Economic Survey

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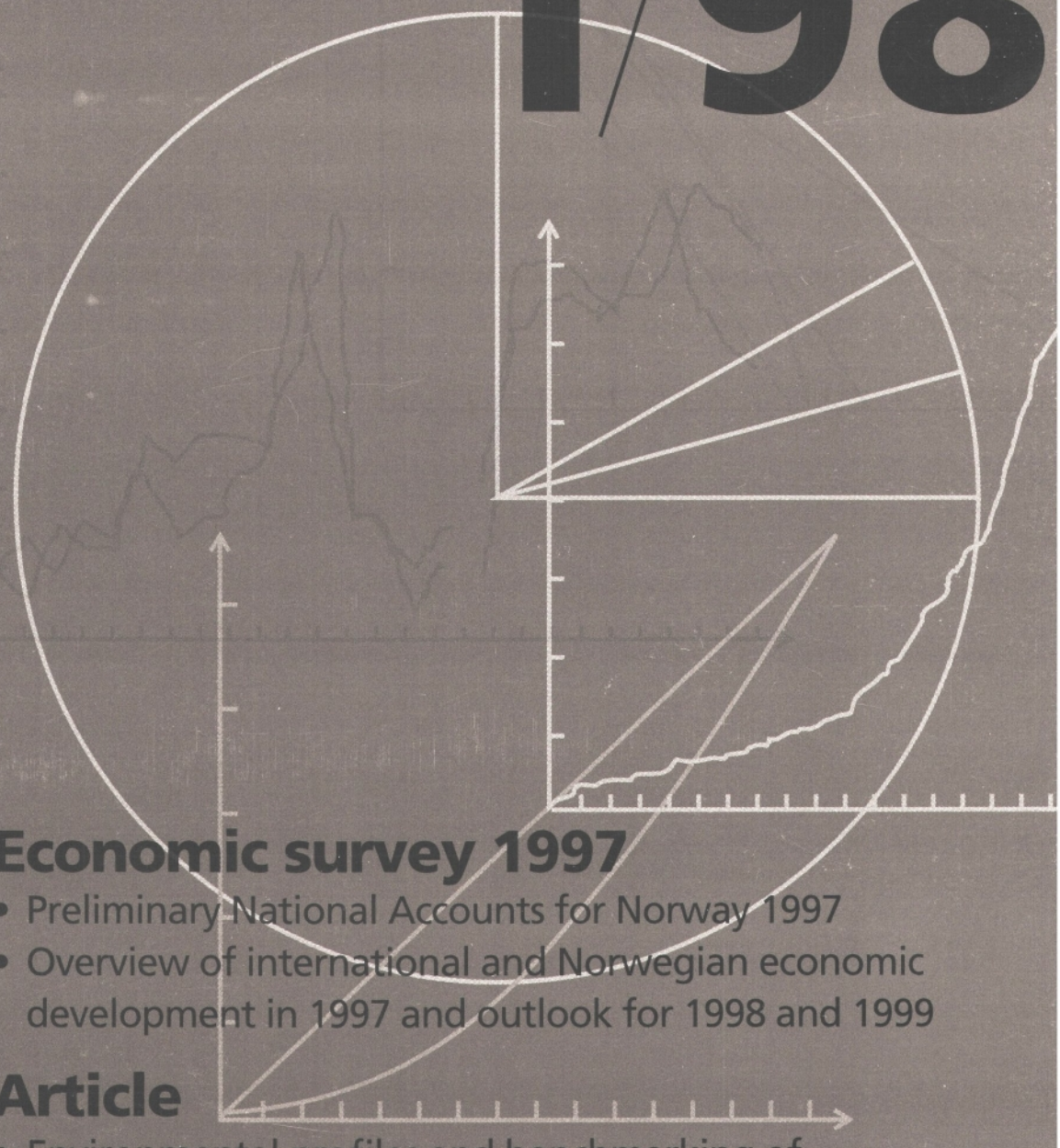

Economic survey 1997

- Preliminary National Accounts for Norway 1997
- Overview of international and Norwegian economic development in 1997 and outlook for 1998 and 1999

Article

- Environmental profiles and benchmarking of Norwegian industries

Economic Survey

1/98

Volume 8

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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 90-100 employees (January 1998). The Research Department is today organized in four divisions. Head of Department is *Øystein Olsen.*

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The next edition of Economic Survey will be published at the end of June 1998.

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Not for publication	: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

Economic survey*

Prospects

1997 may be added to the series of auspicious years for the Norwegian economy, but some features also prompted growing concern about future developments. As in earlier years, growth was particularly robust for traditional merchandise exports and investment in the mainland economy, whereas household and general government consumption recorded a more moderate growth rate. Moreover, in 1997 unexpectedly strong growth in petroleum investment made a significant contribution to the upturn. Employment expanded at a brisk pace and unemployment continued to move on a steady downward trend. Price inflation, however, was a little higher than among our trading partners, wage growth picked up and the current-account surplus was slightly lower than in the previous year. The concern about future developments is particularly related to increasing signs of bottlenecks and pressures and to greater uncertainty about the possibility or ability to control the level of activity.

Economic developments in recent years have been unusually favourable. Even though the growth in the level of activity cannot be compared to the peak year of the cyclical upturn of the mid-1980s, the current expansion has been stronger because it has lasted longer. The upturn has also been more broadly based, with sharp growth in most demand components. Moreover, so far there are few signs of financial imbalances reminiscent of the last decade, and price and wage inflation is far lower than during the 1980s.

These developments are ascribable to several factors. Petroleum revenues have given us the opportunity to enjoy a higher level of consumption and prosperity than would otherwise have been the case and provided the central government with considerable fiscal leeway. Calculations indicate that the increased scope for manoeuvre in economic policy and the ability to use this have provided us with advantages which clearly outweigh the importance of net petroleum revenues. In the period 1989-1993 this leeway was used to conduct an active countercyclical policy and maintain employment at high levels, partly through increased emphasis on education and labour market measures. In the years prior to 1993 the level of costs in the Norwegian economy was also brought more in line with our competing countries. The Norwegian economy was therefore well positioned to benefit fully from the upturn that was spurred by the international fall in interest rates in 1993. Economic policy was then gradually revised to prevent a new period of high price and wage inflation, which in the long term would result in a phasing out of the tradeable goods sector and problems in the labour market. The instruments consisted of a gradual tightening of fiscal policy, a monetary and exchange rate policy oriented towards stabilizing the value of the Norwegian krone against European currencies and active incomes policy cooperation. These three policy elements have been mutually supportive and contributed to the broadly based and sustained upturn.

There are now several signs that the fine balance between forces which control developments in the Norwegian economy have come under pressure. A less restrictive economic policy, a swifter decline in unemployment with growing shortages of certain types of labour and higher wage growth bear witness to this.

The growth in the mainland economy has been accompanied by a sharp rise in employment, increasing as much as 190 000 over the past five years. At the same time, the cyclical upturn and improvement in the labour market have resulted in a sharp growth in the labour force. The flexibility of the labour supply has contributed to a gradual fall in unemployment, in the order of half a percentage point a year. This very considerable mobilization in the labour market has been a precondition both for the high growth rate in the economy and for allowing this to be combined with moderate price and wage inflation. We have reaped the benefits

* Translated from Økonomiske analyser 1/98 by Janet Aagenæs.

of the commitment to education and benefited from a labour supply potential which has been far greater than most had assumed.

Labour force participation has now reached a very high level, both historically and in an international context. Even if growth in the Norwegian economy should slow in 1998, the number of employed persons will probably continue to rise faster than the growth in the labour supply as a direct consequence of demographic changes. In the absence of a further rise in participation rates, we may thus experience a swifter decline in unemployment than we have registered in recent years. In all probability this will translate into appreciably higher wage growth.

A key element of economic policy has been to adapt fiscal policy to prevent excessive growth in total domestic demand. Monetary and exchange rate policy has only been able to contribute to a limited extent to stabilizing the economy since it has been oriented towards maintaining a stable krone exchange rate. The contractionary effect of fiscal policy, however, has been reduced considerably the last few years, and the approved budget programme for 1998 will basically be cyclically neutral. Developments in petroleum investment also appear to be almost unpredictable and uncontrollable. In a situation with considerable pressures in the Norwegian economy, the sharp growth in this investment in 1997, which will probably be repeated in 1998, is very untimely. All in all, this indicates that we will not succeed in using the scope for manoeuvre in economic policy to keep the growth rate in the economy within the limits set by productivity gains and the supply of labour. The risk in this case is that wages and prices on their own are left to provide the adaptation required. A situation where costs in Norway are rising at a faster pace than among our trading partners can result in reduced profitability and a loss of market shares for exposed sectors of Norwegian industry and commerce. In time this will make us more dependent on uncertain revenues from petroleum activities.

One alternative is to revise the guidelines for monetary and exchange rate policy so that Norwegian interest rates can be raised independently of movements in European interest rates. To the extent that this contributes to curbing domestic demand, this will alleviate the pressure on fiscal policy. Analyses based on Statistics Norway's models indicate, however, that the isolated effect of an increase in interest rates on domestic demand is relatively moderate. An increase in interest rates, however, may also result in a stronger krone exchange rate and thereby reduced competitiveness in those sectors of industry which compete on the export market or with imports. This will slow the growth rate of the Norwegian economy. But if pressures in the economy cannot be primarily ascribed to developments in exposed sectors, a revision of monetary and exchange rate policy in this direction will not necessarily be the appropriate solution.

On the other hand, there are obvious problems associated with conducting a tight, contractionary fiscal policy during a sustained upturn, particularly if one focuses solely on the possibilities of maintaining low spending growth in government budgets. Over time, this might distort the relationship between public and private demand in an undesirable way. Given the current situation in the Norwegian economy, one alternative is more selective tightening, e.g. focused on government-controlled investment or investment that can be influenced. This would make it possible to exert a direct influence on those areas exposed to pressures and a shortage of labour. If the pressures are due to domestically created factors of a temporary nature, such selective measures may appear more effective and result in fewer long-term detrimental effects than a general monetary policy tightening, which may particularly affect exposed industries.

These prospects underline that economic policy should attach decisive importance to preventing an overheating of the economy, with sustained and harmful effects as a potential result. They also indicate that we should think twice before allowing short-term management problems to motivate considerable changes in the formulation of economic policy.

International economy

Economic developments in 1997 were characterized by considerable variations in growth rates among Norway's main trading partners. In Japan and Italy, GDP growth last year was weak compared with the previous year, about 1 per cent, and the outlook in Japan for 1998 is not bright. In Germany and France, the favourable export performance contributed to GDP growth of more than 2 per cent, but it is uncertain to what extent domestic demand will take over as the driving force this year. For the Netherlands and Denmark, GDP growth appears to have exceeded 3 per cent last year, and the positive trend is expected to continue. The cyclical situation was even more favourable for Anglo-Saxon industrial countries, and both the US and UK recorded a rise in GDP of about 3.5 per cent in 1997. Growth, however, is expected to slow this year. The crisis in Asia will have a dampening effect on growth in the world economy. For Norway's trading partners as a whole, GDP is likely to expand by about 2 per cent both in 1998 and 1999. The problems in the Asian countries may contribute to keeping price inflation at around 2 per cent.

Economic developments

The *US* economy has now been expanding for seven years, and growth in 1997 appears to have been the strongest level recorded in the 1990s. Preliminary national accounts figures indicate that GDP rose by 3.8 per cent last year. Higher growth in private consumption was the main driving force behind the expansion. Consumption growth has been stimulated by both higher real wages and a positive trend in wealth, the latter a result of the strong advances in share prices. Business fixed investment has risen sharply throughout the upturn, and continued to make a considerable contribution to GDP growth last year. Unemployment has stabilized at an historically low level and stood at 4.7 per cent in December, the lowest level of unemployment since the early 1970s. The strong appreciation of the dollar over the past year, combined with lower demand from Asia, entail that net exports will provide a negative impetus to activity in the period ahead. A relatively high real interest rate as a result of the fall in the inflation rate through 1997 is also expected to have a dampening effect on domestic demand. Against this background, GDP is projected to grow at a more moderate pace in 1998, slowing further to about 2 per cent in 1999.

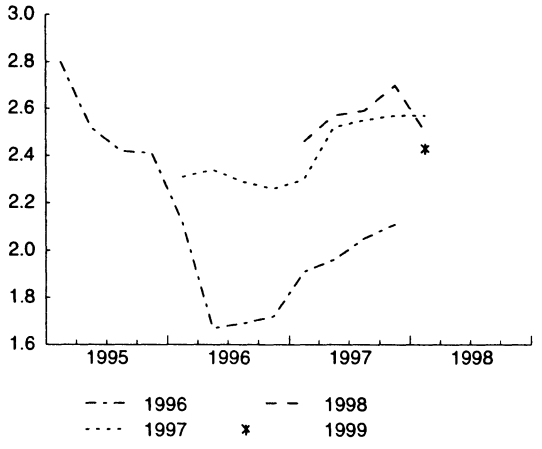
Following sluggish economic trends through the first half of the 1990s, GDP in *Japan* expanded by 3.7 per cent in 1996. However, this was not an indication that the Japanese economy was entering a new growth period but rather the result of temporary fiscal stimulus. Fiscal tightening in the form of higher taxes from 1 April 1997 contributed to a pronounced dampening of the upswing. A substantial decline in public investment also contributed to reducing growth. The negative demand impetus was to some extent offset by a marked rise in exports in the wake of a depre-

Economic forecasts for Norway's main trading partners
Annual per cent change

	1996	1997	1998	1999
USA				
GDP	2.8	3.8	2.4	2.1
Private consumption deflator	2.4	2.0	1.9	2.3
Short term interest rate (level)	5.5	5.7	5.8	5.8
General government budget deficit[1]	-1.1	-0.1	0.3	0.5
Japan				
GDP	3.5	1.1	0.7	1.1
Private consumption deflator	0.2	1.7	1.4	0.3
Short term interest rate (level)	0.5	0.5	0.6	0.5
General government budget deficit[1]	-4.4	-2.7	-2.7	-3.1
Germany				
GDP	1.4	2.3	2.5	2.2
Private consumption deflator	2.0	1.9	1.9	1.7
Short term interest rate (level)	3.2	3.3	3.6	4.4
General government budget deficit[1]	-3.6	-3.1	-2.7	-2.5
France				
GDP	1.5	2.2	2.5	2.4
Private consumption deflator	1.8	1.5	1.7	1.4
Short term interest rate (level)	3.9	3.4	3.7	4.4
General government budget deficit[1]	-4.1	-3.1	-3.0	-2.8
United Kingdom				
GDP	2.3	3.3	2.0	2.6
Private consumption deflator	2.6	2.4	2.5	2.9
Short term interest rate (level)	6.0	6.6	7.4	6.9
General government budget deficit[1]	-4.7	-2.0	-0.6	-0.4
Italy				
GDP	0.7	1.2	2.1	2.3
Private consumption deflator	4.5	2.2	2.5	2.3
Short term interest rate (level)	8.8	6.9	5.6	4.4
General government budget deficit[1]	-6.7	-2.8	-3.1	-2.9
Sweden				
GDP	1.3	1.8	2.5	2.2
Private consumption deflator	1.2	0.9	1.7	2.3
Short term interest rate (level)	5.8	4.1	4.7	5.4
General government budget deficit[1]	-3.3	-1.2	0.5	0.1
Denmark				
GDP	3.4	3.1	2.9	2.8
Private consumption deflator	2.6	2.1	2.7	2.4
Short term interest rate (level)	3.9	3.5	3.6	4.4
General government budget deficit[1]	-1.4	0.5	1.6	1.8
The Netherlands				
GDP	3.3	3.1	3.7	2.1
Private consumption deflator	1.4	2.3	2.3	2.2
Short term interest rate (level)	3.0	3.3	3.6	4.4
General government budget deficit[1]	-2.3	-2.0	-1.9	-1.9
Memorandum items:				
GDP trading partners	2.2	2.6	2.5	2.3
CPI trading partners	1.9	1.8	2.0	2.0
ECU interest rate[2]	4.5	4.2	4.4	4.4

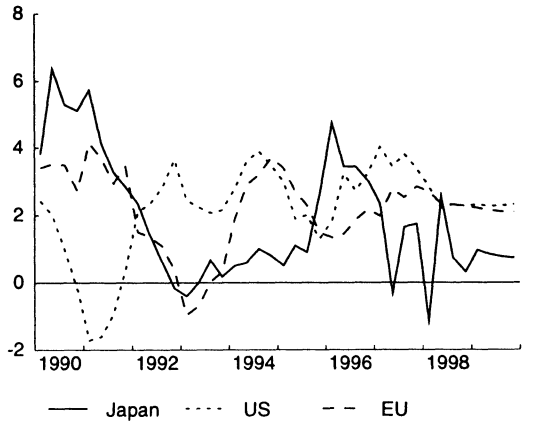
[1] Per cent of GDP.
[2] ECU rate up to and including 1998, euro rate for 1999.
Sources: NIESR and calculations by Statistics Norway.

GDP-growth forecasts for Norway's main trading partners for 1996 - 1999 given on different dates



Source: Consensus Forecasts.

GDP-growth in US, Japan and EU (per cent)
Measured from the same quarter the previous year



Sources: NIESR and Statistics Norway.

ciating currency. Later in the autumn, however, the problems in a number of Southeast Asian economies were exacerbated (see separate section on the crisis in Asia). This region accounts for more than 40 per cent of Japan's exports. The problems among important trading partners thereby amplified the sluggish trend in the Japanese economy. Moreover, Japanese banks have considerable financial investments in these countries, which will place additional burdens on an already heavily indebted financial industry. A large part of Japan's problems in recent years must be viewed in connection with strong private sector debt accumulation up to the start of the 1990s. The authorities did not introduce measures to write off the debt, but instead relied on a strategy where it was hoped that the economy would grow out of its difficulties. When enterprises have to use a large share of their revenues to service their debt, little is left for investment, and private domestic demand exhibits a weak trend. It appears that GDP rose by about 1 per cent last year, and output growth is projected to be even lower this year.

GDP in *Germany* is likely to show a rise of 2.3 per cent in 1997 after expanding by only 1.4 per cent in 1996. The upturn in the German economy is primarily being fuelled by the favourable export performance, stimulated by the fall of the Deutschemark against the dollar. Domestic demand, particularly private consumption, is exhibiting a sluggish trend. This must partly be seen in connection with the weak growth in real wages and mounting unemployment, which in December reached 11.9 per cent. As a result of the rise in exports, Germany recorded a substantial increase in industrial production in the first three quarters of 1997. Available short-term data from the fourth quarter indicate, however, that output has levelled off. This impression is reinforced by a drop in foreign orders for three consecutive months after showing a sharp rise through the first half of 1997. This probably reflects the financial crisis in Asia, which will contribute to curbing export growth in the period ahead. On the other hand, real wages are expected to rise this year, a factor which points to faster growth in consumption. The same applies to the removal of the Solidarity tax of 7.5 per cent which inhabitants of the western länder have paid following the reunification of the two German states. High capacity utilization in manufacturing industry will probably result in higher growth in private fixed investment in the period ahead. Germany's GDP is therefore expected to expand in 1998 at about the same rate as in 1997, but the growth impetus will gradually shift from the foreign sector to domestic demand components. With an unchanged growth rate, however, unemployment is likely to remain high.

According to preliminary national accounts figures, the growth rate in *France* increased through 1997, with GDP likely to show a rise of 2.2 per cent for the year as a whole. Net exports were the main driving force in the first half of the year, but domestic demand seems to have made a stronger contribution in the autumn. Private consumption, which since 1995 has exhibited a weak trend in the wake of tax increases, rose sharply in the third quarter. Industrial production expanded through 1997 and resulted in higher capacity utilization. This was probably the reason for the rise in domestic investment, which also made a positive contribution to growth towards the end of the year. The need to replace old equipment combined with a relatively low real interest rate is expected to result in a continued rise in investment this year. Along with slightly higher private consumption, this will compensate for a weaker growth impetus from net exports. Against this background, GDP is expected to expand by about 2.5 per cent the next two years. Unemployment, which is very high, fell to 12.4 per cent in November. The rate will probably continue to edge down in pace with improved prospects for the French economy, but a level under 11.5 per cent in the projection period is not very likely. The Jospin Government has launched a number of measures aimed at reducing unemployment over a period, including a reduction in working hours to 35 hours a week from 2000. The effect on unemployment will depend on the type of financing used.

Following an increase in GDP in *Italy* of only 0.7 per cent in 1996, preliminary national accounts figures show higher economic growth in 1997. Unlike other continental European countries, Italy's net exports have not generated a

strong growth impetus, partly as a result of the appreciation of the lira since mid-1995. A substantial increase in taxes and public austerity measures have also dampened domestic demand. In 1997, however, special measures were introduced to stimulate private car purchases, which contributed to pushing up the growth in private consumption. Investment, on the other hand, fell slightly, mainly as a result of the decline in the construction sector. The recovery which now seems to be emerging is primarily being fuelled by domestic demand. Consumers are becoming more optimistic in the light of rising real wage growth as a result of falling inflation and a gradual improvement in employment. Optimism is also being boosted by the removal of the temporary "Europa tax" which was introduced in the run-up to qualifying for participation in EMU. A sharp fall in interest rates and higher company earnings are expected to stimulate investment. All in all, this points to a stronger expansion of the Italian economy, and GDP is projected to grow by about 2 per cent in 1998, with the rate edging up next year.

In the *UK*, preliminary national accounts figures show that GDP grew by 3.3 per cent from 1996 to 1997, primarily fuelled by private domestic demand. Household consumption was stimulated by a substantial improvement in wealth, partly as a result of higher house and share prices. Developments in the labour market had the same effect. Unemployment, which began to decline at an early stage of the recovery, continued to fall through 1997. In December, unemployment had been reduced to 5 per cent of the labour force. Private investment picked up considerably, probably as a result of high earnings in the business sector and the need to expand capacity following several years of economic expansion. The sharp growth, however, slowed in the fourth quarter of 1997. A decline was primarily recorded in goods-producing industries, while service industries appeared to be affected to a lesser extent. The strong appreciation of pound sterling is expected to have a dampening effect on exports in the period ahead. A tight monetary policy and a weaker trend in household wealth will also have the same effect. Against this background, GDP growth is expected to slow to 2 per cent in 1998.

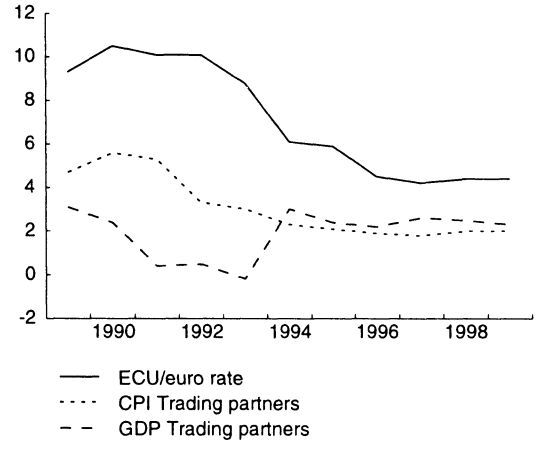
Following sluggish trends in the first half of 1997, preliminary national accounts figures for *Sweden* show that the growth rate picked up sharply through the autumn. GDP expanded by 1.9 per cent from the first three quarters of 1996 to the same period in 1997. Net exports were the main engine of growth, whereas domestic demand exhibited a weak trend. A moderate rise in household consumption was offset by a decline in private investment, general government consumption and investment. Unemployment drifted down through 1997 and stood at 6.5 per cent at the end of the year. However, this was primarily ascribable to the decline in the labour force as more people entered the education system. Domestic components are expected to become the main driving force in the economy in the period ahead. In recent years Sweden has increased its exports to Asian markets, with these countries now accounting for 13-14 per cent of total exports. The crisis in Asia will therefore have a more adverse effect on Swedish exports than other EU countries, at the same time that lower growth is expected in other important markets, such as the US and the UK. Whereas the growth in real income per employee was close to zero last year, it will probably reach 2 per cent in 1998 and help to stimulate private consumption. Moreover, the substantial fiscal tightening, which has taken place the last few years, will be phased out, with the likelihood of an increase in general government consumption. Low interest rates will probably result in a rise in investment. GDP growth is therefore expected to reach 2.5 per cent in 1998.

In *Denmark*, the economic expansion has entered its fifth year, and conditions are favourable for continued high growth. Growth is primarily being fuelled by domestic demand, particularly private consumption and investment. Preliminary national accounts figures point to an increase in household consumption of nearly 4 per cent in 1997, bolstered by a sharp rise in real wages and a substantial improvement in wealth as a result of a sharp rise in house prices. A fall in long-term interest rates and high capacity utilization have also stimulated private investment. In spite of a depreciating currency, however, exports exhibited a relatively weak trend last year. With high import growth as a result of the expansion in domestic consumption, net exports therefore made a negative contribution to GDP in 1997. Unemployment, which fell sharply through 1996, declined at a slower pace through 1997 and stood at 7.7 per cent at the end of the year. However, this reflected changes in the labour force, which grew almost as sharply as employment. Exports are expected to pick up in the period ahead as a result of slightly higher growth among important trading partners. The upturn in the Danish economy is therefore expected to continue both in 1998 and 1999.

Price inflation

The forecasts indicate that price inflation among Norway's main trading partners will be 2 per cent both in 1998 and 1999. The strong depreciation of a number of Asian currencies will curb inflation in the projection period as a result of lower import prices. In most European countries consumer price inflation is now between 1 and 2 per cent. In Germany, consumer prices rose by 1.7 per cent from 1996 to 1997, and figures for January show an even lower rate. The depreciation of the Deutschemark, however, may gradually have an influence on domestic prices. The planned one percentage point increase in VAT from 1 April this year will also contribute to a rise in consumer prices. Inflation in France also remains subdued in spite of the depreciation of the French franc through 1997. Prices, measured by the consumer price index, rose by 1.2 per cent from 1996 to 1997. Inflation is expected to edge up in France in the period ahead. Inflation in Italy has fallen sharply the past two years, helped in part by an appreciation of the lira. In December, the year-on-year inflation rate was down to 1.6 per cent. Inflation is expected to remain subdued this year. In Sweden, consumer prices declined in the

GDP and consumer price growth for Norway's main trading partners, and 3 month ECU/euro rate
Per cent



Source: Statistics Norway.

first five months of 1997, but higher prices for food and tobacco as well as higher rents resulted in slightly higher inflation during the second half of the year. The year-on-year rate was nevertheless only 1.6 per cent in December. Price inflation in Denmark has remained low in spite of a sustained economic expansion. Consumer prices rose by 2.2 per cent from 1996 to 1997. In the UK, it appears that robust economic growth has fed through to prices to some extent. Consumer prices showed a year-on-year rise of 3.6 per cent in December, but excluding the contribution from interest and indirect taxes the rise in prices was still only about 2.5 per cent.

Inflation in the US has been stable for a long time, and in December 1997 consumer prices showed a year-on-year rise of 1.7 per cent, the lowest for ten years. Unemployment has also been reduced to a very low level. Stronger-than-estimated productivity gains through this period of expansion may be one possible explanation for the subdued level of inflation. In addition, the appreciation of the dollar is helping to curb inflation. Japan has experienced a period of weak economic growth, and this was reflected in falling prices and a decline in the consumer price index both in 1995 and 1996. The 2 percentage point increase in the consumption tax on 1 April 1997 was the main reason for the faster year-on-year increase in consumer price inflation, moving up from 0.2 per cent in March to 2.2 per cent in November.

Monetary policy

Following a protracted period of stable, low interest rates in Germany, the repo rate (a key rate for money market rates) was raised from 3 to 3.3 per cent in October last year. The interest-rate increase was probably triggered by the sharp rise in import prices (5.4 per cent in August) and the greater growth impetus to the German economy. In order to maintain stable exchange rates between the currencies of the two countries, the French central bank immediately raised its key rate to the same level as in Germany. In Italy, favourable inflation figures have helped to reduce interest rates substantially. The discount rate has been lowered gradually, most recently in December 1997 by 0.75 percentage point, to 5.5 per cent. The crisis in Asia will probably curb both the growth in the world market and the inflationary impetus from abroad. With money supply growth remaining within the central bank's target range, this implies that German interest rates will remain at a low level this year. We assume that EMU will enter into force on 1 January 1999 and that eleven countries will initially participate. In line with the convergence that will take place between member countries' interest rates, the euro rate is initially expected to be slightly higher than the German rate. This entails approximately constant interest rates for the area as a whole. For 1999 we expect a modest rise in the short-term euro rate. In the UK, the base rate (the "floor" for money market rates) has been raised several times following the change of Government on 1 May 1997, when the authorities gave the central bank a more independent role in the implementation of monetary policy. The base rate was most recently raised to 7.25 per cent at the beginning of November. The strong pound sterling exchange rate and a tight fiscal policy imply that further interest-rate increases of significance will not be necessary in the period ahead. In Sweden, the repo rate was raised by 35 basis points, to 4.35 per cent, in December last year. The Swedish central bank conducts monetary policy on the basis of an inflation target of 1-3 percent a year, and the increase in interest rates was prompted by the need to prevent future inflationary pressures.

The US federal funds rate (US interbank rate) has remained at 5.5 per cent since March 1997. Stable and subdued price inflation, helped by a strong dollar exchange rate, implies that interest rates will not be raised, whereas pronounced GDP growth in the fourth quarter of last year would indicate the opposite. The uncertainty surrounding developments in Asia and the effect the crisis will have on the US economy indicate that the central bank will wait to see how the situation develops before changing interest rates. In Japan, the economic slump over the last few years has been met with a very expansionary monetary policy. The discount rate has been kept at a record-low level (0.5 per cent) since September 1995, and the substantial financial problems in the Japanese economy imply continued low interest rates.

Fiscal policy

Fiscal policy in EU countries has in recent years largely focused on satisfying the convergence criteria in the Maastricht treaty, thereby paving the way for membership in EMU. The decision concerning EMU shall be based on national accounts figures for 1997, and sluggish economic trends last year required a further tightening of fiscal policy in several countries. In Germany, preliminary national accounts figures show that the budget deficit came to 3.1 per cent of GDP in 1997, the same as in the first half of the year. In keeping with Eurostat's rules, expenditure on public hospitals was eliminated from the budget figures, which reduced the deficit by 0.3 per cent of GDP. Germany was therefore close to meeting the stipulated limit of 3

The EU's road to monetary union

At the beginning of May EU leaders will decide which member states are eligible for participation in the economic and monetary union (EMU) from the start on 1 January 1999. The decision will be based on whether the countries satisfy the convergence criteria set out in the Maastricht treaty of December 1991. The criteria entail that the general government budget deficit shall not exceed 3 per cent of GDP and that general government gross debt must not exceed 60 per cent of GDP. Moreover, inflation must be no more than 1.5 percentage points above the average of the three lowest inflation rates in member states, and long-term interest rates must be no more than 2 percentage points higher than the average of the low-inflation countries. The decision will be based on national accounts figures for 1997.

All countries, with the exception of Greece, will satisfy the criteria for inflation and long-term interest rates. According to the OECD's forecasts from December 1997, only France will fail to satisfy the budget criterion. Among the other countries, however, only Finland, Luxembourg and the UK also satisfy the debt criterion. Most of the countries have a debt ratio of between 60 and 70 per cent, while Belgium, Greece and Italy have a gross debt far higher than 100 per cent of GDP. The IMF, which presented its forecasts at an earlier date, estimates that neither France, Italy nor Germany will be formally eligible for participation in EMU because the countries' general government budget deficit will exceed the limit. The debt figures are generally on a par with those presented by the OECD.

EMU is primarily a political project, and the criteria set out in the Maastricht treaty will therefore probably be interpreted with some leeway. Recent signals indicate that all member states, with the exception of Greece, may be deemed eligible for participation in EMU. Each country, however, must decide whether it wishes to join EMU from the start. Even when the Maastricht treaty was being drawn up, the UK and Denmark added a protocol allowing them to opt out of Stage 3 and the transition to a common currency. Moreover, Sweden has indicated that the country wants to postpone EMU entry. We therefore assume that EMU will be established from 1 January 1999 and that eleven countries will participate from the start.

This assumption entails that on 1 January 1999 we will have a new currency unit in Europe, the euro, as a parallel currency of member states' established currencies. Exchange rates will be fixed between the euro and existing currencies. Euro notes and coin, however, will not be put into circulation until the beginning of 2002. Thus, in the first three years the euro will only exist as account money, for example in the form of indebtedness to or deposits with financial institutions. The existing national currencies must continue to be used for cash transactions. Enterprises which have extensive cross-border transactions, however, may find it expedient to use the common currency from the start. Gradually, purely domestic transactions in EMU countries will probably be effected in the new currency to a greater extent. As from 1 July 2002 the euro alone will be legal tender in those countries participating in EMU.

Even though the introduction of a common currency in Europe will result in common money market rates, there is little reason to expect interest rates on government paper to be identical because the risk associated with each country's government debt will continue to vary. Today it appears that the interest rate differentials are particularly associated with exchange rate risk. A country can always honour its government debt in its own currency by printing more money. This policy may contribute to higher price inflation and a depreciating currency. Market participants who buy government paper from countries with little exchange rate credibility therefore require compensation for the exchange rate risk in the form of higher interest rates. With the introduction of a common currency in EMU, each member state will no longer have the possibility of printing money to repay debt. The European Central Bank has in fact been instructed not to print money to "rescue" a country where the authorities experience problems in servicing the government debt. This entails that market participants who want to buy government paper from an EMU country should look at the country's future ability to service its debt. Countries which due to a high debt, considerable future expenditure or a low taxation potential have in relative terms a limited capacity to service the debt and must therefore expect to pay a credit risk premium on their funding.

General government budget deficit and general government gross dept. Forecasts for 1997

	Budget deficit[1]		Government gross dept[1]	
	OECD	EU-Comm.	OECD	EU-Comm.
Austria	-2.9	-2.5	65.5	68.0
Belgium	-2.5	-2.8	124.5	125.1
Denmark	0.5	0.5	63.1	66.4
Finland	-1.3	-1.9	59.4	59.4
France	-3.1	-3.2	57.0	57.7
Germany	-3.0	-3.1	60.7	62.2
Greece	-5.0	-4.7	107.3	108.0
Ireland	-0.2	-0.8	67.5	67.5
Italy	-3.0	-3.2	122.3	122.9
Luxembourg	..	-0.1	..	5.7
Netherlands	-2.0	-2.1	71.9	73.6
Portugal	-2.9	-2.9	66.5	62.9
Spain	-2.9	-3.0	69.8	69.0
Sweden	-1.5	-2.1	76.6	77.1
United Kingdom	-2.3	-2.0	53.8	54.5

[1] Per cent of GDP.
Sources: OECD Economic Outlook 62, December 1997, table 30 and 60. IMF World Economic Outlook, October 1997, table 11.

per cent. However, higher unemployment, and thus higher social security payments and lower-than-expected tax receipts, have weakened the budget balance. The budget deficit is expected to decline in the projection period. A planned increase in VAT along with reductions in transfers will probably more than compensate for the loss of revenues if the Solidarity tax is removed this year.

In France, an independent audit of government finances concluded in July 1997 that the deficit for the year would be equivalent to 3.5-3.7 per cent of GDP. Against this background, the new Government proposed measures aimed at reducing the deficit, including higher taxation of enterprises and reduced defence spending. The budget for 1998 aims at bringing the deficit down to 3 per cent of

GDP, among other things by removing existing deductions to broaden the tax base. In Italy, the general government budget deficit was equivalent to 6.7 per cent of GDP in 1996. In the budget for 1997 the authorities introduced measures aimed at allowing Italy to qualify for EMU, including the introduction of a temporary "Europa tax" as well as new accounting routines. In response to figures which showed that it would be difficult to achieve the objective, the Government adopted new austerity measures through 1997. Preliminary estimates now indicate that the general government budget deficit in 1997 will be equivalent to 2.8 per cent of GDP. The result reflects both higher-than-expected revenues and lower expenditure on debt servicing as a result of lower interest rates. Fiscal tightening is being continued in the 1998 budget, and a new pension agreement is expected to result in considerable savings. Higher VAT and other indirect taxes will boost revenues, and the deficit is expected to be about 3 per cent of GDP.

In the UK, the new Government's budget did not contain any tax increases other than the announced one-off windfall tax on excess profits of privatized utilities. This was in accord with Labour's promises during the election campaign. The budget deficit is expected to be reduced to 2 per cent of GDP this year and decline further in the years ahead.

In Sweden, the authorities' continued tightening of policy has contributed to a considerable improvement in government finances. The budget deficit is likely to be equivalent to 1.2 per cent of GDP in 1997. The general government sector is expected to record a surplus this year, partly due to temporary revenues from the privatization of state enterprises. The gross debt is also falling gradually from the peak of 79.3 per cent of GDP in 1994. Even though Sweden will probably be eligible to participate in the planned monetary union, the Government has stated that participation from the start in 1999 is not being considered. In Denmark, the general government budget deficit has also been substantially reduced in recent years, and preliminary figures for 1997 show a small surplus. Three fiscal tightening packages were presented in 1997 with the aim of preventing an overheating of the economy. Government revenues are thus improving considerably and Denmark is set to record a growing surplus in the period ahead. General government gross debt is also declining so that Denmark will probably be eligible for EMU membership even though such participation from the start is very unlikely.

As a result of higher-than-expected tax revenues and a continued tight spending policy, the federal budget deficit in the US for the 1996 fiscal year was reduced to 1.1 per cent of GDP. Last year the deficit was reduced further, and government budgets were nearly in balance. The forecasts point to a surplus this year, which in the event would be the first time since the 1960s. Japan's budget balance has deteriorated substantially as a result of the many economic stimulus packages launched by the authorities through the protracted slump. Fiscal policy was tightened last year. Temporary tax reliefs were removed and the consumption tax was raised from 3 to 5 per cent on 1 April. However, new expansionary measures have been proposed to counteract the effects of the crisis in Southeast Asia, which also affected Japan last autumn. The proposal calls for using 30 000 billion Japanese yen (nearly 6 per cent of GDP) for restructuring the financial sector and 2 000 billion yen to stimulate the economy.

Asia's economic crisis and developments in the world economy

The economic crisis which started in Thailand in July 1997 spread to an increasing number of countries in Southeast Asia during the autumn months. While it was initially thought that the problems in the region would only have negligible effects on the rest of the world, the gravity of the situation increased when the economic superpowers in the area, South Korea and Japan, also experienced problems. What have been the factors behind the major problems being seen in economies that were hitherto deemed miraculous?

As early as 1996 economic growth in Thailand was coming to a halt. Traditional exports of labour-intensive products suffered in particular in the competition with low-cost producers. China had gained an advantage through a devaluation of its currency both in 1990 and 1994, and the market for important Thai export products also exhibited a sluggish trend during this period. In the wake of a prolonged period of robust economic growth, the population of Southeast Asia had developed a growing appetite for imported consumer goods. This resulted in substantial current-account deficits for Thailand throughout the 1990s, a situation which deteriorated further after the expansion in exports slowed. As in most countries in Southeast Asia, Thailand's currency was pegged to the US dollar before the currency crisis. The appreciation of the dollar since the end of 1995 resulted in additional losses of competitiveness, both in relation to European countries and particularly Japan. Substantial current-account deficits were previously looked upon as unproblematic because the investment rate was very high. Some of the investments, however, related to projects with low rates of return. Moreover, capital flows from abroad, which financed the current-account deficit, were largely absorbed in sheltered sectors and thus did not contribute to an increase in production capacity in industries exposed to competition.

Developments through the 1990s also contributed to exposing weaknesses in Thailand's financial system. The capital market was liberalized fairly quickly, whereas the development of financial institutions and supervisory authorities was not followed up at the same pace. Annual GDP growth rates of nearly 8 per cent over the past fifteen years led to considerable optimism. The belief that the economic expansion would continue resulted in very strong lending growth and encouraged the financing of many risky projects, particularly in a property market characterized by considerable excess capacity accompanied by poor earnings. A fixed exchange rate against the dollar entailed

that many financial institutions found it to their advantage to raise foreign-currency loans at lower interest rate than the domestic level, while lending was denominated in local currency. Hedging against exchange rate losses for these borrowed funds was very limited as the risk of exchange rate fluctuations was considered minimal. As a result of political unrest and poor macroeconomic management, however, the risk was considered so great that most foreign investors only wanted to provide short-term loans. This practice gave rise to serious distortions in banks' balance sheets: Short-term foreign-currency debt on the one hand and illiquid domestic assets, for example in the form of mortgages on commercial buildings, on the other. The problems were further exacerbated by the authorities' interference in the form of demands for loans to relatives and friends of political leaders or for politically motivated projects.

As long as the economies flourished, everything appeared to be unproblematic. However, as the signs of economic problems gradually became more apparent, an increasing number of investors wanted to leave the Thai market. There were repeated rumours through 1996 that the Thai baht would be devalued, and in August that year the currency came under pressure. The central bank, however, defended the currency, and the market was relatively calm in January 1997. Once again the central bank had managed to ward off a devaluation, but the defence of the currency led to higher interest rates, which resulted in increased pressures on interest-sensitive sectors with a high debt ratio, particularly the property market. When the currency came under renewed attack in June, the central bank did not succeed in maintaining a fixed exchange rate, and on 2 July 1997 the Thai baht began to float. The subsequent depreciation of the currency was enormous, nearly 40 per cent over a period of a few weeks. The result was a vicious circle for the banks, which received interest and instalments in the local currency but had to service their own costly foreign-currency loans, particularly dollar loans. The large number of high-risk projects in their lending portfolios entails that the banks probably have a very high percentage of loans that will never be repaid. Many financial institutions were in reality insolvent even when the wave of speculation against the currency began. Share prices plummeted, activity slowed and company earnings declined. The business sector's ability to meet its debt obligations was further reduced. The crisis was a fact, and Thailand had to turn to the IMF for assistance.

The Asian countries are largely dependent on each other's economic developments since more than 40 per cent of trade takes place within the region. Thailand's neigbouring countries, however, were affected very little by the turmoil in the first half of 1997. They did not experience the same degree of decline in exports and had lower current-account deficits. During this period, however, external conditions changed somewhat as the Japanese yen appreciated, bond yields in Japan rose sharply and the Federal Reserve in the US raised interest rates in March. As a result of these factors, it became less lucrative to borrow funds in industrial countries in order to invest in Asian countries. As the problems in Thailand gradually became more apparent, investors became more nervous, and the focus was shifted to other countries in the area. It was not difficult to find similarities in the form of sizeable short-term dollar loans, a fixed exchange rate, an overheated property market and many politically motivated prestigious projects. After Thailand abandoned its attempt to defend the exchange rate, foreign exchange dealers then turned to neighbouring countries which followed suit like dominoes. The central banks of the Philippines, Indonesia, Singapore and Malaysia halted the defence of their respective currencies in July and August, while Taiwan and South Korea had to abandon their fixed exchange rate regimes in October. Both Indonesia and South Korea had to apply for support from the IMF.

The fact that the crisis had now reached South Korea, at the time the eleventh largest economy in the world and a member of the OECD, was an unexpected development for most people. In hindsight, however, South Korea's economy also suffered from considerable weaknesses. Following slower growth in GDP in 1992 and 1993, efforts were devoted to bringing about an investment-led upturn over the following two years. In 1995, the country recorded GDP growth of nearly 9 per cent, but there was another side to the picture. The large industrial conglomerates, or *chaebol*, have traditionally financed new investment by raising loans, which they continued to do during 1994/1995. On average, the debt was four times the level of share capital. In addition, there was considerable excess capacity in a number of sectors, and prices for important export goods began to fall dramatically in the glutted world market. The earnings of the *chaebol* declined sharply. Short-term, unhedged loans were raised in foreign banks in order to service the long-term debt. This seemed to be a favourable solution taking into account a fixed exchange rate and low interest rates abroad compared with domestic rates. During 1997 there were reports that some of the *chaebol* were experiencing financial problems and that there was an unsound mix of politics and business. In the meantime the crisis had spread to an increasing number of countries and created considerable nervousness in the financial market. When credit rating agencies began to downgrade banks that had sizeable loans to South Korean companies, confidence quickly disintegrated. A currency tidal wave poured out of the country and it was impossible for companies to renew their short-term loans. The crisis was a fact, and the potential consequences for the world economy increased considerably. The country is important for developments in Asia's real economic superpower, Japan, both as a trading partner and as a competitor in a broad range of export products.

Japan has been struggling with economic problems since a vigorous debt-financed upturn collapsed at the beginning of the 1990s.The authorities did not initiate measures to write off non-performing loans or allow insolvent financial institutions to go bankrupt. Instead, a strategy was adopted where it was hoped that the Japanese economy would grow out of the problems. When enterprises have to use a

Gross domestic output in various parts of the world
Percentage change in volume unless otherwise indicated

	Forecast					Impacts of the crisis in Asia[1]				
	1997		1998		1999	1997		1998		1999
	IMF	LINK	IMF	LINK	LINK	IMF	LINK	IMF	LINK	LINK
Total	4.1	3.1	3.5	2.9	3.1	-0.1	0.0	-0.8	-0.3	-0.2
Industrial countries[2]	2.8	2.5	2.4	2.3	2.3	-0.1	0.0	-0.3	-0.2	-0.1
US	3.8	3.8	2.4	2.3	2.2	0.1	0.0	-0.2	-0.1	-0.1
Japan	1.0	1.0	1.1	1.1	1.5	-0.1	0.0	-1.0	-0.7	-0.4
EU	2.6	2.4	2.7	2.5	2.5	0.1	0.0	-0.1	-0.1	-0.1
Eastern Europe[3]	2.4	3.7	3.4	5.3	5.0	0.3	0.0	-0.2	0.0	0.0
Russia[4]	1.3	0.0	3.3	1.0	3.1	-0.2	0.0	-1.6	0.0	0.0
Developing countries	5.9	5.8	4.9	5.0	5.6	-0.3	0.0	-1.3	-1.1	-0.5
Africa	3.4	3.2	4.7	3.7	3.8	-0.4	0.0	-0.3	-0.1	0.0
Latin America	5.2	4.6	3.5	2.9	4.1	1.1	0.1	-0.9	-1.7	-0.3
Asia[5]	6.8	6.0	5.7	5.3	6.1	-0.9	-1.0	-1.7	-1.1	-0.7
China	..	9.3	..	8.0	9.0	..	-1.3	..	-1.0	-0.5

[1] Change in growth in percentage points.
[2] Includes the OECD area, excluding Mexico, the Czech Republic, Poland, Hungary and South Korea.
[3] Includes Bulgaria, Poland, Hungary, the Slovak Republic, the Czech Republic and Romania.
[4] Includes Transcaucasia and Central Aisa in the IMF.
[5] The IMF includes China in the figures for Asia, while LINK specifies the country as a separate region.
Sources: IMF and LINK project. The LINK project is an international forecasting collaboration under the auspices of the UN, in which Statistics Norway participates. In the model simulations, account is taken of the links between the countries as a result of international trade. The IMF uses purchasing power parities when aggregating across regions wheras the LINK project uses official exchange rates. Emerging-market countries with undervalued exchange rates are given a higher weight when calculations are based on purchasing power parities, and this partially explains why the IMF systematically presents higher growth rates than the LINK project.

large share of their revenues to service debt, little is left for investment and bonus payments. Private domestic demand has therefore exhibited a sluggish trend after the "bubble" burst. Any GDP growth recorded over the past six years has been almost exclusively spurred by general government demand and exports. As a result of the many economic stimulus packages introduced by the authorities, the budget deficit reached about 4.5 per cent of GDP in 1996, and fiscal policy was tightened. Developments last autumn, including several major bankruptcies in banks and securities firms, point to a new policy. The authorities have signalled a willingness to clean up the financial sector. Extensive reforms aimed at liberalizing and restructuring the banking and financial sector by 2002 shall be implemented on 1 April this year. The arrest of senior civil servants, accused of corruption, in the Ministry of Finance in January, resulting in the Minister of Finance's resignation, has softened the traditional anti-reform attitude of the Ministry of Finance, and the episode is expected to simplify the restructuring.

In December 1997, Statistics Norway presented calculations which showed the effect of the crisis in Asia on the Norwegian and international economy (see ES 4/97). Our analysis indicated that the effects would be relatively modest for our traditional trading partners, with the exception of Japan. The countries in the region account for more than 40 per cent of Japan's exports. In addition, the product range is much the same as in South Korea and Taiwan. There are thus many indications that the Japanese economy will continue to experience problems, with low domestic demand, a weaker export market trend in Southeast Asia and stronger competition from producers in depreciation countries. Moreover, Japanese banks are heavily involved in the area with considerable loans outstanding, a factor which may exacerbate the problems in financial institutions. For other industrial countries, the direct effect will depend on the share of exports that go to the troubled economies. Asia accounts for about 15 per cent of US exports. For European countries the share of exports to these Asian countries is between 5 and 10 per cent. The direct impact will be amplified by indirect effects via lower import prices for Asian trading partners and a decline in commodity prices as a result of the fall in demand from Asia. As indicated in the table, our analysis is entirely consistent with similar calculations made by the IMF and LINK project. The main mechanism in the spread of the crisis to the rest of the world is primarily through lower domestic demand in the troubled economies, which results in reduced export possibilities for trading partners. The effect is amplified by stronger competition in the wake of falling exchange rates in the Asian economies, with downward pressures on prices for other producers and thus lower earnings. A further depreciation of some of the countries' currencies after the analyses were presented indicates, in isolation, that the calculations underestimate the effects. On the other hand, there have been indications that many producers find it difficult to reduce export prices in step with the depreciation because the import content of the products is very high. The increase in exports which has taken place in the wake of the crisis has largely been recorded by labour-intensive, low-technology products, such as clothing and footwear.

Eastern Europe quickly felt the effects of Asia's crisis. In mid-May 1997 the currencies of both the Czech Republic and Slovakia came under strong downward pressure. This must be viewed in connection with the economic similari-

ties between these countries and Thailand: a sizeable current-account deficit financed by a high share of short-term private foreign capital and a fixed exchange rate. Fiscal policy was tightened in both these East European countries in order to curb demand, and the Czech Republic abandoned its fixed exchange rate before the central bank lost market confidence. As a result, the currency depreciated only moderately and the supply of capital only showed a negligible decline. Some of the countries in the area, however, have recorded substantial current-account deficits for a number of years. Combined with relatively low investment rates, East European countries may experience problems in the longer run. Countries in the region are largely dependent on developments in the EU which, according to the calculations, does not seem to be affected to any extent, and growth rates in the area are therefore not likely to be revised downwards. (One exception is the IMF's downward revision for republics in the former Soviet Union. However, this is in accord with the IMF's consistent overestimation of developments in Russia, entailing that the IMF's forecasts had to be revised down in response to negative national accounts figures.)

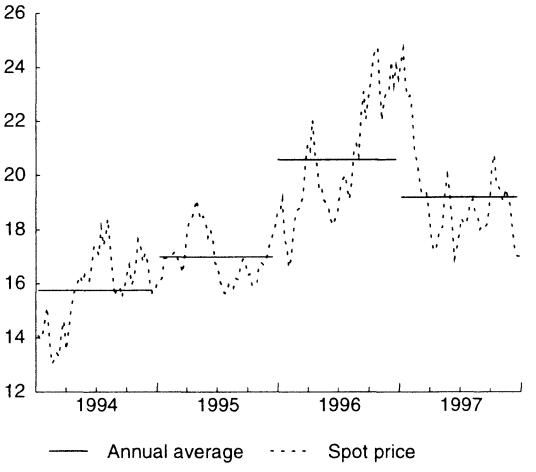
The greatest decline in GDP as a result of Asia's crisis will be recorded by developing countries as a group, but this is primarily ascribable to the bleak outlook for Asia. GDP is likely to fall in both Thailand and Indonesia this year, whereas the other countries will experience a sharp reduction in growth rates. Developments will entail considerable social changes with mass unemployment and increasing poverty. Countries in Latin America do not seem to be much affected by the crisis even though this region has also had a sizeable inflow of capital in the 1990s. This is partly because several of these countries have already experienced a financial crisis following the collapse in Mexico in 1994. Moreover, Argentina has established a currency board, pegging its currency to the dollar, and has thus avoided currency speculation, while Chile has restrictions on short-term capital movements and has managed to avoid the effects of both crises. The most exposed country in the region is Brazil, but the authorities tightened fiscal policy last summer and so far the country has retained market confidence. Africa has only received a negligible share of the capital which has flowed to developing countries in recent years, and will therefore not experience problems with a reversal of capital flows. Lower growth in industrial countries will curb export possibilities somewhat, and lower commodity prices due to falling demand will result in lower earnings. The total effect, however, appears to be modest.

International commodity markets

The oil market

After rising the previous two years, oil prices moved on a downward trend through 1997, but with considerable fluctuations. Prices began to drift down at the end of 1996, from a level of about $ 24 p/b. At the end of April 1997 the spot price of Brent Blend had been reduced to a little

Spot price, Brent Blend
Dollar per barrel



Source: Petroleum Intelligence Weekly.

more than $ 17 p/b. These changes must be viewed in connection with the agreement giving Iraq the opportunity to export about 0.7 million b/d from December 1996 on the condition that the earnings would only be used for humanitarian purposes. Iraq's production would have come on top of the excess production which already existed in OPEC, in addition to the fact that the winter of 1996/1997 was relatively mild. However, contrary to the expectations of most analysts, the price of oil remained between $ 17 and 20 p/b up to the end of September 1997, partly because Iraq's oil exports did not begin in earnest until the beginning of September. Moreover, production in the North Sea was reduced because of the postponed start of new fields. The annual halt in production there as a result of maintenance had the same effect. In addition, demand for petrol remained at a high level in the US and in Europe. Increased tension in the Gulf boosted oil prices to $ 21 p/b at the end of September. When Iraq expressed its displeasure and unwillingness to cooperate with UN arms inspectors, this generated concern about future oil production in the area, and led to increased purchases in the futures market for crude oil. The decline in demand in Europe and the US resulted in a resumption of the downward movement in oil prices in mid-October, to about $ 19 p/b. Moreover, a number of factors contributed to a decline to as low as $ 16 p/b through the last months of 1997. First, the market expected the demand for oil to be reduced as the financial crisis in Asia gradually spread to large oil consumers, such as Japan and South Korea. Furthermore, at the OPEC meeting in Djakarta at the end of November OPEC decided to increase its quotas by 2.5 million b/d in 1998. Even though OPEC production already exceeded its self-imposed quotas by more than 2.3 million b/d, the market still expected a slight increase in production. In addition, the demand for heating oil in November and December was fairly low due to mild weather in Northwest Asia (Japan), on the east coast of the US and in Europe. The average spot price of Brent Blend for 1997 was $ 19.2, $ 1.4 lower than in 1996.

Whereas the demand for oil on a world basis grew by 2 million b/d in 1997, IEA now projects a rise of 1.5 million

b/d this year. The growth in demand in Asia has been revised downwards, but the area will probably still continue to account for the lion's share of the increase in oil consumption. Demand in the OECD area is projected to rise moderately in line with improved economic prospects for Western Europe. Consumption in the former Soviet Union is expected to level off at the 1997 level following a decline in domestic demand over a period of several years.

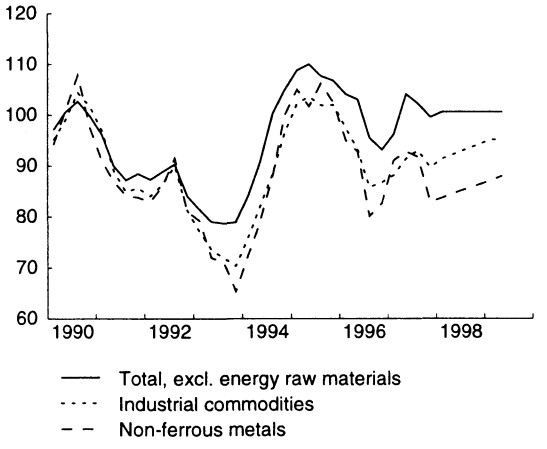
Oil production in non-OPEC countries expanded by 0.7 million b/d in 1997 and is expected to increase by 1.9 million b/d in 1998. The IEA assumes that the North Sea, Latin America and, to some extent, Africa and the former Soviet Union will record the highest percentage growth in production next year. After overestimating non-OPEC production for two years, it is not inconceivable that the IEA is reducing its projected increase in production slightly. The rise in production in non-OPEC countries may nevertheless be approximately the same as the increase in global demand, which will entail that for the first time in a number of years the demand for oil from OPEC will not rise.

It is uncertain how much of an increase in production can be expected in OPEC in 1998 after the decision to raise quotas was adopted in November. Petroleum Intelligence Weekly (PIW) operates with a production growth of 0.8-1.2 million b/d, with Saudi Arabia, Kuwait and the United Arab Emirates expected to account for most of this increase. Some production growth as a result of capacity expansions may also be expected in Venezuela, Indonesia, Algeria and Nigeria. Iraq has extended its export agreement for another six months up to June 1998. This should entail a continuation of production of a little more than 0.7 million b/d in this period. Proposals have been tabled in the UN to ease the sanctions against Iraq and increase its export quota. This is unlikely to occur until the conflict between Iraq and UN arms inspectors is resolved. Irrespective, it will take time before Iraq can build up its production capacity to the level prevailing prior to the Gulf War, i.e. 3.5 million b/d.

Whereas oil stocks were low in 1996 and at the beginning of 1997, figures from the IEA show that oil stocks in the OECD area towards the end of November last year were approximately 120 million barrels higher than in the same period one year earlier. It appears that oil stocks have continued to rise this winter, at a time when stocks are normally reduced. If expectations of a future rise in production outside OPEC in 1998 are fulfilled, the result will be a situation with relatively high oil production in relation to demand, even with cold weather in the northern hemisphere during the remainder of the winter. This development is contingent on OPEC adhering to the production quotas decided on in November 1997 and a continuation of Iraq's exports within the limits set by the current agreement.

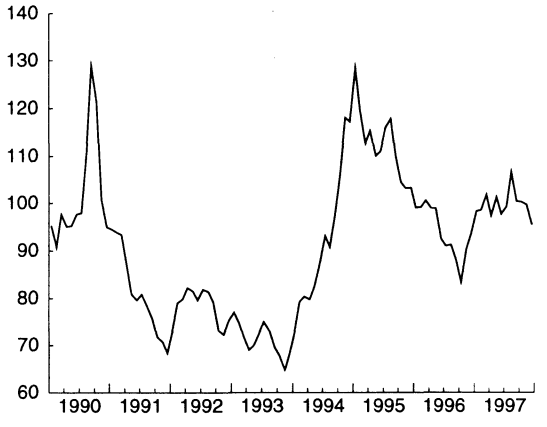
At the moment OPEC is showing little willingness to restrict production. According to PIW, oil prices must remain low over a longer period before OPEC introduces measures to limit production. and a new ministerial meeting is not scheduled to take place until the end of May. Based on these assumptions, the forecasts point to continued downward pressure on oil prices for some time in 1998 from the current level of between $ 15-16 p/b. If the conflict between UN arms inspectors and Iraq is not resolved peacefully, prices may be higher for a period.

Commodity prices on the world market
Dollar based indices. 1990 = 100



Source: HWWA-Institut fur Wirtschaftsforschung.

Aluminium price
Dollar based index. 1979=100



Source: World Metal Statistics.

Other commodity markets

Commodity prices, excluding energy, edged up during the first months of 1997 and peaked in May. A surge in coffee prices contributed to the rise. Over the last six months, however, prices dropped by about 6 per cent and were thus almost back to the level prevailing at the beginning of 1997. The decline in prices was particularly strong for food and beverages and metals. Prices for farm-based industrial commodities moved on a fairly flat trend throughout 1997. According to the AIECE, commodity prices will only rise marginally from 1997 to 1998. Prices for food and beverages are expected to edge down, whereas prices for industrial commodities, according to the AIECE, will

drift up as a result of the improved economic outlook for Western Europe. These forecasts, however, were drawn up when the extent of the crisis in Asia was considered limited. Recent developments point to a weaker price trend for most commodities as a result of lower demand from Southeast Asia.

After passing a trough in autumn 1996, metal prices increased during the first half of 1997. Demand was stimulated by brisk economic growth in the US and expanding industrial output in Europe. Prices fell sharply last autumn, particularly for copper, zinc and nickel. The crisis in Asia contributed to the sluggish price trend, but special conditions in the various markets probably also played a role.

Aluminium prices fluctuated somewhat through 1997, which may reflect varying market balance with a potential for using excess capacity when prices are high enough. Prices dropped towards the end of last year, but this trend was broken at the beginning of 1998. The rise in January must be viewed in connection with the very low level of stocks. Analysts point out that there appears to be a certain shortage of the metal in the market, entailing that lower demand from Asia will not have a negative impact on prices. The prospect of a substantial rise in prices, however, is limited, and the AIECE projects that prices will rise by 5 per cent from 1997 to 1998. Copper prices bottomed out in September 1996 after irregularities uncovered in the Japanese firm Sumitomo triggered a drop in prices. Prices rose up to June 1997 but then moved on a downward trend, and in October copper prices were down to abut the same level as one year earlier. Prices continued to decline through the autumn and winter, and in January 1998 prices reached the lowest level in four years. Copper production is expected to increase in Latin America and in China, and production will probably be resumed in the Congo, Papua New Guinea and Zambia. Combined with substantially lower demand from Asia, this means that prices are likely to fall further in 1998. Weaker demand for steel products contributed to lower nickel prices through most of 1996. Following a short-lived rebound at the beginning of 1997, prices have fallen sharply from August last year and in January 1998 were at their lowest level in 12 months. Higher production in Russia will curb price increases, and lower demand from important Asian markets will have the same effect. Copper and nickel are the metals that will proably be most adversely affected by the crisis in Asia. These metals are important in the construction and car industries, two sectors that are expected to exhibit a weak trend in the troubled Asian economies. The region also accounted for 34 per cent of copper consumption and nearly 39 per cent of nickel consumption in 1996.

The demand for tin is exhibiting a sluggish trend, partly because tin is gradually being replaced by other products, such as aluminium and plastic. Production has nevertheless remained high, particularly in China, and prices have been falling for some time. Recent market developments point to a continued drop in tin prices. The price of zinc rose by more than 50 per cent between January and September 1997 when it recorded its highest level for seven years. However, prices fell sharply again through the autumn and winter, probably as a result of China's substantial supplies of zinc to the market. A shortage of zinc supplies, however, is expected in spite of lower demand from Asia, which may result in a resumed rise in prices. Lead prices were also relatively weak through 1997. The demand for batteries was limited due to the mild winter, while production increased by 2.4 per cent in the first half of last year. An upswing in demand will probably result in a moderate rise in prices this year.

World steel production grew by 5.4 per cent in the first seven months of 1997 after remaining unchanged through 1996. Output showed a particularly sharp rise in Western Europe and Asia, expanding by more than 7 per cent. Demand also picked up last year, increasing by an estimated 3 per cent. The AIECE projects a slight rise in prices, but there is a risk that developments in Asia will prevent this.

Prices for farm-based industrial commodities fell substantially through the beginning of 1996, whereas prices were more stable last year. Pulp prices plunged by 50 per cent during the first half of 1996 and exhibited a sluggish trend up to April 1997 when prices rebounded. The upward trend was reversed, however, at the end of last year, and the forecasts now point to lower prices in 1998. The demand for pulp is projected to decline by between 5 and 7.5 per cent as a result of the turmoil in Southeast Asia. Moreover, production capacity for pulp has recently risen considerably in the region. In the wake of the strong currency depreciation recorded by several of the troubled Asian economies over the last six months, Asian production will be very competitive and may exert downward pressures on prices. Prices for wood products fell through 1997 after the year began with difficult weather conditions in January, which curbed demand from the construction sector. Prices are expected to move on a weak trend in the period ahead as a result of continued low building activity in continental Europe and Japan.

After falling through the second half of 1996, food and beverage prices rebounded sharply up to May 1997. This was particularly influenced by coffee prices, which surged by 35 per cent from the fourth quarter of 1996 to the first quarter of 1997, and in May last year prices reached their highest level in 20 years. The rise was ascribable to the cold wave in Brazil, which led to uncertainty surrounding production. Coffee prices have gradually edged down as a result of favourable weather conditions in coffee-producing countries. The weather phenomenon El Niño, which appears at regular intervals and leads to droughts in Asia, Africa and Australia and floods in Latin America, is expected to result in a shortage of some farm-based commodities and thus higher prices in 1998. So far, however, the harvests do not seem to have been influenced to any great extent.

Norwegian economy

Developments in 1997

According to preliminary national accounts figures, mainland GDP expanded by about 4 per cent in 1997. The growth in activity was negligibly higher than in 1996, but stronger than assumed earlier. This is partly ascribable to fairly brisk growth in the fourth quarter, but is also related to an upward revision of estimates for production in manufacturing and in private service industries in the third quarter. For the last five years as a whole mainland GDP has increased by about 3.5 per cent a year, around one percentage point higher than the average for the previous 25 years.

The economic expansion currently under way has been more broadly based than we experienced in the mid-1980s, and so far there are few signs of financial imbalances reminiscent of that period. Unemployment is still higher than in the mid-1980s, but this is also true of labour force participation, which has reached a record-high level. On the demand side, the main engines of growth over the past five years have been traditional merchandise exports, mainland fixed investment and household consumption. With the exception of 1997, petroleum investment and general government demand have exhibited a relatively sluggish trend.

Traditional merchandise exports expanded by 7.4 per cent in 1997, compared with a good 10 per cent the previous year. Whereas the rise in exports to our 12 main trading partners was approximately the same as in 1996, exports to other countries showed an appreciably lower growth than in the previous year. In the period 1993-1997, traditional merchandise exports showed an average annual rise of 8.5 per cent, while turnover in the markets for Norwegian export products (measured by merchandise imports among our trading partners) increased by a good 6 per cent a year. Market shares for Norway's traditional exports have thus risen considerably from the historically low level at the end of the 1980s. Prices for traditional export goods edged up by 0.5 per cent from 1996 to 1997 after declining by 1.5 per cent the previous year.

Demand impetus
Change in volume of some demand components in per cent of mainland GDP

	1994	1995	1996	1997
Household consumption, etc.	2.4	1.6	2.7	1.8
Fixed investment				
Private mainland industries	2.0	2.0	1.0	1.2
Petroleum activities	-0.8	-1.0	-0.3	1.5
General government demand[1]	0.4	0.3	1.0	1.1
Traditional merchandise exports	2.0	0.7	1.8	1.4

[1] General government consumption + general government gross fixed capital formation.

Gross fixed investment grew by a good 15 per cent last year. After declining markedly through the previous three years, total petroleum investment rose as much as 27 per cent, and is now only about 5 per cent below the record level of 1993. Mainland investment rose at a slightly faster pace than in 1996, but in contrast to previous years general government investment, especially in the education sector, made a substantial contribution to growth. Investment in dwellings and in other private service industries also exhibited sharp growth, whereas manufacturing investment showed little change.

Over the past four years mainland investment has grown at a considerably faster pace than the level of activity. As a share of GDP for mainland Norway, however, this demand component is still appreciably lower than in the period up to the mid-1980s, which was marked by low real interest rates and credit rationing. Growth in the capital stock of mainland industries, however, has picked up from the very low level recorded early in the 1990s, but is still considerably slower than mainland GDP growth.

Household consumption grew by 3.0 per cent in 1997 after increasing 4.7 per cent the previous year. The slower growth rate primarily reflects a considerably weaker trend in household purchases of cars. Excluding car purchases, household consumption showed approximately the same growth in 1997 as in the previous three years. When car purchases are included, household consumption so far during the current expansion has only risen at a moderately faster pace than household real disposable income. The corollary to this is an estimated decline in the household saving ratio of about half a percentage point, from 5.8 per cent in 1992 to 5.4 per cent in 1997. The fall in the saving ratio must be viewed in connection with a decline in the average lending rate from more than 13 per cent in 1991/1992 to around 6 per cent last year, contributing to a decline of more than 3 percentage points in the real after-tax interest rate.

The fall in interest rates entails that it is now cheaper to hold real property and consumer durables. The demand for dwellings has risen considerably, which has translated into a pronounced rise in prices and an increase in residential construction. Higher house prices have also improved the household sector's ability to furnish collateral for loans. According to figures from Norges Bank, however, household debt rose in real terms by only 1.5 per cent from 1992 to 1996, whereas real income advanced by 13.5 per cent in the same period. In 1997, however, debt probably rose at a slightly faster pace than income, but this was also the case for household net financial assets, which increased for the ninth consecutive year. Whereas in 1988, household debt exceeded household financial assets, net financial assets at the end of 1997 probably amounted to more than 45 per cent of disposable income. The current financial situation

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

			Seasonally adjusted			
	1996	1997	97.1	97.2	97.3	97.4
Demand and output						
Consumption in households and non-profit organizations	4.7	3.0	-0.7	2.3	0.7	0.1
General government consumption	3.3	2.5	0.3	0.8	0.5	0.8
Gross fixed investment	4.8	15.1	5.2	9.5	-2.2	-2.3
- mainland Norway	6.6	9.2	1.8	6.2	-1.9	0.3
- petroleum activites[1]	-5.5	27.1	24.5	4.8	-1.2	3.9
Final domestic demand from mainland Norway[2]	4.7	4.0	-0.0	2.7	0.2	0.3
Exports	10.0	4.1	-1.3	3.5	0.2	-0.7
- crude oil and natural gas	15.5	2.0	-1.3	2.2	-3.2	4.0
- traditional goods	10.3	7.4	0.2	7.1	0.5	-0.7
Imports	6.5	11.9	2.3	5.0	0.6	0.8
- traditional goods	9.3	9.1	-1.1	7.1	-0.2	4.6
Gross domestic product	5.3	3.5	0.2	2.6	0.0	1.4
- mainland Norway	3.7	3.9	0.6	2.1	1.0	0.8
Labour market[3]						
Man-hours worked	2.1	2.3	1.4	0.4	-0.6	2.4
Employed persons	2.5	2.9	0.6	0.9	0.7	0.6
Labour force	2.1	2.4	0.4	1.0	0.5	0.3
Unemployment rate, level[4]	4.9	4.1	4.2	4.3	4.1	3.8
Prices						
Consumer price index[5]	1.3	2.6	3.1	2.7	2.3	2.2
Export prices, traditional goods	-1.5	0.5	-2.1	-0.5	3.5	0.7
Import prices, traditional goods	0.4	-1.5	-2.3	-0.4	3.0	-2.0
Balance of payment						
Current balance, bill. NKr	72.5	58.5	21.5	12.9	13.9	10.2
Memorandum items (unadjusted, level)						
Eurokrone rate (3 month NIBOR)	4.8	3.6	3.4	3.4	3.9	3.8
Borrowing rate[6]	7.1	6.0	6.3	5.9	5.9	6.0
Crude oil price, NKr[7]	133.1	135.6	141.2	128.2	137.8	133.9
Importweighted krone exchange rate	100.7	100.2	96.7	100.6	102.9	100.1
Norges Bank's ECU-index	102.5	100.3	97.6	101.3	101.9	100.1

[1] Figures for petroleum activities now covers the sectors oil and gas extraction proper, transport via pipelines and service activities incidental to oil and gas extraction.
[2] Consumption in households and non-profit organizations + general government consumption + gross fixed capital formation in mainland Norway.
[3] Figures for 1996 and 1997 are from the national accounts. The quarterly figures are from Statistics Norway's Labour force survey (LFS), since the new quarterly national account series for employment are too short for seasonal adjustment.
[4] According to Statistics Norway's labour force survey (LFS). The 1995-figure is adjusted in accordance with alternation on the LFS from the beginning of 1996, and is raised by 0.5 percentage points compared to forecasts published earlier.
[5] Percentage, change from previous year.
[6] Households' average borrowing rate in private financial institutions.
[7] Average spot price, Brent Blend.
Sources: Statistics Norway and Norges Bank.

of the household sector is thus entirely different from the situation in the mid-1980s.

Preliminary national accounts figures show a rise in general government consumption of 2.5 per cent in 1997. Over the last five years as a whole, however, general government consumption has risen at a slower pace than mainland GDP. Fiscal policy has nevertheless gradually become less contractionary during this period. Measured by the Ministry of Finance's non-oil, cyclically-adjusted budget indicator, fiscal policy contributed, in isolation, to a reduction in total domestic demand equivalent to 1.5-2 per cent of mainland GDP per year in the period 1994-1996, whereas the tightening effect measured in this way is estimated at about 0.5 per cent of mainland GDP in 1997.

As a result of the rapid growth in the central government's net cash flow from petroleum activities, general government net lending has risen substantially over the last few years, and in 1997 came to more than 7 per cent of GDP. The general government non-oil budget deficit (measured as general government net lending less net cash flow from petroleum revenues as well as interest and dividend income in the Government Petroleum Fund) amounted to about NKr 22 billion. Measured at constant 1997-prices, this deficit has amounted to about NKr 35 billion on average over the last 20 years. By way of comparison, the central government's share of permanent income from petroleum activities was estimated, on an uncertain basis, at a little less than NKr 75 billion in the National Budget for 1998.

As a result of fairly brisk growth in production in private service industries and in goods-producing industries, excluding manufacturing, mainland GDP expanded at a faster rate in 1997 than in the previous year. For the first time in 12 years the growth rate was higher for the mainland economy than for petroleum production. Over the last five years as a whole, however, the gross output of the petroleum sector has risen at a substantially faster pace than gross output in mainland Norway, while goods and service industries in the mainland economy have moved along a parallel trend.

In the period since 1992 mainland growth has been appreciably faster than growth in labour productivity. The corollary to this is a pronounced rise in the number of persons employed. In 1997, the number of persons employed advanced as much as 2.9 per cent, 0.4 percentage point below the growth rate for the peak years 1976 and 1986. For the five-year period 1992 to 1997 as a whole, employment has risen by 190 00, equivalent to a growth of 9.3 per cent. Brisk growth in the labour force through the period has entailed, however, that the unemployment rate has only fallen by about half a percentage point a year, from 6.5 per cent of the labour force in 1992/1993 (adjusted for the revision of the Labour Force Survey (LFS) in 1996) to 4.1 per cent last year. 73 per cent of the population in the age group 16-74 years is now in the labour force, the highest participation rate ever registered in Norway and also very high by international standards.

Wages per normal man-year showed a rise of 4.6 per cent in 1997, approximately on a par with the level recorded in 1996. Over the past five years as a whole, real wages have increased by 1.7 per cent a year, a good half a percentage point above the average for the period 1982-1987. Whereas real wages grew at a slightly slower pace than productivity in the mainland economy through the first three years of the current expansion, wages have risen at a faster rate over the last two years. The relatively high wage growth in 1996 partly reflects the healthy earnings recorded in parts of the business sector in 1995 as a result of the rise in prices for manufactured goods. It is also related to the fact that it takes time before the entire wage effect of a fall in unemployment is exhausted and that the effect of a decline in unemployment on wages is greater the lower the level of unemployment is at the start.

Consumer prices rose by an average 2.6 per cent from 1996 to 1997. The contribution from indirect tax increases may be estimated at about half a percentage point. As an average for the period 1993 to 1997, consumer prices have increased by 2 per cent a year, a little less than the average for Norway's main trading partners in the same period, and half a percentage point below average price inflation in the ECU area. In 1997, however, price inflation in Norway was slightly higher than the average of our main trading partners.

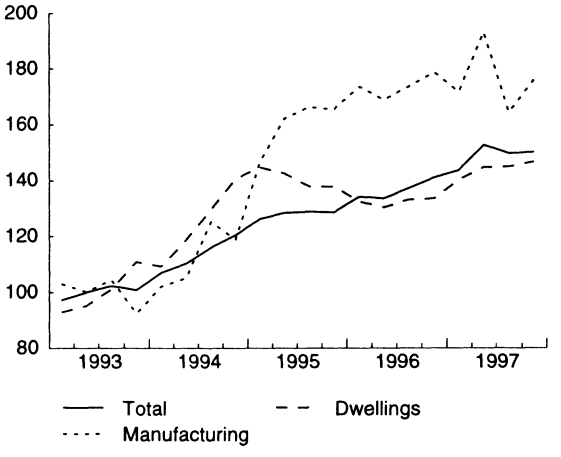
After the Norwegian krone came under appreciation pressures at the end of 1996, Norges Bank abandoned its attempt to keep Norwegian money market rates at a higher level than equivalent ECU rates, and has since then sharply reduced the extent of exchange-market interventions to stabilize the currency. As a result, the krone exchange rate has shown considerably stronger fluctuations through the last 14 months than in the previous 10 years. As an average for the year, the Norwegian krone appreciated by 2.2 per cent against the ECU from 1996 to 1997, but only by 0.5 per cent against an import-weighted basket of currencies of our main trading partners. For 1997 as a whole, the exchange rate against the ECU was at the same level as in the period prior to the unrest in European foreign exchange markets in the second half of 1992.

An increase in Norges Bank's key rates in July 1997 contributed to a rise in Norwegian money market rates of about half a percentage point from the first to the second half of last year. As an average for 1997, the 3-month Norwegian Euro-rate was 3.6 per cent, almost 7 percentage points below the level prevailing up to the currency unrest in 1992. In the same period equivalent rates in Germany and the

Exports
Seasonally adjusted volume indices, 1993=100

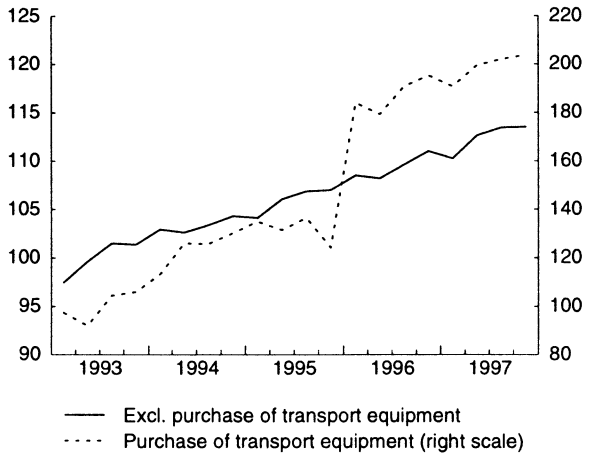
Source: Statistics Norway.

Gross fixed capital formation, mainland Norway
Seasonally adjusted volume indices, 1993=100



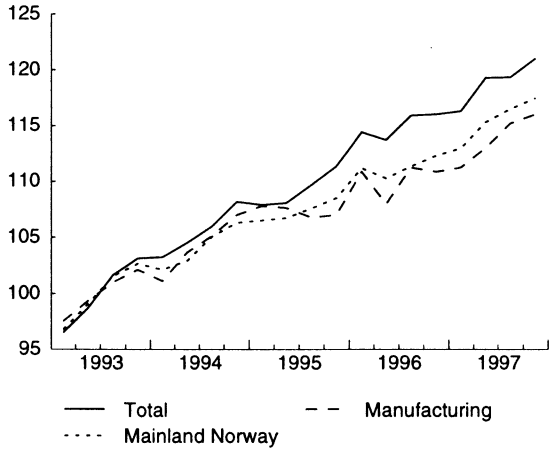
Source: Statistics Norway.

Consumption in households
Seasonally adjusted volume indices, 1993=100



Source: Statistics Norway.

Gross domestic product
Seasonally adjusted volume indices, 1993=100



Source: Statistics Norway.

ECU area have fallen by about 6 percentage points. As in earlier years, deposit and lending rates in Norwegian financial institutions have shadowed movements in money market rates through 1997.

According to preliminary estimates, the surplus on the current account amounted to NKr 58.5 billion in 1997, equivalent to 5.4 per cent of GDP. In 1996, the surplus came to 7.1 per cent of GDP, while the level over the previous five years remained stable at a little less than 3 per cent. Norway's net foreign assets amounted to about 7.3 per cent of GDP at the end of last year.

Outlook for 1998 and 1999

The cyclical upturn in Norway has now lasted for five years and there were no signs of a slowdown in 1997. The upswing is expected to continue in 1998. Investment will generate a fairly strong impetus to demand again this year, albeit slightly weaker than in 1997. International growth is likely to be slightly lower in 1998, partly due to the crisis in Asia and partly due to cyclical factors in major Anglo-Saxon countries. This entails that we will probably not see increases in interest rates in 1998 which might have curbed household demand in Norway. Furthermore, the fiscal policy stance has become more cyclically neutral, whereas earlier in the upturn it had a dampening effect on demand growth. As in our last Economic Survey, we expect 1998 to be a turning point in this upturn, as lower investment will contribute to considerably slower growth in the Norwegian economy in 1999. However, no major changes are expected in price and wage inflation in the period ahead, and the growth rate in Norway may thus be slightly higher than among our trading partners.

At the beginning of 1998 the Norwegian economy is characterized by a high level of activity and growing pressures in many areas. Unemployment has dropped substantially, and such a low level of unemployment has not been seen for ten years. The number of vacancies has risen considerably, and as a share of the labour force the level is back to the 1987 level. Average labour force participation is higher than was the case ten years agao, largely reflecting increased labour force participation among women. There are thus many indicators which show pressures in the labour market, and a clear shortage of labour has been registered for a number of occupational groups. This has contributed to relatively high real wage growth in relation to productivity gains the last few years.

The picture is more uncertain for capacity utilization, not least because this is difficult to measure. For manufacturing industry, where the figures are fairly precise, capacity utilization is not abnormally high historically. In a number of areas investment has expanded briskly through the upturn, thereby boosting capacity. As discussed in the section on prices, it is difficult to identify clear signs of higher inflation as a result of pressures in markets for goods. The completion of a number of major investment projects during 1998 and the generally high level of investment reinforce the impression that markets for goods are not likely to be exposed to considerable pressures in the period ahead. In the housing market, however, the situation is quite different. Prices in the market for existing dwellings have risen substantially in real terms, and rents are also rising at a faster pace then previously in spite of falling interest rates. Here, there is no doubt that demand pressures are pushing up prices. An increase in residential construction may curb the pressures to some extent, but migration and centralization, low interest rates and high income growth imply a continued tight housing market.

Compared with our earlier forecasts for 1998, the growth outlook internationally has been revised downwards, primarily due to the crisis in Asia, which was also discussed in the last Economic Survey. The downward adjustment entails slightly lower market growth among our trading partners, a lower rise in prices for imported goods and lower interest rates in 1998 than assumed earlier. In isolation, these changes result in a slight downward adjustment of the growth in mainland Norway, in line with the calcula-

Main economic indicators
Percentage change from previous year unless otherwise noted

	1997	1998			1999	
	Accounts	SN	NB[1]	MoF[2]	SN	NB[1]
Demand and output						
Consumption in households and non-profit organizations	3.0	3.1	4	3.7[3]	2.8	4 1/4[9]
General government consumption	2.5	2.0	2	1.8	2.0	2 1/2
Gross fixed investment	15.1	8.5	2 1/4	3.0	-3.6	-4 3/4
- mainland Norway	9.2	7.0	2	3.5	-1.4	0
- petroleum activities [4]	24.7	15.2	2 1/4	1.3	-10.4	-19
Demand from mainland Norway[5]	4.0	3.6	3 3/4	2.9	1.8	3
Stockbuilding[6]	0.6	-0.1			0.0	
Exports	4.1	8.4	7 3/4	8.1	5.0	4 1/4
- crude oil and natural gas	2.0	14.9	..	12.9	6.4	..
- traditional goods	7.4	5.1	6	6.5	4.7	5
Imports	11.9	5.4	4 3/4	3.7	1.6	1 3/4
- traditional goods	9.1	5.4	5	4.3	1.3	2
Gross domestic product	3.5	5.3	5	4.6	4.0	2 3/4
- mainland Norway	3.9	3.6	3 1/4	3.2[3]	1.8	2 1/2
Labour market						
Employed persons	2.9	1.7	2	1.5	0.3	1 1/4
Unemployment rate (level)	4.1	3.6	3 1/4	3.8	4.1	2 3/4
Prices and wages						
Wages per standard man-year	4.6	4.6	5	3 1/2	4.3	6
Consumer price index	2.6	2.5	2 3/4	2 1/2	2.6	3
Export prices, traditional goods	0.5	-0.8	2	..	1.6	2 1/2
Import prices, traditional goods	-1.5	-0.3	1	..	0.1	1 1/4
Real price, dwellings	5.7	6.3	..	..	6.1	
Balance of payment						
Current balance (bill. NKr)	58.5	49	88	96.2	68	108
current balance (per cent of GDP)	5.4	4.3	7 1/2	..	5.7	8 3/4
Memorandum items:						
Household savings ratio	5.6	6.3	5	5.4	6.9	4 1/2
Money market rate (level)	3.6	3.9	..	..	4.4	..
Average borrowing rate (level)[7]	6.0	6.0	..	..	6.4	..
Crude oil price NKr (level)[8]	134	111	125	125	108	123[9]
International market growth	6.6	5.7	..	...	5.2	..
Importweighted krone exchange rate[10]	-0.5	0.0	..	..	0.0	..

[1] NB: Forecasts according to Norges Bank. Penger og Kreditt 1997/4.
[2] FIN: Ministry of Finance's forecasts. St.prp. nr. 1 Tillegg nr. 3.
[3] Estimate given at the Minister of Finance's press conference.
[4] Excl. services related to oil- and gas extraction.
[5] Consumption in households and non-profit organizations + general government + gross fixed captial formation in mainland Norway.
[6] Change in stockbuilding. Per cent of GDP.
[7] Households' borrowing rate in private financial institutions.
[8] Average, Norwegian oil production.
[9] 1998-kroner.
[10] Increasing index implies depreciation.

tions presented in the last Economic Survey. Once again, however, projected petroleum investment has been revised upwards, a factor which boosts the growth forecasts. All in all, this has entailed that we have revised upwards our projections for mainland growth, but made a downward adjustment in our inflation projection for 1998. The projection for wage growth has been raised slightly, partly because unemployment at the end of 1997 was lower than estimated earlier, but also because the projection for unemployment in 1998 has been revised downwards. On balance, it therefore now appears that the economic expansion will continue in 1998, albeit at a slightly slower pace than in earlier years. We assume, however, that growth will slow appreciably in 1999. This course of events primarily reflects a projected decline in investment, but there is considerable uncertainty attached to these developments.

Slightly lower growth internationally due to Asia's crisis
Our evaluation of the importance of the crisis in Asia to developments in the world economy is largely the same as that presented in our last survey and is discussed elsewhere in this report. In general, GDP growth in the EU is not expected to show any major changes the next two years. Lower growth is projected in the UK, while the opposite may occur in Italy. In the period ahead GDP growth in Germany and France is projected to remain approximately un-

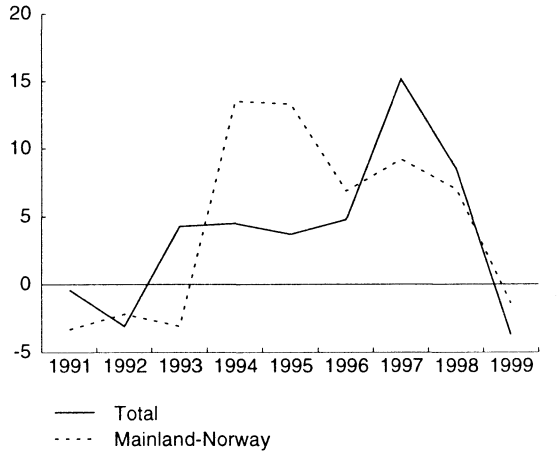
changed compared with 1997. In the US, the growth rate is expected to slow, while in Japan growth will remain very sluggish. Any interest-rate increase of significance in 1998 is now considered very unlikely, partly due to the crisis in Asia. There is considerable uncertainty associated with interest rate movements in connection with the introduction of a common currency in the EU, but in the absence of any clear basis for expecting otherwise we assume that there will be no significant changes in interest rates in the EU. Slower economic growth internationally has already translated into lower prices for some commodities, and a number of commodity prices are projected to exhibit a sluggish trend in 1998, with prices edging up in 1999.

Greater growth impetus from petroleum activities

According to preliminary figures from the quarterly national accounts, petroleum investment expanded by about 25 per cent from 1996 to 1997, and in volume terms is almost back to the record level recorded in 1993. New estimates from oil companies indicate that petroleum investment may show considerable growth in 1998, but probably at a slower pace than in 1997. The Government has signalled that it is considering the possibility of regulating investment in the petroleum sector in order to prevent increased pressures in the economy. This political signal, however, may have induced the companies in the sector to raise their estimates in order to avoid excessive cutbacks in their investment plans. Investment growth in 1998 is projected at about 15 per cent. In real terms, this level of investment is about 10 per cent higher than during the last investment peak in 1993. Whereas petroleum investment in the 1990s had a stabilizing effect on the economy up to 1996, developments in 1997 and 1998 entail a clear break with this trend. The increase in petroleum investment will result in a total demand impetus over these two years of 2.5 per cent of mainland GDP. Investment in 1999 is projected, on an uncertain basis, to fall by about 10 per cent, which is a smaller decline than was previously envisaged.

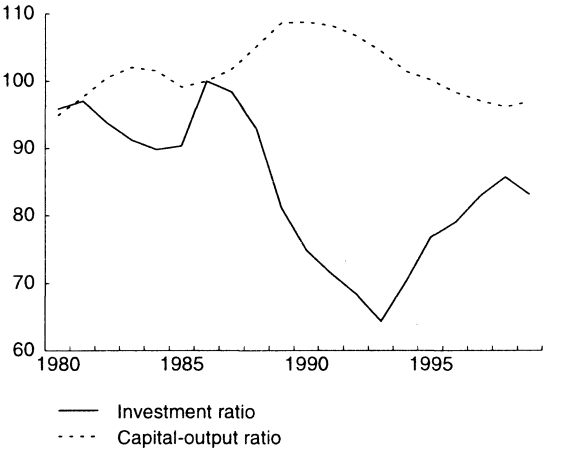
Oil and gas production is expected to increase considerably from 1997 to 1998. Oil production is projected to grow by about 15 per cent and gas production by about 10 per cent. This means that total GDP will again expand at a faster pace than mainland GDP in 1998. For 1999, the production of oil and gas is expected to grow at about the same rate, with output rising by a good 6 per cent. We assume that oil prices will fall substantially from 1997 to 1998, both measured in dollars and in Norwegian kroner. High production in OPEC along with slower growth in the world economy are the main factors behind these projections. In recent weeks there has been renewed political tension between the UN and Iraq, boosting oil prices from the low level prevailing in January. If there is another war in the area, our oil price projection for 1998 will be too low. We assume that oil prices in dollars will edge up in 1998 in line with a more normal cyclical trend and as the crisis in Asia gradually subsides.

Gross fixed capital formation
Percentage growth



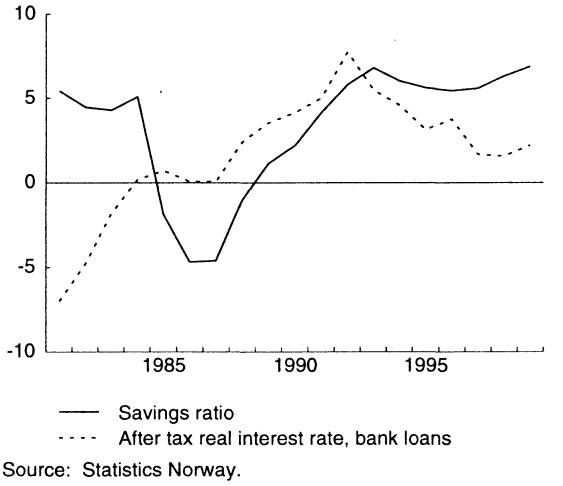
Source: Statistics Norway

Capital formation, Mainland Norway
Volume indices. 1986=100. Forecasts for 1998 and 1999



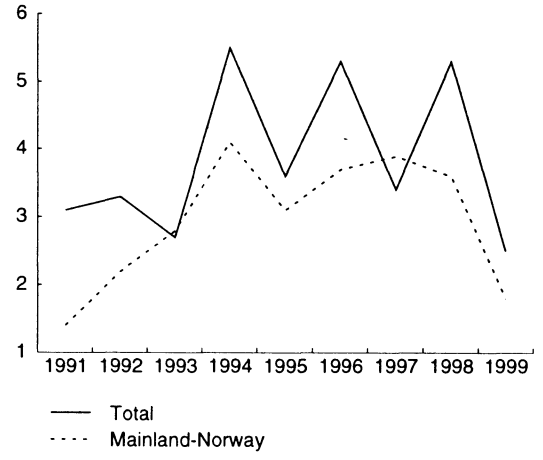
Source: Statistics Norway.

Household financial indicators 1981-99
Per cent. Forecasts for 1998 and 1999



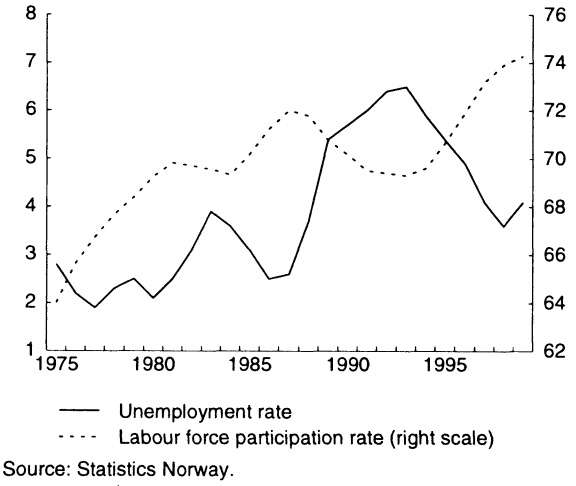
Source: Statistics Norway.

Gross domestic product
Percentage growth



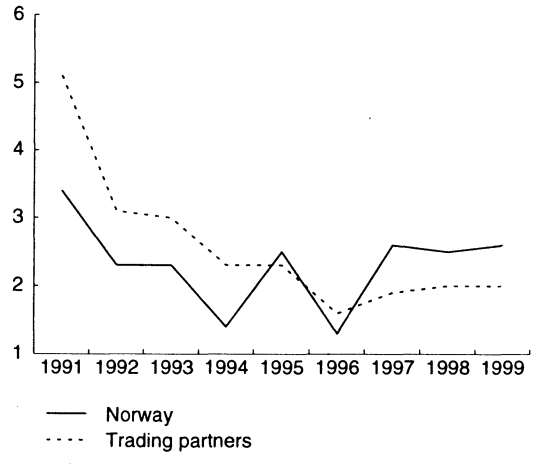
Source: Statistics Norway

Unemployment and labour force participation 1975 - 1999
Per cent. Forecasts for 1998 and 1999



Source: Statistics Norway.

Consumer price indices
Percentage growth



Source: Statistics Norway

Less contractionary fiscal policy

After growing sharply from 1996 to 1997, general government investment is projected to show only marginal changes in 1998 and 1999. This entails that general government investment will remain at a high level. The projection for general government consumption growth for both 1998 and 1999 is approximately on a par with the growth recorded last year.

An attempt has been made to incorporate the tax and excise duty programme for 1998 in the calculations. In the case of indirect taxes, the immediate inflationary impetus from excise duty increases is estimated at 0.4 percentage point. For 1999, we have as usual assumed that direct tax rates will be adjusted in step with wage growth, while excise duty rates are adjusted by consumer price inflation. This entails in particular that any "green" tax reform as a result of the agreement in Kyoto has not been included. This agreement may mean that Norway has to reduce its expected emissions of greenhouse gases during the coming ten-year period by about 10 per cent.

Higher minimum pensions from 1 May and the introduction of cash allowances for families with one-year-olds who do not use state-subsidized childcare arrangements will increase transfers to households substantially both in 1998 and 1999 compared with developments the previous two years. This will contribute to boosting household consumption. We have assumed, however, that the schemes will only result in a small reduction in the supply of labour.

Continued brisk growth in output and demand in 1998, but lower growth in 1999

Whereas growth in the mainland economy was primarily fuelled by consumption and exports in 1996, it was investment-led in 1997. The latter will also be the case in 1998, according to our KVARTS calculations, but to a slightly lesser degree than in 1997. Household consumption is projected to grow at about the same pace in 1998 as in the previous year, while the growth in housing investment will pick up further. Developments in housing investment entail that housing starts must increase considerably during the year and continue to rise sharply in 1999. According to our calculations, prices for existing dwellings are likely to increase substantially. Continued low interest rates, high income growth and declining unemployment in 1998 are important reasons for this. Changes in total household expenditure for consumption and investment entail that household financial investments as a share of disposable income will not rise, while the saving ratio as defined in the national accounts is expected to increase by a good half a percentage point both in 1998 and 1999.

Mainland investment is projected to expand by 7 per cent in 1998. Both housing investment and manufacturing investment are expected to rise at a faster pace than in 1997. As noted earlier, general government investment is expected to show little change in the years ahead, while investment in mainland industries, excluding manufacturing, is

estimated to reach a peak in 1998 and decline in 1999. This must be viewed in connection with the completion of a number of major investment projects in service industries this year without being replaced by projects on an equivalent scale.

Growth in traditional merchandise exports will probably slow the next few years, partly as a result of a moderate decline in import growth among our trading partners. Import growth in Norway was very high in 1997 due to the vigorous rise in investment, but will decline quite markedly in 1998 and 1999 as a result of changes in investment, which are the most import-intensive demand component.

With high demand growth, mainland GDP growth will continue at about the same pace as in the previous two years. Manufacturing output is also expected to rise sharply due to continued export and investment growth. Growth in the construction sector is also projected to be vigorous in 1998, but not as high as last year. As noted earlier, production in the petroleum sector is expanding faster than in the mainland economy, entailing that total GDP growth this year is estimated at 5.3 per cent, compared with 3.4 per cent in 1997. In 1999, growth in both total GDP and mainland GDP is expected to be appreciably lower. Manufacturing output is projected to show little change from 1998 to 1999, largely due to lower investment and export growth compared with the previous year. Household consumption is expected to expand at about the same rate as in 1998.

Continued fall in unemployment in 1998, but increase in 1999?

Employment growth was unusually buoyant in 1996 and 1997. We project a clear decline in employment growth the next two years and a sharper rise in productivity than earlier. Employment is expected to expand by about 2 per cent this year, while the labour supply is expected to increase by a good 1 per cent. This entails that unemployment will continue to fall and is now estimated at a little more than 3.5 per cent in 1998. The labour force has expanded at an unusually brisk pace during the current upturn and labour force participation is at an historically record level. The labour market is probably now tighter than the impression gained by looking at unemployment figures alone. The number of vacancies is very high. We have therefore deemed it reasonable to adjust wage growth upwards (about half a percentage point in 1998) in excess of the level derived from the KVARTS model, which only uses unemployment as an indicator of pressures in the labour market. The projected cyclical slowdown in 1999 will alleviate pressures in the labour market somewhat, partly because growth will be noticeably lower in those segments of the labour market which now appear to be most squeezed. Higher transfers to households are not expected to have a sizeable impact on the labour supply in 1998, but there is a definite possibility that labour force participation will not rise as much as we have assumed. The effects of a lower growth in the labour supply were illustrated in the last Economic Survey and the calculations there showed that the nominal path of a lower labour supply may be substantial, even in the relatively short term.

Unchanged price and wage inflation in the period ahead

As a result of assumptions that the rise in import prices in 1998 will be lower than envisaged earlier, we have reduced our projection for the increase in consumer prices for this year compared with our last survey to 2.5 per cent. As mentioned earlier, increases in excise duties from 1 January this year are expected to contribute 0.4 percentage point to price inflation, or about the same as in 1997. Productivity gains are expected to pick up in the period ahead, which in isolation will help to curb inflation. Wages are projected to rise in 1998 at approximately the same rate as in 1997 and will thus make about the same contribution to inflation as last year. The projection that price inflation will be more or less the same in 1998 as in 1997 is primarily based on slightly greater demand pressures than assumed earlier, which is reflected in a higher estimate for GDP growth. It is assumed that this will increase profit margins for some goods and services. No changes in exchange rates have been assumed in the period ahead. Lower commodity prices and the crisis in Asia may perhaps result in a slower rise in import prices than we have assumed. It is, however, difficult to estimate the effect of exchange rate changes in Asia on Norwegian import prices. Usually, it is assumed that there is a time lag before exchange rate changes feed through to these countries' export prices. For 1999, the rise in import prices is projected to pick up, thereby contributing to a slight increase in price inflation in Norway, while domestic factors will show relatively little change.

Substantial current-account surplus in spite of low oil prices

Our oil price projection for 1998 has been adjusted downwards to NKr 111 p/b, a decline of 17 per cent compared with 1997, and entails that the deflator for Norwegian exports is expected to fall by about 5.5 per cent. This means that Norway's terms of trade will show a considerable deterioration in 1998 following several years of improvement. The trade surplus may thus be reduced by almost NKr 10 billion in 1998 compared with the level in 1997. The projection for the current-account surplus has been reduced to about NKr 50 billion in 1998, about 4.5 per cent of GDP at current prices. Preliminary estimates indicate a substantial deterioration in the interest and transfers balance from 1996 to 1997, but this is not expected to recur in 1998. For 1999, the current-account balance is projected to show a considerable improvement, partly due to lower import growth and higher exports, particularly of oil and gas, with no further fall in oil prices. The surplus is now expected to reach NKr 70 billion at current prices, a good 5.5 per cent of GDP.

How accurate were Statistics Norway's forecasts for 1997?

The Economic Surveys published by Statistics Norway over the past two years have presented forecasts for macroeconomic developments in 1997 eight times: The first forecasts were presented in Economic Survey 1/96, and this was followed by forecasts in each quarterly survey. The table below shows how Statistics Norway's forecasts have changed over time as new information and new assumptions have been incorporated.

As can be seen in the table, the forecast errors primarily relate to an underestimation of both the real growth in the economy and the rise in consumer prices and wages. The degree of forecast error is appreciably reduced when we enter the year to which the forecast applies, i.e. the forecasts for 1997 that were presented through 1997. The underestimation of consumer price inflation for 1997 in the projections presented during 1996 is primarily due to changes in indirect taxes that were implemented in the summer of 1996 and in January 1997, which were not embodied in the calculations. This "error" is ascribable to the normal assumption of unchanged real subsidy and indirect tax rates unless we know otherwise. Altogether, this contributed to pushing up price inflation in 1997 by half a percentage point and wage growth by a little less. Adjusted for this policy assumption, the forecasts for consumer price inflation have thus been very close to the outturn. In the forecasts presented one year ago the uncertainty surrounding exchange rate changes was considerable, and two sets of calculations were presented in Economic Survey 1/97 based on two alternative assumptions concerning exchange rate changes through 1997. This is the reason that two figures are specified for some price forecasts in the table below. The forecast for consumer prices of 2.4 per cent was based on movements in the krone exchange rate which proved to coincide with actual developments. In this estimate we had also incorporated the indirect tax changes which had then been introduced.

On the demand side, the forecasts for investment are those which have been underestimated most. The forecast for investment growth both in the general government sector and particularly in petroleum activities was too low. These variables are not determined in the KVARTS model which is used in the forecasting process, and the forecasts were therefore based on information from other sources. The growth in the mainland economy and in imports was largely underestimated because the growth in these exogenously determined investment components was underestimated. The underestimation of production resulted in an underestimation of employment and an overestimation of unemployment, entailing that the forecast for wage growth was too low.

Consumption growth in 1997 was also underestimated in 1996, whereas the forecasts presented during 1997 have been very accurate. The underestimation of general government consumption during 1996 is related to the weakening of fiscal policy in 1997 through higher growth in general government consumption and investment compared with the original plans and estimates.

The forecasts for the international economy have generally been close to the outturn with the exception of import prices for traditional goods where our forecasts presented in 1996 were clearly too high. This also entailed that the forecast for export prices for traditional Norwegian export goods was too high. An assumption that nominal growth abroad in 1997 would be higher than was actually the case has to some extent influenced our forecasts for nominal interest rates, particularly at the short end of the money market. It is conceivable that we were unwisely influenced by the many market observers who expected interest-rate increases and noticeably higher inflation in 1997 than was the case. However, the forecasts for 1997, presented in 1996, were also influenced by the policy conducted by Norges Bank, which through much of 1996 kept Norwegian interest rates nearly half a percentage point above equivalent ECU rates, a policy which was abandoned at the beginning of 1997. The high forecasts for interest rates in 1997, presented in 1996, are also part of the reason that our forecasts for growth in household consumption were too low.

Statistics Norway's forecasts for 1997. Growth rates in per cent

	ES1/96	ES2/96	ES3/96	ES4/96	ES1/97[1]	ES2/97	ES3/97	ES4/97	ES1/98
Consumption in households and non-profit organizations	2.4	2.5	2.7	2.5	3.1	2.5	3.0	3.5	3.0
General government consumption	1.4	1.2	1.2	1.6	2.6	3.1	2.4	1.7	2.5
Gross fixed investement	3.0	1.9	1.8	4.7	5.4	5.6	11.0	15.6	15.1
Gross fixed investment, mainland Norway	3.5	2.9	2.9	2.5	2.7	5.1	4.1	11.1	9.2
Exports	3.4	4.1	4.8	4.5	5.0	3.3	4.3	4.1	4.1
-traditional goods	4.4	7.2	7.5	4.5	5.5	3.8	5.5	7.9	7.4
Imports	3.6	4.1	4.7	4.3	6.5	4.4	6.9	10.0	11.9
-traditional goods	3.7	3.7	4.1	3.3	4.5	2.9	4.9	8.0	9.1
GDP	2.4	2.2	2.3	3.0	3.1	3.1	3.4	3.0	3.5
-mainland GDP	2.4	2.3	2.4	2.7	2.7	2.8	2.9	3.4	3.9
Employed persons	1.1	1.0	1.1	1.5	1.9	2.2	2.7	2.9	2.9
Unemployment rate (level)	4.4	4.3	4.2	4.0	4.5	4.2	4.1	4.2	4.1
Wages per man-hour	3.4	2.8	3.6	3.6	3.6/3.8	3.8	3.9	4.2	4.6
Consumer prices	2.0	2.0	2.2	2.3	1.8/2.4	2.4	2.5	2.6	2.6
Export price, traditional goods	1.3	2.5	2.1	0.2	-0.3/1.2	-0.8	-0.1	1.5	0.5
Import price, traditional goods	1.8	1.6	1.8	0.3	-2.3/0.1	-0.6	-1.0	-0.6	-1.5
3 month eurokrone rate (level)	4.5	4.8	5.0	4.1	3.6	3.5	3.7	3.7	3.6
Average borrowing rate (level)	6.5	7.0	7.4	6.4	6.0	6.1	6.1	5.8	6.0
Current balance (bill. NKr)	43	45	60	71	74	77	73	65	58.5
Market growth	5.6	7.0	6.0	6.0	6.3	6.3	6.5	6.6	6.6
Crude oil price, NKr	110	115	126	126	118	128	134	134	134

[1] In ES 1/97 we presented two sets of estimates based on alternative assumptions concerning the development of exchange rates. For wages and prices we reproduce both sets of forecasts.

National accounts: Final expenditure and gross domestic product
At fixed 1993-prices. Million kroner

	Unadjusted		Seasonally adjusted							
	1996	1997	96.1	96.2	96.3	96.4	97.1	97.2	97.3	97.4
Final consumption exp. of households and NPISHs[1]	460253	474281	114142	113640	115501	116970	116097	118765	119637	119782
Household final consumption expenditure	438615	451951	108706	108268	110098	111543	110612	113154	114036	114150
Goods	250933	257475	62605	61735	62775	63819	62668	64462	65141	65204
Services	183822	188543	45541	45665	46035	46580	46667	47139	47289	47449
Direct purchases abroad by resident households	18384	20672	4376	4438	4852	4719	4879	5219	5248	5326
Direct purchases by non-residents	-14524	-14739	-3815	-3570	-3564	-3575	-3603	-3666	-3641	-3828
Final consumption exp. of NPISHs	21639	22330	5436	5372	5403	5427	5485	5612	5601	5632
Final consumption exp. of general government	190313	195137	46995	47213	47977	48129	48257	48662	48905	49312
Final consumption exp. of central government	77587	79161	19140	19205	19608	19634	19763	19706	19696	19996
Central government, civilian	55914	57180	13747	13831	14130	14206	14150	14261	14268	14500
Central government, defence	21673	21982	5394	5373	5478	5429	5613	5445	5428	5496
Final consump. exp. of local government	112726	115975	27854	28009	28369	28495	28494	28957	29209	29316
Gross fixed capital formation	190998	219839	45394	46428	49556	49620	52179	57160	55897	54603
Petroleum activities	42932	54584	9990	10870	11533	10539	13121	13752	13591	14120
Ocean transport	5882	10024	482	786	2282	2331	1646	3660	3331	1386
Mainland Norway	142184	155232	34922	34772	35740	36750	37412	39747	38975	39097
Mainland Norway ex. general government	113171	122707	27584	27822	28469	29296	29106	30534	31038	32028
Manufacturing and mining	17156	17404	4289	4170	4284	4413	4236	4768	4057	4343
Production of other goods	11290	11804	2854	2749	2770	2918	2880	2855	3017	3052
Dwelling services	23080	25137	5773	5683	5804	5820	6116	6311	6317	6393
Other services	61644	68362	14669	15220	15610	16146	15874	16601	17647	18240
General government	29014	32525	7338	6950	7271	7454	8306	9213	7937	7068
Changes in stocks and stat. discrepancies	22872	28507	7729	4835	5872	4436	6351	5187	5658	11311
Gross capital formation	213870	248346	53123	51264	55428	54056	58530	62347	61556	65914
Final domestic use of goods and services	864437	917764	214259	212117	218906	219155	222884	229774	230098	235008
Final demand from mainland Norway[2]	792751	824649	196059	195625	199218	201849	201766	207175	207518	208191
Final demand from general government[3]	219327	227661	54333	54163	55248	55583	56563	57875	56843	56380
Total exports	391488	407576	97186	95507	98133	100662	99343	102813	103065	102355
Traditional goods	145246	155957	36990	35387	35950	36919	36993	39603	39818	39543
Crude oil and natural gas	145312	148172	35054	35968	37128	37162	36691	37485	36269	37727
Ships and oil platforms	8785	6414	2615	2078	1275	2817	2292	1706	1628	787
Services	92145	97033	22526	22075	23780	23764	23366	24019	25350	24298
Total use of goods and services	1255925	1325340	311445	307624	317039	319817	322227	332587	333163	337364
Total imports	308520	345201	75883	73455	78285	80897	82762	86883	87435	88121
Traditional goods	215786	235395	52867	52411	54586	55922	55284	59186	59095	61830
Crude oil	1176	1372	214	219	226	517	392	317	368	295
Ships and oil platforms	13925	18053	3732	2248	3612	4333	6601	4230	4591	2631
Services	77633	90382	19071	18578	19860	20125	20485	23150	23382	23366
Gross domestic product[4]	947405	980139	235562	234170	238754	238919	239465	245704	245727	249242
Mainland Norway (market prices)	773844	803675	193285	191692	193613	195254	196368	200486	202581	204239
Petroleum activities and ocean transport	173561	176464	42277	42477	45142	43665	43097	45219	43146	45003
Mainland Norway (basic prices)	683450	709669	170944	169753	170917	171836	174238	176976	178743	179712
Mainland Norway ex. general government	541580	564197	135942	134425	135241	135972	138372	140767	142100	142957
Manufacturing and mining	106024	109507	26663	25960	26751	26651	26745	27169	27703	27890
Production of other goods	72466	76776	19164	17971	17467	17864	18464	19450	19406	19456
Service industries	363090	377914	90115	90495	91023	91457	93162	94149	94992	95612
General government	141870	145472	35002	35328	35676	35864	35866	36209	36642	36755
Correction items	90394	94006	22341	21939	22696	23418	22130	23510	23839	24527

Notes, see "Technical comments".

National accounts: Final expenditure and gross domestic product
Percentage volume change in 1993-prices

	Unadjusted		Seasonally adjusted							
	1996	1997	96.1	96.2	96.3	96.4	97.1	97.2	97.3	97.4
Final consumption exp. of households and NPISHs[1]	4.7	3.0	3.1	-0.4	1.6	1.3	-0.7	2.3	0.7	0.1
Household final consumption expenditure	4.9	3.0	3.3	-0.4	1.7	1.3	-0.8	2.3	0.8	0.1
Goods	6.0	2.6	5.8	-1.4	1.7	1.7	-1.8	2.9	1.1	0.1
Services	2.8	2.6	0.5	0.3	0.8	1.2	0.2	1.0	0.3	0.3
Direct purchases abroad by resident households	5.6	12.4	-2.4	1.4	9.3	-2.7	3.4	7.0	0.6	1.5
Direct purchases by non-residents	-0.0	1.5	2.6	-6.4	-0.2	0.3	0.8	1.8	-0.7	5.1
Final consumption exp. of NPISHs	0.8	3.2	0.8	-1.2	0.6	0.4	1.1	2.3	-0.2	0.6
Final consumption exp. of general government	3.3	2.5	0.7	0.5	1.6	0.3	0.3	0.8	0.5	0.8
Final consumption exp. of central government	4.2	2.0	1.6	0.3	2.1	0.1	0.7	-0.3	-0.0	1.5
Central government, civilian	4.1	2.3	1.1	0.6	2.2	0.5	-0.4	0.8	0.1	1.6
Central government, defence	4.2	1.4	2.7	-0.4	1.9	-0.9	3.4	-3.0	-0.3	1.3
Final consumption exp. of local government	2.7	2.9	0.1	0.6	1.3	0.4	-0.0	1.6	0.9	0.4
Gross fixed capital formation	4.8	15.1	-2.4	2.3	6.7	0.1	5.2	9.5	-2.2	-2.3
Petroleum activities	-5.5	27.1	-15.3	8.8	6.1	-8.6	24.5	4.8	-1.2	3.9
Ocean transport	68.9	70.4	-60.7	63.1	190.2	2.1	-29.4	122.3	-9.0	-58.4
Mainland Norway	6.6	9.2	4.3	-0.4	2.8	2.8	1.8	6.2	-1.9	0.3
Mainland Norway ex. general government	7.1	8.4	3.2	0.9	2.3	2.9	-0.6	4.9	1.6	3.2
Manufacturing and mining	8.4	1.4	5.0	-2.8	2.7	3.0	-4.0	12.6	-14.9	7.1
Production of other goods	-1.5	4.5	0.1	-3.7	0.8	5.3	-1.3	-0.9	5.7	1.2
Dwelling services	-6.0	8.9	-3.9	-1.6	2.1	0.3	5.1	3.2	0.1	1.2
Other services	14.5	10.9	6.3	3.8	2.6	3.4	-1.7	4.6	6.3	3.4
General government	4.8	12.1	8.6	-5.3	4.6	2.5	11.4	10.9	-13.8	-11.0
Changes in stocks and stat. discrepancies	-16.7	24.6	-7.0	-37.4	21.4	-24.5	43.2	-18.3	9.1	99.9
Gross capital formation	2.0	16.1	-3.1	-3.5	8.1	-2.5	8.3	6.5	-1.3	7.1
Final domestic use of goods and services	3.7	6.2	1.0	-1.0	3.2	0.1	1.7	3.1	0.1	2.1
Final demand from mainland Norway[2]	4.7	4.0	2.7	-0.2	1.8	1.3	-0.0	2.7	0.2	0.3
Final dermand from general government[3]	3.5	3.8	1.7	-0.3	2.0	0.6	1.8	2.3	-1.8	-0.8
Total exports	10.0	4.1	6.3	-1.7	2.7	2.6	-1.3	3.5	0.2	-0.7
Traditional goods	10.3	7.4	12.7	-4.3	1.6	2.7	0.2	7.1	0.5	-0.7
Crude oil and natural gas	15.5	2.0	2.0	2.6	3.2	0.1	-1.3	2.2	-3.2	4.0
Ships and oil platforms	-19.3	-27.0	22.6	-20.6	-38.6	121.0	-18.7	-25.6	-4.6	-51.7
Services	5.3	5.3	2.1	-2.0	7.7	-0.1	-1.7	2.8	5.5	-4.1
Total use of goods and services	5.6	5.5	2.6	-1.2	3.1	0.9	0.8	3.2	0.2	1.3
Total imports	6.5	11.9	2.1	-3.2	6.6	3.3	2.3	5.0	0.6	0.8
Traditional goods	9.3	9.1	5.7	-0.9	4.2	2.4	-1.1	7.1	-0.2	4.6
Crude oil	-5.5	16.6	15.6	2.2	3.6	128.6	-24.3	-19.2	16.2	-19.9
Ships and oil platforms	5.4	29.6	-25.7	-39.8	60.7	19.9	52.4	-35.9	8.5	-42.7
Services	-0.1	16.4	-0.0	-2.6	6.9	1.3	1.8	13.0	1.0	-0.1
Gross domestic product[4]	5.3	3.5	2.7	-0.6	2.0	0.1	0.2	2.6	0.0	1.4
Mainland Norway (market prices)	3.7	3.9	2.5	-0.8	1.0	0.8	0.6	2.1	1.0	0.8
Petroleum activities and ocean transport	13.1	1.7	4.0	0.5	6.3	-3.3	-1.3	4.9	-4.6	4.3
Mainland Norway (basic prices)	3.0	3.8	2.1	-0.7	0.7	0.5	1.4	1.6	1.0	0.5
Mainland Norway ex. general government	3.1	4.2	2.7	-1.1	0.6	0.5	1.8	1.7	0.9	0.6
Manufacturing and mining	2.7	3.3	3.6	-2.6	3.0	-0.4	0.4	1.6	2.0	0.7
Production of other goods	-3.3	5.9	-1.3	-6.2	-2.8	2.3	3.4	5.3	-0.2	0.3
Service industries	4.6	4.1	3.3	0.4	0.6	0.5	1.9	1.1	0.9	0.7
General government	2.7	2.5	-0.0	0.9	1.0	0.5	0.0	1.0	1.2	0.3
Correction items	8.8	4.0	5.2	-1.8	3.5	3.2	-5.5	6.2	1.4	2.9

National accounts: Selected price indices
1993 = 100

	Unadjusted		Seasonally adjusted							
	1996	1997	96.1	96.2	96.3	96.4	97.1	97.2	97.3	97.4
Final consumption exp. of households and NPISHs[1]	105.2	108.1	103.6	105.2	105.8	106.3	107.8	108.1	108.2	108.5
Final consumption exp. of general government	109.7	113.1	108.8	109.7	109.6	110.9	112.7	112.8	113.3	113.6
Gross fixed capital formation	109.1	111.0	109.6	108.7	108.5	109.6	110.8	109.4	112.0	111.8
Mainland Norway	109.3	109.8	107.7	109.3	109.7	110.4	108.2	109.0	111.6	110.6
Final domestic use of goods and services	107.0	109.6	105.0	106.8	107.9	108.3	108.0	109.0	110.6	110.6
Final demand from mainland Norway[2]	107.0	109.6	105.6	107.0	107.4	108.2	109.0	109.4	110.0	110.1
Total exports	105.4	108.4	101.5	104.3	105.1	110.5	109.0	106.7	109.3	108.6
Traditional goods	107.3	107.9	107.0	107.9	105.8	108.5	106.2	105.6	109.4	110.1
Total use of goods and services	106.5	109.2	103.9	106.0	107.0	109.0	108.3	108.3	110.2	110.0
Total imports	103.7	104.9	103.2	104.0	102.8	104.8	103.5	104.0	107.2	105.0
Traditional goods	103.2	101.7	103.7	103.4	102.3	103.4	101.0	100.5	103.6	101.5
Gross domestic product	107.4	110.7	104.1	106.7	108.4	110.4	110.0	109.8	111.3	111.7
Mainland Norway	107.9	111.4	105.7	107.8	108.4	109.6	109.6	110.7	111.9	113.3

National accounts: Selected price indices
Percentage change from the previous period

	Unadjusted		Seasonally adjusted							
	1996	1997	96.1	96.2	96.3	96.4	97.1	97.2	97.3	97.4
Final consumption exp. of households and NPISHs[1]	1.1	2.8	-1.1	1.5	0.6	0.5	1.4	0.2	0.1	0.3
Final consumption exp. of general government	3.3	3.1	1.5	0.9	-0.2	1.2	1.6	0.1	0.5	0.3
Gross fixed capital formation	3.1	1.7	3.2	-0.8	-0.2	1.0	1.1	-1.3	2.3	-0.1
Mainland Norway	3.3	0.5	0.8	1.5	0.3	0.6	-2.0	0.8	2.3	-0.9
Final domestic use of goods and services	2.2	2.4	-0.8	1.7	1.0	0.3	-0.2	0.9	1.5	-0.1
Final demand from mainland Norway[2]	2.0	2.4	-0.1	1.4	0.3	0.7	0.8	0.3	0.6	0.1
Total exports	6.2	2.8	2.9	2.8	0.7	5.1	-1.4	-2.1	2.4	-0.6
Traditional goods	-1.5	0.5	-1.4	0.8	-1.9	2.6	-2.1	-0.5	3.5	0.7
Total use of goods and services	3.3	2.5	0.2	2.0	0.9	1.8	-0.6	-0.1	1.8	-0.2
Total imports	1.0	1.2	0.1	0.7	-1.1	2.0	-1.3	0.5	3.0	-2.0
Traditional goods	0.4	-1.5	0.8	-0.3	-1.1	1.1	-2.3	-0.4	3.0	-2.0
Gross domestic product	4.1	3.0	0.2	2.4	1.6	1.8	-0.4	-0.2	1.4	0.4
Mainland Norway	1.5	3.3	-1.7	2.0	0.5	1.1	0.0	1.0	1.1	1.2

Technical comments on the quarterly figures

Footnotes:
[1] NPISHs: Non-profit inistitutions serving households.
[2] Defined as total final consumption expenditure plus gross fixed capital formation in mainland Norway.
[3] Defined as general government final consumption expenditure plus gross fixed capital formation.
[4] Gross domestic product is measured at market prices, while value added by industry is measured at basic prices.

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.

Environmental profiles and benchmarking of Norwegian industries

Results from the Norwegian economic and environmental accounts (NOREEA) project

Julie L. Hass and Knut Ø. Sørensen

The first results from a new, joint project between the divisions for national accounting and environmental statistics at Statistics Norway are reported. A special way of organising and linking environmental and economic data has been developed in this project which makes it possible to identify a specific industry's contribution to the Norwegian economy and the environmental consequences of that economic activity. Although only data which has been previously published is used, new insights into the environmental consequences of Norwegian economic activity can be obtained. Future plans include expanding the system to cover additional environmental parameters, such as solid waste and waste water, and developing a longer and more detailed time series.

Background

Both national accounting and environmental statistics have long traditions in Norway. Already in the early 1970s proposals for combining these two sets of data were made here in Norway (Peskin 1972). While emissions data have been integrated into the economic models of Statistics Norway (Vennemo 1994; Alfsen, Bye and Holmøy 1996), only now are these two sets of data being integrated into the national accounts through a co-operative project between the environmental statistics and the national accounting departments of Statistics Norway. This article reports some of the first results which have emerged from this co-operative project. This project has been partially funded by Eurostat and the Norwegian Ministry of the Environment.

A major problem in combining economic and environmental data is that one set of information is in monetary units and the other set is in physical units. There are two main approaches used to solve this problem. One approach takes the environmental data (which is in physical units) and converts it into monetary units. The two sets of monetary evaluations are then combined into one overall set of information. A major problem with this approach is deciding how to value the environment and how to include these calculations into current economic indicators.[1] The second method, which is the approach used in this project, uses the two types of data in their original formats and simply assembles the data into a single, linked system. The resultant data matrix then allows connections between the various components to be made; it does not, however, allow the physical and monetary components to be added together.

This second approach is a specialised form of what is known as a social accounting matrix (see UN, *et al.*, 1993). A social accounting matrix is a method which can be used to link economic activity with a variety of other aspects in society. The particular method of linking economic activity and the associated environmental consequences was largely developed in the Netherlands (see de Haan and Keuning 1996) and is often referred to as "NAMEA" (*N*ational *A*ccounting *M*atrix including *E*nvironmental *A*ccounts). The NAMEA approach is proving to be a useful way of linking environmental and economic information since the framework is quite flexible and can be adapted to a country's specific needs and characteristics. The NAMEA approach is being advocated by Eurostat and is now being used as a basic framework for combining environmental and economic data in a number of countries including the Netherlands, Denmark, the United Kingdom, Sweden and Finland.

NORwegian Economic and Environment Accounts - NOREEA

The Norwegian system which connects economic and environment data has been called "NOREEA" (*NOR*wegian *E*conomic and *E*nvironmental *A*ccounts). A schematic identifying the major sections of the NOREEA matrix is given in Figure 1. A more detailed table with the actual economic, energy use, employment and air emissions data for

[1] Barde and Pearce (1991), Aaheim and Nyborg (1995) and Alfsen (1996) give a discussion of these problems.

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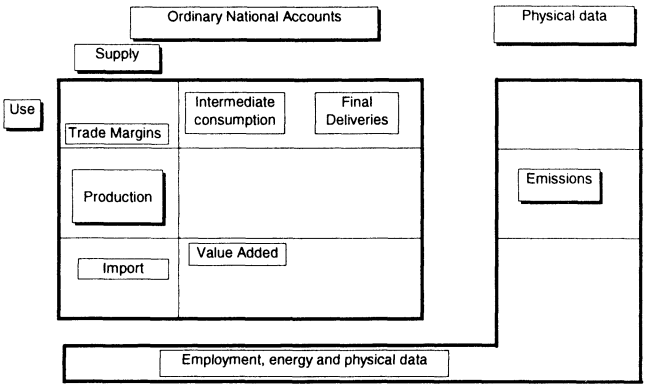
Figure 1. Schematic of NOREEA matrix showing the integration of the national accounting sypply and use matrix and the environmental data



1993 is provided in the appendix. Although the table in the appendix is quite large showing a total of seven industries, it is still highly aggregated since the entire NOREEA matrix breaks down these seven highly aggregated industries into over one hundred more detailed industry classifications.

The NOREEA matrix has two main sections. One section includes the economic information and is shown in the left-hand portion of Figure 1. The data for this section is obtained from the national accounts and shows the economic activity broken down by industry. This portion of the NOREEA matrix is a traditional national accounts supply and use matrix. This national accounts input-output matrix is then extended to the right and underneath to include the physical data, including air emissions, energy use and employment data. The energy, emissions, and employment data comprise the second major section of the NOREEA matrix. The key to developing this system was having the four sets of data (air emissions, energy, employment and economic data) all assembled according to the same NACE industry categories. If all of the data were not developed according to the NACE industry classification system it would be difficult to integrate these data sets.

This integrated data matrix is set up primarily according to the national accounts approach, where the supply of a product is shown by looking down its specific product column while the use of that product for intermediate consumption, investment, etc. is shown across a corresponding row. As a result of the general accounting principles the two sides of the account are supposed to balance. This means that the sum of the column will be the same as the sum in the corresponding row, see table in appendix.

A brief explanation about how to read the table can be helpful. The product and industry categories used in this analysis are given in the table in the appendix and have the identification numbers beginning with "1" for products and "2" for industries. The data presented in the table are highly aggregated so that the overall NOREEA system could be shown. Taking the example of the oil and gas extraction industry (row no. 2.020 in table in appendix), the numbers on the left hand side of the table show the monetary value of the production of different products from that industry. Continuing to the right hand side of the table, the physical emissions data for that industry are shown. Looking down the column for the industry (also identified by the number 2.020) shows the use of products for intermediate consumption in monetary units at the top of the table, and at the bottom of the table the industry's employment data and energy use are provided. On the right hand side of the table, the emissions of the various gases are listed separately in columns. In addition, the relevant emissions are aggregated into two environmental themes, acidification and global warming (column nos. 10.1, 10.2, 11.1). The gases which contribute to these two specific environmental problems are combined to produce a single value or index. The inset box gives an explanation of exactly how the values for the environmental themes are calculated.

The economic data are given in basic values, which is the value the producer is left with after sales, minus net taxes on products to the government. The basic value differs from the purchaser's value, which is the sum the buyer must pay for the product, as a result of net taxes on products (value added taxes, electricity duties, etc.) and as a result of trade margins (wholesale and retail trade margins and transport margins). It is necessary to have separate lines for trade margins and duties in the appendix table, so it is possible to balance the product accounts in purchaser's values. The trade margin is a part of the production of the relevant industries.

Data used in the NOREEA system

The data for the NOREEA matrices originate partly from the national accounts and partly from Statistics Norway's emission and energy accounts. These three different sets of accounts are, for the most part, co-ordinated regarding definitions and categorisations. The co-ordination of these systems makes it possible to present results based on existing data sources at such an early stage of the project.

A main goal of the national accounts is to present a harmonious and complete picture of the economy of the society. The primary data sources used in the national accounts are many and varied. A brief description of the national accounts can be found in Statistics Norway (1996).

The emissions data in NOREEA are based on Statistics Norway's emissions model and covers emissions to air. A general presentation of the emissions data is given in the annual environmental report published by Statistics Norway (see for example, Statistics Norway 1997).[2] There are several reports that describe different aspects of the emission calculations in more detail, see Rypdal (1993, 1995), Flugsrud and Rypdal (1996), and Holtskog and Rypdal (1997). The emissions model has been developed by Statis-

[2] Please note that there have been a number of revisions to the 1993 data which have been made since the data were originally published.

tics Norway in co-operation with the Norwegian Pollution Control Authority (SFT), which has provided information regarding the parameters in the emission model and emissions data for a number of large companies.

There were a number of differences between the aggregation of the economic data and the aggregation of the environmental data which needed to be clarified and resolved during the early stages of the project. At the most detailed industry level the categories were the same in the two systems. The problem arose when comparing the results of more highly aggregated industry groupings. For example, in the emissions data the emissions attributed to travel bureau activities was classified in the services industry, whereas in the national accounts these activities are classified in the transport industry. These variations in the classification and aggregation approaches help to explain the differences between the previously published emissions from these industries and the values being published from the NOREEA project. In addition, there are some definition differences between how the emissions data are reported for Norwegian entities that are producing emissions outside Norwegian territories. This includes Norwegian airplanes flying abroad and ocean transport. There is also the emissions from foreign entities that are producing emissions inside Norwegian territories. The emissions numbers used in the NOREEA include emissions from Norwegian airplanes flying abroad and ocean transport. The emissions from foreign entities are not considered. This issue requires additional consideration at later stages in the project. Currently, it is important to note that the emissions from air traffic are under revision (Rypdal and Tornsjø 1997) and therefore, revisions of the data for the transport industry can be anticipated.

The amounts shown in the table in the appendix for the emissions of HFC gases are allocated using rough estimates for the industries that are using refrigeration units. Included in "transport" is, among others, the storage industry, as it is seen as a support industry for the transport industry. Other industries considered as using HFC gases include the food products industry (wholesale and retail trade), as well as private households. The current allocations have a high level of uncertainty and might be revised. Although the use of these chemicals is currently very low, according to the Kyoto Protocol these emissions are to be included as greenhouse gases in the aggregation of these emissions into environmental themes. Earlier NAMEA analyses from other countries do not include these gases, so international comparisons need to be made carefully. Other countries typically only include the depositions from three greenhouse gases, CO_2, CH_4 and N_2O, in the calculation of this theme.

In addition to connecting emissions to the production within the specific industries, the NOREEA system is set up to try to differentiate between the emissions from inside the Norwegian boundaries and the emissions from other countries which are carried by air currents and deposited in Norway. The gases which lead to problems of acidification are of particular interest. The data for these depositions are taken from the EMEP transboundary air pollution modelling project (Barrett and Berge 1996). Converted to acid equivalents (SO_2 tons), Norway received 10 806 acid equivalents from other countries, exported 6 588 acid equivalents, and emitted 14 185 acid equivalents. In 1993 these values would indicate that the net air pollution from other countries contributes significantly to the acidification pollution of the Norwegian environment.

The energy use information originates from the data in the energy accounts (Djupskås, *et al.* 1993). Consumption in

Environmental themes

Various types of pollutants contribute to different types of environmental problems. One compound can contribute to more than one problem and may be more damaging than other compounds . Aggregating emission data into certain themes is done by weighting the emission type with a factor that is proportional to the potential of that particular emission to contribute to that type of damage. The advantage of this approach is that data on economic activity is then directly linked to widely recognised environmental problems.

Acidification
This theme includes sulphur dioxide (SO_2), nitrogen oxides (NO_x) and ammonia (NH_3) emissions. These chemicals react with water to form dilute acids which damage ecosystems and buildings. These have been aggregated according to their acid forming potentials based on their chemical properties. The units are expressed as acid equivalents in tons SO_2.

Global warming
Greenhouse gas emissions are combined into a weighted aggregate according to the potential damage of the emissions. The damage from each type of emission is estimated from climate models (IPPC 1995) and is assigned a conversion factor known as Global Warming Potential (GWP). Each type of emission is converted into carbon dioxide (CO_2) equivalents in tons CO_2 using the GWP factor. The Norwegian calculations not only include the conventional greenhouse gases, carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O), in calculating this theme but also includes the humanly produced gases including hydrofluorocarbons (HFCs), perfluorocarbons (CF_4 and C_2F_6) and sulphurhexafluoride (SF_6). The gases to include into the global warming theme were determined by the IPCC and are also part of the Kyoto Protocol. The GWP conversion factors used are given in IPPC (1995) and Statistics Norway (1997, Table C1).

NMVOC emissions include emissions from a variety of petroleum products which evaporate easily. These types of chemicals are known as non-methane volatile organic chemicals. Examples: fumes which escape while filling a car's fuel tank with gasoline and when oil is transferred to and from large storage containers and oil tankers.

the energy sector is included. We have not included consumption as raw material.

Some results from the NOREEA

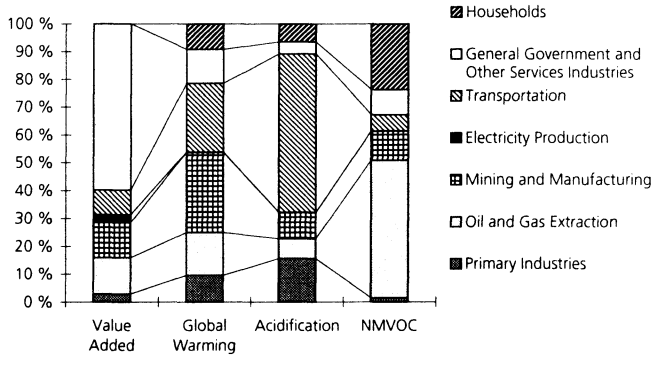
Assembling the various data sets into one large matrix framework results in a coherently arranged data set. In this first phase of the project, four NOREEA matrices have been developed covering the period 1991 to 1994. In the following we present industry profiles for 1993, which show the economic activity and the resultant environmental consequences of this activity. Second, we present a number of trends over time (1991-1994) for a number of different industries. Please note that corrections to the emissions data may be forthcoming, therefore the results reported here should be considered preliminary.

Economic and environmental profiles for Norwegian industries

Two different ways of looking at the connections between economic activity and environmental consequences were made using the NOREEA data for 1993. First a bar graph showing the economic activity and resultant air emissions is presented in Figure 2. This graph shows, for example, that the transport industry contributes only 9 percent to value added but is responsible for over 57 percent of the Norwegian emissions contributing to acidification. Figure 2 also shows that although the oil and gas industry contributes only 13 percent of the Norwegian value added, it is the major industry source for NMVOC emissions (49 percent). On the other hand, the general government and services industries account for 60 percent of the value added yet have very low air emissions.

By looking at the linkages between economic activity and the resultant environmental consequences, some estimates of the environmental impacts of increased economic activity in an industry can be estimated. Caution must be used, however, since changes in technology can result in major discontinuities in these linked relationships.

Figure 2. Linkages between the economicresults of industries and the resulting air emissions. In percent of total. 1993



Another way to examine different industries is to develop industry profiles which include the input factors of energy and employment, the economic contribution (measured as percent contribution to value added) and the environmental consequences (air emissions). 1993 profiles for seven industries plus household consumption are presented in Figures 3 - 10. Household consumption, by definition, does not contribute to value added or have employment but it does have energy use and air emissions. These profiles highlight some of the particular features of the structure of the Norwegian economy. In this context, there is particular interest in the production of electricity and the transportation industries. It should be noted that some industrial processes, by their very nature, produce more emissions of certain types than other industrial processes.

In Norway, the production of electricity is predominantly from hydroelectric plants. This means that there are very low air emissions from this industry. This is markedly different from other countries' electricity production. In most parts of Europe electricity is produced by burning natural gas, oil or coal. These methods of electricity production result in high emissions of gases which contribute to both global warming and acidification.

The structure of the Norwegian transportation industry is also different from other countries. Norway has a fairly high number of ships registered under its flag. By international agreement, the emissions from these ships produced in international waters are not considered or reported as part of Norway's air emissions. However, the economic activity produced by these ships are considered as part of Norway's gross domestic product. This is a prime example of the differences between the definitions and methods used in the emissions accounts and the economic accounts. This difference is not important in many countries, however, in Norway the emissions from ocean transport dominate the air emissions data in the transportation industry. The use of high sulphur-containing fuels by international shipping results in a large contribution to the acidification air emissions. In the transportation industry profile (Figure 8), the economic definition of the industry is used which includes both domestic and ocean transport and support services such as travel agencies. Postal and telephone services are included in "other services."

Mining and manufacturing (Figure 6) is an energy intensive industry which also results in high air emissions contributing to global warming. This industry accounts for over 40 percent of the total industry energy use, and also accounts for over 30 percent of the total industry contribution to air emissions that contribute to global warming. This industry's contribution to value added is only 13 percent.

The oil and gas extraction industry (Figure 5) includes both extraction and the support services such as drilling. A proportionately high energy use and flaring of gases contributes to the air emissions from this industry. The large pro-

Figure 3. Household consumption: Energy use and air emissions. Percent of Norwegian total, 1993

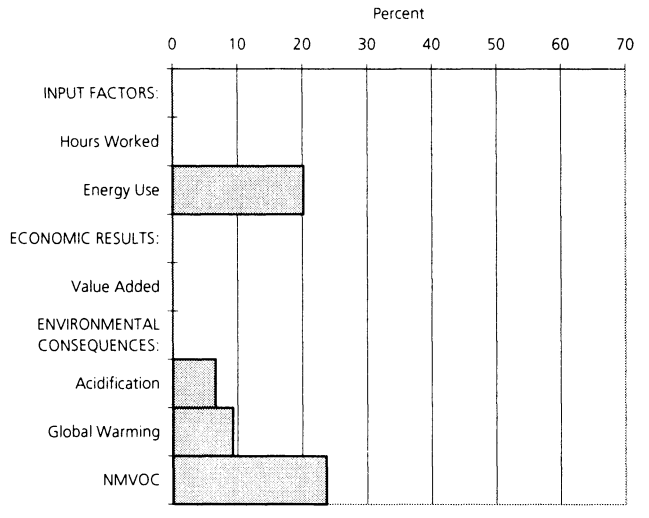


Figure 4. Profile for primary industries. Percent of Norwegian industry total. 1993

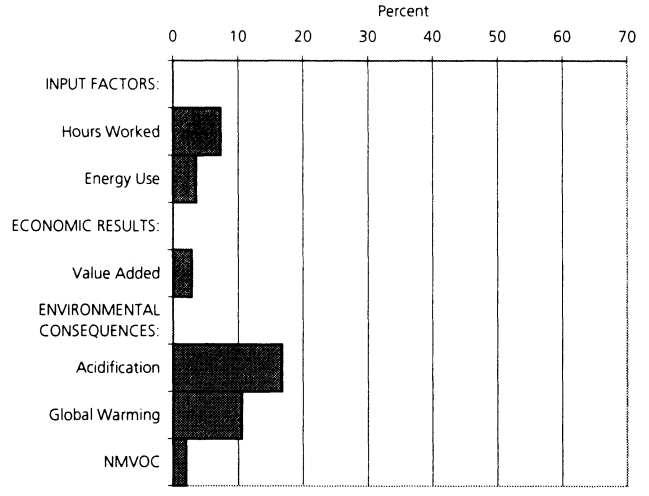


Figure 5. Profile for oil and gas extraction. Percent of Norwegian industry total, 1993

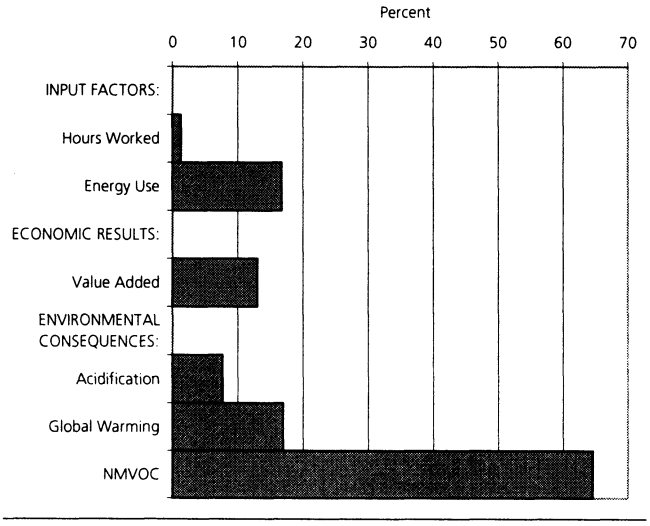


Figure 6. Profile for mining and manufacturing. Percent of Norwegian industry total, 1993

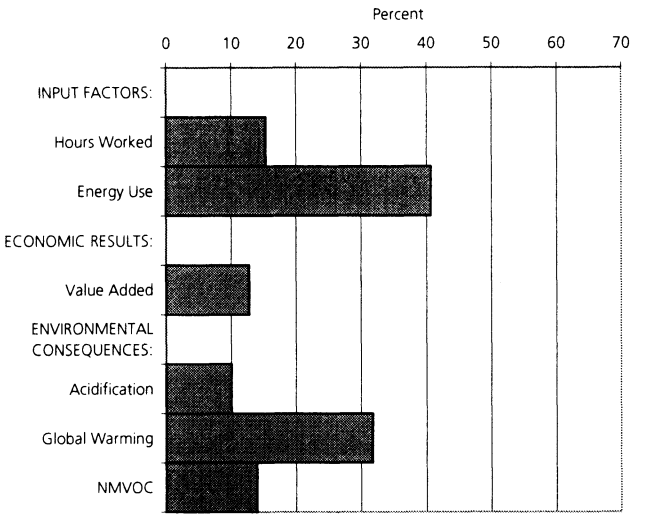


Figure 7. Profile for electricity production. Percent of Norwegian industry total. 1993

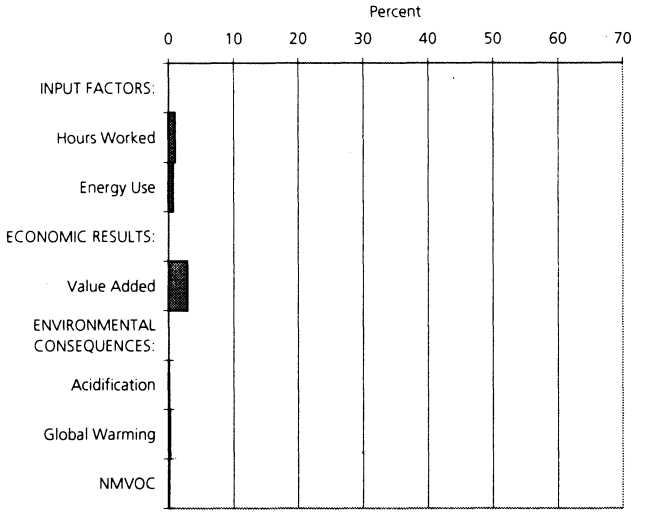
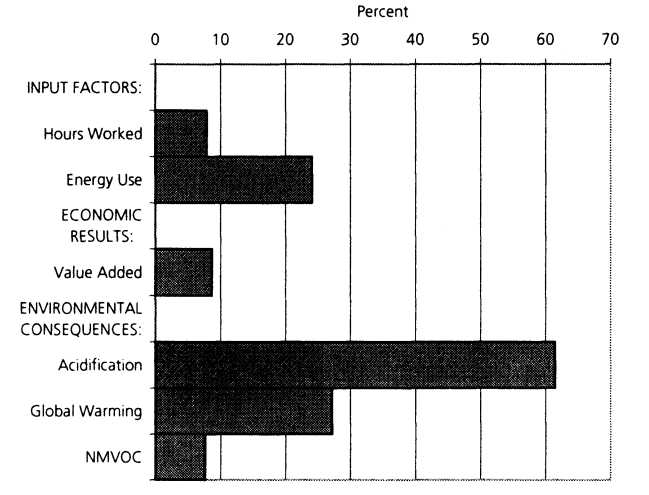


Figure 8. Profile for transportation. Percent of Norwegian industry total. 1993



(Note: Transportation industry includes both domestic and ocean transport)

Figure 9. Profile for other services industry. Percent of Norwegian industry total, 1993

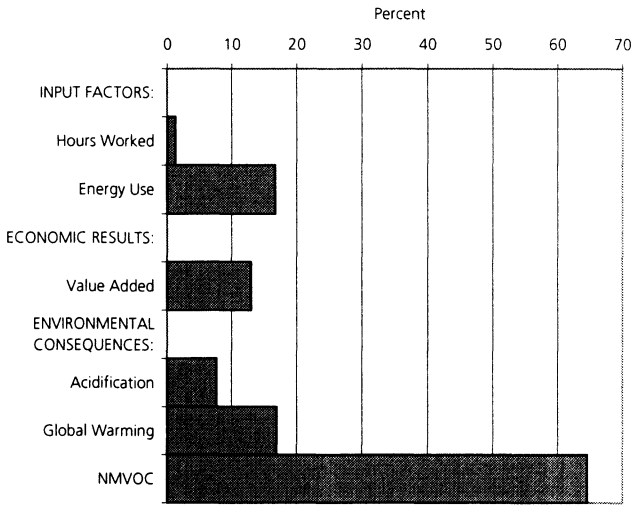
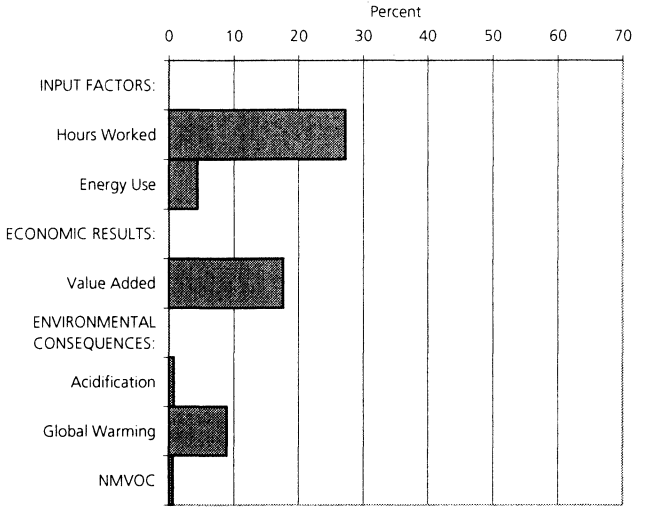


Figure 10. Profile for general government services. Percent of Norwegian industry total, 1993



portion of NMVOC emissions is a result of the loading and discharging of oil.

Primary industries, which includes agriculture and fishing, (Figure 4) contributes little to the gross domestic product but contributes significantly to air emissions. CO_2 gas emissions are particularly a result of diesel fuels used by the fishing industry. Methane emissions result from livestock and manure spreading.

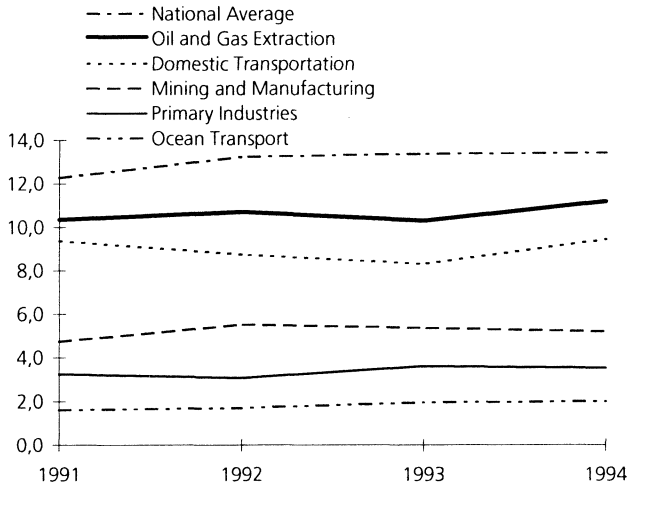
Other services industry (Figure 9) contributes strongly to value added and hours worked with only modest air emissions, as does general government services (Figure 10). Although government services does account for a major portion of the country's methane emissions due to the methane emissions from municipal landfills.

Emission efficiency benchmarking and performance, 1991-1994

The eight profiles presented in the previous section provide information about a specific industry's performance at a single point in time. It is also interesting to look at an industry's performance over time, which may be helpful for identifying whether the industry's environmental efficiency is improving. In order to evaluate performance over time, a complete set of NOREEA matrices were developed for the four years covering 1991 through 1994. These NOREEA data matrices provided the information from which a number of environmental performance indicators or benchmarks were developed. Interestingly, some relatively dramatic changes in air emissions and efficiencies can be observed even during this rather short time period.

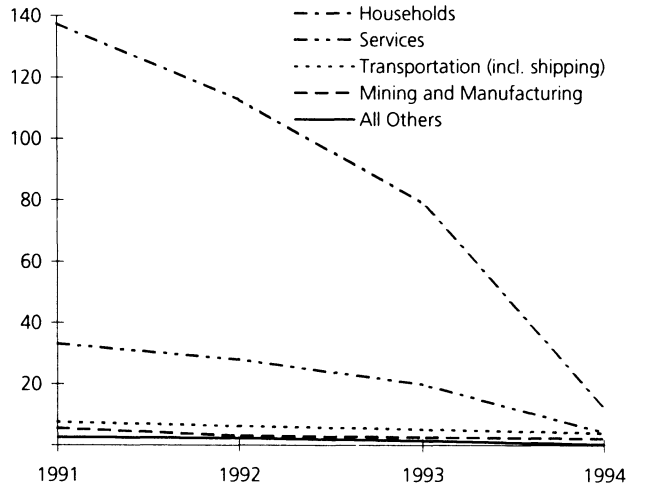
Three types of benchmarks have been developed: emissions per kroner value added in fixed 1993 prices, emissions per unit of energy used, and emissions per hour of employment (see Hass and Sørensen 1997). Benchmarking can be a useful management tool for evaluating performance and can be used by individual companies to determine if their own processes result in performance which is above or below the industry average. However, a note of caution must be given with respect to the interpretation and use of these benchmark figures. A number of interpretation problems could arise when making comparisons. For example, an increase in the emissions per hour of employment could be due to a real increase in emissions if employment is constant. However, there could also be an increase in the emissions per hour of employment if emissions stay constant and employment is reduced. So efficiency gains in employment could result in an increase in the emissions per hour of employment values.

Figure 11. Kroner value added per kilogram CO_2 emitted (CO_2-equivalents) for selected Norwegian industies (constant 1993-kroner)



[3] Larsen and Nesbakken (1995) have calculated the CO_2-intensity of selected industries from 1987-1993, but have only included CO_2 emissions in their calculations. This time series also indicates that there are major changes over time.

Figure 12. Air emissions for Norwegian households and industry. 1991-1994. Kilograms of lead



Examining the benchmark of kroner value added per kilogram CO_2-equivalent emitted over a four year period gives an interesting and mixed picture of the environmental performance of Norwegian industry.[3] The national average is 13.1 kroner value added per kilogram CO_2-equivalent emitted (see Figure 11). The reason why the national average is so high compared to the other industries shown, is because the two sectors which contribute over 60 percent of the total gross value added, the government and services sectors, have very low greenhouse gas emissions. This results in a much higher national average than the efficiency levels shown for the five other industries, oil and gas extraction, domestic transport, manufacturing and mining, primary industries, and ocean transport. Understanding why the observed changes have occurred is difficult to obtain from studying only the data. The economic trends and technology changes in each industry would need to be understood before an accurate understanding of these efficiency trends could be made.

If the transport industry is divided into two groups, ocean transport and all other transport (including travel bureaus, but excluding post and telecommuications), the trends of these two groups are nearly opposite during this time period. Ocean transport shows a steady efficiency increase over this four year time period, whereas other transport shows a decrease in efficiency during the 1991-1993 period which is then gained back to the same 1991 level within one year (1993-1994). A closer examination of the emissions data for ocean transport shows a more than 20 percent decrease in emissions from 1991 to 1994 with only a 2 percent reduction in value added. These two trends together tend to indicate that there have been increases in efficiencies related to greenhouse gas emissions. From the data it is difficult to determine the exact cause of these changes and there is most certainly a combination of contributing factors. Factors such as changes in the number of ships flagged in Norway and uncertainties in the emissions calculations could contribute.

The mining and manufacturing industries also do not show a consistent pattern of change. An initial improvement is observed from 1991 to 1992, but these efficiencies are being slowly eroded over time back to the earlier lower levels. Primary industries, which include agriculture and fishing, on the other hand, show an efficiency decrease from 1991 to 1992 but have later regained those efficiencies and are appearing to stabilise at a slightly higher level, around 3.5 kroner value added per kilogram of CO_2-equivalents emitted. Within the primary industries, fishing and fish farming have shown a strong and persistant improvement of their efficiency.

In the oil and gas extraction industry there has been an increase in both the value added and emissions during this period. Over this four year period the increase in the value added was slightly higher than the increase in greenhouse gas emissions. These combined trends result in the environmental efficiency of the industry increasing. Although this industry's environmental efficiency with respect to global warming has improved, the industry's emissions efficiency with respect to NMVOC decreased by 20 percent during this same period. Specifically, the emissions resulting from the transfer and loading of oil has doubled in the time period.

An example of how technology changes can drastically change the performance in an industry is shown in Figure 12. This graph shows the change in the air emissions of lead over the 1991 to 1994 time period. During this time, lead free gasoline was introduced to the Norwegian market which resulted in dramatic reductions in lead emissions especially for household consumption and the service industry, the two largest users of gasoline automobiles. Interestingly, the transportation industry does not show a particularly large decrease during this time period. This is primarily due to the predominant use of diesel-type fuels in this industry.

Next phase of project

The first phase of this project has produced some interesting results and insights into the environmental consequences of Norwegian industries. In addition, some useful new benchmarks were developed. Plans for the next phase of this project are to try to include other types of waste and emissions, such as solid waste and waste water emissions, and to possibly include other types of statistics such as health and work statistics. The flexibility of the NOREEA matrix easily allows for this type of expansion when the information is available based on the standard NACE industry classifications. There are also plans to extend the time series to include all years for which air emissions data are available. These data matrices would serve as a valuable resource for studying various linkages between different aspects of the Norwegian economy.

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Appendix

NOREEA 1993. Supply and Use in billion kroner, emissions in tons

	Col.id	Supply of products 1 010	1 020	1 030	1 040	Trade margins 1 050	Net taxes on products 1.xxx	Intermediate consumption according to industry 2 010	2 020	2 030	2 040	2 050	2 060	2 070	Correction (FISIM)	Gross value added (GVA) 3.010	Gross domestic product GDP 3.020	Rest of world exports 5.010	Final deliveries of products: Household consum. 6 010	Other consum. 6 040	Investment 8.010
Use of products																					
Electricity	1.010							693	57	6020	791	507	4186	3399				885	15354	0	
Petroleum products	1.020							1534	338	2124	57	8204	4511	688				9871	17912	0	92
Transportation services	1.030							280	2726	12128	550	24012	15402	5396				54431	25325	1071	2502
Other products	1.040							17670	26951	2E+05	5091	45614	191545	55573	32649			241271	328957	200519	187185
Trade margins, basic value	1.050	14608	9964		0	140917	-165489														
Purchase/sale of existing fixed capital	1.110																	9502	2439	0	-11941
Net taxes on products	1.xxx	7111	14759	2426	77334																
Production according to industry																					
Primary industries	2.010	0	0	0	41722	0															
Oil and gas extraction	2.020	0	216	0	128087	0															
Manufacturing and mining	2.030	0	14690	0	299507	1338															
Electricity production	2.040	10096	0	0	3377	14608															
Transport	2.050	0	0	108769	4568	30522															
Other services excluding government	2 060	18	0	27784	387031	119021															
General government	2.070	0	0	546	197961	0															
Value added Gross domestic product																					
Gross value added (GVA) basic value	3.010							21545	98231	96172	21592	65522	318210	133451							
Gross domestic production	3.020						101630								-32649	754723					
Rest of World																					
Imports	5.010	57	5702	4300	251610												54291				
Consumption and investment activities																					
Household consumption	6 010																389987				
Other consumption (government, non-profit org.)	6 040																201590				
Gross investment	8 010																177836				
Environmental themes																					
Global warming (1000 tons)	10.1																				
Acidification, emissions (acid equivalents, SO2))	10.2																				
Acidifaction, depositions in Norway (acid equivalents, SO2)	11.1																	6588			
Employment and energy use																					
Persons employed (1000)	12.1							108,3	21,3	289,2	19,5	136,6	829,8	632							
Hours worked (Million)	12.2							214,3	36,2	447	29,2	231,1	1167,8	795,2							
Energy use (Peta-joule)	12.3							30	141	344	6	204	82	37					214		
Total economic values		31890	45331	143825	1532114	0	101630	41722	128303	315535	28081	143859	533854	198507	0	754723	823704	315960	389987	201590	177836
Selected totals physical units																					

Note that the columns and lines in the table in the appendix are identified by a number in the column headed "col. id.". This identification is provided on the extreme sides of this two page table to assist in reading the table's contents. The first digit in the identification number is assigned using the corresponding number from the account plan of the national accounts, the digits following provide references to the classifications used within each part of the accounts. The same identification numbers are used to identify the columns. In the columns labelled "Intermediate consumption according to industry" and "Supply of products" only the identification number has been listed. The industry and product names corresponding to those codes can be found in the corresponding rows in the extreme left hand column. In principle this gives every account in the national accounts a column and a row in the table, and the column total will be equal to the row total. This is true for totals involving the economic data and for totals involving the physical data. Note that the economic data and physical data cannot be

Air emissions																Environmental themes					
Acidification			Greenhouse gases								Othrer types of emissions					Global warm-ing	Acidifi-cation emis.	Acidifi-cation deposit	Total econ. values	Col. id	Selected totals physical units
SO2	NOx	NH3	CO2 1000 t	CH4	N20	HFC 134	HFC 152	CF4	C2F6	SF6	CO	NMVOC	Partic ulates	Pb (kilo)	CD (kilo)	1000 t 10.1	ton 10.2	ton 11.1			
																			31890	**1.010**	
																			45331	**1.020**	
																			143823	**1.030**	
																			1532116	**1.040**	
																			0	**1.050**	
																			0	**1.110**	
																			101630	**1.xxx**	
1367	35176	23885	2003	93563	6435						15124	5446	1160	1042	4	5963	2212		41722	**2.010**	
911	45209	0	8967	26312	83						6189	176860	290	45	2	9545	1011		128303	**2.020**	
25326	23516	319	11439	106255	5911	5	0	254	11	28	54993	38177	1795	2639	921	17926	1321		315535	**2.030**	
25	373	1	44	5	5					2	1441	196	28	223	0	103	9		28081	**2.040**	
81193	256002	18	15096	928	700	18	1				38475	20914	5316	5255	52	15356	8104		143859	**2.050**	
1731	19372	101	2459	450	238	5					114949	30404	1135	19902	34	2549	481		533854	**2.060**	
355	4431	1	642	208419	67						2069	1794	131	250	7	5040	108		198507	**2.070**	
																			754723	**3.010**	
																			823704	**3.020**	
168200	174143	29993																10806	315960	**5.010**	
1926	39356	400	5291	13188	563	3	0				630154	84888	14925	79116	133	5742	939		389987	**6 010**	
																			201590	**6 040**	
																			177836	**8 010**	
			45941	9432	4341	40	0	1651	101	722										**10.1**	62228
																		14185		**10.2**	14185
7851	8519	2033																		**11.1**	24991
																				12.1	2037
																				12.2	2921
																				12.3	1059
Emissions totals from production, according to emission type																62228	14185	24991			
112834	423435	24725	45941	449120	14002	31	1	254	11	30	863394	358679	24780	108472	1153						

added together. The matrix shows the balanced values for the economic variables and the environmental themes.

The environmental themes of global warming and acidification have units of 1000 tons CO_2 -equivalents and tons SO_2 acid-equivalents, respectively. For the global warming theme, see column 10.1, the emissions for industries and households are identified. Looking across row 10.1 shows the totals of the different types of greenhouse gas emissions. For acidification, emissions divided according to industry are given down column 10.2, while row 10.2 shows emissions divided according to the type of gases which result in acidification. In addition, there are acidifying air pollutants from other countries which are transported across international boundaries by air currents and are then deposited in Norway. These emissions are shown in column 11.1 (acidification, deposits) and row 5.010 (imports, according to type of gas emitted). This is balanced against the pollution that is emitted in Norway but transported to other countries. These emissions are shown in the exports to rest of the world column (5.010). The net acidification deposits shown in line 11.1, are divided according to the

Research publications in English

New titles

Reports

Annegrete Bruvoll:
The Costs of Alternative Policies for Paper and Plastic Waste
Reports 98/2, 1998. pp 30.
ISBN 82-537-4478-1

After decades with landfill and incineration as the most common waste treatment methods, the current main waste policy strategy has changed toward recycling. Also, most governments declare that source reduction, to reduce the generation of waste, is the best choice, while in practice few steps have been taken in this direction. In order to improve the understanding of optimal policies for paper and plastic waste reductions we compare the costs of the four alternatives recycling, incineration, landfill based on a combination of US and Norwegian data, and source reduction implemented by a tax on material inputs.

This study supports the ranking of source reduction as the most efficient alternative. Price incentives directed towards reducing material use and waste is more efficient than rectifying the damages of already generated waste. While a tax on waste generating materials actually involves net benefits, all the other alternatives involve net costs.

Furthermore, in an environmental as well as economic perspective the heavy emphasis on recycling may well be misleading, as the environmental and the economic costs exceed the costs of incineration and landfill in most cases. Higher environmental and economic transport costs from recycling more than outweigh the emission costs and conventional costs from incineration and landfill plants in our analysis. Recycling is the least costly alternative for commercial paper waste, due to relatively low pickup costs and high commercial value of recycled paper.

Discussion Papers

Torbjørn Hægeland and Tor Jakob Klette:
Do Higher Wages Reflect Higher Productivity? Education, Gender and Experience Premiums in a Matched Plant-Worker Data Set
DP no. 208, 1997. pp 36.

Do wage differences between workers with high and low levels of education, between males and females and between workers with different levels of experience reflect differences in productivity? We address this set of questions on the basis of a data set with variables for individual workers matched with a comprehensive data set for manufacturing plants in Norway for the period 1986-93. The results suggest that workers with higher education tend to be more productive, roughly in accordance to their wage premium. Female workers are cet. par. found to be less productive than male workers, and this is reflected in their wages. Experienced workers are on average found to be more productive. For workers with 8 to 15 years of experience, the productivity premium exceeds the wage premium, while the opposite is the case for workers with more than 15 years of experience.

Jon Gjerde, Sverre Grepperud and Snorre Kverndokk:
Optimal Climate Policy under the Possibility of a Catastrophe
DP no. 209, 1998. pp 30.

This paper concerns optimal emissions of greenhouse gases when catastrophic consequences are possible. A numerical model is presented which takes into account both continuous climate-feedback damages as well as the possibility of a catastrophic outcome. The uncertainty in the model concerns whether or not a future catastrophe will occur. However, the welfare losses imposed by such an outcome are assumed known to the decision-maker. An important result is that the possibility of a climate catastrophe is a major argument for greenhouse gas abatement even in absence of continuous damage. Special attention is given to analyses on the probability of a catastrophe and the pure rate of time preferences, and the implicit values of these parameters are calculated if the Rio stabilisation target is assumed to be optimal. Finally, the expected value of perfect information about the probability of the arrival of a catastrophe is estimated.

Karl Ove Aarbu and Jeffrey K. MacKie-Mason:
Why some Corporations Pay More Tax than Necessary
DP no. 211, 1998. pp 44.

It has been noticed in several countries that many corporations do not claim all of their allowable tax depreciation deductions, despite incurring a higher tax cost. There are several possible explanations. First, the uniform reporting accounting system (typical of many European countries) can under certain circumstances constrain dividends. The dividend constraint can, however, be loosened by forgoing some tax depreciation. We find no support for this hypothesis. Second, we find strong evidence that corporations with bad economic performance tend to underutilize their deductions, suggesting that corporations use costly "window-dressing" on their accounting measures. Third, we find support for the hypothesis that tax compliance costs discourage the utilization of accelerated depreciation, especially by small firms. Fourth, we find weak support for the hypothesis that there is substitution between tax depreciation and private debt due to competition between the benefits of private bank monitoring and the tax savings from using debt, as suggested in earlier literature. Our empirical analysis is possible due to unusual access to extremely detailed individual firm tax returns forms in Norway, combined with the 1992 Norwegian tax reform that provided a natural experiment for testing some of the hypotheses. We use the time-series and cross-sectional variation across Norwegian corporations in 1988, 1991, 1992 and 1993.

Rolf Aaberge:
UMP Unbiased Tests for Multiparameter Testing Problems with Restricted Alternatives
DP no. 212, 1998. pp 18.

Applications of the standard theory of UMP unbiased tests depends on conditions which in general are difficult to verify. In the present paper, however, we suggest more simple rules for applying this theory for regular exponential families of distribu-

tions. This approach leads to UMP unbiased tests for various multiparameter testing problems with restricted alternatives, and is shown to give justification for conditional tests of various test problems for contingency tables. The derived tests are shown to possess attractive small sample properties.

Morten G. Søberg:
"EPA's New Emissions Trading Mechanism: A Laboratory Evaluation" - A Comment
DP no. 213, 1998. pp 9.

In the US tradable SO_2 permit scheme 97.2 per cent of the permits are grandfathered annually to electricity utilities. The remaining 2.8 per cent are withheld and offered for sale at the Environmental Protection Agency (EPA) auction. Also, the electricity utilities may tender permits for sale both at this auction as well as on a complementary permit market. Cason and Plott [3] recommend that the EPA seriously consider reforming the present auction procedure for SO_2 permit trading. They provide experimental evidence of downward biased auction prices that understate the marginal cost of emissions control. Our comparison with available empirical data shows that the complementary market for SO_2 permits disciplines the auction inasmuch as the auction and market prices are not significantly dissimilar. This fact and the extent of conducted permit trade render improbable the assertion that the EPA auction price differs from the true marginal abatement cost. Hence, the policy relevance of the EPA auction's alleged faults may be negligible.

Karine Nyborg:
Non-Verifiable Emissions, Voluntary Agreements, and Emission Taxes
DP no. 214, 1998. pp 18.

This paper demonstrates that voluntary agreements between a regulator and an industry can be Pareto superior to environmental taxes. Further, such agreements may differ from direct regulation in a non-trivial way. The first-best optimum may be included in the set of possible agreements, even if it is not attainable using tax instruments. There is no uncertainty or asymmetric information in the model. However, it is assumed that some emissions are observable, but not verifiable. This may be interpreted as a situation where precise formal specification of the pollutant is infeasible.

Reprints

Elin Berg, Snorre Kverndokk and Knut Einar Rosendahl:
Market Power, International CO_2, Taxation and Oil Wealth
Reprints no. 110, 1998. pp 39.

Reprint from The Energy Journal Vol. 18, No. 4, 1997.

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Modelling Strategic Investment in the European Natural Gas Market. **Documents 97/14, 1997.**

Appendix

List of tables

Page

National accounts for Norway

NATIONAL ACCOUNTS FOR NORWAY

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

	1996	1997	96:1	96:2	96:3	96:4	97:1	97:2	97:3	97:4
Final consumption exp. of househ. and NPISHs	484 268	512 911	113 660	113 193	123 096	134 319	119 571	122 427	130 714	140 199
Household final consumption expenditure	460 217	487 299	107 679	107 243	117 064	128 231	113 224	116 078	124 277	133 720
Goods	262 365	276 473	60 376	61 328	64 590	76 071	61 901	66 978	68 521	79 073
Services	193 423	204 657	47 468	45 500	50 085	50 371	51 187	48 211	52 754	52 505
Direct purchases abroad by resident househ.	19 652	22 070	3 031	4 189	7 936	4 496	3 314	4 814	8 776	5 166
- Direct purchases by non-residents	-15 223	-15 900	-3 196	-3 773	-5 547	-2 707	-3 177	-3 925	-5 774	-3 024
Final consumption exp. of NPISHs 4)	24 051	25 612	5 981	5 949	6 033	6 089	6 347	6 348	6 437	6 479
Final consumption exp. of general government	208 862	220 717	51 162	51 680	52 730	53 289	54 303	54 877	55 581	55 956
Final consumption exp. of central government	84 231	88 421	20 628	20 835	21 260	21 509	21 918	21 996	22 087	22 419
Central government, civilian	60 651	63 971	14 850	14 999	15 305	15 496	15 736	16 013	15 970	16 252
Central government, defence	23 580	24 449	5 777	5 836	5 954	6 013	6 182	5 983	6 117	6 167
Final consumption exp. of local government	124 631	132 297	30 535	30 846	31 471	31 781	32 385	32 881	33 493	33 537
Gross fixed capital formation	208 375	244 014	45 735	49 725	52 422	60 493	53 910	61 814	60 655	67 634
Petroleum activities	46 673	62 601	9 900	12 212	12 274	12 287	12 654	17 284	15 443	17 219
Ocean transport	6 286	10 903	1 366	972	1 578	2 369	4 258	2 284	2 751	1 610
Mainland-Norway	155 416	170 509	34 469	36 541	38 570	45 837	36 998	42 246	42 460	48 805
Mainland-Norway excl. general government	123 649	134 531	27 640	29 652	30 550	35 808	28 934	32 832	33 427	39 338
Manufacturing and mining	18 196	18 299	3 434	4 272	4 697	5 793	3 426	4 868	4 332	5 673
Production of other goods	12 096	12 602	2 253	3 211	3 140	3 492	2 210	3 396	3 332	3 663
Dwelling services	26 089	28 817	6 341	6 189	6 586	6 973	6 801	7 016	7 288	7 712
Other services	67 268	74 813	15 612	15 980	16 127	19 549	16 496	17 552	18 475	22 290
General government	31 767	35 978	6 829	6 889	8 020	10 029	8 064	9 414	9 033	9 467
Changes in stocks and stat. discrepancies	23 596	27 913	12 798	6 048	5 402	-651	8 334	7 884	4 809	6 885
Gross capital formation	231 972	271 926	58 533	55 773	57 824	59 842	62 244	69 699	65 464	74 520
Final domestic use of goods and services	925 102	1 005 555	223 355	220 646	233 651	247 450	236 119	247 002	251 759	270 675
Final demand from Mainland-Norway 2)	848 546	904 138	199 291	201 413	214 396	233 445	210 872	219 550	228 755	244 961
Final demand from general government 3)	240 629	256 696	57 991	58 569	60 750	63 318	62 367	64 291	64 614	65 424
Total exports	412 678	441 775	99 009	98 612	102 868	112 190	108 111	109 109	112 284	112 270
Traditional goods	155 848	168 221	40 390	37 375	36 783	41 301	39 091	42 052	42 105	44 973
Crude oil and natural gas	156 688	163 044	34 593	36 717	40 000	45 378	43 150	39 422	39 313	41 159
Ships and oil platforms	9 151	7 262	2 604	2 175	1 341	3 031	2 492	1 922	1 915	933
Services	90 991	103 248	21 422	22 345	24 744	22 480	23 378	25 713	28 951	25 206
Total use of goods and services	1 337 780	1 447 329	322 364	319 258	336 519	359 640	344 230	356 111	364 043	382 945
Total imports	319 986	362 254	75 636	75 250	81 345	87 755	81 018	90 825	94 629	95 782
Traditional goods	222 613	239 292	53 992	53 525	53 945	61 151	53 167	60 557	59 107	66 461
Crude oil	1 445	1 517	218	255	261	711	436	322	413	346
Ships and oil platforms	14 290	19 694	3 776	2 340	3 714	4 460	6 857	4 677	5 179	2 981
Services	81 638	101 751	17 650	19 130	23 425	21 433	20 558	25 269	29 930	25 994
Gross domestic product 1)	1 017 794	1 085 075	246 728	244 008	255 174	271 885	263 212	265 286	269 414	287 164
Mainland-Norway (market prices)	834 819	895 423	205 575	200 917	207 942	220 385	213 686	219 012	224 258	238 466
Petroleum activities and ocean transport	182 975	189 652	41 153	43 091	47 232	51 500	49 525	46 274	45 155	48 698
Mainland-Norway (basic prices)	727 088	777 334	180 754	175 025	180 701	190 608	189 244	190 159	192 785	205 147
Mainland-Norway excl. general government	569 180	610 150	142 066	135 943	140 829	150 342	148 192	148 788	150 528	162 642
Manufacturing and mining	119 515	127 556	30 345	29 313	29 207	30 650	29 754	33 184	30 434	34 184
Production of other goods	80 875	85 457	21 781	16 003	20 930	22 162	20 971	17 341	23 219	23 926
Service industries	368 790	397 138	89 940	90 628	90 691	97 531	97 467	98 264	96 875	104 532
General government	157 908	167 184	38 688	39 083	39 873	40 266	41 052	41 370	42 257	42 505
Correction items	107 731	118 089	24 822	25 892	27 241	29 777	24 442	28 854	31 474	33 319

1) Gross domestic product is measured at market prices, while value added by industry is measured at basic prices
2) Defined as total final consumption expenditure plus gross fixed capital formation in Mainland-Norway
3) Defined as final consumption expenditure plus gross fixed capital formation
4) NPISH: Non-profit institutions serving housholds

NATIONAL ACCOUNTS FOR NORWAY

Table A2. Final expenditure and gross domestic product. At constant 1993-prices. Million kroner

	1996	1997	96:1	96:2	96:3	96:4	97:1	97:2	97:3	97:4
Final consumption exp. of househ. and NPISHs	460 253	474 281	109 507	107 867	116 841	126 038	110 143	113 541	121 378	129 219
Household final consumption expenditure	438 615	451 951	104 095	102 509	111 417	120 594	104 627	107 996	115 760	123 568
Goods	250 934	257 475	58 475	58 846	61 582	72 031	57 426	62 360	63 962	73 728
Services	183 822	188 543	45 838	43 294	47 813	46 876	46 928	44 714	49 123	47 778
Direct purchases abroad by resident househ.	18 384	20 672	2 847	3 939	7 369	4 228	3 244	4 526	8 091	4 811
- Direct purchases by non-residents	-14 524	-14 739	-3 066	-3 570	-5 347	-2 541	-2 971	-3 604	-5 416	-2 749
Final consumption exp. of NPISHs 4)	21 639	22 330	5 412	5 358	5 424	5 444	5 516	5 545	5 618	5 651
Final consumption exp. of general government	190 313	195 137	46 777	46 977	48 258	48 302	47 917	48 505	49 194	49 521
Final consumption exp. of central government	77 587	79 161	19 092	19 113	19 727	19 655	19 654	19 675	19 800	20 032
Central government, civilian	55 914	57 180	13 730	13 759	14 210	14 215	14 024	14 291	14 342	14 522
Central government, defence	21 673	21 982	5 362	5 354	5 517	5 441	5 630	5 385	5 458	5 510
Final consumption exp. of local government	112 726	115 975	27 684	27 864	28 532	28 646	28 263	28 829	29 394	29 489
Gross fixed capital formation	190 998	219 839	42 411	45 491	48 333	54 762	49 804	55 722	54 203	60 111
Petroleum activities	42 932	54 584	9 251	11 237	11 332	11 112	11 401	15 190	13 241	14 752
Ocean transport	5 882	10 024	1 229	901	1 449	2 303	4 030	2 080	2 492	1 422
Mainland-Norway	142 184	155 232	31 931	33 354	35 552	41 347	34 373	38 452	38 470	43 937
Mainland-Norway excl. general government	113 171	122 707	25 599	27 089	28 184	32 299	26 942	29 933	30 384	35 447
Manufacturing and mining	17 156	17 404	3 245	4 061	4 433	5 417	3 293	4 635	4 105	5 371
Production of other goods	11 290	11 804	2 117	3 012	2 928	3 234	2 095	3 185	3 107	3 417
Dwelling services	23 080	25 137	5 726	5 461	5 798	6 094	6 058	6 124	6 301	6 655
Other services	61 644	68 362	14 511	14 555	15 025	17 554	15 497	15 989	16 871	20 005
General government	29 014	32 525	6 333	6 265	7 369	9 048	7 431	8 519	8 086	8 489
Changes in stocks and stat. discrepancies	22 873	27 860	12 028	5 939	5 265	-358	9 064	7 632	4 875	6 290
Gross capital formation	213 871	247 699	54 439	51 430	53 598	54 405	58 868	63 353	59 078	66 401
Final domestic use of goods and services	864 438	917 117	210 723	206 273	218 698	228 745	216 928	225 399	229 649	245 141
Final demand from Mainland-Norway 2)	792 751	824 649	188 215	188 197	200 652	215 687	192 433	200 498	209 042	222 677
Final demand from general government 3)	219 327	227 661	53 109	53 241	55 627	57 350	55 348	57 024	57 280	58 010
Total exports	391 487	407 575	97 494	94 459	97 906	101 627	99 387	102 162	102 633	103 392
Traditional goods	145 245	155 956	37 624	34 741	34 655	38 224	36 891	39 803	38 294	40 968
Crude oil and natural gas	145 312	148 172	35 546	35 613	36 388	37 765	37 501	36 795	35 531	38 346
Ships and oil platforms	8 785	6 414	2 615	2 078	1 275	2 817	2 292	1 706	1 628	787
Services	92 145	97 033	21 709	22 028	25 588	22 820	22 703	23 859	27 181	23 291
Total use of goods and services	1 255 925	1 324 692	308 217	300 733	316 604	330 371	316 315	327 562	332 283	348 533
Total imports	308 520	345 201	73 539	72 848	78 817	83 316	79 052	87 424	87 885	90 840
Traditional goods	215 786	235 395	52 162	52 129	52 702	58 794	53 254	60 249	56 873	65 019
Crude oil	1 176	1 372	214	219	226	517	392	317	368	295
Ships and oil platforms	13 925	18 053	3 732	2 248	3 612	4 333	6 601	4 230	4 591	2 631
Services	77 633	90 382	17 432	18 253	22 277	19 671	18 805	22 628	26 053	22 896
Gross domestic product 1)	947 405	980 139	234 678	227 885	237 787	247 056	237 209	240 261	244 626	258 043
Mainland-Norway (market prices)	773 844	803 675	192 163	185 474	193 999	202 208	192 551	196 444	202 762	211 918
Petroleum activities and ocean transport	173 561	176 464	42 515	42 411	43 788	44 848	44 658	43 817	41 864	46 126
Mainland-Norway (basic prices)	683 450	709 669	170 669	164 135	171 497	177 149	171 322	173 526	179 140	185 681
Mainland-Norway excl. general government	541 580	564 197	135 883	129 042	135 658	140 997	135 738	137 540	142 326	148 592
Manufacturing and mining	106 024	109 507	27 428	26 072	25 051	27 473	26 545	28 189	26 005	28 767
Production of other goods	72 466	76 776	19 632	14 357	19 521	18 956	18 594	15 886	21 358	20 938
Service industries	363 090	377 914	88 823	88 613	91 086	94 568	90 599	93 465	94 963	98 887
General government	141 870	145 472	34 786	35 093	35 839	36 152	35 583	35 986	36 813	37 089
Correction items	90 394	94 006	21 494	21 339	22 502	25 059	21 229	22 918	23 622	26 237

1) Gross domestic product is measured at market prices, while value added by industry is measured at basic prices
2) Defined as total final consumption expenditure plus gross fixed capital formation in Mainland-Norway
3) Defined as final consumption expenditure plus gross fixed capital formation
4) NPISH: Non-profit institutions serving housholds

NATIONAL ACCOUNTS FOR NORWAY

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

	1996	1997	96:1	96:2	96:3	96:4	97:1	97:2	97:3	97:4
Final consumption exp. of househ. and NPISHs	4,7	3,0	5,4	3,3	4,5	5,4	0,6	5,3	3,9	2,5
Household final consumption expenditure	4,9	3,0	5,6	3,5	4,7	5,6	0,5	5,4	3,9	2,5
Goods	6,0	2,6	7,5	4,5	4,8	7,3	-1,8	6,0	3,9	2,4
Services	2,8	2,6	3,2	2,6	2,8	2,8	2,4	3,3	2,7	1,9
Direct purchases abroad by resident househ.	5,6	12,4	8,5	-6,9	13,0	4,7	13,9	14,9	9,8	13,8
- Direct purchases by non-residents	-0,0	1,5	8,0	-3,2	-0,4	-3,6	-3,1	0,9	1,3	8,2
Final consumption exp. of NPISHs 4)	0,8	3,2	1,8	0,2	0,5	0,6	1,9	3,5	3,6	3,8
Final consumption exp. of general government	3,3	2,5	3,4	2,7	3,7	3,2	2,4	3,3	1,9	2,5
Final consumption exp. of central government.	4,2	2,0	4,3	3,3	4,8	4,3	2,9	2,9	0,4	1,9
Central government, civilian	4,1	2,3	4,1	3,1	4,8	4,6	2,1	3,9	0,9	2,2
Central government, defence	4,2	1,4	4,7	3,8	5,0	3,4	5,0	0,6	-1,1	1,3
Final consumption exp. of local government	2,7	2,9	2,8	2,4	2,9	2,5	2,1	3,5	3,0	2,9
Gross fixed capital formation	4,8	15,1	1,7	1,7	9,9	5,6	17,4	22,5	12,1	9,8
Petroleum activities	-5,5	27,1	-7,7	-1,7	-1,0	-11,2	23,2	35,2	16,8	32,8
Ocean transport	68,9	70,4	-28,7	-41,2	.	99,5	228,0	130,9	71,9	-38,3
Mainland-Norway	6,6	9,2	6,6	5,0	6,3	8,3	7,6	15,3	8,2	6,3
Mainland-Norway excl. general government	7,1	8,4	7,1	5,7	6,8	8,6	5,2	10,5	7,8	9,7
Manufacturing and mining	8,4	1,4	18,0	5,9	4,7	8,2	1,5	14,1	-7,4	-0,8
Production of other goods	-1,5	4,5	-1,5	-4,7	-1,3	1,7	-1,0	5,8	6,1	5,6
Dwelling services	-6,0	8,9	-8,0	-8,2	-3,6	-4,1	5,8	12,1	8,7	9,2
Other services	14,5	10,9	13,5	14,7	14,2	15,6	6,8	9,9	12,3	14,0
General government	4,8	12,1	4,9	2,0	4,3	7,1	17,3	36,0	9,7	-6,2
Changes in stocks and stat. discrepancies	-16,7	21,8	7,5	-20,6	4,6	.	-24,6	28,5	-7,4	.
Gross capital formation	2,0	15,8	3,0	-1,5	9,4	-2,2	8,1	23,2	10,2	22,0
Final domestic use of goods and services	3,7	6,1	4,3	1,9	5,5	3,1	2,9	9,3	5,0	7,2
Final demand from Mainland-Norway 2)	4,7	4,0	5,1	3,4	4,6	5,5	2,2	6,5	4,2	3,2
Final demand from general government 3)	3,5	3,8	3,6	2,6	3,8	3,8	4,2	7,1	3,0	1,2
Total exports	10,0	4,1	10,7	10,1	8,9	10,3	1,9	8,2	4,8	1,7
Traditional goods	10,3	7,4	9,1	11,4	8,6	11,9	-1,9	14,6	10,5	7,2
Crude oil and natural gas	15,5	2,0	15,8	19,3	19,3	8,6	5,5	3,3	-2,4	1,5
Ships and oil platforms	-19,3	-27,0	28,3	-30,8	-65,7	32,1	-12,4	-17,9	27,7	-72,1
Services	5,3	5,3	4,1	1,1	7,6	8,4	4,6	8,3	6,2	2,1
Total use of goods and services	5,6	5,5	6,2	4,4	6,5	5,2	2,6	8,9	5,0	5,5
Total imports	6,5	11,9	7,3	1,2	8,5	8,9	7,5	20,0	11,5	9,0
Traditional goods	9,3	9,1	9,0	7,0	9,2	11,7	2,1	15,6	7,9	10,6
Crude oil	-5,5	16,6	-38,7	-42,8	-31,1	179,9	83,3	45,0	62,7	-43,0
Ships and oil platforms	5,4	29,6	16,8	-12,3	49,1	-13,8	76,9	88,2	27,1	-39,3
Services	-0,1	16,4	1,7	-10,1	2,8	5,6	7,9	24,0	17,0	16,4
Gross domestic product 1)	5,3	3,5	5,9	5,4	5,9	4,0	1,1	5,4	2,9	4,4
Mainland-Norway (market prices)	3,7	3,9	4,3	3,4	3,8	3,3	0,2	5,9	4,5	4,8
Petroleum activities and ocean transport	13,1	1,7	14,1	15,2	16,3	7,3	5,0	3,3	-4,4	2,8
Mainland-Norway (basic prices)	3,0	3,8	3,5	2,9	3,3	2,4	0,4	5,7	4,5	4,8
Mainland-Norway excl. general government	3,1	4,2	3,8	3,0	3,4	2,3	-0,1	6,6	4,9	5,4
Manufacturing and mining	2,7	3,3	2,7	0,3	4,5	3,6	-3,2	8,1	3,8	4,7
Production of other goods	-3,3	5,9	5,5	-3,2	-5,7	-8,9	-5,3	10,6	9,4	10,5
Service industries	4,6	4,1	3,7	5,0	5,3	4,5	2,0	5,5	4,3	4,6
General government	2,7	2,5	2,6	2,7	2,7	2,6	2,3	2,5	2,7	2,6
Correction items	8,8	4,0	10,4	7,1	7,7	10,1	-1,2	7,4	5,0	4,7

1) Gross domestic product is measured at market prices, while value added by industry is measured at basic prices
2) Defined as total final consumption expenditure plus gross fixed capital formation in Mainland-Norway
3) Defined as final consumption expenditure plus gross fixed capital formation
4) NPISH: Non-profit institutions serving housholds

NATIONAL ACCOUNTS FOR NORWAY

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

	1996	1997	96:1	96:2	96:3	96:4	97:1	97:2	97:3	97:4
Final consumption exp. of househ. and NPISHs	1,1	2,8	-0,4	1,6	1,6	1,5	4,6	2,8	2,2	1,8
Household final consumption expenditure	1,0	2,8	-0,6	1,5	1,5	1,4	4,6	2,7	2,2	1,8
Goods	0,6	2,7	-0,3	0,0	0,8	1,7	4,4	3,1	2,1	1,6
Services	1,3	3,2	-1,1	3,2	2,1	1,1	5,3	2,6	2,5	2,3
Direct purchases abroad by resident househ.	3,4	-0,1	3,9	5,4	3,8	0,4	-4,1	0,0	0,7	1,0
- Direct purchases by non-residents	1,7	2,9	1,4	2,0	1,7	1,7	2,6	3,1	2,8	3,3
Final consumption exp. of NPISHs 4)	3,8	3,2	3,4	4,1	3,9	3,8	4,1	3,1	3,0	2,5
Final consumption exp. of general government	3,3	3,1	3,1	3,8	2,8	3,4	3,6	2,8	3,4	2,4
Final consumption exp. of central government	2,7	2,9	2,6	3,5	2,0	2,7	3,2	2,6	3,5	2,3
Central government, civilian	2,5	3,1	2,5	3,5	1,8	2,2	3,7	2,8	3,4	2,7
Central government, defence	3,3	2,2	2,8	3,7	2,5	4,1	1,9	1,9	3,9	1,3
Final consumption exp. of local government	3,7	3,2	3,5	4,0	3,4	3,8	3,9	3,0	3,3	2,5
Gross fixed capital formation	3,1	1,7	3,3	3,4	2,1	3,5	0,4	1,5	3,2	1,9
Petroleum activities	3,3	5,5	2,8	3,5	2,4	4,3	3,7	4,7	7,7	5,6
Ocean transport	-4,5	1,8	10,4	9,9	54,1	-9,7	-5,0	1,7	1,4	10,1
Mainland-Norway	3,3	0,5	3,1	3,1	2,9	3,8	-0,3	0,3	1,7	0,2
Mainland-Norway excl. general government	3,3	0,3	3,2	3,0	3,0	3,8	-0,5	0,2	1,5	0,1
Manufacturing and mining	2,0	-0,9	3,2	1,2	2,3	1,7	-1,7	-0,1	-0,4	-1,2
Production of other goods	2,1	-0,4	2,8	1,6	2,4	2,0	-0,9	0,0	0,0	-0,7
Dwelling services	4,8	1,4	4,4	4,7	4,9	5,0	1,4	1,1	1,8	1,3
Other services	3,4	0,3	2,8	3,2	2,8	4,5	-1,1	-0,0	2,0	0,1
General government	3,2	1,0	2,7	3,5	2,6	3,9	0,6	0,5	2,6	0,6
Changes in stocks and stat. discrepancies	5,1	-2,9	7,9	-2,0	8,6	102,1	-13,6	1,4	-3,9	-39,9
Gross capital formation	3,5	1,2	4,2	2,9	2,7	4,1	-1,7	1,4	2,7	2,0
Final domestic use of goods and services	2,2	2,5	1,6	2,4	2,2	2,5	2,7	2,4	2,6	2,1
Final demand from Mainland-Norway 2)	2,0	2,4	1,1	2,4	2,2	2,4	3,5	2,3	2,4	1,6
Final demand from general government 3)	3,3	2,8	3,1	3,8	2,8	3,4	3,2	2,5	3,3	2,1
Total exports	6,2	2,8	1,0	3,9	7,5	12,2	7,1	2,3	4,1	-1,6
Traditional goods	-1,5	0,5	-2,9	-0,9	-2,5	0,5	-1,3	-1,8	3,6	1,6
Crude oil and natural gas	19,8	2,0	6,7	9,9	27,2	35,4	18,2	3,9	0,7	-10,7
Ships and oil platforms	7,2	8,7	3,3	3,9	10,9	11,1	9,2	7,6	11,8	10,2
Services	0,4	7,8	0,7	3,6	-1,2	-1,3	4,4	6,2	10,1	9,9
Total use of goods and services	3,3	2,6	1,4	2,8	3,7	5,2	4,0	2,4	3,1	0,9
Total imports	1,0	1,2	-0,1	1,6	0,9	1,6	-0,4	0,6	4,3	0,1
Traditional goods	0,4	-1,5	0,6	0,3	0,1	0,5	-3,5	-2,1	1,5	-1,7
Crude oil	36,4	-10,0	9,2	25,3	40,2	50,3	9,1	-12,9	-2,7	-14,6
Ships and oil platforms	5,4	6,3	5,7	10,5	3,3	3,9	2,7	6,2	9,7	10,1
Services	1,5	7,1	-3,3	3,5	1,9	3,1	8,0	6,6	9,3	4,2
Gross domestic product 1)	4,1	3,0	1,8	3,2	4,6	6,5	5,5	3,1	2,6	1,1
Mainland-Norway (market prices)	1,5	3,3	0,7	2,1	1,1	2,0	3,7	2,9	3,2	3,2
Petroleum activities and ocean transport	19,6	1,9	9,6	10,1	26,4	32,3	14,6	3,9	-0,0	-8,1
Mainland-Norway (basic prices)	1,5	3,0	0,6	2,1	1,0	2,2	4,3	2,8	2,1	2,7
Mainland-Norway excl. general government	0,8	2,9	-0,3	1,6	0,2	1,6	4,4	2,7	1,9	2,7
Manufacturing and mining	1,1	3,3	1,5	1,2	1,5	0,3	1,3	4,7	0,4	6,5
Production of other goods	5,5	-0,3	2,5	2,3	4,2	12,1	1,7	-2,1	1,4	-2,3
Service industries	-0,3	3,5	-1,6	1,7	-1,1	-0,1	6,2	2,8	2,5	2,5
General government	4,2	3,3	4,2	4,2	4,1	4,2	3,7	3,2	3,2	2,9
Correction items	0,8	5,4	0,7	1,3	1,1	0,1	-0,3	3,8	10,1	6,9

1) Gross domestic product is measured at market prices, while value added by industry is measured at basic prices
2) Defined as total final consumption expenditure plus gross fixed capital formation in Mainland-Norway
3) Defined as final consumption expenditure plus gross fixed capital formation
4) NPISH: Non-profit institutions serving housholds

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Table A5. Gross domestic product and value added by industry.
At current prices. Million kroner

	1996	1997	96:1	96:2	96:3	96:4	97:1	97:2	97:3	97:4
Gross domestic product 1)	1 017 794	1 085 075	246 728	244 008	255 174	271 885	263 212	265 286	269 414	287 164
Agriculture and hunting	12 278	12 123	2 523	175	6 097	3 483	2 739	360	6 024	2 999
Forestry and logging	2 977	1 887	1 191	754	292	741	718	468	199	502
Fishing and fish farming	7 203	7 358	2 335	1 532	1 558	1 778	1 844	1 519	2 046	1 949
Oil and gas extraction incl. services	150 313	156 514	32 708	34 932	38 789	43 885	41 687	37 535	37 137	40 155
Oil and gas extraction	147 301	152 366	32 086	34 241	37 976	42 998	40 741	36 498	36 334	38 794
Service act. incidental to oil and gas ext.	3 012	4 148	621	690	813	887	946	1 037	803	1 361
Mining and quarrying	1 827	1 972	454	476	426	471	402	527	509	535
Manufacturing	117 688	125 584	29 891	28 837	28 781	30 179	29 352	32 658	29 925	33 649
Food products, beverages and tobacco	17 433	18 636	4 128	4 542	4 330	4 433	4 526	5 088	4 421	4 601
Textiles, wearing apparel, leather	2 292	2 170	586	553	530	624	548	625	458	538
Wood and wood products	4 068	5 865	956	953	981	1 178	1 292	1 443	1 447	1 683
Pulp, paper and paper products	5 842	5 101	1 740	1 335	1 366	1 400	1 196	1 219	1 260	1 427
Publishing, printing, reproduction	13 928	14 803	3 562	3 384	3 320	3 663	3 542	3 595	3 649	4 017
Refined petroleum products	1 228	1 803	245	423	257	304	355	388	495	565
Basic chemicals	6 610	6 583	1 617	1 500	1 822	1 671	1 408	1 720	1 784	1 671
Chemical and mineral products	10 607	10 512	2 773	2 656	2 469	2 709	2 509	2 939	2 494	2 570
Basic metals	10 862	10 779	2 999	2 883	2 600	2 381	2 201	2 905	2 661	3 013
Machinery and other equipment n.e.c.	29 189	32 161	7 109	6 940	7 337	7 804	7 746	8 308	7 206	8 901
Building of ships, oil platforms and moduls	11 873	13 053	3 172	2 810	2 922	2 969	3 103	3 349	3 110	3 490
Furniture and other manufacturing n.e.c.	3 755	4 116	1 005	859	847	1 044	925	1 080	939	1 173
Electricity and gas supply	21 683	23 991	7 379	4 611	3 756	5 937	6 618	5 282	4 854	7 237
Construction	36 734	40 097	8 353	8 931	9 228	10 223	9 052	9 711	10 096	11 238
Service industries excluded general government	401 451	430 275	98 385	98 787	99 134	105 145	105 306	107 002	104 893	113 075
Wholesale and retail trade	92 868	96 769	21 924	21 740	22 597	26 609	22 360	23 720	23 100	27 589
Hotels and restaurants	11 776	12 090	2 601	2 782	3 059	3 334	2 602	2 900	3 132	3 455
Transport via pipelines	16 627	17 084	4 014	3 956	4 164	4 493	4 451	4 181	3 956	4 497
Water transport	17 762	17 809	4 860	4 675	4 778	3 449	3 793	5 074	4 563	4 379
Ocean transport	16 035	16 054	4 431	4 204	4 279	3 121	3 388	4 558	4 062	4 046
Inland water and costal transport	1 727	1 755	428	472	499	328	405	517	501	333
Other transport industries	37 723	44 477	9 714	10 421	9 583	8 005	10 462	11 859	11 648	10 508
Post and telecommunications	20 278	20 418	4 902	4 921	4 734	5 721	4 840	5 034	4 773	5 773
Financial intermediation	35 627	39 505	7 440	9 429	8 537	10 221	11 047	9 698	8 782	9 977
Dwelling services	64 141	66 446	15 899	16 023	16 079	16 141	16 351	16 524	16 712	16 859
Business services etc.	53 583	61 125	13 833	12 779	12 139	14 832	15 440	14 999	13 938	16 748
Personal services	51 067	54 552	13 200	12 063	13 464	12 340	13 961	13 013	14 288	13 290
General government	157 908	167 184	38 688	39 083	39 873	40 266	41 052	41 370	42 257	42 505
Central government	46 722	48 812	11 447	11 563	11 798	11 914	11 991	12 072	12 348	12 401
Civilian central government	34 596	36 150	8 476	8 562	8 736	8 822	8 909	8 943	9 093	9 204
Defence	12 126	12 662	2 971	3 001	3 062	3 092	3 082	3 129	3 254	3 196
Local government	111 186	118 372	27 241	27 520	28 075	28 352	29 060	29 298	29 909	30 104
FISIM 2)	-30 018	-30 591	-7 205	-7 403	-7 314	-8 097	-7 395	-7 614	-7 680	-7 903
Value added tax and investment levy	95 385	101 698	22 281	22 607	23 689	26 808	22 951	24 769	25 836	28 143
Other taxes on products, net	41 968	46 776	9 214	10 452	10 516	11 786	9 091	11 744	13 001	12 940
Statistical discrepancy	396	207	531	235	351	-720	-204	-45	316	140
Mainland-Norway (basic prices)	727 088	777 334	180 754	175 025	180 701	190 608	189 244	190 159	192 785	205 147
Market producers	673 524	717 738	163 766	159 551	168 165	182 042	177 550	174 766	174 879	190 543
Non-market producers	236 539	249 248	58 140	58 565	59 767	60 066	61 220	61 667	63 061	63 301
Education	41 940	44 322	10 292	10 356	10 563	10 729	10 800	10 889	11 218	11 414
Health and social work	75 699	81 428	18 563	18 736	19 145	19 254	20 075	20 272	20 515	20 566

1) Gross domestic product is measured at market prices, while value added by industry is measured at basic prices
2) Financial intermediation services indirectly measured

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Table A6. Gross domestic product and value added by industy.
Percentage change in volume from the same period in the previous year

	1996	1997	96:1	96:2	96:3	96:4	97:1	97:2	97:3	97:4
Gross domestic product 1)	5,3	3,5	5,9	5,4	5,9	4,0	1,1	5,4	2,9	4,4
Agriculture and hunting	3,3	4,0	4,7	20,7	1,1	3,5	11,7	52,5	1,8	-7,7
Forestry and logging	-21,9	-3,1	-22,0	-21,9	-21,8	-21,8	-3,1	-3,1	-3,1	-3,1
Fishing and fish farming	4,8	4,4	16,6	7,3	3,0	-6,6	-8,6	20,5	3,5	5,1
Oil and gas extraction incl. services	14,2	1,2	16,5	17,4	17,7	6,4	4,5	2,5	-5,6	3,5
Oil and gas extraction	14,1	1,1	17,0	17,0	17,5	6,1	3,9	2,2	-4,9	3,3
Service act. incidental to oil and gas ext.	19,6	4,3	-5,6	42,8	28,6	20,4	34,5	15,4	-33,5	8,7
Mining and quarrying	1,3	1,9	6,3	-0,8	-2,6	2,5	-5,3	6,2	8,8	-2,1
Manufacturing	2,8	3,3	2,6	0,3	4,6	3,6	-3,2	8,2	3,7	4,8
Food products, beverages and tobacco	1,9	1,4	4,8	0,6	1,3	1,2	0,5	-0,9	1,9	4,1
Textiles, wearing apparel, leather	1,1	-0,0	-10,9	-4,3	9,9	13,4	-3,8	14,8	-4,8	-5,7
Wood and wood products	1,4	7,9	-2,7	1,6	3,6	3,5	-2,2	4,3	15,4	14,3
Pulp, paper and paper products	-6,8	4,7	-5,1	-10,4	-6,7	-4,9	-4,7	9,1	4,6	10,5
Publishing, printing, reproduction	3,6	1,3	4,1	4,8	3,9	1,7	-4,7	0,1	5,0	4,8
Refined petroleum products	10,5	2,4	0,4	1,8	17,7	23,6	8,7	6,6	-1,4	-3,3
Basic chemicals	-0,5	1,0	-1,6	-9,5	5,4	3,9	-5,2	13,4	-3,1	0,5
Chemical and mineral products	3,3	2,9	3,3	3,6	3,2	3,3	-3,2	13,6	2,6	-1,0
Basic metals	3,2	3,2	1,6	3,7	3,3	4,4	0,8	6,5	-0,0	5,3
Machinery and other equipment n.e.c.	4,7	5,7	4,6	0,4	7,6	6,4	-1,9	14,2	5,5	5,4
Building of ships, oil platforms and moduls	2,7	0,2	2,7	-2,1	8,6	2,2	-12,9	6,4	2,3	7,4
Furniture and other manufacturing n.e.c.	5,4	12,3	5,0	4,7	7,2	4,9	-2,3	27,8	16,1	10,7
Electricity and gas supply	-15,0	7,4	7,9	-14,0	-29,7	-27,2	-24,2	6,3	34,7	34,2
Construction	2,4	7,0	4,8	1,6	1,8	1,6	6,9	7,5	7,2	6,4
Service industries excluded general government	5,0	4,0	3,9	5,2	5,8	5,0	2,5	5,6	3,9	4,2
Wholesale and retail trade	6,3	4,4	6,7	5,6	5,0	7,7	-1,5	8,2	5,7	5,0
Hotels and restaurants	4,0	1,9	3,6	3,6	3,8	4,7	0,2	1,8	2,9	2,4
Transport via pipelines	18,1	3,2	16,8	17,7	21,0	17,0	10,7	5,5	-3,0	0,0
Water transport	2,2	4,1	-1,8	0,7	4,1	6,0	4,4	7,6	3,0	1,5
Ocean transport	2,0	3,8	-1,9	0,2	3,9	6,1	4,2	7,5	2,6	1,1
Inland water and costal transport	4,0	7,0	-0,7	5,5	6,6	4,5	6,4	8,0	6,6	6,9
Other transport industries	12,2	9,4	8,1	8,3	21,3	10,2	7,5	12,3	7,7	10,3
Post and telecommunications	4,4	5,0	4,6	6,5	3,0	3,7	2,2	5,0	5,4	7,0
Financial intermediation	-0,8	-2,3	-4,1	7,4	-2,1	-3,9	0,4	-5,5	-3,0	-1,0
Dwelling services	0,9	1,0	0,9	0,9	0,8	0,8	1,1	1,0	1,0	1,0
Business services etc.	6,5	9,0	4,7	6,5	8,7	6,5	6,6	12,1	9,8	8,1
Personal services	2,9	2,5	3,8	2,6	2,6	2,6	1,7	3,0	2,3	2,9
General government	2,7	2,5	2,6	2,7	2,7	2,6	2,3	2,5	2,7	2,6
Central government	1,9	1,4	2,0	1,7	2,1	1,7	1,4	1,4	1,1	1,6
Civilian central government	2,6	1,3	2,6	2,7	2,6	2,6	1,3	1,3	1,0	1,5
Defence	-0,3	1,6	0,3	-1,1	0,6	-0,8	1,5	1,7	1,4	1,8
Local government	3,0	3,0	2,9	3,1	3,0	3,0	2,7	3,0	3,4	3,0
FISIM 2)	-0,1	-1,0	-0,2	-0,1	-0,1	-0,1	-2,6	0,4	-0,0	-1,7
Value added tax and investment levy	5,3	4,3	6,5	4,0	4,5	6,2	1,2	7,4	5,1	3,7
Other taxes on products, net	9,0	0,4	9,7	7,7	8,0	10,4	-6,5	3,8	2,6	1,7
Statistical discrepancy	10,5	-24,9	6,7	6,7	9,2	19,4	-32,9	-37,0	-34,8	1,6
Mainland-Norway (basic prices)	3,0	3,8	3,5	2,9	3,3	2,4	0,4	5,7	4,5	4,8
Market producers	5,9	3,8	6,7	6,4	7,0	3,8	1,1	6,3	2,8	5,1
Non-market producers	2,0	2,1	2,1	1,9	2,0	1,9	1,8	2,2	2,3	2,2
Education	2,5	2,2	2,5	2,5	2,5	2,5	1,1	1,9	2,9	3,0
Health and social work	2,9	4,0	3,1	3,0	2,8	2,8	3,9	4,5	3,9	3,5

1) Gross domestic product is measured at market prices, while value added by industry is measured at basic prices
2) Financial intermediation services indirectly measured

Table A7. Household final consumption expenditure. At current prices. Million kroner

	1996	1997	96:1	96:2	96:3	96:4	97:1	97:2	97:3	97:4
Household final consumption expenditure	460 217	487 299	107 679	107 243	117 064	128 231	113 224	116 078	124 277	133 720
Food, beverages and tobacco	96 704	100 984	21 697	23 865	24 932	26 210	21 965	24 810	26 517	27 691
Clothing and footwear	26 578	27 491	5 462	6 251	6 255	8 610	5 527	6 833	6 346	8 785
Housing, water, electr., gas and other fuels	104 394	107 963	27 219	24 887	24 365	27 923	28 648	26 004	25 020	28 292
Furnishings, household equipment etc.	29 473	31 566	6 624	6 096	7 207	9 547	6 727	7 003	7 728	10 108
Health	11 747	12 533	2 802	2 889	2 949	3 107	2 893	3 096	3 198	3 346
Transport	78 478	84 099	17 902	19 875	21 237	19 464	18 533	22 333	22 879	20 354
Leisure, entertainment and culture	42 852	45 696	10 480	8 861	11 534	11 978	10 709	9 983	12 405	12 599
Education	2 056	2 246	489	440	549	577	525	486	600	635
Hotels, cafes and restaurants	25 692	26 983	5 341	5 901	7 381	7 070	5 635	6 136	7 692	7 519
Miscellaneous goods and services	37 812	41 569	9 828	7 763	8 265	11 957	11 927	8 504	8 890	12 248
Direct purchases abroad by resident househ.	19 652	22 070	3 031	4 189	7 936	4 496	3 314	4 814	8 776	5 166
- Direct purchases by non-residents	-15 223	-15 900	-3 196	-3 773	-5 547	-2 707	-3 177	-3 925	-5 774	-3 024
Goods	262 365	276 473	60 376	61 328	64 590	76 071	61 901	66 978	68 521	79 073
Services	193 423	204 657	47 468	45 500	50 085	50 371	51 187	48 211	52 754	52 505
Services, dwellings	82 897	85 865	20 455	20 721	20 780	20 941	21 098	21 380	21 599	21 788
Other services	110 526	118 792	27 013	24 778	29 305	29 430	30 089	26 831	31 155	30 717

Table A8. Household final consumption expenditure.
Percentage change in volume from the same period in the previous year

	1996	1997	96:1	96:2	96:3	96:4	97:1	97:2	97:3	97:4
Household final consumption expenditure	4,9	3,0	5,6	3,5	4,7	5,6	0,5	5,4	3,9	2,5
Food, beverages and tobacco	1,7	0,3	3,4	0,5	0,4	2,6	-2,7	-0,8	2,8	1,6
Clothing and footwear	6,3	3,8	5,3	4,1	6,6	8,5	-0,9	8,9	3,4	3,5
Housing, water, electr., gas and other fuels	1,5	0,5	3,6	1,0	1,0	0,4	-1,0	1,4	0,7	0,9
Furnishings, household equipment etc.	3,7	6,4	6,4	1,1	2,2	4,7	0,8	13,8	6,6	5,6
Health	3,0	4,5	1,7	2,5	3,5	4,4	1,4	5,3	5,7	5,6
Transport	14,0	3,4	13,4	11,7	13,1	17,8	0,2	9,3	3,8	-0,2
Leisure, entertainment and culture	6,0	4,8	6,9	6,1	3,5	7,8	0,6	10,7	5,4	3,6
Education	0,0	5,7	-0,4	1,1	-1,1	0,6	3,3	6,6	5,5	7,3
Hotels, cafes and restaurants	3,9	2,5	3,9	3,4	3,9	4,2	3,3	0,6	2,1	3,8
Miscellaneous goods and services	3,1	5,3	3,1	3,3	2,6	3,4	5,6	7,0	6,2	3,0
Direct purchases abroad by resident househ.	5,6	12,4	8,5	-6,9	13,0	4,7	13,9	14,9	9,8	13,8
- Direct purchases by non-residents	-0,0	1,5	8,0	-3,2	-0,4	-3,6	-3,1	0,9	1,3	8,2
Goods	6,0	2,6	7,5	4,5	4,8	7,3	-1,8	6,0	3,9	2,4
Services	2,8	2,6	3,2	2,6	2,8	2,8	2,4	3,3	2,7	1,9
Services, dwellings	0,9	1,0	1,2	0,8	0,7	1,0	0,9	1,0	1,0	0,9
Other services	4,3	3,8	4,7	4,1	4,3	4,2	3,5	5,2	3,9	2,6

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Table A9. Gross fixed capital formation by type of capital goods and by industry.
At current prices. Million kroner

	1996	1997	96:1	96:2	96:3	96:4	97:1	97:2	97:3	97:4
Gross fixed capital formation	208 375	244 014	45 735	49 725	52 422	60 493	53 910	61 814	60 655	67 634
Buildings and structures	82 932	92 234	19 080	19 633	20 604	23 615	20 709	22 762	23 319	25 444
Oil exploration, drilling, pipelines	20 413	27 702	4 119	4 921	5 852	5 521	5 391	7 096	7 607	7 608
Oil platforms etc.	24 176	33 695	4 983	6 446	6 256	6 491	7 063	9 920	7 521	9 191
Ships and boats	7 433	12 442	1 680	1 181	1 861	2 711	4 795	2 697	3 151	1 799
Other transport equipment	25 355	25 369	5 876	6 416	5 678	7 385	5 508	6 612	5 902	7 348
Machinery and equipment	48 066	52 571	9 997	11 128	12 170	14 770	10 443	12 727	13 156	16 244
Agriculture and hunting	5 293	5 369	914	1 612	1 493	1 274	929	1 628	1 517	1 295
Forestry and logging	550	556	137	137	137	139	138	139	139	141
Fishing and fish farming	551	612	148	113	159	131	258	186	162	6
Oil and gas extraction, incl. services	40 680	54 698	8 676	10 626	10 396	10 983	11 556	15 156	12 855	15 131
Oil and gas extraction	41 499	54 688	8 974	10 777	10 409	11 340	11 546	15 156	12 855	15 131
Service act. incidental to oil and gas ext.	-819	10	-298	-151	-13	-357	10	-	-	-
Mining and quarrying	375	333	76	66	127	105	38	75	85	135
Manufacturing	17 821	17 966	3 358	4 206	4 569	5 688	3 387	4 793	4 247	5 538
Food products, beverages and tobacco	3 230	3 356	592	700	674	1 264	615	822	780	1 139
Textiles, wearing apparel, leather	209	230	41	46	71	51	61	65	60	44
Wood and wood products	1 373	981	187	317	524	344	267	229	239	247
Pulp, paper and paper products	1 448	1 525	339	284	243	582	212	383	364	567
Publishing, printing, reproduction	966	1 150	204	228	227	307	196	389	247	318
Refined petroleum products	324	193	73	43	140	67	23	54	79	37
Basic chemicals	1 708	1 001	472	464	446	326	334	243	180	245
Chemical and mineral products	2 034	2 253	345	438	590	661	343	539	649	722
Basic metals	2 922	3 435	432	735	763	992	755	1 137	713	830
Machinery and other equipment n.e.c.	2 346	2 453	472	530	633	711	402	526	644	882
Building of ships, oil platforms and moduls	777	959	134	261	134	248	127	275	163	394
Furniture and other manufacturing n.e.c.	486	430	67	161	123	134	55	132	130	114
Electricity and gas supply	4 698	4 915	797	1 083	1 127	1 691	600	1 146	1 244	1 925
Construction	1 004	1 150	258	266	224	256	286	297	270	297
Service industries excl.general government	105 636	122 436	24 543	24 727	26 169	30 196	28 654	28 979	31 103	33 700
Wholesale and retail trade	21 337	22 785	5 057	5 036	5 095	6 149	5 017	5 489	5 552	6 727
Hotels and restaurants	2 009	2 522	522	494	497	496	483	494	737	808
Transport via pipelines	5 993	7 903	1 224	1 586	1 878	1 304	1 098	2 128	2 588	2 088
Water transtort	7 009	11 899	1 563	1 095	1 747	2 603	4 609	2 509	3 011	1 769
Ocean transport	6 286	10 903	1 366	972	1 578	2 369	4 258	2 284	2 751	1 610
Inland water and costal transport	722	995	197	123	169	233	351	226	260	159
Other transport industries	15 571	17 466	3 927	4 171	3 301	4 172	4 217	4 410	3 991	4 848
Post and telecommunications	7 733	9 075	1 104	1 483	2 149	2 997	1 301	1 723	2 498	3 553
Financial intermediation	4 876	5 738	1 043	1 095	1 261	1 477	1 181	1 290	1 484	1 783
Dwelling services	26 089	28 817	6 341	6 189	6 586	6 973	6 801	7 016	7 288	7 712
Business services etc.	8 115	8 853	2 010	1 984	1 920	2 201	2 129	2 202	2 108	2 414
Personal services	6 903	7 378	1 751	1 593	1 734	1 824	1 818	1 718	1 846	1 996
General government	31 767	35 978	6 829	6 889	8 020	10 029	8 064	9 414	9 033	9 467
Central government	14 110	14 210	3 205	2 989	3 462	4 454	2 395	3 453	3 861	4 501
Civilian central government	10 810	10 342	2 502	2 354	2 751	3 203	1 945	2 631	2 632	3 134
Defence	3 300	3 868	703	635	711	1 251	450	822	1 229	1 367
Local government	17 657	21 768	3 624	3 900	4 558	5 575	5 669	5 961	5 172	4 966
Mainland-Norway	155 416	170 509	34 469	36 541	38 570	45 837	36 998	42 246	42 460	48 805
Education	5 474	8 309	1 289	1 265	1 358	1 563	2 641	2 668	1 554	1 447
Health and social work	8 191	9 121	1 780	1 798	2 053	2 559	2 063	2 097	2 392	2 568

Table A10. Gross fixed capital formation by type of capital goods and by industry.
Percentage change in volume from the same period in the previous year

	1996	1997	96:1	96:2	96:3	96:4	97:1	97:2	97:3	97:4
Gross fixed capital formation	4,8	15,1	1,7	1,7	9,9	5,6	17,4	22,5	12,1	9,8
Buildings and structures	1,6	9,2	4,1	0,3	1,4	0,8	6,7	14,2	10,6	5,7
Oil exploration, drilling, pipelines	10,7	25,1	13,8	6,3	6,7	17,1	24,4	34,4	17,3	25,7
Oil platforms etc.	-10,1	34,7	-17,2	-4,3	3,6	-20,2	37,7	49,0	14,4	37,8
Ships and boats	51,8	64,1	-26,7	-40,7	.	91,1	197,2	123,6	66,6	-39,4
Other transport equipment	22,4	-0,9	15,4	22,4	19,1	32,7	-3,7	4,0	-3,6	-0,4
Machinery and equipment	4,1	11,4	4,1	4,3	2,7	5,1	7,5	15,4	10,3	12,0
Agriculture and hunting	2,6	1,7	1,7	3,7	2,2	2,4	2,9	0,9	1,3	2,2
Forestry and logging	-0,4	-0,0	-0,6	-0,4	-0,1	-0,4	-0,1	-0,0	-0,0	-0,0
Fishing and fish farming	2,3	16,7	-19,7	-35,3	58,5	63,8	82,0	68,4	4,9	-87,2
Oil and gas extraction, incl. services	-5,8	27,3	-12,9	-2,1	3,4	-11,1	28,4	35,9	14,4	30,3
Oil and gas extraction	-4,6	24,5	-9,6	-0,5	1,2	-9,0	23,7	33,8	14,2	25,8
Service act. incidental to oil and gas ext.	143,9	.	.	.	-93,9	160,6	.	.	.	.
Mining and quarrying	-21,6	-10,0	-26,8	-39,6	15,0	-31,9	-48,5	15,2	-31,8	29,8
Manufacturing	9,3	1,7	19,7	7,2	4,4	9,4	2,6	14,1	-6,7	-1,4
Food products, beverages and tobacco	-4,6	4,4	5,5	-20,7	-8,7	5,1	5,0	18,0	15,3	-9,4
Textiles, wearing apparel, leather	5,5	11,6	-34,1	-16,6	76,0	24,5	51,4	44,9	-15,4	-12,3
Wood and wood products	45,6	-27,8	28,6	49,2	135,8	-5,6	48,1	-27,0	-55,0	-27,4
Pulp, paper and paper products	-22,4	5,3	69,6	-34,2	-62,5	0,3	-34,7	32,7	48,4	-3,4
Publishing, printing, reproduction	8,4	19,7	3,6	53,8	38,8	-20,2	-2,1	69,3	7,3	6,0
Refined petroleum products	-28,1	-38,6	-5,7	-74,2	37,8	-34,8	-67,4	32,4	-42,6	-43,6
Basic chemicals	-22,7	-40,4	35,9	-32,8	-34,4	-33,6	-30,0	-46,4	-57,9	-22,5
Chemical and mineral products	30,2	12,1	22,1	29,2	15,1	54,9	2,1	23,3	10,6	11,1
Basic metals	106,7	18,6	29,5	155,1	115,8	126,9	76,2	54,3	-5,2	-15,0
Machinery and other equipment n.e.c.	1,3	4,9	17,9	13,7	-6,8	-7,9	-13,4	-1,5	1,1	25,6
Building of ships, oil platforms and moduls	14,6	26,0	-4,8	83,1	0,5	-5,7	-2,6	9,1	25,3	59,9
Furniture and other manufacturing n.e.c.	24,0	-10,3	21,1	47,4	28,5	2,1	-18,1	-17,4	5,5	-12,8
Electricity and gas supply	-7,0	4,9	-2,2	-13,9	-10,7	-1,4	-24,5	6,0	11,0	14,3
Construction	2,8	14,3	1,5	7,5	1,8	0,6	11,9	12,0	18,4	15,5
Service industries excl.general government	9,8	14,9	5,4	3,5	17,6	12,8	17,6	16,6	16,3	10,2
Wholesale and retail trade	12,4	6,5	12,4	12,1	10,9	14,1	-0,2	9,0	7,2	9,5
Hotels and restaurants	7,4	23,7	15,7	1,6	6,7	6,2	-7,1	-0,3	44,2	60,1
Transport via pipelines	-2,9	26,3	59,9	0,7	-20,1	-12,4	-13,0	30,4	30,7	53,0
Water transtort	57,4	66,2	-26,6	-40,1	.	87,0	207,2	124,4	69,3	-38,3
Ocean transport	68,9	70,4	-28,7	-41,2	.	99,5	228,0	130,9	71,9	-38,3
Inland water and costal transport	-0,3	30,5	-9,9	-30,3	35,5	14,2	73,8	74,1	45,6	-38,9
Other transport industries	33,9	11,6	21,3	40,0	26,1	50,6	10,0	5,9	14,7	16,4
Post and telecommunications	-0,5	19,5	7,8	-2,2	10,5	-9,0	21,2	17,6	18,6	20,6
Financial intermediation	10,8	15,9	9,1	6,1	10,8	16,1	12,2	16,3	15,3	18,8
Dwelling services	-6,0	8,9	-8,0	-8,2	-3,6	-4,1	5,8	12,1	8,7	9,2
Business services etc.	21,3	8,4	17,5	19,4	21,1	27,3	6,2	10,9	7,5	9,1
Personal services	5,5	6,3	6,5	4,1	4,9	6,3	4,1	7,1	5,4	8,6
General government	4,8	12,1	4,9	2,0	4,3	7,1	17,3	36,0	9,7	-6,2
Central government	1,4	-0,5	1,2	-6,3	0,2	8,3	-25,5	14,7	7,3	1,7
Civilian central government	2,0	-6,0	5,0	2,0	2,8	-0,8	-23,0	9,5	-6,1	-3,9
Defence	-0,8	17,0	-9,7	-28,9	-7,6	41,0	-33,9	34,7	52,9	15,6
Local government	7,7	22,2	8,4	9,2	7,7	6,2	55,4	52,1	11,6	-12,4
Mainland-Norway	6,6	9,2	6,6	5,0	6,3	8,3	7,6	15,3	8,2	6,3
Education	1,1	53,0	10,4	2,9	4,2	-9,1	105,0	111,9	15,1	-6,4
Health and social work	18,9	10,0	17,4	18,1	19,4	20,2	15,2	15,1	14,5	-1,0

Table A11. Exports of goods and services. At current prices. Million kroner

	1996	1997	96:1	96:2	96:3	96:4	97:1	97:2	97:3	97:4
Total exports	412 678	441 775	99 009	98 612	102 868	112 190	108 111	109 109	112 284	112 270
Goods	321 687	338 527	77 587	76 267	78 124	89 710	84 733	83 396	83 333	87 065
Crude oil and natural gas	156 688	163 044	34 593	36 717	40 000	45 378	43 150	39 422	39 313	41 159
Ships, new	4 257	3 821	641	1 249	596	1 771	1 513	1 095	1 020	193
Ships, second-hand	3 765	2 959	1 584	718	655	808	912	775	652	620
Oil platforms and modules, new	59	231	11	12	25	11	22	5	195	9
Oil platforms, second-hand	943	114	344	172	34	393	9	13	17	75
Direct exports related to petroleum act.	127	137	24	24	31	48	36	34	31	36
Other goods	155 848	168 221	40 390	37 375	36 783	41 301	39 091	42 052	42 105	44 973
Agriculture, forestry and fishing	7 035	7 711	1 683	1 798	1 654	1 900	1 863	1 888	1 779	2 182
Mining and quarrying	2 342	2 284	662	600	549	531	479	617	595	593
Manufacturing products	145 483	157 613	37 474	34 762	34 483	38 765	36 701	39 457	39 479	41 976
Food products, beverages and tobacco	19 528	21 460	5 277	4 066	4 607	5 578	4 989	4 771	5 009	6 691
Textiles, wearing apparel, leather	2 207	2 351	546	515	540	606	550	594	575	632
Wood products	2 864	2 923	678	710	710	766	717	795	699	712
Pulp, paper and paper products	11 593	10 822	3 262	2 807	2 792	2 732	2 556	2 683	2 748	2 835
Printing and publishing	559	493	147	126	131	155	118	121	119	135
Refined petroleum products	17 147	19 378	3 927	4 036	4 128	5 056	5 088	4 554	5 170	4 566
Basic chemicals	12 107	12 963	3 204	2 775	3 084	3 044	2 939	3 450	3 336	3 238
Chemical and mineral products	9 597	10 627	2 364	2 301	2 516	2 416	2 392	2 709	2 789	2 737
Basic metals	30 756	33 814	8 159	7 723	7 048	7 826	7 591	8 627	8 807	8 789
Machinery and other equipment n.e.c.	35 969	39 265	9 113	8 981	8 170	9 706	8 945	10 294	9 398	10 628
Furniture and other manufacturing products	3 156	3 518	797	722	757	880	816	869	829	1 014
Electricity	988	612	571	215	97	105	48	90	252	222
Services	90 991	103 248	21 422	22 345	24 744	22 480	23 378	25 713	28 951	25 206
Gross receipts, shipping	46 801	52 757	11 475	11 743	11 777	11 806	12 056	13 674	13 642	13 385
Petroleum activities, various services	714	751	177	177	180	180	186	188	185	192
Oil drilling etc.	1 131	1 502	264	263	374	230	294	323	407	478
Pipeline transport	3 424	3 896	736	685	855	1 148	1 076	890	815	1 115
Travel	15 223	15 900	3 196	3 773	5 547	2 707	3 177	3 925	5 774	3 024
Other services	23 698	28 441	5 574	5 704	6 011	6 409	6 589	6 713	8 128	7 012
Transport, post and telecommunication	8 631	8 861	1 861	2 215	2 296	2 259	1 879	2 044	2 948	1 990
Financial and business services	11 948	15 556	2 799	2 792	2 978	3 379	3 733	3 590	4 224	4 009
Services n.e.c.	3 119	4 024	914	697	737	771	977	1 079	956	1 012

Table A12. Exports of goods and services.
Percentage change in volume from the same period in the previous year

	1996	1997	96:1	96:2	96:3	96:4	97:1	97:2	97:3	97:4
Total exports	10,0	4,1	10,7	10,1	8,9	10,3	1,9	8,2	4,8	1,7
Goods	11,5	3,7	12,8	13,1	9,4	10,9	1,2	8,1	4,3	1,6
Crude oil and natural gas	15,5	2,0	15,8	19,3	19,3	8,6	5,5	3,3	-2,4	1,5
Ships, new	-1,4	-12,7	14,5	-46,7	-39,8	365,0	126,5	-16,0	64,5	-89,5
Ships, second-hand	-39,9	-31,6	12,7	-7,0	-74,0	-50,4	-46,8	-3,8	-18,9	-35,6
Oil platforms and modules, new	-9,7	274,5	-10,6	.	-47,9	164,2	91,9	-60,1	649,9	-21,5
Oil platforms, second-hand	91,7	-87,9	.	364,9	-86,6	125,9	-97,4	-92,4	-50,0	-80,9
Direct exports related to petroleum act.	26,8	-1,0	1,9	-3,9	20,2	86,0	42,9	31,1	-11,6	-32,5
Other goods	10,3	7,4	9,1	11,4	8,6	11,9	-1,9	14,6	10,5	7,2
Agriculture, forestry and fishing	14,1	7,2	11,1	26,5	25,0	-0,7	11,6	9,6	-5,9	14,1
Mining and quarrying	2,4	-1,8	24,0	6,8	-0,8	-15,7	-19,8	7,1	4,7	3,0
Manufacturing products	10,7	7,7	8,7	11,1	8,6	14,3	-1,6	15,2	11,6	6,5
Food products, beverages and tobacco	11,8	6,7	16,3	17,0	6,5	8,6	-4,0	12,9	1,7	16,7
Textiles, wearing apparel, leather	1,9	10,6	-9,2	1,1	5,5	12,0	1,4	15,2	12,3	13,8
Wood products	1,0	-3,2	-10,9	5,7	7,4	3,5	3,5	3,4	-8,5	-10,5
Pulp, paper and paper products	3,6	6,4	-2,7	3,8	7,8	6,5	-1,9	10,6	5,9	11,6
Printing and publishing	56,6	-18,2	95,3	71,0	28,7	37,6	-24,0	-25,4	-14,5	-5,7
Refined petroleum products	10,0	5,3	-0,8	-1,6	9,4	42,5	0,8	11,5	12,5	-3,0
Basic chemicals	6,5	4,9	6,4	2,5	2,9	14,6	-9,0	24,5	1,9	5,6
Chemical and mineral products	8,6	14,7	8,6	-2,8	17,3	12,2	9,1	25,3	10,8	14,4
Basic metals	13,2	9,7	2,6	12,7	12,2	26,9	4,5	15,6	16,7	3,2
Machinery and other equipment n.e.c.	13,4	8,1	20,8	23,6	7,4	3,9	-6,6	15,3	21,0	5,3
Furniture and other manufacturing products	11,0	8,2	15,6	14,8	1,8	12,6	6,2	16,8	4,2	6,3
Electricity	-49,9	-24,5	32,8	-52,8	-76,8	-84,6	-88,6	-50,1	93,1	272,9
Services	5,3	5,3	4,1	1,1	7,6	8,4	4,6	8,3	6,2	2,1
Gross receipts, shipping	2,0	3,8	-1,9	0,2	3,9	6,1	4,2	7,5	2,6	1,1
Petroleum activities, various services	10,6	0,9	12,1	8,9	12,7	8,8	0,8	1,8	-1,2	2,4
Oil drilling etc.	-8,9	13,8	-26,8	-11,3	11,1	-6,7	2,2	6,9	-11,3	75,9
Pipeline transport	47,4	14,1	17,4	25,6	55,2	96,5	42,3	24,8	3,1	-3,8
Travel	-0,0	1,5	8,0	-3,2	-0,4	-3,6	-3,1	0,9	1,3	8,2
Other services	13,0	9,4	17,6	4,4	18,5	11,4	5,2	13,4	18,6	-0,0
Transport, post and telecommunication	23,9	-9,2	5,3	12,6	52,2	21,4	-0,6	-8,8	0,7	-27,1
Financial and business services	10,8	20,9	29,0	0,9	0,3	16,2	9,3	21,8	36,4	16,9
Services n.e.c.	-7,1	27,1	12,5	-5,1	-7,4	-24,0	3,8	51,6	28,9	30,6

Table A13. Imports of goods and services. At current prices. Million kroner

	1996	1997	96:1	96:2	96:3	96:4	97:1	97:2	97:3	97:4
Total imports	319 986	362 254	75 636	75 250	81 345	87 755	81 018	90 825	94 629	95 782
Goods	238 348	260 503	57 986	56 120	57 920	66 322	60 460	65 556	64 699	69 788
Ships	6 325	10 555	1 799	652	1 494	2 380	4 841	2 150	2 734	830
Oil platforms and modules	282	211	33	32	192	25	36	45	76	54
Direct imports related to petroleum activities	7 683	8 928	1 944	1 656	2 028	2 055	1 980	2 482	2 369	2 097
Other goods	224 058	240 809	54 210	53 780	54 206	61 862	53 603	60 879	59 520	66 807
Agriculture, forestry and fishing	8 088	8 328	2 299	1 907	1 730	2 152	1 936	2 323	1 828	2 241
Crude oil	1 445	1 517	218	255	261	711	436	322	413	346
Mining and quarrying	2 906	3 407	835	663	667	741	728	881	932	866
Manufacturing products	208 274	226 237	50 612	50 229	50 365	57 068	49 716	57 105	56 284	63 132
Food products, beverages and tobacco	9 493	10 676	2 162	2 339	2 505	2 487	2 228	2 597	2 968	2 883
Textiles, wearing apparel, leather	15 344	16 744	4 059	2 971	4 519	3 795	4 159	3 470	5 130	3 985
Wood products	4 104	4 870	947	1 031	998	1 128	1 007	1 286	1 225	1 352
Pulp, paper and paper products	6 370	6 487	1 693	1 545	1 486	1 646	1 532	1 614	1 588	1 753
Printing and publishing	3 386	3 705	836	712	852	986	822	842	963	1 078
Refined petroleum products	9 362	10 862	2 084	2 232	2 483	2 563	2 467	2 760	2 720	2 915
Basic chemicals	9 070	9 620	2 306	2 363	2 264	2 137	2 166	2 556	2 426	2 472
Chemical and mineral products	21 757	23 534	5 277	5 511	5 285	5 684	5 171	6 167	5 875	6 321
Basic metals	22 701	23 937	5 685	5 735	5 260	6 021	5 439	5 641	5 656	7 201
Machinery and other equipment n.e.c.	83 343	91 803	20 618	20 225	19 308	23 192	19 602	23 574	22 113	26 514
Furniture and other manufacturing products	7 049	8 169	1 683	1 556	1 658	2 152	1 770	1 979	1 964	2 456
Non-competitive imports	16 295	15 830	3 262	4 009	3 747	5 277	3 353	4 619	3 656	4 202
Electricity	3 345	1 320	246	726	1 183	1 190	787	248	63	222
Services	81 638	101 751	17 650	19 130	23 425	21 433	20 558	25 269	29 930	25 994
Operating costs shipping, excl. bunkers	20 052	24 819	4 601	4 863	4 920	5 668	5 571	6 182	6 799	6 267
Operating costs oil drilling, excl. bunkers	1 227	1 627	359	288	306	274	215	394	512	506
Petroleum activities, various services	4 140	5 882	795	1 092	1 095	1 158	800	2 236	1 610	1 236
Travel	29 128	31 880	5 407	6 581	10 254	6 886	5 620	7 399	11 184	7 677
Other services	27 091	37 543	6 488	6 306	6 850	7 447	8 352	9 058	9 825	10 309
Transport, post and telecommunication	2 976	3 342	677	708	907	684	864	798	841	839
Financial and business services	13 350	19 148	3 073	3 128	3 245	3 904	4 427	4 685	4 822	5 215
Services n.e.c.	10 765	15 053	2 738	2 470	2 698	2 859	3 061	3 575	4 162	4 255

Table A14. Imports of goods and services.
Percentage change in volume from the same period in the previous year

	1996	1997	96:1	96:2	96:3	96:4	97:1	97:2	97:3	97:4
Total imports	6,5	11,9	7,3	1,2	8,5	8,9	7,5	20,0	11,5	9,0
Goods	8,9	10,4	9,2	5,6	10,9	10,0	7,4	18,7	9,4	6,8
Ships	-5,6	53,2	-20,4	-58,6	78,2	18,1	155,8	196,7	62,0	-69,5
Oil platforms and modules	-21,4	-34,3	-32,3	-26,8	198,8	-83,7	-10,1	16,1	-67,4	78,0
Direct imports related to petroleum activities	20,9	11,6	132,6	71,5	23,5	-30,8	-2,3	43,6	12,3	-2,0
Other goods	9,2	9,1	8,6	6,6	9,0	12,3	2,4	15,7	8,1	10,1
Agriculture, forestry and fishing	3,8	-3,0	3,3	-8,9	8,8	13,7	-14,6	14,6	-8,4	-2,3
Crude oil	-5,5	16,6	-38,7	-42,8	-31,1	179,9	83,3	45,0	62,7	-43,0
Mining and quarrying	1,0	9,0	27,3	-16,1	-2,1	-0,8	-16,1	28,2	18,4	11,5
Manufacturing products	8,5	10,1	8,8	7,0	7,6	10,3	1,7	16,4	10,2	12,2
Food products, beverages and tobacco	4,5	9,3	11,2	-0,0	0,7	7,8	6,5	12,6	9,8	8,2
Textiles, wearing apparel, leather	-1,3	5,7	-10,0	-0,1	-0,8	8,4	2,1	14,3	6,9	1,0
Wood products	8,2	18,3	0,0	5,9	15,2	12,0	6,6	28,5	19,4	18,2
Pulp, paper and paper products	1,5	9,4	-1,1	0,5	1,2	5,5	2,2	14,0	12,1	9,8
Printing and publishing	12,6	16,9	14,3	4,6	19,4	11,8	5,8	26,1	17,3	19,1
Refined petroleum products	-8,2	14,6	-4,4	-10,8	-8,9	-8,5	7,0	27,4	5,0	19,9
Basic chemicals	2,5	6,6	9,0	0,5	3,2	-2,3	-9,1	9,2	8,4	18,9
Chemical and mineral products	9,6	7,2	10,6	6,8	8,8	12,3	-2,5	12,0	11,2	8,2
Basic metals	13,9	3,4	17,4	9,2	12,6	16,6	1,4	1,6	-4,8	14,2
Machinery and other equipment n.e.c.	7,7	15,3	11,2	9,7	6,6	4,0	1,5	21,3	18,3	19,3
Furniture and other manufacturing products	3,4	15,6	4,4	4,8	3,6	1,5	6,5	25,8	16,0	14,9
Non-competitive imports	48,0	-6,0	28,8	23,8	47,0	96,0	6,3	10,7	-14,0	-20,2
Electricity	.	-45,1	155,9	391,0	.	.	489,7	-66,0	-95,1	-69,2
Services	-0,1	16,4	1,7	-10,1	2,8	5,6	7,9	24,0	17,0	16,4
Operating costs shipping, excl. bunkers	2,0	3,8	-1,9	0,2	3,9	6,1	4,2	7,5	2,6	1,1
Operating costs oil drilling, excl. bunkers	-11,2	27,5	38,7	-15,9	-30,8	-19,8	-43,3	32,3	61,8	79,8
Petroleum activities, various services	-6,3	36,6	15,0	-31,7	-20,0	55,2	-3,4	96,2	41,4	2,5
Travel	4,7	9,7	7,4	-3,3	9,6	3,8	8,3	12,4	8,3	10,4
Other services	-4,9	29,9	-2,4	-18,3	-0,7	3,0	14,4	37,1	35,1	33,4
Transport, post and telecommunication	-11,9	7,6	-15,3	-25,5	0,8	-7,6	23,3	10,1	-11,8	16,1
Financial and business services	-12,7	33,6	-14,3	-25,6	-9,4	0,3	18,3	42,7	42,9	31,7
Services n.e.c.	9,4	32,2	22,4	-4,3	11,3	10,0	7,5	38,2	43,5	40,3

Table A15. Balance of payments. Summary. At current prices. Million kroner

	1996	1997	96:1	96:2	96:3	96:4	97:1	97:2	97:3	97:4
Total exports	412 678	441 775	99 009	98 612	102 868	112 190	108 111	109 109	112 284	112 270
Goods	321 687	338 527	77 587	76 267	78 124	89 710	84 733	83 396	83 333	87 065
Services	90 991	103 248	21 422	22 345	24 744	22 480	23 378	25 713	28 951	25 206
Total imports	319 986	362 254	75 636	75 250	81 345	87 755	81 018	90 825	94 629	95 782
Goods	238 348	260 503	57 986	56 120	57 920	66 322	60 460	65 556	64 699	69 788
Services	81 638	101 751	17 650	19 130	23 425	21 433	20 558	25 269	29 930	25 994
Balance of goods and services	92 692	79 521	23 373	23 362	21 523	24 435	27 093	18 284	17 655	16 489
Primary income and transfers from abroad	39 792	43 938	10 737	9 664	9 384	10 007	10 444	12 022	10 782	10 690
Compensation of employees	1 200	1 200	300	300	300	300	300	300	300	300
Interest	23 203	27 981	6 166	5 472	5 454	6 111	6 278	7 979	6 804	6 920
Dividends etc.	2 052	2 903	1 064	405	280	303	240	1 126	1 060	477
Reinvested earnings	3 716	2 530	352	1 105	1 170	1 089	1 136	215	279	900
Current transfers	9 621	9 324	2 855	2 382	2 180	2 204	2 490	2 402	2 339	2 093
Primary income and transfers to abroad	59 965	64 929	14 707	15 304	12 560	17 394	16 083	17 360	14 514	16 972
Compensation of employees	3 604	3 643	895	887	903	919	883	904	926	930
Interest	22 978	28 090	6 066	6 046	3 872	6 994	7 445	7 948	5 655	7 042
Dividends etc.	9 513	9 488	2 268	3 982	2 777	486	2 984	4 820	954	730
Reinvested earnings	4 656	4 254	1 283	-109	689	2 793	342	-891	2 300	2 503
Current transfers from general government	8 388	8 670	1 476	1 812	1 845	3 255	1 614	1 866	1 935	3 255
Other current transfers	10 826	10 784	2 719	2 686	2 474	2 947	2 815	2 713	2 744	2 512
Primary income and transfers from abroad, net	-20 173	-20 991	-3 970	-5 640	-3 176	-7 387	-5 639	-5 338	-3 732	-6 282
Current external balance	72 519	58 530	19 403	17 722	18 347	17 048	21 454	12 946	13 923	10 207
Capital transfers, net	-1 017	-1 331	-17	-20	-61	-919	-83	-272	-56	-920
Net lending	71 502	57 199	19 386	17 702	18 286	16 129	21 371	12 674	13 867	9 287
Revaluations, net	-7 101	-14 788	-3 067	-2 092	1 650	-3 592	-7 480	-4 133	-4 217	1 042
Increase in Norway's net assets	64 401	42 411	16 319	15 610	19 936	12 537	13 891	8 541	9 650	10 329

Table A16. Employed persons, employees by industry and total. 1000

	1996	1997	96:1	96:2	96:3	96:4	97:1	97:2	97:3	97:4
Total employees	1 973,5	2 037,7	1 933,9	1 968,0	1 995,4	1 996,2	2 009,3	2 035,5	2 054,5	2 050,8
Agriculture and hunting	17,1	16,4	17,0	17,3	17,3	16,9	16,5	16,3	16,5	16,1
Forestry and logging	3,5	3,6	3,4	3,6	3,6	3,6	3,6	3,6	3,5	3,8
Fishing and fish farming	8,2	8,5	7,7	8,0	8,3	8,6	8,5	8,7	8,5	8,5
Oil and gas extraction incl. services	21,7	22,2	21,2	21,7	22,0	22,0	22,1	22,2	22,4	22,2
Oil and gas extraction	17,6	17,5	17,8	17,6	17,7	17,6	17,5	17,4	17,6	17,4
Service act. incidental to oil and gas ext.	4,1	4,7	3,5	4,2	4,3	4,4	4,6	4,8	4,8	4,8
Mining and quarrying	4,4	4,3	4,5	4,6	4,5	4,2	4,2	4,3	4,3	4,2
Manufacturing	298,6	307,3	291,6	297,5	302,8	302,6	303,8	307,4	310,7	307,2
Food products, beverages and tobacco	54,5	56,1	52,8	53,8	55,5	56,1	55,8	55,6	56,7	56,2
Textiles, wearing apparel, leather	8,4	7,9	8,3	8,7	8,6	8,2	7,9	7,9	7,9	7,9
Wood and wood products	15,5	16,3	15,0	15,4	15,9	15,7	16,1	16,5	16,4	16,3
Pulp, paper and paper products	10,9	11,1	11,2	10,9	11,1	10,3	11,1	10,7	11,4	11,3
Publishing, printing, reproduction	39,7	41,4	40,0	39,6	39,7	39,6	41,2	41,4	41,8	41,4
Refined petroleum products	1,9	2,1	1,7	2,0	2,1	1,9	1,9	2,2	2,2	2,1
Basic chemicals	9,5	9,4	9,4	9,6	9,7	9,4	9,3	9,4	9,6	9,4
Chemical and mineral products	21,6	22,1	20,9	21,2	22,1	22,3	21,6	22,3	22,7	21,6
Basic metals	16,7	16,9	15,0	17,3	17,7	16,8	16,4	17,1	17,5	16,7
Machinery and other equipment n.e.c.	72,6	75,0	71,7	72,7	72,9	73,0	74,3	74,9	75,4	75,4
Building of ships, oil platforms and moduls	34,3	35,2	33,4	33,8	34,7	35,4	34,9	35,5	35,3	35,0
Furniture and other manufacturing n.e.c.	12,9	13,8	12,3	12,5	12,8	13,9	13,5	13,8	13,7	14,0
Electricity and gas supply	20,0	20,0	19,5	20,0	20,5	19,9	20,0	20,2	20,1	19,6
Construction	88,0	97,2	84,1	87,4	90,4	90,2	94,1	96,0	98,5	99,9
Service industries excluded general government	846,2	878,5	821,1	843,9	860,2	859,1	861,8	878,4	888,2	885,0
Wholesale and retail trade	283,3	300,1	272,6	282,8	288,9	288,8	292,9	301,1	303,4	302,8
Hotels and restaurants	56,9	58,8	53,8	56,5	59,3	57,9	57,0	58,4	60,5	59,2
Transport via pipelines	0,4	0,3	0,4	0,4	0,4	0,4	0,2	0,4	0,3	0,4
Water transport	50,1	49,8	48,4	49,8	51,2	51,0	48,9	49,2	51,0	50,2
Ocean transport	41,8	41,5	40,8	41,5	42,4	42,6	40,7	40,8	42,3	42,0
Inland water and costal transport	8,3	8,3	7,6	8,3	8,8	8,4	8,1	8,4	8,7	8,1
Other transport industries	73,6	76,5	70,6	73,1	75,6	75,1	76,0	76,4	76,5	76,8
Post and telecommunications	50,2	48,7	50,4	50,8	50,5	49,1	49,7	49,6	48,8	46,7
Financial intermediation	50,7	49,9	50,3	50,7	51,1	50,7	50,2	49,9	50,0	49,7
Dwelling services	1,2	1,1	1,2	1,3	1,3	1,1	1,1	1,1	1,1	1,2
Business services etc.	119,3	130,2	115,4	119,7	120,9	121,1	124,5	130,3	132,9	133,1
Personal services	160,4	163,0	158,0	158,8	161,0	163,9	161,4	162,0	163,8	164,9
General government	665,7	679,8	663,9	663,9	665,7	669,2	674,7	678,2	681,8	684,2
Central government	152,0	152,5	152,2	151,7	151,9	152,1	152,6	152,2	152,1	153,1
Civilian central government	106,6	107,1	106,6	106,5	106,6	106,7	107,1	106,9	106,7	107,5
Defence	45,4	45,4	45,6	45,3	45,3	45,4	45,5	45,3	45,3	45,6
Local government	513,7	527,3	511,6	512,2	513,9	517,1	522,1	526,0	529,8	531,1
Mainland-Norway	1 909,5	1 973,7	1 871,5	1 904,4	1 930,6	1 931,2	1 946,3	1 972,0	1 989,6	1 986,1
Total employees and self-employed	2 159,9	2 222,0	2 128,2	2 157,2	2 182,5	2 171,2	2 188,3	2 222,6	2 243,7	2 232,7

Table A17. Employed persons, employees by industry and total.
Percentage change from the same period in the previous year

	1996	1997	96:1	96:2	96:3	96:4	97:1	97:2	97:3	97:4
Total employees	3,0	3,3	2,6	3,8	2,9	2,7	3,9	3,4	3,0	2,7
Agriculture and hunting	2,8	-4,5	4,1	3,3	1,4	2,5	-3,1	-6,0	-4,6	-4,3
Forestry and logging	-0,6	2,8	1,5	-0,3	-2,1	-1,2	7,7	0,2	-4,6	8,2
Fishing and fish farming	1,1	4,7	-3,3	-0,3	1,1	7,0	9,2	8,5	2,5	-0,6
Oil and gas extraction incl. services	3,7	2,3	1,6	4,3	4,0	5,0	4,0	2,5	1,5	1,3
Oil and gas extraction	3,5	-1,0	4,3	3,4	2,9	3,5	-1,5	-0,8	-0,6	-0,8
Service act. incidental to oil and gas ext.	4,6	16,3	-10,3	8,0	8,8	11,7	32,4	16,3	10,1	9,7
Mining and quarrying	-0,0	-4,3	2,9	3,3	-0,2	-5,9	-5,5	-5,6	-5,0	-0,9
Manufacturing	2,1	2,9	2,2	2,3	1,6	2,5	4,2	3,3	2,6	1,5
Food products, beverages and tobacco	2,3	2,8	1,7	1,3	1,6	4,6	5,7	3,4	2,3	0,2
Textiles, wearing apparel, leather	-0,9	-5,9	-2,1	2,1	0,1	-3,9	-4,5	-8,7	-7,3	-2,8
Wood and wood products	0,5	5,2	-0,6	0,4	1,1	1,1	7,4	7,1	3,0	3,6
Pulp, paper and paper products	-2,0	2,0	2,9	-2,1	-2,4	-6,3	-0,8	-2,3	2,6	9,0
Publishing, printing, reproduction	2,0	4,4	3,9	2,8	0,7	0,7	3,1	4,6	5,3	4,6
Refined petroleum products	-0,0	9,3	-1,6	0,7	0,9	-0,2	10,2	9,6	8,5	8,8
Basic chemicals	3,0	-1,2	4,7	4,4	2,3	0,8	-1,5	-1,7	-1,5	-0,2
Chemical and mineral products	4,0	1,9	2,5	2,1	4,3	7,1	3,2	5,2	2,8	-3,3
Basic metals	2,0	1,3	-3,6	4,5	3,6	3,2	9,2	-1,1	-1,1	-0,7
Machinery and other equipment n.e.c.	2,1	3,3	3,4	3,4	1,0	0,7	3,6	3,0	3,3	3,3
Building of ships, oil platforms and moduls.	2,8	2,4	2,1	1,6	2,5	5,0	4,4	5,0	1,8	-1,3
Furniture and other manufacturing n.e.c.	5,0	6,9	2,9	3,7	2,9	10,2	9,8	10,7	6,7	1,2
Electricity and gas supply	-0,0	-0,0	0,3	0,6	-0,2	-0,7	2,4	0,9	-1,8	-1,6
Construction	2,9	10,4	4,4	3,7	1,1	2,6	12,0	9,9	9,0	10,8
Service industries excluded general government	3,9	3,8	2,7	4,9	4,4	3,7	5,0	4,1	3,3	3,0
Wholesale and retail trade	5,5	5,9	3,0	6,5	6,6	5,9	7,5	6,5	5,0	4,8
Hotels and restaurants	4,5	3,4	2,4	4,0	5,7	5,7	6,0	3,4	2,0	2,3
Transport via pipelines	-0,4	-18,6	25,0	.	.	-68,8	-50,0	-	-25,0	-
Water transport	-1,0	-0,6	-2,1	-1,3	-0,4	-0,1	0,9	-1,1	-0,5	-1,7
Ocean transport	-1,5	-0,9	-2,5	-1,7	-1,1	-0,7	-0,2	-1,6	-0,3	-1,4
Inland water and costal transport	2,0	0,8	0,4	1,1	3,1	3,1	6,9	1,4	-1,4	-3,0
Other transport industries	3,1	3,9	1,1	3,2	4,0	4,0	7,6	4,6	1,3	2,4
Post and telecommunications	-0,4	-3,0	2,6	3,2	-0,4	-6,4	-1,3	-2,3	-3,4	-5,0
Financial intermediation	-0,6	-1,6	-0,8	0,4	-0,8	-1,1	-0,3	-1,6	-2,3	-2,0
Dwelling services	2,5	-5,3	3,2	7,6	7,2	-7,7	-4,9	-9,7	-11,9	7,0
Business services etc.	7,4	9,1	6,6	9,8	7,2	6,2	7,9	8,8	9,9	9,9
Personal services	3,3	1,6	3,0	3,4	2,8	4,0	2,1	2,0	1,7	0,6
General government	2,4	2,1	2,5	3,4	2,1	1,7	1,6	2,1	2,4	2,2
Central government	1,4	0,3	1,7	1,8	1,3	0,7	0,2	0,3	0,1	0,6
Civilian central government	2,0	0,4	2,2	2,4	2,0	1,3	0,5	0,4	0,1	0,7
Defence	0,0	0,1	0,7	0,3	-0,2	-0,7	-0,4	0,1	0,1	0,4
Local government	2,7	2,6	2,7	3,8	2,4	2,0	2,1	2,7	3,1	2,7
Mainland-Norway	3,1	3,4	2,7	3,9	3,0	2,8	4,0	3,6	3,1	2,8
Total employees and self-employed	2,5	2,9	2,6	3,3	2,2	2,1	2,8	3,0	2,8	2,8

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