlier. Textile exports rose by 20 per cent in the same period.

Turnover in retail trade rebounded in the third quarter following a somewhat weaker second quarter. Household demand for cars has risen sharply, and considerable investments are being made in the car industry despite substantial excess capacity on a global basis. The building boom in towns is resulting in strong demand growth for the steel and cement industry. Manufacturing industry as a whole has shown relatively stable growth through 2003, about 16 per cent at an annual rate, with the exception of a small decline in the second quarter.

There are several factors that may threaten strong growth. Chinese banks have a large volume of bad loans, which may jeopardize stability in financial markets. China has a large trade deficit with the US, and China's fixed exchange rate policy against the US dollar has provoked the US authorities for some time. The US has now decided to introduce quota restrictions for some textile goods. If the US were to introduce tariffs on a number of Chinese goods, this would have consequences for the Chinese economy. However, this is not considered to be very probable. Moreover, there is concern that the rate of investment, particularly in the car, cement and steel industries, may create excess capacity in manufacturing.

Developments in the oil market

The spot price of Brent Blend rose from about USD 24 per barrel at the end of April to about USD 31 in mid-October. The oil price has fallen somewhat since then and was USD 28-29 at the beginning of December. For the first 11 months of the year, the price has averaged USD 28.50 per barrel, against about USD 25 last year.

The most important reason for the high level of oil prices in recent months was the low level of stocks of both crude oil and finished products, particularly in the US. Many analysts pointed to the low stocks of petrol during the driving season in the US, and later there was concern surrounding the build-up of stocks of heating oil prior to the winter season. Some analysts also indicate that there is a risk premium as a result of the terrorist attacks in Saudi Arabia, Iraq and Turkey this autumn, which may have contributed to some concern about future supply security.

Iraq has managed to increase production to just below the level prevailing before the toppling of the former regime. Exports are now about 0.6 million b/d less than earlier. OPEC decided to reduce production by 0.9 million b/d as from November, but the cartel is still producing about 1 million b/d more than the stipulated quotas. Even though Iraq is not covered by OPEC's quota system, it appears that member countries take Iraq's production into account when discussing quota discipline. Moreover, the price of a basket of OPEC oil grades is now around the upper limit of the cartel's desired interval of between USD 22-28 per barrel, which corresponds to about USD 23-29 per barrel for Brent Blend.

The International Energy Agency (IEA) expects demand for oil to increase by 1 million b/d from 2003 to 2004. The increase is primarily expected to occur in North America, Asia and the Middle East. At the same time, the IEA expects production in non-OPEC countries to increase by 1.4 million b/d, particularly in the former Soviet Union and Africa. This means that the residual demand for OPEC oil will be somewhat lower next year, with the cartel losing market shares to other producers.

According to the IEA, stocks of crude oil and finished products in the OECD area are now rising. So far, winter has been fairly mild in the western hemisphere, and it appears that stocks of heating oil are being restored to acceptable levels before demand rises. If OPEC manages to reduce overproduction to about 75 per cent of the announced cuts, and if Iraq maintains production at the current level, stocks of crude oil could nevertheless rise somewhat in the fourth quarter of 2003 and first quarter of next year as a whole. This is a period when stocks are normally reduced by between 0.5 and 1 million b/d. Later in 2004, it

would appear that OPEC must undertake new production cuts to prevent the oil price from falling below the lower range of the cartel's price interval. Continued confidence in OPEC's ability to act is resulting in expectations of an average oil price in the middle range of the interval in the period ahead. The oil price is therefore projected to fall to around USD 26 per barrel during the first half of 2004 and thereafter remain unchanged at this level through the projection period.

Norwegian economy

The Norwegian economy bottomed out in the first half of 2003. According to the quarterly national accounts (QNR), mainland GDP growth was 0.5 per cent in the second quarter and 0.8 per cent in the third quarter, i.e. markedly higher than projected trend growth. The rise in unemployment came to a halt in the second quarter of the year. If this means that unemployment has peaked and is falling, the turnaround in the labour market will occur at an earlier stage than previously projected. The pronounced cyclical upswing is expected to continue through 2004, followed by a gradual moderation in growth through

2005 and 2006. Unemployment will nevertheless only fall somewhat over the next two years partly because productivity growth is expected to be high and because higher employment and lower unemployment will lead to an increase in the supply of labour.

The main driving forces behind the turnaround in the Norwegian economy have been strong growth in petroleum investment over the past year and the sharp reduction in interest rates through 2003. The decline in interest rates led to a marked upswing in private consumption through the summer and autumn, and the weaken-

Macroeconomic indicators 2001-2003

Growth from previous period unless otherwise noted. Per cent

	2001	2002	Seasonally adjusted			
			02.4	03.1	03.2	03.3
Demand and output						
Consumption in households and non-profit organizations	2.6	3.6	1.3	0.0	1.2	1.0
General government consumption	2.7	3.2	-0.3	0.6	1.1	0.1
Gross fixed investment	-4.2	-3.6	7.7	-2.1	-3.4	0.3
- Mainland Norway	0.7	-4.6	2.5	-3.9	-0.3	-1.0
- Extraction and transport via pipelines	-1.0	-4.6	6.0	6.5	6.0	4.3
- Service activities incidental to extraction	..	..	..	..	..	..
Final domestic demand from Mainland Norway ¹	2.3	2.1	1.1	-0.5	0.9	0.4
Exports	4.1	-0.5	-1.5	-1.3	2.1	-1.2
- Crude oil and natural gas	5.2	0.2	-1.0	-1.7	0.9	-1.9
- Traditional goods	3.7	1.3	-4.3	0.0	4.3	0.6
Imports	0.9	1.7	2.1	1.6	-1.2	-1.5
- Traditional goods	2.9	4.7	2.9	-0.3	1.3	-0.2
Gross domestic product	1.9	1.0	-0.4	-0.1	-0.2	0.8
- Mainland Norway	1.7	1.3	-0.6	-0.1	0.5	0.8
Labour market²						
Man-hours worked	-1.0	-0.9	-0.4	-0.4	-0.3	-0.1
Employed persons	0.5	0.2	-0.2	-0.3	-0.5	0.4
Labour force ³	0.6	0.6	0.2	-0.3	0.0	0.4
Unemployment rate, level ⁴	3.6	3.9	4.2	4.1	4.6	4.6
Prices						
Consumer price index (CPI) ⁵	3.0	1.3	2.2	4.5	2.2	1.9
CPI adjusted for tax changes and excluding energy products (CPI-ATE) ⁵	2.6	2.3	2.0	1.8	1.2	0.8
Export prices, traditional goods	-2.9	-8.7	1.1	0.6	-0.4	-0.1
Import prices, traditional goods	-0.2	-8.0	-0.6	1.2	-0.5	1.5
Balance of payment						
Current balance, bill. NOK	238.5	200.6	47.2	55.5	43.9	51.0
Memorandum items (Unadjusted, level)						
Money market rate (3 month NIBOR)	7.2	6.9	7.0	5.7	4.7	3.1
Lending rate, banks	8.8	8.4	8.7	7.7	6.9	5.2
Crude oil price NOK ⁶	219.5	197.5	196.0	221.9	183.0	209.0
Importweighted krone exchange rate, 44 countries, 1995=100	100.2	91.6	87.7	88.7	91.9	95.7
NOK per euro	8.05	7.51	7.3	7.6	8.0	8.3

¹ Consumption in households and non-profit organizations + general government consumption + gross fixed capital formation in Mainland Norway.

² 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.

³ Unemployed (Labour Force Survey) and employment (NA) exclusive of sailors in foreign shipping.

⁴ According to Statistics Norway's labour force survey (LFS).

⁵ Percentage change from the same period the previous year.

⁶ Average spot price, Brent Blend.

Sources: Statistics Norway and Norges Bank.

ing of the krone in the wake of the interest rate reductions has partly reversed the contractionary effects of the strong krone in 2002. Both impulses will persist in the period ahead, with particularly strong growth in private consumption. Moreover, the international cyclical upturn that appears to have taken hold will generate clear growth impulses over the next two years.

In spite of clear growth in the economy, price inflation is projected to be low in Norway and other industrial countries in the years ahead. A higher share of service and goods imports from low-cost countries is a contributory factor. It may appear difficult to attain the inflation target of 2.5 per cent in the course of the next three years, unless the key interest rate is set at such a low level that krone depreciates markedly. A very low interest rate during a consumption-led upswing may, on the other hand, lead to imbalances in the economy that will be difficult to redress in the somewhat longer term. Our projections are based on the assumption that the key rate is not reduced further and that inflation remains slightly below the inflation target throughout the projection period.

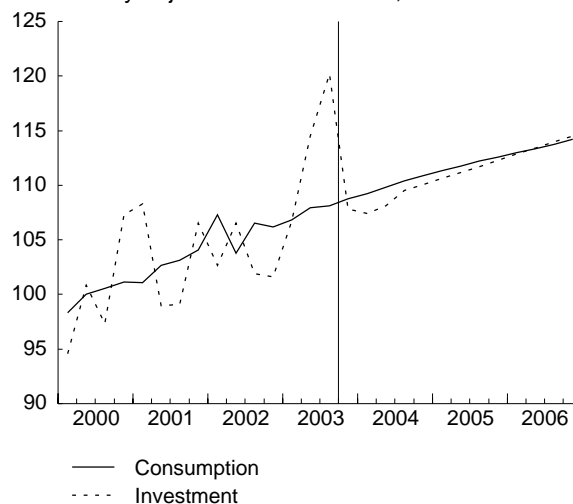
Fiscal policy – moderate impulses

Preliminary QNR figures show somewhat higher growth in public spending on goods and services through 2003 than previously assumed and somewhat higher than projected in the National Budget for 2004. Investment activity in particular is expanding at a faster pace than previously projected. General government consumption is now estimated to grow by 1.9 per cent in 2003 and investment by close to 7 per cent.

For 2004, our projections are based on the estimates in the National Budget for 2004, which have been adjusted in line with the budget agreement between the Government and the Labour Party. These estimates imply lower growth in general government consumption of goods and services in 2004 than in 2003. For the subsequent years, we have assumed low growth in general government consumption from a historical perspective, while private sector consumption of goods and services increases primarily as a result of assumed structural changes in the public sector. As a result of differences in the occurrence of public holidays, the number of working days will increase by 3 in 2004 compared with 2003, but decrease by 1 and 2 respectively in the following years. This will push up public sector output and consumption in 2004, and push it down in 2005 and 2006.

We assume that real tax rates will remain unchanged at the 2003-level in 2004 and 2005. This means that volume rates are adjusted for inflation and that income tax rates are adjusted in line with projected wage growth. Tax and pension schemes are assumed to remain unchanged. In the September *Economic Survey*, we assumed that the fiscal rule provided room for some tax relief in 2005. The estimations in the

General government
Seasonally adjusted volume indices, 2000=100



Source: Statistics Norway.

National Budget for 2004 indicate that this is not as likely at present. It is obviously possible to reduce taxes in 2005 while adhering to the fiscal rule, but this would not leave any room for higher government expenditure on consumption and investment as social security expenditure increases more than other expenditure in real terms.

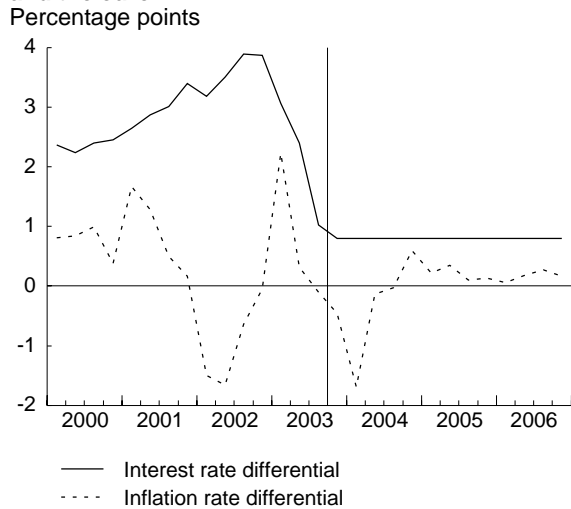
Continued low interest rates

After Norges Bank cut its key interest rate by a total of 4.5 percentage points from December 2002 to September 2003, it now appears that the period of interest rate cuts is behind us. The most recent interest rate cut was on 17 September, and the key rate now stands at 2.5 per cent. The three-month money market rate was 2.8 per cent at the beginning of December.

Inflation fell sharply through 2003, and the underlying rise in prices has hovered below 1 per cent since June. The depreciation of the krone since the beginning of the year will, in isolation, push up inflation in the period ahead. The prospect of low wage growth in the years ahead as a result of higher unemployment and low imported price inflation through imports from low-cost countries such as China will have the opposite effect. We do not expect Norges Bank to increase its key rate before price inflation has shown a marked rise from the current level.

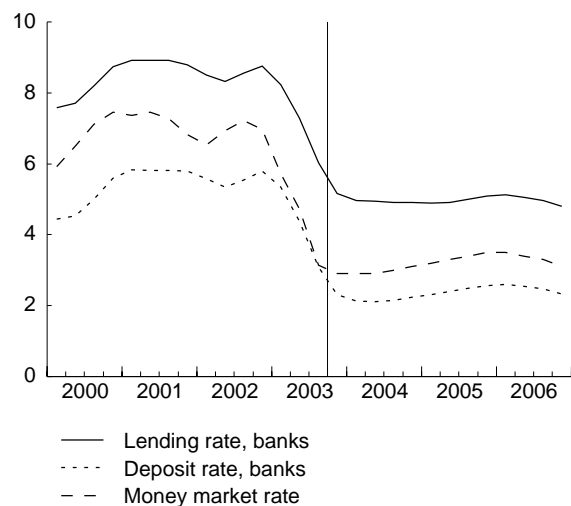
The import-weighted krone exchange rate index depreciated by around 12 per cent through the first half of this year, partly reflecting the considerable narrowing of the interest rate differential against other countries. Since its weakest level in August, the krone has appreciated by around 4 per cent, however. A large share of the appreciation has taken place since the beginning of November. The krone has shown a particularly marked appreciation against the US dollar, by about 13 per cent since August, but has also strengthened somewhat against the euro recently. At the be-

Interest rate and inflation differential between NOK, and the euro



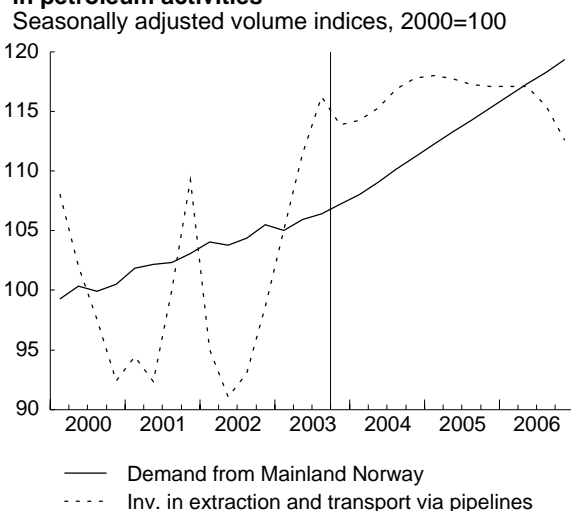
Sources: Norges Bank and Statistics Norway.

Lending rate and deposit rate



Source: Norges Bank.

Demand from Mainland Norway and investment in petroleum activities



Source: Statistics Norway.

ginning of December, the krone stood at about 6.70 against the dollar and at about 8.10 against euro. We assume that the krone will weaken to EUR 8.20 and USD 6.90 next year, and remain virtually unchanged at this level to the end of the projection period. The import-weighted krone index is thus expected to weaken by about 3 per cent from today's level. This corresponds to a weakening to approximately the level prevailing in the third quarter. This is in line with forecasts from Consensus Forecasts.

Developments in the krone are important for the interest rate level ahead. A continued appreciation of the krone will adversely affect manufacturing and result in lower imported price inflation. This may lead to higher unemployment and make it more difficult to achieve the inflation target, and may imply that interest rates will increase at a later stage than expected. A sharp appreciation of the krone may lead to a further interest rate cut. However, the improvement in the labour market, growth in household consumption, rising house prices and prospects of a global upturn would suggest the opposite.

We assume that three-month money market rates remain virtually unchanged at the current level in the period to autumn 2004, followed by a gradual rise from the third quarter, to 3.5 per cent in the fourth quarter of 2005. A comparable increase in interest rates is assumed for the euro area, based on the assumption of a pick-up in euro-area growth next year. In 2006, Norwegian money market rates are assumed to edge down in pace with money market rates in the euro area. This path implies an interest rate differential of around 0.8 percentage point through the projection period, and implies a smaller interest rate increase in both Norway and the euro area than assumed in our previous economic report published on 12 September.

Petroleum investment remains high in 2006 – more surprises in store?

According to preliminary national accounts figures, gross investment in extraction and pipeline transport contracted by close to 5 per cent between 2001 and 2002 (at constant prices). Seasonally adjusted QNR figures show that the decline in investment occurred in the first half of 2002. Investment has subsequently shown a steady rise. Both in the first and second quarter of this year, investment expanded by about 6 per cent compared with the previous quarter. In the third quarter, investment increased by a good 4 per cent. For 2003, the level of investment is projected to be about 18 per cent higher than in 2002. Investment is expected to increase further by about 5 per cent, annualised, in 2004. This is somewhat lower than projected in the September *Economic Survey*, and partly reflects some upward revision of this year's investment level and delays in the development of the Ormen Lange field. The delays, combined with a higher overall investment

estimate for the development of this field, have pushed up the investment estimates for 2005 and 2006. The investment level for these years is assumed to be approximately in line with the level for 2004. The upward revisions are primarily for investments in onshore installations that have a substantial impact on the Norwegian economy, and investments in pipelines with a high import share, which are thus less important for the mainland economy.

Traditionally, the projections for petroleum investment one year ahead are uncertain – not to mention projections for two to three years ahead. It now seems fairly certain that the Barents Sea will eventually be open for both exploration and production. In the first round, this may contribute to a further increase in exploration activity, but it may also entail and increase in field development. For example, the Goliath field may boost investment as early as in 2006. However, this has not been incorporated into our projections.

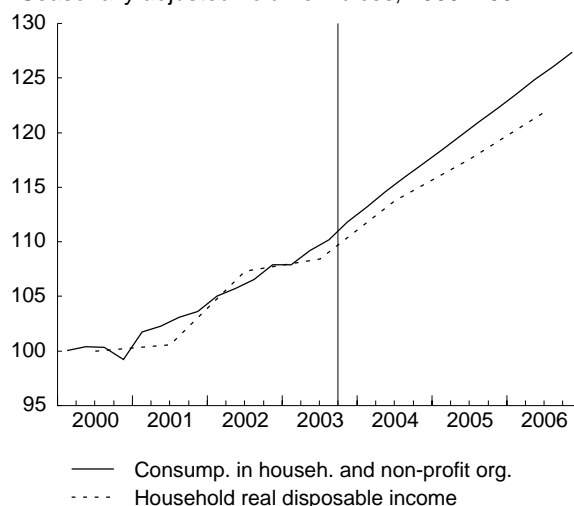
In 2002, oil prices averaged USD 25 per barrel, or about NOK 200. So far this year, oil prices have been above this level and the average oil price for 2003 is estimated at close to USD 29. Given the exchange rate assumption, this implies that the oil price in NOK will be slightly higher than in 2002. Oil prices are assumed to decline slightly in the first half of 2004, and then remain at USD 26 from the third quarter of 2004. The average price in NOK will fall to NOK 185 in 2004, and remain slightly higher than NOK 180 in both 2005 and 2006.

Preliminary, seasonally adjusted QNR figures show that the production of crude oil and natural gas remained virtually unchanged from the fourth quarter of 2002 to the first quarter of 2003. In the second quarter, production sank somewhat, followed by a slight rise in the third quarter. Production is assumed to decline by close to 1 per cent in 2003, primarily reflecting production disruptions as a result of maintenance at several fields in the second quarter. Whereas gas production has increased markedly, oil production has declined. This tendency is expected to continue. In 2004, a moderate volume increase of 0.5 per cent is expected, despite somewhat lower oil production. In 2005 and 2006, the level of production is assumed to show a small reduction. These projections are broadly in line with the estimates in the National Budget for 2004.

Strong income and consumption growth in 2004

Seasonally adjusted QNR figures show 1.0 per cent growth in consumption for households and non-profit institutions at constant prices between the second and third quarter. In the second quarter, growth moved up to 1.2 per cent from zero growth in the preceding quarter. The pick-up in consumption growth through 2003 must be seen against the background of high

Income and consumption in households
Seasonally adjusted volume indices, 2000=100



Source: Statistics Norway.

income growth in 2002, the interest rate cuts in the beginning of 2003 and the fall in electricity prices through the spring. In line with developments from the end of last year, goods consumption showed the strongest growth between the second and third quarter (1.1 per cent), while growth in services consumption was more moderate (0.5 per cent). The rise in prices for consumer goods has been slightly negative over the past twelve months (-0.1 per cent), and explains why goods consumptions at constant prices has shown relatively strong growth in the period.

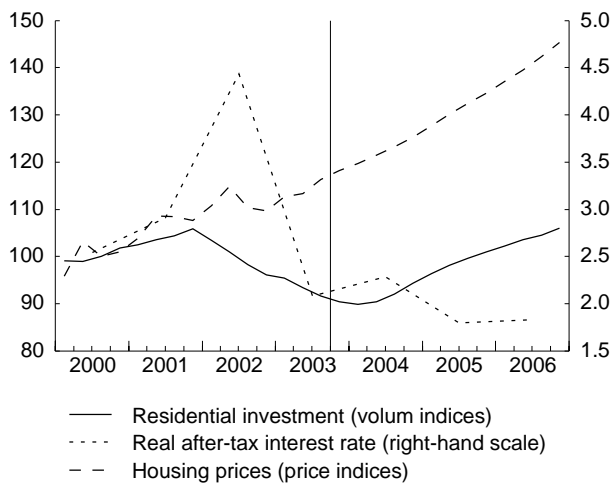
Growth in real disposable income is projected at only 1.0 per cent in 2003. An important explanation for this is higher consumer price inflation. Weak growth in wage income as a result of relatively low wage growth and a fall in employment, combined with low growth in income from self-employment is another factor, in addition to the expected reduction in dividend payments and lower net interest income.

Real disposable income is projected at 4.9 per cent in 2004, 3.4 per cent in 2005 and 3.6 per cent in 2006. Price inflation is expected to be considerably lower in 2004 than in 2003, and will therefore contribute to relatively high real income growth in 2004. In 2005 and 2006, price inflation is expected to be somewhat higher than in 2004. Growth in wage income and net capital income is important for developments in real disposable income in 2004, 2005 and 2006. Higher employment will boost growth in household wage income. Net capital income will push up growth in household disposable income next year as a result of a decline in the average lending rate from this year's level. Towards the end of the projection period, a moderate decline in interest rates is assumed, and net interest income will then push up income growth somewhat.

Growth in consumption for households and non-profit institutions is projected at 3.2 per cent in 2003, mea-

Residential investment and housing prices

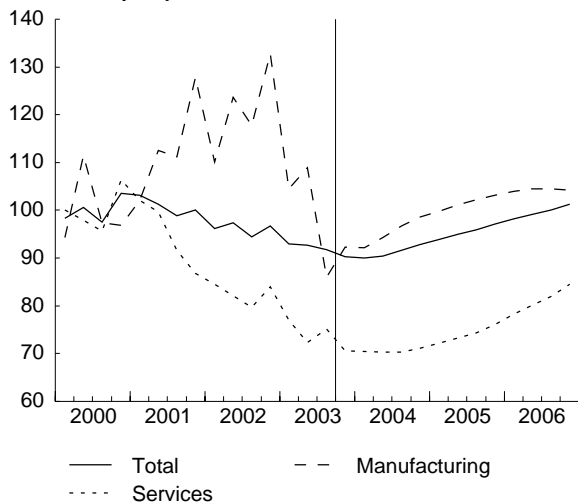
Seasonally adjusted indices, 2000=100



Source: Statistics Norway.

Investment, Mainland Norway

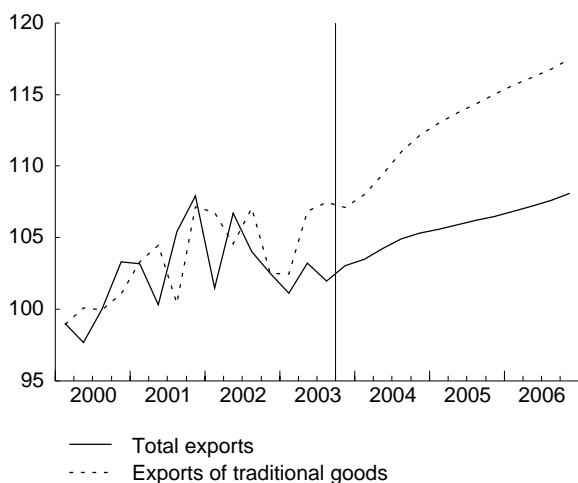
Seasonally adjusted volume indices, 2000=100



Source: Statistics Norway.

Exports

Seasonally adjusted volume indices, 2000=100



Source: Statistics Norway.

sured at constant prices. Consumption growth is expected to continue to accelerate in 2004. Growth is projected to be as much as 5.1 per cent in 2004. Income growth is expected to slow down somewhat in 2005 and 2006 and is projected at 4.4 per cent in 2005 and 4.3 per cent in 2006. Consumption is influenced by developments in disposable income, but also by interest rate developments. Lower interest rates reduce the incentive to save. Both nominal and real interest rates are important. Our analyses indicate that lower nominal interest rates translate into higher consumption fairly rapidly. Real interest rates have a more lagged effect, but have the same impact. Our projections for income and consumption growth imply a fall in the saving ratio from 5.0 in 2003 to 3.7 in 2006, reflecting a gradual adaptation to lower real interest rates.

House prices have not yet bottomed out

The marked interest rate cuts at the beginning of 2003 were expected to boost housing investment towards the end of the year. This is not yet reflected in the statistics. Seasonally adjusted QNR figures show a 1.9 per cent decline in housing investment at constant prices between the second and third quarter. The estimates for housing investment are based on the number of square metres of housing starts obtained from housing start statistics. The statistics show a continued fall, particularly in the number of square metres, and housing investment is therefore unlikely to pick up before 2004.

House prices are influenced by nominal interest rates in the short term, and lower interest rates are expected to push up house prices ahead. Household income developments will have the same effect. House prices are projected to show an annual average rise of 3.7 per cent this year, and 6-7 per cent in the three subsequent years.

As mentioned, housing investment will be lower in 2003 than in 2002. Our projection shows a decline of 7.3 per cent. Higher house price inflation, lower nominal interest rates and relatively strong income growth in 2004 imply a reversal of the trend in housing investment in 2004, however. While housing investment is projected to show an annual decline of 1.4 per cent in 2004, housing investment is expected to expand by 8.6 per cent in 2005 and 5.5 per cent in 2006. Real interest rate developments also influence housing investment. The low real interest rate level underlying our projection for 2003 to 2006 imply an increase in both house prices and housing investment.

Fall in mainland business investment comes to a halt

Mainland gross business investment has contracted for almost three consecutive years, primarily reflecting the decline in investment in service sectors. However, in the third quarter investment in these sectors appears to have edged up. Manufacturing investment, which expanded at a brisk pace in 2001 and 2002, has

Main economic indicators 2001-2005. Accounts and forecasts

Percentage change from previous year unless otherwise noted

	Accounts 2002	Forecasts								
		2003			2004			2005		2006
		SN	MoF	NB	SN	MoF	NB	SN	NB	SN
Demand and output										
Consumption in households and non-profit organizations	3.6	3.2	3.0	3 1/4	5.1	3.8	5	4.4	3 1/2	4.3
General government consumption	3.2	1.9	0.7	1	2.1	2.0	2	1.7	1 1/2	1.4
Gross fixed investment	-3.6	-1.2	2.0	..	1.8	2.9	..	3.2	..	3.1
Extraction and transport via pipelines ¹	-4.6	17.7	22.3	15	4.4	11.5	15	1.0	-5	-0.3
Mainland Norway	-4.6	-5.1	-2.5	-5	0.3	0.9	1	4.8	4 1/2	4.5
Firms	-6.4	-8.8	-4.3	..	0.3	0.2	..	4.3	..	5.1
Housing	-4.2	-7.3	-2.1	..	-1.4	1.6	..	8.6	..	5.5
General government	0.0	6.8	1.3	..	2.0	1.5	..	2.0	..	2.0
Demand from Mainland Norway ²	2.1	1.5	1.6	1 1/4	3.6	3.1	3 3/4	3.7	3 1/4	3.6
Stockbuilding ³	0.4	-0.5	..	..	0.0	..	..	0.0	..	0.0
Exports	-0.5	-1.1	0.0	..	2.2	1.7	..	1.4	..	1.2
Crude oil and natural gas	0.2	-1.4	-0.7	..	0.7	0.5	..	-0.7	..	-0.4
Traditional goods	1.3	0.7	0.4	1	4.9	3.3	2	3.4	3 1/4	2.1
Imports	1.7	1.9	2.4	2	4.2	3.6	5 1/4	4.3	2 1/2	4.4
Traditional goods	4.7	2.9	3.5	..	3.9	4.2	..	4.6	..	4.7
Gross domestic product	1.0	0.0	0.6	..	2.8	2.3	..	2.2	..	2.0
Mainland Norway	1.3	0.6	0.5	3/4	3.6	2.6	3	2.9	2 3/4	2.6
Labour market										
Employed persons	0.2	-0.8	-0.9	-1	0.2	0.0	1/4	0.7	1	0.9
Unemployment rate (level)	3.9	4.5	4.5	4 1/2	4.4	4.7	4 3/4	4.2	4 1/2	3.9
Prices and wages										
Wages per standard man-year	5.4	4.2	4 1/2	4 1/2	4.2	4	4 1/4	4.1	4 3/4	4.1
Consumer price index (CPI)	1.3	2.6	2 1/2	2 1/2	1.3	1 1/4	1 1/4	1.8	2	1.8
CPI adjusted for tax changes and excluding energy products (CPI-ATE)	2.3	1.1	1 1/4	1 1/4	1.5	1 3/4	2	2.1	2 1/4	2.1
Export prices, traditional goods	-8.7	-0.6	-0.8	..	6.1	-0.4	..	1.8	..	-1.5
Import prices, traditional goods	-8.0	0.9	0.1	..	4.4	1.7	..	0.3	..	-0.3
Housing prices ⁴	4.0	3.7	..	..	6.3	..	..	7.3	..	7.3
Balance of payment										
Current balance (bill. NOK)	200.6	197.2	202.3	..	172.4	162.9	..	163.5	..	155.5
Current balance (per cent of GDP)	13.2	12.7	..	..	10.8	..	..	9.9	..	9.0
Memorandum items:										
Household savings ratio (level)	7.2	5.0	5.4	..	5.1	5.1	..	4.2	..	3.7
Money market rate (level) ⁵	6.9	4.1	4.1	4 1/4	3.0	3.2	3	3.4	4	3.3
Lending rate, banks (level) ⁶	8.4	6.7	..	..	4.9	..	..	5.0	..	5.0
Crude oil price NOK (level) ⁷	197	204	200	..	186	170	..	180	..	183
Export markets indicator	0.2	4.0	..	..	6.9	..	..	5.2	..	3.4
	-8.5	1.3	..	1 1/2	2.8	..	3	-0.1	1/2	0.4

¹ Forecasts from MoF includes service activities incidental to extraction.² Consumption in households and non-profit organizations + general government consumption + gross fixed capital formation in Mainland Norway.³ Change in stockbuilding. Per cent of GDP.⁴ Freeholder.⁵ NB use their sight deposit rates.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 (2003-2004), (MoF), Norges Bank, forecasts based on forward interest and exchange rates, Inflasjonsrapport 3/2003 (NB).

fallen sharply so far this year partly due to the phasing out of a few large investment projects, particularly in the metal industry.

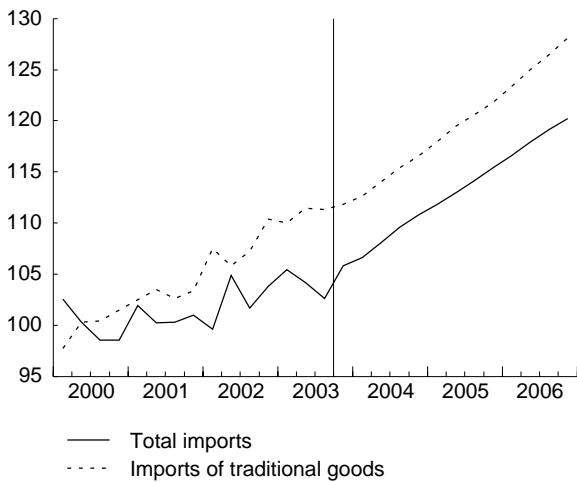
As the turnaround in the Norwegian economy gains a firm footing and interest rates remain low, mainland business investment should pick up. According to our calculations, manufacturing investment will rapidly shift to moderate growth, while investment in private service industries are expected to start to pick up at a somewhat later stage next year. Considerable spare capacity in the

commercial building sector will, however, have a dampening impact on investment in these industries. All in all, mainland business investment is projected to fall by close to 9 per cent in 2003, but to show slightly positive growth in 2004, followed by an annual growth rate of around 4-5 per cent in 2005 and 2006.

Exports on the rise – but trade balance continues to weaken

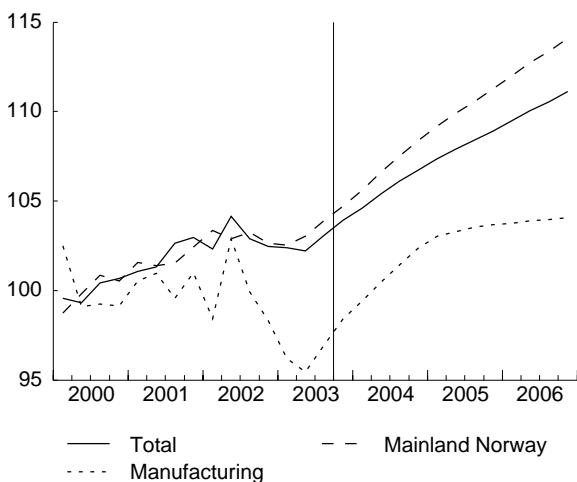
Measured in terms of the trade-weighted index, the Norwegian krone has depreciated markedly in 2003

Imports
Seasonally adjusted volume indices, 2000=100



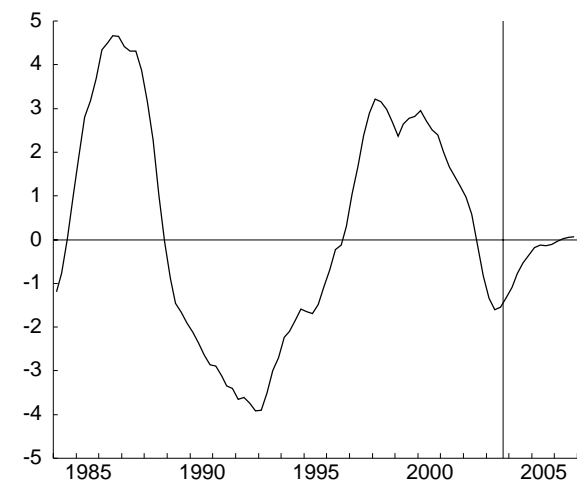
Source: Statistics Norway.

Gross domestic product
Seasonally adjusted volume indices, 2000=100



Source: Statistics Norway.

Output gap
Per cent



Source: Statistics Norway.

compared with 2002. The depreciation was particularly pronounced in the first six months. In the third quarter, the manufacturing industry's effective krone exchange rate had reverted to the same level prevailing in the third quarter of 2001. The krone depreciated against the euro in particular. The krone has appreciated somewhat against the US dollar compared with 2002. This means that the krone has appreciated against Asian currencies as these currencies are broadly stable against the US dollar. Traditional merchandise imports from Asia have increased by 10.6 per cent, and exports to Asia fell by 6.7 per cent compared with the same period last year.

Over time, a depreciation of a country's currency tends to boost the volume of exports, while the volume of imports falls. This has a favourable impact on the trade balance. In the short term, however, a weaker krone may have the opposite effect, the so-called J-curve effect. In the short run, a weaker krone will not influence the volume of imports/exports to any significant extent. However, the price of imports measured in NOK will increase, while the price of exports in NOK will remain stable. The result is that the value of overall imports increases, while the value of overall exports remains unchanged. The trade balance for traditional goods (exports of traditional goods less imports of traditional goods) was 18 per cent weaker for the first three quarters of 2003 compared with the same period in 2002. At current prices, traditional goods imports expanded by 5.9 per cent in the third quarter compared with the same period one year earlier. At constant prices, traditional goods imports grew by 3.7 per cent. Seasonally adjusted, import prices for traditional goods increased by 1.5 per cent between the second and third quarter, while the volume of imports fell by 0.2 per cent.

Compared with the same period in 2002, there is still marked growth in the volume of imports of many consumer goods such as textiles, clothing and footwear (up 4.0 per cent) and food and beverages (up 8.5 per cent). Imports of these goods now seem to be moderating, however. Seasonally adjusted imports of textiles, clothing and footwear fell from the second to the third quarter.

Import growth is expected to hold up in the period ahead. At constant prices, our projections imply 3.9 per cent growth in traditional goods imports in 2004 and 4.6 per cent in 2005. With strong growth in consumption in this period, import growth is expected to be relatively low, however.

At current prices, total exports expanded by 1.9 per cent between the third quarter of 2002 and the third quarter of 2003. At constant prices, exports contracted by 2.2 per cent in the same period, primarily reflecting a fall in exports of petroleum-related products. At current prices, exports of traditional goods grew by 1.9

per cent between the third quarter of 2002 and the third quarter of this year. At constant prices, exports of these goods increased by 0.4 per cent. The trend seems to be positive. Between the second and third quarter, the volume of traditional goods exports rose by a seasonally adjusted 0.6 per cent.

Between the third quarter of 2002 to the third quarter of 2003, metal exports (up 8.0 per cent) and paper and pulp (up 9.9 per cent) made a considerable positive contribution to overall export growth. In the same period, the volume of exports for the engineering industry fell by 4.3 per cent. Exports of engineering products picked up by a seasonally adjusted 4.5 per cent from the second to the third quarter, while growth in metal exports appears to have flattened out.

We expect brisk growth in traditional goods exports ahead despite continued loss of market shares. At constant prices, growth is projected at 4.9 per cent in 2004 and 3.4 per cent in 2005. The growth figure for 2004 partly reflects the effects of the krone depreciation in 2003 and the global cyclical upswing. We assume that our trading partners will reach a renewed cyclical peak in 2005, with a subsequent slowdown in export growth.

Cyclical turnaround and high output growth

Total GDP (seasonally adjusted and at constant 2000 prices) reached a peak level in the first half of 2002 and subsequently fell to the end of the second quarter of this year. However, preliminary QNR figures for the third quarter of 2003 show a clear increase in total GDP and a halt in the decline in value added for oil activity and shipping. Mainland GDP fell from the beginning of 2002 to the beginning of 2003, but has since picked up. In the second quarter, growth approached trend growth for the mainland economy, while growth was clearly higher than trend in the third quarter. The cyclical trough was passed in the first or second quarter of 2003 (see chart). With low interest rates in Norway and abroad, combined with a global upswing and rising petroleum investment in Norway, the stage is set for a broad-based upturn in the Norwegian economy in the period ahead.

The downturn in the Norwegian economy through 2002 was fairly pronounced and affected almost all industries. A share of the decline in total production reflects reduced electricity production as from the winter 2002/2003, but the near-term production potential has shown little change. Consequently, weak GDP growth in 2003 is attributable to a temporary supply shock and is not a normal cyclical phenomenon. The cyclical downturn was particularly pronounced for manufacturing industry, but recent figures indicate that the decline may have come to a halt in this industry. Growth was also weak or negative in service sectors through 2002 and into 2003. Value added in the public sector fell through 2002, while growth was fairly flat for private services. However, this is to some extent

ascribable to institutional changes. QNR figures for 2003 show solid growth in private services production, but it should be noted that the data are weaker than for most other production sectors. Rising growth in household consumption is the main factor behind the upswing in the service sector.

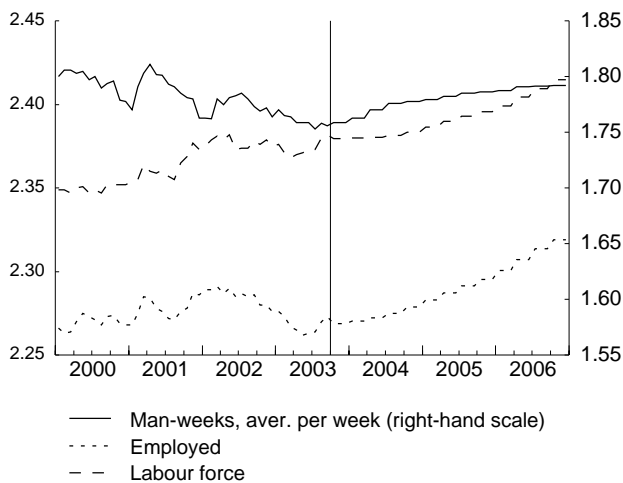
Our projections now show zero growth in total GDP between 2002 and 2003, in line with the projections in the September *Economic Survey*. Mainland growth is now projected at 0.5 per cent in 2003, while value added in manufacturing may fall by as much as 3 per cent. Both projections are in line with earlier projections. Through 2003 the figures show, as mentioned above, clear underlying growth in the economy which means that 2004 will begin with a marked, positive carry-over, unlike the situation one year earlier.

In the same way that the past economic downturn was broad-based and adversely affected most industries, the upturn will have a favourable impact on most private industries in the Norwegian economy. High growth in household consumption in 2004 will boost production, particularly in service industries. Rising international growth, in conjunction with a weaker krone compared with 2002 and the beginning of 2003, will increase growth in internationally exposed industries. Increased petroleum investment will also increase production in offshore-related industries, of which there are now a fairly large number. Even if we do not expect a pronounced investment upswing in the mainland economy in 2004, there is reason to expect that this will occur in 2005 and 2006. This will be noticeable in the building and construction industry. Household income growth will also contribute to relatively high consumption growth in 2005 and 2006. On balance, production in most private mainland industries is thus expected to increase in the years ahead.

Mainland GDP growth is now projected at 3.6 per cent between 2003 and 2004, which is marginally higher than previously projected. Total GDP will probably continue to grow at slower pace than mainland GDP for many years ahead, as the petroleum production peak seems to have been reached. Oil production is on a gentle downward slope, while gas production will continue to increase ahead. Manufacturing production is expected to show a pronounced increase through 2004 and approach the 2002-level. Several factors come into play here. The global cyclical upswing is one factor. Higher oil investment is of considerable importance for some manufacturing sectors and large aluminium production installations will finally be in full operation in the course of the year. In 2005, the contribution from these factors will abate, but still generate some impulses. A possible international slowdown at the end of 2005 and into 2006 will restrain growth in manufacturing, but not to the extent that the sector will not continue to expand.

Labour force, employment and number of man-weeks

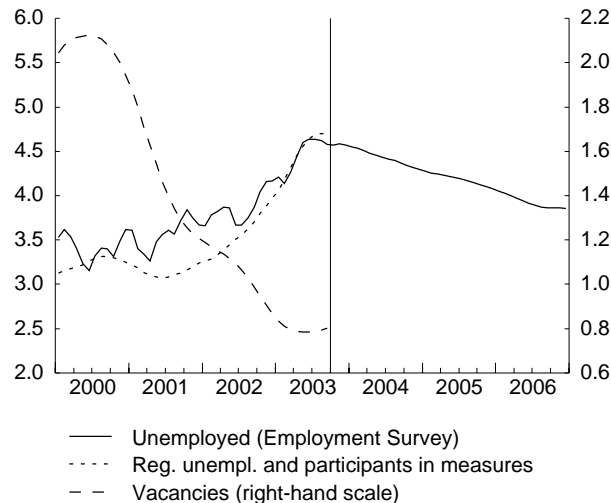
Millions. Seasonally adjusted and smoothed indices



Source: Statistics Norway.

Unemployed and number of vacancies

Per cent of labour force



Sources: The Directorate of Labour and Statistics Norway.

Consumption growth will contribute to sustaining brisk growth in private services through the period and employment growth will pick up in these “sheltered” sectors and contribute to pushing down unemployment. The margin of manoeuvre in fiscal policy is limited. The orientation of economic policy would imply that public sector activity will make only a moderate contribution to growth during the projection period.

Brighter labour market outlook

After five years of gradually rising unemployment, the peak may have been reached. According to Labour Force Survey (LFS) figures, the unemployment rate, seasonally adjusted and calculated as a three-month moving average, has remained virtually unchanged after reaching 4.6 per cent in May 2003. According to figures from the Directorate of Labour, the number of registered unemployed peaked in September and fell close to 1000 at the end of November, adjusting for normal seasonal variations. The number of persons

participating in ordinary labour market programmes remained virtually unchanged. At the same time, the number of advertised vacancies has shown some increase, albeit from a very low level.

QNA employment figures are not seasonally adjusted, but a weaker fall in employment from the third quarter of 2002 to the third quarter of 2003 compared with the period from the second quarter of 2002 to the second quarter of 2003 may indicate that the labour market is improving. QNA also shows growth in employment in the distribution sector since the third quarter of 2002. However, for the past year as a whole, the labour market can still be characterised as weak. In the period, manufacturing employment fell by 14 000, and the overall reduction in the number of employed is 21 400.

The labour market is expected to continue to improve into 2004. An upswing in production will increase employment growth in the years ahead. According to unadjusted LFS figures, the number of unemployed stood at 112 000 in the third quarter of this year. Adding the number of persons that want employment, but have not been actively seeking employment, and all the part-time employees who want longer working hours, the number of persons that wanted (more) employment was as high as 364 000 in the third quarter. The increase in employment will most likely be spread across all these groups. As a result, the fall in unemployment is assumed to be less pronounced than the increase implied by LFS figures. Unemployment is projected to fall from 4.5 per cent in 2003 to 4.4 per cent in 2004, 4.2 per cent in 2005 and 3.9 per cent in 2006.

Owing to demographic developments, the labour force will continue to expand in the years ahead. In addition, the improvement in the labour market will, in isolation, boost labour force participation among the various age groups. The average labour force participation rate is, nevertheless, expected to edge down from an estimated 73.4 per cent in 2003 as a result of the ageing of the population. Labour force participation rates are lower than average for older age groups. The labour force participation rate is projected to fall to 72.5 per cent in 2006.

Persistent moderate wage growth

After many years of high wage growth, this year's interim settlement resulted in moderate pay increases across the board. In the central and local government sector, no pay increases were awarded, but a considerable carry-over from last year, in addition to the pay increases for the local government sector agreed in the 2002 settlement, imply that wage growth for public employees will be in line with that of other groups. The moderation in wage growth reflects the gradual weakening of labour market conditions over recent years and the profitability problems in the Norwegian manufacturing sector. As usual, income policy cooper-

ation has strengthened in pace with the rise in unemployment so that the deterioration in profitability in the manufacturing sector has contributed to lower wage growth also in other sectors of the economy.

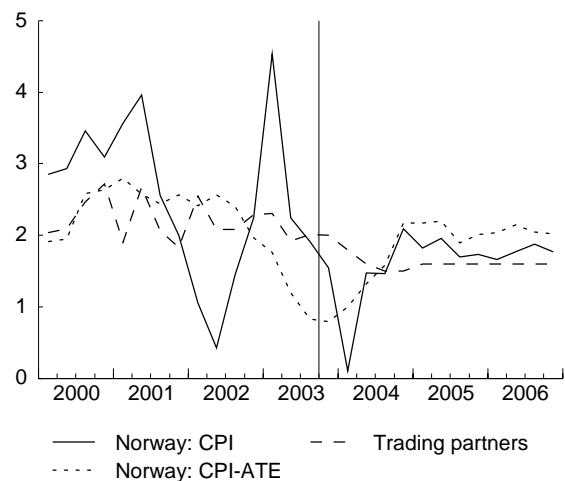
Pay increases in the manufacturing sector are expected to make a modest contribution of about 0.5 percentage point to annual wage growth this year. With a relatively sizeable carry-over from last year, wage growth is nevertheless put at a good 4 per cent from 2002 to 2003. This picture is confirmed by Statistics Norway's wage statistics. The statistics include developments in monthly earnings for full-time employees including bonuses, commissions and non-negotiated increases, but do not include overtime pay. According to the wage statistics, monthly earnings for full-time employees in the manufacturing sector rose by 4.2 per cent between the third quarter of 2002 and the third quarter of this year. At the same time last year, annual wage growth was 6.4 per cent, and in the second quarter wages were 5.4 per cent higher than in the second quarter of 2002. Wage growth in the manufacturing sector has thus fallen markedly so far this year.

The wage statistics also show a clear decline in wage growth in other industries. In the construction industry, wages rose by only 2.9 per cent from the third quarter of 2002 to the third quarter of 2003, down from an annual wage growth of 5.2 per cent in the second quarter. Wage growth has also moderated in the distribution sector and the business services industry. Annual wage growth for full-time employees in the banking and insurance industry is estimated to rise by 4.6 per cent between 2002 and 2003, down from 5.8 per cent in the preceding year. In addition, the wage statistics show a decline in overtime pay in the financial services industry and in property management and business services industry of 10.3 and 17.3 per cent, respectively. It would appear that overtime pay has also declined in other industries, but the wage statistics only include overtime pay for employees in these industries.

The wage statistics indicate that wage growth in many service industries appears to have fallen to a level that is well below that projected earlier and below the level implied by the negotiated pay increases in addition to normal wage drift. The reason seems to be that wage drift in these industries is very low because of a sharp decline in overtime pay, bonuses and the like. All in all, we now project average growth in wages per normal man-year at 4.2 per cent between 2002 and 2003.

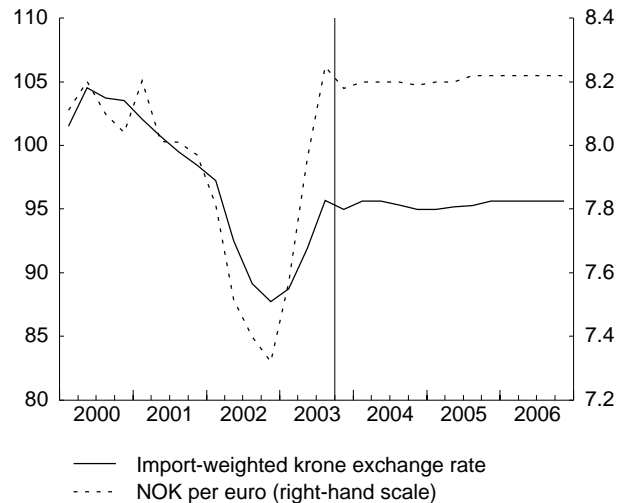
Small pay increases in all industries, combined with moderate wage drift in the private service sector, will result in an overall low carry-over into 2004. The contribution to wage growth is estimated to be well below 1 percentage point in 2004. Normal wage drift and projected average growth in wages per normal man-year of 4.2 per cent in 2004 are based on the

Consumer price indices Percentage growth from the same quarter previous year



Sources: Statistics Norway and Norges Bank.

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



Source: Norges Bank.

assumption of average pay increases of almost 4 per cent in the main settlement in 2004. Because the pay increases take effect several months into the year and because wage drift in service industries is likely to normalise next year, the carry-over into 2005 will be relatively high. With relatively moderate increases in the interim settlement in 2005, wage growth is also projected to be moderate in 2005 at 4.1 per cent.

In 2006, average growth in wages per normal man-year is also projected at 4.1 per cent. Owing to the considerable carry-over into years with interim negotiations and a moderate carry-over into years with main settlements, wage growth is assumed to be virtually unchanged throughout the projection period 2003-2006. Despite the economic upswing, wage growth will not edge up in the years ahead. This is because wage growth reacts with a considerable lag to changes in the economy. Therefore, wage growth is a suitable gauge of pressure tendencies in the economy, but

What is required to achieve the inflation target?

Norges Bank's operational objective is an inflation rate of 2.5 per cent. The most important instrument Norges Bank has to achieve the target is the Bank's key rates. Norges Bank has emphasized that since it takes some time for the effects of a change in interest rates to feed through, two years is a «reasonable time horizon» for achieving the inflation target.

In our baseline scenario we have assumed a constant interest rate differential between Norway and other countries and a krone exchange rate that is weaker than the current level. On the basis of these assumptions, our projections show that inflation, measured by the CPI-ATE, will be 2.1 per cent in 2006, i.e. below the inflation target of Norges Bank.

What interest rate should Norges Bank set for achieving the inflation target of 2.5 per cent towards the end of 2006? We have carried out shift calculations in which Norwegian interest rates are reduced by 0.5 percentage point in the first quarter of 2004 and held constant thereafter.

We assume that the exchange rate will react to this change in interest rates in accordance with our model with modified purchasing power parity. In this model, a reduction in interest rates will result in a weaker exchange rate in the short term, while the exchange rate in the long term is determined by relative inflation between Norway and among our trading partners (see further description in *Economic Survey 3/2003*). With an interest rate that is 0.5 percentage point lower than the current level, the krone exchange rate will depreciate by 2.6 per cent in the period to 2006 compared with the baseline scenario.

Lower interest rates have several effects. Consumption growth rises from 4.4 to 4.9 per cent in 2005 and from 4.3 to 4.9 per cent in 2006. Moreover, a weaker krone results in a slight increase in traditional goods exports. In 2005, export growth edges up from 3.4 to 3.6 per cent. GDP growth rises by 0.4 percentage point in 2005 and 0.3 percentage point in 2006. The unemployment rate declines by 0.2 percentage point to 3.7 per cent in 2006. This brings wage growth up from 4.1 to 4.4 per cent in 2006. The weaker krone also results in higher import prices. The last factor in particular makes a considerable contribution to Norwegian inflation. The overall effect is that inflation, measured by the CPI-ATE, reaches 2.5 per cent in the second quarter of 2006, and remains at the inflation target through 2006.

Should then Norges Bank reduce its interest rates in 2004 in order to achieve the inflation target? As discussed elsewhere in this report, the low level of inflation in our baseline scenario is due in part to low imported price inflation and in part to low wage growth as a result of low profitability and high unemployment. A lower interest rate will also result in higher credit growth and have an effect on asset prices. For example, our simulation indicates that with a 0.5 percentage point lower interest rate compared with the current level, the saving ratio will fall from 3.7 to 2.6 per cent in 2006, while house price inflation will rise from 7.6 per cent to 9.7 per cent. Our calculations also show that households' net financial assets will fall by 3.9 per cent at the end of 2006 compared with the baseline scenario, and that investments in financial assets will fall as a share of income. An increased risk of financial imbalances in the private sector may be the cost of holding up Norway's price inflation.

largely reflects the activity level in earlier years (see ES 4/2001) In the same way that solid profitability in manufacturing industry and the decline in unemployment through the previous expansion resulted in high wage growth up to and including 2002, low profitability and high unemployment will restrain wage growth in the period ahead.

Continued low inflation

After falling for close to a year, underlying inflation has been stable over the past five months. The twelve-month rise in the consumer prices index adjusted for tax changes and excluding energy products (CPI-ATE) has remained within the interval 0.7-0.9 per cent. In October, CPI-ATE inflation was 0.8 per cent. For the year as a whole, CPI-ATE inflation is projected at 1.1 per cent, while CPI inflation is projected at 2.6 per cent partly reflecting high electricity prices.

Movements in the krone, particularly the appreciation of the krone through the first half of 2002, have been an important factor behind developments in the underlying rise in prices over the past year. According to QNR figures, prices for traditional import goods fell by as much as 9.1 per cent from second quarter of 2001 to the second quarter of 2002. The annualised, quarterly fall in import prices has since moderated, and in the third quarter of 2003 this trend was reversed to an increase of 2.1 per cent. Adjusted for normal seasonal variations, import prices rose by 1.5 per cent between the second and third quarter. However, there is a considerable lag before changes in import prices feed fully through to retail prices. It took time before consumers could fully benefit from the price effects of the strong krone in 2002, and it takes time before they will see the full effects of a weaker krone. In May 2002, the CPI's price index for imported consumer goods for households showed a decline of only 0.9 per cent on the same month one year earlier. The decline in prices for these goods continued at a faster pace up to June this year, when the rate of decline was 4.5 per cent, slowing to 4.2 per cent in October.

With a krone value at today's level or weaker, the negative price impulses from imported consumer goods will steadily weaken and gradually reverse. As the effects of the krone depreciation fade, low international inflation and a persistent shift in imports towards low-cost countries will have a renewed dampening impact on the rise in prices for imported consumer goods. Overall externally generated inflationary impulses are not confined to imported consumer goods. A larger or smaller share of inputs is directly or indirectly imported in all industries. Import price developments will thus influence price developments for all consumer groups, but for many groups other factors will dominate developments.

Developments in electricity prices have been behind the pronounced movements in the twelve-month rise in

the CPI in recent years. In January 2003, electricity prices for households, including taxes and grid rent, were as much as 82.5 per cent higher than twelve months earlier. Through the first six months, electricity prices fell sharply, and in July electricity prices were only 20.6 per cent higher than in the same month last year. In August and September, electricity prices rose again, followed by a renewed decline in October. Utility companies have since announced price increases. Annualised, the electricity price index in the CPI is estimated to be about 36 per cent higher than in 2002. Electricity prices for 2004 to 2006 are estimated based

on forward prices at the beginning of December. It appears that electricity prices for households will continue to rise into next year. Compared with prices in 2003, it now seems that prices will be markedly lower in the first quarter, but higher in the second quarter. As an annual average, it would appear that electricity prices will fall by 5-6 per cent in both 2004 and 2005 and remain virtually unchanged from 2005 to 2006. The uncertainty surrounding the electricity price projections for 2004-2006 is substantial. Should weather conditions prove to be considerably milder or precipitation levels higher than normal, electricity prices may be

Is China making it difficult to achieve the inflation target?

The low level of inflation in the Norwegian economy is due to several factors. First, unemployment has risen in recent years and the after-effects of this will influence wage determination for some time ahead even though unemployment will decline moderately. Second, Norwegian manufacturing has recorded deteriorating competitiveness over several years, and weak profitability in internationally exposed enterprises will exert pressures on wage growth. Moreover, the effective krone exchange rate has appreciated markedly due to the depreciation of the US dollar and affiliated currencies. And, finally, external inflationary impulses have been limited, partly as a result of the global downturn and partly as a result of strong competition due to increased economic globalization.

Some of these factors are transitory and in the short term will probably contribute to pushing up inflation in the period ahead. This primarily relates to the after-effects of the depreciation of the krone through 2003, and the assumption of a sharper rise in prices for industrial raw materials as a result of the global recovery that is now under way. The other factors will make more long-lasting contributions. The model we use in our forecasting work will capture the direct effects of continued high unemployment and weak profitability. The effects of globalization, on the other hand, must be based on estimates outside the model, and are also more difficult to quantify.

Globalization entails increasing competition from low-cost countries, and includes product, labour and capital markets. The deregulation of capital markets has taken place for more than 30 years but only gained momentum at the beginning of the 1990s. The shift of international goods production to low-cost countries is a long process, but one that has probably gathered momentum as a result of the inclusion of China – with a little more than 1/5 of the world's population – in the World Trade Organization, WTO, in December 2001. India appears to play a similar role in the production of services. The globalization of the labour market is probably more limited, but a high inflow of labour was undoubtedly an important factor when the US experienced both strong economic growth and subdued inflation in the 1990s. With the enlargement of the EU in May next year, Norway may, through the EEA Agreement, gradually experience a similar inflow of labour.

This analysis will be confined to examining potential consequences of China's full participation in international trade, based on Norwegian data. From 1998 to 2001, China's share

of Norwegian imports rose steadily from 0.5 per cent to a good 3 per cent. If we look at traditional goods (i.e. excluding ships and platforms), China's share of Norwegian imports was 3.1 per cent in 2001 and 3.6 per cent in 2002. In January-October 2003, the share increased to 4.4 per cent and may easily reach 4.5 per cent for the year as a whole. This means that through each of the past two years the share has risen by 0.9 percentage point per year, compared with a steady increase of 0.1 percentage point through each of the previous 13 years. In other words, a trend break appears to have occurred.

The change as from 2002 must be seen in connection with China's membership in the WTO on 11 December 2001. Membership has resulted in a strong expansion of China's export industries, and it is likely that China's share of Norwegian imports will continue to increase markedly for several years ahead as China's range of goods is expanded further. If, as an experiment, we assume that prices for Chinese products are half the level of prices for products they directly or indirectly displace, and also assume that the import share for Chinese goods gradually rises by 0.9 percentage point, the shift to Chinese goods will contribute to reducing import prices in Norway by 0.5 per cent.

It must be emphasised that the example is stylized. First, some of the improved competitiveness is due to the pegging of the Chinese yuan to the US dollar. If the Chinese yuan were to appreciate considerably, some of the price effects would disappear. Second, Chinese products will to some extent displace products from what was previously looked upon as low-cost countries. This will also limit the price effects. On the other hand, the effect of China may have long-term consequences. A natural response from earlier low-cost countries in e.g. South-east Asia will be to shift production to products that are today supplied by industrial countries, i.e. the low level of Chinese prices may gradually have consequences for «all» products imported by Norway.

Indirect effects via prices for other countries' imports come in addition.¹ Lower imported price inflation among our traditional trading partners may result in lower import prices for Norway also for direct imports from these countries. With a full feed-through from Chinese import prices to our trading partners' export prices, the overall contribution will be to push down Norway's imported price inflation by 0.9 percentage point. If the feed-through to other countries' export prices is only half this level, the overall contribution will be 0.7.²

¹ Strictly speaking, this will not come fully in addition since lower prices for non-Chinese goods reduce the contribution of shifting from non-Chinese to Chinese goods.

² Note that we can also argue that the feed-through will be substantially stronger as a result of attempts to counter the increased Chinese response. If the supply of goods from China had been infinitely elastic and comprised all goods, prices throughout the world would fall to the Chinese level!

... cont.

On this basis, we have calculated the effects for the years 2004-2010 of a 0.7 percentage point slower rise (on an annual basis) in Norwegian import prices. There is reason to assume that pressures for lower prices will be seen for processed imported goods and not for industrial raw materials (metals, paper and pulp, industrial chemicals, refined products, oil and gas, electricity).³ If the overall contribution to Norwegian import prices is to be 0.7 per cent, the rise in prices for consumer goods and other processed products must be reduced by a little less than one percentage point.

The effects on selected macroeconomic variables are shown in the table. In the calculations, interest rates and the exchange rate are kept unchanged. The table shows that if the fall in import prices is of the magnitude shown, the rise in Norwegian consumer prices will slow by between 0.2 and 0.4 percentage point in relation to the baseline scenario. Increased competition results in lower export growth and lower wage growth, but note that Norwegian consumption actually increases through the period. The return on capital in Norway will also rise inasmuch as the real interest rate increases (nominal interest rates are held constant while inflation falls).

It is important to note that the effect here comes through a shift in trade weights between our trading partners. By shifting from «high-cost countries» to «low-cost countries» we achieve a fall in import prices. But this effect will only be «temporary». Sooner or later the import shares from low-cost countries will stabilize. And over time it is unlikely that the rise in prices for imports from China will deviate markedly from what we have seen for other countries. However, in the actual transitional phase, while trade from low-cost countries is being phased in, the price impulses, as our simple example shows, may be considerable.

What consequences will this development in import prices have for the possibility of achieving the inflation target? In the period

³ This is an indication that Norway will benefit from China's participation in world trade because they supplement our resources: they have ample labour, we are capital intensive and have abundant raw materials.

Effects of 0.7 percentage point lower rise in prices for traditional goods imports

Deviation from baseline scenario	Deviation in annual rise		Deviation in level	
	2004	2005	2006	2010
Import prices, traditional goods	-0,7	-0,7	-0,7	-4,9
Export prices, traditional goods	-0,2	-0,3	-0,4	-3,0
Consumer prices	-0,2	-0,3	-0,3	-2,4
Wages	-0,1	-0,2	-0,2	-1,8
Household real disposable income	0,1	0,2	0,1	0,8
Private consumption	0,0	-0,1	0,0	0,3
Exports, traditional goods	-0,2	-0,1	-0,1	-0,8
Manufacturing output	-0,3	-0,2	-0,3	-2,1
Mainland GDP	-0,1	-0,1	-0,1	-0,3
Unemployment rate (level)	0,0	0,1	0,1	0,1

1996-2001, the average rise in prices for traditional goods imports was 0.4 per cent. In 2005-2006 (after the effect of a weaker krone has generally unwound), our estimate in the baseline scenario is 0 per cent, but this is influenced by a projected cyclical decline in prices for industrial raw materials. One may then ask whether our estimates have sufficiently taken into account the contribution of rising imports from China. There is naturally considerable uncertainty surrounding this. However, it is not unreasonable to assume that the risk associated with import prices is on the downside of that assumed in the baseline scenario. And the baseline scenario implies a rise in the CPI-ATE of 2.1 per cent in 2006, i.e. already below the current inflation target.

The calculations thereby underscore the problems that monetary policy appears to be facing in coming years in achieving the inflation target without a noticeable reduction in interest rates and subsequent depreciation of the krone exchange rate. For a period, low import prices may make it difficult to achieve an inflation rate of 2.5 per cent in Norway.

markedly lower than today's forward prices would imply. Abnormally cold temperatures and low precipitation levels will lead to higher prices.

According to our calculations, underlying inflation will be fairly low in the years ahead. Labour costs are projected to rise by a little more than 4 per cent, and with productivity growth of around 2.5 per cent for the private mainland economy excluding electricity production, the cost impulses from Norwegian production should be modest. Low interest rates would imply that the rise in housing rents will also be moderate. Falling energy prices will not only push down overall CPI inflation, but curb underlying inflation through the attendant negative cost impulses to all industries. As mentioned, inflationary impulses from imported goods are expected to push up inflation for a period ahead. The intensity and duration of this impact will, however, largely be determined by exchange rate developments. CPI-ATE inflation is projected at 1.1 per cent in 2003, 1.5 per cent in 2004 and 2.1 per cent in both 2005 and 2006.

Balance of payments

Preliminary balance-of-payments figures show a current account surplus of NOK 150.3 billion from January to September of this year, i.e. a decline of NOK 3.1 billion compared with the same period one year earlier. This is primarily attributable to a decline of NOK 161.2 billion in the trade surplus in the first three quarters of 2002 to NOK 158.3 billion this year. The deficit on the interest and transfers balance was about NOK 8 billion in this period in both years.

On an annual basis, the current account surplus is estimated at NOK 197.2 billion in 2003, i.e. a decrease of a good NOK 3 billion compared with 2002. Deteriorating terms of trade, a loss of market shares and cyclically-determined high Norwegian imports are behind a marked weakening of the current account in the years ahead. The drop in oil prices in NOK contributes to reducing the surplus on the trade balance and the current account balance. The current account surplus is estimated at NOK 163.5 billion in 2005 and 155.5 billion in 2006.

National accounts: Final expenditure and gross domestic product

At fixed 2000-prices. Million kroner

	Unadjusted		Seasonally adjusted						
	2001	2002	02.1	02.2	02.3	02.4	03.1	03.2	03.3
Final consumption exp. of housh. and NPISHs	641 829	664 700	164 164	165 268	166 472	168 663	168 650	170 599	172 232
Household final consumption expenditure	615 225	638 102	157 573	158 672	159 918	161 791	161 668	163 550	165 102
Goods	342 546	356 706	88 478	88 747	88 736	90 696	90 083	92 275	93 279
Services	263 866	270 251	67 044	67 180	67 853	68 396	67 942	68 218	68 558
Direct purchases abroad by resident househ.	27 131	28 901	6 643	7 302	7 548	7 167	7 851	7 499	7 662
Direct purchases by non-residents	-18 317	-17 755	-4 593	-4 557	-4 218	-4 468	-4 209	-4 442	-4 396
Final consumption exp. of NPISHs	26 605	26 598	6 592	6 595	6 554	6 872	6 983	7 049	7 130
Final consump. exp. of general government	288 592	297 914	75 448	72 971	74 890	74 666	75 117	75 915	76 017
Final consump. exp. of central government	115 101	161 052	40 596	39 700	40 396	40 386	41 036	41 522	41 774
Central government, civilian	88 521	133 445	33 705	32 767	33 519	33 481	34 054	34 489	34 747
Central government, defence	26 579	27 606	6 891	6 933	6 877	6 904	6 982	7 034	7 027
Final consump. exp. of local government	173 491	136 862	34 852	33 271	34 493	34 280	34 081	34 393	34 243
Gross fixed capital formation	261 191	251 728	60 976	65 777	60 187	64 843	63 481	61 311	61 511
Extraction and transport via pipelines	54 837	52 312	13 160	12 610	12 884	13 654	14 546	15 426	16 092
Service activities incidental to extraction	-797	5 427	69	4 256	-11	1 113	517	-241	-302
Ocean transport	10 886	6 663	887	1 485	1 330	2 961	3 155	1 011	1 038
Mainland Norway	196 265	187 326	46 860	47 427	45 983	47 116	45 262	45 115	44 683
Mainland Norway ex. general government	156 189	147 269	36 867	37 059	36 065	37 229	34 880	33 974	32 984
Manufacturing and mining	21 163	22 614	5 138	5 772	5 496	6 198	4 873	5 081	4 012
Production of other goods	16 070	16 790	3 945	4 242	4 273	4 216	4 544	4 523	4 320
Dwellings	49 475	47 395	12 316	12 022	11 706	11 445	11 364	11 128	10 912
Other services	69 481	60 469	15 468	15 023	14 590	15 369	14 100	13 241	13 741
General government	40 077	40 058	9 993	10 368	9 919	9 886	10 382	11 141	11 699
Changes in stocks and stat. discrepancies	27 193	29 954	8 708	8 634	7 641	4 466	9 163	3 058	4 665
Gross capital formation	288 384	281 682	69 684	74 411	67 827	69 310	72 644	64 369	66 176
Final domestic use of goods and services	1 218 805	1 244 296	309 297	312 649	309 189	312 639	316 411	310 884	314 424
Final demand from Mainland Norway	1 126 687	1 149 940	286 473	285 665	287 345	290 445	289 029	291 629	292 931
Final demand from general government	328 668	337 972	85 441	83 339	84 808	84 552	85 499	87 056	87 716
Total exports	713 743	709 868	173 800	182 790	178 214	175 559	173 235	176 824	174 687
Traditional goods	222 201	225 163	57 125	55 938	57 283	54 846	54 827	57 165	57 501
Crude oil and natural gas	322 590	323 206	75 353	85 956	81 522	80 743	79 411	80 131	78 599
Ships and oil platforms	15 716	9 941	3 460	3 287	2 043	1 151	2 354	3 052	1 352
Services	153 236	151 558	37 861	37 610	37 366	38 818	36 643	36 476	37 234
Total use of goods and services	1 932 548	1 954 164	483 097	495 440	487 402	488 198	489 646	487 708	489 111
Total imports	435 146	442 534	107 383	113 030	109 590	111 912	113 673	112 332	110 630
Traditional goods	282 860	296 144	73 837	72 667	73 644	75 793	75 560	76 548	76 431
Crude oil	1 852	1 021	294	330	324	83	730	148	47
Ships and oil platforms	14 365	11 171	766	6 615	1 538	2 252	3 897	2 727	1 041
Services	136 068	134 198	32 485	33 417	34 084	33 784	33 487	32 909	33 111
Gross domestic product	1 497 402	1 511 630	375 713	382 410	377 812	376 286	375 973	375 376	378 481
Mainland Norway (market prices)	1 119 859	1 134 208	284 531	283 335	284 300	282 628	282 297	283 691	285 955
Petroleum activities and ocean transport	377 543	377 422	91 182	99 075	93 512	93 658	93 675	91 685	92 526
Mainland Norway (basic prices)	971 575	982 397	246 800	245 450	246 072	244 754	244 671	245 071	247 717
Mainland Norway ex. general government	754 528	765 297	191 283	192 208	191 680	190 609	190 780	190 991	193 683
Manufacturing and mining	145 143	144 126	35 525	37 133	36 061	35 483	34 714	34 445	34 857
Production of other goods	100 576	102 110	25 883	25 293	25 928	24 995	24 396	24 514	24 715
Service industries	508 808	519 061	129 875	129 783	129 690	130 131	131 669	132 033	134 111
General government	217 047	217 100	55 517	53 241	54 392	54 144	53 891	54 080	54 034
Correction items	148 284	151 811	37 731	37 885	38 229	37 874	37 627	38 619	38 238

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	02.1	02.2	02.3	02.4	03.1	03.2	03.3
Final consumption exp. of housh. and NPISHs	2.6	3.6	1.4	0.7	0.7	1.3	0.0	1.2	1.0
Household final consumption expenditure	2.6	3.7	1.6	0.7	0.8	1.2	-0.1	1.2	0.9
Goods	2.8	4.1	1.9	0.3	0.0	2.2	-0.7	2.4	1.1
Services	2.4	2.4	0.6	0.2	1.0	0.8	-0.7	0.4	0.5
Direct purchases abroad by resident househ.	-1.1	6.5	3.8	9.9	3.4	-5.0	9.6	-4.5	2.2
Direct purchases by non-residents	-3.8	-3.1	-2.5	-0.8	-7.4	5.9	-5.8	5.5	-1.0
Final consumption exp. of NPISHs	1.7	0.0	-2.3	0.1	-0.6	4.8	1.6	1.0	1.1
Final consump. exp. of general government	2.7	3.2	3.1	-3.3	2.6	-0.3	0.6	1.1	0.1
Final consump. exp. of central government	2.5	39.9	39.8	-2.2	1.8	0.0	1.6	1.2	0.6
Central government, civilian	4.5	50.7	50.5	-2.8	2.3	-0.1	1.7	1.3	0.7
Central government, defence	-3.7	3.9	3.8	0.6	-0.8	0.4	1.1	0.7	-0.1
Final consump. exp. of local government	2.8	-21.1	-21.0	-4.5	3.7	-0.6	-0.6	0.9	-0.4
Gross fixed capital formation	-4.2	-3.6	-6.3	7.9	-8.5	7.7	-2.1	-3.4	0.3
Extraction and transport via pipelines	-1.0	-4.6	-13.0	-4.2	2.2	6.0	6.5	6.0	4.3
Service activities incidental to extraction .....	..	..	-104.3	..	-100.3	..	-53.5	-146.5	25.5
Ocean transport	-40.0	-38.8	-68.8	67.3	-10.4	122.7	6.5	-67.9	2.7
Mainland Norway	0.7	-4.6	-3.8	1.2	-3.0	2.5	-3.9	-0.3	-1.0
Mainland Norway ex. general government	0.1	-5.7	-3.9	0.5	-2.7	3.2	-6.3	-2.6	-2.9
Manufacturing and mining	13.6	6.9	-13.8	12.3	-4.8	12.8	-21.4	4.3	-21.1
Production of other goods	-2.2	4.5	0.7	7.5	0.7	-1.3	7.8	-0.4	-4.5
Dwellings	3.7	-4.2	-2.3	-2.4	-2.6	-2.2	-0.7	-2.1	-1.9
Other services	-5.1	-13.0	-2.6	-2.9	-2.9	5.3	-8.3	-6.1	3.8
General government	2.9	0.0	-3.6	3.8	-4.3	-0.3	5.0	7.3	5.0
Changes in stocks and stat. discrepancies	-22.4	10.2	355.8	-0.8	-11.5	-41.5	105.2	-66.6	52.5
Gross capital formation	-6.3	-2.3	4.0	6.8	-8.8	2.2	4.8	-11.4	2.8
Final domestic use of goods and services	0.4	2.1	2.4	1.1	-1.1	1.1	1.2	-1.7	1.1
Final demand from Mainland Norway	2.3	2.1	0.9	-0.3	0.6	1.1	-0.5	0.9	0.4
Final demand from general government	2.7	2.8	2.3	-2.5	1.8	-0.3	1.1	1.8	0.8
Total exports	4.1	-0.5	-6.0	5.2	-2.5	-1.5	-1.3	2.1	-1.2
Traditional goods	3.7	1.3	-0.4	-2.1	2.4	-4.3	0.0	4.3	0.6
Crude oil and natural gas	5.2	0.2	-9.6	14.1	-5.2	-1.0	-1.7	0.9	-1.9
Ships and oil platforms	51.5	-36.7	-35.2	-5.0	-37.8	-43.7	104.5	29.7	-55.7
Services	-1.0	-1.1	-2.4	-0.7	-0.6	3.9	-5.6	-0.5	2.1
Total use of goods and services	1.7	1.1	-0.8	2.6	-1.6	0.2	0.3	-0.4	0.3
Total imports	0.9	1.7	-1.4	5.3	-3.0	2.1	1.6	-1.2	-1.5
Traditional goods	2.9	4.7	4.0	-1.6	1.3	2.9	-0.3	1.3	-0.2
Crude oil	2.5	-44.9	-44.6	12.2	-2.1	-74.4	782.4	-79.7	-68.3
Ships and oil platforms	-45.4	-22.2	-81.1	763.6	-76.7	46.4	73.1	-30.0	-61.8
Services	6.0	-1.4	-2.5	2.9	2.0	-0.9	-0.9	-1.7	0.6
Gross domestic product	1.9	1.0	-0.6	1.8	-1.2	-0.4	-0.1	-0.2	0.8
Mainland Norway (market prices)	1.7	1.3	0.9	-0.4	0.3	-0.6	-0.1	0.5	0.8
Petroleum activities and ocean transport	2.7	0.0	-5.0	8.7	-5.6	0.2	0.0	-2.1	0.9
Mainland Norway (basic prices)	1.6	1.1	0.8	-0.5	0.3	-0.5	0.0	0.2	1.1
Mainland Norway ex. general government	1.8	1.4	0.6	0.5	-0.3	-0.6	0.1	0.1	1.4
Manufacturing and mining	0.5	-0.7	-2.5	4.5	-2.9	-1.6	-2.2	-0.8	1.2
Production of other goods	-3.2	1.5	2.9	-2.3	2.5	-3.6	-2.4	0.5	0.8
Service industries	3.2	2.0	1.0	-0.1	-0.1	0.3	1.2	0.3	1.6
General government	1.0	0.0	1.6	-4.1	2.2	-0.5	-0.5	0.4	-0.1
Correction items	2.1	2.4	1.3	0.4	0.9	-0.9	-0.7	2.6	-1.0

Source: Statistics Norway.

National accounts: Final expenditure and gross domestic product

Price indices. 2000=100

	Unadjusted		Seasonally adjusted						
	2001	2002	02.1	02.2	02.3	02.4	03.1	03.2	03.3
Final consumption exp. of households and NPISHs	102.4	103.1	102.1	102.5	103.3	104.2	105.7	104.8	105.3
Final consumption exp. of general government	107.3	111.6	108.6	111.1	113.2	113.0	114.4	114.3	114.9
Gross fixed capital formation	103.6	103.0	103.4	104.3	104.4	99.8	101.5	104.8	105.4
Mainland Norway	103.4	103.5	103.4	104.1	104.5	102.0	102.2	103.6	104.8
Final domestic use of goods and services	103.7	104.9	101.9	106.0	106.1	105.6	105.0	107.3	108.4
Final demand from Mainland Norway	103.8	105.3	104.0	105.0	106.0	106.1	107.4	107.1	107.7
Total exports	97.7	88.8	90.7	88.4	85.8	90.4	95.7	86.9	89.1
Traditional goods	97.1	88.7	91.3	90.3	86.2	87.2	87.7	87.4	87.3
Total use of goods and services	101.5	99.1	97.9	99.5	98.7	100.1	101.7	99.9	101.5
Total imports	100.0	93.8	96.2	94.5	92.6	92.2	92.8	93.9	96.5
Traditional goods	99.8	91.9	94.5	92.0	90.7	90.2	91.3	90.9	92.2
Gross domestic product	102.0	100.6	98.4	101.0	100.4	102.4	104.3	101.7	103.0
Mainland Norway (market prices)	103.8	106.4	103.4	107.3	106.6	108.1	106.7	108.8	108.4

Source: Statistics Norway.

National accounts: Final expenditure and gross domestic product

Price indices. Percentage volume change from previous period

	Unadjusted		Seasonally adjusted						
	2001	2002	02.1	02.2	02.3	02.4	03.1	03.2	03.3
Final consumption exp. of households and NPISHs	2.4	0.7	-0.3	0.4	0.8	0.9	1.5	-0.8	0.5
Final consumption exp. of general government	7.3	4.0	-1.0	2.3	1.8	-0.1	1.2	0.0	0.5
Gross fixed capital formation	3.6	-0.6	1.3	0.8	0.1	-4.4	1.7	3.2	0.6
Mainland Norway	3.4	0.1	0.4	0.7	0.4	-2.3	0.1	1.4	1.2
Final domestic use of goods and services	3.7	1.1	-2.3	4.0	0.1	-0.5	-0.6	2.2	1.0
Final demand from Mainland Norway	3.8	1.5	-0.4	0.9	1.0	0.1	1.2	-0.3	0.6
Total exports	-2.3	-9.1	0.6	-2.5	-3.0	5.4	5.9	-9.2	2.5
Traditional goods	-2.9	-8.7	-1.5	-1.1	-4.4	1.1	0.6	-0.4	-0.1
Total use of goods and services	1.5	-2.4	-1.1	1.7	-0.9	1.5	1.6	-1.8	1.6
Total imports	0.0	-6.2	-1.7	-1.8	-1.9	-0.4	0.7	1.1	2.8
Traditional goods	-0.2	-8.0	-2.2	-2.6	-1.4	-0.6	1.2	-0.5	1.5
Gross domestic product	1.9	-1.3	-0.9	2.7	-0.6	2.0	1.9	-2.6	1.3
Mainland Norway (market prices)	3.8	2.5	-1.8	3.8	-0.7	1.4	-1.3	2.0	-0.4

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.

A Nordic energy market under stress

Torstein Bye

The Nordic electricity market was exposed to an extreme primary energy shock during 2002 and 2003. A short-term shortage of precipitation and inflow entailed sharply increasing prices and vigorous discussions about the functioning of the deregulated market when exposed to such extreme situations. As a consequence, several policy instruments that could relieve so-called infirmities in the market were launched. In this article, we show that the market functioned remarkably well; the producers tried to optimise the value of water as expected, electricity trade followed anticipated patterns, and consumers responded according to theory. We also show that the historic rate of return in power production explains low investments in production capacity. Moreover, expectations of futures prices do not justify expansion in the production capacity as yet, despite the high price level in 2002-2003. Although the market seems to have functioned well, the article points at some elements for further study and follow-up by the competition authorities.

1. Introduction

The Nordic electricity prices were much higher than usual in the late fall of 2002 and winter of 2003. Electricity producers claim that a dry summer and a cold and dry fall and winter were the main reasons for the high prices. Precipitation was low and put a stress on water reservoirs. But in the media it was frequently argued that the electricity producers exported too much electricity in the late summer and early fall, reducing water reservoir levels to a record low and driving prices upwards. The claim was that producers should have kept a higher security level of the water storage to make sure there was enough water for the winter demand. Some even proposed that a lower bound on reservoir levels should be implemented as a regulatory mechanism.

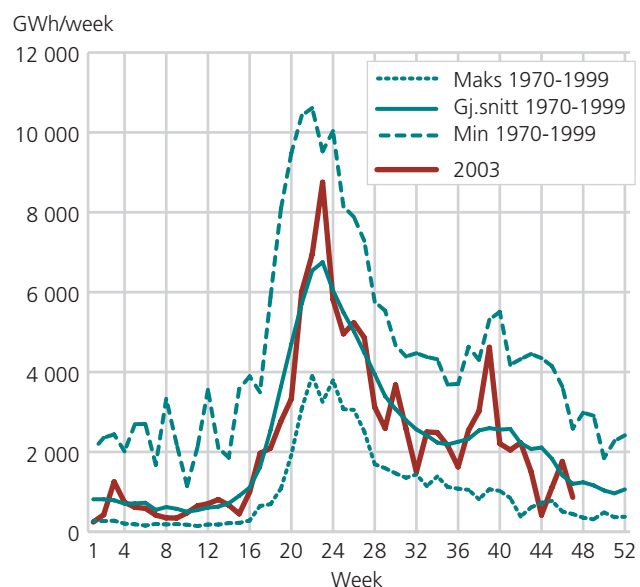
In this article, we take a closer look at the validity of these claims. We particularly ask if the development could be explained by normal optimising behaviour in a free competitive market. This includes a discussion of the link between the physical spot market and the financial risk hedging market at the NordPool exchange. We also investigate the demand side responses, as many seem to believe that consumers do not respond to increasing prices. Thus increasing prices just imply income redistribution, and do not help out in securing the market when primary energy inflow fails. We also ask whether market failure has led to inefficient investment decisions or if normal incentive indicators may explain the lack of investments.

2. What happened to inflow?

The common view concerning the Norwegian water balance in 2002 seems to be that it was a very dry year, something which created problems in the hydro-based electricity market. The total inflow to Norwegian reservoirs in 2002 was some 111 TWh compared to a normal level of 118 TWh. The 90 per cent confidence interval, with respect to the stochastic inflow to this system, is 90-145 TWh a year. A 6 per cent lower than normal inflow could then hardly be characterised as a particularly dry year. So what was the problem?

From figure 1 we find that during the first 22 weeks of 2002 the water supply was some 30 per cent (14 TWh) above *normal* (average of the period 1979-

Figure 1. Effective inflow to the Norwegian reservoirs during 2002 and 2003 compared to normal. GWh/week



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Figure 2. The development of the reservoir level. Deviations from the average development. Per cent

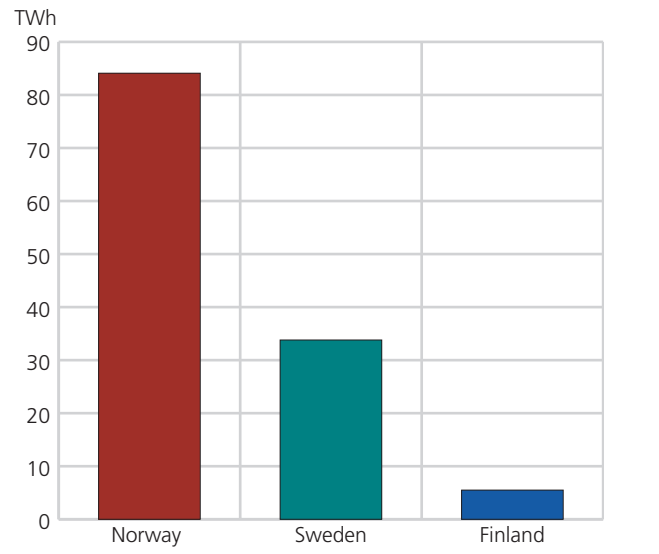


1990). Then, in week 23, the precipitation and inflow decreased sharply, and eventually became lower than normal. During the last 20 weeks of 2002 the accumulated inflow was 30 per cent (21 TWh) below average for these weeks over the period 1979-1999. At the same time, the abnormal precipitation led to groundwater losses, i.e. further precipitation had to re-establish the water balance in the ground before the reservoir level increased. The probability for this low or lower inflow, referring to the statistics of 70 years of inflow variation, is calculated at 0.5 per cent, i.e. this would occur in one out of two hundred years. Producers calculate expected water inflow as a total of possible outcomes weighted by their probabilities. Since the probability of low inflow is low, the expected value is hardly influenced. Producer behaviour during the fall of 2002 may then well be in line with an optimal risk management, despite the fact that the actual production path eventually led to a shortage of water and high prices in the market.

The Nordic electricity market is integrated via transmission lines with continuous exchange of power across country borders. Although some countries (Denmark and Finland) base their supply on thermal technology, others (Sweden and Finland) include hydropower and water reservoirs as in Norway, although the relative share of hydropower is smaller in these countries. The inflows to the Norwegian, Swedish and Finnish reservoirs are highly correlated. In figure 2 we depict the development of the reservoir filling level in these countries in 2002 and 2003.

We see that the total reservoir level in spring was well above the average over time. The reservoir level in Sweden was some 30 per cent above the normal level in week 20, while in Finland it was 17 per cent above and only 10 per cent above in Norway. The total

Figure 3. The water storage capacity in the Norwegian, Swedish and Finnish reservoirs. TWh



Nordic reservoir level was approximately 15 per cent above normal. The reservoir filling started to drop fast, compared to normal, during the early fall, as precipitation failed and demand increased. At the end of the year, the filling was approximately 25 per cent below normal.

Although the drop in the reservoir level was highest in Sweden (from 25 per cent above to 25 per cent below) and lowest in Norway (from 10 per cent above to 24 per cent below) the volume drop was highest in Norway, from plus 8 TWh to a negative difference of 21 TWh, compared to plus/minus 8 TWh in Sweden. Figure 3 shows the reservoir capacities in the three countries, underlining the importance of Norway as the largest hydropower contributor among these countries.

3. The producer problem

The fundamental profit maximising problem for a hydropower producer is to optimise the value of a stochastic inflow of water over time, see Førsund (1994). The reservoir is an instrument to equalise prices over time, which under simplifying assumptions secures the maximisation of profit from the production of power. As long as a sufficient number of producers compete efficiently, no transmission constraints occur, a sufficient storing capacity exists, and precipitation, inflow and weather are normal, equalising prices over periods also secure the optimisation of social surplus. Under no constraints this optimising strategy secures equal prices for electricity in space and time.

In reality these assumptions are too simplistic. The supply side of the market has become increasingly concentrated, the production capacities are limited, short term marginal costs differ between countries, constraints in transmission eventually occur, and

uncertainty about inflow is important. Let us take a closer look at some of these aspects.

3.1. Market imperfections

Over the last 5 years, the supply side has become increasingly *concentrated* as a consequence of acquisitions and formal and informal cooperation. This may open up for the exercise of market power. According to Bye, Fehr, Riis and Sørgaard (2003), it is unlikely that market power has been exercised so far in the Norwegian electricity market, but it could be in the future.

3.2. Limited storing capacity

In the short term, the storing capacity, which allows for the transfer of water from one period to another, is limited. A large inflow in one period may imply water overflow in another, since the expected value of inflow in the second period may override the generating and storing capacity. The capacity of the generators and reservoirs will be too small to take care of the large inflow. It could also be the other way around, i.e. the level of water is too low to satisfy demand before the rainfall season. A large amount of non-storable precipitation, i.e. river plants, may also imply a downward pressure on prices despite the storing capacity in other parts of the market. As a result the link between prices over time is distorted. The uncertainty about future water inflow is large and demand will fluctuate due to temperature changes. Again, these are important elements in the producer's daily production and storing strategy.

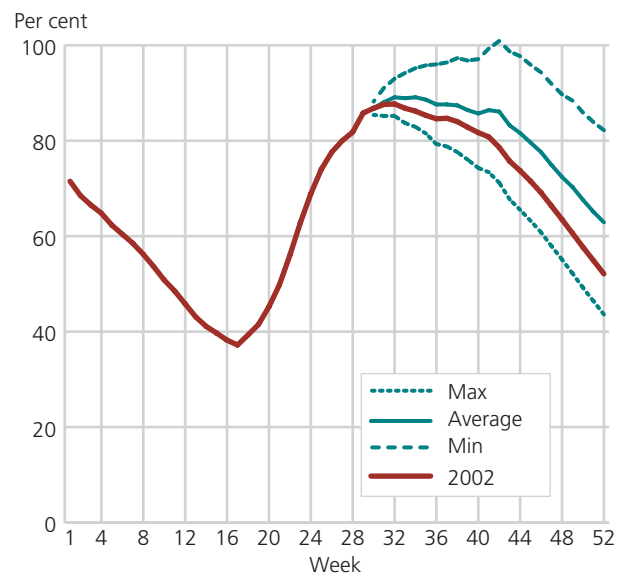
3.3. Limited generation capacity

Several other constraints may occur on the supply side. The generation capacity is limited and may in periods be insufficient to satisfy demand, i.e. prices increase to secure market balance. Most hydropower plants run under a set of regulations including a minimum and/or maximum allowable water flow, and a maximum and/or a minimum change in the water flow etc. When the limitations are effective, price is the only instrument to secure market balance. Constraints will then imply price differences in space and time.

3.4. External trade and increasing cost of short term supply

The short-term marginal production cost in a hydropower plant is very low, but on the demand side the value of water may be high. The Norwegian hydropower dominated market is linked with the markets abroad with thermal dominating technologies through transmission lines. In the expansion process of the thermal-based power market an important aspect is to combine base load technologies with high capital costs and low operating costs, and peak load capacities with low capital costs and high variable costs. This implies a stepwise upward sloping supply curve. When demand is high, prices increase and the market

Figure 4. Actual, minimum and maximum possible storage level. Week 30, 2002.



equilibrium moves upwards the supply curve abroad. As a result the value of water and prices of electricity in Norway also increase. Demand decreases and the excess supply in the Norwegian market is exported (exchange in accordance with profitability conditions). When demand in Europe is low, market prices are low; some of the marginal technologies are out of short-term business. When prices are low, the hydropower production is reduced, water is stored, and normally there is a net import to the Norwegian market.

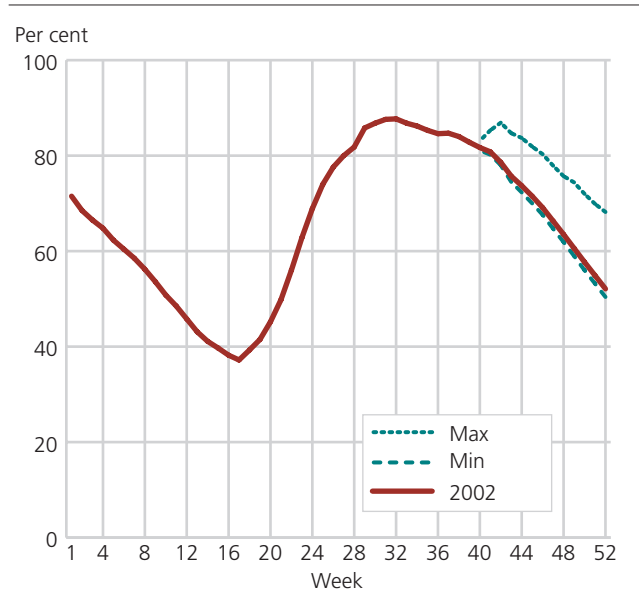
3.5. Transmission constraints

Since the power production technology, and thereby short term marginal cost, differs between countries, and since hydropower plants and consumers are located in different regions, transmission constraints often arise. For instance, during the winter of 2002-2003 (1 October to 1 March) transmission constraints between Denmark and Norway and between Denmark and Sweden, see Nordel (2003), occurred in 3300 out of 4400 hours. Transmission constraints imply price differences over time and across regions, and thereby influence producer behaviour. Even domestic transmission constraints occur frequently, especially under such circumstances as the fall of 2002 and winter of 2003. Uncertainty about future transmission constraints complicates the optimisation of the value of water both regionally and over time.

3.6. Uncertainty about inflow

As mentioned earlier, the 90 per cent confidence interval for annual inflow to the Norwegian hydropower reservoirs is 90-145 TWh. During the first half of 2002, inflow was above the normal level. Since temperatures and the business cycle changed only to a minor extent, demand was normal. Consequently, the stored amount of water was also high. An unusually

Figure 5. Actual, minimum and maximum possible storage level. Week 40, 2002.



warm and long summer implied decreased demand. Thus, producers estimated the futures' value as relatively low compared to normal at this point of the year, i.e. the willingness to produce was relatively high. This is underlined by the fact that there was a positive possibility for overflow when precipitation was expected to increase in the autumn. Figure 4 depicts actual, minimum and maximum possible storage levels during the fall when demand and production were assumed to be normal, referring to the actual reservoir level in week 30 (1 August).

Figure 5 shows the minimum and maximum possible storage level for the rest of the year, assuming normal production and demand from week 40 to the end of the year (1 October). We observe that at this point in time there is a zero possibility that overflow will occur, but still the actual production during this period is high. Two factors are important to bear in mind: First, prices in the day-ahead market had started to increase, sending signals to the reservoir owners to produce more electricity. Second, despite the fact that there was no possibility of overflow, the upper bound storage level was approximately normal. Since prices were above normal, again, the important incentive for the producer was to produce when prices were relatively high compared to earlier equivalent physical periods.

3.7. A complex optimisation

Uncertainty about inflow of water to the hydropower system is large, and demand changes due to temperature variation. In combination with all the restrictions that may occur in the storing, generating and transmission capacities, and the changing marginal cost of production from thermal plants, this supply and demand uncertainty creates a complex optimisation procedure for the hydropower producers. Eventually, this

causes prices to be high or low and differ between regions, depending on the inflows, but also depending on which capacity constraint is limiting. The underlying strategy from a hydropower producer, however, is still to equalise prices over time.

How can the producer deal with these uncertainties? A large number of market participants place bids and offers on the NordPool Exchange, which calculates the balancing price in the market on a 24-hour basis. Indirectly the NordPool market is an exchange of information on the cost of production and willingness to pay in the daily market. The aggregated information helps the market clearance. The electricity market is divided into regional markets, with systematic price differences between regions when transmission constraints occur. Then, the most important and relevant price differences in space are handled in the market.

What about differences in time? The NordPool participants take part in a price hedging futures market. Due to the volatility of both the supply and demand side, players need to hedge against the risk. In this market, risk lovers and risk averters meet and set up hedging prices for futures and forwards. All available information needed to optimise the value of water over time is settled indirectly through this financial market mechanism. The overall strategy, again, is to equalise the value of water over time.

4. The price formation

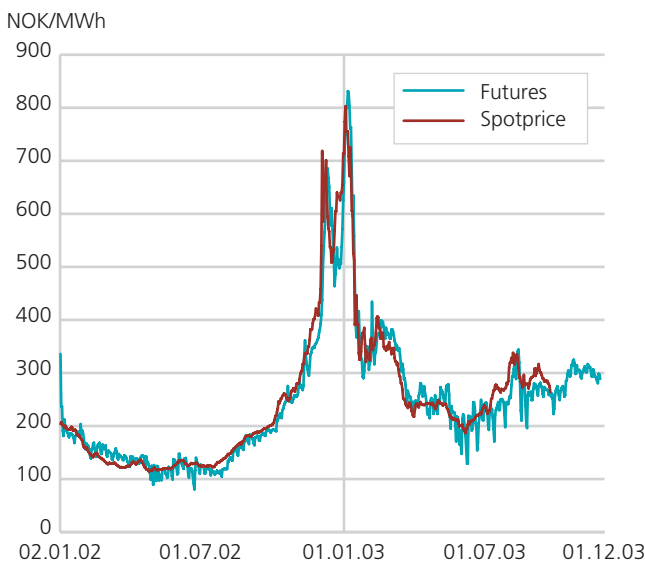
The futures market at NordPool gives information about the market anticipation of the future value of water. If prices are higher in the future (futures) than today (the spot market), it is profitable to store water for production at higher prices later on. Lower production today increases the spot prices. More production tomorrow reduces prices in the future. This optimising behaviour is going on until no arbitrage possibility between periods can be obtained. However, today is higher valued than tomorrow, due to uncertainty and an expected rate of return of investing in storing water, and because there may be some short term marginal costs of storing water. These elements must be adjusted for when comparing futures prices and the day-ahead spot price. The formal relation between futures prices and the spot price can be specified as (see Gjørlberg et al (2003))

$$p_f = (1+r)p_s + w + \varepsilon$$

p_f is the futures price, p_s the spot price, w the storage cost and ε represents an uncertainty element.

In figure 6, we show the development of the average over the 3-month ahead futures prices and the spot price for every day in 2002 and 2003. As the figure shows, the correlation seems to correspond with theory. Whether the futures price is the leader and the spot price the follower seems to vary over the period.

Figure 6. The development of the average 3-month ahead futures prices and the spot price. NOK/MWh

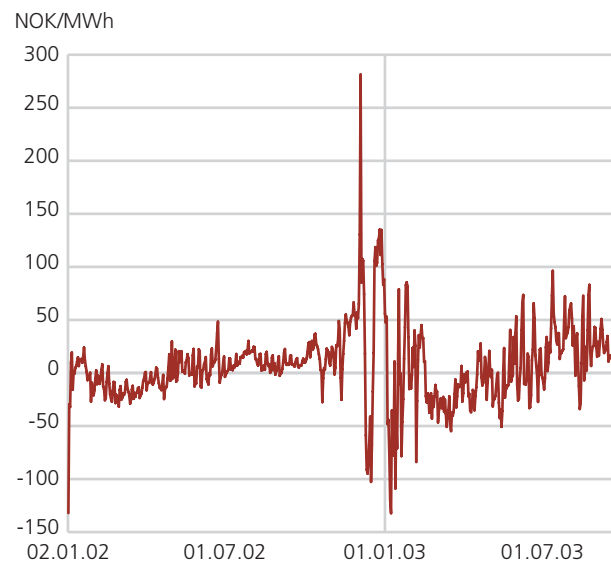


During most of the fall of 2003, the futures price was higher than the spot price as we would expect when uncertainty is normally distributed. From mid-December 2002 to early May 2003 the futures price was lower than the spot price in periods. Uncertainty was high and seems to have varied, perhaps biased downwards. When the snow-melting period started in May 2003, the reservoir level increased, and the normal high futures price compared to the spot price prevailed.

Even though the futures price and the spot price seem to correlate as expected from theory, a closer look at the differences raises important questions about the functioning of the market. Figure 7 shows these differences. For most of the period, the futures prices were about 10-15 per cent above the spot prices. In mid-December, this changed dramatically. Over a short period of time, the difference was almost 35 per cent, and it changed from positive to negative in a matter of days. What can the explanation be? The theoretical relation between futures prices and the spot price described above point at three different elements; the interest rate, the storage cost, and an uncertainty element. The interest rate did not change during this period, neither did the storage cost, as there was no probability of overflow in December. Uncertainty obviously changed. Three elements may be important to explain this change in uncertainty: bank security, an inefficient market and information.

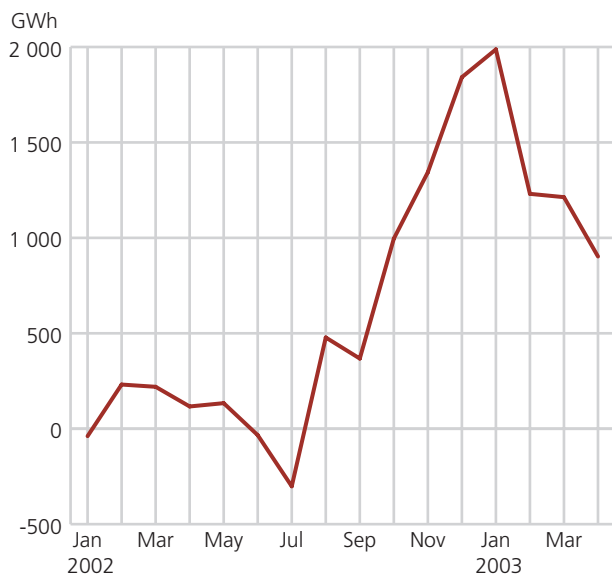
First, since the spot price almost quadrupled in this period compared to the summer of 2002, the absolute price difference became huge in December and January. Thus, the arbitrage possibilities increased enormously. Arbitrage also changed from a bias towards spot to a bias towards futures in a matter of a few days, i.e. a large change in the risk. Second, all agents in the futures market have to place a bank security for the future settlement of the contracts. Since prices in

Figure 7. The differences between the 3-month ahead futures prices and the spot price. NOK/MWh



the futures market tripled, the NordPool administrator found it necessary, on a short notice, to increase the bank security level in the futures market. This resulted in some of the market participants facing problems in raising the increased security and even withdrew from the market. Tripling of the prices, increased risk, and increasing bank security levels implied an almost illiquid market for a short period of time. A low number of players then increased the possibilities to exercise market power, both in the spot market and the futures market. The third element is the information problem. Prices normally have a rationing effect on the market. If the authorities consider the price mechanism as insufficient they should regulate the market by other instruments to secure enough electricity throughout the whole winter period. In December, both the Transmission System Operator (TSO) and the Norwegian Water Resources and Energy Directorate (NVE) indicated the possibility of intervention in the supply and demand side of the market. At the same time, there was a huge debate on prices, price formation and possible malfunctioning of the market that also led politicians to launch a range of possible instruments to "make the market work". There is reason to believe that this influenced the price formation in both the futures and the spot market.

From figure 6, we see that the average spot price in 2002 was much lower than the average spot price in 2003. In 2002 the average spot price was just above 20 øre/kWh – approximately the same as in 2001. So prices were not generally high in 2002. Only the last two months of 2002 can be characterised a high price period. The average spot price in 2003 is approximately 29 øre/kWh, which is 45 per cent higher than in 2002. Thus, 2003 is a very high price year, not only because of the high prices in the wintertime 2002-2003 but also because of relatively high and stable

Figure 8. Net exchange of power between the Nordic countries and Europe by month. GWh

prices throughout the year. This of course is a consequence of the relative scarcity of water at the beginning of the year, and only a normal inflow throughout 2003, i.e. the relative scarcity prevails.

5. Did we export too much?

One of the main focuses in the discussion last year was the public allegation that Norwegian producers exported too much power during the fall of 2002, as an effort to raise prices and increase profit during the wintertime of 2003. Producers of electricity do not export. Their obligation is to maximise the value of water, taking all the information they have about prices into account. Producers trade spot and futures at the NordPool exchange on the margin. The NordPool Exchange is an international exchange, i.e. producers and consumers from the Nordic countries meet indirectly through bids and offers. However, producers do not meet individual consumers in this market. They face only the total supply and demand, irrespective of whether the players are domestic or foreign. The result of the market clearing at NordPool is an exchange of power between countries. Export and import then become more of an accounting measure than a delivery measure. What takes place is an exchange of power on a profitable basis.

The statement about increasing production in the fall in order to increase prices in the wintertime implies an accusation that electricity producers exercised market power. As explained in the previous sections, production seemed to follow a profit maximising behaviour in a competitive market. It is hard to point at any exercise of market power throughout this period.

The discussion so far has mostly focused on the export side of the story. Let us take a closer look at what happened with respect to imports and exports from Norway from the summer of 2002 to the summer of 2003.

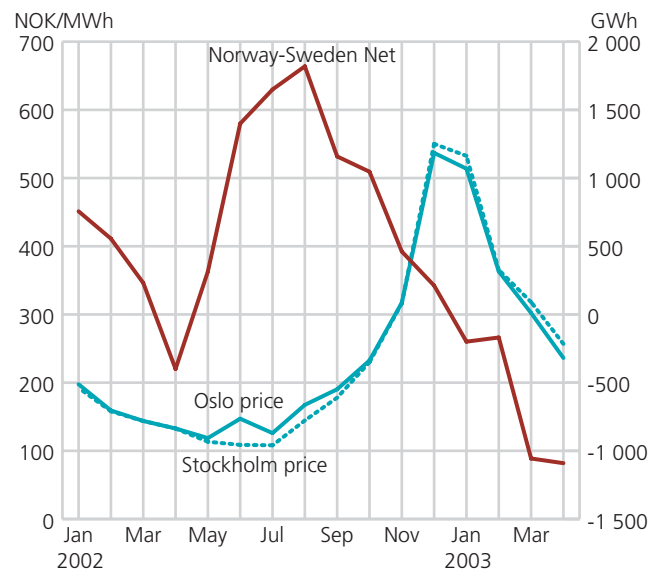
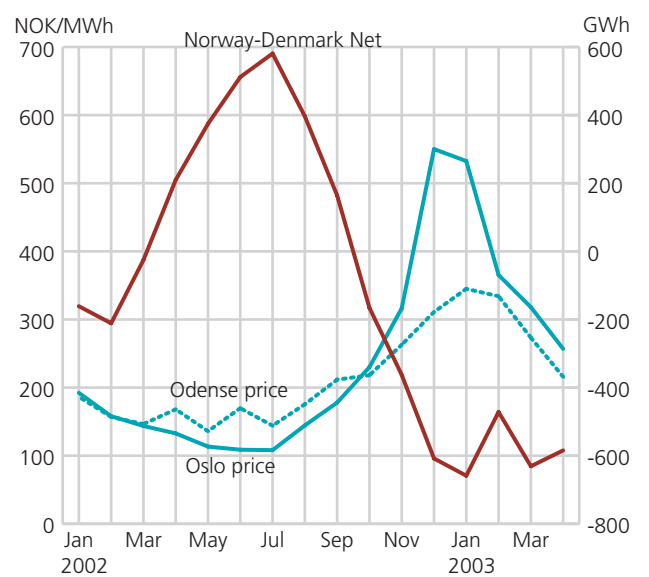
Figure 9. Net exchange of power between Norway and Sweden. Net export from Norway. NOK/MWh and GWh**Figure 10. Net exchange of power between Norway and Denmark. Net export from Norway. NOK/MWh and GWh**

Figure 8 clearly shows that inflows were substantial during the spring and summer of 2002. Prices were low and did not cover the short-term marginal cost in thermal plants in Europe. Eventually, as precipitation and inflow failed, the future value of water increased because of the expected scarcity, prices in the day-ahead market of electricity increased and the profitability of thermal capacities in Europe exceeded zero. The Nordic countries benefited from net imports, which lasted for the whole winter. Thermal plants in Europe helped the Nordic countries with power when water was scarce.

Figure 9 shows the exchange path between Norway and Sweden and Norway and Denmark, i.e. internal net trade between the three countries. From these

figures, we see that Norway was a net exporter when prices were low during most of 2002, until October/November, when spot prices increased sharply. From then on exports changed to imports, a situation that lasted through the summer of 2003. The same pattern goes for the exchange between Norway and Denmark. The most important difference is that while net inflow to Norway from Sweden increased steadily, the imports from Denmark stabilised on a maximum level of approximately 600 GWh a week. This reflects the limited transmission capacity between Western Denmark and Norway. According to Nordel (2003), the transmission lines between these two regions were congested in more than 75 per cent of the time between 1 October 2002 and 31 March 2003, as was the transmission capacity between Denmark and Sweden (inflow to Sweden).

If we accumulate the net export/import figures for these three countries from July 2002 to July 2003, we find that Norway was a net importer of 0.5 TWh. This clearly shows that exchange between countries with different technologies on a profitable basis is to the benefit of all participating countries. When supply of water was plentiful, Norway exported to the neighbouring countries. When supply of water was scarce, the capacity utilisation of existing thermal plants in the neighbouring countries increased, and the exchange changed direction.

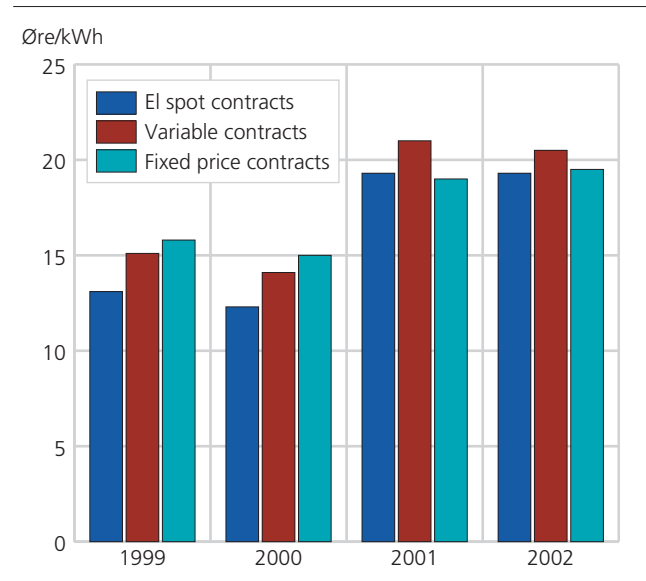
6. Flexibility of domestic demand and the market for contracts

Consumers may be exposed to fluctuations in the spot prices or hedge against the risk by signing fixed price contracts. Two problems then arise:

First of all, hedging against risk is reasonable if the transaction cost of switching contracts is high, if you are a risk averter or your liquidity is low. When spot prices started to increase during the fall of 2002 the media started to advocate fixed price contracts. Unfortunately, this was a little late as optimal fixed price contracts are influenced by the spot price changes and the optimal signing of such contracts is a matter of timing. Besides, signing a fixed price contract implies a combined product; i.e. a combination of an electricity price and an insurance premium. The price in a fixed price contract is therefore normally higher than the spot price.

Second, if everybody hedged against the risk by signing fixed price contracts, the flexibility in the demand side would disappear. When supply is limited, prices in the wholesale market increase. Since everybody is on a fixed purchaser price contract no market response on the demand side helps the market to clear and eventually the market breaks down (cf. the Californian case) in the short run. In the longer run, prices increase as the producers have to take all the risk. Fortunately, many consumers (especially industries)

Figure 11. The average power price by contract type. All consumers except the power intensive industry. Øre/kWh



have signed spot or variable price contracts and actually respond on price changes.

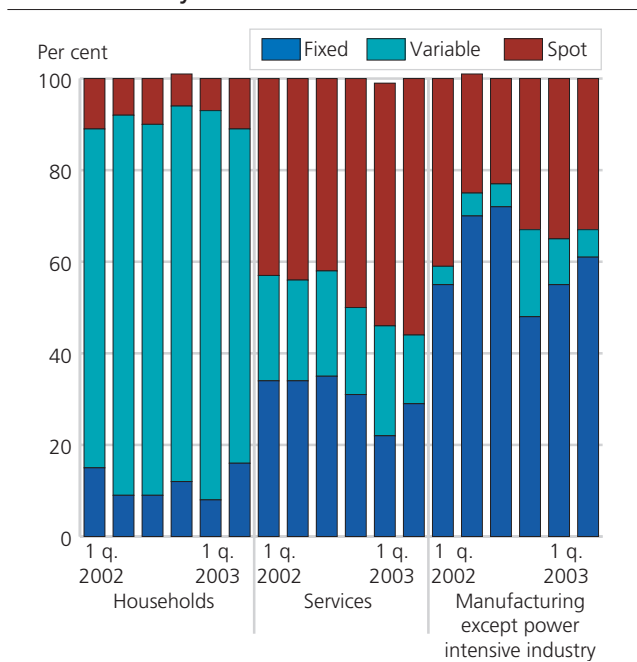
Price contracts, income distribution and market responses were important aspects in the discussion about the functioning of the electricity market last year. Halvorsen and Nesbakken (2003) discuss some income distribution effects. We concentrate on the contracting and the market responses.

6.1. The best contract

Most consumers face access contracts in the electricity market; i.e. they can consume any amount at a fixed unit price, a variable price or a spot price, depending on the type of contract. Some consumers have a combination of fixed price and volume contract (mainly the power intensive industry). These industries face the market price on the margin, as they are allowed to sell back some of the fixed price contracted volume at market prices, and thereby earn a profit. Another type of contract, which is most commonly chosen among households, is the variable price contract. This started out to be a kind of flexible fixed price contract that lasted for some months. Eventually this contract type has become more and more linked to the spot price, as it can be cancelled by both parties 14 days in advance and changed every month. The least typical contract is a spot price contract, which is directly linked to the day-ahead market, with an administrative mark-up.

Figure 11 pictures the average price for the three different kinds of contracts; the fixed price contract, the variable contract and the spot contract, from 1999 to 2002. On average, the spot price contract was the best contract for consumers. The fixed price contract was more expensive, which is as expected under normal circumstances, since when signing a fixed contract,

Figure 12. The share of contracts by type in three different sectors. All consumers except the power intensive industry. Øre/kWh



the supplier takes over a certain amount of risk, which has a price in the market. On the other hand, the supplier also removes some risk in signing such a contract. The graph shows that the net risk sharing has been to the benefit of the suppliers, if they use the spot market when purchasing power for their deliveries. But, we should keep in mind that the figures are averages from several years. Some fixed price contracts may well be better off than the spot contract, depending on when the fixed price contract was signed. As mentioned, this is a matter of timing.

Thus, the variable contract has been the least profitable contract for the consumer over the last two years, while in 1999 and 2000 the fixed price contract was the most expensive one. The reason why the variable contract has been more expensive lately is probably due to a shorter warning period for termination of the variable contract. The variable contract is then closely linked to the spot price. When the spot price increases sharply, it seems as if variable contracts include an even sharper increase, and vice versa. The variable contract then seems to add an important mark-up to the spot price, see Statistics Norway (2003). How this contract survives in the market is an open question. It may possibly be due to lack of information to consumers – i.e. inefficiency in the market. Until recently the Norwegian Competition Authority has only had information about the variable contract offers on their website. In the fall of 2003, information about the differences in the variable contracts, the fixed contracts and the mark-ups on the spot contracts by supplier was also included.

The problem with lack of information is underlined by the fact that the residential sector has been the most eager supporter of the variable contract type, see figure 12. Approximately 85 per cent of the residential sector has chosen this contract type despite the fact that this has been the least favourable both from a price and risk perspective. The service and manufacturing industries¹ seem to have a better mix of fixed and spot contracts and so seem more professional in information gathering than the residential sector. The profits to be earned for the industry on an optimal portfolio mix of contracts is of course also higher, since transaction cost per unit of electricity is less than in the residential sector.

6.2. The market's response

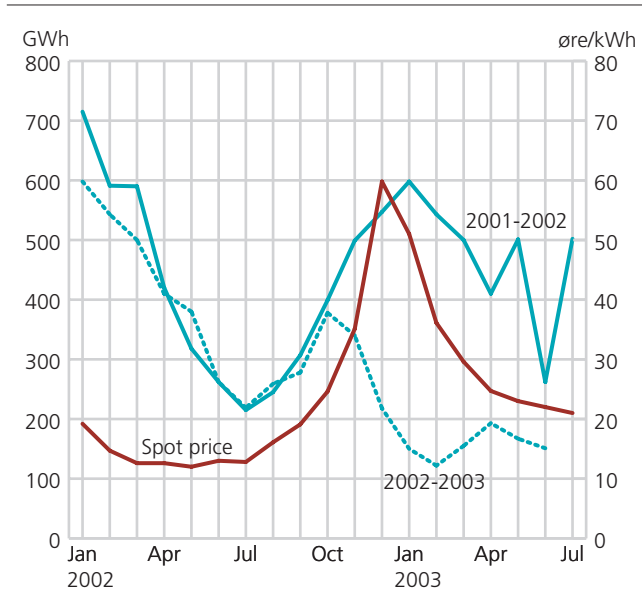
When it comes to the discussion of market response to the increasing prices we divide the market in three with respect to flexibility; the boiler market, the demand in the energy intensive industry and the general consumption of electricity.

The technology in the boiler market is flexible, as the boilers that produce hot water or steam can run on both electricity and fuel oil. The switching is simple, and could be accomplished on an hourly or daily basis. The flexibility in this sector is high. Figure 13 shows that when prices rise in the spot market, boilers leave the market and switch to fuel oil. In the spring of 2002, the boilers followed a normal pattern, decreasing demand as the need for heat decreased. In the fall, the normal development is increasing demand. This was suddenly abrupt by a sharp decrease, as the spot price increased above 30 øre/kWh. Surprisingly, there was still some demand left when prices exceeded 50 øre/kWh. This may be due to lack of maintenance of fuel burners, i.e. switching on a short notice is not possible, or price roof contracts excluding market prices when exceeding a maximum level. In such cases the supplier covers the price risk, and the consumer has no incentive to adjust demand. The total volume effect on demand in the boiler sector is calculated at just above 2 TWh for the periods shown in the graph.

Due to putty clay technology the power intensive industry is not very flexible. This implies that once technology choices have been made the technology is fixed; no substitution is possible in the short term. An advantage of the fixed price contracts in this industry compared to traditional fixed contracts in the general consumption sector is the combination of price and volume elements. This opens up for the possibility to sell power back to the market and earn profit on the difference between the spot price and the contracted price. Since business cycles are important in this sec-

¹ The energy intensive industry is excluded from this graph since they first and foremost use a combination of fixed price and volume contracts.

Figure 13. The spot prices and the boiler market for electricity by month. 2001-2003. Øre/kWh and GWh



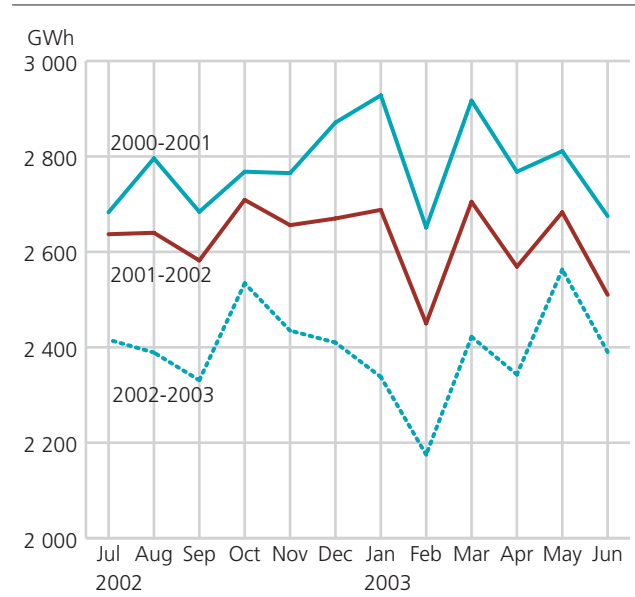
tor, it may be hard to separate the effect from business cycles and the electricity price changes.

Figure 14 shows a large variation in the demand pattern of energy intensive industries between 2001, 2002 and 2003. This may all be due to changes in the business cycle. The graphs also show that the pattern month by month seems to be the same for the three years. The exception is the period October 2002 to January 2003, where demand dropped markedly, while for the same period it increased in 2001 and was stable in 2002. Taking this as the price effect (the spot price started to increase in October and to drop in February), the price response may be calculated at approximately 0.5 to 1.0 TWh.

The general consumption sector (all except boilers and energy intensive industry) typically consumes electricity for a mix of end uses; technical purposes, heating purposes and to some extent processes. Thus, this sector combines flexible and non-flexible demand. Electricity use for heating purposes has been stressed particularly in the debate. Some allege that electricity has some kind of a higher value than expressed in the market, and therefore should be reserved for manufacturing industry processes. It seems however, that the residential sector and the rest of the general consumption sector has a high willingness to pay for electricity (the elasticity of demand is low, cf. Bye, Breivikås and Hansen (2003)).

Figure 15 depicts the demand for electricity from the general consumption sector in 2001-2003. There is a clear difference in demand, especially for the high price period in late 2002 and the first four months of 2003. The sum of differences adds up to approximately 4 TWh for this period. This is also on par with the price elasticities of 0.05 in Bye, Breivikås and Hansen (2003), cf. also Johnsen and Lindh (2001).

Figure 14. The demand for electricity in the energy intensive industry. 2001-2003. GWh



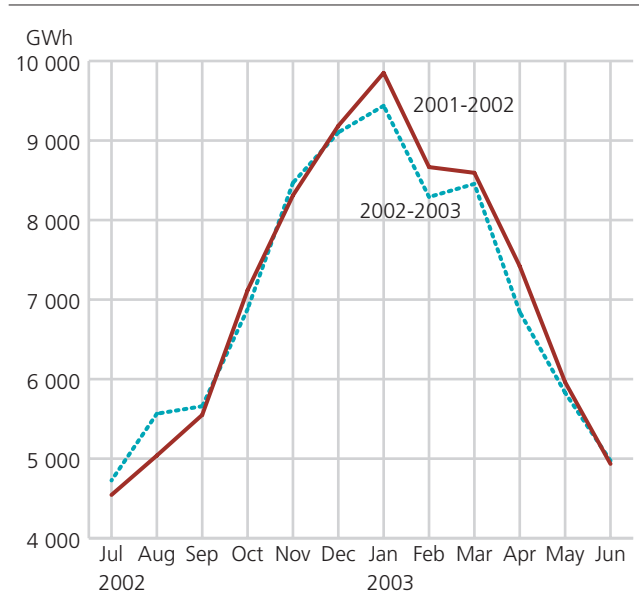
The total price effect in the Norwegian electricity market, from the fall of 2002 until the spring of 2003, is calculated at approximately 7 TWh. This again is approximately one month of electricity use during the snow-melting period of May and June. In the spring of 2003, the lowest reservoir level was at 18 per cent or approximately 15 TWh. According to the TSO, only 8 TWh of this could be utilised effectively in the market. The difference exactly equals the market response we report above. This shows that despite the common view about elasticity of demand being low, the price response actually calculated is very important for the water balance in the electricity market.

7. Are investments in capacity expansion too low?

It seems as if many people are of the opinion that the deregulation of the electricity market implied inefficiencies with respect to the incentives for investment in capacity expansion. To support their view, they point to the fact that since 1991 investments in the Norwegian electricity-producing sector increased the capacity by 4 TWh a year, while demand increased by 13 TWh. As a consequence, net trade changed. In order to explain why this does not imply a failure in the market, we address three issues; what was the reasoning behind the deregulation, what has become the result with respect to return on investments, and what is the future profitability of expanding power production capacity.

The main reason for deregulating the electricity market was to increase efficiency (and social surplus) with respect to three objectives: increase efficiency in the electricity market (equalising prices among consumers), increase efficiency in the distribution and transmission sector, and increase efficiency in capacity expansion (overcapacity comparing prices and cost).

Figure 15. The demand for electricity in the energy intensive industry. 2001-2003. GWh



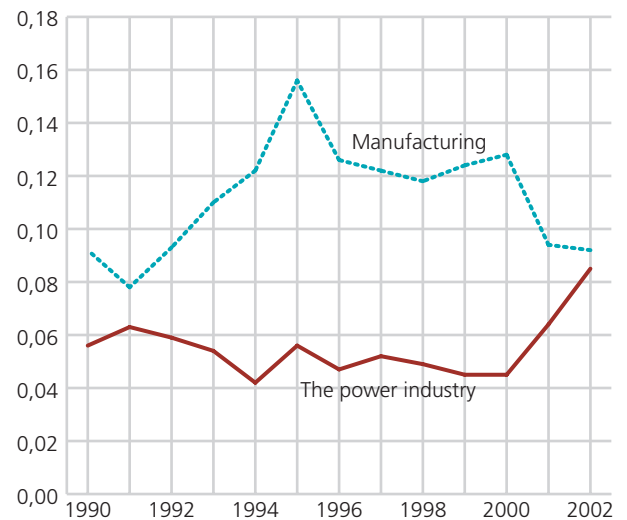
Different upfront studies, cf. Bye and Strøm (1987), Førsund and Kittelsen (1990) and calculations from the suppliers, indicate a net benefit to the society of deregulating the Norwegian electricity market and increasing efficiency at a total of NOK 7-10 billion a year.

Figure 16 shows the rate of return on capital investments in the power sector and the manufacturing industry from 1990 to 2002, i.e. the period after the deregulation of the electricity sector. The figures are based on the national accounts figures for operating surplus and the depreciated replacement cost for each industry. The average rate of return in the power sector in this period is approximately 6 per cent, while the rate of return in the manufacturing industry is well above 10 per cent. This calls for further investments in manufacturing before any expansion of the power sector takes place.

The reason for the low rate of return in the power sector is the overcapacity and low prices under the free competitive market. The overcapacity lasted for many years, and still exists. Several neighbouring countries are linked to the Norwegian market, and these countries also deregulated their markets during the 1990s. They all experienced excess capacity compared to prices and costs. Integrating the markets then implied low prices in the whole region for several years.

We also see that the rate of return between the power sector and the manufacturing industry has narrowed in the last two years. This is due to diminishing excess capacity and a combination of high prices and volumes. In periods with high prices, volumes have not been comparably low, and in periods with large volumes, prices have not been particularly low because of exports. The figure conceals the fact that the rate of

Figure 16. The development of the rate of return on capital investment in the power sector and the manufacturing industry. Per cent.

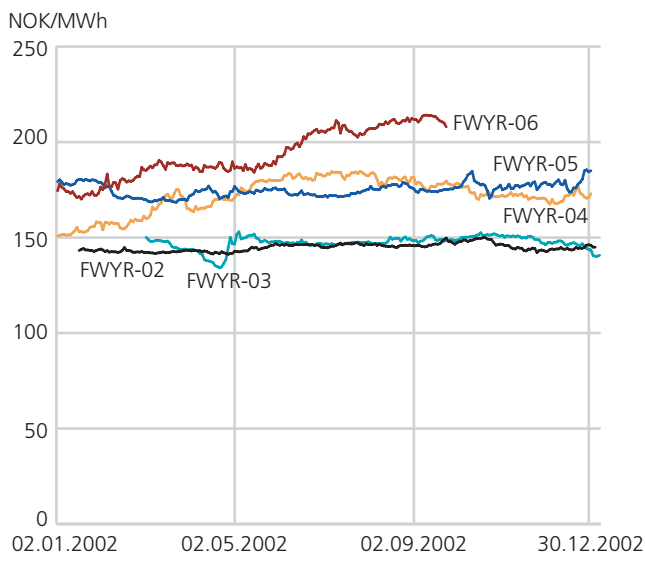


return on the margin is even less than the development shows. The hydropower sector faces an increasing long-term marginal cost of expansion. An optimal investment path should then leave a certain ground rent in the sector, i.e. the average rate of return should exceed the rate of return of alternative investments in other industries. The development of the rate of return in power production explains why almost no investments have taken place since the deregulation of the market in 1991; all investments have to rely on profitability in the market.

At the NordPool market, a three-year forward contract should give an idea about the profitability of future investments in an expansion of the production capacity. Figure 19 shows the development of this forward price contract since 1999. The FWYR2002 then tells us what the market in 1999 anticipated with respect to electricity prices in 2002, i.e. three years ahead. To evaluate these forward prices in an investment approach, we need to know the marginal cost of expansion. In NOU 1998:11, the cost of investing and running a gas power plant was estimated to approximately 20 øre/kWh. This excludes the cost of the negative externalities, like emissions of greenhouse gases, i.e. the social cost is even higher. Since the investment decision is to be taken in a competitive market, the regulatory regime around the greenhouse gas emissions is important. So far, the government has not clarified this. This introduces an uncertainty element in a private sector investment strategy, i.e. it also causes the relevant cost to be even higher than 20 øre/kWh.

We notice that prices in the forward market were very low compared to the unit cost of expansion, with prices increasing as excess capacity diminished, from 15 to 20 øre/kWh for the period of 2002-2005. The forward market thus told the investors that a new capac-

Figure 17. The development of the 3-year forward contract at the NordPool market. NOK/MWh



ity expansion would not be profitable before 2005. Consequently, no investments took place. In 2003, the 3-year forward price has increased to approximately 23-24 øre/kWh. Does this make new investments profitable? Three important factors have to be considered. Firstly, the 3-year forward price probably includes a small mark-up on the price as a consequence of a gradual conversion to a normal reservoir filling. This may imply an embedded underlying downward pressure on the price development for the 2007 forward contract. Second, lately the freight rates for shipping of coal to the Nordic coal thermal plants have increased markedly. This increases electricity prices in the short and medium term. When freight rates are normalised, this could imply a negative shift in prices and profitability of new investments. Third, since 1998, gas prices have increased following the increase in crude oil prices. Since the gas cost is approximately half of the cost of a gas power plant, this implies that prices have to match increased gas power plant unit cost. This may be in the region of 23-24 øre/kWh, i.e. new large investments in increasing the power production capacity on a profitable basis would hardly show up in the next 3-4 years. It should also be added that the government introduces several instruments to increase the power producing capacity based on renewable energy sources, and to reduce demand of electricity for heating purposes. These instruments will then put a downward pressure on electricity prices and postpone the market-based power production investments.

8. Concluding remarks

The Nordic and Norwegian electricity markets were exposed to an extreme primary energy situation during 2002 and 2003. A short-term shortage of precipitation and inflow entailed sharply increasing prices and vigorous discussions about the functioning of the deregulated market when exposed to such extreme

situations. Because the extreme period was concentrated to a few weeks in the fall, it was neither easy for the players to foresee the event nor to adjust fast. Compared to theory, the power market functioned remarkably well during this period.

Norway exported large amounts of power during the fall of 2002, but we imported approximately the same amount during the winter and spring of 2003. This clearly shows the advantage of trade between different supply systems with different properties and short-term marginal cost. We must bear in mind that producers do not export in an interlinked power market, they optimise the value of water in a broad international market, and exchange between countries is simply a consequence of commercial trade in a common pool.

Despite the common view that consumers do not change their demand much when prices of electricity increase, our analyses show that consumers actually adjusted pretty much to increasing prices. The price response equals approximately one month of domestic consumption in the spring. The price response also equalises the difference between the actual reservoir level and the minimum exploitable reservoir level in the spring of 2003. A flexible demand side turns out to be a very important element in a power system facing stochastic primary energy inflow.

One political concern regarding the sharp increases in the electricity prices was the effect on income distribution. Some of this negative distribution effect could have been avoided if consumers had the proper information about risk and contracts. The residential sector almost unilaterally chose the most expensive contract type. A new type of contracts combining a price and volume element would serve as an excellent instrument combining the need for risk hedging and flexibility on the consumer side in a stochastic supply system.

An optimal balance of water over time, when no constraints are in effect, implies an equalising of prices over time. The prices in the futures market and the spot market are then correlated. This has not been the case all the time. The futures market is an important messenger to the spot market. This implies that a well functioning electricity market is based on both a well functioning spot market and an efficient futures market. In some periods one may question the functioning of the futures market, since the market was hardly liquid.

During the past decade, almost no capacity incremental investment has taken place in the Norwegian power sector. This is caused by excess capacity internationally, comparing prices and long-term marginal cost, and a low rate of return on existing capacity. The forward prices on the NordPool market signals that a

new capacity expansion will hardly occur during the next 3-4 years. Many uncertainties, both with respect to the development of prices in the primary energy markets (gas, coal etc) and with respect to the governmental handling of externality issues, put a downward pressure on capacity expansion investments. Governmental efforts to increase the introduction of renewable energy sources and increase energy savings postpone market-based investments in new production capacity.

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Research publications in English

New titles

Reports

Robert Straumann: Exporting Pollution? Calculating the embodied emissions in trade for Norway. Rapporteur 2003/17. Sidetall 33. ISBN 82-537-6487-1

Economic activity causes to varying degree pollution to air, soil and water. The pollution that is caused by the production of a single unit of a certain commodity can be said to be embodied in the commodity. This approach allows us to investigate environmental issues from a consumption-centred perspective, and this is especially important in the case where the embodied pollution in a certain commodity is not restricted to the country where the commodity is consumed.

In this thesis, I present some possible approaches to measure the emissions embodied in the exports and imports of different commodities. The indicator which I focus on, the so-called Pollution Terms of Trade is presented in the second chapter, and its main features is discussed and I also propose several possible applications. The indicator is based on trade data and emission intensities in the production of different commodities, and I pay particular attention to the importance of using country-specific intensities in order to capture the total embodied emissions in trade.

In the third chapter I calculate the indicator for the case of Norway, and find significant differences in the balance of emissions in trade for different pollutants. The importance of the oil industry, as well as ocean transport, for Norwegian exports greatly affects the results, especially in the case of pollutants like NO_x and NMVOC. The technology effect is also significant in some cases, as expected.

In the fourth chapter I discuss the impacts of trade on the environment, and present a theoretical model to illustrate some of these issues. I also use data from an earlier general equilibrium study to assess the effects of a certain shift in trade policy on the Pollution Terms of Trade. I find that as the net import of agricultural

goods increases, the balance of embodied emissions in trade improves to a great deal when it comes to pollutants like CH_4 and NH_3 . The effects are both positive and negative in terms of the PTTI, depending on type

Discussion Papers

Erling Røed Larsen and Dag Einar Sommervoll: Rising Inequality of Housing? Evidence from Segmented Housing Price Indices. DP no. 363, 2003. 22 pages.

This article uses the Case-Shiller technique for constructing housing price indices on a Norwegian data set of transactions for the period 1991-2002 consisting of 10 376 pairs of repeated sales. Using a weighted least squares scheme in order to control for heteroskedasticity, we construct a general housing price index by regressing differences in log prices for the subset of repeated sales of same, and thus identical, homes onto a set of binary time variables, one for each quarter in the period. The constructed index shows that nominal prices for identical homes in general have increased by a factor of 3.58 over the 11-year period, while the CPI increased by 1.28, creating substantial capital returns for early purchasers. We then segment the data set into five different housing types in order to control for finite mixtures of hedonic features, and find that price indices for the smallest and largest type show nominal increases by factors 4.40 and 2.77, respectively.

Erling Røed Larsen: Are Rich Countries Immune to the Resource Curse? Evidence from Norway's Management of Its Oil Riches. DP no. 362, 2003. 27 pages.

Growth studies show, counter to intuition, that the discovery of a natural resource may be a curse rather than a blessing since resource-rich countries grow slower than others. But it has been suggested that Norway may be an important exception to the curse and that the curse does not afflict rich countries. This article addresses both issues, and introduces a new diagnostic test. Neighbor countries Denmark and Sweden are used to highlight Norway's relative development and to test for curse presence. I employ a structural break technique to demon-

strate that Norway started an acceleration in the early 70s, after having discovered oil in 1969, and did not experience a pronounced retardation for the next 25 years. Instead, after first catching-up with its neighbors, Norway maintained a higher pace of growth. Norway might have escaped the curse. However, data suggest a slow-down at the end of the period, opening the possibility of a late onset of the curse. If so, rich countries are not immune.

Elin Halvorsen: Financial Deregulation and Household Saving. The Norwegian Experience Revisited. DP no. 361, 2003. 30 pages.

I use new micro data to study the effects of credit deregulation on the Norwegian household savings decline in the mid-1980s. This paper has three main findings. First, the decline in saving started in 1983, a couple of years earlier than previously thought on the basis of National Accounts data. Second, it was primarily young and middle-aged households who increased their consumption. Finally, the rapid increase in housing prices in 1985-86 may have been an important determinant of older and retired households' saving through reversed mortgages, but cannot on its own explain the decline in savings that started in 1983.

Rolf Aaberge: Mean-Spread-Preserving Transformations. DP no. 360, 2003. 55 pages.

The purpose of this paper is to define various mean-spread-preserving transformations, which can be considered as generalized versions of the mean-Gini-preserving transformation. The mean-Gini-preserving transformation, which was introduced independently by Zoli (1997, 2002) and Aaberge (2000b), is a combination of progressive and regressive transfers that leaves the Gini coefficient unchanged. It will be demonstrated that the various mean-spread-preserving transformations form a useful basis for judging the normative significance of two alternative sequences of nested Lorenz dominance criteria that can be used to rank Lorenz curves in situations where the Lorenz curves intersect. The two alternative sequences of Lorenz dominance criteria suggest two alternative strategies for increas-

ing the number of Lorenz curves that can be strictly ordered; one that places more emphasis on changes that occur in the lower part of the income distribution and the other that places more emphasis on changes that occur in the upper part of the income distribution. Furthermore, it is demonstrated that the sequences of dominance criteria characterize two separate systems of nested subfamilies of inequality measures and thus provide a method for identifying the least restrictive social preferences required to reach an unambiguous ranking of a given set of Lorenz curves.

Scaling up the introduced Lorenz dominance relations of this paper by the mean income μ and replacing the rank-dependent measures of inequality JP with the rank-dependent social welfare functions $WP = m(1 - JP)$, it can be demonstrated that the present results also apply to the generalized Lorenz curve and moreover provide convenient characterizations of the corresponding social welfare orderings.

Mari Rege and Kjetil Telle: Indirect Social Sanctions from Monetarily Unaffected Strangers in a Public Good Game.
DP no. 359, 2003. 20 pages.

Several economists have maintained that social sanctions can enforce cooperation in public good situations. This experimental study investigates whether indirect social sanctions from monetarily unaffected observers can increase contributions to a public good. The experiment has two treatment effects. First, each participant's identity and contribution to the public good is revealed to the monetarily unaffected observers. Second, information affecting participants' beliefs about the degree to which the observers are contributors is introduced. The data suggests that indirect social sanctions from monetarily unaffected observers can increase voluntary contributions to public goods, provided that the subjects have reason to believe that the observers themselves are strong contributors.

John K. Dagsvik, Steinar Strøm and Zhiyang Jia: A Stochastic Model for the Utility of Income.
DP no. 358, 2003. 40 pages.

In this paper we propose a particular approach to measuring utility of income. To this end we develop a theoretical framework that restricts the class of admissible functional forms and distributions of the random com-

ponents of the model. The theoretical approach is based on ideas and principles that are used in modern psychophysical research and theories of probabilistic choice.

The empirical part of the paper is based on "Stated Preference" data (SPD). In the present context this means that individuals participating in a laboratory type of experiments are asked to rank order a set of hypothetical alternatives presented.

Solveig Glomsrød and Wei Taoyuan: Coal cleaning: A viable strategy for reduced carbon emissions and improved environment in China? DP no. 356, 2003. 39 pages.

China is a dominant energy consumer in a global context and current energy forecasts emphasise that China's future energy consumption also will rely heavily on coal. The coal use is the major source of the greenhouse gas CO₂ and particles causing serious health damage. This paper looks into the question if coal washing might work as low cost strategy for both CO₂ and particle emission reductions. Coal washing removes dirt and rock from raw coal, resulting in a coal product with higher thermal energy and less air pollutants. Coal cleaning capacity has so far not been developed in line with the market potential. In this paper an emerging market for cleaned coal is studied within a CGE model for China. The macro approach catches the repercussions of coal cleaning through increased energy efficiency, lower coal transportation costs and crowding out effect of investments in coal washing plants. Coal cleaning stimulates economic growth and reduces particle emissions, but total energy use, coal use and CO₂ emissions increase through a rebound effect supported by the vast reserve of underemployed labourers. A carbon tax on fossil fuel combustion has a limited effect on total emissions. The reason is a coal leakage to tax exempted processing industries.

Iulie Aslaksen and Terje Synnøstvedt: Corporate environmental protection under uncertainty.
DP no. 355, 2003. 19 pages.

Investment in pollution prevention technologies are often made under significant uncertainty about the future pay-off from the investments. However, as time passes some of the uncertainties may be resolved by new information, implying that the timing of investments becomes an important issue for the company. This paper fo-

cuses on uncertainty about a future environmental tax, and shows, within a two period model, that a specific tax uncertainty, standing alone, does not create any incentives for early investments. However, introducing a market share increase linked to the investment, the tax uncertainty may strengthen the incentives for early investments.

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Table A1. Final expenditure and gross domestic product. At current prices. Million kroner

	2001	2002	02:1	02:2	02:3	02:4	03:1	03:2	03:3
Final consumption expenditure of households and NPISHs	656 990	685 179	159 346	167 003	173 426	185 404	171 584	175 373	182 814
Household final consumption exp.	629 292	657 026	152 337	160 067	166 418	178 204	164 078	167 663	175 045
Goods	345 148	355 447	81 267	85 749	86 529	101 902	88 236	89 004	90 925
Services	275 967	292 720	69 889	72 823	75 730	74 279	73 836	76 350	78 810
Direct purchases abroad by resident households.	26 795	27 133	5 034	6 532	9 759	5 808	5 637	7 340	11 194
Direct purchases by non-residents	-18 619	-18 275	-3 852	-5 037	-5 600	-3 786	-3 631	-5 031	-5 885
Final consumption exp. of NPISHs	27 698	28 153	7 009	6 936	7 009	7 200	7 505	7 710	7 769
Final consumption exp. of general government.	309 566	332 450	80 301	82 848	83 713	85 588	88 454	84 017	86 509
Final consumption exp. of central government	121 719	175 884	42 684	43 645	45 050	44 505	46 507	45 317	47 425
Central government, civilian	93 492	145 933	35 256	36 181	37 613	36 883	38 654	37 707	39 802
Central government, defence	28 227	29 951	7 428	7 464	7 437	7 622	7 853	7 611	7 624
Final consumption exp. of local government	187 847	156 566	37 617	39 203	38 663	41 083	41 946	38 700	39 084
Gross fixed capital formation	270 686	259 256	60 127	67 871	62 860	68 398	61 654	63 357	64 950
Extraction and transport via pipelines	56 893	53 431	12 725	13 041	13 268	14 397	14 192	16 322	17 001
Services activities incidental to extraction -699	5 538	102	4 941	289	206	528	406	32	
Ocean transport	11 592	6 471	914	1 535	1 310	2 711	2 595	949	998
Mainland Norway	202 901	193 817	46 386	48 354	47 993	51 085	44 338	45 680	46 918
Mainland Norway) excl. general government	161 198	151 333	36 389	38 034	37 422	39 489	33 922	34 334	34 351
Manufacturing and mining	21 469	22 192	4 184	5 654	5 600	6 755	3 718	4 878	4 036
Production of other goods	16 402	16 576	3 020	4 572	4 463	4 520	3 394	4 500	4 313
Dwelling service (households).	52 097	51 887	13 466	12 741	12 545	13 136	12 956	12 041	12 084
Other services.	71 230	60 678	15 719	15 066	14 814	15 078	13 855	12 915	13 918
General government	41 703	42 484	9 997	10 320	10 571	11 596	10 416	11 346	12 567
Changes in stocks and stat. discrepancies	27 032	28 434	9 525	10 132	5 030	3 746	14 588	-2 132	2 264
Gross capital formation	297 719	287 690	69 653	78 003	67 890	72 145	76 242	61 225	67 214
Final domestic use of goods and services	1 264 274	1 305 319	309 300	327 854	325 029	343 136	336 279	320 615	336 538
Final demand from Mainland Norway (excl. changes in stocks)	1 169 456	1 211 446	286 033	298 205	305 132	322 076	304 376	305 070	316 242
Final demand from general government	351 269	374 934	90 298	93 168	94 284	97 184	98 870	95 363	99 076
Total exports	697 597	630 472	154 853	162 977	153 200	159 443	163 940	154 647	156 078
Traditional goods	215 864	199 794	51 555	51 771	46 866	49 603	48 729	50 159	47 741
Crude oil and natural gas.	301 613	264 842	62 423	68 379	64 328	69 712	76 334	61 225	64 597
Ships and oil platforms	16 055	9 711	3 498	3 223	1 918	1 072	2 159	2 594	1 344
Services	164 065	156 125	37 377	39 604	40 088	39 056	36 718	40 669	42 395
Total use of goods and services	1 961 871	1 935 791	464 153	490 831	478 229	502 579	500 220	475 262	492 615
Total imports	435 270	415 063	97 796	108 350	103 708	105 209	101 533	105 027	109 790
Traditional goods	282 389	272 036	66 910	68 919	64 870	71 337	68 401	69 141	68 693
Crude oil	1 598	810	134	202	296	178	478	43	61
Ships and oil platforms	15 505	10 747	811	6 522	1 409	2 005	3 127	2 252	1 026
Services	135 778	131 470	29 941	32 707	37 133	31 689	29 527	33 591	40 010
Gross domestic product ¹	1 526 601	1 520 728	366 357	382 481	374 521	397 370	398 687	370 235	382 825
Mainland Norway (market values)	1 162 540	1 207 125	291 022	301 698	298 898	315 507	307 405	297 990	304 432
Petroleum activities and ocean transport	364 061	313 603	75 335	80 783	75 623	81 862	91 282	72 245	78 394
Mainland Norway (basic values)	1 013 000	1 069 146	257 932	265 908	265 004	280 302	277 846	263 872	271 629
Mainland Norway excl. gen.gov.	778 803	820 897	198 733	204 124	202 320	215 721	211 878	202 675	208 697
Manufacturing and mining	142 818	145 730	36 450	39 418	34 092	35 769	34 362	35 002	32 872
Production of other goods	111 695	119 076	29 662	24 397	30 944	34 073	35 202	24 920	31 651
Service activities.	524 289	556 091	132 621	140 308	137 284	145 879	142 315	142 753	144 175
General government	234 197	248 248	59 199	61 785	62 684	64 581	65 968	61 196	62 932
Correction items	149 540	137 980	33 090	35 789	33 895	35 206	29 558	34 118	32 803

¹ Gross domestic product is measured at market prices, while value added by industry is measured at basic prices

Table A2. Final expenditure and gross domestic product. At constant 2000-prices. Million kroner

	2001	2002	02:1	02:2	02:3	02:4	03:1	03:2	03:3
Final consumption expenditure of households and NPISHs	641 829	664 700	155 092	162 192	168 887	178 529	159 205	166 886	174 882
Household final consumption exp.	615 225	638 102	148 367	155 602	162 337	171 796	152 185	159 722	167 766
Goods	342 546	356 706	81 564	86 291	87 697	101 154	83 279	89 140	92 258
Services	263 866	270 251	65 421	67 293	69 525	68 012	66 468	68 076	70 333
Direct purchases abroad by resident households.	27 131	28 901	5 161	6 907	10 548	6 285	5 903	7 298	10 766
Direct purchases by non-residents	-18 317	-17 755	-3 778	-4 889	-5 433	-3 655	-3 465	-4 791	-5 592
Final consumption exp. of NPISHs	26 605	26 598	6 725	6 590	6 551	6 733	7 020	7 163	7 116
Final consumption exp. of general government.	288 592	297 914	73 702	74 891	74 106	75 215	77 223	73 772	75 444
Final consumption exp. of central government	115 101	161 052	39 809	40 240	40 656	40 347	41 558	40 622	42 196
Central government, civilian	88 521	133 445	32 924	33 305	33 851	33 365	34 449	33 697	35 244
Central government, defence	26 579	27 606	6 885	6 935	6 804	6 982	7 109	6 925	6 952
Final consumption exp. of local government	173 491	136 862	33 893	34 651	33 450	34 868	35 665	33 150	33 248
Gross fixed capital formation	261 191	251 728	57 909	65 622	60 653	67 544	60 539	60 997	61 793
Extraction and transport via pipelines	54 837	52 312	12 362	12 871	12 921	14 158	13 787	15 621	16 142
Services activities incidental to extraction	-797	5 427	98	4 855	276	198	511	384	30
Ocean transport	10 886	6 663	887	1 485	1 330	2 961	3 155	1 011	1 038
Mainland Norway	196 265	187 326	44 562	46 411	46 127	50 226	43 087	43 981	44 582
Mainland Norway) excl. general government	156 189	147 269	35 093	36 653	36 228	39 294	33 296	33 415	33 026
Manufacturing and mining	21 163	22 614	4 164	5 711	5 644	7 095	3 889	5 044	4 108
Production of other goods	16 070	16 790	2 971	4 543	4 429	4 848	3 621	4 679	4 414
Dwelling service (households).	49 475	47 395	12 455	11 659	11 420	11 861	11 612	10 685	10 647
Other services.	69 481	60 469	15 504	14 740	14 735	15 491	14 174	13 008	13 857
General government	40 077	40 058	9 469	9 758	9 899	10 932	9 791	10 566	11 557
Changes in stocks and stat. discrepancies	27 193	29 954	9 827	10 093	5 425	4 608	16 148	-2 145	3 557
Gross capital formation	288 384	281 682	67 736	75 715	66 079	72 153	76 688	58 852	65 350
Final domestic use of goods and services	1 218 805	1 244 296	296 529	312 798	309 072	325 897	313 116	299 509	315 675
Final demand from Mainland Norway (excl. changes in stocks)	1 126 687	1 149 940	273 355	283 494	289 120	303 971	279 515	284 639	294 908
Final demand from general government	328 668	337 972	83 171	84 649	84 005	86 148	87 014	84 338	87 001
Total exports	713 743	709 868	175 854	180 632	172 536	180 845	175 363	175 454	168 739
Traditional goods	222 201	225 163	57 246	57 616	53 604	56 697	56 930	57 007	53 802
Crude oil and natural gas.	322 590	323 206	78 397	81 686	78 046	85 077	80 492	78 491	74 893
Ships and oil platforms	15 716	9 941	3 460	3 287	2 043	1 151	2 354	3 052	1 352
Services	153 236	151 558	36 750	38 044	38 844	37 920	35 587	36 904	38 691
Total use of goods and services	1 932 548	1 954 164	472 383	493 430	481 608	506 742	488 479	474 963	484 414
Total imports	435 146	442 534	101 997	114 213	111 251	115 073	110 000	111 165	112 248
Traditional goods	282 860	296 144	70 859	74 734	70 929	79 622	75 139	75 857	73 539
Crude oil	1 852	1 021	184	236	366	234	635	58	76
Ships and oil platforms	14 365	11 171	766	6 615	1 538	2 252	3 897	2 727	1 041
Services	136 068	134 198	30 188	32 628	38 417	32 965	30 329	32 524	37 592
Gross domestic product ¹	1 497 402	1 511 630	370 386	379 217	370 358	391 669	378 479	363 798	372 166
Mainland Norway (market values)	1 119 859	1 134 208	276 789	283 591	280 197	293 631	282 699	275 254	282 709
Petroleum activities and ocean transport	377 543	377 422	93 597	95 626	90 160	98 039	95 780	88 544	89 457
Mainland Norway (basic values)	971 575	982 397	241 438	246 343	242 399	252 216	247 871	237 430	244 323
Mainland Norway excl. gen.gov.	754 528	765 297	187 772	191 742	188 536	197 247	192 072	185 499	191 106
Manufacturing and mining	145 143	144 126	36 152	37 747	33 826	36 401	36 299	34 083	32 890
Production of other goods	100 576	102 110	25 198	22 421	27 652	26 838	24 605	20 874	26 566
Service activities.	508 808	519 061	126 422	131 574	127 058	134 007	131 169	130 542	131 649
General government	217 047	217 100	53 667	54 601	53 863	54 970	55 798	51 930	53 217
Correction items	148 284	151 811	35 350	37 248	37 798	41 414	34 829	37 825	38 386

¹ Gross domestic product is measured at market prices, while value added by industry is measured at basic prices

Table A3. Final expenditure and gross domestic product.
Percentage change in volume from the same period in the previous year

	2001	2002	02:1	02:2	02:3	02:4	03:1	03:2	03:3
Final consumption expenditure									
of households and NPISHs	2.6	3.6	2.6	3.6	3.6	4.3	2.7	2.9	3.5
Household final consumption exp.	2.6	3.7	2.7	3.9	3.8	4.4	2.6	2.6	3.3
Goods	2.8	4.1	2.7	5.0	3.9	4.7	2.1	3.3	5.2
Services	2.4	2.4	2.4	2.2	2.2	2.9	1.6	1.2	1.2
Direct purchases abroad by resident households	-1.1	6.5	-0.5	4.0	9.4	11.0	14.4	5.7	2.1
Direct purchases by non-residents	-3.8	-3.1	-6.0	1.3	-4.6	-3.1	-8.3	-2.0	2.9
Final consumption exp. of NPISHs	1.7	-0.0	1.5	-1.9	-1.4	1.7	4.4	8.7	8.6
Final consumption exp. of general government	2.7	3.2	-0.9	6.8	4.7	2.6	4.8	-1.5	1.8
Final consumption exp. of central government	2.5	39.9	35.3	43.4	41.7	39.5	4.4	0.9	3.8
Central government, civilian	4.5	50.7	45.7	54.5	52.5	50.5	4.6	1.2	4.1
Central government, defence	-3.7	3.9	0.8	6.4	4.9	3.6	3.3	-0.1	2.2
Final consumption exp. of local government	2.8	-21.1	-24.6	-17.6	-20.5	-21.5	5.2	-4.3	-0.6
Gross fixed capital formation	-4.2	-3.6	-11.1	2.2	-5.1	-0.6	4.5	-7.0	1.9
Extraction and transport via pipelines	-1.0	-4.6	1.2	-2.2	-6.8	-9.2	11.5	21.4	24.9
Services activities incidental to extraction .. . . .	..	..	-63.0	349.2	-10.4	..	423.3	-92.1	-89.1
Ocean transport	-40.0	-38.8	-80.6	-26.4	-8.3	4.3	255.6	-31.9	-21.9
Mainland Norway	0.7	-4.6	-7.3	-3.3	-4.5	-3.3	-3.3	-5.2	-3.3
Mainland Norway) excl. general government	0.1	-5.7	-8.4	-5.7	-6.0	-3.0	-5.1	-8.8	-8.8
Manufacturing and mining	13.6	6.9	7.5	9.9	8.0	3.3	-6.6	-11.7	-27.2
Production of other goods	-2.2	4.5	-9.9	11.3	4.9	8.4	21.9	3.0	-0.3
Dwelling service (households)	3.7	-4.2	0.8	-1.6	-6.6	-9.1	-6.8	-8.4	-6.8
Other services	-5.1	-13.0	-17.4	-16.9	-12.5	-4.0	-8.6	-11.8	-6.0
General government	2.9	-0.0	-3.1	7.0	1.3	-4.3	3.4	8.3	16.7
Changes in stocks and stat. discrepancies	-22.4	10.2	-26.1	37.1	17.5	140.7	64.3	..	-34.4
Gross capital formation	-6.3	-2.3	-13.6	5.8	-3.6	3.3	13.2	-22.3	-1.1
Final domestic use of goods and services	0.4	2.1	-2.4	4.9	2.2	3.7	5.6	-4.2	2.1
Final demand from Mainland Norway (excl. changes in stocks)	2.3	2.1	-0.1	3.2	2.5	2.5	2.3	0.4	2.0
Final demand from general government	2.7	2.8	-1.2	6.8	4.3	1.7	4.6	-0.4	3.6
Total exports	4.1	-0.5	-1.7	6.4	-1.6	-4.7	-0.3	-2.9	-2.2
Traditional goods	3.7	1.3	-0.2	4.3	6.3	-4.2	-0.6	-1.1	0.4
Crude oil and natural gas	5.2	0.2	-3.4	11.6	-3.3	-2.8	2.7	-3.9	-4.0
Ships and oil platforms	51.5	-36.7	28.2	2.2	-54.2	-78.4	-32.0	-7.1	-33.8
Services	-1.0	-1.1	-2.2	-0.0	-2.4	0.3	-3.2	-3.0	-0.4
Total use of goods and services	1.7	1.1	-2.1	5.4	0.8	0.5	3.4	-3.7	0.6
Total imports	0.9	1.7	-4.5	6.8	1.6	2.8	7.8	-2.7	0.9
Traditional goods	2.9	4.7	1.3	6.0	4.5	6.8	6.0	1.5	3.7
Crude oil	2.5	-44.9	-55.9	-41.2	5.5	-65.8	244.8	-75.5	-79.3
Ships and oil platforms	-45.4	-22.2	-83.6	210.6	-56.3	-44.5	408.7	-58.8	-32.3
Services	6.0	-1.4	-5.0	-3.9	1.9	1.1	0.5	-0.3	-2.1
Gross domestic product ¹	1.9	1.0	-1.5	5.1	0.6	-0.2	2.2	-4.1	0.5
Mainland Norway (market values)	1.7	1.3	-1.8	4.6	2.0	0.5	2.1	-2.9	0.9
Petroleum activities and ocean transport	2.7	-0.0	-0.6	6.4	-3.5	-2.0	2.3	-7.4	-0.8
Mainland Norway (basic values)	1.6	1.1	-2.1	4.9	1.9	0.1	2.7	-3.6	0.8
Mainland Norway excl. gen.gov.	1.8	1.4	-1.3	4.9	1.9	0.4	2.3	-3.3	1.4
Manufacturing and mining	0.5	-0.7	-4.8	4.7	0.3	-2.7	0.4	-9.7	-2.8
Production of other goods	-3.2	1.5	-3.3	4.5	6.2	-0.7	-2.4	-6.9	-3.9
Service activities	3.2	2.0	0.1	5.1	1.4	1.5	3.8	-0.8	3.6
General government	1.0	0.0	-4.9	4.7	1.7	-1.0	4.0	-4.9	-1.2
Correction items	2.1	2.4	0.7	2.8	2.9	3.0	-1.5	1.5	1.6

¹ Gross domestic product is measured at market prices, while value added by industry is measured at basic prices

Table A4. Final expenditure and gross domestic product.
Percentage change in prices from the same period in the previous year

	2001	2002	02:1	02:2	02:3	02:4	03:1	03:2	03:3
Final consumption expenditure									
of households and NPISHs	2.4	0.7	0.3	-0.3	1.0	1.7	4.9	2.1	1.8
Household final consumption exp.	2.3	0.7	0.3	-0.3	0.9	1.7	5.0	2.0	1.8
Goods	0.8	-1.1	-2.3	-3.4	-0.4	1.3	6.3	0.5	-0.1
Services	4.6	3.6	3.7	4.0	3.6	2.9	4.0	3.6	2.9
Direct purchases abroad by resident households.	-1.2	-4.9	-2.9	-5.0	-5.6	-5.4	-2.1	6.4	12.4
Direct purchases by non-residents	1.6	1.3	0.5	-0.0	2.0	2.5	2.8	1.9	2.1
Final consumption exp. of NPISHs	4.1	1.7	1.0	1.6	2.2	1.9	2.6	2.3	2.0
Final consumption exp. of general government.	7.3	4.0	3.1	4.2	5.6	3.2	5.1	2.9	1.5
Final consumption exp. of central government	5.7	3.3	2.2	3.0	4.3	3.4	4.4	2.9	1.4
Central government, civilian	5.6	3.5	2.3	3.4	4.7	3.7	4.8	3.0	1.6
Central government, defence	6.2	2.2	2.3	1.4	2.6	2.4	2.4	2.1	0.3
Final consumption exp. of local government	8.3	5.7	4.5	6.0	7.6	4.6	6.0	3.2	1.7
Gross fixed capital formation	3.6	-0.6	-0.2	-0.4	0.2	-1.9	-1.9	0.4	1.4
Extraction and transport via pipelines	3.8	-1.6	-0.0	-3.1	-1.0	-2.0	0.0	3.1	2.6
Services activities incidental to extraction	-12.3	16.3	1.4	-2.6	0.3	5.1	-1.0	3.9	1.6
Ocean transport	6.5	-8.8	-3.9	-1.5	-8.2	-13.6	-20.2	-9.3	-2.4
Mainland Norway	3.4	0.1	0.1	0.5	0.7	-0.9	-1.1	-0.3	1.1
Mainland Norway) excl. general government	3.2	-0.4	-0.4	0.3	0.3	-1.8	-1.7	-1.0	0.7
Manufacturing and mining	1.4	-3.3	-2.3	-3.1	-2.5	-4.7	-4.9	-2.3	-1.0
Production of other goods	2.1	-3.3	-1.8	-1.6	-1.4	-7.4	-7.8	-4.4	-3.1
Dwelling service (households).	5.3	4.0	3.9	4.0	4.0	4.1	3.2	3.1	3.3
Other services.	2.5	-2.1	-2.9	-0.9	-1.2	-3.1	-3.6	-2.9	-0.1
General government	4.1	1.9	1.7	1.6	2.3	2.1	0.8	1.5	1.8
Changes in stocks and stat. discrepancies	-0.6	-4.5	-8.7	1.2	-3.5	33.8	-6.8	-1.0	-31.3
Gross capital formation	3.2	-1.1	-1.5	-0.3	-0.2	-2.0	-3.3	1.0	0.1
Final domestic use of goods and services	3.7	1.1	0.6	0.8	1.9	1.2	3.0	2.1	1.4
Final demand from Mainland Norway (excl. changes in stocks)	3.8	1.5	1.0	1.1	2.2	1.7	4.1	1.9	1.6
Final demand from general government	6.9	3.8	3.0	3.9	5.3	3.1	4.7	2.7	1.5
Total exports	-2.3	-9.1	-12.6	-13.1	-9.9	-0.6	6.2	-2.3	4.2
Traditional goods	-2.9	-8.7	-9.2	-10.1	-9.1	-6.2	-5.0	-2.1	1.5
Crude oil and natural gas.	-6.5	-12.4	-18.6	-19.2	-14.3	4.2	19.1	-6.8	4.6
Ships and oil platforms	2.2	-4.4	-4.7	-7.1	-7.6	-5.5	-9.3	-13.3	5.8
Services	7.1	-3.8	-6.9	-4.9	-2.8	-0.4	1.4	5.9	6.2
Total use of goods and services	1.5	-2.4	-4.3	-4.3	-2.2	0.9	4.2	0.6	2.4
Total imports	0.0	-6.2	-6.5	-6.6	-5.9	-5.8	-3.7	-0.4	4.9
Traditional goods	-0.2	-8.0	-8.7	-9.1	-7.5	-6.5	-3.6	-1.2	2.1
Crude oil	-13.7	-8.1	-18.3	-14.6	-14.5	5.0	3.5	-13.2	-0.2
Ships and oil platforms	7.9	-10.9	-3.8	-12.9	-12.9	-15.3	-24.2	-16.2	7.6
Services	-0.2	-1.8	-0.6	-0.9	-2.3	-3.3	-1.8	3.0	10.1
Gross domestic product ¹	1.9	-1.3	-3.6	-3.6	-1.1	2.9	6.5	0.9	1.7
Mainland Norway (market values)	3.8	2.5	2.0	2.3	3.1	2.6	3.4	1.8	0.9
Petroleum activities and ocean transport	-3.6	-13.8	-20.6	-20.7	-15.1	3.7	18.4	-3.4	4.5
Mainland Norway (basic values)	4.3	4.4	3.8	4.3	4.7	4.7	4.9	3.0	1.7
Mainland Norway excl. gen.gov.	3.2	3.9	3.8	3.7	3.6	4.6	4.2	2.6	1.8
Manufacturing and mining	-1.6	2.8	4.4	6.2	2.0	-1.6	-6.1	-1.7	-0.8
Production of other goods	11.1	5.0	5.9	0.3	2.3	10.9	21.5	9.7	6.5
Service activities.	3.0	4.0	3.1	3.7	4.2	4.8	3.4	2.5	1.4
General government	7.9	6.0	4.1	6.2	8.4	5.2	7.2	4.1	1.6
Correction items	0.8	-9.9	-10.2	-10.1	-7.4	-11.5	-9.3	-6.1	-4.7

¹ Gross domestic product is measured at market prices, while value added by industry is measured at basic prices

Table A5. Production. At current prices. Million kroner

	2001	2002	02:1	02:2	02:3	02:4	03:1	03:2	03:3
Total production	2 516 256	2 511 191	611 775	636 254	613 820	649 343	653 113	617 585	631 268
Agriculture, hunting and forestry	29 514	28 955	5 179	6 364	10 605	6 807	5 170	6 219	11 069
Fishing and fish farming.	24 778	24 513	6 545	5 248	6 747	5 973	5 314	4 665	4 512
Oil and gas extraction incl. services	352 511	309 077	75 469	80 115	73 568	79 925	90 079	69 052	76 216
Oil and gas extraction.	337 977	295 383	70 274	76 261	71 025	77 824	87 833	66 780	73 836
Service activities incidental to oil and gas	14 535	13 694	5 195	3 854	2 544	2 102	2 246	2 272	2 380
Mining and quarrying	6 665	6 510	1 565	1 718	1 684	1 544	1 631	1 821	1 664
Manufacturing	487 191	472 468	119 324	124 592	109 822	118 730	118 201	112 964	110 092
Food products, beverages and tobacco.	107 976	108 058	27 196	28 314	25 809	26 739	26 156	25 723	25 346
Textiles, wearing apparel, leather	5 695	5 306	1 417	1 441	1 146	1 302	1 359	1 120	990
Wood and wood products	17 857	17 340	4 259	4 818	4 010	4 254	4 290	4 099	3 718
Pulp, paper and paper products	20 017	16 616	4 397	4 349	3 794	4 075	3 978	3 790	4 215
Publishing, printing, reproduction	36 724	35 566	9 053	9 056	8 436	9 022	9 443	8 491	8 621
Refined petroleum, chemical and mineral products	66 131	61 924	15 376	16 643	13 939	15 966	16 194	15 863	15 360
Basic chemicals	24 068	21 918	5 895	5 664	5 142	5 218	5 258	5 942	5 474
Basic metals	44 716	38 954	10 015	10 174	8 919	9 847	9 878	10 563	10 310
Machinery and other equipment n.e.c.	100 342	100 486	25 016	26 797	23 109	25 564	24 727	22 620	21 787
Building of ships, oil platforms and moduls	48 350	51 292	12 814	13 358	12 170	12 950	13 023	11 334	10 973
Furniture and other manufacturing n.e.c.	15 313	15 007	3 886	3 978	3 350	3 793	3 897	3 419	3 299
Electricity and gas supply.	37 655	42 087	11 910	7 914	8 068	14 195	16 548	8 169	8 704
Water supply	3 428	3 535	883	884	884	884	949	950	950
Construction	156 766	163 628	39 756	41 816	39 083	42 972	42 278	40 956	39 650
Wholesale and retail trade, repair of motor vehicles etc.	223 229	234 575	54 096	57 929	56 831	65 719	57 068	58 011	58 781
Hotels and restaurants	41 462	41 886	8 858	10 374	12 109	10 546	8 734	10 262	12 001
Transport via pipelines	15 617	15 913	3 801	4 270	3 853	3 989	4 221	4 727	4 442
Ocean transport	97 538	87 197	21 392	22 018	21 623	22 164	20 602	22 566	23 170
Other transport industries.	137 688	140 247	32 185	36 130	37 219	34 713	33 154	36 913	38 349
Post and telecommunications	60 751	62 480	15 298	15 416	15 707	16 059	15 708	15 329	15 525
Financial intermediation.	78 354	79 263	19 011	20 203	19 920	20 128	20 189	20 140	21 097
Dwellings (households)	90 959	96 913	23 742	24 128	24 424	24 619	25 171	25 613	25 841
Business services	256 033	258 646	65 325	66 830	60 137	66 353	70 475	65 502	63 024
Public administration and defence.	115 870	121 329	29 575	30 035	30 816	30 902	31 643	30 052	31 307
Education	79 673	84 693	20 802	21 368	20 167	22 355	23 502	21 707	20 773
Health and social work	145 692	157 642	37 570	39 181	40 579	40 313	41 509	40 812	42 913
Other social and personal services	74 882	79 635	19 488	19 722	19 973	20 452	20 967	21 154	21 190
Mainland Norway	2 050 590	2 099 005	511 113	529 851	514 776	543 264	538 212	521 240	527 441
General government.	339 252	359 607	87 040	89 626	90 524	92 418	93 799	89 432	91 866
Central government	122 982	176 217	42 746	43 730	45 152	44 590	44 934	43 844	45 871
Civilian central government	95 237	146 767	35 440	36 390	37 838	37 099	37 255	36 398	38 412
Defence	27 745	29 450	7 305	7 340	7 314	7 491	7 679	7 446	7 458
Local government	216 270	183 390	44 295	45 896	45 371	47 828	48 866	45 589	45 995

Table A6. Production. At constant 2000-prices. Million kroner

	2001	2002	02:1	02:2	02:3	02:4	03:1	03:2	03:3
Total production	2 458 460	2 472 856	610 423	627 134	601 880	633 419	620 504	599 622	603 491
Agriculture, hunting and forestry	29 223	28 767	5 146	6 274	10 406	6 941	5 115	6 072	10 623
Fishing and fish farming	25 066	27 341	6 942	6 412	7 052	6 936	6 800	6 495	6 030
Oil and gas extraction incl. services	375 557	376 544	94 273	95 508	89 395	97 368	95 197	87 450	88 208
Oil and gas extraction	361 111	361 407	89 013	91 236	86 348	94 809	92 629	84 809	85 560
Service activities incidental to oil and gas	14 447	15 137	5 260	4 272	3 047	2 559	2 567	2 640	2 648
Mining and quarrying	6 559	6 294	1 479	1 666	1 665	1 483	1 563	1 753	1 568
Manufacturing	481 937	476 069	120 264	124 616	111 042	120 147	120 073	113 079	109 322
Food products, beverages and tobacco	105 387	103 490	26 158	27 056	24 562	25 714	25 430	24 738	24 088
Textiles, wearing apparel, leather	5 593	5 089	1 365	1 376	1 102	1 246	1 324	1 064	936
Wood and wood products	17 742	17 473	4 339	4 841	4 022	4 271	4 253	4 039	3 638
Pulp, paper and paper products	19 466	18 095	4 580	4 694	4 247	4 574	4 610	4 324	4 788
Publishing, printing, reproduction	35 486	34 341	8 751	8 740	8 147	8 702	9 136	8 190	8 319
Refined petroleum, chemical and mineral products	67 161	65 549	16 821	17 367	14 817	16 544	16 140	16 204	15 677
Basic chemicals	24 033	23 373	6 115	5 903	5 566	5 788	5 773	6 231	5 862
Basic metals	46 847	45 952	11 345	11 814	10 866	11 926	12 037	12 330	11 545
Machinery and other equipment n.e.c.	98 860	99 544	24 730	26 305	22 974	25 535	25 286	22 262	21 321
Building of ships, oil platforms and moduls	46 446	48 590	12 308	12 646	11 479	12 157	12 318	10 414	10 010
Furniture and other manufacturing n.e.c.	14 915	14 574	3 753	3 874	3 258	3 689	3 764	3 285	3 139
Electricity and gas supply	29 561	31 481	8 893	7 062	6 887	8 639	7 211	5 490	5 668
Water supply	3 190	3 108	776	777	777	777	785	785	785
Construction	149 522	149 706	36 916	38 428	35 621	38 741	37 901	36 353	34 772
Wholesale and retail trade, repair of motor vehicles etc.	220 382	227 235	53 607	56 689	54 497	62 442	54 649	56 082	56 183
Hotels and restaurants	40 050	38 929	8 337	9 655	11 291	9 646	7 976	9 268	10 892
Transport via pipelines	15 721	15 979	3 765	4 364	3 873	3 978	4 122	4 011	4 137
Ocean transport	87 418	84 459	21 430	20 891	20 705	21 433	20 132	20 143	20 496
Other transport industries	131 208	131 182	29 888	33 872	34 937	32 485	30 734	34 346	35 387
Post and telecommunications	62 907	63 352	15 744	15 594	15 837	16 177	15 842	15 458	15 872
Financial intermediation	76 214	77 100	19 013	19 468	19 104	19 516	19 380	18 608	19 821
Dwellings (households)	87 199	88 626	22 022	22 103	22 192	22 309	22 424	22 521	22 631
Business services	246 747	246 473	62 618	63 381	57 069	63 405	67 330	61 464	59 242
Public administration and defence	108 531	109 389	27 142	27 233	27 582	27 432	27 918	26 533	27 569
Education	74 031	74 436	18 779	19 072	17 601	18 984	19 717	18 358	17 568
Health and social work	136 403	142 698	35 159	35 712	35 969	35 858	36 762	36 257	37 633
Other social and personal services	71 030	73 689	18 229	18 359	18 378	18 722	18 875	19 096	19 085
Mainland Norway	1 979 763	1 995 874	490 955	506 372	487 906	510 640	501 054	488 018	490 651
General government	316 487	321 870	79 922	80 903	80 008	81 037	81 489	78 051	79 728
Central government	116 049	160 288	39 714	40 076	40 460	40 038	39 697	38 815	40 419
Civilian central government	89 922	133 173	32 946	33 264	33 777	33 186	32 755	32 049	33 628
Defence	26 127	27 115	6 768	6 812	6 683	6 851	6 942	6 766	6 791
Local government	200 438	161 582	40 208	40 827	39 548	41 000	41 792	39 235	39 308

Table A7. Production. Percentage change in volume from the same period in the previous year

	2001	2002	02:1	02:2	02:3	02:4	03:1	03:2	03:3
Total production	1.7	0.6	-1.5	4.4	0.4	-0.8	1.7	-4.4	0.3
Agriculture, hunting and forestry	-1.2	-1.6	-0.6	-8.9	0.2	2.5	-0.6	-3.2	2.1
Fishing and fish farming.	0.0	9.1	0.8	10.3	22.7	4.8	-2.0	1.3	-14.5
Oil and gas extraction incl. services	2.5	0.3	0.9	7.1	-3.7	-2.8	1.0	-8.4	-1.3
Oil and gas extraction.	2.9	0.1	-1.2	6.4	-3.2	-1.3	4.1	-7.0	-0.9
Service activities incidental to oil and gas	-6.7	4.8	56.9	24.4	-14.7	-37.4	-51.2	-38.2	-13.1
Mining and quarrying	3.0	-4.0	-3.1	3.6	1.2	-16.6	5.7	5.2	-5.8
Manufacturing	-0.3	-1.2	-4.2	4.0	-1.2	-3.2	-0.2	-9.3	-1.5
Food products, beverages and tobacco.	-1.4	-1.8	-5.2	4.1	-0.5	-5.2	-2.8	-8.6	-1.9
Textiles, wearing apparel, leather	-5.7	-9.0	-12.8	3.5	-6.2	-18.2	-3.0	-22.7	-15.0
Wood and wood products	-3.3	-1.5	-8.2	8.0	0.7	-5.9	-2.0	-16.6	-9.6
Pulp, paper and paper products	-4.4	-7.0	-13.3	-5.3	-10.8	2.4	0.6	-7.9	12.8
Publishing, printing, reproduction	-0.0	-3.2	-6.8	0.2	-2.5	-3.5	4.4	-6.3	2.1
Refined petroleum, chemical and mineral products	-3.8	-2.4	3.0	1.4	-8.7	-5.4	-4.0	-6.7	5.8
Basic chemicals	-0.8	-2.7	-4.1	-3.4	-2.3	-1.0	-5.6	5.6	5.3
Basic metals	-3.0	-1.9	-4.6	0.5	-1.8	-1.8	6.1	4.4	6.3
Machinery and other equipment n.e.c.	5.5	0.7	-5.8	7.7	3.0	-1.3	2.2	-15.4	-7.2
Building of ships, oil platforms and moduls	4.0	4.6	1.5	12.1	5.3	0.2	0.1	-17.6	-12.8
Furniture and other manufacturing n.e.c.	-5.4	-2.3	-7.1	6.5	0.9	-8.0	0.3	-15.2	-3.7
Electricity and gas supply.	-14.5	6.5	-4.7	17.0	26.1	-1.1	-18.9	-22.3	-17.7
Water supply	7.9	-2.6	-2.7	-2.5	-2.5	-2.5	1.0	1.0	1.0
Construction	1.5	0.1	-2.9	4.6	0.1	-1.1	2.7	-5.4	-2.4
Wholesale and retail trade, repair of motor vehicles etc.	3.4	3.1	1.7	5.8	3.5	1.7	1.9	-1.1	3.1
Hotels and restaurants	-2.7	-2.8	-2.3	-2.7	-2.9	-3.2	-4.3	-4.0	-3.5
Transport via pipelines	3.4	1.6	-5.7	17.7	-2.6	-1.7	9.5	-8.1	6.8
Ocean transport	2.2	-3.4	-1.4	-3.6	-5.8	-2.7	-6.1	-3.6	-1.0
Other transport industries.	0.4	-0.0	-4.2	-0.2	0.6	3.6	2.8	1.4	1.3
Post and telecommunications	-2.5	0.7	3.1	-0.6	1.1	-0.7	0.6	-0.9	0.2
Financial intermediation.	3.1	1.2	3.3	3.0	-0.2	-1.3	1.9	-4.4	3.8
Dwellings (households)	1.4	1.6	1.5	1.6	1.7	1.7	1.8	1.9	2.0
Business services	6.6	-0.1	-5.1	6.6	0.4	-1.7	7.5	-3.0	3.8
Public administration and defence.	1.3	0.8	-2.9	3.1	2.3	0.8	2.9	-2.6	-0.0
Education	3.5	0.5	-4.7	6.5	2.6	-1.5	5.0	-3.7	-0.2
Health and social work	4.2	4.6	2.4	6.8	5.1	4.2	4.6	1.5	4.6
Other social and personal services	0.9	3.7	2.7	4.1	3.9	4.3	3.5	4.0	3.8
Mainland Norway	1.5	0.8	-2.0	4.1	1.5	-0.3	2.1	-3.6	0.6
General government.	2.6	1.7	-2.0	5.0	3.0	1.0	2.0	-3.5	-0.4
Central government	3.4	38.1	33.4	41.7	40.1	37.5	-0.0	-3.1	-0.1
Civilian central government	5.5	48.1	42.9	52.1	50.1	47.6	-0.6	-3.7	-0.4
Defence	-3.3	3.8	0.8	6.2	4.7	3.5	2.6	-0.7	1.6
Local government	2.2	-19.4	-22.3	-16.3	-18.9	-19.8	3.9	-3.9	-0.6

Table A8. Production. Percentage change in prices from the same period in the previous year

	2001	2002	02:1	02:2	02:3	02:4	03:1	03:2	03:3
Total production	2.4	-0.8	-2.4	-2.4	-0.7	2.4	5.0	1.5	2.6
Agriculture, hunting and forestry	1.0	-0.3	-0.5	-0.8	0.3	-0.6	0.4	1.0	2.2
Fishing and fish farming.	-1.1	-9.3	-3.5	-12.8	-6.9	-14.8	-17.1	-12.2	-21.8
Oil and gas extraction incl. services	-6.1	-12.6	-18.1	-18.9	-14.7	3.4	18.2	-5.9	5.0
Oil and gas extraction.	-6.4	-12.7	-19.2	-19.2	-14.6	4.6	20.1	-5.8	4.9
Service activities incidental to oil and gas	0.6	-10.1	-1.2	-11.7	-16.7	-17.9	-11.5	-4.6	7.7
Mining and quarrying	1.6	1.8	4.5	0.2	-0.4	3.2	-1.4	0.7	4.9
Manufacturing	1.1	-1.8	-2.1	-2.1	-2.2	-0.9	-0.8	-0.1	1.8
Food products, beverages and tobacco.	2.5	1.9	2.6	2.5	2.4	0.2	-1.1	-0.6	0.1
Textiles, wearing apparel, leather	1.8	2.4	3.1	2.7	2.6	1.2	-1.1	0.6	1.7
Wood and wood products	0.6	-1.4	-2.9	-1.5	-0.9	-0.2	2.7	2.0	2.5
Pulp, paper and paper products	2.8	-10.7	-10.6	-11.2	-11.5	-8.9	-10.1	-5.4	-1.5
Publishing, printing, reproduction	3.5	0.1	0.0	-0.0	-0.0	0.3	-0.1	0.1	0.1
Refined petroleum, chemical and mineral products	-1.5	-4.1	-7.2	-6.8	-5.5	3.7	9.8	2.2	4.1
Basic chemicals	0.1	-6.4	-4.4	-6.2	-6.9	-8.0	-5.5	-0.6	1.1
Basic metals	-4.5	-11.2	-12.0	-11.9	-13.5	-7.2	-7.0	-0.5	8.8
Machinery and other equipment n.e.c.	1.5	-0.5	-0.1	0.0	-0.9	-1.3	-3.3	-0.3	1.6
Building of ships, oil platforms and moduls	4.1	1.4	1.5	1.1	1.4	1.6	1.5	3.0	3.4
Furniture and other manufacturing n.e.c.	2.7	0.3	1.2	-0.0	0.3	-0.2	-0.0	1.4	2.2
Electricity and gas supply.	27.4	5.0	3.0	-10.7	-5.0	28.1	71.3	32.8	31.1
Water supply	7.4	5.8	5.8	5.8	5.8	5.8	6.4	6.4	6.4
Construction	4.8	4.2	4.1	4.2	4.4	4.3	3.6	3.5	3.9
Wholesale and retail trade, repair of motor vehicles etc.	1.3	1.9	-0.3	0.5	2.5	4.6	3.5	1.2	0.3
Hotels and restaurants	3.5	3.9	4.0	4.3	3.8	3.7	3.1	3.1	2.7
Transport via pipelines	-0.7	0.2	-1.4	-3.6	-0.1	6.6	1.4	20.4	7.9
Ocean transport	11.6	-7.5	-14.0	-8.8	-5.1	-1.2	2.5	6.3	8.2
Other transport industries.	4.9	1.9	4.3	1.3	1.2	0.9	0.2	0.8	1.7
Post and telecommunications	-3.4	2.1	0.7	2.3	2.8	2.7	2.0	0.3	-1.4
Financial intermediation.	2.8	-0.0	-1.1	0.9	0.8	-0.5	4.2	4.3	2.1
Dwellings (households)	4.3	4.8	4.6	5.2	5.4	4.2	4.1	4.2	3.7
Business services	3.8	1.1	1.3	1.2	1.3	0.6	0.3	1.1	1.0
Public administration and defence.	6.8	3.9	3.7	4.1	4.4	3.4	4.0	2.7	1.6
Education	7.6	5.7	3.9	4.7	6.1	8.1	7.6	5.5	3.2
Health and social work	6.8	3.4	2.1	4.1	6.4	1.1	5.7	2.6	1.1
Other social and personal services	5.4	2.5	2.5	2.3	2.7	2.4	3.9	3.1	2.2
Mainland Norway	3.6	1.5	1.1	1.0	1.8	2.2	3.2	2.1	1.9
General government.	7.2	4.2	3.2	4.3	5.7	3.6	5.7	3.4	1.8
Central government	6.0	3.7	2.7	3.4	4.7	4.1	5.2	3.5	1.7
Civilian central government	5.9	4.1	2.8	3.9	5.1	4.3	5.7	3.8	2.0
Defence	6.2	2.3	2.4	1.5	2.7	2.5	2.5	2.1	0.4
Local government	7.9	5.2	4.0	5.5	7.0	4.4	6.1	3.4	2.0

Table A9. Intermediate consumption. At current prices. Million kroner

	2001	2002	02:1	02:2	02:3	02:4	03:1	03:2	03:3
Intermediate consumption	1 177 478	1 167 691	287 962	299 471	283 109	297 149	294 230	291 356	291 842
Agriculture, hunting and forestry	14 146	14 826	2 660	5 507	3 587	3 072	2 715	5 465	3 636
Fishing and fish farming.	12 537	13 552	3 289	3 249	3 441	3 574	3 394	3 313	3 048
Oil and gas extraction incl. services	40 804	40 886	10 995	10 589	9 417	9 885	9 800	9 269	9 408
Oil and gas extraction.	31 845	31 755	7 768	8 021	7 594	8 373	8 269	7 689	7 792
Service activities incidental to oil and gas	8 959	9 130	3 227	2 567	1 824	1 512	1 531	1 580	1 615
Mining and quarrying	4 012	3 850	901	1 012	1 014	923	989	1 095	987
Manufacturing	347 025	329 399	83 538	85 880	76 399	83 582	84 482	78 689	77 896
Food products, beverages and tobacco.	85 819	83 322	21 229	21 515	19 826	20 752	20 022	19 539	19 405
Textiles, wearing apparel, leather	3 611	3 171	863	848	681	778	826	661	598
Wood and wood products	12 419	11 990	2 984	3 316	2 737	2 952	2 965	2 815	2 544
Pulp, paper and paper products	13 916	12 674	3 241	3 193	2 892	3 349	3 495	3 117	3 509
Publishing, printing, reproduction	21 124	20 145	5 172	5 129	4 769	5 074	5 348	4 845	4 921
Refined petroleum, chemical and mineral products	50 353	45 573	11 355	12 287	10 357	11 573	12 104	11 139	11 503
Basic chemicals	18 373	16 841	4 416	4 201	3 886	4 338	4 505	4 663	4 451
Basic metals	35 549	32 231	8 023	8 098	7 289	8 821	9 159	8 937	8 711
Machinery and other equipment n.e.c.	63 468	61 001	15 354	16 181	14 081	15 385	15 335	13 714	13 266
Building of ships, oil platforms and moduls	33 001	33 639	8 611	8 776	7 922	8 330	8 448	7 256	7 035
Furniture and other manufacturing n.e.c.	9 391	8 813	2 289	2 337	1 958	2 229	2 275	2 003	1 954
Electricity and gas supply.	9 364	9 936	2 771	2 104	2 089	2 972	2 639	1 784	1 896
Water supply	1 125	1 122	281	281	280	280	289	289	288
Construction	97 351	98 052	24 123	25 163	23 485	25 280	24 938	24 139	23 292
Wholesale and retail trade, repair of motor vehicles etc.	100 918	102 077	24 093	25 529	24 563	27 892	24 523	25 373	25 356
Hotels and restaurants	22 239	21 601	4 539	5 413	6 281	5 368	4 356	5 248	6 125
Transport via pipelines	1 475	1 536	353	420	375	388	401	401	415
Ocean transport	59 326	56 162	13 979	14 611	13 628	13 943	13 419	14 431	15 611
Other transport industries.	86 363	84 438	19 282	21 819	22 555	20 781	19 741	22 124	23 145
Post and telecommunications	39 712	40 182	9 940	9 901	10 144	10 198	10 110	9 929	10 215
Financial intermediation.	28 933	30 146	7 190	6 965	7 960	8 031	7 503	7 292	7 577
Dwellings (households)	18 049	18 650	4 597	4 621	4 683	4 749	4 823	4 853	4 939
Business services	126 848	125 270	31 902	32 385	29 108	31 875	34 109	31 587	30 462
Public administration and defence.	47 939	50 955	12 740	12 740	12 739	12 736	13 103	13 106	13 103
Education	18 001	19 147	4 781	4 782	4 788	4 796	5 096	5 089	5 095
Health and social work	33 209	35 929	8 974	8 961	8 991	9 003	9 494	9 903	10 641
Other social and personal services	29 820	30 728	7 581	7 631	7 665	7 851	8 063	8 090	8 109
Mainland Norway	1 037 590	1 029 859	253 181	263 943	249 772	262 963	260 365	257 368	255 812
General government.	105 055	111 359	27 841	27 841	27 840	27 837	27 831	28 236	28 934
Central government	55 352	71 325	17 831	17 831	17 833	17 830	17 503	17 905	18 606
Civilian central government	42 067	56 455	14 113	14 113	14 115	14 114	13 637	14 036	14 739
Defence	13 285	14 870	3 718	3 718	3 718	3 716	3 866	3 869	3 867
Local government	49 703	40 034	10 010	10 010	10 007	10 007	10 328	10 331	10 328

Table A10. Intermediate consumption. At constant 2000-prices. Million kroner

	2001	2002	02:1	02:2	02:3	02:4	03:1	03:2	03:3
Intermediate consumption	1 146 612	1 150 491	284 729	294 816	278 623	292 323	286 495	282 937	279 581
Agriculture, hunting and forestry	13 710	14 300	2 575	5 297	3 462	2 966	2 540	5 144	3 385
Fishing and fish farming	12 708	13 822	3 401	3 287	3 505	3 630	3 402	3 391	3 094
Oil and gas extraction incl. services	38 912	39 355	10 621	10 208	9 058	9 468	9 292	8 683	8 750
Oil and gas extraction	30 160	30 185	7 434	7 620	7 212	7 918	7 736	7 083	7 146
Service activities incidental to oil and gas	8 752	9 170	3 186	2 588	1 846	1 550	1 555	1 600	1 604
Mining and quarrying	3 869	3 713	873	983	982	875	922	1 034	925
Manufacturing	339 484	334 524	84 719	87 552	77 898	84 354	84 415	79 716	77 074
Food products, beverages and tobacco	81 953	80 478	20 413	21 065	19 041	19 959	19 764	19 186	18 660
Textiles, wearing apparel, leather	3 524	3 206	860	867	694	785	834	670	590
Wood and wood products	12 310	12 123	3 010	3 358	2 791	2 963	2 951	2 802	2 524
Pulp, paper and paper products	13 244	12 311	3 116	3 194	2 889	3 112	3 136	2 942	3 258
Publishing, printing, reproduction	20 682	20 014	5 100	5 094	4 748	5 072	5 325	4 773	4 849
Refined petroleum, chemical and mineral products	52 499	50 641	13 081	13 379	11 374	12 807	12 670	12 625	12 308
Basic chemicals	17 322	16 846	4 407	4 255	4 012	4 172	4 161	4 491	4 225
Basic metals	34 132	33 479	8 266	8 608	7 917	8 689	8 770	8 983	8 412
Machinery and other equipment n.e.c.	62 536	62 968	15 643	16 640	14 533	16 152	15 995	14 082	13 487
Building of ships, oil platforms and moduls	32 012	33 397	8 489	8 685	7 873	8 349	8 469	7 118	6 812
Furniture and other manufacturing n.e.c.	9 272	9 060	2 333	2 408	2 026	2 293	2 340	2 042	1 951
Electricity and gas supply	8 421	8 948	2 523	2 011	1 958	2 456	2 057	1 572	1 620
Water supply	1 093	1 080	272	267	266	275	281	275	276
Construction	94 509	94 772	23 379	24 330	22 546	24 517	24 057	23 090	22 072
Wholesale and retail trade, repair of motor vehicles etc.	97 783	99 039	23 368	24 751	23 750	27 169	23 656	24 343	24 227
Hotels and restaurants	21 456	20 855	4 467	5 172	6 049	5 167	4 273	4 965	5 835
Transport via pipelines	1 408	1 431	337	391	347	356	369	359	370
Ocean transport	60 834	58 775	14 913	14 538	14 409	14 915	14 010	14 017	14 263
Other transport industries	84 839	83 413	19 061	21 482	22 252	20 618	19 101	21 621	22 433
Post and telecommunications	39 885	40 108	9 994	9 848	10 088	10 178	10 039	9 782	10 105
Financial intermediation	27 603	28 581	6 883	6 502	7 512	7 683	7 086	6 666	7 064
Dwellings (households)	17 260	17 542	4 359	4 375	4 393	4 416	4 439	4 458	4 479
Business services	123 156	123 057	31 272	31 652	28 473	31 660	33 617	30 703	29 564
Public administration and defence	45 248	47 423	11 875	11 892	11 837	11 819	11 988	11 956	11 909
Education	16 867	17 853	4 484	4 500	4 486	4 383	4 561	4 625	4 584
Health and social work	31 664	34 710	8 667	8 703	8 648	8 691	9 089	9 512	10 001
Other social and personal services	28 634	29 738	7 345	7 424	7 401	7 567	7 662	7 735	7 678
Mainland Norway	1 008 187	1 013 477	249 517	260 029	245 507	258 424	253 183	250 589	246 328
General government	99 440	104 770	26 255	26 303	26 146	26 068	25 690	26 120	26 510
Central government	52 532	67 282	16 831	16 859	16 772	16 819	16 298	16 634	17 147
Civilian central government	39 859	52 977	13 302	13 257	13 217	13 200	12 600	12 919	13 452
Defence	12 673	14 305	3 530	3 601	3 555	3 619	3 698	3 716	3 695
Local government	46 908	37 489	9 423	9 444	9 373	9 249	9 393	9 486	9 363

Table A11. Intermediate consumption.
Percentage change in volume from the same period in the previous year

	2001	2002	02:1	02:2	02:3	02:4	03:1	03:2	03:3
Intermediate consumption	1.5	0.3	-1.2	3.2	0.5	-1.1	0.6	-4.0	0.3
Agriculture, hunting and forestry	-0.1	4.3	5.2	1.2	4.8	8.7	-1.4	-2.9	-2.2
Fishing and fish farming.	0.3	8.8	0.8	10.3	19.8	5.8	0.0	3.2	-11.7
Oil and gas extraction incl. services	0.6	1.1	11.2	10.5	-5.8	-9.8	-12.5	-14.9	-3.4
Oil and gas extraction.	2.9	0.1	-1.2	6.4	-3.2	-1.3	4.1	-7.0	-0.9
Service activities incidental to oil and gas	-6.7	4.8	56.9	24.4	-14.7	-37.4	-51.2	-38.2	-13.1
Mining and quarrying	3.0	-4.0	-3.1	3.6	1.2	-16.6	5.7	5.2	-5.8
Manufacturing	-0.7	-1.5	-4.0	3.7	-1.8	-3.6	-0.4	-9.0	-1.1
Food products, beverages and tobacco.	-1.7	-1.8	-5.2	4.4	-0.6	-5.3	-3.2	-8.9	-2.0
Textiles, wearing apparel, leather	-5.7	-9.0	-12.8	3.5	-6.2	-18.2	-3.0	-22.7	-15.0
Wood and wood products	-3.3	-1.5	-8.2	8.0	0.7	-5.9	-2.0	-16.6	-9.6
Pulp, paper and paper products	-4.4	-7.0	-13.3	-5.3	-10.8	2.4	0.6	-7.9	12.8
Publishing, printing, reproduction	-0.0	-3.2	-6.8	0.2	-2.5	-3.5	4.4	-6.3	2.1
Refined petroleum, chemical and mineral products	-4.5	-3.5	3.9	-0.2	-11.0	-6.6	-3.1	-5.6	8.2
Basic chemicals	-0.8	-2.7	-4.1	-3.4	-2.3	-1.0	-5.6	5.6	5.3
Basic metals	-3.0	-1.9	-4.6	0.5	-1.8	-1.8	6.1	4.4	6.3
Machinery and other equipment n.e.c.	5.5	0.7	-5.8	7.7	3.0	-1.3	2.2	-15.4	-7.2
Building of ships, oil platforms and moduls	4.4	4.3	1.1	11.8	5.1	-0.1	-0.2	-18.0	-13.5
Furniture and other manufacturing n.e.c.	-5.4	-2.3	-7.1	6.5	0.9	-8.0	0.3	-15.2	-3.7
Electricity and gas supply.	-14.2	6.3	-4.8	16.5	25.2	-1.0	-18.4	-21.8	-17.2
Water supply	6.3	-1.2	-1.6	-2.3	-2.2	1.5	3.2	3.2	3.5
Construction	1.5	0.3	-2.7	4.6	0.2	-0.9	2.9	-5.1	-2.1
Wholesale and retail trade, repair of motor vehicles etc.	3.2	1.3	-0.1	3.8	1.7	-0.1	1.2	-1.7	2.0
Hotels and restaurants	-2.7	-2.8	-2.3	-2.7	-2.9	-3.2	-4.3	-4.0	-3.5
Transport via pipelines	3.4	1.6	-5.7	17.7	-2.6	-1.7	9.5	-8.1	6.8
Ocean transport	2.2	-3.4	-1.4	-3.6	-5.8	-2.7	-6.1	-3.6	-1.0
Other transport industries.	1.9	-1.7	-4.7	-2.7	-0.3	0.9	0.2	0.7	0.8
Post and telecommunications	-4.7	0.6	3.2	-1.0	0.8	-0.6	0.4	-0.7	0.2
Financial intermediation.	0.1	3.5	4.6	-4.6	14.1	0.9	2.9	2.5	-6.0
Dwellings (households)	1.4	1.6	1.5	1.6	1.7	1.7	1.8	1.9	2.0
Business services	6.7	-0.1	-5.0	6.5	0.5	-1.6	7.5	-3.0	3.8
Public administration and defence.	5.2	4.8	3.4	4.7	5.6	5.5	1.0	0.5	0.6
Education	11.2	5.8	5.5	6.6	7.1	4.1	1.7	2.8	2.2
Health and social work	9.9	9.6	9.9	10.1	8.8	9.7	4.9	9.3	15.6
Other social and personal services	-1.9	3.9	2.6	3.8	4.1	4.9	4.3	4.2	3.7
Mainland Norway	1.4	0.5	-1.8	3.4	1.2	-0.6	1.5	-3.6	0.3
General government.	6.5	5.4	4.6	5.5	5.7	5.6	-2.1	-0.7	1.4
Central government	9.5	28.1	26.6	27.9	28.7	29.2	-3.2	-1.3	2.2
Civilian central government	11.9	32.9	31.5	32.2	33.8	34.2	-5.3	-2.6	1.8
Defence	2.4	12.9	11.0	14.2	12.6	13.7	4.8	3.2	3.9
Local government	3.4	-20.1	-20.1	-19.6	-19.8	-20.8	-0.3	0.4	-0.1

Table A12. Intermediate consumption.
Percentage change in prices from the same period in the previous year

	2001	2002	02:1	02:2	02:3	02:4	03:1	03:2	03:3
Intermediate consumption	2.7	-1.2	-1.6	-1.9	-1.0	-0.1	1.5	1.4	2.7
Agriculture, hunting and forestry	3.2	0.5	0.1	0.3	0.2	1.6	3.5	2.2	3.6
Fishing and fish farming	-1.3	-0.6	-2.2	-0.5	-1.2	1.3	3.2	-1.2	0.4
Oil and gas extraction incl. services	4.9	-0.9	-0.6	-1.5	-1.1	-0.5	1.9	2.9	3.4
Oil and gas extraction	5.6	-0.4	-0.2	-0.8	-0.5	-0.0	2.3	3.1	3.6
Service activities incidental to oil and gas	2.4	-2.7	-0.9	-3.2	-3.7	-4.5	-2.8	-0.5	1.9
Mining and quarrying	3.7	-0.0	-0.5	-1.0	-0.3	2.0	3.9	2.8	3.4
Manufacturing	2.2	-3.7	-4.6	-5.5	-3.9	-0.6	1.5	0.6	3.0
Food products, beverages and tobacco	4.7	-1.1	0.9	-0.8	-0.9	-3.4	-2.6	-0.3	-0.1
Textiles, wearing apparel, leather	2.5	-3.5	-3.0	-3.9	-3.9	-3.1	-1.3	0.9	3.3
Wood and wood products	0.9	-2.0	-2.6	-3.0	-2.0	-0.2	1.3	1.7	2.8
Pulp, paper and paper products	5.1	-2.0	-2.4	-5.7	-3.5	3.8	7.1	6.0	7.6
Publishing, printing, reproduction	2.1	-1.5	-1.2	-1.9	-1.2	-1.6	-1.0	0.8	1.1
Refined petroleum, chemical and mineral products	-4.1	-6.2	-11.8	-9.8	-6.6	4.7	10.1	-3.9	2.6
Basic chemicals	6.1	-5.8	-9.1	-7.7	-7.8	2.4	8.0	5.2	8.8
Basic metals	4.2	-7.6	-10.3	-13.3	-9.8	3.7	7.6	5.7	12.5
Machinery and other equipment n.e.c.	1.5	-4.5	-4.9	-5.8	-4.1	-3.3	-2.3	0.1	1.5
Building of ships, oil platforms and moduls	3.1	-2.3	-1.8	-3.1	-2.3	-2.0	-1.7	0.9	2.6
Furniture and other manufacturing n.e.c.	1.3	-4.0	-4.3	-5.5	-3.9	-2.2	-0.9	1.1	3.6
Electricity and gas supply	11.2	-0.1	-3.3	-6.6	-2.8	11.1	16.8	8.5	9.7
Water supply	2.9	0.9	1.2	2.3	1.9	-1.8	-0.4	-0.3	-0.6
Construction	3.0	0.4	0.4	0.4	1.1	-0.1	0.5	1.1	1.3
Wholesale and retail trade, repair of motor vehicles etc.	3.2	-0.1	0.1	-0.5	0.3	-0.4	0.5	1.1	1.2
Hotels and restaurants	3.6	-0.1	0.8	-0.4	0.3	-1.0	0.3	1.0	1.1
Transport via pipelines	4.8	2.4	1.8	2.2	2.4	3.2	3.8	3.9	3.5
Ocean transport	-2.5	-2.0	-4.8	-0.4	-2.4	-0.4	2.2	2.4	15.7
Other transport industries	1.8	-0.6	-0.3	-0.9	-0.6	-0.4	2.2	0.7	1.8
Post and telecommunications	-0.4	0.6	-0.2	0.1	1.5	1.1	1.3	1.0	0.5
Financial intermediation	4.8	0.6	2.2	3.6	-0.8	-1.9	1.4	2.1	1.2
Dwellings (households)	4.6	1.7	1.2	1.2	2.0	2.3	3.0	3.1	3.4
Business services	3.0	-1.2	-1.1	-1.5	-0.3	-1.7	-0.5	0.5	0.8
Public administration and defence	5.9	1.4	2.8	1.5	0.7	0.7	1.9	2.3	2.2
Education	6.7	0.5	0.7	-0.4	-0.7	2.4	4.8	3.5	4.1
Health and social work	4.9	-1.3	-1.3	-1.6	-0.7	-1.5	0.9	1.1	2.3
Other social and personal services	4.1	-0.8	-0.8	-1.6	-0.5	-0.2	2.0	1.8	2.0
Mainland Norway	2.9	-1.3	-1.6	-2.1	-1.1	-0.3	1.3	1.2	2.1
General government	5.6	0.6	1.3	0.5	0.3	0.4	2.2	2.1	2.5
Central government	5.4	0.6	1.8	0.8	0.2	-0.3	1.4	1.8	2.1
Civilian central government	5.5	1.0	2.1	1.5	0.3	-0.0	2.0	2.1	2.6
Defence	4.8	-0.8	0.8	-2.0	-0.6	-1.6	-0.8	0.9	0.1
Local government	6.0	0.8	0.9	0.2	0.5	1.6	3.5	2.7	3.3

Table A13. Gross domestic product and value added by industry.
At current prices. Million kroner

	2001	2002	02:1	02:2	02:3	02:4	03:1	03:2	03:3
Gross domestic product¹	1 526 601	1 520 728	366 357	382 481	374 521	397 370	398 687	370 235	382 825
Agriculture, hunting and forestry	15 368	14 129	2 519	857	7 018	3 735	2 454	755	7 433
Fishing and fish farming	12 241	10 961	3 257	1 999	3 306	2 399	1 920	1 352	1 464
Oil and gas extraction incl. services	311 707	268 192	64 474	69 526	64 151	70 041	80 279	59 783	66 808
Oil and gas extraction	306 131	263 628	62 506	68 240	63 431	69 451	79 564	59 091	66 044
Service activities incidental to oil and gas	5 576	4 564	1 968	1 286	720	590	714	692	764
Mining and quarrying	2 653	2 661	664	707	669	621	642	726	676
Manufacturing	140 165	143 069	35 786	38 712	33 423	35 148	33 720	34 276	32 196
Food products, beverages and tobacco	22 157	24 735	5 967	6 800	5 982	5 986	6 134	6 184	5 941
Textiles, wearing apparel, leather	2 084	2 136	555	592	465	524	533	458	392
Wood and wood products	5 438	5 351	1 275	1 501	1 273	1 302	1 325	1 285	1 175
Pulp, paper and paper products	6 102	3 942	1 156	1 157	903	726	484	673	706
Publishing, printing, reproduction	15 600	15 422	3 881	3 927	3 666	3 948	4 095	3 646	3 700
Refined petroleum, chemical and mineral products	15 778	16 351	4 021	4 356	3 581	4 393	4 090	4 724	3 857
Basic chemicals	5 694	5 078	1 479	1 463	1 256	880	753	1 279	1 023
Basic metals	9 167	6 724	1 992	2 077	1 629	1 026	719	1 626	1 600
Machinery and other equipment n.e.c.	36 874	39 485	9 661	10 616	9 028	10 179	9 391	8 905	8 521
Building of ships, oil platforms and moduls	15 350	17 653	4 203	4 582	4 249	4 620	4 574	4 078	3 937
Furniture and other manufacturing n.e.c.	5 921	6 194	1 598	1 641	1 391	1 564	1 622	1 417	1 344
Electricity and gas supply	28 291	32 151	9 138	5 810	5 979	11 223	13 909	6 385	6 808
Water supply	2 303	2 413	602	603	604	604	660	661	662
Construction	59 415	65 576	15 632	16 653	15 598	17 692	17 340	16 817	16 358
Wholesale and retail trade, repair of motor vehicles etc.	122 311	132 497	30 002	32 400	32 268	37 827	32 545	32 638	33 425
Hotels and restaurants	19 223	20 285	4 320	4 961	5 828	5 177	4 378	5 014	5 876
Transport via pipelines	14 142	14 377	3 448	3 850	3 478	3 601	3 820	4 326	4 027
Ocean transport	38 212	31 035	7 413	7 407	7 995	8 220	7 184	8 136	7 559
Other transport industries	51 325	55 809	12 903	14 311	14 664	13 932	13 414	14 790	15 203
Post and telecommunications	21 039	22 298	5 358	5 515	5 563	5 862	5 598	5 400	5 310
Financial intermediation	49 421	49 117	11 821	13 238	11 961	12 097	12 687	12 848	13 519
Dwellings (households)	72 910	78 263	19 145	19 507	19 741	19 870	20 348	20 760	20 902
Business services	129 186	133 376	33 424	34 445	31 030	34 478	36 365	33 915	32 562
Public administration and defence	67 931	70 374	16 835	17 295	18 077	18 166	18 540	16 946	18 204
Education	61 673	65 545	16 021	16 585	15 380	17 559	18 406	16 618	15 679
Health and social work	112 483	121 714	28 596	30 220	31 587	31 310	32 016	30 908	32 272
Other social and personal services	45 062	48 907	11 908	12 091	12 309	12 601	12 905	13 064	13 081
FISIM ²	-38 283	-39 249	-9 455	-9 908	-9 916	-9 970	-10 245	-9 887	-10 597
Value added tax and investment levy	137 738	134 934	32 542	33 354	33 931	35 108	32 084	32 592	33 995
Other taxes on products, net	53 722	53 773	12 071	14 190	13 679	13 834	12 354	14 770	13 940
Statistical discrepancy	-3 637	-11 479	-2 068	-1 846	-3 799	-3 766	-4 634	-3 356	-4 536
Mainland Norway	1 013 000	1 069 146	257 932	265 908	265 004	280 302	277 846	263 872	271 629
General government	234 197	248 248	59 199	61 785	62 684	64 581	65 968	61 196	62 932
Central government	67 630	104 892	24 915	25 899	27 319	26 760	27 431	25 939	27 265
Civilian central government	53 170	90 312	21 327	22 277	23 723	22 985	23 618	22 362	23 673
Defence	14 460	14 580	3 587	3 622	3 596	3 775	3 813	3 577	3 591
Local government	166 567	143 356	34 285	35 886	35 364	37 821	38 538	35 258	35 667

1 Gross domestic products is valued at market prices, while the industries are valued at basic prices

2 Financial intermediation services indirectly measured

Table A14. Gross domestic product and value added by industry.
At constant 2000-prices. Million kroner

	2001	2002	02:1	02:2	02:3	02:4	03:1	03:2	03:3
Gross domestic product ¹	1 497 402	1 511 630	370 386	379 217	370 358	391 669	378 479	363 798	372 166
Agriculture, hunting and forestry	15 514	14 468	2 571	977	6 945	3 975	2 575	928	7 238
Fishing and fish farming	12 358	13 519	3 541	3 125	3 546	3 306	3 398	3 104	2 936
Oil and gas extraction incl. services	336 646	337 190	83 652	85 300	80 338	87 899	85 905	78 767	79 458
Oil and gas extraction	330 951	331 222	81 579	83 616	79 136	86 891	84 893	77 726	78 415
Service activities incidental to oil and gas	5 695	5 967	2 073	1 684	1 201	1 009	1 012	1 041	1 044
Mining and quarrying	2 690	2 581	607	683	683	608	641	719	643
Manufacturing	142 454	141 545	35 545	37 063	33 143	35 793	35 658	33 364	32 247
Food products, beverages and tobacco	23 434	23 011	5 745	5 991	5 521	5 755	5 666	5 551	5 427
Textiles, wearing apparel, leather	2 070	1 883	505	509	408	461	490	394	346
Wood and wood products	5 433	5 350	1 329	1 482	1 232	1 308	1 302	1 237	1 114
Pulp, paper and paper products	6 222	5 784	1 464	1 500	1 357	1 462	1 474	1 382	1 531
Publishing, printing, reproduction	14 804	14 326	3 651	3 646	3 399	3 630	3 812	3 417	3 471
Refined petroleum, chemical and mineral products	14 662	14 907	3 740	3 988	3 443	3 737	3 471	3 578	3 369
Basic chemicals	6 711	6 527	1 708	1 648	1 554	1 616	1 612	1 740	1 637
Basic metals	12 715	12 472	3 079	3 207	2 949	3 237	3 267	3 347	3 134
Machinery and other equipment n.e.c.	36 325	36 576	9 087	9 665	8 441	9 382	9 291	8 180	7 834
Building of ships, oil platforms and moduls	14 434	15 193	3 818	3 960	3 606	3 808	3 849	3 295	3 197
Furniture and other manufacturing n.e.c.	5 643	5 514	1 420	1 466	1 233	1 396	1 424	1 243	1 188
Electricity and gas supply	21 141	22 533	6 370	5 051	4 929	6 184	5 154	3 918	4 047
Water supply	2 098	2 028	504	511	511	502	504	510	510
Construction	55 013	54 934	13 536	14 098	13 075	14 224	13 844	13 263	12 700
Wholesale and retail trade, repair of motor vehicles etc.	122 598	128 196	30 239	31 938	30 747	35 273	30 994	31 740	31 956
Hotels and restaurants	18 594	18 074	3 871	4 482	5 242	4 478	3 703	4 303	5 057
Transport via pipelines	14 313	14 548	3 427	3 973	3 526	3 622	3 753	3 652	3 766
Ocean transport	26 584	25 684	6 517	6 353	6 296	6 518	6 122	6 125	6 233
Other transport industries	46 369	47 769	10 826	12 391	12 685	11 867	11 633	12 725	12 954
Post and telecommunications	23 022	23 244	5 750	5 746	5 749	5 999	5 803	5 675	5 767
Financial intermediation	48 611	48 519	12 130	12 966	11 591	11 833	12 294	11 943	12 757
Dwellings (households)	69 939	71 084	17 663	17 728	17 799	17 893	17 986	18 063	18 151
Business services	123 591	123 416	31 346	31 729	28 596	31 745	33 713	30 761	29 678
Public administration and defence	63 283	61 966	15 267	15 340	15 745	15 613	15 931	14 577	15 660
Education	57 164	56 583	14 295	14 572	13 115	14 601	15 156	13 733	12 984
Health and social work	104 739	107 989	26 493	27 008	27 320	27 167	27 673	26 745	27 632
Other social and personal services	42 396	43 952	10 884	10 935	10 977	11 155	11 213	11 361	11 406
FISIM ²	-37 270	-37 453	-9 340	-9 651	-9 302	-9 159	-9 642	-9 289	-9 870
Value added tax and investment levy	131 863	135 082	32 079	33 223	33 571	36 208	32 209	33 447	34 510
Other taxes on products, net	53 679	54 485	12 593	13 738	13 652	14 502	12 313	13 660	13 791
Statistical discrepancy	12	-303	18	-62	-123	-136	-52	6	-45
Mainland Norway	971 575	982 397	241 438	246 343	242 399	252 216	247 871	237 430	244 323
General government	217 047	217 100	53 667	54 601	53 863	54 970	55 798	51 930	53 217
Central government	63 518	93 006	22 882	23 218	23 688	23 219	23 399	22 181	23 273
Civilian central government	50 064	80 196	19 644	20 007	20 559	19 986	20 155	19 131	20 176
Defence	13 454	12 810	3 238	3 211	3 128	3 232	3 244	3 050	3 097
Local government	153 529	124 093	30 784	31 383	30 175	31 751	32 399	29 749	29 945

1 Gross domestic products is valued at market prices, while the industries are valued at basic prices

2 Financial intermediation services indirectly measured

Table A15. Gross domestic product and value added by industry.
Percentage change in volume from the same period in the previous year

	2001	2002	02:1	02:2	02:3	02:4	03:1	03:2	03:3
Gross domestic product¹	1.9	1.0	-1.5	5.1	0.6	-0.2	2.2	-4.1	0.5
Agriculture, hunting and forestry	-2.1	-6.7	-5.9	-40.8	-2.0	-1.7	0.1	-5.0	4.2
Fishing and fish farming	-0.3	9.4	0.7	10.4	25.7	3.7	-4.0	-0.7	-17.2
Oil and gas extraction incl. services	2.7	0.2	-0.3	6.7	-3.4	-2.0	2.7	-7.7	-1.1
Oil and gas extraction	2.9	0.1	-1.2	6.4	-3.2	-1.3	4.1	-7.0	-0.9
Service activities incidental to oil and gas	-6.7	4.8	56.9	24.4	-14.7	-37.4	-51.2	-38.2	-13.1
Mining and quarrying	3.0	-4.0	-3.1	3.6	1.2	-16.6	5.7	5.2	-5.8
Manufacturing	0.5	-0.6	-4.8	4.8	0.2	-2.4	0.3	-10.0	-2.7
Food products, beverages and tobacco	-0.5	-1.8	-5.1	3.1	-0.1	-4.7	-1.4	-7.3	-1.7
Textiles, wearing apparel, leather	-5.7	-9.0	-12.8	3.5	-6.2	-18.2	-3.0	-22.7	-15.0
Wood and wood products	-3.3	-1.5	-8.2	8.0	0.7	-5.9	-2.0	-16.6	-9.6
Pulp, paper and paper products	-4.4	-7.0	-13.3	-5.3	-10.8	2.4	0.6	-7.9	12.8
Publishing, printing, reproduction	-0.0	-3.2	-6.8	0.2	-2.5	-3.5	4.4	-6.3	2.1
Refined petroleum, chemical and mineral products	-1.3	1.7	0.1	7.2	-0.1	-0.7	-7.2	-10.3	-2.1
Basic chemicals	-0.8	-2.7	-4.1	-3.4	-2.3	-1.0	-5.6	5.6	5.3
Basic metals	-3.0	-1.9	-4.6	0.5	-1.8	-1.8	6.1	4.4	6.3
Machinery and other equipment n.e.c.	5.5	0.7	-5.8	7.7	3.0	-1.3	2.2	-15.4	-7.2
Building of ships, oil platforms and moduls	3.3	5.3	2.2	12.7	5.8	0.8	0.8	-16.8	-11.3
Furniture and other manufacturing n.e.c.	-5.4	-2.3	-7.1	6.5	0.9	-8.0	0.3	-15.2	-3.7
Electricity and gas supply	-14.7	6.6	-4.6	17.2	26.4	-1.1	-19.1	-22.4	-17.9
Water supply	8.7	-3.3	-3.2	-2.7	-2.7	-4.6	-0.1	-0.1	-0.3
Construction	1.5	-0.1	-3.4	4.6	-0.1	-1.4	2.3	-5.9	-2.9
Wholesale and retail trade, repair of motor vehicles etc.	3.5	4.6	3.1	7.3	5.0	3.0	2.5	-0.6	3.9
Hotels and restaurants	-2.7	-2.8	-2.3	-2.7	-2.9	-3.2	-4.3	-4.0	-3.5
Transport via pipelines	3.4	1.6	-5.7	17.7	-2.6	-1.7	9.5	-8.1	6.8
Ocean transport	2.2	-3.4	-1.4	-3.6	-5.8	-2.7	-6.1	-3.6	-1.0
Other transport industries	-2.2	3.0	-3.2	4.4	2.4	8.6	7.5	2.7	2.1
Post and telecommunications	1.6	1.0	2.9	0.0	1.8	-0.7	0.9	-1.2	0.3
Financial intermediation	4.9	-0.2	2.6	7.3	-7.6	-2.7	1.4	-7.9	10.1
Dwellings (households)	1.4	1.6	1.5	1.6	1.7	1.7	1.8	1.9	2.0
Business services	6.5	-0.1	-5.1	6.6	0.4	-1.7	7.6	-3.1	3.8
Public administration and defence	-1.3	-2.1	-7.2	1.9	-0.0	-2.5	4.3	-5.0	-0.5
Education	1.4	-1.0	-7.4	6.4	1.1	-3.0	6.0	-5.8	-1.0
Health and social work	2.5	3.1	0.2	5.8	4.0	2.6	4.5	-1.0	1.1
Other social and personal services	2.9	3.7	2.7	4.3	3.8	3.9	3.0	3.9	3.9
FISIM ²	2.4	0.5	3.9	1.8	-1.4	-2.2	3.2	-3.8	6.1
Value added tax and investment levy	2.8	2.4	1.7	3.3	2.6	2.2	0.4	0.7	2.8
Other taxes on products, net	0.7	1.5	0.4	1.6	1.6	2.3	-2.2	-0.6	1.0
Statistical discrepancy	..	..	109.8	..	..	..	..	..	..
Mainland Norway	1.6	1.1	-2.1	4.9	1.9	0.1	2.7	-3.6	0.8
General government	1.0	0.0	-4.9	4.7	1.7	-1.0	4.0	-4.9	-1.2
Central government	-1.1	46.4	38.9	53.7	49.4	44.3	2.3	-4.5	-1.8
Civilian central government	0.9	60.2	51.8	68.9	62.8	58.0	2.6	-4.4	-1.9
Defence	-8.1	-4.8	-8.4	-1.5	-2.9	-6.0	0.2	-5.0	-1.0
Local government	1.9	-19.2	-23.0	-15.3	-18.6	-19.5	5.2	-5.2	-0.8

1 Gross domestic products is valued at market prices, while the industries are valued at basic prices

2 Financial intermediation services indirectly measured

Table A16. Gross domestic product and value added by industry.
Percentage change in prices from the same period in the previous year

	2001	2002	02:1	02:2	02:3	02:4	03:1	03:2	03:3
Gross domestic product ¹	1.9	-1.3	-3.6	-3.6	-1.1	2.9	6.5	0.9	1.7
Agriculture, hunting and forestry	-0.9	-1.4	-1.4	-10.3	0.4	-2.7	-2.7	-7.3	1.6
Fishing and fish farming	-0.9	-18.1	-4.8	-27.3	-12.4	-31.0	-38.6	-31.9	-46.5
Oil and gas extraction incl. services	-7.4	-14.1	-20.6	-21.0	-16.3	4.3	21.2	-6.9	5.3
Oil and gas extraction	-7.5	-14.0	-21.1	-20.9	-16.0	5.2	22.3	-6.8	5.1
Service activities incidental to oil and gas	-2.1	-21.9	-1.8	-24.8	-38.0	-39.7	-25.6	-13.0	22.2
Mining and quarrying	-1.4	4.5	12.1	1.9	-0.5	5.2	-8.5	-2.3	7.3
Manufacturing	-1.6	2.7	4.2	6.3	2.0	-1.7	-6.1	-1.6	-1.0
Food products, beverages and tobacco	-5.4	13.7	9.5	14.4	15.2	15.2	4.2	-1.9	1.0
Textiles, wearing apparel, leather	0.7	12.6	14.4	13.9	13.9	8.3	-0.9	0.1	-0.7
Wood and wood products	0.1	-0.1	-3.8	1.9	1.6	-0.1	6.0	2.6	2.1
Pulp, paper and paper products	-1.9	-30.5	-27.5	-23.5	-30.2	-41.6	-58.4	-36.8	-30.6
Publishing, printing, reproduction	5.4	2.2	1.7	2.5	1.5	2.9	1.1	-0.9	-1.2
Refined petroleum, chemical and mineral products	7.6	1.9	8.7	2.3	-2.7	-0.1	9.6	20.9	10.0
Basic chemicals	-15.2	-8.3	12.7	-1.3	-4.0	-38.8	-46.1	-17.2	-22.6
Basic metals	-27.9	-25.2	-18.4	-5.8	-26.9	-51.3	-66.0	-25.0	-7.6
Machinery and other equipment n.e.c.	1.5	6.3	8.7	10.4	4.5	1.9	-4.9	-0.9	1.7
Building of ships, oil platforms and moduls	6.3	9.3	8.9	10.3	9.2	8.8	8.0	7.0	4.5
Furniture and other manufacturing n.e.c.	4.9	7.0	10.0	8.9	6.8	2.8	1.2	1.8	0.3
Electricity and gas supply	33.8	6.6	5.0	-12.1	-5.8	33.5	88.1	41.7	38.7
Water supply	9.8	8.4	8.2	7.6	7.8	9.9	9.8	9.7	9.9
Construction	8.0	10.5	10.4	10.6	9.7	11.3	8.5	7.3	8.0
Wholesale and retail trade, repair of motor vehicles etc.	-0.2	3.6	-0.6	1.4	4.3	8.6	5.8	1.4	-0.3
Hotels and restaurants	3.4	8.6	7.6	9.8	7.9	9.0	5.9	5.3	4.5
Transport via pipelines	-1.2	0.0	-1.7	-4.2	-0.3	7.0	1.2	22.2	8.4
Ocean transport	43.7	-15.9	-27.3	-21.9	-9.3	-2.6	3.2	13.9	-4.5
Other transport industries	10.7	5.6	11.9	4.6	3.9	2.4	-3.3	0.6	1.5
Post and telecommunications	-8.6	5.0	2.4	6.7	5.3	5.5	3.5	-0.9	-4.8
Financial intermediation	1.7	-0.4	-3.0	-0.5	1.5	0.4	5.9	5.4	2.7
Dwellings (households)	4.2	5.6	5.5	6.2	6.3	4.6	4.4	4.4	3.8
Business services	4.5	3.4	3.7	4.0	2.9	2.9	1.2	1.6	1.1
Public administration and defence	7.3	5.8	4.3	6.0	7.2	5.6	5.5	3.1	1.2
Education	7.9	7.4	4.9	6.2	8.4	9.9	8.4	6.3	3.0
Health and social work	7.4	5.0	3.2	6.0	8.7	2.1	7.2	3.3	1.0
Other social and personal services	6.3	4.7	4.8	5.0	4.9	4.1	5.2	4.0	2.3
FISIM ²	2.7	2.0	0.4	-0.3	2.9	5.2	5.0	3.7	0.7
Value added tax and investment levy	4.5	-4.4	-6.3	-6.8	-0.4	-4.0	-1.8	-2.9	-2.5
Other taxes on products, net	0.1	-1.4	-1.4	0.4	-0.7	-3.9	4.7	4.7	0.9
Statistical discrepancy	..	..	..	..	-82.4	-68.7	..	..	227.3
Mainland Norway	4.3	4.4	3.8	4.3	4.7	4.7	4.9	3.0	1.7
General government	7.9	6.0	4.1	6.2	8.4	5.2	7.2	4.1	1.6
Central government	6.5	5.9	3.4	5.2	7.8	7.1	7.7	4.8	1.6
Civilian central government	6.2	6.0	3.3	5.3	8.1	7.2	7.9	5.0	1.7
Defence	7.5	5.9	4.2	5.5	6.5	7.4	6.1	3.9	0.9
Local government	8.5	6.5	4.9	7.1	9.0	5.1	6.8	3.6	1.6

1 Gross domestic products is valued at market prices, while the industries are valued at basic prices

2 Financial intermediation services indirectly measured

Table A17. Final consumption expenditure of households. At current prices. Million kroner

	2001	2002	02:1	02:2	02:3	02:4	03:1	03:2	03:3
Final consumption expenditure of households	629 292	657 026	152 337	160 067	166 418	178 204	164 078	167 663	175 045
Food and non-alcoholic beverages	89 840	91 589	21 404	22 505	23 066	24 613	22 377	24 113	24 384
Alcoholic beverages and tobacco, etc.	29 647	29 673	6 380	7 312	7 219	8 762	5 982	7 440	7 413
Clothing and footwear	35 992	37 225	7 578	9 484	8 749	11 415	7 962	9 400	9 414
Housing, water, electricity, fuels	127 909	133 369	34 479	31 530	30 873	36 486	41 198	34 486	33 423
Furnishings, household equipment	39 363	40 758	9 375	9 285	10 115	11 983	9 329	9 381	10 527
Health	17 497	18 623	4 195	4 678	4 673	5 078	4 597	5 057	4 970
Transport	92 088	95 817	21 863	25 298	25 356	23 299	22 449	25 274	25 613
Communication	16 571	17 362	4 145	4 196	4 354	4 668	4 263	4 208	4 303
Recreation and culture	81 756	88 350	20 221	20 673	22 311	25 144	21 133	21 253	23 062
Education	3 236	3 494	859	860	874	900	909	915	942
Restaurants and hotels	39 900	42 913	9 187	10 477	12 482	10 766	9 378	10 834	12 820
Miscellaneous goods and services	47 317	48 995	11 469	12 273	12 186	13 068	12 495	12 992	12 864
Direct purchases abroad by resident households	26 795	27 133	5 034	6 532	9 759	5 808	5 637	7 340	11 194
Direct purchases in Norway by non-res. households	-18 619	-18 275	-3 852	-5 037	-5 600	-3 786	-3 631	-5 031	-5 885
Goods ¹	345 148	355 447	81 267	85 749	86 529	101 902	88 236	89 004	90 925
Services ¹	275 967	292 720	69 889	72 823	75 730	74 279	73 836	76 350	78 810
Dwellings	100 411	106 165	26 092	26 429	26 772	26 872	27 673	28 090	28 307
Other services	175 556	186 555	43 798	46 393	48 957	47 407	46 163	48 260	50 504

1 Final consumption of goods and services includes direct purchases in Norway by non-resident households, but not direct purchases abroad by resident households

Table A18. Final consumption expenditure of households. At constant 2000-prices. Million kroner

	2001	2002	02:1	02:2	02:3	02:4	03:1	03:2	03:3
Final consumption expenditure of households	615 225	638 102	148 367	155 602	162 337	171 796	152 185	159 722	167 766
Food and non-alcoholic beverages	91 726	94 975	22 430	23 394	23 717	25 433	22 757	24 253	24 264
Alcoholic beverages and tobacco, etc.	28 630	28 832	6 211	7 122	7 011	8 487	5 743	7 136	7 104
Clothing and footwear	36 212	39 673	8 193	9 730	9 630	12 120	9 339	10 880	11 653
Housing, water, electricity, fuels	118 700	119 049	30 870	28 759	27 985	31 435	31 348	29 223	28 499
Furnishings, household equipment	38 977	40 121	9 273	9 101	9 956	11 791	9 261	9 250	10 444
Health	17 008	17 519	4 056	4 405	4 343	4 716	4 245	4 626	4 535
Transport	90 009	92 858	21 280	24 462	24 562	22 553	21 195	24 193	24 411
Communication	17 334	17 924	4 331	4 316	4 462	4 815	4 456	4 525	4 738
Recreation and culture	81 307	87 269	19 930	20 337	21 980	25 022	20 701	20 895	23 048
Education	3 027	3 018	755	755	754	753	758	763	769
Restaurants and hotels	38 216	39 570	8 595	9 699	11 467	9 810	8 476	9 716	11 455
Miscellaneous goods and services	45 264	46 149	11 058	11 506	11 353	12 232	11 468	11 756	11 671
Direct purchases abroad by resident households	27 131	28 901	5 161	6 907	10 548	6 285	5 903	7 298	10 766
Direct purchases in Norway by non-res. households	-18 317	-17 755	-3 778	-4 889	-5 433	-3 655	-3 465	-4 791	-5 592
Goods ¹	342 546	356 706	81 564	86 291	87 697	101 154	83 279	89 140	92 258
Services ¹	263 866	270 251	65 421	67 293	69 525	68 012	66 468	68 076	70 333
Dwellings	96 036	96 878	24 141	24 163	24 278	24 296	24 548	24 628	24 721
Other services	167 830	173 373	41 280	43 130	45 246	43 716	41 920	43 448	45 612

1 Final consumption of goods and services includes direct purchases in Norway by non-resident households, but not direct purchases abroad by resident households

Table A19. Final consumption expenditure of households.
Percentage change in volume from the same period in the previous year

	2001	2002	02:1	02:2	02:3	02:4	03:1	03:2	03:3
Final consumption expenditure of households	2.6	3.7	2.7	3.9	3.8	4.4	2.6	2.6	3.3
Food and non-alcoholic beverages	3.3	3.5	4.0	3.9	3.9	2.5	1.5	3.7	2.3
Alcoholic beverages and tobacco, etc.	0.3	0.7	4.5	-3.0	0.6	1.4	-7.5	0.2	1.3
Clothing and footwear	6.4	9.6	7.2	11.8	7.9	10.8	14.0	11.8	21.0
Housing, water, electricity, fuels	2.4	0.3	-1.6	-0.2	-0.2	3.2	1.5	1.6	1.8
Furnishings, household equipment	2.7	2.9	4.0	6.2	2.4	0.2	-0.1	1.6	4.9
Health	3.5	3.0	1.0	4.2	2.6	4.0	4.7	5.0	4.4
Transport	-1.5	3.2	1.5	4.8	3.0	3.2	-0.4	-1.1	-0.6
Communication	9.0	3.4	4.1	1.1	1.8	6.5	2.9	4.8	6.2
Recreation and culture	5.9	7.3	5.3	8.4	7.7	7.7	3.9	2.7	4.9
Education	1.6	-0.3	0.3	0.1	-0.6	-1.0	0.3	1.1	2.0
Restaurants and hotels	-3.0	3.5	5.8	2.7	3.0	3.1	-1.4	0.2	-0.1
Miscellaneous goods and services	5.9	2.0	1.2	2.3	1.5	2.7	3.7	2.2	2.8
Direct purchases abroad by resident households	-1.1	6.5	-0.5	4.0	9.4	11.0	14.4	5.7	2.1
Direct purchases in Norway by non-res. households	-3.8	-3.1	-6.0	1.3	-4.6	-3.1	-8.3	-2.0	2.9
Goods ¹	2.8	4.1	2.7	5.0	3.9	4.7	2.1	3.3	5.2
Services ¹	2.4	2.4	2.4	2.2	2.2	2.9	1.6	1.2	1.2
Dwellings	1.5	0.9	0.9	0.7	0.9	1.1	1.7	1.9	1.8
Other services	2.9	3.3	3.3	3.0	2.9	4.0	1.5	0.7	0.8

1 Final consumption of goods and services includes direct purchases in Norway by non-resident households, but not direct purchases abroad by resident households

Table A20. Final consumption expenditure of households.
Percentage change in prices from the same period in the previous year

	2001	2002	02:1	02:2	02:3	02:4	03:1	03:2	03:3
Final consumption expenditure of households	2.3	0.7	0.3	-0.3	0.9	1.7	5.0	2.0	1.8
Food and non-alcoholic beverages	-2.1	-1.5	-5.8	-6.5	3.2	3.0	3.0	3.3	3.3
Alcoholic beverages and tobacco, etc.	3.5	-0.6	-0.4	-0.6	-0.6	-0.8	1.4	1.6	1.3
Clothing and footwear	-0.6	-5.6	-5.9	-2.6	-6.9	-6.9	-7.8	-11.4	-11.1
Housing, water, electricity, fuels	7.8	4.0	4.6	2.3	2.8	5.8	17.7	7.6	6.3
Furnishings, household equipment	1.0	0.6	0.2	0.6	0.8	0.7	-0.4	-0.6	-0.8
Health	2.9	3.3	1.2	3.2	4.5	4.2	4.7	2.9	1.8
Transport	2.3	0.9	1.0	-0.5	0.6	2.5	3.1	1.0	1.6
Communication	-4.4	1.3	-0.1	1.1	2.3	1.9	-0.0	-4.3	-6.9
Recreation and culture	0.6	0.7	1.0	0.6	0.8	0.4	0.6	0.1	-1.4
Education	6.9	8.3	9.7	9.8	8.4	5.5	5.5	5.3	5.6
Restaurants and hotels	4.4	3.9	3.9	4.2	3.8	3.7	3.5	3.2	2.8
Miscellaneous goods and services	4.5	1.6	0.7	2.5	2.1	0.9	5.1	3.6	2.7
Direct purchases abroad by resident households	-1.2	-4.9	-2.9	-5.0	-5.6	-5.4	-2.1	6.4	12.4
Direct purchases in Norway by non-res. households	1.6	1.3	0.5	-0.0	2.0	2.5	2.8	1.9	2.1
Goods ¹	0.8	-1.1	-2.3	-3.4	-0.4	1.3	6.3	0.5	-0.1
Services ¹	4.6	3.6	3.7	4.0	3.6	2.9	4.0	3.6	2.9
Dwellings	4.6	4.8	4.6	5.1	5.4	4.2	4.3	4.3	3.8
Other services	4.6	2.9	3.3	3.4	2.6	2.2	3.8	3.3	2.3

1 Final consumption of goods and services includes direct purchases in Norway by non-resident households, but not direct purchases abroad by resident households

Table A21. Gross fixed capital formation by type of capital goods and by industry.
At current prices. Million kroner

	2001	2002	02:1	02:2	02:3	02:4	03:1	03:2	03:3
Gross fixed capital formation	270 686	259 256	60 127	67 871	62 860	68 398	61 654	63 357	64 950
Building and construction	123 907	123 250	30 411	30 021	30 850	31 968	29 524	30 715	32 655
Oil exploration, drilling, pipelines for oil and gas	33 367	26 647	7 276	6 459	6 135	6 777	6 548	7 310	7 087
Oil platforms etc.	21 864	28 122	5 106	10 330	6 312	6 375	6 592	6 550	6 672
Ships and boats	14 554	7 882	1 138	2 021	1 643	3 080	3 184	1 457	1 199
Other transport equipment	8 415	6 287	929	1 666	1 281	2 412	1 921	2 346	2 132
Machinery and equipment	68 581	67 068	15 268	17 373	16 640	17 787	13 885	14 978	15 205
Agriculture, hunting and forestry	5 690	5 682	987	1 709	1 622	1 364	881	1 466	1 431
Fishing and fish farming	1 878	1 243	227	412	323	282	415	426	266
Oil and gas extraction incl. services	54 017	57 894	12 658	17 826	13 169	14 240	13 952	15 741	16 410
Oil and gas extraction	54 716	52 356	12 556	12 885	12 881	14 034	13 423	15 335	16 377
Service activities incidental to oil and gas	-699	5 538	102	4 941	289	206	528	406	32
Mining and quarrying	863	297	31	87	77	102	73	96	69
Manufacturing	20 606	21 895	4 153	5 566	5 523	6 653	3 645	4 783	3 967
Food products, beverages and tobacco	5 238	4 197	779	1 054	902	1 462	934	943	801
Textiles, wearing apparel, leather	200	68	7	12	17	32	57	25	18
Wood and wood products	411	544	83	119	195	147	149	230	172
Pulp, paper and paper products	880	773	139	172	245	215	100	160	159
Publishing, printing, reproduction	609	392	83	121	47	142	80	128	140
Refined petroleum, chemical and mineral products	1 790	2 305	421	625	583	676	351	593	353
Basic chemicals	1 717	1 801	288	429	463	620	405	529	386
Basic metals	3 661	5 999	1 174	1 579	1 661	1 585	611	855	973
Machinery and other equipment n.e.c.	4 371	3 422	718	876	862	966	479	554	628
Building of ships, oil platforms and moduls	810	1 392	205	378	330	478	333	562	129
Furniture and other manufacturing n.e.c.	919	1 001	255	201	217	329	146	204	207
Electricity and gas supply	4 870	5 871	835	1 444	1 620	1 972	992	1 604	1 619
Water supply	1 256	1 182	240	256	334	352	259	277	368
Construction	3 963	3 779	971	1 007	898	902	1 106	1 004	997
Wholesale and retail trade, repair of motor vehicles etc.	10 106	10 251	2 814	2 846	2 455	2 136	2 301	2 482	3 456
Hotels and restaurants	2 053	1 802	440	460	485	416	385	406	439
Transport via pipelines	2 177	1 075	169	156	387	362	769	987	624
Ocean transport	11 592	6 471	914	1 535	1 310	2 711	2 595	949	998
Other transport industries	12 369	8 585	1 106	2 190	1 903	3 386	2 570	3 016	2 309
Post and telecommunications	10 630	7 308	2 332	1 340	1 817	1 820	1 646	954	1 292
Financial intermediation	6 296	6 228	1 603	1 559	1 531	1 536	1 478	1 449	1 488
Dwellings (households)	52 097	51 887	13 466	12 741	12 545	13 136	12 956	12 041	12 084
Business services	23 496	19 801	5 676	4 933	5 012	4 180	3 878	2 886	3 372
Public administration and defence	16 580	19 436	4 519	4 919	4 818	5 180	4 389	5 055	5 513
Education	8 458	8 820	2 385	2 240	2 055	2 139	2 678	2 561	2 339
Health and social work	13 850	11 555	2 703	2 687	2 888	3 277	2 782	3 203	3 778
Other social and personal services	7 839	8 194	1 897	1 956	2 088	2 253	1 905	1 973	2 131
Mainland Norway	202 901	193 817	46 386	48 354	47 993	51 085	44 338	45 680	46 918

General government	41 703	42 484	9 997	10 320	10 571	11 596	10 416	11 346	12 567
Central government	14 646	18 057	4 617	4 531	4 261	4 648	4 427	4 745	5 188
Civilian central government	12 755	15 943	4 017	3 933	3 845	4 148	3 857	4 124	4 747
Defence	1 891	2 114	600	598	416	500	570	621	441
Local government	27 057	24 427	5 380	5 789	6 310	6 948	5 989	6 601	7 379

Table A22. Gross fixed capital formation by type of capital goods and by industry.
At constant 2000-prices. Million kroner

	2001	2002	02:1	02:2	02:3	02:4	03:1	03:2	03:3
Gross fixed capital formation	261 191	251 728	57 909	65 622	60 653	67 544	60 539	60 997	61 793
Building and construction	118 003	113 253	28 262	27 598	28 210	29 183	26 716	27 522	29 046
Oil exploration, drilling, pipelines for oil and gas . . .	32 330	26 597	7 155	6 446	6 143	6 853	6 520	7 236	6 920
Oil platforms etc.	20 753	26 962	4 871	10 086	5 975	6 029	6 269	6 080	6 178
Ships and boats	13 527	7 949	1 067	1 933	1 640	3 308	3 836	1 578	1 205
Other transport equipment	8 234	6 100	922	1 484	1 377	2 318	1 737	2 128	1 841
Machinery and equipment	68 344	70 867	15 632	18 074	17 307	19 853	15 461	16 454	16 602
Agriculture, hunting and forestry	5 565	5 679	970	1 679	1 577	1 453	907	1 462	1 395
Fishing and fish farming.	1 793	1 188	215	398	310	264	446	447	257
Oil and gas extraction incl. services	51 890	56 651	12 288	17 581	12 801	13 981	13 510	15 046	15 559
Oil and gas extraction.	52 687	51 224	12 191	12 726	12 525	13 783	12 999	14 662	15 529
Service activities incidental to oil and gas	-797	5 427	98	4 855	276	198	511	384	30
Mining and quarrying	848	307	31	89	79	107	77	100	72
Manufacturing	20 315	22 307	4 133	5 621	5 565	6 988	3 812	4 944	4 036
Food products, beverages and tobacco.	5 145	4 257	775	1 054	904	1 523	969	962	815
Textiles, wearing apparel, leather	195	71	7	13	18	33	56	27	19
Wood and wood products	403	540	82	116	190	152	152	238	173
Pulp, paper and paper products	878	800	140	178	252	229	107	170	167
Publishing, printing, reproduction	607	408	84	120	49	155	89	141	152
Refined petroleum, chemical and mineral products	1 774	2 377	426	642	599	711	371	623	365
Basic chemicals	1 698	1 850	288	438	470	654	427	546	400
Basic metals	3 595	6 042	1 146	1 592	1 667	1 637	631	853	941
Machinery and other equipment n.e.c.	4 317	3 510	725	886	866	1 032	511	579	656
Building of ships, oil platforms and moduls.	800	1 443	207	385	333	519	348	598	134
Furniture and other manufacturing n.e.c.	902	1 010	253	198	216	343	151	207	212
Electricity and gas supply.	4 802	6 079	826	1 455	1 637	2 162	1 079	1 729	1 737
Water supply	1 202	1 095	224	236	309	326	236	247	332
Construction	3 910	3 844	960	1 011	905	968	1 189	1 042	1 026
Wholesale and retail trade, repair of motor vehicles etc.	9 946	10 400	2 779	2 851	2 457	2 313	2 465	2 637	3 590
Hotels and restaurants	2 010	1 814	431	457	486	441	400	422	459
Transport via pipelines	2 150	1 088	172	146	396	375	788	959	613
Ocean transport	10 886	6 663	887	1 485	1 330	2 961	3 155	1 011	1 038
Other transport industries.	11 855	8 372	1 148	1 991	1 959	3 273	2 524	2 907	2 067
Post and telecommunications	10 540	7 631	2 362	1 364	1 863	2 041	1 841	1 041	1 417
Financial intermediation.	6 132	6 168	1 560	1 541	1 512	1 555	1 484	1 440	1 472
Dwellings (households)	49 475	47 395	12 455	11 659	11 420	11 861	11 612	10 685	10 647
Business services	22 860	19 426	5 513	4 819	4 860	4 234	3 842	2 840	3 287
Public administration and defence.	15 958	18 335	4 291	4 660	4 512	4 872	4 152	4 721	5 085
Education	8 128	8 399	2 269	2 143	1 941	2 046	2 536	2 424	2 167
Health and social work	13 327	10 987	2 569	2 554	2 733	3 132	2 634	2 998	3 513
Other social and personal services	7 601	7 900	1 827	1 883	2 002	2 189	1 853	1 895	2 025
Mainland Norway	196 265	187 326	44 562	46 411	46 127	50 226	43 087	43 981	44 582

General government.	40 077	40 058	9 469	9 758	9 899	10 932	9 791	10 566	11 557
Central government	14 133	17 250	4 408	4 333	4 036	4 473	4 234	4 495	4 837
Civilian central government	12 298	15 164	3 824	3 737	3 628	3 975	3 653	3 865	4 395
Defence	1 835	2 086	584	596	408	498	580	630	442
Local government	25 943	22 808	5 061	5 425	5 863	6 459	5 557	6 071	6 719

Table A23. Gross fixed capital formation by type of capital goods and by industry.
Percentage change in volume from the same period in the previous year

	2001	2002	02:1	02:2	02:3	02:4	03:1	03:2	03:3
Gross fixed capital formation	-4.2	-3.6	-11.1	2.2	-5.1	-0.6	4.5	-7.0	1.9
Building and construction	0.6	-4.0	-3.0	-2.5	-3.6	-6.7	-5.5	-0.3	3.0
Oil exploration, drilling, pipelines for oil and gas . .	22.2	-17.7	-9.3	-13.3	-26.2	-21.1	-8.9	12.3	12.7
Oil platforms etc.	-30.3	29.9	8.3	54.8	6.4	46.4	28.7	-39.7	3.4
Ships and boats	-38.8	-41.2	-80.9	-23.7	-18.5	-2.1	259.4	-18.4	-26.5
Other transport equipment	-19.0	-25.9	-64.9	-36.9	-38.4	127.4	88.5	43.4	33.7
Machinery and equipment	2.0	3.7	1.8	5.8	5.2	2.0	-1.1	-9.0	-4.1
Agriculture, hunting and forestry	-2.0	2.0	0.8	1.1	-0.0	6.4	-6.5	-12.9	-11.6
Fishing and fish farming.	-31.5	-33.8	-62.9	-5.4	-35.3	-15.7	107.2	12.1	-17.2
Oil and gas extraction incl. services	-12.1	9.2	2.3	26.8	-5.5	12.2	9.9	-14.4	21.5
Oil and gas extraction.	-3.7	-2.8	3.7	-0.4	-5.4	-7.6	6.6	15.2	24.0
Service activities incidental to oil and gas . . . .	..	..	-63.0	349.2	-10.4	..	423.3	-92.1	-89.1
Mining and quarrying	20.4	-63.8	-83.0	-76.1	-53.2	-11.4	145.1	11.9	-9.2
Manufacturing	13.3	9.8	12.1	16.5	10.0	3.6	-7.8	-12.1	-27.5
Food products, beverages and tobacco.	18.0	-17.3	-27.7	-24.3	-26.7	5.4	25.0	-8.7	-9.9
Textiles, wearing apparel, leather	95.5	-63.5	-80.1	-73.6	-57.5	-50.1	650.9	101.5	10.4
Wood and wood products	-26.1	33.8	22.2	22.0	50.3	32.2	85.6	105.1	-8.9
Pulp, paper and paper products	-10.3	-8.9	23.9	-19.9	9.9	-26.8	-23.6	-4.3	-33.7
Publishing, printing, reproduction	-50.7	-32.8	-38.0	3.1	-63.4	-30.1	6.7	17.4	211.3
Refined petroleum, chemical and mineral products	-18.1	34.0	35.1	62.2	36.2	13.9	-12.9	-2.9	-39.0
Basic chemicals	-3.4	8.9	-8.0	5.0	20.9	13.0	48.2	24.6	-14.9
Basic metals	77.6	68.1	149.1	133.2	83.1	6.2	-45.0	-46.4	-43.5
Machinery and other equipment n.e.c.	23.9	-18.7	-14.5	-10.9	-27.9	-18.9	-29.5	-34.7	-24.2
Building of ships, oil platforms and moduls	38.2	80.4	37.0	87.2	125.9	75.1	68.3	55.3	-59.8
Furniture and other manufacturing n.e.c.	28.0	11.9	44.3	-21.4	5.8	26.5	-40.4	4.5	-1.7
Electricity and gas supply.	14.4	26.6	12.2	38.9	30.5	22.6	30.6	18.9	6.1
Water supply	-4.2	-8.9	0.8	-6.7	-6.3	-17.8	5.1	5.0	7.5
Construction	-0.5	-1.7	-5.6	5.9	-0.6	-5.8	23.9	3.0	13.4
Wholesale and retail trade, repair of motor vehicles etc.	-10.2	4.6	3.6	20.4	5.9	-10.2	-11.3	-7.5	46.1
Hotels and restaurants	0.5	-9.7	-7.6	-8.5	-11.3	-11.2	-7.1	-7.6	-5.6
Transport via pipelines	210.6	-49.4	-63.0	-62.0	-35.8	-45.3	359.1	558.6	54.9
Ocean transport	-40.0	-38.8	-80.6	-26.4	-8.3	4.3	255.6	-31.9	-21.9
Other transport industries.	-12.4	-29.4	-66.6	-38.3	-34.4	48.1	119.8	46.0	5.5
Post and telecommunications	16.5	-27.6	-6.3	-50.5	-30.4	-21.0	-22.0	-23.7	-23.9
Financial intermediation.	2.3	0.6	0.8	3.9	0.0	-2.1	-4.9	-6.5	-2.6
Dwellings (households)	3.7	-4.2	0.8	-1.6	-6.6	-9.1	-6.8	-8.4	-6.8
Business services	-10.2	-15.0	-16.1	-16.7	-7.0	-19.7	-30.3	-41.1	-32.4
Public administration and defence.	5.7	14.9	2.8	28.5	20.6	10.3	-3.2	1.3	12.7
Education	-3.2	3.3	4.3	3.5	1.3	4.1	11.8	13.1	11.6
Health and social work	10.7	-17.6	-13.2	-14.3	-20.4	-20.8	2.5	17.4	28.5
Other social and personal services	-7.6	3.9	2.7	4.6	3.5	4.8	1.4	0.7	1.2
Mainland Norway	0.7	-4.6	-7.3	-3.3	-4.5	-3.3	-3.3	-5.2	-3.3

General government.	2.9	-0.0	-3.1	7.0	1.3	-4.3	3.4	8.3	16.7
Central government	-4.0	22.1	13.5	40.4	29.9	10.2	-4.0	3.7	19.9
Civilian central government	-2.3	23.3	12.0	46.7	29.2	12.7	-4.5	3.4	21.2
Defence	-13.6	13.6	24.5	10.9	36.7	-6.2	-0.6	5.7	8.3
Local government	7.1	-12.1	-14.0	-10.0	-12.1	-12.3	9.8	11.9	14.6

Table A24. Gross fixed capital formation by type of capital goods and by industry.
Percentage change in prices from the same period in the previous year

	2001	2002	02:1	02:2	02:3	02:4	03:1	03:2	03:3
Gross fixed capital formation	3.6	-0.6	-0.2	-0.4	0.2	-1.9	-1.9	0.4	1.4
Building and construction	5.0	3.6	3.5	3.6	4.1	3.4	2.7	2.6	2.8
Oil exploration, drilling, pipelines for oil and gas . . .	3.2	-2.9	-1.2	-4.0	-3.1	-3.7	-1.2	0.8	2.5
Oil platforms etc.	5.4	-1.0	1.7	-2.3	0.9	-3.5	0.3	5.2	2.2
Ships and boats	7.6	-7.8	-1.3	-2.2	-7.6	-12.9	-22.1	-11.7	-0.7
Other transport equipment	2.2	0.8	-7.8	15.4	-7.7	5.7	9.7	-1.8	24.5
Machinery and equipment	0.3	-5.7	-4.9	-5.6	-4.0	-7.9	-8.1	-5.3	-4.7
Agriculture, hunting and forestry	2.2	-2.1	-1.2	-1.0	0.0	-6.4	-4.6	-1.5	-0.3
Fishing and fish farming.	4.8	-0.1	0.3	-0.4	0.5	-0.2	-12.0	-7.8	-0.6
Oil and gas extraction incl. services	4.1	-1.8	0.0	-3.0	-0.9	-3.0	0.3	3.2	2.5
Oil and gas extraction.	3.9	-1.6	0.0	-3.1	-0.9	-2.1	0.3	3.3	2.6
Service activities incidental to oil and gas	-12.3	16.3	1.4	-2.6	0.3	5.1	-1.0	3.9	1.6
Mining and quarrying	1.8	-4.8	-4.5	-4.0	-4.8	-4.0	-3.8	-2.1	-0.9
Manufacturing	1.4	-3.2	-2.2	-3.1	-2.5	-4.7	-4.8	-2.3	-1.0
Food products, beverages and tobacco.	1.8	-3.2	-2.3	-2.1	-2.0	-4.7	-4.0	-2.0	-1.5
Textiles, wearing apparel, leather	2.4	-6.9	-6.0	-8.8	-8.8	-5.4	5.2	-0.4	-2.3
Wood and wood products	2.0	-1.2	-1.8	0.2	0.3	-3.9	-3.2	-5.5	-3.1
Pulp, paper and paper products	0.3	-3.6	-2.8	-4.6	-3.6	-4.2	-6.5	-3.2	-2.2
Publishing, printing, reproduction	0.3	-4.1	-3.4	-0.4	-5.2	-7.0	-9.1	-9.6	-3.8
Refined petroleum, chemical and mineral products	0.9	-3.8	-3.9	-4.4	-4.0	-3.7	-4.5	-2.3	-0.7
Basic chemicals	1.1	-3.7	-2.7	-4.2	-2.8	-4.4	-5.2	-1.0	-2.1
Basic metals	1.8	-2.5	-0.3	-3.4	-3.1	-3.7	-5.4	1.0	3.7
Machinery and other equipment n.e.c.	1.3	-3.7	-3.6	-3.0	-1.9	-6.1	-5.5	-3.2	-3.8
Building of ships, oil platforms and moduls	1.2	-4.7	-3.1	-4.1	-2.7	-7.2	-3.5	-4.4	-2.5
Furniture and other manufacturing n.e.c.	1.8	-2.6	-2.2	-1.0	-1.4	-4.6	-3.9	-2.6	-2.6
Electricity and gas supply.	1.4	-4.8	-1.8	-2.7	-2.7	-9.0	-9.0	-6.5	-5.8
Water supply	4.5	3.3	3.5	3.9	3.3	2.7	2.7	3.1	2.5
Construction	1.4	-3.0	-2.3	-1.1	-1.7	-7.0	-8.1	-3.2	-2.1
Wholesale and retail trade, repair of motor vehicles etc.	1.6	-3.0	-2.4	-1.5	-1.3	-7.6	-7.8	-5.7	-3.7
Hotels and restaurants	2.1	-2.8	-1.2	-1.6	-2.0	-6.5	-5.8	-4.5	-4.2
Transport via pipelines	1.3	-2.5	-3.9	2.5	-2.9	-2.5	-0.9	-4.0	4.0
Ocean transport	6.5	-8.8	-3.9	-1.5	-8.2	-13.6	-20.2	-9.3	-2.4
Other transport industries.	4.3	-1.7	-10.5	5.1	-5.8	3.0	5.7	-5.7	15.0
Post and telecommunications	0.9	-5.0	-3.9	-3.8	-3.0	-9.2	-9.5	-6.7	-6.5
Financial intermediation.	2.7	-1.7	-1.5	-1.3	-1.2	-2.7	-3.1	-0.5	-0.1
Dwellings (households)	5.3	4.0	3.9	4.0	4.0	4.1	3.2	3.1	3.3
Business services	2.8	-0.8	-0.9	-1.3	1.4	-2.6	-2.0	-0.7	-0.5
Public administration and defence.	3.9	2.0	1.4	1.7	2.4	2.5	0.4	1.4	1.5
Education	4.1	0.9	1.1	0.3	1.5	0.8	0.5	1.1	2.0
Health and social work	3.9	1.2	1.2	1.0	1.5	1.1	0.4	1.5	1.8
Other social and personal services	3.1	0.6	0.1	0.5	1.5	0.2	-1.0	0.2	0.9
Mainland Norway	3.4	0.1	0.1	0.5	0.7	-0.9	-1.1	-0.3	1.1

General government.	4.1	1.9	1.7	1.6	2.3	2.1	0.8	1.5	1.8
Central government	3.6	1.0	0.9	0.9	1.5	0.7	-0.2	1.0	1.6
Civilian central government	3.7	1.4	1.4	1.1	1.8	1.1	0.5	1.4	1.9
Defence	3.0	-1.6	-2.4	-1.2	-0.9	-2.1	-4.4	-1.8	-2.1
Local government	4.3	2.7	2.3	2.3	3.0	3.1	1.4	1.9	2.0

Table A25. Exports of goods and services. At current prices. Million kroner

	2001	2002	02:1	02:2	02:3	02:4	03:1	03:2	03:3
Total exports	697 597	630 472	154 853	162 977	153 200	159 443	163 940	154 647	156 078
Goods	533 532	474 347	117 476	123 373	113 112	120 387	127 222	113 978	113 683
Crude oil and natural gas	301 613	264 842	62 423	68 379	64 328	69 712	76 334	61 225	64 597
Ships, new	7 281	7 188	3 001	2 265	1 217	705	1 437	652	1 106
Ships, second-hand	5 397	2 220	450	898	634	238	645	1 669	132
Oil platforms and modules, new	75	76	10	4	17	45	19	208	24
Oil platforms, second-hand	3 164	99	8	21	28	42	15	21	39
Direct exports in relation to petroleum activities	138	128	29	35	22	42	43	44	43
Other goods	215 864	199 794	51 555	51 771	46 866	49 603	48 729	50 159	47 741
Agriculture, forestry and fishing	9 286	8 743	1 978	2 255	2 070	2 440	2 118	2 367	2 070
Mining and quarrying	3 060	2 678	636	653	683	706	627	659	693
Manufacturing products	202 217	185 925	48 450	48 421	43 235	45 820	45 497	46 937	44 488
Food products, beverages and tobacco	25 964	24 104	6 478	5 279	5 336	7 011	5 305	4 665	4 733
Textiles, wearing apparel, leather	2 447	2 338	588	570	554	626	559	525	552
Wood products	2 823	2 638	698	703	591	646	664	651	625
Pulp, paper and paper products	14 020	11 080	2 871	2 922	2 595	2 692	2 520	2 545	2 826
Printing and publishing	582	576	151	138	140	147	142	159	139
Refined petroleum products	26 329	22 352	5 586	6 238	5 243	5 285	7 366	7 111	5 772
Basic chemicals	18 318	15 985	4 049	4 091	3 968	3 877	3 950	4 517	4 300
Chemical and mineral products	13 027	12 908	3 269	3 472	2 981	3 186	3 087	3 376	3 079
Basic metals	38 900	33 863	9 148	9 254	7 894	7 567	8 755	9 809	9 401
Machinery and other equipment n.e.c.	55 156	55 783	14 473	14 644	12 996	13 671	12 085	12 697	12 193
Furniture and other manufacturing products	4 651	4 298	1 139	1 110	937	1 112	1 064	882	868
Electricity	1 301	2 448	491	442	878	637	487	196	490
Services	164 065	156 125	37 377	39 604	40 088	39 056	36 718	40 669	42 395
Gross receipts, shipping	79 356	70 485	17 279	17 826	17 480	17 900	16 633	18 323	18 815
Petroleum activities, various services	875	891	217	223	213	238	240	219	243
Oil drilling etc.	5 097	6 172	1 431	1 634	1 721	1 386	1 427	1 351	1 408
Pipeline transport	5 918	6 488	1 469	1 893	1 593	1 533	1 795	2 515	2 220
Travel	18 619	18 275	3 852	5 037	5 600	3 786	3 631	5 031	5 885
Other services	54 200	53 814	13 129	12 991	13 481	14 213	12 992	13 230	13 824
Transport, post and telecommunication	12 866	11 927	2 779	3 020	3 228	2 900	2 796	2 780	2 782
Financial and business services	32 581	33 332	8 332	7 902	8 050	9 048	8 157	8 337	8 745
Services n.e.c.	8 753	8 555	2 018	2 069	2 203	2 265	2 039	2 113	2 297

Table A26. Exports of goods and services. At constant 2000-prices. Million kroner

	2001	2002	02:1	02:2	02:3	02:4	03:1	03:2	03:3
Total exports	713 743	709 868	175 854	180 632	172 536	180 845	175 363	175 454	168 739
Goods	560 507	558 309	139 104	142 588	133 693	142 925	139 776	138 550	130 048
Crude oil and natural gas	322 590	323 206	78 397	81 686	78 046	85 077	80 492	78 491	74 893
Ships, new	7 014	7 048	2 928	2 223	1 200	698	1 427	637	1 066
Ships, second-hand	5 331	2 586	486	1 001	777	323	850	2 154	193
Oil platforms and modules, new	72	72	10	4	16	42	18	192	22
Oil platforms, second-hand	3 164	99	8	21	28	42	15	21	27
Direct exports in relation to petroleum activities	135	136	30	38	22	45	43	48	45
Other goods	222 201	225 163	57 246	57 616	53 604	56 697	56 930	57 007	53 802
Agriculture, forestry and fishing	10 691	11 084	2 446	2 802	2 631	3 205	2 779	3 292	3 199
Mining and quarrying	3 104	2 741	616	667	737	720	645	711	691
Manufacturing products	207 700	209 888	53 899	53 789	49 638	52 562	53 388	52 909	49 716
Food products, beverages and tobacco	25 514	25 511	6 513	5 513	5 729	7 756	6 179	5 299	5 346
Textiles, wearing apparel, leather	2 424	2 238	565	533	538	602	584	505	515
Wood products	2 881	2 875	807	737	611	719	699	664	595
Pulp, paper and paper products	13 613	12 636	3 072	3 277	3 080	3 207	3 116	3 062	3 384
Printing and publishing	519	496	136	111	129	120	158	145	137
Refined petroleum products	29 190	29 256	8 167	7 775	7 035	6 279	7 932	8 046	6 596
Basic chemicals	18 767	18 212	4 488	4 562	4 549	4 612	4 693	5 037	4 892
Chemical and mineral products	12 668	12 863	3 132	3 403	3 036	3 293	3 286	3 567	3 266
Basic metals	41 066	40 957	10 546	10 979	9 900	9 532	10 955	11 688	10 694
Machinery and other equipment n.e.c.	56 442	60 504	15 346	15 792	14 079	15 288	14 736	14 026	13 477
Furniture and other manufacturing products	4 617	4 339	1 127	1 108	952	1 153	1 052	870	814
Electricity	706	1 451	285	358	597	210	119	95	196
Services	153 236	151 558	36 750	38 044	38 844	37 920	35 587	36 904	38 691
Gross receipts, shipping	70 716	68 322	17 336	16 899	16 749	17 338	16 285	16 294	16 580
Petroleum activities, various services	842	848	209	212	202	224	227	202	223
Oil drilling etc.	5 066	7 066	1 450	1 822	2 085	1 709	1 646	1 584	1 578
Pipeline transport	6 015	6 431	1 408	1 959	1 598	1 465	1 639	1 766	1 876
Travel	18 317	17 755	3 778	4 889	5 433	3 655	3 465	4 791	5 592
Other services	52 279	51 136	12 569	12 262	12 776	13 529	12 325	12 266	12 843
Transport, post and telecommunication	12 395	11 306	2 611	2 850	3 079	2 766	2 667	2 611	2 604
Financial and business services	31 422	31 865	8 029	7 473	7 656	8 707	7 786	7 731	8 153
Services n.e.c.	8 462	7 965	1 929	1 940	2 041	2 056	1 873	1 925	2 086

Table A27. Exports of goods and services.
Percentage change in volume from the same period in the previous year

	2001	2002	02:1	02:2	02:3	02:4	03:1	03:2	03:3
Total exports	4.1	-0.5	-1.7	6.4	-1.6	-4.7	-0.3	-2.9	-2.2
Goods	5.5	-0.4	-1.5	8.3	-1.4	-6.0	0.5	-2.8	-2.7
Crude oil and natural gas	5.2	0.2	-3.4	11.6	-3.3	-2.8	2.7	-3.9	-4.0
Ships, new	20.9	0.5	139.3	-4.5	-57.5	8.6	-51.2	-71.3	-11.2
Ships, second-hand	37.9	-51.5	-65.9	22.5	-49.3	-79.3	75.1	115.3	-75.2
Oil platforms and modules, new	-86.0	-0.2	230.0	98.8	-68.9	176.8	86.0	..	36.5
Oil platforms, second-hand . . . . .	..	-96.9	-27.3	-41.7	55.6	-98.6	87.5	-	-3.6
Direct exports in relation to petroleum activities	2.8	0.8	-20.3	19.4	-46.4	92.2	44.8	26.0	99.9
Other goods	3.7	1.3	-0.2	4.3	6.3	-4.2	-0.6	-1.1	0.4
Agriculture, forestry and fishing	-1.8	3.7	-9.4	5.3	8.8	10.1	13.6	17.5	21.6
Mining and quarrying	17.4	-11.7	-1.8	-2.6	-11.8	-24.7	4.7	6.6	-6.3
Manufacturing products	4.6	1.1	0.0	3.8	5.6	-4.4	-0.9	-1.6	0.2
Food products, beverages and tobacco	2.3	-0.0	-10.2	-4.3	13.4	4.1	-5.1	-3.9	-6.7
Textiles, wearing apparel, leather	-1.1	-7.7	-10.1	-8.4	-10.9	-1.3	3.4	-5.2	-4.3
Wood products	-8.6	-0.2	11.5	-0.7	-8.3	-3.8	-13.5	-9.9	-2.7
Pulp, paper and paper products	2.8	-7.2	-18.1	-2.2	-5.2	-1.6	1.4	-6.6	9.9
Printing and publishing	-23.7	-4.5	-16.3	6.3	19.7	-17.0	16.8	31.6	5.8
Refined petroleum products	-2.2	0.2	5.2	8.9	2.2	-15.2	-2.9	3.5	-6.2
Basic chemicals	8.0	-3.0	-12.2	-7.5	3.2	6.8	4.6	10.4	7.5
Chemical and mineral products	3.2	1.5	-7.7	5.9	8.0	1.3	4.9	4.8	7.6
Basic metals	-0.8	-0.3	-1.1	2.1	0.6	-2.8	3.9	6.5	8.0
Machinery and other equipment n.e.c.	15.5	7.2	15.7	12.1	14.2	-8.8	-4.0	-11.2	-4.3
Furniture and other manufacturing products	4.2	-6.0	-3.1	-5.2	-11.6	-4.6	-6.6	-21.4	-14.5
Electricity	-65.0	105.5	67.9	359.2	377.5	-36.9	-58.5	-73.5	-67.2
Services	-1.0	-1.1	-2.2	-0.0	-2.4	0.3	-3.2	-3.0	-0.4
Gross receipts, shipping	2.2	-3.4	-1.4	-3.6	-5.8	-2.7	-6.1	-3.6	-1.0
Petroleum activities, various services	47.5	0.7	-0.5	7.1	-4.0	0.5	8.3	-4.9	10.3
Oil drilling etc.	-7.5	39.5	4.9	50.2	91.6	23.6	13.5	-13.0	-24.3
Pipeline transport	7.9	6.9	-10.0	39.5	2.2	-1.2	16.4	-9.8	17.3
Travel	-3.8	-3.1	-6.0	1.3	-4.6	-3.1	-8.3	-2.0	2.9
Other services	-4.8	-2.2	-1.9	-4.8	-5.1	3.0	-1.9	0.0	0.5
Transport, post and telecommunication	10.4	-8.8	-16.0	-10.6	-4.3	-4.0	2.1	-8.4	-15.4
Financial and business services	-14.4	1.4	3.1	-4.1	-1.6	8.0	-3.0	3.5	6.5
Services n.e.c.	21.1	-5.9	0.6	2.5	-17.1	-6.1	-2.9	-0.8	2.2

Table A28. Exports of goods and services.
Percentage change in prices from the same period in the previous year

	2001	2002	02:1	02:2	02:3	02:4	03:1	03:2	03:3
Total exports	-2.3	-9.1	-12.6	-13.1	-9.9	-0.6	6.2	-2.3	4.2
Goods	-4.8	-10.7	-14.3	-15.3	-12.2	-1.0	7.8	-4.9	3.3
Crude oil and natural gas	-6.5	-12.4	-18.6	-19.2	-14.3	4.2	19.1	-6.8	4.6
Ships, new	3.8	-1.8	-0.9	-2.5	-2.1	-1.8	-1.8	0.5	2.3
Ships, second-hand	1.2	-15.2	-14.6	-17.7	-16.5	-21.5	-18.2	-13.7	-16.1
Oil platforms and modules, new	4.1	1.5	1.0	0.6	1.3	1.6	2.2	3.3	3.4
Oil platforms, second-hand	-	-	-	-	-	-	-	-	44.4
Direct exports in relation to petroleum activities	2.5	-7.9	-4.2	-11.2	-4.5	-8.9	2.4	-0.2	-2.2
Other goods	-2.9	-8.7	-9.2	-10.1	-9.1	-6.2	-5.0	-2.1	1.5
Agriculture, forestry and fishing	-13.1	-9.2	-11.5	-10.8	-10.4	-3.4	-5.7	-10.6	-17.8
Mining and quarrying	-1.4	-0.9	4.0	-5.1	-4.8	2.1	-5.9	-5.3	8.3
Manufacturing products	-2.6	-9.0	-9.5	-10.2	-9.6	-6.8	-5.2	-1.5	2.7
Food products, beverages and tobacco	1.8	-7.2	-1.4	-3.3	-7.5	-14.3	-13.7	-8.1	-5.0
Textiles, wearing apparel, leather	0.9	3.5	4.0	4.8	5.3	0.2	-8.1	-2.9	4.1
Wood products	-2.0	-6.4	-14.4	-3.6	-1.9	-4.2	9.9	2.8	8.6
Pulp, paper and paper products	3.0	-14.9	-13.9	-14.9	-16.6	-13.1	-13.5	-6.8	-0.9
Printing and publishing	12.1	3.6	4.3	-3.1	-10.7	23.0	-19.5	-12.4	-6.2
Refined petroleum products	-9.8	-15.3	-24.7	-23.7	-17.7	12.4	35.8	10.2	17.4
Basic chemicals	-2.4	-10.1	-9.7	-10.9	-8.8	-10.0	-6.7	0.0	0.8
Chemical and mineral products	2.8	-2.4	3.1	-1.1	-6.5	-5.5	-10.0	-7.2	-4.0
Basic metals	-5.3	-12.7	-13.3	-13.3	-15.2	-8.7	-7.9	-0.4	10.2
Machinery and other equipment n.e.c.	-2.3	-5.7	-4.6	-6.1	-4.0	-7.9	-13.0	-2.4	-2.0
Furniture and other manufacturing products	0.7	-1.7	-2.3	0.4	-1.3	-3.4	0.1	1.2	8.4
Electricity	84.3	-8.4	-11.9	-39.5	-16.0	70.9	138.9	67.5	70.4
Services	7.1	-3.8	-6.9	-4.9	-2.8	-0.4	1.4	5.9	6.2
Gross receipts, shipping	12.2	-8.1	-14.9	-9.5	-5.6	-1.6	2.5	6.6	8.7
Petroleum activities, various services	3.9	1.1	1.0	0.6	1.3	1.6	2.2	3.3	3.4
Oil drilling etc.	0.6	-13.2	-1.3	-12.2	-17.7	-19.0	-12.2	-4.9	8.1
Pipeline transport	-1.6	2.5	-1.7	-6.7	0.9	23.2	5.0	47.4	18.8
Travel	1.6	1.3	0.5	-0.0	2.0	2.5	2.8	1.9	2.1
Other services	3.7	1.5	2.1	2.0	1.6	0.4	0.9	1.8	2.0
Transport, post and telecommunication	3.8	1.6	5.0	1.8	0.9	-1.1	-1.5	0.5	1.9
Financial and business services	3.7	0.9	1.0	1.7	1.2	-0.2	1.0	2.0	2.0
Services n.e.c.	3.4	3.8	2.8	3.5	3.8	5.3	4.1	2.9	2.0

Table A29. Imports of goods and services. At current prices. Million kroner

	2001	2002	02:1	02:2	02:3	02:4	03:1	03:2	03:3
Total imports	435 270	415 063	97 796	108 350	103 708	105 209	101 533	105 027	109 790
Goods	299 492	283 593	67 855	75 643	66 575	73 520	72 006	71 436	69 780
Ships	11 663	4 011	424	1 552	813	1 222	2 469	1 610	321
Oil platforms and modules	1 161	4 841	95	4 702	12	32	148	54	26
Direct imports related to petroleum activities	2 681	1 895	292	268	584	751	510	588	679
Other goods	283 987	272 846	67 044	69 121	65 166	71 515	68 879	69 184	68 754
Agriculture, forestry and fishing	9 151	8 726	2 775	2 142	1 629	2 180	2 328	2 145	1 810
Crude oil	1 598	810	134	202	296	178	478	43	61
Mining and quarrying	3 559	2 858	764	818	623	653	631	704	698
Manufacturing products	267 634	259 220	63 060	65 804	62 577	67 779	63 698	65 336	65 739
Food products, beverages and tobacco	14 717	14 569	3 319	3 616	3 852	3 782	3 374	3 608	4 279
Textiles, wearing apparel, leather	18 478	18 005	4 993	3 663	5 293	4 056	4 878	3 712	5 568
Wood products	6 025	5 921	1 370	1 584	1 436	1 531	1 503	1 656	1 536
Pulp, paper and paper products	7 022	6 522	1 687	1 649	1 570	1 616	1 643	1 623	1 622
Printing and publishing	3 712	3 569	903	786	894	986	852	778	903
Refined petroleum products	16 048	15 152	3 557	3 961	3 795	3 839	4 181	3 908	3 921
Basic chemicals	11 481	9 981	2 489	2 729	2 387	2 376	2 497	2 683	2 660
Chemical and mineral products	29 237	29 522	7 072	7 825	7 049	7 576	7 518	7 663	7 805
Basic metals	24 861	22 934	5 500	6 398	4 991	6 045	5 435	6 453	5 573
Machinery and other equipment n.e.c.	105 267	101 485	24 884	25 813	23 990	26 798	25 133	26 013	24 889
Furniture and other manufacturing products	10 567	11 066	2 631	2 626	2 528	3 281	2 623	2 689	2 722
Non-competitive imports	20 219	20 494	4 655	5 154	4 792	5 893	4 061	4 550	4 261
Electricity	2 045	1 232	311	155	41	725	1 744	956	446
Services	135 778	131 470	29 941	32 707	37 133	31 689	29 527	33 591	40 010
Operating costs shipping, excl. bunkers	32 649	31 802	8 056	8 471	7 657	7 618	7 227	8 394	9 221
Operating cost oil drilling, excl. bunkers	6 484	7 869	1 462	2 069	2 155	2 183	1 514	1 709	1 532
Petroleum activities, various services	1 832	2 144	415	554	569	606	359	311	331
Travel	39 535	40 034	7 427	9 638	14 399	8 570	8 317	10 830	16 517
Other services	55 278	49 621	12 581	11 975	12 353	12 712	12 110	12 347	12 409
Transport, post and telecommunication	5 821	6 023	1 457	1 492	1 731	1 343	1 266	1 263	1 442
Financial and business services	30 450	26 291	6 966	6 118	6 493	6 714	6 898	6 471	6 338
Services n.e.c.	19 007	17 307	4 158	4 365	4 129	4 655	3 946	4 613	4 629

Table A30. Imports of goods and services. At constant 2000-prices. Million kroner

	2001	2002	02:1	02:2	02:3	02:4	03:1	03:2	03:3
Total imports	435 146	442 534	101 997	114 213	111 251	115 073	110 000	111 165	112 248
Goods	299 077	308 336	71 809	81 585	72 833	82 108	79 671	78 642	74 656
Ships	10 724	4 464	398	1 592	969	1 505	3 221	2 114	387
Oil platforms and modules	1 066	4 909	86	4 768	15	40	194	71	31
Direct imports related to petroleum activities	2 575	1 798	282	255	554	706	482	542	623
Other goods	284 712	297 165	71 043	74 970	71 295	79 856	75 775	75 915	73 614
Agriculture, forestry and fishing	8 863	8 693	2 484	2 164	1 800	2 246	2 378	2 233	1 893
Crude oil	1 852	1 021	184	236	366	234	635	58	76
Mining and quarrying	3 746	3 226	785	925	755	761	854	865	756
Manufacturing products	268 951	283 603	67 363	71 497	68 343	76 400	71 339	72 241	70 665
Food products, beverages and tobacco	14 518	14 795	3 255	3 690	3 985	3 864	3 548	3 711	4 323
Textiles, wearing apparel, leather	18 528	19 787	5 176	4 248	5 820	4 543	5 643	4 529	6 053
Wood products	6 321	6 468	1 538	1 758	1 550	1 622	1 648	1 745	1 583
Pulp, paper and paper products	7 170	7 044	1 740	1 790	1 708	1 806	1 815	1 714	1 714
Printing and publishing	4 091	4 236	1 000	950	1 110	1 177	1 046	945	1 144
Refined petroleum products	17 597	19 341	4 955	4 824	4 854	4 708	4 472	5 085	4 561
Basic chemicals	10 957	10 600	2 639	2 861	2 626	2 474	2 595	2 673	2 610
Chemical and mineral products	27 878	29 348	7 006	7 735	6 885	7 722	7 634	7 720	7 326
Basic metals	25 490	27 672	6 451	7 428	6 186	7 607	6 810	7 474	6 224
Machinery and other equipment n.e.c.	106 601	112 876	26 594	28 206	26 368	31 708	29 413	29 308	27 940
Furniture and other manufacturing products	10 608	11 582	2 649	2 868	2 597	3 467	2 854	3 033	2 982
Non-competitive imports	19 192	19 853	4 360	5 137	4 655	5 701	3 861	4 304	4 205
Electricity	1 300	622	228	149	31	215	568	517	225
Services	136 068	134 198	30 188	32 628	38 417	32 965	30 329	32 524	37 592
Operating costs shipping, excl. bunkers	34 731	33 555	8 514	8 300	8 226	8 515	7 998	8 003	8 143
Operating cost oil drilling, excl. bunkers	6 240	7 480	1 411	1 970	2 045	2 053	1 430	1 576	1 406
Petroleum activities, various services	1 787	2 160	408	557	574	620	365	314	328
Travel	40 030	42 642	7 615	10 191	15 563	9 274	8 710	10 767	15 885
Other services	53 281	48 361	12 240	11 610	12 009	12 503	11 825	11 864	11 830
Transport, post and telecommunication	5 358	5 409	1 238	1 326	1 591	1 254	1 168	1 158	1 302
Financial and business services	29 358	26 126	6 960	6 042	6 411	6 713	6 843	6 271	6 137
Services n.e.c.	18 564	16 826	4 041	4 242	4 006	4 536	3 814	4 435	4 391

Table A31. Imports of goods and services.
Percentage change in volume from the same period in the previous year

	2001	2002	02:1	02:2	02:3	02:4	03:1	03:2	03:3
Total imports	0.9	1.7	-4.5	6.8	1.6	2.8	7.8	-2.7	0.9
Goods	-1.3	3.1	-4.2	11.7	1.5	3.5	10.9	-3.6	2.5
Ships	-42.6	-58.4	-90.5	-15.3	-65.8	-17.8	709.8	32.8	-60.1
Oil platforms and modules	-79.8	360.3	267.9	..	-86.1	-95.5	124.0	-98.5	116.3
Direct imports related to petroleum activities	8.6	-30.2	-38.9	24.5	-3.9	-47.0	71.0	112.4	12.5
Other goods	2.9	4.4	1.0	5.8	4.5	6.1	6.7	1.3	3.3
Agriculture, forestry and fishing	1.3	-1.9	2.8	-8.2	-0.9	-1.2	-4.2	3.2	5.2
Crude oil	2.5	-44.9	-55.9	-41.2	5.5	-65.8	244.8	-75.5	-79.3
Mining and quarrying	3.2	-13.9	-30.7	3.9	-9.9	-14.1	8.8	-6.5	0.1
Manufacturing products	2.6	5.4	2.0	7.1	5.3	7.3	5.9	1.0	3.4
Food products, beverages and tobacco	5.7	1.9	-0.8	2.9	2.4	2.7	9.0	0.5	8.5
Textiles, wearing apparel, leather	-1.6	6.8	1.1	9.4	8.5	9.1	9.0	6.6	4.0
Wood products	9.7	2.3	2.1	10.7	1.8	-4.8	7.2	-0.8	2.1
Pulp, paper and paper products	-6.8	-1.8	-9.9	6.7	-1.1	-1.5	4.3	-4.2	0.3
Printing and publishing	1.8	3.6	-1.6	4.4	16.7	-3.0	4.6	-0.5	3.1
Refined petroleum products	3.5	9.9	18.8	14.6	9.4	-1.5	-9.7	5.4	-6.0
Basic chemicals	-1.4	-3.3	2.3	-6.4	-8.6	1.1	-1.7	-6.6	-0.6
Chemical and mineral products	-1.5	5.3	2.9	7.1	-0.2	11.1	9.0	-0.2	6.4
Basic metals	2.2	8.6	6.8	10.3	0.0	16.5	5.6	0.6	0.6
Machinery and other equipment n.e.c.	4.0	5.9	1.2	7.8	7.9	6.7	10.6	3.9	6.0
Furniture and other manufacturing products	1.9	9.2	3.9	12.7	4.0	14.9	7.7	5.8	14.8
Non-competitive imports	7.2	3.4	-9.0	-0.8	12.7	11.9	-11.4	-16.2	-9.7
Electricity	626.3	-52.2	-26.3	-68.3	-90.9	14.9	149.5	247.7	637.6
Services	6.0	-1.4	-5.0	-3.9	1.9	1.1	0.5	-0.3	-2.1
Operating costs shipping, excl. bunkers	2.2	-3.4	-1.4	-3.6	-5.8	-2.7	-6.1	-3.6	-1.0
Operating cost oil drilling, excl. bunkers	12.8	19.9	-12.3	26.5	56.8	16.1	1.4	-20.0	-31.2
Petroleum activities, various services	19.9	20.8	-8.6	23.7	62.5	15.5	-10.7	-43.6	-42.8
Travel	-1.1	6.5	-0.5	4.0	9.4	11.0	14.4	5.7	2.1
Other services	13.6	-9.2	-8.9	-14.3	-8.3	-5.4	-3.4	2.2	-1.5
Transport, post and telecommunication	5.8	1.0	-10.6	-4.9	22.7	-2.2	-5.7	-12.7	-18.2
Financial and business services	17.5	-11.0	-8.0	-19.3	-11.6	-4.9	-1.7	3.8	-4.3
Services n.e.c.	10.2	-9.4	-9.8	-9.1	-11.9	-6.9	-5.6	4.6	9.6

Table A32. Imports of goods and services.
Percentage change in prices from the same period in the previous year

	2001	2002	02:1	02:2	02:3	02:4	03:1	03:2	03:3
Total imports	0.0	-6.2	-6.5	-6.6	-5.9	-5.8	-3.7	-0.4	4.9
Goods	0.1	-8.2	-8.9	-8.9	-7.8	-6.8	-4.4	-2.0	2.3
Ships	8.8	-17.4	-3.8	-14.6	-20.3	-21.9	-28.1	-21.9	-1.0
Oil platforms and modules	8.9	-9.4	-0.7	-13.7	-26.0	-25.7	-30.5	-22.9	0.2
Direct imports related to petroleum activities	4.1	1.2	1.0	0.6	1.3	1.6	2.2	3.3	3.4
Other goods	-0.3	-7.9	-8.6	-9.1	-7.6	-6.4	-3.7	-1.2	2.2
Agriculture, forestry and fishing	3.2	-2.8	3.7	0.4	-10.2	-7.8	-12.4	-3.0	5.6
Crude oil	-13.7	-8.1	-18.3	-14.6	-14.5	5.0	3.5	-13.2	-0.2
Mining and quarrying	-5.0	-6.7	1.1	-9.7	-13.4	-4.7	-24.1	-8.0	11.9
Manufacturing products	-0.5	-8.1	-9.1	-9.0	-7.2	-7.1	-4.6	-1.7	1.6
Food products, beverages and tobacco	1.4	-2.9	0.8	-1.9	-3.6	-6.1	-6.7	-0.8	2.4
Textiles, wearing apparel, leather	-0.3	-8.8	-4.0	-10.1	-10.4	-10.7	-10.4	-4.9	1.1
Wood products	-4.7	-4.0	-9.0	-6.8	-2.5	2.6	2.4	5.4	4.7
Pulp, paper and paper products	-2.1	-5.5	-1.9	-7.4	-4.7	-7.8	-6.6	2.8	3.0
Printing and publishing	-9.3	-7.2	-3.1	-8.2	-13.1	-4.3	-9.8	-0.5	-2.0
Refined petroleum products	-8.8	-14.1	-24.7	-16.6	-17.4	4.5	30.2	-6.4	10.0
Basic chemicals	4.8	-10.1	-16.2	-9.4	-8.9	-5.6	2.0	5.2	12.1
Chemical and mineral products	4.9	-4.1	-6.3	-0.0	-0.0	-9.5	-2.4	-1.9	4.1
Basic metals	-2.5	-15.0	-16.3	-18.0	-15.4	-9.4	-6.4	0.2	11.0
Machinery and other equipment n.e.c.	-1.3	-9.0	-9.3	-9.6	-7.6	-9.1	-8.7	-3.0	-2.1
Furniture and other manufacturing products	-0.4	-4.1	0.3	-7.7	-0.2	-7.4	-7.5	-3.2	-6.2
Non-competitive imports	5.4	-2.0	-3.4	-3.7	1.4	-1.4	-1.5	5.3	-1.6
Electricity	57.3	26.0	-18.8	-37.9	-6.0	143.6	124.8	77.4	47.5
Services	-0.2	-1.8	-0.6	-0.9	-2.3	-3.3	-1.8	3.0	10.1
Operating costs shipping, excl. bunkers	-6.0	0.8	0.2	4.5	0.9	-2.4	-4.5	2.8	21.7
Operating cost oil drilling, excl. bunkers	3.9	1.2	1.0	0.6	1.3	1.6	2.2	3.3	3.4
Petroleum activities, various services	2.5	-3.2	-0.7	-3.1	-3.5	-4.6	-3.2	-0.4	1.8
Travel	-1.2	-4.9	-2.9	-5.0	-5.6	-5.4	-2.1	6.4	12.4
Other services	3.7	-1.1	0.4	-1.0	-0.9	-2.9	-0.4	0.9	2.0
Transport, post and telecommunication	8.6	2.5	13.2	1.9	2.2	-6.0	-7.9	-3.1	1.8
Financial and business services	3.7	-3.0	-2.7	-2.6	-2.6	-4.0	0.7	1.9	2.0
Services n.e.c.	2.4	0.5	1.8	0.2	0.4	-0.4	0.6	1.1	2.3

Table A33. Balance of payments. Summary. At current prices. Million kroner

	2001	2002	02:1	02:2	02:3	02:4	03:1	03:2	03:3
Total exports	697 597	630 472	154 853	162 977	153 200	159 443	163 940	154 647	156 078
Goods	533 532	474 347	117 476	123 373	113 112	120 387	127 222	113 978	113 683
Services	164 065	156 125	37 377	39 604	40 088	39 056	36 718	40 669	42 395
Total imports	435 270	415 063	97 796	108 350	103 708	105 209	101 533	105 027	109 790
Goods	299 492	283 593	67 855	75 643	66 575	73 520	72 006	71 436	69 780
Services	135 778	131 470	29 941	32 707	37 133	31 689	29 527	33 591	40 010
Balance of goods and services.	262 327	215 409	57 057	54 627	49 492	54 234	62 407	49 620	46 287
Primary income and transfers from abroad	81 712	86 814	22 445	22 382	19 623	22 364	19 830	22 037	19 932
Compensation of employees.	2 280	2 400	600	600	600	600	600	600	600
Interest	51 719	55 270	15 054	13 571	12 033	14 612	14 196	12 638	12 759
Dividends etc.	7 682	8 338	1 507	3 367	1 670	1 794	1 337	5 149	2 321
Reinvested earnings	6 781	7 714	1 969	1 608	2 123	2 014	678	678	678
Current transfers to Norway	13 250	13 092	3 315	3 236	3 197	3 344	3 019	2 972	3 574
Primary income and transfers to abroad	105 523	101 598	24 528	25 041	22 631	29 398	26 765	27 805	15 206
Compensation of employees.	6 205	6 128	1 475	1 531	1 459	1 663	1 392	1 524	1 615
Interest	47 711	41 648	11 159	9 172	9 065	12 252	9 745	10 811	6 198
Dividends etc.	28 650	21 386	10 769	5 756	4 383	478	8 301	8 668	863
Reinvested earnings	-5 379	714	-5 618	960	760	4 612	-861	-861	-861
Current transfers from Norway.	11 016	12 979	2 094	2 843	2 465	5 577	2 795	2 502	2 508
Current transfers from Norway.	17 320	18 743	4 649	4 779	4 499	4 816	5 393	5 161	4 883
Primary income and transfers from abroad, net.	-23 811	-14 784	-2 083	-2 659	-3 008	-7 034	-6 935	-5 768	4 726
Current external balance	238 516	200 625	54 974	51 968	46 484	47 200	55 472	43 852	51 013
Capital transfers to abroad, net.	840	462	-870	220	532	580	-780	718	139
Acquisitions of patents, licenses etc, net.	-25	-27	-2	-9	-13	-3	-1	-1	6
Net lending	237 701	200 190	55 846	51 757	45 965	46 623	56 253	43 135	50 868

Table A34. Employed persons by industry. Employees and self-employed. 1000

	2001	2002	02:1	02:2	02:3	02:4	03:1	03:2	03:3
Total	2 315.7	2 321.3	2 315.2	2 334.9	2 331.7	2 303.2	2 298.2	2 308.6	2 310.3
Agriculture, hunting and forestry	72.6	70.4	70.7	70.7	70.4	69.8	67.9	67.8	69.2
Fishing and fish farming	16.0	16.5	15.0	17.3	18.3	15.6	14.1	15.2	14.7
Oil and gas extraction incl. services	22.9	23.7	23.6	23.8	24.2	23.2	22.9	23.2	23.7
Oil and gas extraction	15.4	15.7	15.6	15.7	16.0	15.5	15.4	15.4	15.6
Service activities incidental to oil and gas	7.5	8.0	7.9	8.1	8.2	7.7	7.5	7.8	8.1
Mining and quarrying	3.9	3.9	3.8	4.0	4.0	3.8	3.6	3.7	3.8
Manufacturing	296.8	293.4	295.0	298.5	292.9	287.4	282.7	281.1	278.8
Food products, beverages and tobacco	53.8	53.6	52.7	53.3	54.2	54.0	52.0	52.0	53.0
Textiles, wearing apparel, leather	7.9	7.4	7.6	8.0	7.1	6.8	7.1	7.0	6.6
Wood and wood products	16.0	15.7	15.7	15.9	15.7	15.5	15.3	15.7	15.3
Pulp, paper and paper products	9.9	9.1	9.6	9.5	8.7	8.5	8.8	8.6	8.6
Publishing, printing, reproduction	38.0	36.8	38.0	36.9	36.8	35.5	36.0	35.4	35.2
Refined petroleum, chemical and mineral products	22.3	22.4	21.9	23.2	22.5	21.9	21.2	22.1	21.7
Basic chemicals	8.2	8.0	8.0	7.9	7.9	8.2	7.5	7.9	7.7
Basic metals	14.4	13.8	14.2	14.1	13.6	13.4	13.4	13.9	13.5
Machinery and other equipment n.e.c.	77.4	77.2	77.6	79.0	76.9	75.4	74.6	73.3	72.6
Building of ships, oil platforms and moduls	34.1	35.1	34.6	35.5	35.9	34.4	33.0	31.6	31.9
Furniture and other manufacturing n.e.c.	14.8	14.4	15.0	15.1	13.7	13.8	13.9	13.6	12.7
Electricity and gas supply	15.9	15.3	15.4	15.3	15.8	14.8	15.0	14.9	15.4
Water supply	1.4	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.4
Construction	135.8	138.2	134.5	138.9	140.9	138.4	135.2	138.0	138.9
Wholesale and retail trade, repair of motor vehicles etc.	324.6	328.3	325.2	332.0	330.5	325.6	331.5	336.1	338.6
Hotels and restaurants	67.7	67.8	67.7	68.3	68.5	66.9	66.5	67.8	68.8
Transport via pipelines	0.7	0.7	0.4	0.8	0.9	0.8	0.4	0.7	0.8
Ocean transport	43.1	43.8	43.9	43.5	44.3	43.4	43.1	42.1	42.4
Other transport industries	109.9	109.4	109.7	109.2	109.6	108.9	106.3	105.7	108.7
Post and telecommunications	44.7	42.9	43.5	43.2	42.5	42.3	42.4	42.6	40.7
Financial intermediation	48.3	48.3	48.4	48.1	48.4	48.3	47.5	47.8	47.3
Dwellings (households)	1.2	1.2	1.1	1.1	1.2	1.2	1.2	1.1	1.2
Business services	237.6	236.0	237.5	238.1	235.2	233.4	236.0	237.7	235.0
Public administration and defence	158.3	154.9	156.9	154.4	154.1	154.3	154.9	152.7	153.2
Education	180.9	178.5	180.0	180.7	177.5	176.1	179.5	180.5	174.1
Health and social work	443.9	455.3	451.7	453.5	459.1	456.6	457.1	457.5	460.8
Other social and personal services	89.5	91.4	89.8	92.2	92.3	91.3	88.9	90.9	92.9
Mainland Norway	2 249.0	2 253.1	2 247.3	2 266.8	2 262.3	2 235.9	2 231.8	2 242.6	2 243.4
General government	721.7	724.5	724.8	725.8	724.9	722.5	720.4	719.8	716.6
Central government	157.5	266.7	268.2	266.7	268.1	263.9	262.9	263.4	264.2
Civilian central government	120.8	231.5	232.3	231.3	233.0	229.3	228.5	228.9	229.5
Defence	36.6	35.2	35.9	35.4	35.1	34.6	34.3	34.5	34.7
Local government	564.2	457.8	456.6	459.1	456.8	458.6	457.6	456.4	452.4

Table A35. Employed persons by industry. Employees and self-employed.
Percentage change from the same period in the previous year

	2001	2002	02:1	02:2	02:3	02:4	03:1	03:2	03:3
Total	0.5	0.2	0.6	0.6	0.3	-0.5	-0.7	-1.1	-0.9
Agriculture, hunting and forestry	-5.3	-3.0	-2.5	-1.2	-4.1	-4.1	-4.0	-4.0	-1.8
Fishing and fish farming.	-4.0	3.4	-2.6	0.8	10.9	4.0	-6.0	-12.0	-19.2
Oil and gas extraction incl. services	-0.0	3.4	3.3	3.2	4.5	2.7	-2.8	-2.9	-2.2
Oil and gas extraction.	-2.0	1.9	2.1	2.9	2.6	-0.1	-1.2	-2.0	-2.6
Service activities incidental to oil and gas	4.2	6.7	5.8	3.8	8.6	8.8	-5.9	-4.7	-1.6
Mining and quarrying	-1.4	-0.5	-0.9	1.2	0.2	-2.6	-4.0	-5.8	-3.5
Manufacturing	-1.4	-1.2	-0.0	-0.4	-1.6	-2.5	-4.2	-5.8	-4.8
Food products, beverages and tobacco.	-1.7	-0.5	1.6	-1.7	-1.6	-0.1	-1.3	-2.4	-2.2
Textiles, wearing apparel, leather	-3.0	-6.5	-7.5	-1.8	-7.4	-9.7	-7.1	-13.2	-7.3
Wood and wood products	1.1	-1.6	-4.1	2.5	-3.0	-1.6	-2.4	-1.8	-2.7
Pulp, paper and paper products	0.4	-8.0	-4.3	-7.0	-9.6	-11.2	-9.2	-9.4	-1.2
Publishing, printing, reproduction	-1.7	-3.1	-0.4	-3.5	-3.7	-4.8	-5.4	-4.2	-4.6
Refined petroleum, chemical and mineral products	-4.4	0.4	0.4	0.3	0.7	0.2	-3.0	-4.5	-3.2
Basic chemicals	1.2	-2.7	-2.8	-4.8	-4.0	0.9	-5.4	0.2	-1.7
Basic metals	-3.8	-4.3	-3.4	-4.6	-3.9	-5.4	-6.2	-1.4	-0.6
Machinery and other equipment n.e.c.	-0.2	-0.3	0.7	1.7	-0.4	-3.2	-3.9	-7.1	-5.6
Building of ships, oil platforms and moduls	-0.4	3.0	4.2	4.3	3.8	0.0	-4.8	-11.2	-11.2
Furniture and other manufacturing n.e.c.	-4.8	-3.1	-2.1	-1.1	-5.9	-3.4	-7.0	-9.4	-7.0
Electricity and gas supply.	-5.1	-3.8	-5.7	-4.4	-2.0	-3.2	-2.6	-2.6	-2.2
Water supply	36.1	-2.2	-1.3	-2.8	-2.7	-2.0	0.8	0.9	1.1
Construction	2.2	1.8	2.5	1.5	2.3	0.7	0.6	-0.7	-1.5
Wholesale and retail trade, repair of motor vehicles etc.	-0.7	1.2	-0.5	1.3	2.9	0.9	1.9	1.2	2.5
Hotels and restaurants	0.7	0.2	0.2	-1.8	1.2	1.3	-1.7	-0.7	0.5
Transport via pipelines	-7.4	3.3	-7.5	-7.5	38.8	-7.5	-7.5	-7.5	-7.5
Ocean transport	-1.4	1.5	1.4	2.5	1.1	1.1	-1.8	-3.3	-4.3
Other transport industries.	-0.5	-0.5	0.9	-0.9	-1.8	-0.2	-3.1	-3.3	-0.9
Post and telecommunications	-0.7	-4.0	-4.8	-4.7	-4.1	-2.5	-2.6	-1.5	-4.1
Financial intermediation.	0.0	0.1	0.9	1.2	-0.9	-0.9	-1.9	-0.8	-2.3
Dwellings (households)	-3.4	-3.1	-5.4	-6.3	-2.3	2.0	2.7	0.3	3.5
Business services	4.9	-0.7	1.3	0.2	-2.1	-1.9	-0.6	-0.2	-0.1
Public administration and defence.	-1.0	-2.1	-1.4	-1.9	-2.4	-2.8	-1.3	-1.1	-0.6
Education.	1.4	-1.3	-0.6	0.4	-1.1	-3.9	-0.3	-0.1	-1.9
Health and social work	2.5	2.6	2.8	2.6	2.8	2.1	1.2	0.9	0.4
Other social and personal services	-1.3	2.1	3.7	2.0	1.4	1.3	-0.9	-1.3	0.7
Mainland Norway	0.6	0.2	0.6	0.5	0.2	-0.6	-0.7	-1.1	-0.8
General government.	1.2	0.4	1.0	1.0	0.3	-0.7	-0.6	-0.8	-1.1
Central government	-1.2	69.4	69.8	70.4	70.1	67.1	-2.0	-1.2	-1.5
Civilian central government	1.3	91.6	91.6	93.7	92.6	88.5	-1.6	-1.1	-1.5
Defence	-8.3	-3.8	-2.1	-4.6	-4.0	-4.6	-4.4	-2.4	-1.1
Local government	1.9	-18.9	-18.4	-18.3	-19.2	-19.5	0.2	-0.6	-1.0

Table A36. Total hours worked. Employees and self-employed. Aggregated activity. Millions

	2001	2002	02:1	02:2	02:3	02:4	03:1	03:2	03:3
Total hours worked	3 148.5	3 119.6	782.8	799.7	730.7	806.4	812.1	754.1	719.1
Agriculture, forestry and fishing	168.9	163.9	40.8	42.0	39.5	41.5	40.7	37.8	37.5
Oil and gas extraction incl. services	37.8	38.8	9.7	9.9	9.3	9.9	9.9	9.3	9.1
Manufacturing, mining and quarrying	455.3	444.6	111.8	115.9	102.6	114.3	112.5	104.7	97.5
Electricity and gas supply	23.2	22.3	5.6	5.6	5.3	5.7	5.8	5.3	5.2
Construction incl. general government	213.4	217.4	52.7	56.4	51.0	57.3	55.2	53.5	49.9
Service industries excl. general government	1 422.0	1 410.0	352.9	360.0	334.5	362.6	367.9	343.8	333.1
General government	844.1	838.1	213.2	213.7	191.9	219.3	222.2	201.5	188.5
Mainland Norway	3 030.4	3 000.1	753.0	769.4	701.8	775.9	781.8	725.6	691.5

Table A37. Total hours worked. Employees and self-employed. Aggregated activity. Percentage change from the same period in the previous year

	2001	2002	02:1	02:2	02:3	02:4	03:1	03:2	03:3
Total hours worked	-1.0	-0.9	-6.8	4.2	1.2	-1.5	3.7	-5.7	-1.6
Agriculture, forestry and fishing	-6.6	-2.9	-8.2	2.5	-1.4	-4.1	-0.3	-10.1	-5.0
Oil and gas extraction incl. services	-1.3	2.8	-3.7	7.1	5.9	2.3	1.6	-6.1	-3.1
Manufacturing, mining and quarrying	-1.7	-2.3	-7.5	3.4	-0.7	-3.9	0.6	-9.6	-5.0
Electricity and gas supply	-6.1	-3.9	-12.2	0.2	-0.2	-2.2	2.5	-5.6	-2.3
Construction incl. general government	-0.6	1.9	-5.5	6.0	1.8	5.4	4.8	-5.3	-2.2
Service industries excl. general government	-0.4	-0.8	-6.9	4.0	1.8	-1.5	4.2	-4.5	-0.4
General government	-0.2	-0.7	-6.4	4.8	1.4	-1.7	4.2	-5.7	-1.7
Mainland Norway	-1.0	-1.0	-6.9	4.1	1.1	-1.6	3.8	-5.7	-1.5

Main economic indicators 1996-2006. Accounts and forecasts

Percentage change from previous year unless otherwise noted

	1996	1997	1998	1999	2000	2001*	2002*	Forecasts			
								2003	2004	2005	2006
Demand and output											
Consumption in households and non-profit organizations	6.5	3.2	2.7	3.3	3.9	2.6	3.6	3.2	5.1	4.4	4.3
General government consumption	3.1	2.5	3.3	3.2	1.3	2.7	3.2	1.9	2.1	1.7	1.4
Gross fixed investment	10.3	15.5	13.1	-5.6	-3.6	-4.2	-3.6	-1.2	1.8	3.2	3.1
Extraction and transport via pipelines	-5.7	24.9	22.2	-13.1	-23.0	-1.0	-4.6	17.7	4.4	1.0	-0.3
Mainland Norway	11.5	11.8	8.6	-0.1	-1.2	0.7	-4.6	-5.1	0.3	4.8	4.5
Firms	18.1	9.4	8.9	-1.6	0.1	-1.4	-6.4	-8.8	0.3	4.3	5.1
Housing	2.9	12.1	7.8	3.0	5.6	3.7	-4.2	-7.3	-1.4	8.6	5.5
General government	5.0	18.0	8.6	0.5	-11.4	2.9	0.0	6.8	2.0	2.0	2.0
Demand from Mainland Norway ¹	6.5	4.5	3.9	2.6	2.3	2.1	1.5	3.6	3.7	3.7	3.6
Stockbuilding ²	-1.8	0.7	0.4	-0.5	0.8	-1.1	0.4	-0.5	0.0	0.0	0.0
Exports	10.2	7.7	0.6	2.8	4.0	4.1	-0.5	-1.1	2.2	1.4	1.2
Crude oil and natural gas	13.7	2.9	-4.4	-0.8	5.0	5.2	0.2	-1.4	0.7	-0.7	-0.4
Traditional goods	10.5	8.6	3.5	4.0	2.5	3.7	1.3	0.7	4.9	3.4	2.1
Imports	8.8	12.4	8.5	-1.8	2.7	0.9	1.7	1.9	4.2	4.3	4.4
Traditional goods	10.5	8.4	9.2	-1.3	2.7	2.9	4.7	2.9	3.9	4.6	4.7
Gross domestic product	5.3	5.2	2.6	2.1	2.8	1.9	1.0	0.0	2.8	2.2	2.0
Mainland Norway	4.2	4.9	4.1	2.7	2.5	1.7	1.3	0.6	3.6	2.9	2.6
Manufacturing	3.1	3.6	-0.7	0.1	-0.8	0.5	-0.7	-2.8	4.2	2.4	0.5
Labour market											
Total hours worked. Mainland Norway	1.6	2.5	2.3	0.6	-0.7	-1.0	-1.0	-1.1	1.1	0.3	0.3
Employed persons	2.0	2.9	2.5	0.8	0.4	0.5	0.2	-0.8	0.2	0.7	0.9
Labor force ³	2.0	2.1	1.6	0.8	0.7	0.6	0.6	-0.2	0.1	0.5	0.6
Participation rate (level) ⁴	71.4	72.7	73.6	73.8	74.0	74.1	74.1	73.4	72.9	72.7	72.5
Unemployment rate (level)	4.8	4.0	3.2	3.2	3.4	3.6	3.9	4.5	4.4	4.2	3.9
Prices and wages											
Wages per standard man-year	4.4	4.8	6.5	5.4	4.5	5.0	5.4	4.2	4.2	4.1	4.1
Consumer price index (CPI)	1.2	2.6	2.3	2.3	3.1	3.0	1.3	2.6	1.3	1.8	1.8
CPI adjusted for tax changes and excluding energy products (CPI-ATE) .....	..	..	..	..	2.6	2.3	1.1	1.5	2.1	2.1	
Export prices, traditional goods	-1.6	0.0	1.1	0.5	12.6	-2.9	-8.7	-0.6	6.1	1.8	-1.5
Import prices, traditional goods	-0.1	-1.2	1.2	-2.6	5.2	-0.2	-8.0	0.9	4.4	0.3	-0.3
Housing prices ⁵	8.4	10.9	9.7	9.4	14.1	7.2	4.0	3.7	6.3	7.3	7.3
Income, interest rates and exchange rate											
Household real income	3.4	3.9	5.7	2.7	3.6	0.5	6.7	1.0	4.9	3.4	3.6
Household saving ratio (level)	2.3	2.9	5.9	5.6	5.2	4.0	7.2	5.0	5.1	4.2	3.7
Money market rate (level)	4.9	3.7	5.8	6.5	6.8	7.2	6.9	4.1	3.0	3.4	3.3
Lending rate, banks (level) ⁶	7.2	6.0	7.4	8.4	8.1	8.8	8.4	6.7	4.9	5.0	5.0
After-tax real interest rate (level)	3.8	1.7	2.8	3.3	2.5	2.9	4.4	2.1	2.3	1.8	1.8
Importweighted krone exchange rate (44 countries) ⁷	-0.4	-0.4	2.5	-1.2	2.9	-3.1	-8.5	1.3	2.8	-0.1	0.4
Current account											
Current balance (bill. NOK)	70.7	70.5	0.5	66.4	228.9	238.5	200.6	197.2	172.4	163.5	155.5
Current balance (per cent of GDP)	6.9	6.3	0.0	5.4	15.6	15.6	13.2	12.7	10.8	9.9	9.0
International indicators											
Export markets indicator	4.7	8.3	10.3	6.7	11.3	0.2	0.2	4.0	6.9	5.2	3.4
Consumer price index, euro-area	2.1	2.0	1.5	1.2	2.3	2.1	2.3	2.1	1.6	1.6	1.6
3 months interest rate, euro	4.4	4.2	4.2	2.9	4.4	4.2	3.3	2.3	2.2	2.6	2.5
Crude oil price NOK (level) ⁸	133	135	96	141	252	220	197	204	186	180	183

¹ Consumption in households and non-profit organizations + general government consumption + gross fixed capital formation in Mainland Norway.² Change in stockbuilding. Per cent of GDP.³ Unemployed (Labour Force Survey) and employment (NA) exclusive of sailors in foreign shipping.⁴ Unemployed (Labour Force Survey) and employment (NA) exclusive of sailors in foreign shipping as a share of the population.⁵ Freeholder.⁶ Households' borrowing rate in private financial institutions.⁷ Increasing index implies depreciation.⁸ Average spot price Brent Blend.

*Preliminary figures.

Source: Statistics Norway.