# Economic Survey

# 1/96

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# Economic Survey

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## Economic Survey

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# Economic survey

## Prospects

It now appears that mainland Norway has passed a cyclical peak, with both foreign and domestic forces contributing to curbing the upswing. Norway's main trading partners recorded slower growth in 1995 than in 1994, and considerably lower growth than projected one year ago. Petroleum investment fell for the second consecutive year, and fiscal policy contributed to restraining the rise in demand. The fall in interest rates, which was essential for the upturn through 1993 and 1994, virtually came to a halt last year, and household demand rose at a noticeably slower pace than in the previous year. As expected, mainland fixed investment generated the strongest impetus to demand in 1995, contributing to mainland GDP growth which was marginally higher than the average of the previous 30 years. Despite the weaker rise in output compared with one year earlier, unemployment continued to edge down, with the unemployment rate at its lowest level since 1988. Nevertheless, there was no significant change in wage growth, and most of the fluctuations recorded in the rate of price inflation over the past few years can be ascribed to indirect tax changes and the decline in interest rates.

Cyclical movements in the Norwegian economy have traditionally reflected international economic developments. The growth of the petroleum sector and deregulation of credit and foreign exchange markets, however, contributed to a divergent cyclical trend in Norway in the 1980s. Even though economic growth in the past five years has generally been higher in Norway than among our main trading partners, cyclical trends in the Norwegian economy have been more synchronized with those of our trading partners than in the last half of the 1980s. Developments in the Norwegian economy through 1995, the economic policy programme for the period ahead, and projected investment in the petroleum sector do not indicate that this situation will change to any extent over the next few years. In line with this, growth in the mainland economy is likely to be slightly lower in 1996 than last year. On an annual basis, unemployment will probably decline further, while the approved indirect tax programme will help to reduce price inflation to about 1 1/2 per cent this year. This is nearly one percentage point below projected average price inflation among Norway's main trading partners. With no changes in the exchange rate or in the indirect tax programme for 1997, however, there is reason to believe that price inflation in Norway will be more on a par with the level in trading partner countries next year.

As a small country with a specialized structure of industry based on international trade in goods and virtually free capital movements, the possibilities for Norway's economic growth - and economic policy leeway in the slightly longer run - largely depend on developments in the international economy. Deviations from international trends are primarily related to Norway's structure of industry, which differs from that of our trading partners. The uncertainty associated with economic developments in Norway - when disregarding some components of economic policy - is therefore closely tied to the possibilities of abrupt changes in the impetus generated by the international economy. In addition to international cyclical developments, it is natural to point to three such forces: changes in trade policy regimes, oil price shocks and interest and exchange rate shocks.

The EEA Agreement, which came into force on 1 January 1994, is one of several agreements providing the operating environment for Norway's future trade relations, and is also the agreement which has had the greatest quantitative effect. The GATT Agreement, which came into force in 1995, has far-reaching consequences for global trade, and is also an important element in the framework conditions for Norway. Both agreements have transitional arrangements, entailing that the full impact will not be felt until some years have elapsed. The trade policy effects of not being a member of the EU have largely been offset by the EEA agreement (as indicated by calculations made by Statistics Norway before the referendum). With the EEA Agreement as a basis, the trade-related drawbacks of Norway's non-EU membership cannot be said to be greater than the advantages. Signs of new trade barriers and discrimination of Norwegian exports through dumping com-

plaints, etc. indicate, however, the strategic disadvantage of being a small country with considerable trade dependence on the EU. And the fact that the EU cannot exactly be characterized as a fast-growing area also indicates that Norway's trade relations with other countries should be more broadly based, for example by focusing to a greater extent on emerging markets in Asia.

The date for the implementation of the EU's Maastricht agreement on monetary union is quickly approaching even though doubt is still being expressed about the feasibility of implementing the decision. If developments in the Norwegian economy move in step with those of our trading partners, it may be advantageous to conduct an exchange rate policy which links Norway closely to monetary union. A link which is too strong, however, would create considerable problems if Norway and its trading partners are exposed to asymmetrical shocks as, for example, a sizeable and lasting decline in oil prices.

Petroleum activities are the most important single reason for the strong position of the Norwegian economy, partly as a result of large current revenues and partly through the impetus generated by petroleum investment to the rest of the economy. Following years of vigorous development, the petroleum sector has definitively entered a harvesting phase, which may result in very substantial petroleum revenues in the years ahead. The estimates for petroleum reserves are constantly being revised upwards, with national wealth increasing considerably in spite of high current production.

The uncertainty associated with oil prices nevertheless still plays an important role for the Norwegian economy. As a result of higher production, Norway and other oil-producing countries have contributed to exerting strong pressure on OPEC, with a greater likelihood of a fall in prices which, for a period, may lead to low returns for high-cost countries like Norway. There may also be a breakthrough in international negotiations on climate policy measures, resulting in downward pressures on producer prices for oil and gas. On the other hand, technological advances have made it possible to reduce production costs and thereby increase the recovery rate. The Norwegian economy is therefore more resilient to a substantial fall in oil prices today than it was ten years ago.

The acceleration of petroleum production may be perceived as a bold attempt to reduce future price uncertainties by reaping the benefits as quickly as possible. If this is successful without a substantial fall in prices, petroleum revenues will translate into considerable surpluses on the balance of payments and in the government budget, with a swift build-up of resources in the Petroleum Fund as a result. The appropriateness of setting aside the petroleum revenues seems to have broad support. The management of the Norwegian economy through a period of surpluses and accumulation of Fund resources - features of the Norwegian economy which underscore the difference between Norway and almost all EU countries - places considerable demands on budgetary discipline and exchange rate stability. The accumulation of resources in the Petroleum Fund entails a redistribution of national wealth from natural resource capital, of which at the moment Norway seems to have an abundance, to financial capital of which we have relatively little compared with our total national wealth. This will reduce the uncertainties and the vulnerability of the Norwegian economy.

In the short and medium term, the main reason for accumulating resources in the Petroleum Fund is linked to the consideration for a sound macroeconomic stabilization policy. An increase in demand resulting from the current use of today's substantial revenues would engender considerable pressures in the economy and result in greater vulnerability in connection with any fall in oil prices. With a sizeable Petroleum Fund, it will also be somewhat easier for Norway than for other European countries to cope, in a fiscal policy context, with the ageing of the population in 15-20 years' time. Using oil revenues at a time when the economy is characterized by a shortage of labour as a result of the ageing of the population may, however, give rise to the same pressures and structural problems as an increased use of oil revenues today. The basis now being laid in the form of a well-educated labour force and an adaptable economy is therefore of greatest importance for enhancing our ability to cope with the ageing of the population and other challenges.

The greatest long-term challenges, however, probably relate to the environment. No better illustration can be found of the importance of policies aimed at safeguarding the country's long-term interests than the greenhouse effect and its potentially far-reaching effects. This underscores both the importance of a long-term precautionary policy and of the global community which closely links Norway's most vital interests to countries also outside the sphere of our traditional partners.
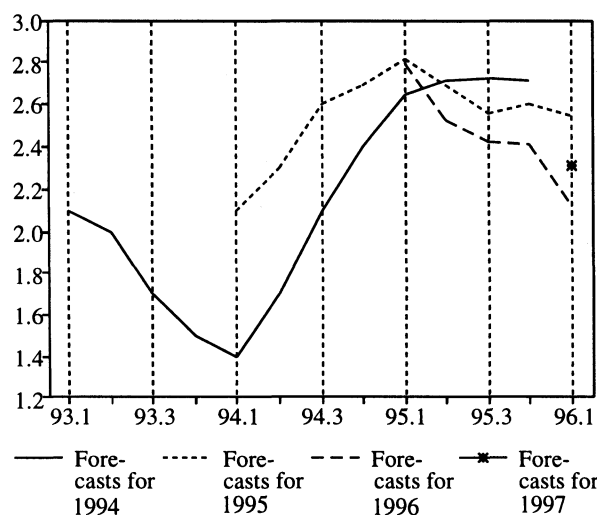
# International economy

## Developments in the OECD area

After economic activity in the OECD picked up markedly in the course of 1994, total growth was expected to rise further through 1995, albeit with divergent growth rates between countries. While a cyclical peak had already been passed in Anglo-Saxon countries, a buoyant upswing seemed likely in continental Europe at the beginning of 1995. Later in the spring and summer, however, short-term data showed that the expectations of an economic upturn in major EU countries had been too optimistic, and forecasts were revised downwards continuously through the autumn. The downward revision is embodied in the estimates for the international economy presented in Economic Survey no. 4/95, and as the table shows our assessment of the situation for Norway's main trading partners has not changed significantly since then. GDP growth for our trading partners is likely to be about 2 per cent in 1996, edging up to a projected 2 1/2 per cent in 1997.

After monetary policy in the *US* was tightened considerably through 1994, economic growth gradually slowed. While GDP grew by 4.1 per cent in 1994, preliminary estimates for 1995 show a rise of 3.3 per cent (measured in 1987 prices). Revised national accounts figures for the first half of 1995 indicate, however, that the growth rate for the year will be revised down. A further downward revision may also be made as a result of the decision to change the way in which GDP is calculated. The budget conflict between the Republican majority in Congress and the Democratic Administration, however, has led to delays in the national accounts figures as a result of the closure of government departments in two periods. Available short-term data from December and January point to a continued slackening of GDP growth. Unemployment has nevertheless only risen slightly and the rate is still below 6 per

cent. According to most forecasts, GDP will rise by about 2.5 per cent this year, while a normal cyclical path would imply stronger growth in 1997. The steep rise in investment the last three years, particularly in machinery and equipment, should in the long run provide a basis for

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

|  | 1994 | 1995 | 1996 | 1997 |
|---|---|---|---|---|
| **USA** | | | | |
| GDP | 4.1 | 3.3 | 2.5 | 2.8 |
| Private consumption deflator | 2.6 | 2.8 | 2.8 | 3.1 |
| Short term interest rate (level) | 4.7 | 5.9 | 5.5 | 5.5 |
| **Japan** | | | | |
| GDP | 0.6 | 0.4 | 1.7 | 2.2 |
| Private consumption deflator | 0.7 | -0.2 | 0.6 | 1.4 |
| Short term interest rate (level) | 2.3 | 1.1 | 0.5 | 1.1 |
| **Germany** | | | | |
| GDP | 2.9 | 1.9 | 1.7 | 2.5 |
| Private consumption deflator | 2.8 | 1.8 | 1.6 | 1.8 |
| Short term interest rate (level) | 5.3 | 4.4 | 3.6 | 4.1 |
| **France** | | | | |
| GDP | 2.9 | 2.6 | 1.8 | 2.9 |
| Private consumption deflator | 1.7 | 1.8 | 2.3 | 2.7 |
| Short term interest rate (level) | 5.8 | 6.7 | 5.6 | 6.1 |
| **United Kingdom** | | | | |
| GDP | 3.9 | 2.6 | 2.0 | 2.8 |
| Consumer price index[1] | 2.5 | 3.4 | 2.8 | 3.2 |
| Short term interest rate (per cent) | 5.5 | 6.7 | 6.1 | 6.4 |
| **Italy** | | | | |
| GDP | 2.2 | 3.2 | 2.0 | 2.2 |
| Private consumption deflator | 3.9 | 5.4 | 5.2 | 4.5 |
| Short term interest rate (level) | 8.4 | 9.1 | 8.7 | 9.0 |
| **Sweden** | | | | |
| GDP | 2.2 | 3.4 | 1.5 | 2.2 |
| Consumer price index | 2.2 | 2.6 | 3.1 | 2.7 |
| Short term interest rate (level) | 7.4 | 8.8 | 8.5 | 8.0 |
| **Denmark** | | | | |
| GDP | 4.4 | 3.7 | 2.8 | 2.7 |
| Consumer price index | 2.0 | 2.1 | 2.5 | 2.5 |
| Short term interest rate (level) | .. | .. | .. | .. |
| **The Netherlands** | | | | |
| GDP | 2.5 | 2.8 | 2.8 | 1.9 |
| Private consumption deflator | 2.1 | 1.9 | 1.9 | 1.8 |
| Short term interest rate (level) | 5.2 | 4.4 | 4.0 | 4.7 |
| **Memo** | | | | |
| GDP trading partners | 2.7 | 2.7 | 2.1 | 2.5 |
| CPI trading partners | 2.3 | 2.3 | 2.5 | 2.6 |
| ECU interest rate | 5.9 | 5.8 | 4.8 | 5.0 |

1) Retail price index incl. mortage interest payments.
Sources: NIESR and Statistics Norway.
National sources for Sweden and Denmark.

**GDP-growth forecasts for Norway's main trading partners for 1994 - 1997 given on different dates**



| —— Fore-casts for 1994 | ····· Fore-casts for 1995 | – – – Fore-casts for 1996 | —*— Fore-casts for 1997 |

Source: Consensus Forecasts.

higher trend growth in the US economy than we have witnessed the last ten years.

During the second half of 1995 it became apparent that the cyclical slowdown in the US was in the process of spreading to Europe. GDP growth slowed markedly in *Germany* and *France* towards the end of 1995, and forecasts for this year have been subject to sharp downward revisions. Unemployment has shown a pronounced rise in the same two countries. In the *UK* and *Italy*, economic growth also

## The EU's road to monetary union

According to the Maastricht treaty, the EU will decide at the beginning of 1998 which member states are eligible for participation in economic and monetary union (EMU) from 1 January 1999. The decision will be based on whether the countries in 1997 satisfy the convergence criteria set out in the Maastricht treaty. The criteria entail that the general government budget deficit shall not exceed 3 per cent of GDP and, if the treaty is strictly interpreted, that the 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 Europe, and long-term interest rates must be no more than 2 percentage points higher than the average of the low-inflation countries. In addition, there is also a criterion stipulating that the member state shall not have devalued its currency for at least two years before participation in EMU.

According to the forecasts of the EU Commission from November last year, only four countries - Germany, France, the UK and Luxembourg - will satisfy the criteria on the debt ratio and budget deficit. The forecasts entail a decline in the budget deficit of 2 percentage points from 1995 to 1997 both for the UK and France, without changes in fiscal policy other than those already planned. The deficit in France is expected to be reduced as a result of a reorganization of the social security system, while moderate economic growth and a continued decline in unemployment are assumed to be sufficient to reduce the deficit in the UK. With the prospect that growth will be lower than estimated by the Commission, fiscal policy tightening will probably be necessary to achieve the budget criterion. As a result of a sluggish economic trend in Germany towards the end of last year, the budget deficit for 1995 is now estimated at 3.6 per cent, 0.7 percentage point higher than the EU Commission's forecast. The German Government's estimate for the budget deficit in 1996 has also been revised upwards to 3.5 per cent of GDP.

The forecasts also show that Denmark, Finland, Ireland and the Netherlands will satisfy the budget criterion, while the deficits in Belgium and Sweden will marginally exceed 3 per cent of GDP. For these countries, the interpretation of the treaty text will be decisive. The Maastricht treaty states that the debt must be "approaching the reference value at a satisfactory pace". According to the forecasts, however, Ireland is the only country among the six cited above in which the debt ratio (in per cent of GDP) will decline substantially from 1995 to 1997, and which thereby will probably be considered eligible for monetary union. A slight decline is also expected in Belgium, but here the figure starts at such a high level that it is difficult to imagine that the debt criterion can be accepted. In the Netherlands and Sweden, the public debt is likely to decline slightly over the next two years, while public debt may rise in Denmark and Finland in the same period.

### General government budget deficit, general government gross debt and consumer price inflation

| | Budget deficit[1] | | Government gross debt[1] | | Consumer price inflation | |
|---|---|---|---|---|---|---|
| | 1995 | 1997 | 1995 | 1997 | 1995 | 1997 |
| Austria | 5.5 | 4.6 | 68.0 | 71.5 | 2.4 | 2.4 |
| Belgium | 4.5 | 3.5 | 134.4 | 130.0 | 1.5 | 2.2 |
| Denmark | 2.0 | 0.5 | 73.8 | 70.5 | 2.0 | 2.7 |
| Finland | 5.4 | 0.0 | 58.8 | 64.5 | 1.2 | 2.2 |
| France | 5.0 | 2.9 | 51.5 | 54.2 | 1.9 | 1.8 |
| Germany | 2.9 | 2.4 | 58.8 | 59.3 | 1.8 | 2.2 |
| Greece | 9.3 | 7.3 | 114.4 | 113.1 | 9.2 | 7.0 |
| Ireland | 2.7 | 1.3 | 85.9 | 78.9 | 2.5 | 2.4 |
| Italy | 7.4 | 5.2 | 124.9 | 122.3 | 5.6 | 3.7 |
| Luxembourg | 0.4 | 0.7 | 6.3 | 6.8 | 1.9 | 2.5 |
| Netherlands | 3.1 | 2.2 | 78.2 | 77.8 | 1.6 | 2.0 |
| Portugal | 5.4 | 4.1 | 70.5 | 70.9 | 4.2 | 3.3 |
| Spain | 7.0 | 3.6 | 64.8 | 65.4 | 4.9 | 3.8 |
| Sweden | 7.0 | 3.2 | 81.4 | 79.8 | 2.8 | 3.0 |
| United Kingdom | 5.1 | 2.8 | 52.5 | 53.2 | 2.9 | 2.6 |

1) Per cent of GDP.
Source: EU-Commision. The Outlook for the Community Economy 1995-1997.

Including Ireland, there are thus at the moment only five relatively clear candidates for EMU, and it is likely that a more liberal interpretation of the criteria may be applied, even though politically there will probably be disagreement about this strategy. If there is a willingness to include countries with a debt ratio of up to 80 per cent of GDP, the forecasts of the EU Commission indicate that only Italy, Greece and Belgium would be excluded from participation in EMU as a result of excessive debt. If we overlook the possibility that inflation in Spain may be a little too high in 1997, the budget deficit will then be the limiting factor for Austria, Portugal, Spain and possibly Sweden. Since the budget deficit may be reduced relatively swiftly (and considerably faster than is the case for public debt), these countries might join EMU as the deficit is gradually reduced to less than 3 per cent of GDP.

In addition to satisfying the convergence criteria, each country must want to join EMU, which entails among other things a transition to a single currency, "euro". Even when the Maastricht treaty was being drawn up, the UK and Denmark added a protocol allowing them to opt out of Stage 3. In the UK, EMU membership may still be the result if the issue is determined by a referendum or if the Labour Party wins the next parliamentary election. In Germany and France, the political will on the part of governing parties is considerable, but it may also be necessary to convince the people of the advantages of EMU, in Germany in particular because the next federal election will be held in the autumn of 1998 and in France in order to prevent new strikes and unrest which may be the result of any further economic tightening.

abated during 1995, and GDP is not expected to expand by
more than 2 per cent this year. A common feature of seve-
ral of the large European economies is that domestic de-
mand components have not sufficiently taken over as driv-
ing forces once export effects began to wane. This must be
viewed in connection with fiscal policy, which has largely
been focused on reducing budget deficits and public debt
in attempts to satisfy two key Maastricht convergence
criteria. The orientation of monetary policy is therefore
decisive for the possibilities of stimulating economic activi-
ty in Europe. For some countries, however, monetary poli-
cy's scope for manoeuvre is being limited by the Maast-
richt treaty's criterion concerning a stable exchange rate.
Without a clear, coordinated monetary policy stimulus, a
new recovery in Europe will depend on growth impulses
from areas outside the region. In this connection little
stimulus may be expected this year: growth in the US has
slowed, and countries in Asia, particularly China, are
projected to grow at a slightly slower rate than in the past
few years. In addition, Japan is still struggling to emerge
from recession.

In 1995, *Japan* recorded its fourth consecutive year of low
or negative growth, and the most prolonged period of stag-
nation since the Second World War has still not been re-
placed by recovery. The recession started following a
period of overinvestment and inflated property and asset
prices at the end of the 1980s, and it takes time before
balance is restored in the economy. The Government has
attempted to stimulate the economy on a number of
occasions through an expansionary fiscal policy. This stra-
tegy is being continued this year, with a weakening of the
budget position by 14 220 billion yen (about 3 per cent of
GDP). Monetary policy has also been very expansionary.
Against this background, GDP is projected to rise by about
1 3/4 per cent in 1996, edging up in 1997.

The forecasts indicate that *price inflation* among Norway's
main trading partners will be about 2 1/2 per cent both in
1996 and 1997, i.e. slightly higher than last year. Consu-
mer price inflation in Germany moved on a falling trend
last year and is projected at an average 1.8 per cent for
1995. The rate of inflation will probably slow further in
1996. In France and Sweden, indirect tax increases will re-
sult in slightly higher inflation rates in 1996. During this
upturn price inflation in the US has been more moderate
than during cyclical upswings in the 1980s. The US labour
market is still much more flexible than European ones, and
changes in health insurance have resulted in a lower rise in
costs for employers. Against this background, price infla-
tion is expected to remain moderate in the US both in 1996
and 1997. Japan has experienced a period of falling prices,
but consumer prices will probably begin to edge up in
1996.

The cyclical situation of the major OECD countries be-
came more synchronized in 1995 compared with the begin-
ning of the 1990s, and this is reflected in *monetary policy*.
In 1994, a boom was under way in the US, and monetary
policy was tightened considerably during the year. Later in

**3 month ECU rate and growth in consumer prices
for Norway's trading partners.** Per cent
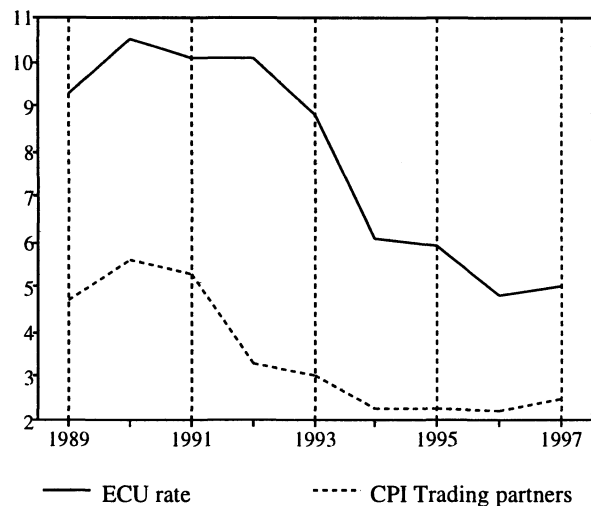


Source:  Statistics Norway.

the spring of 1995, however, there were clearer indications
that economic growth had started to slow, and the Federal
funds rate was therefore lowered to 5.75 per cent in July
1995. Short-term data indicated a considerable slowdown
in activity through the second half of 1995, and the Federal
funds rate was reduced on two occasions: in December last
year and most recently in January 1996, with the reduction
totalling half a percentage point. In the UK, which cyclical-
ly has largely followed the US, the central bank raised its
base rate on three occasions between September 1994 and
February 1995, to a level of 6.75 per cent. Towards the end
of last year, there were also signs of slower economic
growth in the UK, and the authorities reduced the base rate
on two occasions over a short period. It now stands at 6.25
per cent. The German central bank cut its key rates on
three occasions in 1995, most recently in December when
the discount and Lombard rates were lowered to 3.0 and
5.0 per cent, respectively. This must be viewed against the
background of economic data, which indicated somewhat
weaker economic activity than expected earlier, and the
slower rise in consumer prices and money supply growth.
Historically, the discount rate is now at a very low level in
Germany, and further stimulus from lower interest rates is
therefore probably limited. Interest rates in other continen-
tal European countries shadow German rates, with the ad-
dition of a certain risk premium. Interest rates are at a parti-
cularly high level in Italy where a strong depreciation of
the Italian lira prompted the authorities to conduct a con-
tractionary monetary policy. A continued weak currency
and rising consumer prices indicate that Italian interest
rates will remain relatively high in the months ahead. In
Japan, the economic slump over the past three years has
been met with gradual reductions in the discount rate, most
recently to a record-low 0.5 per cent in September last
year. The central bank is expected to maintain a low dis-
count rate until the economic recovery is firmly entren-
ched.

**7**

## Developments outside the OECD area

This section is based on forecasts from the IMF and LINK project[1] drawn up last autumn, and sufficient consideration has therefore not been given to the economic slowdown in Europe. As noted in the discussion above concerning Norway's main trading partners, total GDP in industrial countries is likely to rise more slowly than indicated by the table. Lower economic growth in the OECD area will have a dampening effect on developments in the rest of the world, primarily as a result of falling demand and lower commodity prices.

Preliminary estimates show that GDP in *eastern Europe* combined rose by a little more than 4 per cent in 1995, and growth is expected to remain at approximately this level the next two years. The relatively favourable trend, however, must be viewed in connection with the more than 20 per cent decline in GDP recorded by these countries in the period from 1989 to 1993. Based on current growth rates, the area as a whole will not reach the 1989 level before the turn of the millennium. There are also considerable differences between the various countries. *Bulgaria* and *Romania* recorded low growth last year, partly as a result of structural problems in the banking sector. As a result of political pressures, the banks have often had to extend loans to insolvent state enterprises which have not implemented reforms to any extent. A sizeable budget deficit has made it necessary to conduct a tight fiscal policy with ensuing low growth in *Hungary*. Those countries which at an early stage in the reform process implemented macroeconomic stabilization measures and structural changes are now experiencing increases in production. This applies to *Albania, the Czech Republic, Poland, Slovakia* and *Slovenia*. The outlook for these countries points to continued high GDP growth.

*Republics in the former Soviet Union* (excluding the Baltic states) have experienced a dramatic decline in GDP in recent years, but there are many indications that the decline came to a halt in 1995. The forecasts indicate that output in the area as a whole will expand by about 2 per cent this year. Inflation fell substantially last year, but is expected to remain at around 60 per cent in 1996, indicating the continued existence of major structural problems in the economies.

Throughout most of *Africa* GDP per capita has generally fallen from one year to the next since 1980. Structural adjustment programmes drawn up by the IMF and World Bank for Africa, and which most of the countries on the continent - more or less wholeheartedly - have introduced since the mid-1980s have thus far not resulted in a substantial rise in growth. Considerable social and political instability, a high debt burden and low foreign investment are factors underlying the weak economic trend. The IMF expects some improvement this year, based on an assumption that the countries continue the reform policy outlined in the stabilization programmes. The LINK assessments are more

### World gross domestic product
Annual per cent change

| | 1994 | 1995* | | 1996* | | 1997* |
|---|---|---|---|---|---|---|
| | IMF | IMF | LINK | IMF | LINK | LINK |
| World | 3.6 | 3.7 | 2.6 | 4.1 | 3.1 | 3.2 |
| Industrial countries[1) | 3.1 | 2.5 | 2.4 | 2.4 | 2.6 | 2.5 |
| Eastern Europe[2) | 2.8 | 4.0 | 4.6 | 4.4 | 4.5 | 4.8 |
| Russia[3) | -15.2 | -4.6 | -4.5 | 2.4 | 1.9 | 3.5 |
| Developing countries | 6.2 | 6.0 | 5.0 | 6.3 | 5.5 | 5.7 |
| Africa | 2.6 | 3.0 | 2.6 | 5.2 | 3.3 | 3.0 |
| Latin America | 4.6 | 1.8 | 1.5 | 4.0 | 2.6 | 4.2 |
| Asia[4) | 8.5 | 8.7 | 6.8 | 7.9 | 6.6 | 6.7 |
| China | .. | .. | 9.9 | .. | 8.8 | 8.3 |

\* Indicates forecasts.
1) OECD-area excluding Mexico.
2) Region includes Bulgaria, Poland, Hungary, Slovakia, the Czech Republic and Romania.
3) IMF includes Trans-Caucasus and Central Asian countries.
4) IMF includes China in the Asian region, LINK treats China as a separate region.
Sources: IMF and the LINK Project.

pessimistic, partly because several countries in the area are still involved in unresolved armed conflicts and have limited administrative and political capacity to conduct a policy which promotes growth. Over the next two years GDP growth may therefore remain below average population growth, which is slightly higher than 3 per cent.

Developments in *Latin America* last year were largely marked by the financial crisis in Mexico towards the end of 1994. The stabilization measures introduced by the Mexican Government in the first half of 1995 resulted in a sharp decline in domestic demand. Preliminary estimates show that GDP fell by 6 per cent in 1995. The forecasts, however, point to positive growth rates this year and in 1997. Argentina had a substantial supply of foreign capital at the beginning of the 1990s. This flow was reversed in the wake of the crisis in Mexico and made it necessary for the authorities to introduce severe austerity measures which led to lower growth and higher unemployment. Argentina probably recorded zero growth last year, and only a weak rise is projected in 1996. *Brazil, Chile, Colombia* and *Peru* were not affected by the financial crisis to the same extent. These countries initially had a better balance in their economies, and in general a more favourable composition of their foreign liabilities. Preliminary national accounts figures indicate that these four countries recorded GDP growth of between 4.5 and 7 per cent in 1995, a trend which is expected to persist over the next two years. Registered price inflation in the region has slowed substantially, from nearly 500 per cent in 1994 to less than 20 per cent last year. Developments in *Brazil* made the greatest contribution to the decline, while price inflation in *Venezuela* had the opposite effect. Venezuela has recorded a drop in production

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1  The LINK project is an international forecasting project under the auspices of the United Nations, in which Statistics Norway participates. The forecasts for the world economy are drawn up on the basis of model-based calculations in which the various countries contribute macroeconomic models for their respective countries. In the model simulations, account is taken of the link-up between the various countries as a result of international trade.

the last few years and has accumulated one of the region's largest general government budget deficits.

*Asia* (excluding Japan) recorded considerable economic growth again in 1995, with a combined rise in GDP estimated at about 8 per cent. Growth is expected to slow somewhat, edging down to 7 per cent this year. *China* in particular helped to boost the overall growth rate last year, with a rise in GDP provisionally estimated at 10.2 per cent. However, this is still a decline of 1 percentage point from the previous year. The slowdown is a result of measures introduced by the authorities to curb the level of activity, which must be viewed in connection with the fear of overheating following price inflation of more than 20 per cent in 1994. Inflation was reduced to 14.8 per cent at the end of 1995. The NICs (*South Korea, Hong Kong, Singapore* and *Taiwan*) and countries in Southeast Asia (*Indonesia, Malaysia, Philippines* and *Thailand*) recorded a combined growth rate of nearly 8 per cent in 1995. Growth rates are expected to decline slightly the next two years with total GDP rising by about 6 1/2 per cent in 1997. Countries in South Asia have not experienced the same upturn as countries further east. Preliminary figures indicate, however, that GDP in both *India* and *Pakistan* grew by around 5 per cent last year, and the forecasts point to growth of about 6 per cent in 1996.

## International markets

*Growth in world trade* slowed from about 10 per cent in 1994 to about 8 per cent last year. The lower growth rate must be viewed in connection with the economic slowdown in the OECD area. There are several reasons why growth nevertheless continued at a stronger pace than earlier in the 1990s. Economic activity remained at a high level in Southeast Asia last year, and GDP growth in China continued at a double-digit pace. Imports in developing countries increased substantially, partly because the sharp rise

in commodity prices in 1994 contributed to boosting import capacity. Oil-producing countries, on the other hand, did not contribute to the increase in world trade, partly due to the weak trend in crude oil prices. The prospect of lower GDP growth in the OECD area, particularly in continental Europe, points to lower growth in world trade this year. However, as a result of an increased degree of internal trade, NICs in Asia have become less dependent on exports to OECD countries, and developments in this area will probably continue to make a positive contribution to growth. The forecasts point to an expansion in world trade of a little more than 7 per cent both in 1996 and in 1997.

*The price of crude oil* North Sea Brent Blend was an average $ 17 p/b in 1995, an increase of $ 1.20 from the previous year. Global demand for crude oil rose by 1.4 million barrels a day, the sharpest increase in several years. Growth was particularly high in Asia, but there was also a substantial increase in consumption in Europe. Oil production rose again in 1995, with the North Sea registering the highest growth. However, OPEC increased its production by about 0.5 million b/d in spite of unchanged quotas. Towards the end of 1995 cold winter weather in North America and Europe contributed to a sharp rise in oil prices. The price reached $ 19 p/b at the beginning of 1996, but has since declined, partly because Iraq has expressed an interest in discussing the possibilities of limited oil sales with the UN. The forecasts show that oil production in the former Soviet Union is likely to increase this year after declining for eight years. Other non-OPEC countries will probably also record higher production. With the prospect of approximately unchanged growth in demand from 1995 to 1996, the projections point to downward pressures on oil prices in the period ahead.

After rising sharply through 1994, most *commodity prices* levelled off in the first half of 1995 and prices edged down towards the end of last year. According to the HWWA commodity price index, commodity prices, excluding energy raw materials, rose by 0.9 per cent in the year to December 1995. Prices of farm-based raw materials for manufacturing industry increased by nearly 10 per cent. A sharp rise in the price of cotton, rubber and pulp in the first half of 1995 boosted the rise, whereas in the second half of the year the prices of most goods in this category began to drift down. Prices of food and beverages declined by about 10 per cent through 1995. While the price of coffee, tea and sugar fell in the second half of 1995, the price of such products as wheat, rice and maize rose considerably following several years when production was lower than consumption. Grain prices have increased both as a result of poor weather conditions in grain producing countries and a sharp rise in demand in Asia. China, which previously was the world's largest exporter of maize, now consumes its entire production. Metal prices, which increased sharply in 1994, also edged down in 1995. Among non-ferrous metals, aluminium prices made the greatest contribution to the decline, while there was a relatively stable price trend for copper, nickel, tin and zinc in 1995.

**Spot price, Brent Blend**
Dollar per barrel



Jan 94 — Jul 94 — Jan 95 — Jul 95 — Jan 96

——— Spot          ——— Annual average
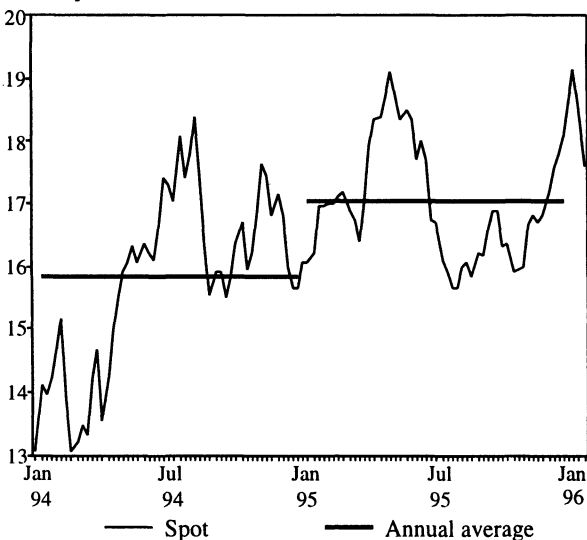
Source: Petroleum Intelligence Weekly

# Norwegian economy

## Developments in 1995

According to preliminary figures from the quarterly national accounts (QNA), gross domestic product (GDP) expanded by 3.7 per cent from 1994 to 1995, after surging by 5.7 per cent the previous year. The 3.3 percent growth in mainland GDP was also noticeably lower than in 1994. The decline in oil investment, slower growth in demand from mainland Norway and a pronounced slowdown in traditional merchandise exports contributed to curbing the upturn in the Norwegian economy from 1994 to 1995. Unemployment nevertheless declined by half a percentage point on an annual basis, approximately the same as in the previous year. A higher VAT rate with effect from 1 January 1995 resulted in price inflation of 2.4 per cent. For the first time in several years, Norway thus had a slightly higher rate of inflation than the average of her main trading partners.

One problem when interpreting the preliminary QNA figures is the persistent rise in *inventory investment* over the past three years. As noted in Economic Survey 4/95, this may indicate that QNA figures overestimate the growth in the supply of goods and services (production plus imports) or underestimate demand. Based on signs of slower growth in both production in mainland industries and in demand from mainland Norway, the figures nevertheless indicate that the cyclical upturn in the Norwegian economy is now becoming more moderate.

The rise in manufacturing production last year was approximately on a par with growth in mainland GDP. Following brisk growth through 1994 and into 1995, manufacturing output declined in the second and third quarters, but picked up moderately again at the end of 1995. Other goods-producing industries posted markedly higher gains than manufacturing industry in 1995, but growth in these industries was not particularly high through the year. The construction sector recorded a noticeable decline in production through 1995, while there was an increase in the power supply sector. Production in service industries rose less than the average for mainland industries in spite of (moderately) rising growth through the year.

Changes in manufacturing output are closely related to developments in traditional merchandise exports and in petroleum investment. Following record-high growth from 1993 to 1994, the volume of traditional merchandise exports peaked in the first quarter of 1995 and has since moved on a downward trend. The level in the fourth quarter was about 1 per cent below the annual average. There were considerable differences between the various commodity groups, with continued sharp growth in exports of engineering products and farmed fish, while exports of metals, chemical raw materials and refined oil products showed a considerable decline. The prices of traditional export goods showed relatively little change through 1995, but compared with the average level in 1994 the rise was a

good 7 per cent. The decline in the volume of traditional merchandise exports through 1995 must be viewed in connection with weaker economic growth among Norway's main trading partners. Preliminary estimates indicate demand growth of about 5 per cent in Norway's export markets last year, a halving of the 1994-figure.

While petroleum investment fell by around 12 per cent at an annual rate from 1994 to 1995, mainland investment expanded by a good 14 per cent. As expected, mainland fixed investment made the greatest contribution to the growth in demand in the mainland economy. The rise in manufacturing investment is estimated at 35 per cent, the highest growth rate since 1962. Investment in dwellings and in other private services also rose substantially even though growth rates were not as high as in the preceding year. Even though the expansion in mainland investment on an annual basis was stronger in 1995 than in 1994, there were clear signs of slower growth through last year, and the carry-over into 1996 is close to zero.

Consumption in households and non-profit organizations (the new term for private consumption) showed clear signs of slower growth through 1995, and the annual growth rate is provisionally estimated at 2.7 per cent. In isolation, the halving of new car sales from November to December reduced the annual growth rate for household consumption by about 0.1 percentage point. Figures for new car registrations for December and January indicate that households have adjusted to the announced changes in car taxes.

Developments in resale home prices also provide an indication of slower demand growth. Following a sharp rise through 1994 and an annual rise in real terms of nearly 12 per cent, it appears that house prices levelled off through 1995. As an average over the first three quarters of last year, Statistics Norway's price index for existing dwellings was in real terms about 5 per cent above the level in the same period one year earlier. Data from the Norwegian Realtors' Association indicate that the rise on an annual basis will be about the same, or slightly lower.

With a projected growth in household real disposable income of a little less than 3 per cent in both 1994 and 1995, it is natural to view the slower rise in private consumption, house prices and housing investment in connection with interest rate movements. Households' average borrowing rates in private financial institutions fell by nearly 2 percentage points from 1992 to 1993, and by an additional 3 percentage points from 1993 to 1994. The decline in interest rates, however, virtually came to a halt in the second half of 1994, and lending rates in the first three quarters of 1995 combined were only half a percentage point lower than in the same period one year earlier.

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

|  | 1994 | 1995 | Seasonally adjusted | | | |
|---|---|---|---|---|---|---|
|  |  |  | 95.1 | 95.2 | 95.3 | 95.4 |
| **Demand and output** | | | | | | |
| Consumption in households and non-profit organizations | 4.6 | 2.7 | -0.8 | 2.0 | 1.6 | -0.6 |
| General government consumption | 1.1 | 0.6 | 1.0 | -0.1 | -1.0 | 0.1 |
| Gross fixed investment | 9.2 | 9.6 | 30.1 | -8.5 | -9.3 | 11.2 |
| - mainland Norway | 12.0 | 14.1 | 6.9 | -1.5 | -0.6 | 2.6 |
| -petroleum activities | -7.6 | -12.2 | -2.1 | 0.3 | 3.6 | 16.3 |
| Final domestic demand from mainland Norway[1] | 4.8 | 4.0 | 0.9 | 0.9 | 0.6 | 0.1 |
| Exports | 8.5 | 3.7 | -1.2 | -3.0 | 3.4 | 1.0 |
| - crude oil and natural gas | 11.6 | 8.3 | -2.6 | -0.8 | 3.6 | 10.0 |
| - traditional goods | 13.3 | 4.4 | 4.1 | -7.9 | 4.9 | -1.8 |
| Imports | 6.6 | 4.1 | 1.6 | 3.4 | -1.5 | 1.5 |
| - traditional goods | 15.0 | 9.0 | 3.4 | 2.3 | 0.1 | 0.7 |
| Gross domestic product | 5.7 | 3.7 | -0.7 | 0.3 | 2.1 | 1.7 |
| - mainland Norway | 4.8 | 3.3 | -0.5 | 0.3 | 1.5 | 1.3 |
| **Labour market[2]** | | | | | | |
| Man-hours worked | 1.4 | 1.2 | 0.9 | 0.4 | -0.1 | 1.7 |
| Employed persons | 1.5 | 2.0 | 0.6 | 0.4 | 0.6 | 0.7 |
| Labour force | 0.9 | 1.6 | 0.7 | 0.1 | 0.2 | 0.3 |
| Unemployment rate, level | 5.4 | 4.9 | 5.4 | 5.1 | 4.8 | 4.3 |
| **Prices** | | | | | | |
| Consumer price index[3] | 1.4 | 2.5 | 2.6 | 2.7 | 2.3 | 2.2 |
| Export prices, traditional goods | 0.8 | 7.1 | 5.7 | -1.7 | 0.5 | -0.1 |
| Import prices, traditional goods | 0.5 | 0.7 | -0.0 | 0.5 | 1.1 | -0.6 |
| **Balance of payment** | | | | | | |
| Current balance, bill. Nkr | 21.1 | 32.3 | 11.2 | 5.1 | 8.5 | 7.4 |
| **Memorandum items (unadjusted, level):** | | | | | | |
| Eurokrone rate (3 month NIBOR) | 5.7 | 5.4 | 5.4 | 5.5 | 5.3 | 5.2 |
| Average lending rate[4] | 8.3 | 7.9[6] | 8.1 | 7.8 | 7.7 | .. |
| Crude oil price, Nkr[5] | 111.3 | 107.8 | 109.9 | 113 | 102 | 106.3 |
| Importweighted krone exchange rate (1993=100) | 101.5 | 99.1 | 99.4 | 99.2 | 98.7 | 99.2 |

1) Consumption in households and non-profit organizations + general government consumption + gross fixed capital formation in mainland Norway.
2) The quarterly figures are based on seasonally adjusted monthly figures from the Labour market survey.
3) Percentage change from previous year.
4) Households' borrowing rate in private financial institutions.
5) Average, spot price, Brent Blend.
6) Average 1.-3. quarter.
Source: Statistics Norway.

Over the past few years interest rates in private financial institutions have generally shadowed movements in Norwegian money market rates with a slight lag. Through the second half of 1995 and so far in 1996 money market rates have fallen noticeably less than corresponding ECU rates. Since the beginning of 1996 short-term interest rates in Norway have remained at a level considerably above corresponding ECU rates.

Preliminary accounts figures for the general government sector indicate a growth in public-sector demand of 1.2 per cent last year, a good 1/3 of mainland GDP growth. Based on the accounts, it also appears that the general government surplus was equivalent to about 2 per cent of GDP in 1995, against 0.4 per cent in 1994.

The volume of traditional merchandise imports continued to rise through 1995, but at a gradually slower pace com-

pared with the brisk growth through 1993 and 1994. These imports showed no change from the third to fourth quarter. The development in traditional merchandise imports in 1995 supports the impression of slower demand growth. The increase on an annual basis was slightly less than 9 per cent, down from 15 per cent the previous year. Imports of engineering products, which in 1994 accounted for more than 1/3 of total traditional merchandise imports in value terms, rose by about the same rate in 1995 as in 1994. It is natural to view this in connection with the vigourous rise in investment, while the slowdown in manufacturing output contributed to lower growth in imports of raw materials and semi-manufactures. Prices of traditional imported goods rose by 0.7 per cent from 1994 to 1995, and in the fourth quarter were only marginally above the average for the year. Due to the steep rise in export prices, this resulted in terms-of-trade gains of more than 6 per cent for trade in traditional goods.

**Short-term indicators**

Seasonally adjusted and smoothed indices. Jan. 1993=100



—— Industrial production ····· Exports trad. goods (right scale) − − − Imports trad. goods (right scale)
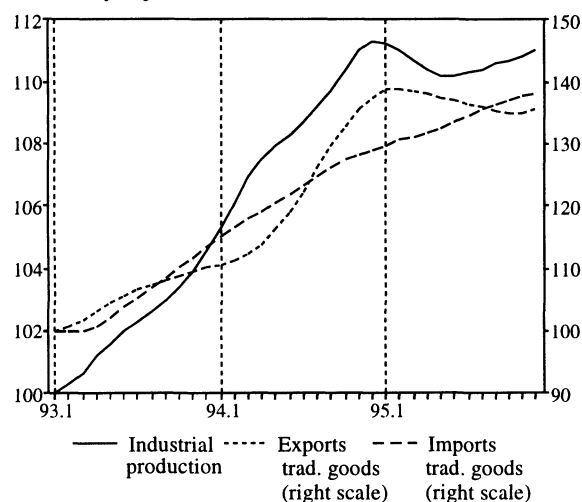
Source: Statistics Norway.

**Short-term indicators**

Seasonally adjusted and smoothed indices. Jan. 1993 = 100



—— Retail sales ····· Cars (right scale) − − − Housing starts (right scale)

Source: Statistics Norway.

**Two capital formation indicators.** Seasonally adjusted and smoothed indices. 1. quarter 1990=100



—— Manufacturing investment ····· Building starts, ex. housing

Source: Statistics Norway.

According to preliminary figures from manpower accounts, employment grew by 2 per cent last year. Manufacturing employment rose for the second consecutive year, and there was a sharp rise in the number employed in construction, distributive trades and some private services. For the first time in many years the growth in employment in the public sector was noticeably less than the average for the economy as 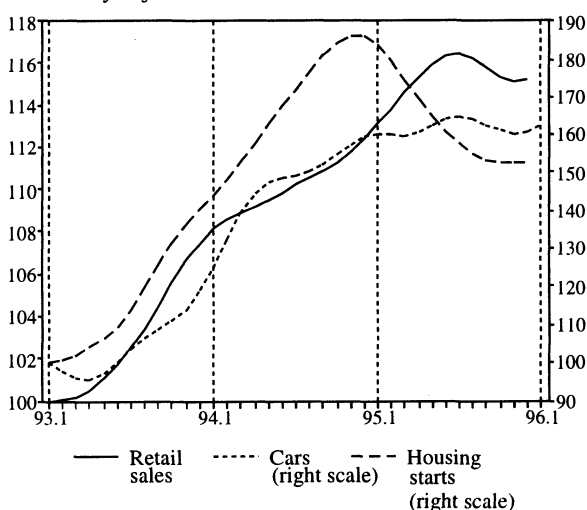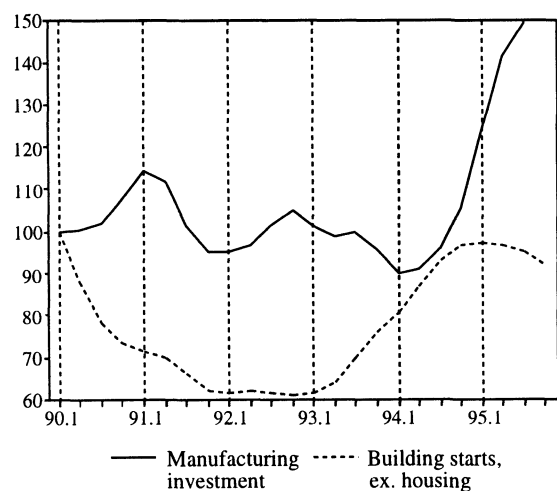a whole. Whereas the labour force expanded at more or less the same pace as employment through 1994 and into 1995, growth was considerably lower through the second half of last year. As a result, unemployment (seasonally adjusted) fell by more than 1 percentage point over three quarters, dropping to 4.3 per cent in the fourth quarter of 1995, the lowest level since the fourth quarter of 1988. The Directorate of Labour's figures for the sum of registered unemployed and persons participating in labour market measures, excluding rehabilitation, have also been declining since the first quarter of 1993, while the number of vacancies at employment offices has risen. Through the second half of 1995 and up to January this year, however, both indicators seemed to be levelling off.

The consumer price index rose by 2.4 per cent from 1994 to 1995. This is approximately the same as the price inflation recorded from 1992 to 1993, but 1 percentage point higher than from 1993 to 1994. The fluctuations in the inflation rate for these years can largely be ascribed to two factors. First, the general decline in interest rates contributed to a very low rise in house rents from 1993 to 1994. Second, changes in indirect taxes boosted the rate of inflation from 1994 to 1995. Adjusted for these factors, price inflation has shown little change through the period. Inflation in Norway abated through 1995. The annual average, however, was marginally higher than the inflation rate recorded by our main trading partners, but less than the rise in prices in the ECU area.

The Norwegian krone appreciated against an import-weighted basket of our trading partners' currencies through 1994 and into 1995, and this helped to slow the rise in prices of imported goods. Measured by this exchange rate indicator, the Norwegian krone appreciated on an annual basis by nearly 2.5 per cent. If exchange rates remain unchanged until the end of 1996, the import-weighted krone exchange rate will show little change from 1995 to 1996.

Preliminary figures show an increase in wages per normal man-year of 3.3 per cent last year, marginally higher than in 1994. Measured per man-hour worked, however, wage growth rose from 3.0 per cent in 1994 to 3.9 per cent in 1995. The higher growth in wages per man-hour worked can be ascribed to a slight rise in absenteeism and the fact that there were two fewer working days in 1995 compared with 1994. Manufacturing industry recorded slightly higher wage growth than the average for mainland Norway, while wage growth in the general government sector was below the average.

The current account of the balance of payments showed a surplus of a good NKr 32 billion last year, equivalent to 3.5 per cent of GDP and about NKr 10 billion higher than in 1994. The trade surplus widened by NKr 3 billion, while the deficit on the interest and transfers balance fell by about NKr 7 billion. Based on the financial survey's estimates for assets and liabilities in nominal terms, net foreign assets are estimated at about 2.6 per cent of GDP at end-1995. Norway thus became a creditor nation in the course of 1995, for the first time since 1946.

## Outlook for 1996 and 1997

Most economic indicators now point to weaker economic growth in 1996 than in the two previous years. Economic growth among our trading partners is moving on a downward trend with moderating effects on Norway's traditional merchandise exports. Investment growth in the mainland economy, which had a positive impact on growth in 1995, is showing signs of levelling off. The impetus from petroleum investment to the Norwegian economy will show little change in the period ahead and government expenditure on goods and services is also expanding at a sluggish pace. Growth in household consumption, however, will remain buoyant with growth rates broadly in line with the growth in household income. Unemployment is likely to continue to fall, but probably slightly less than in the previous two years. With the likelihood that inflation in 1996 will be noticeably lower than in 1995, and almost down to the level recorded in 1994, real wages will rise at a somewhat faster pace in 1996 than last year. The current-account balance will show a markedly higher surplus in 1996 than in earlier years and the general government sector will also increase its net lending substantially.

## Projections for international interest rates, commodity prices and market growth

The cyclical slowdown which spread to most of the OECD area in the course of 1995 is expected to persist in 1996, with GDP among our trading partners expanding by about 2 per cent. This will result in slower market growth for traditional Norwegian exports in 1996 than in 1995, and far lower than in 1994. The outlook for 1997 is naturally more uncertain, but it is assumed that a new upswing in the US and, to some extent, Japan will contribute to an export-led upturn in Europe. This will result in higher market growth next year, cf. table.

The international economic recovery through 1993 and 1994 contributed to a pronounced rise in prices for a number of important Norwegian export goods. This resulted in terms-of-trade gains in 1995 and contributed to the sharp growth in the country's disposable income. As a result of the economic slowdown which occurred through 1995, prices for a number of these export goods have begun to fall, or the rise at least has come to a halt. Prices for traditional Norwegian exports are expected to continue to exhibit a sluggish trend in 1996, with declining tendencies for important export prices. With a cyclical slowdown in

1995/1996 followed by a new upturn in the course of 1997, it is assumed that some of these prices will resume an upward trend during 1997. The rise in import prices, which are dominated by prices for processed manufactured goods, is expected to show little change, but because the (import-weighted) Norwegian krone appreciated slightly in 1995 the rise in import prices may pick up in 1996. On the other hand, international price inflation is expected to ease, which would point to a reduced rise in import prices. All in all, the rise in import prices is not expected to show much change in 1996 and 1997 compared with the rise in 1995.

**Main economic indicators**
Percentage change from previous year unless otherwise noted

| | Accounts 1995 | SN 1996 | NB[1] 1996 | MoF[2] 1996 | SN 1997 |
|---|---|---|---|---|---|
| **Demand and output** | | | | | |
| Consumption in households and non-profit organizations | 2.7 | 2.5 | 2 3/4 | 3.0 | 2.4 |
| General government consumption | 0.6 | 1.3 | 1 1/4 | 1.3 | 1.4 |
| Gross fixed investment | 9.6 | 3.0 | 3 1/2 | 2.3 | 3.0 |
| - mainland Norway | 14.1 | 3.6 | 8 | 6.3 | 3.5 |
| - petroleum activities | -12.2 | 3.4 | -9 | -9 | 3.4 |
| Demand from mainland Norway[3] | 4.0 | 2.4 | 3 1/4 | 3.0 | 2.4 |
| Change in stocks (per cent of GDP) | 1.1 | 0 | 0 | -0.1 | 0.0 |
| Exports | 3.7 | 7.1 | 7 3/4 | 8.8 | 3.4 |
| - crude oil and natural gas | 8.3 | 13.5 | 14 1/4 | 14.4 | 2.5 |
| - traditional goods | 4.4 | 3.4 | 4 1/4 | 5.0 | 4.4 |
| Imports | 4.1 | 3.9 | 4 | 4.1 | 3.6 |
| - traditional goods | 9.0 | 3.5 | 4 3/4 | 4.7 | 3.7 |
| Gross Domestic Product | 3.7 | 3.7 | 4 | 4.3 | 2.4 |
| - mainland Norway | 3.3 | 2.2 | 2 3/4 | 2.7 | 2.4 |
| | | | | | |
| **Labour market** | | | | | |
| Persons employed | 2.0 | 1.5 | 1 1/2 | 1.5 | 1. 1 |
| Unemployment rate (level) | 4.9 | 4.5 | 4 1/2 | 4.5 | 4.4 |
| | | | | | |
| **Prices and wages** | | | | | |
| Wages per man-hour | 3.9 | 3.4 | 3 3/4 | 3 | 3.4 |
| Wages per standard man-year | 3.3 | 3.2 | 3 3/4 | 3 | 3.3 |
| Consumer price index | 2.4 | 1.6 | 2 | 2.0 | 2.0 |
| Export prices, traditional goods | 7.1 | -1.8 | | 1.4 | 1.3 |
| Import prices, traditional goods | 0.7 | 1.2 | 1 1/2 | 1.8 | 1.8 |
| | | | | | |
| **Balance of payments** | | | | | |
| Current balance (bill. NKr) | 32.3 | 39.7 | | 48.0 | 42.8 |
| Current balance (per cent of GDP) | 3.5 | 4.1 | | | 4.2 |
| | | | | | |
| **Memorandum items:** | | | | | |
| Money market rate (level) | 5.4 | 4.7 | | | 4.5 |
| Average borrowing rate (level)[4] | 7.7 | 7.2 | | | 6.5 |
| Crude oil price NKr (level)[5] | 105.9 | 107.3 | 107 | 105 | 110.2 |
| International market growth | 4.9 | 3.4 | | 7 1/2 | 5.6 |
| Importweighted krone exchange rate[6] | -2.5 | -0.2 | 0 | | 0 |

1) NB: Forecasts according to Norges Bank, Penger og kreditt 1995/4.
2) MoF: Ministry of Finance's forecasts. Final budget bill 1996.
3) Consumption in households and non-profit organizations + general government consumption + gross fixed capital formation in mainland Norway.
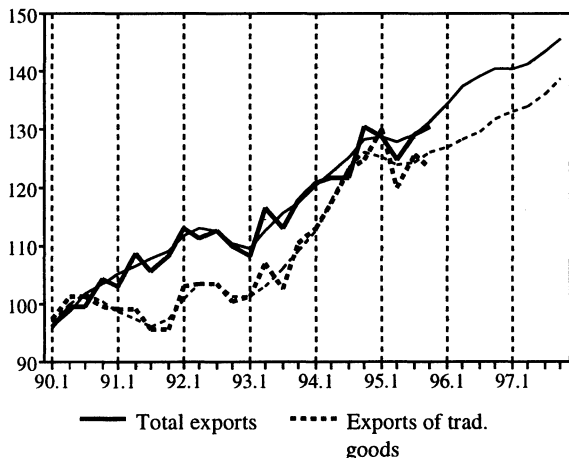4) Households' borrowing rate in private financial institutions.
5) Average Norwegian oil production.
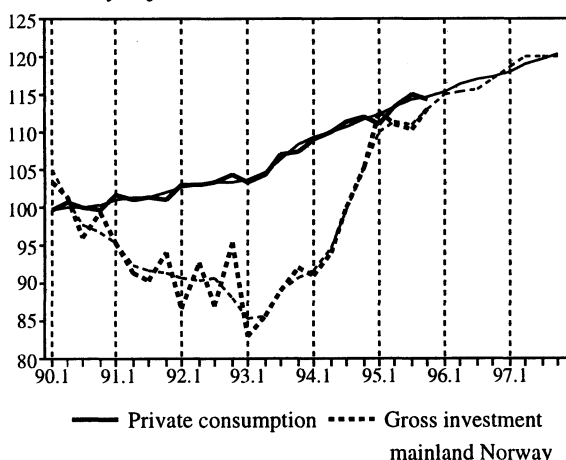6) Positive sign entails depreciation.

**Exports**

1990=100. Seasonally adjusted (QNA)
Seasonally adjusted and smoothed (KVARTS)



— Total exports ···· Exports of trad. goods

Source: Statistics Norway

**Consumption and investment**

1990=100. Seasonally adjusted (QNA)
Seasonally adjusted and smoothed (KVARTS)



— Private consumption ····· Gross investment mainland Norway

Source: Statistics Norway

**Net wealth ratio, saving ratio and after tax real interest rate 1976 - 1996**



— Net financial wealth ratio (left scale)  ····· Saving ratio  – – – After tax real interest rate (bank loans)
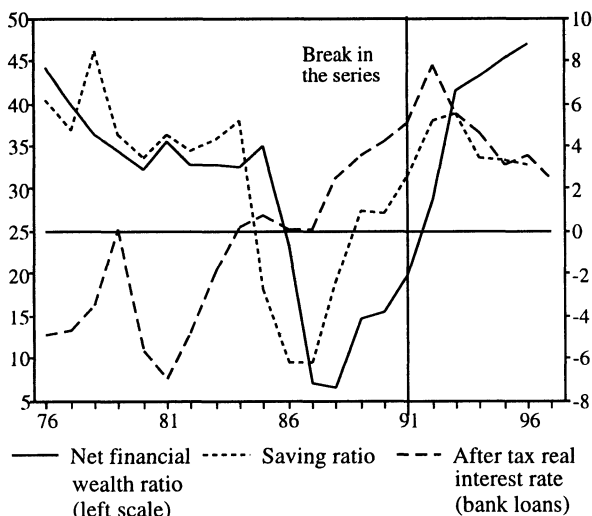
Source: Central Bank of Norway and Statistics Norway.

The sluggish growth in the European economy has resulted in a downward adjustment in short-term interest rates in Germany, and this has had an influence on interest rate movements throughout the ECU area. In the National Budget for 1996, the Government indicated that Norges Bank would be permitted to increase foreign exchange reserves to some extent in order to maintain interest rates at the present level in an environment of a strong krone and a domestic upturn. Relatively high short-term rates in January of this year combined with an appreciation of the krone exchange rate against the ECU may indicate that Norges Bank has attempted to make use of this leeway. In our calculations, however, we have assumed that this will not continue as the economic slowdown becomes more apparent. Nominal interest rates in Norway are therefore expected to be slightly lower than in 1995. As a result of lower price inflation in Norway, however, real interest rates (before and after tax) will rise slightly from 1995 to 1996. In isolation, this will curb consumption and housing investment. Housing investment, however, is also influenced by prices in the market for existing dwellings and here the rise in prices in 1995 was higher, which is also expected to be the case in 1996. Based on a turnaround in the international economy and higher growth through 1997, short-term interest rates abroad are expected to increase gradually next year.

## Moderate growth in government expenditure on goods and services

The assumptions concerning fiscal policy are based on the Final Budget bill, which estimates the growth in general government consumption at 1.3 per cent and in general government gross fixed investment at 3.1 per cent from 1995 to 1996. An attempt has been made to incorporate the approved changes in the tax and excise duty programme. Changes in car taxes are among the important changes which deviate from an inflation-based adjustment of volume rates. It was decided to reduce these taxes considerably, entailing that new car prices will on average fall by about 7 per cent if the tax reduction feeds fully through to buyers.

## Positive contribution to growth from the petroleum sector

After declining substantially from 1994 to 1995, petroleum investment is now expected to increase the next few years, although not so sharply that the level in 1997 will be on a par with the level recorded in 1994. Petroleum investment is projected to show an overall growth of about 4 per cent in both 1996 and 1997. There will, however, be a shift in the composition of investment entailing that the increase in volume will relate to foreign orders for 1996 and 1997 as a whole.

Both oil and gas production is expected to show a sharp growth from 1995 to 1996. Average oil production in 1995 came to 138 mtoe, while the estimate for 1996 and 1997 is now nearly 155 mtoe. Gas production is expected to rise

by nearly 24 per cent from 1995 to 1996 and almost 17 per cent the following year. We have assumed an average oil price for Norwegian production of NKr 107 p/b in 1996, against NKr 105 in 1995. The estimate for 1997 is about NKr 110 p/b. These projections entail unchanged real oil prices from 1995 to 1997.

## Weaker demand growth

Following two years of sharp growth in private sector demand in the mainland economy and traditional export markets, the growth rate slowed markedly through 1995. Growth in private consumption and particularly housing investment tapered off and the growth in traditional merchandise exports came to a complete halt. Based on the projected sluggish trend internationally, the contribution to growth from traditional exports is expected to be somewhat weaker in 1996, whereas oil and gas exports will increase substantially. Investment demand is expected to grow at a far slower pace in 1996 than in the previous two years. The development of the new main airport will generate some growth impetus in 1996, but not in 1997. According to the calculations, manufacturing investment, which expanded sharply from 1994 to 1995, will only increase slightly the next two years.

Housing investment moved on a falling trend through 1995, and the level in the fourth quarter was lower than one year earlier. Housing starts passed a provisional peak in the fourth quarter of 1994. It is difficult to draw any clear conclusions based on developments through 1995 even though the figures towards the end of the year showed a slight rise. As a result of the rise in resale home prices and income growth on a par with the level the previous year, the calculations derived from the model show that housing investment will pick up again during 1996 even though real interest rates will show a slight rise. Our projection of a moderately positive growth in housing investment entails that housing starts must rise by 10 per cent from 1995 to 1996.

Household consumption showed a slower growth rate through 1995, even when adjustments are made for the abnormal decline in new car purchases towards the end of 1995 as a result of expectations of lower car taxes in 1996. Consumption growth of 2.7 per cent in 1995 was approximately the same as income growth. Real wages are expected to rise at a slightly higher rate in 1996 than in 1995. Combined with a continued rise in employment and somewhat higher real interest rates, the calculations show a consumption growth in 1996 and 1997 on a par with the growth in 1995. The reduction in car taxes will shift the composition of consumption towards more car purchases and a relative reduction in other consumption. If these shifts in new car purchases from the end of 1995 and into 1996 are disregarded, the combined effect of changes in relative prices and real income will contribute to a growth in new car purchases of about 10 per cent from 1995 to 1996. It is difficult to estimate the magnitude of shifts in purchases, but if we estimate the abnormal decline in

**Gross domestic product and employment**
1990=100. Seasonally adjusted (QNA)
Seasonally adjusted and smoothed (KVARTS)
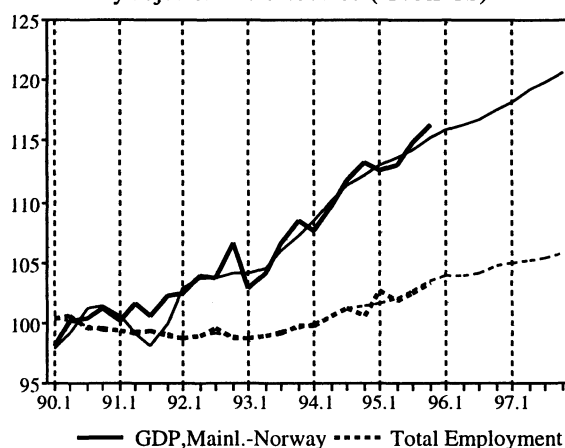


Source: Statistics Norway

**Consumer price index**
**Percentage growth from same quarter previous year**
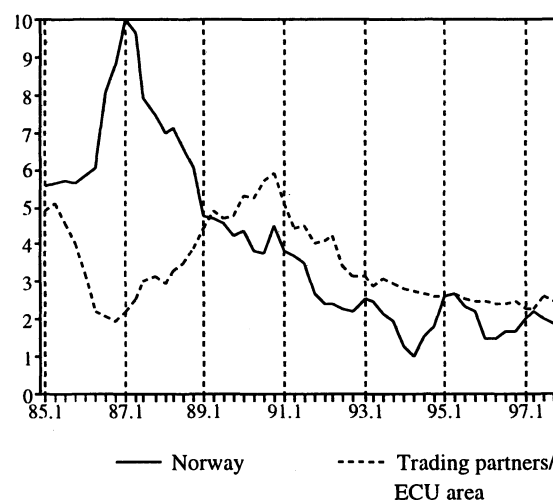


Source: Statistics Norway, OECD and Eurostat

December 1995 at 3 000 cars which are instead purchased at the beginning of 1996, this adds 6 per cent to the growth in 1996. All in all, it is conceivable that new car purchases will rise by 15-20 per cent from 1995 to 1996. The estimates imply an approximately unchanged saving ratio for households from 1995 to 1997.

## Slower output growth in the mainland economy

Lower growth in both traditional merchandise exports and in investment combined with approximately unchanged consumption growth (total) will contribute to slower output growth for the mainland economy in the period ahead. In the previous two years, however, a sharp rise in inventories entailed that output growth was higher than the growth in demand. We do not have an adequate explanation for this development. When growth in the economy is curbed, however, it is reasonable to assume that the rise in inventory accumulation comes to a halt, or at least is curbed. Our calculations are based on the assumption that inventory in-

vestment in 1996 is the same as in 1995. In 1995, domestic demand from mainland Norway grew by a good 4 per cent. According to our calculations, this growth will be about 2.5 per cent in 1996. The estimate for mainland GDP growth is thus a good 2 per cent in 1996 compared with 3.3 per cent in 1995. In 1997, we assume that mainland output will expand by about 2.5 per cent as a result of higher international growth.

As noted above, oil and gas production is projected to rise substantially from 1995 to 1996. Total GDP will therefore expand by a good 3.5 per cent this year. Unchanged oil production from 1996 to 1997 may entail that total GDP growth in 1997 will be about the same as for the mainland economy. The calculations also show that the growth in manufacturing production will slow to about 1 per cent. In 1997, manufacturing output is expected to increase faster, on a par with the growth recorded in 1995 when it was a good 3 per cent.

Based on projected low growth in employment in the general government sector, production will also increase only marginally. Employment in the defence sector has been reduced in recent years, and no particular changes are expected in the civilian central government sector. The positive growth will therefore come from a projected employment growth in the local government sector.

## Continued decline in unemployment

The sharp growth in the Norwegian economy has resulted in a substantial rise in employment, measured by both the number of man-hours worked and number of persons. Unemployment has declined somewhat less than expected when taking account of the steep employment growth. This entails that there has been a sharp rise in labour force participation. Total labour force participation for women is now higher than ever, while labour force participation rates for men are still substantially lower than the level recorded throughout the 1980s. Pure demographic factors are now contributing to a rise in the labour force of 13-14 000 persons each year. From 1994 to 1995, however, the labour force rose by as much as 35 000 persons, or by 1.6 per cent. Our estimates for 1996 and 1997 show a rise in the labour force of a good 1 per cent, or about 25 000 persons each year. This entails a continued rise in participation rates, albeit at a slightly slower pace than in 1995.

With the prospect of more moderate output growth in the period ahead, employment growth will slow. The calculations nevertheless show that unemployment will continue to decline, but at slightly slower pace than in the previous two years. Employment growth is projected at about 1.5 per cent from 1995 to 1996, against 2 per cent last year, while unemployment may be about 4.5 per cent. This annual estimate entails that we interpret the low unemployment recorded in the fourth quarter of 1995 as a transitory low. Employment growth will slow further in 1997 because this increase usually lags behind an upturn in production.

## Moderate price and wage inflation

In 1995, inflation in Norway, measured by the consumer price index, was approximately the same as among our trading partners, after recording lower inflation rates since 1989. Our estimates indicate, however, that in 1996 Norway will again record lower price inflation than our trading partners. Much of the increase in the rate of inflation last year is ascribable to higher VAT rates. In 1996, an opposite effect will be felt as a result of reduced car taxes. If the tax reduction feeds through in full to buyer prices, this will reduce inflation by a good 0.3 per cent from 1995 to 1996. The effects of an unchanged VAT rate from 1995 to 1996 will probably contribute to reducing annual inflation by the same margin. In addition, electricity prices rose sharply at the beginning of 1995. This did not occur in 1996, which in isolation will also help to slow the inflation rate by 0.3 per cent. If all other inflationary factors are kept unchanged from 1995 to 1996, price inflation in 1996 will be a good 1.5 per cent, against 2.4 per cent in 1995.

Two other factors, however, are worth evaluating more closely. First, the calculations show a slight reduction in productivity gains in 1996 compared with the growth in 1995. In isolation this will contribute to higher inflation. On the other hand, according to our models lower productivity gains also result in lower wage growth, entailing that unit labour costs will not increase to any extent. The consumer price index is thus projected to rise by 1.6 per cent in 1996. For 1997, the projection for inflation is 2 per cent, with most of the increase ascribable to car taxes not being reduced again. The remainder can primarily be attributed to a slightly higher contribution from import prices.

Average hourly wage growth in 1995 is estimated at about 4 per cent, with a slightly higher growth in manufacturing industry. Annual wage growth, however, was only a little above 3 per cent, entailing that the increase in real annual wages was about 3/4 per cent. Both hourly wage growth and annual wage growth are projected at about 3.5 per cent in 1996. This would then result in an increase in real annual wages of nearly 2 per cent in 1996, or more than double the growth of the previous year. Three factors are worth noting in this connection. First, consumer price inflation will, as noted above, be reduced. This plays an important role in explaining the growth in real wages in the short run both in manufacturing industry and in the economy in general. Second, the rise in prices of Norwegian manufactured goods will slow from 1995 to 1996, primarily as a result of the cyclical factors discussed earlier. Third, productivity gains will be reduced, also primarily for cyclical reasons. These last two factors entail that the "scope for wage growth", particularly in manufacturing industry, will increase less in 1996 than in 1995. However, the level of wages in manufacturing is lower than the level traditionally implied by the "wage scope" because wages at the start of the recovery did not increase as much as the "wage scope". Some of the wage growth in 1996 is therefore due to lags following the upturn. Developments in manufacturing wages are assumed to play an

important role for wage developments outside the manu-
facturing sector in the model. The growth in real wages is
therefore largely ascribable to the decline in inflation and
lags following the sharp improvement in business profits,
and particularly in manufacturing industry, during the
upturn over the past few years. The decline in unemploy-
ment therefore has little effect on developments in wages,
according to the model, because the level of unemploy-
ment remains high. Based on the higher growth in real
wages which follows from the calculations, profitability
will be reduced somewhat in 1996 compared with 1995,
and most noticeably in manufacturing industry.

## Rising current-account surpluses

Norway recorded a current-account surplus of a good
NKr 32 billion in 1995. With the prospect of slower domes-
tic demand growth and rising oil and gas production, the
trade surplus will widen substantially from 1995 to 1996.
Furthermore, Norway became a creditor nation (measured
net) in the course of 1995. In the period ahead Norway's
interest and transfer balance will therefore improve. As
foreign assets are gradually accumulated, this will contri-
bute to higher current-account surpluses. The current-
account surplus in 1996 is projected at about NKr 40 bil-
lion, increasing to nearly NKr 43 billion in 1997. A sub-
stantial part of this net lending will take place in the public
sector inasmuch as such a high share of the petroleum reve-
nues accrues to the state.

## A comparison of business cycles 1982-1988 and 1991-1997

Following several years of relatively sluggish developments, the Norwegian economy experienced a vigorous recovery towards the end of 1993. Mainland GDP growth is provisionally estimated at 4.8 per cent in 1994 and 3.3 per cent in 1995. Growth rates of this magnitude have not been seen since the period 1984-1986. The boom in the mid-1980s, however, was succeeded by several years of stagnation and even a decline in production and demand in the mainland economy, while over the next two years we expect growth to continue, albeit at a slightly slower pace than in the previous two years. As a basis for evaluating similarities and differences between cyclical developments in the 1980s and 1990s, we present in the diagrams below movements in some key macroeconomic variables through the periods 1982-1988 and 1991-1997. Information for the period 1982-1988 is based on the old national accounts, while the figures for the years 1991-1995 were obtained from the revised national accounting system. Estimates from the macroeconomic projections presented in this issue of Economic Survey were used for 1996 and 1997.

Four factors made a very strong contribution to the cyclical upturn in the first half of the 1980s: An upswing in the US generated an impetus to a marked expansion in traditional merchandise exports from 1982 to 1983. A brisk growth in petroleum investment in 1983-1984 and the dismantling of quantitative credit regulations around the end of 1983 provided a further stimulus to higher production in the mainland economy, with a subsequent rise in investment. Moreover, fiscal policy moved in a more expansionary direction in the election year 1985. In addition, as a result of the deregulation of the credit market, changes in interest rates and in the value of fixed assets probably got a greater influence on household behaviour than earlier. Since the effects of the changes in the credit market first materialized in the wake of the other two shocks, the upturn was prolonged. The exceptionally high growth in private consumption in 1985 is an important factor behind the sharp rise in mainland GDP that year.

The upturn in 1993-1994 occurred without any shocks equivalent to the deregulation of the credit market. Develop-

ments in the credit market have nevertheless been an important factor behind the expansion. This time, however, the impetus came from the decline in European interest rates, which provided a basis for a halving of real interest rates in Norway from 1992 to 1995. Combined with the upswing in the US, the decline in interest rates was also an important factor behind the cyclical turnaround in Europe in 1993-1994. The rise in demand and production in important trading partner countries contributed to record-high growth in exports of traditional goods from Norway, while the decline in interest rates stimulated private consumption and housing investment. Production in the mainland economy expanded sharply, and investment growth in mainland Norway was also high through 1994 and into 1995, while petroleum investment made a negative contribution during this upturn.

Preliminary national accounts figures for 1995 indicate that the growth rate is now declining, but according to estimates for 1996 and 1997 it is unlikely that we will see a repetition of the deep recession recorded at the end of the 1980s. Part of the explanation for this is that the upturn has also been far weaker this time, and private sector finances are still in reasonable balance. This is illustrated by developments in the household saving ratio, which showed little change from 1994 to 1995, after declining moderately the previous year. In contrast to the last upturn, fiscal policy has contributed to curbing the cyclical effects, and so far general government budgets have not been faced with the same adjustment pressures like those following the oil price fall in 1985/1986. Furthermore, unemployment was noticeably lower in the first half of the 1980s than in the first half of the 1990s. Relatively stable exchange rates and high unemployment at the beginning of the recovery have contributed to a steadier nominal trend through the first half of the 1990s than ten years earlier. Growth in real wages has remained in the area of 1 to 1 3/4 per cent. Real wages in 1996 and 1997 will probably rise by a little more than the average of the three preceding years, but this is not likely to result in new and serious imbalances in the economy.

**GDP mainland-Norway**
Percentage growth



--- GDP 82-88      —— GDP 91-97
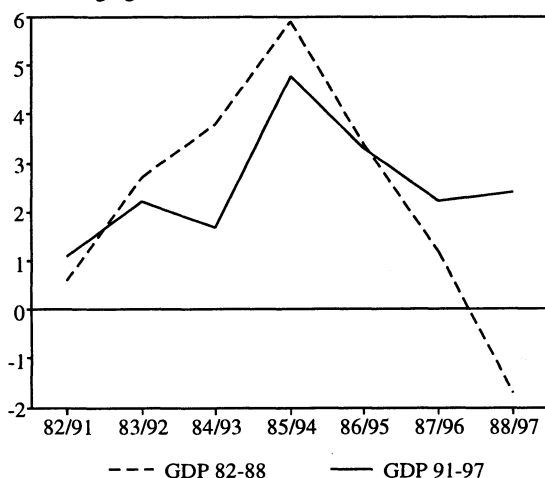
Source: Statistics Norway.

**Traditional exports**
Percentage growth



--- Export 82-88      —— Export 91-97
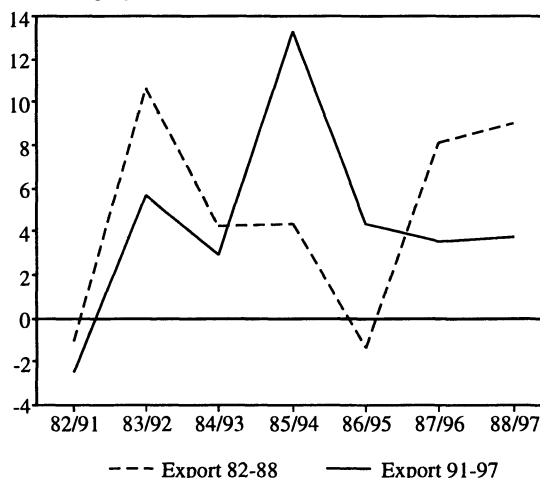
Source: Statistics Norway.

## Accrued investment in oil activities
Percentage growth



- - - Oil inv. 82-88    —— Oil inv. 91-97
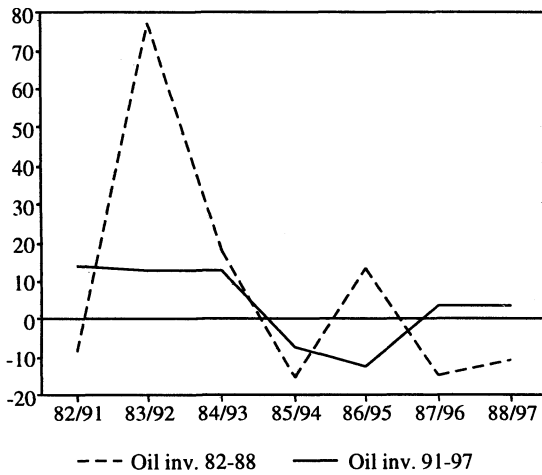
Source:  Statistics Norway.

## Private consumption
Percentage growth



- - - Consumption 82-88    —— Consumption 91-97
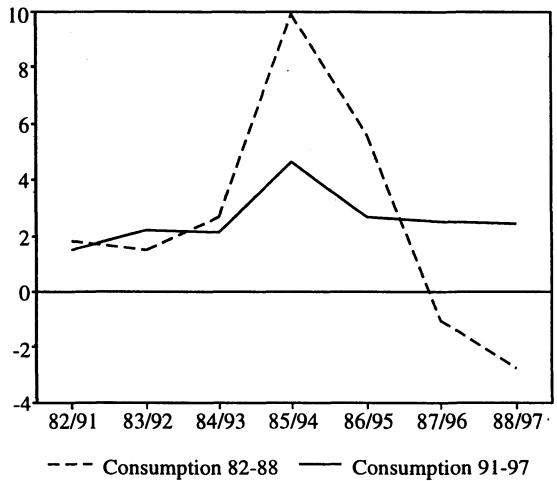
Source:  Statistics Norway.

## Gross investment in mainland-Norway
Percentage growth



- - - Investment 82-88    —— Investment 91-97
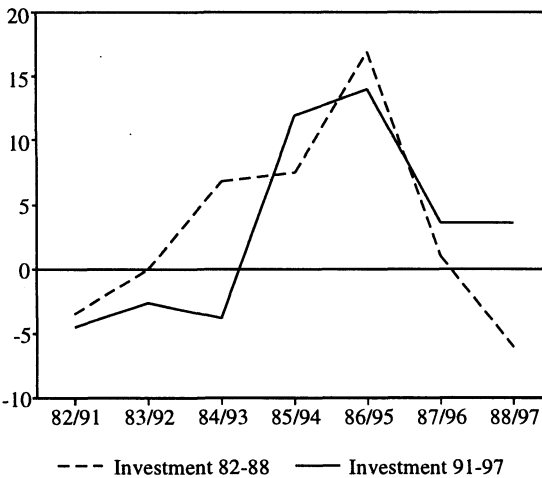
Source:  Statistics Norway.

## Households' savings and real after tax interest rate
Per cent



- - - Saving 82-88    —— Saving 91-97  -----
- - - Interest rate    —— Interest rate
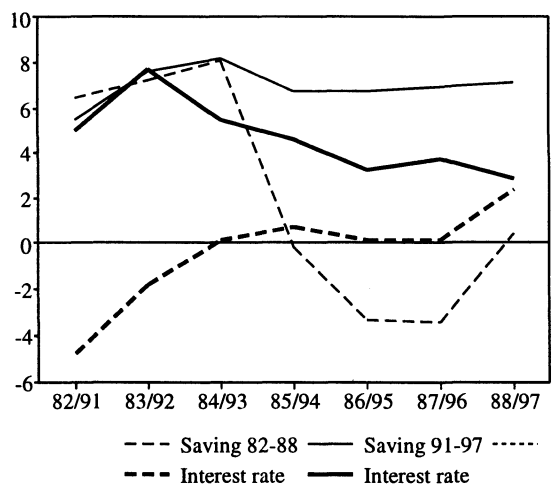
Source:  Statistics Norway.

## Annual earnings and consumer prices
Percentage growth



- - - Prices 82-88    —— Prices 91-97  -----
- - - Wages 82-88    —— Wages 91-97
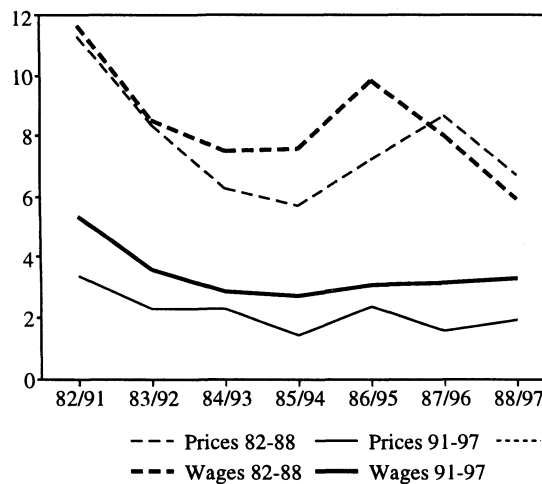
Source.  Statistics Norway.

## Unemployment
Per cent



- - - Unemployment 82-88    —— Unemployment 91-97
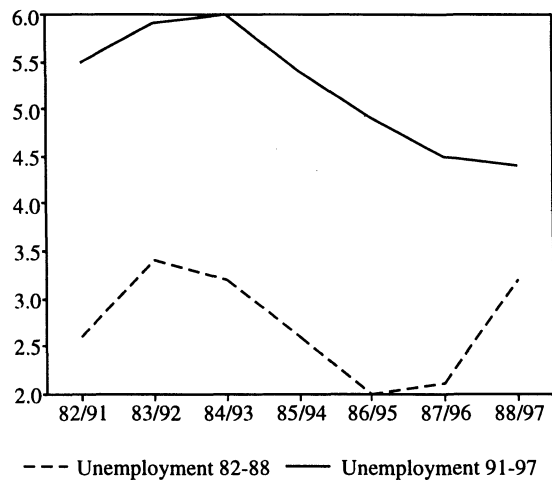
Source:  Statistics Norway.

# How accurate were Statistics Norway's forecasts for 1995?

The Economic Surveys published by Statistics Norway over the past two years have presented forecasts for macroeconomic developments in 1995 as many as eight times. The first forecasts were presented in Economic Survey 1/94, and this was followed by forecasts in each quarterly survey. The table below shows how Statistics Norway's forecasts for 1995 have changed over time as new information has been received.

There is one particular factor concerning the forecasts for 1995 which entails that the estimates are more difficult to compare this year than was the case earlier. During 1995 Statistics Norway published new revised national accounts figures, and the quarterly estimates for this year based on the new standard were first started in September this year. The models used to draw up the forecasts have not been calibrated to the new national accounts before the last estimate was made, in Economic Survey 4/95. Not all of the projections are influenced by the national accounts revision. Estimates for consumer prices, employment, unemployment, interest rates, hourly wages, market growth abroad, crude oil prices and, to a large extent, prices of traditional merchandise exports are in part entirely unaffected and in part only marginally affected by the main revision. Moreover, a comparison of growth rates for main variables in the old and new accounts for the years 1988-1994, published in Economic Survey 3/95, shows rather moderate differences between the national accounting versions. With this reservation, we shall in the following comment on the figures as if the main revision has not influenced the figures.

Two external factors have had a decisive influence on the forecasts during the period. One is related to the decision to raise the VAT rate by one percentage point in 1995. In isolation, such a change in indirect taxes entails that our projection of consumer price inflation will rise by 0.3-0.4 per cent. The increase in the inflation projections from Economic Survey 3/94 to 4/94 is thus primarily based on information concerning a policy change. This projection also entailed that the forecast for the real growth in private consumption was reduced slightly. The second main factor is the projection for international economic developments which influences the forecast for interest rates, market growth abroad and changes in prices of traditional export goods. In line with the optimism which gradually spread as international growth gathered momentum through 1994, most international forecasters raised their projections for GDP growth. Our forecasts largely followed this trend, with the exception of the end of the projection period when we undertook more independent evaluations. The increase in our interest rate projections generally followed in the wake of this optimism with regard to market growth. This was also the reason that our GDP projections for Norway were highest at the beginning of 1995 before we started to make downward adjustments in forecasts of international growth, which resulted in lower projections for exports and investment in the Norwegian economy.

However, for a number of key nominal variables - with the exception of the projections for oil prices in 1994 - the revisions in the forecasts have been very minor and far less than the uncertainty embodied in the model. This result is in accord with the experiences of forecasts for 1994. The revisions have also been moderate for other key macroeconomic variables even though most are bell-shaped linked to the projections for international economic developments.

## Statistics Norway's forecasts for 1995. Growth rates in per cent

|  | ES1/94[1] | ES5/94 | ES3/94 | ES4/94 | ES1/95 | ES2/95 | ES3/95 | ES4/95 | ES1/96[2] |
|---|---|---|---|---|---|---|---|---|---|
| Consumption in households and non-profit organizations | 3.1 | 3.0 | 3.3 | 2.7 | 2.9 | 2.7 | 2.9 | 3.1 | 2.7 |
| General government consumption | 1.7 | 1.5 | 1.4 | 0.7 | 0.7 | 1.2 | 1.2 | 0.6 | 0.6 |
| Gross fixed investment, mainland Norway | 7.0 | 9.7 | 8.9 | 10.1 | 16.3 | 15.4 | 15.3 | 13.7 | 14.1 |
| Exports | 4.2 | 4.3 | 4.3 | 5.2 | 8.6 | 7.9 | 4.8 | 5.0 | 3.7 |
| -traditional goods | 5.1 | 4.6 | 4.3 | 5.8 | 7.7 | 9.4 | 5.0 | 4.4 | 4.4 |
| Imports | 4.6 | 5.6 | 5.5 | 7.9 | 10.6 | 9.9 | 5.6 | 4.5 | 4.1 |
| -traditional goods | 4.6 | 4.9 | 4.5 | 7.0 | 9.3 | 8.9 | 7.2 | 7.6 | 9.0 |
| GDP | 2.6 | 2.7 | 2.5 | 2.6 | 4.8 | 4.8 | 4.8 | 4.2 | 3.7 |
| Mainland GDP | 2.5 | 2.6 | 2.2 | 2.2 | 3.6 | 4.0 | 4.2 | 3.9 | 3.3 |
| Employed persons | 1.4 | 1.7 | 1.7 | 1.6 | 1.7 | 1.8 | 2.0 | 2.2 | 2.0 |
| Unemployment rate (level) | 5.4 | 5.1 | 5.3 | 5.0 | 4.9 | 5.1 | 5.1 | 4.9 | 4.9 |
| Wages per man-hour | 3.6 | 3.6 | 3.6 | 3.7 | 3.7 | 3.6 | 3.5 | 3.6 | 3.9 |
| Consumer prices | 2.0 | 1.9 | 2.1 | 2.6 | 2.6 | 2.5 | 2.5 | 2.5 | 2.4 |
| Export price, trad. goods | 6.1 | 7.6 | 10.6 | 9.6 | 10.1 | 7.7 | 7.0 | 7.2 | 7.1 |
| Eurokrone rate (3 month) | 3.9 | 4.5 | 4.6 | 5.8 | 5.4 | 5.3 | 5.3 | 5.3 | 5.4 |
| Average lending rate (level) | 7.3 | 7.8 | 7.8 | 8.6 | 8.0 | 8.0 | 7.9 | 7.8 | 7.7 |
| Current balance (bill. Nkr) | 30.6 | 31.1 | 26.4 | 27.1 | 26.3 | 30.0 | 27.9 | 32.2 | 32.3 |
| Memo |  |  |  |  |  |  |  |  |  |
| Market growth | 5.8 | 6.0 | 5.9 | 7.3 | 7.2 | 7.2 | 6.5 | 6.0 | 4.9 |
| Crude oil price, Nkr | 127.5 | 122.4 | 116.5 | 116.5 | 108 | 112.8 | 107 | 108 | 105.9 |

1) Economic Survey no 1/94.
2) Preliminary national accounts figures for 1995.

## Norway: Trends in selected macroeconomic variables
At fixed 1992 prices. Billion Nkr

| | Unadjusted | | Seasonally adjusted* | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1994 | 1995 | 94.1 | 94.2 | 94.3 | 94.4 | 95.1 | 95.2 | 95.3 | 95.4 |
| Consumption in households and non-profit organizations | 422064 | 433577 | 103959 | 104769 | 106058 | 106813 | 105970 | 108091 | 109803 | 109187 |
| Direct purchases abroad by resident households | 16900 | 17315 | 3905 | 4251 | 4354 | 4249 | 3835 | 4344 | 4515 | 4399 |
| - Direct purchases in Norway by non-resident households | -15289 | -14092 | -4022 | -3901 | -3864 | -3430 | -4062 | -3303 | -3392 | -3532 |
| General government consumption | 176675 | 177819 | 44264 | 43868 | 44413 | 44286 | 44710 | 44653 | 44224 | 44267 |
| Gross fixed capital formation | 167394 | 176001 | 40811 | 43374 | 42202 | 40713 | 44066 | 44096 | 41560 | 46393 |
| Oil | 51149 | 44889 | 13013 | 15233 | 12176 | 10802 | 10575 | 10603 | 10982 | 12767 |
| Shipping | 1919 | 623 | 1272 | 673 | 844 | -870 | 592 | 1086 | -1628 | 573 |
| Mainland Norway | 114326 | 130488 | 26527 | 27468 | 29181 | 30781 | 32898 | 32407 | 32206 | 33053 |
| Manufacturing and mining | 11650 | 15696 | 2504 | 2663 | 3106 | 3221 | 3602 | 3956 | 3991 | 3994 |
| Production of other goods | 10969 | 11285 | 2738 | 2856 | 2621 | 2632 | 2908 | 2792 | 2583 | 2903 |
| General government | 26639 | 27698 | 6523 | 6483 | 6628 | 6866 | 7119 | 6911 | 7192 | 6668 |
| Dwellings | 22386 | 25529 | 4842 | 5368 | 5841 | 6255 | 6462 | 6461 | 6326 | 6287 |
| Other services | 42683 | 50281 | 9921 | 10098 | 10985 | 11808 | 12808 | 12286 | 12114 | 13200 |
| Stocks* | 20466 | 29917 | 3213 | 5227 | 6833 | 6402 | 4092 | 7561 | 9395 | 9126 |
| Gross capital formation | 187860 | 205918 | 44024 | 48601 | 49035 | 47115 | 48158 | 51657 | 50955 | 55519 |
| Final domestic use of goods and services | 786598 | 817314 | 192247 | 197238 | 199506 | 198214 | 198838 | 204401 | 205002 | 208973 |
| Demand from mainland Norway | 713065 | 741884 | 174751 | 176106 | 179653 | 181879 | 183579 | 185150 | 186233 | 186507 |
| Exsports | 332230 | 344441 | 81116 | 81572 | 81452 | 87384 | 86355 | 83804 | 86642 | 87551 |
| Traditional goods | 126514 | 132038 | 29902 | 31000 | 32517 | 33012 | 34373 | 31671 | 33223 | 32624 |
| Crude oil and natural gas | 114741 | 124298 | 28572 | 28456 | 26954 | 30744 | 29939 | 29713 | 30785 | 33853 |
| Ships and oil platforms | 10889 | 11531 | 2147 | 1993 | 2448 | 4302 | 2169 | 3618 | 3808 | 1937 |
| Services | 80086 | 76574 | 20495 | 20124 | 19533 | 19326 | 19875 | 18803 | 18826 | 19138 |
| Total use of goods and services | 1118828 | 1161756 | 273363 | 278810 | 280958 | 285598 | 285193 | 288205 | 291644 | 296524 |
| Imports | 272635 | 283911 | 67103 | 68462 | 68548 | 68362 | 69427 | 71818 | 70720 | 71800 |
| Traditional goods | 180522 | 196805 | 43323 | 44127 | 46654 | 46448 | 48020 | 49144 | 49702 | 50050 |
| Crude oil | 976 | 1281 | 243 | 238 | 260 | 236 | 361 | 396 | 340 | 183 |
| Ships and oil platforms | 12348 | 9760 | 4357 | 3750 | 1900 | 2341 | 2684 | 2588 | 1967 | 2522 |
| Services | 78789 | 76064 | 19180 | 20348 | 19735 | 19337 | 18361 | 19689 | 18712 | 19045 |
| Gross domestic production (GDP) | 846193 | 877845 | 206259 | 210347 | 212410 | 217236 | 215766 | 216387 | 220923 | 224724 |
| Mainland Norway | 708149 | 731194 | 172212 | 175808 | 178913 | 181338 | 180357 | 180981 | 183746 | 186103 |
| Oil activities and shipping | 138044 | 146651 | 34048 | 34539 | 33497 | 35899 | 35409 | 35406 | 37177 | 38622 |
| Mainland industry | 639748 | 658884 | 156526 | 159531 | 161723 | 162090 | 163559 | 163683 | 165299 | 166337 |
| Manufacturing and mining | 97217 | 100540 | 23590 | 24285 | 24544 | 24811 | 25309 | 25070 | 24909 | 25217 |
| Production of other goods | 72256 | 78344 | 17759 | 17925 | 18458 | 18218 | 19683 | 19391 | 19368 | 19846 |
| General government | 131792 | 133829 | 32841 | 32764 | 33089 | 33104 | 33181 | 33232 | 33524 | 33876 |
| Private services | 338482 | 346171 | 82336 | 84558 | 85631 | 85956 | 85386 | 85990 | 87497 | 87397 |
| Correction items | 68401 | 72311 | 15686 | 16277 | 17190 | 19248 | 16799 | 17299 | 18447 | 19766 |

\* See "Technical comments".

**Norway: Trends in selected macroeconomic variables**

Percentage volume change in 1992-prices

| | Unadjusted | | Seasonally adjusted* | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1994 | 1995 | 94.1 | 94.2 | 94.3 | 94.4 | 95.1 | 95.2 | 95.3 | 95.4 |
| Consumption in households and non-profit organizations | 4.6 | 2.7 | 1.4 | 0.8 | 1.2 | 0.7 | -0.8 | 2.0 | 1.6 | -0.6 |
| Direct purchases abroad by resident households | 8.6 | 2.5 | 1.8 | 8.9 | 2.4 | -2.4 | -9.7 | 13.3 | 3.9 | -2.6 |
| - Direct purchases in Norway by non-resident households | 13.3 | -7.8 | 14.2 | -3.0 | -1.0 | -11.2 | 18.4 | -18.7 | 2.7 | 4.1 |
| General government consumption | 1.1 | 0.6 | 1.5 | -0.9 | 1.2 | -0.3 | 1.0 | -0.1 | -1.0 | 0.1 |
| Gross fixed capital formation | 5.5 | 5.1 | -5.2 | 6.3 | -2.7 | -3.5 | 8.2 | 0.1 | -5.8 | 11.6 |
| Oil | -7.6 | -12.2 | -14.4 | 17.1 | -20.1 | -11.3 | -2.1 | 0.3 | 3.6 | 16.3 |
| Shipping | 60.0 | -67.5 | .. | .. | .. | .. | .. | .. | .. | .. |
| Mainland Norway | 12.0 | 14.1 | -1.4 | 3.5 | 6.2 | 5.5 | 6.9 | -1.5 | -0.6 | 2.6 |
| Manufacturing and mining | 6.5 | 34.7 | -6.9 | 6.3 | 16.6 | 3.7 | 11.8 | 9.8 | 0.9 | 0.1 |
| Production of other goods | -4.4 | 2.9 | 4.2 | 4.3 | -8.2 | 0.4 | 10.5 | -4.0 | -7.5 | 12.4 |
| General government | -0.8 | 4.0 | -3.2 | -0.6 | 2.2 | 3.6 | 3.7 | -2.9 | 4.1 | -7.3 |
| Dwellings | 25.9 | 14.0 | -1.5 | 10.9 | 8.8 | 7.1 | 3.3 | -0.0 | -2.1 | -0.6 |
| Other services | 22.1 | 17.8 | -0.0 | 1.8 | 8.8 | 7.5 | 8.5 | -4.1 | -1.4 | 9.0 |
| Stocks* | 53.2 | 46.2 | .. | .. | .. | .. | .. | .. | .. | .. |
| Gross capital formation | 9.2 | 9.6 | -7.4 | 10.4 | 0.9 | -3.9 | 2.2 | 7.3 | -1.4 | 0.9 |
| Final domestic use of goods and services | 4.9 | 3.9 | -0.8 | 2.6 | 1.1 | -0.6 | 0.3 | 2.8 | 0.3 | 1.9 |
| Demand from mainland Norway | 4.8 | 4.0 | 1.0 | 0.8 | 2.0 | 1.2 | 0.9 | 0.9 | 0.6 | 0.1 |
| Exsports | 8.5 | 3.7 | 2.5 | 0.6 | -0.1 | 7.3 | -1.2 | -3.0 | 3.4 | 1.0 |
| Traditional goods | 13.3 | 4.4 | 2.5 | 3.7 | 4.9 | 1.5 | 4.1 | -7.9 | 4.9 | -1.8 |
| Crude oil and natural gas | 11.6 | 8.3 | 1.6 | -0.4 | -5.3 | 14.1 | -2.6 | -0.8 | 3.6 | 10.0 |
| Ships and oil platforms | -11.0 | 5.9 | -9.0 | -7.2 | 22.8 | 75.7 | -49.6 | 66.8 | 5.2 | -49.1 |
| Services | 0.8 | -4.4 | 5.2 | -1.8 | -2.9 | -1.1 | 2.8 | -5.4 | 0.1 | 1.7 |
| Total use of goods and services | 5.9 | 3.8 | 0.2 | 2.0 | 0.8 | 1.7 | -0.1 | 1.1 | 1.2 | 1.7 |
| Imports | 6.6 | 4.1 | 1.5 | 2.0 | 0.1 | -0.3 | 1.6 | 3.4 | -1.5 | 1.5 |
| Traditional goods | 15.0 | 9.0 | 4.3 | 1.9 | 5.7 | -0.4 | 3.4 | 2.3 | .1 | 0.7 |
| Crude oil | -17.8 | 31.3 | -22.6 | -2.2 | 9.2 | -9.2 | 53.3 | 9.7 | -14.1 | -46.1 |
| Ships and oil platforms | -33.7 | -21.0 | -18.2 | -13.9 | -49.3 | 23.2 | 14.6 | -3.6 | -24.0 | 28.2 |
| Services | -0.0 | -3.5 | 1.3 | 6.1 | -3.0 | -2.0 | -5.0 | 7.2 | -5.0 | 1.8 |
| Gross domestic production (GDP) | 5.7 | 3.7 | -0.2 | 2.0 | 1.0 | 2.3 | -0.7 | 0.3 | 2.1 | 1.7 |
| Mainland Norway | 4.8 | 3.3 | -0.8 | 2.1 | 1.8 | 1.4 | -0.5 | 0.3 | 1.5 | 1.3 |
| Oil activities and shipping | 10.3 | 6.2 | 3.0 | 1.4 | -3.0 | 7.2 | -1.4 | -0.0 | 5.0 | 3.9 |
| Mainland industry | 4.5 | 3.0 | 0.5 | 1.9 | 1.4 | 0.2 | 0.9 | 0.1 | 1.0 | 0.6 |
| Manufacturing and mining | 5.6 | 3.4 | 0.7 | 2.9 | 1.1 | 1.1 | 2.0 | -0.9 | -0.6 | 1.2 |
| Production of other goods | 2.2 | 8.4 | -2.1 | 0.9 | 3.0 | -1.3 | 8.0 | -1.5 | -0.1 | 2.5 |
| General government | 1.8 | 1.5 | 0.6 | -0.2 | 1.0 | 0.0 | 0.2 | 0.2 | 0.9 | 1.0 |
| Private services | 5.8 | 2.3 | 1.0 | 2.7 | 1.3 | 0.4 | -0.7 | 0.7 | 1.8 | -0.1 |
| Correction items | 8.0 | 5.7 | -12.7 | 3.8 | 5.6 | 12.0 | -12.7 | 3.0 | 6.6 | 7.1 |

\* See "Technical comments".

## Norway: Price indices for selected macroeconomic variables

| | 1995 | Percentage change from the same periode the previous year | | | | Growth from previous quarter seasonally adjusted. Per cent* | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 95.1 | 95.2 | 95.3 | 95.4 | 95.1 | 95.2 | 95.3 | 95.4 |
| Consumption in households and non-profit organizations | 2.2 | 2.3 | 2.3 | 2.1 | 2.0 | 0.8 | 0.4 | 0.4 | 0.4 |
| General government consumption | 2.1 | 2.6 | 2.9 | 1.2 | 2.0 | 0.6 | 0.9 | -0.7 | 1.2 |
| Gross fixed capital formation | 2.3 | 2.2 | 1.6 | 3.3 | 2.2 | 0.6 | 0.1 | 1.5 | -0.1 |
| - mainland Norway | 2.1 | 2.1 | 1.6 | 2.4 | 2.1 | 0.6 | 0.5 | 0.4 | 0.7 |
| Final domestic use of goods and services | 2.0 | 2.3 | 2.2 | 1.7 | 1.9 | 0.7 | 0.4 | 0.0 | 0.7 |
| - demand from mainland Norway | 2.1 | 2.3 | 2.3 | 1.9 | 2.0 | 0.7 | 0.5 | 0.1 | 0.6 |
| Exports | 1.6 | 6.0 | 2.3 | -1.1 | -0.5 | 2.1 | -0.4 | -2.2 | 0.2 |
| - traditional merchandise exports | 7.1 | 11.1 | 8.0 | 6.0 | 3.8 | 5.7 | -1.7 | 0.5 | -0.1 |
| Total use of goods and services | 1.9 | 3.3 | 2.3 | 0.9 | 1.2 | 1.6 | 0.0 | -0.2 | 0.1 |
| Imports | 0.9 | 1.3 | 0.7 | 1.1 | 0.6 | 0.3 | -0.3 | 1.8 | -0.5 |
| - traditional merchandise imports | 0.7 | 0.9 | 1.2 | 0.7 | 0.3 | -0.0 | 0.5 | 1.1 | -0.6 |
| Gross domestic product (GDP) | 2.2 | 4.0 | 2.8 | 0.8 | 1.4 | 2.0 | 0.1 | -0.8 | 0.3 |
| - mainland Norway | 3.3 | 4.2 | 3.7 | 2.7 | 2.8 | 2.0 | 0.4 | -0.1 | 0.5 |

\* See "Technical comments".

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## Technical comments on the quarterly accounts figures

Statistics Norway is currently undertaking an extensive revision of the national accounts. Revised figures for the years 1988-1992 were published in Statistics Weekly no. 27 1995 (extra issue). Revised preliminary national accounts figures for the years 1993-1994 as well as figures for the first and second quarters of 1995 were presented in Economic Survey no. 3/95.

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

*Base year and linking the data:* In the quarterly national accounts all volume measures are currently calculated at constant 1992 prices using weights from that year. The choice of base year influences the constant-price figures and thus the annual rates of change in volume (growth rates). For the sake of comparison, all tables present growth rates with 1992 as the base year (common year of recalculation). This is done by recalculating constant-price figures for the years prior to 1992 at 1992 prices. The recalculation of prices is carried out at the sectoral level of the quarterly national accounts.

At the moment the figures from the new quarterly national accounts (QNA) only go back to the first quarter of 1992, which is too short a period for seasonal adjustment. Based on the new annual figures for the period 1988-1992, provisional quarterly figures on an aggregated level have been prepared for Statistics Norway's macroeconometric model MODAG. These figures are linked backwards in time to the quarterly figures from the old national accounts, and forward in time to the new quarterly accounts from the QNA for seasonal adjustment. The new seasonally adjusted series are more aggregated than the figures in the quarterly national accounts. In this issue of Economic Survey it has therefore not been possible to provide seasonally adjusted estimates for all variables which previously were presented in this way. This applies, for example, to the old classification of competition within manufacturing industry and the old distribution of private consumption on goods and services.

The seasonally adjusted stocks figures are calculated as the difference between total supply on the one side and the sum of consumption, exports and gross fixed capital formation on the other.

# Economic policy calendar 1995

## January

1. Sweden, Finland and Austria accede to the EU.

2. The Norwegian power supply producer Mascot Electronic A/S receives orders worth more than NKr 500 million from various mobile telephone producers.

3. The Army's new tanks are supplied with gun turrets from Kværner Eureka. The contract is worth about NKr 500 million. Hagglunds Vehicle AB won the contract with the Defence last year on the condition that they purchase goods and services in Norway.

4. EFTA's surveillance body ESA deals with the Norwegian retail monopoly for wine and spirits. The surveillance body declares unequivocally that the retail monopoly is a violation of the EEA Agreement's prohibition of quantitative trade restrictions and provisions on monopolies. ESA has previously declared that it will abolish the State Wine Monopoly's exclusive rights on imports, exports and wholesale sales.

7. An out-of-court settlement is reached between Hambros Bank and the Norwegian state in connection with the Reksten case. The settlement between Hambros Bank and the Norwegian Guarantee Institute for Ships and Drilling Vessels (GI) ensures that the state will receive NKr 300 million and will mark the conclusion of the search for Reksten's hidden fortune abroad.

10. Sweden's Minister of Finance Gøran Persson presents a government budget in which SKr 21.7 billion is to be saved over the next 18 months. The goal is to reduce central government debt to less than 60 per cent of GDP, compared with close to 100 per cent today.

13. Freia AS hands over the responsibility for the distribution of chocolate products to the large food chains' own wholesalers. Initially, 114 Freia employees will be dismissed.

14. Telenor Mobil awards the contract for expanding the GSM network in Norway to the Swedish company Ericsson. The framework agreement is worth about NKr 500 million and will run for three years.

14. Aker Offshore Partner and Kværner Installasjon in Stavanger are awarded contracts worth altogether NKr 2.3 billion by Statoil. The agreement will run for five years and relates to maintenance and smaller modifications to the Statfjord and Gullfaks platforms.

17. Kværner wins a contract worth NKr 5 billion to build three new cruise ships. The ships, which have been ordered by the US company Carnival Cruise Lines, shall be built at Kværner MasaYards in Finland (see also 6 December 1994).

17. The cooperative movement in Norway celebrates the 150th anniversary of the world's first cooperative. The 100th anniversary of the establishment of the cooperative movement's international organization is also celebrated. The cooperative movement in Norway has an annual turnover of close to NKr 100 billion and about 1.3 million members.

20. The Federation of Norwegian Professional Associations (AF) becomes a member of the Nordic Professional Associations Union (NFS). It is AF's cooperation agreement with the Norwegian Federation of Trade Unions that has paved the way for the agreement. NFS has eight million members in the Nordic countries.

25. The Gas Negotiations Committee, Total and the French monopoly importer Gaz de France sign a new and comprehensive agreement concerning the sale of Norwegian natural gas to France. The agreement will run for 26 years and relates to a total of 40 million toe natural gas. Deliveries will start in the year 2001 and reach a plateau of 2 million toe a year in 2005. The agreement has a gross value at delivery of about $ 4.5 billion.

26. The Government suffers two defeats in the Storting. Minister of Finance Sigbjørn Johnsen must acknowledge that the tightening of the splitincome tax model will be rejected. Instead the majority in the Finance Committee want accept for a differentiated personal income ceiling. In addition, the draft bill for a new Companies Act was returned to Minister of Justice Grethe Faremo with a request to draw up a separate companies act for small companies.

27. The Government gives its approval to the development plan for a new gas pipeline from the Troll terminal, the so-called Zeepipe Phase IIb. Total investments come to NKr 3.3 billion. The pipeline will extend from the riser platform 16/11E in the North Sea to Kollsnes.

31. Norsk Helikopter is awarded a contract worth NKr 500 million for helicopter transport from Sola to the Ekofisk area. The contract will run for a fiveyear period.

## February

1. The Post Office records a surplus of NKr 466 million after the accounts for 1994 are finalized. Total revenues amounted to NKr 10.1 billion, while expenditure was NKr 9.6 billion.

2. Remøy Holding is awarded the largest supply ship contract in the North Sea, worth about NKr 400 million. According to the contract, Statoil will lease a new supply ship

for NKr 150 million for twelve years, with the possibility of an extension for a further six years.

2. The European Commission approves additional state support for the Kværnerowned Warnov yard in Germany. The Commission gives its consent to investment support amounting to altogether DM 202.5 million, or a little less than NKr 1 billion.

3. Minister of Industry and Energy Jens Stoltenberg announces 56 blocks on the continental shelf, 16 in the North Sea and 40 further north in the Norwegian Sea, as part of the 15th round of licensing.

7. The Environmental and Energy Committee gives its consent to the development and operation of the Norne field.

13. The Government decides to relinquish the import monopoly for wine and spirits. It is hoped that this decision will save the retail monopoly from attacks by the EFTA Court.

14. Den norske Bank announces its highest profits ever. The profit for 1994 was NKr 2.68 billion, compared with NKr 0.94 billion the previous year.

16. Statoil presents its best results ever. The aftertax profit came to NKr 5.4 billion for 1994, against NKr 3.4 billion in 1993. The company will pay NKr 11.5 billion in taxes and NKr 1.6 billion in dividends to the state.

20. Norsk Hydro announces an operating profit of NKr 7.27 billion and a net profit of NKr 4.04 billion for 1994, an increase of NKr 3.23 and 1.04 billion from 1993.

23. By revitalizing its German subsidiary, Saga Petroleum enters into an agreement with the gas distributor company Wingas. The agreement relates to a 15year lease of transport and storage capacity for gas as well as the resale of gas to Wingas. Saga has applied to the Gas Negotiations Committee for the purchase of the gas, which represents a value of about NKr 1 billion a year. The background for the agreement is the rejection on several earlier occasions of Wingas' applications to purchase Norwegian natural gas.

24. Aker and Kværner have each been awarded a contract by Statoil. Aker shall be responsible for assembly and hookup on the Norne field, while Kværner will handle the hookup work on the Sleipner T platform. The contracts for Aker and Kværner are worth NKr 460 and 315 million, respectively.

## March

13. T. Skretting and AS Biomar are awarded a contract, worth about NKr 500 million, to supply feed to the fish farming companies Frøya Holding AS and Mowi AS. After having negotiated individually, the two buyers decided to cooperate on the contract. T. Skretting will be responsible

for 80 per cent of the deliveries and AS Biomar the remainder.

13. Oil production on the Statfjord field passes 3 billion barrels, entailing that the field has produced oil worth more than NKr 500 billion since 1979.

14. SAS orders 35 Boeing 737 aircraft, model 600, worth SKr 8.5 billion. Options for another 35 planes, which can be converted to larger aircraft, come in addition. The first aircraft will be delivered at the end of 1999, and thereafter on a regular basis up to 2002.

15. Norsk Hydro, which is operator for the Njord field, signs a letter of intention with Aker Stord AS concerning an EPC contract (engineering, procurement and construction) for a floating steel platform. The contract, worth about NKr 2.8 billion, entails that the platform shall be ready to be towed out from Aker Stord by 30 June 1997.

15. The Norwegian Federation of Trade Unions (LO) breaks off negotiations with the Norwegian Confederation of Business and Industry (NHO). The wage settlement for 250 000 employees in the private sector must therefore be settled through mediation. The negotiations were broken off due to dissatisfaction with the pay increase and arrangements offered by the employers.

16. Tofte Industrier AS sells its ultra-modern chlorine factory to India, where it will produce environmentally toxic agro-chemicals. The plant, located in Hurum, had to close in 1991 due to protests from both the authorities and environmental organizations.

17. Kværner's Swedish subsidiary Kværner Enviro Power is to supply a complete waste recovery plant to Thailand. The plant will cost about NKr 375 million.

21. The Australian mining company Broken Hill takes over parts of the ilmenite smelter in Tyssedal. NKr 200 million will be invested in the smelter. In the future the smelter will use raw materials from Australia and no longer purchase raw materials from Titania in Dalane.

22. The insurance group which insured the Sleipner platform, led by Vesta, brings an action against Norwegian Contractors (NC) and the parent company Aker. They demand the repayment of NKr 2.3 billion of the insurance paid. This is the largest recourse claim ever raised in Norway. The Sleipner platform sank in the Gansfjord in 1991.

22. The Norwegian-Swedish working partnership AF MNFP is awarded a contract by NSB Gardermobanen A/S worth about NKr 1.8 billion. The company will be responsible for site preparations for the stretch between Åråsen and Leirsundveien in connection with the new railway extension.

27. On behalf of its 22 Norwegian electricity producers, Euro-Kraft Norge AS concludes a power exchange contract with Germany's largest electricity producer Euro-

Strom. The contract will result in investments worth about NKr 4 billion in new power cables from Norway to Germany. The contract involves reciprocal supplies for 25 years starting on 1 January 2003 at the latest.

30. Statoil doubles its reserves estimates for the Smørbukk field, i.e. an increase of abut 290 million barrels. For the owners, this will boost sales revenues by NKr 32 billion.

31. Norske Skog buys out its partner in a French paper mill, expands the chipboard factory in Braskereidfoss and acquires the chipboard competitor Agnes Fabrikker. Altogether, the investments, purchases and takeover of loans come to NKr 840 million.

## April

3. Orkla buys Procordia from Volvo for nearly NKr 3.7 billion. Orkla thus becomes the largest food and beverage company in the Nordic area, with 21 000 employees and turnover of NKr 26 billion.

3. Transocean and Wilrig merge and become the world's third largest rig company. The new company is expected to have sales of NKr 3.5 billion this year.

3. Transocean Petroleum Technology signs a contract with Saga Petroleum for drilling services and maintenance of the drilling module Snorre TLP. The contract, worth NKr 310 million, will extend over a period of four years.

4. The Confederation of Norwegian Business and Industry and the Norwegian Federation of Trade Unions reach agreement on this year's wage settlement (see 15 March). According to the agreement, average hourly wages will be increased by 80 øre, with an additional 85 øre for those who do not have local negotiating rights. Those earning less than 90 per cent of the average will receive an extra 80 øre, or altogether NKr 1.60.

5. The National Insurance Institution shelves plan to switch to the new computer system Tress 90 after having spent more than NKr 600 million. The change-over to the new system originally had a price of NKr 1.3 billion. The National Insurance Institution will continue to use its current nine-year old system.

5. Alcatel Telettra Norway is awarded a framework contract worth NKr 500 million by British Telecom. The company will supply fibre optic cable systems to the British high-frequency network for speech and data.

5. Sweden's Minister of Finance, Göran Persson, presents a new austerity package to reassure the money market. This includes proposals to reduce sickness, maternity and unemployment benefits to 75 per cent of the current level and a reduction in the VAT rate for food from 21 per cent to 12 per cent.

7. Statoil invests about NKr 1 billion in Malaysia. The company wants to strengthen its trading position in Southeast Asia and buys a 15 per cent stake in the expansion of the Melaka refinery.

20. Kværner Pulping is awarded contracts worth altogether NKr 190 million by the Brazilian group Votorantim. The contract covers equipment in connection with Votorantim's plans to modernize its pulp and paper factories.

21. The employee organisations in the state present their demands in connection with the central government settlement. Common to all the demands are higher purchasing power and measures to achieve equal pay.

24. Norway and the European Commission reach agreement on new duty-free quotas for Norwegian fish exports to the EU. The agreement takes account of new member countries in the EU, and Norway's duty-free quota increases by the average of exports to these countries in the period 1992 to 1994.

25. Westamarin AS is awarded a contract, worth NKr 1.4 billion, for building Stena Line's four new catamarans.

25. The heads of the two farmers' unions present their demands in connection with the agricultural settlement. The demands entail a price decline for farmers of NKr 195 million as well as zero growth in support over the government budget.

25. Municipal employees' representatives present their pay demands. The municipal sector in LO's negotiating group (LOK) demands an additional NKr 5 700 for those earning less than NKr 146 700, and an additional NKr 4 500 for those with earnings above this level (pay grade 11). In addition, LOK wants to have extra increases in pay grades 1 to 5. The Federation of Norwegian Professional Associations in the municipal sector demands that all its members be moved up a pay grade and that additional pay increases of 0.5 per cent be granted to those with pay exceeding NKr 309 800 (pay grade 51). The Confederation of Vocational Unions in the municipal sector demands a flat nominal increase of NKr 5 500 a year for all its members.

The Norwegian Federation of State Employees' Unions in LO and the Norwegian Union of Teachers demand increases of NKr 5 700 for those in pay grades 1 to 11, and NKr 4 500 for those in pay grades 12 to 75, with effect from 1 May. The organizations also demand a centralised equal pay fund of 1.1 per cent of total annual pay. State employees in the Confederation of Vocational Unions demand an equal nominal amount of NKr 5 500 a year for all members with effect from 1 May. They also demand a centralized adjustment settlement focused on measures and low-paid employee groups in which women make up the greater part. With regard to the question of equal pay, both the Confederation of Vocational Unions and Federation of Norwegian Professional Associations want to have funds allocated for local negotiations.

28. Saga Petroleum is quoted on the New York Stock Exchange for the first time.

## May

6. The Norwegian Defence concludes a contract with Hughes to buy missiles worth about NKr 4.5 billion. The agreement requires Hughes to buy products from Norwegian industry. The missiles are to be used in the F-16 aircraft.

10. Conoco Norway babtizes the Heidrun platform. The platform is the first concrete tension leg platform in the world and one of Norway's biggest industrial investment amounting to more than NKr 25 billion. Oil production from Heidrun will start in August, and will give the central government tax and royalty revenues of around NKr 7 billion annually from the year 2000.

10. The Revised National Budget for 1995 is presented. Minister of Finance Sigbjørn Johnsen reduces the government budget deficit to NKr 6 billion. In 1996, a surplus of NKr 10 billion will be allocated to the Government Petroleum Fund.

10. Norway's largest gas customer, the German distributor Ruhrgas, has sent an enquiry to the Gas Negotiations Committee (GNC) concerning the purchase of an additional two billion cubic metres of gas a year. At the end of April the GNC rejected an application from Saga to purchase Norwegian gas which was to be resold to Ruhrgas' competitor Wingas. The enquiry from Ruhrgas represents gas worth NKr 1.3 billion a year, twice the amount Saga wanted to sell to Wingas.

11 SAS and Lufthansa conclude a cooperation agreement in which the main component will be a coordination of the airlines' scheduled service network throughout the world. The cooperation agreement will come into force on 1 January 1996 provided it is approved by the EU Commission.

12. The central government and farmers' organisations concludes a new agricultural agreement which entails that support to farmers will be reduced by NKr 900 million. Of this amount, reduced transfers over the government budget will account for NKr 380 million and reduced prices to farmers for agricultural products for NKr 520 million. This will result in cheaper meat, cheese and milk for consumers.

17. After being towed for a week, the Troll platform reaches the field where it will remain for the next 70 years. The field is Europe's largest offshore gas field with about 1 300 billion cubic metres of recoverable gas reserves. The Troll platform is the world's largest concrete platform, and the first platform secured to the seabed at a depth of 300 metres. The total cost of Troll phase 1 is expected to be about NKr 30 billion.

22. The managing director of the Norwegian State Railways (NSB), Kristian Rambjørg, resigns from his position with immediate effect. The Board of NSB feels that a change in management is necessary to solve the enormous financial problems of the company.

24. The Ullstein Group is awarded a ship contract worth NKr 220 million. The contract was concluded with the state of South Korea, and relates to a seismic research vessel. South Korea is the world's second largest shipyard nation.

30. Wilrig is awarded a contract by the Brazilian oil company Petrobas for drilling deep-sea wells on the Brazilian continental shelf. The contract is worth about NKr 360 million.

31. The Federation of Norwegian Professional Associations, the Norwegian Police Federation and the Norwegian Union of Teachers select some of their members for strike action. Among the strikers are physicians, police officers and nursery school teachers.

## June

1. Floods in the eastern part of Norway destroy buildings, roads and cultivated fields.

1. Norsk Hydro and Kværner Masa Yards sign a letter of intention concerning the development of a floating storage unit on the Njord field. The contract is worth NKr 470 million.

1. Norske Skog invests NKr 370 million in Follum Fabrikker in Hønefoss to develop two new high-quality types of paper.

3. The Government decides to introduce compulsory arbitration for the police.

6. After the Federation of Norwegian Professional Associations announces plans for an escalation of the strike, by including air controllers and the weather forecasting service, the Government decides to introduce compulsory arbitration. The Norwegian Union of Teachers has decided that the strike among nursery school teachers shall be escalated.

12. The Storting approves the EU's oil directive, entailing that the EEA Agreement shall also apply to the Norwegian continental shelf.

13. Borregaard in Sarpsborg opens a purification and biocombustion plant which has cost NKr 200 million to build. The plant is a result of considerable reductions in licenses for emissions from process plants in Sarpsborg.

20. Dyno Industrier is selected as sole supplier of oil chemicals for Norsk Hydro's activities on the continental shelf. The deliveries will extend over a five-year period and are worth about NKr 150 million.

20. Petroleum Geo-Services (PGS) signs a contract giving them sole rights to engage in seismic surveys of the seabed

off China. The contract, worth several hundred million kroner, has a duration of five years.

21. The oil company Shell decides to halt plans for dumping the oil rig "Brent Star" in the North Atlantic due to extensive international protests.

30. The company Advanced Production & Loading from Arendal is awarded a contract worth NKr 120 million from Norsk Hydro. The contract relates to the company's floating production solution for the Njord field.

## July

1. Norway concludes an agreement with the EU concerning trade in processed agricultural goods. The agreement ensures duty-free import and export quotas between Norway and the EU. The quotas are based on average imports and exports for each type of product between Norway and Sweden, Finland and Austria in the period 1991-1993.

6. Statistics Norway presents revised national accounts figures for the period 1988-1992.

10. Søviknes Verft in Haram concludes an agreement to build a shrimp trawler for the Danish company Ocean Prawn. The contract is worth NKr 100 million.

13. Norsk Hydro approves the expansion of the smelter in Årdal, costing NKr 1.7 billion. In addition, Norsk Hydro will use a few hundred million kroner to modernize the power station.

15. Fosen Mekaniske Verksted (FMV) signs a contract, worth about NKr 1 billion, with the Finnish shipowners United Shipping LTDAB and Birka Line AB to supply four ro-ro ships.

17. Helikopter Service AS is awarded a contract to develop helicopter services for the Hibernia oil field in Canada. The contract is worth about NKr 250 million.

29. Tandberg Data is awarded a two-year contract, worth about NKr 125 million, with the US company Sun Microsystem. Sun Microsystem is the world's largest supplier of UNIX workstations, and the contract relates to Tandberg's cartridge-based storage technology QIC (Quarter Inch Cartridge).

## August

10. This is the 300th anniversary of the issuance of the first officially approved currency notes in Denmark-Norway. It was King Christian V who gave merchant Jørgen Thor Møhlen in Bergen permission to issue the notes, the so-called Møhlen notes. The notes were dated 10 August 1695 and were put into circulation immediately.

10. The oil company BP awards Scandinavian Service Partner & Industrial Catering a five-year catering contract for the Ula and Gyda fields. The contract is worth NKr 220 million.

10. Kongsberg Offshore AS signs a contract for supplying technological equipment to the Brazilian state oil company Petrobras. The contract, worth NKr 100 million, relates to supplies of newly developed equipment that is used to control oil production at great depths.

11. The company Hydro Agri International, which is owned by Norsk Hydro, concludes a contract with the Japanese yard Hitachi Zosen for building two new gas tankers. The contract is worth about $ 80 million, or about NKr 500 million.

18. Following strong pressure from the Gas Negotiations Committee (Norsk Hydro and Statoil), Saga Petroleum abandons its attempt to sell gas to Germany's Wingas, thereby eliminating future gas earnings of NKr 15 billion in addition to strategic stakes in the German gas network. The Gas Negotiations Committee justifies its position on the grounds that it would be detrimental to sell gas to the main competitor of Ruhrgas, Norway's largest gas customer.

22. The AF Group is awarded a contract for site preparations for the Gardermoen railway. The contract is worth NKr 176 million, with most being awarded by NSB Gardermobanen AS.

22. Borregaard invests NKr 190 million in Borregaard ChemCell in order to be able to offer high-quality chemical pulp.

26. Saga Petroleum upgrades recoverable reserves on the Snorre field by 57 million barrels of oil, to a gross sales value of nearly NKr 6 billion.

29. Kongsberg Offshore is awarded a contract worth between NKr 2.5 and 3 billion from Statoil. The contract relates to supplies of all facilities for Statoil's subsea production the next five years, and is the largest of its kind ever concluded. Norwegian sub-contractors can expect to receive orders for about half of the contract amount, amounting to between 1000 and 1500 man-years.

31. Kværner Rosenberg in Stavanger is to convert an earlier oil platform to the world's first launching pad for booster rockets. The project has been given the name "Sea Launch" and is a joint venture between the Kværner Group, Boeing (US), NPO Yuzhnoye (Ukraine) and RSC Energia (Russia). The conversion will cost about NKr 500 million and employ between 400 and 500 people at Rosenberg for 12 to 14 months. The rockets shall launch commercial satellites, primarily telecommunications satellites.

Kværner will also supply a ro-ro ship that shall function as a supply ship and control centre for satellite launches. This order is worth about NKr 600 million.

31. Helikopter Service's subsidiaries, Bond Helicopter in the UK, and Lloyds Helicopter in Australia are awarded contracts worth altogether NKr 250 million.

31. Norsk Forsvarsteknologi (NFT) concludes an agreement with the US defence companies GM Hughes Aerospace and Raython Company. The agreement relates to the sale of medium-range missiles where NFT has developed and produced the fire control system. The market is estimated at NKr 30 billion over the next ten years. NFT's share is estimated at NKr 3 billion.

## September

1. Aker Verdal is awarded a contract worth about Nkr 500 million by Phillips Petroleum in connection with the development of Ekofisk II.

8. The oil company Conoco must pay Aker's subsidiary Norwegian Contractors NKr 330 million as compensation for cost increases in connection with the work on the Heidrun platform. Initially, Aker demanded between NKr 500 and 800 million.

9. The US manufacturer of automotive parts A-CMI establishes a factory in Lista. The plant, which entails investments of NKr 260 million, will provide 250 new jobs. Elkem Aluminium will be co-owner and sub-contractor.

18. Oceanor signs a three-year contract worth about NKr 100 million with BPPT, the central directorate for technology and industrial development in Indonesia. The project involves the establishment of a maritime environmental monitoring system, Seawatch.

19. Statoil signs an agreement with Conoco concerning the acquisition of 257 petrol stations in Ireland. The agreement costs Statoil about NKr 500 million and will come into effect at the beginning of 1996.

20. The European Commission gives its approval to a joint venture between the food divisions of Orkla and Volvo on the condition that Orkla sells Hansa Brewery in Bergen so that the new company will not be too dominant in the Norwegian beer market.

21. Statoil awards Aker a supplementary order for more than NKr 130 million. The order with Aker Offshore Partner relates to projects in connection with the gas pipeline Norfra.

22. Selmer is awarded a contract worth NKr 221 million by Oslo Hovedflyplass, the company responsible for the new airport at Gardermoen. Selmer will be the main contractor for the airport's external facades, sun screening and security entry systems.

22. Larsen Oil & Gas in Bergen is awarded a drilling and test production contract worth NKr 140 million on the British continental shelf.

29. Following extensive leaks, Minister of Finance Sigbjørn Johnsen presents proposals for the National Budget for 1996. The budget shows a surplus of NKr 10.6 billion.

## October

4. Norway Seafood/RGI sign a contract, worth at least NKr 1.4 billion, to build 16 fishing vessels for Russian shipowners. The vessels, to be built at Brattvåg shipyard, will fish on Russian quotas.

5. Alcatel Kabel Norge signs a contract worth NKr 270 million with Telenor concerning supplies of cables.

7. Brattvåg shipyard signs a contract to build five vessels for a Russian shipping company which engages in fishing on the Pacific coast. The contract is worth NKr 508 million.

17. Statoil enters the battle for the Irish oil company Aran with a bid of NKr 2 billion.

18. Kværner Pulping AB is awarded a contract worth about SKr 185 million by Stora Cell in Sweden.

19. Eeg-Henriksen Anlegg wins a contract for NKr 268 million for building 13 kilometres of the trunk road tunnel between Aurland and Lærdal.

23. Langsten Slip & Båtbyggeri in Romsdal will build a factory trawler for Norway Seafood AS. The contract is worth NKr 400 million. The hull will be built at Tangen Verft in Kragerø.

24. Esso Norge signs an agreement with Smedvig for the purchase of a special vessel SPU 380 for NKr 1.82 billion in connection with the proposed development of the Balder field.

24. Norsk Hydro concludes a long-term contract for drilling production wells for Hydro-operated fields with Odfjell Drilling and Consulting Company. The contract is expected to be worth about NKr 700 million.

31. Raufoss Technology is awarded two major contracts. One is for Canada and relates to sales of M72 for NKr 150 million. The other is a development contract, worth about NKr 75 million, for 30 mm ammunition for the Norwegian Army.

## November

1. PLM Moss Glassverk AS is the first company that is denied state aid as a result of the EEA Agreement. The Swedish management evaluates closing the company after EF-

TA's surveillance body ESA refuses to grant an exemption from the basic tax on beverage containers.

1. A political majority in the Storting advocate a privatization of Ofotbanen. The Norwegian State Railways and Swedish State Railways will each own 24.5 per cent of the shares in the new company, Malmtrafikk AS. The remaining 51 per cent of the shares is owned by the Swedish company LKAB.

2. Veidekke AS concludes a contract, worth about NKr 210 million, for the construction of Amanda Storsenter in Haugesund.

2. Alcatel Telecom Norway wins two contracts, worth altogether NKr 185 million, with the Norwegian Defence. One contract involves the defence's digital network while the other relates to a communications control system for the Air Force.

2. The Russian and Norwegian authorities, through Eksportfinans and the Russian foreign bank Vnjesekonombank, sign an agreement on financing exports of capital goods and ships to Russia. The agreement paves the way for building Russian fishing vessels at Norwegian shipyards.

3. The Ugland Group signs an important contract concerning the transport of oil from the Hibernian oil field off the coast of Canada. The contract entails that Ugland and its Canadian partner will build a tanker reinforced against ice at Samsung in South Korea for NKr 750 million.

3. Carnival Cruise injects USD 50 million in Kloster Cruise, increasing its ownership to two thirds of the company. The capital injection saves Kloster from bankruptcy.

4. The Norwegian State Railways (NSB) is given authorization to sell assets to free up capital. NSB will sell shares in Narvesen for NKr 500 million in addition to properties worth NKr 300 million. The funds will be reinvested in new equipment.

4. Veidekke signs a contract worth NKr 170 million in connection with the construction of Norsk Bransjesenter at Skøyen in Oslo.

8. Norsk Hydro wins a contract worth about NKr 200 million for the sale of Norwegian-produced fertilizer to China. Solberg & Andersen sign a contract worth about NKr 170 million for supplies and training in connection with five drinking water plants.

10. The Government decides to extend shipyard support for several hundred million kroner into 1996 as a result of the failure to reach agreement on the OECD accord which would abolish shipyard support from 1 January.

15. The Ullstein Group is awarded a contract worth NKr 290 million from the Swiss shipping company Care Offshore for building a combined offshore vessel.

17. The Storting adopts a new Securities Trading Act which will come into force on 1 January 1996. The new Act entails changes in capital adequacy rules for securities firms and rules on short sales.

17. Russia, which took over the foreign loans of the former Soviet Union, signs an agreement with creditors after four years of negotiations concerning debt repayments.

18. Haugesund Mekaniske Verksted signs a contract with Norsk Hydro on the construction of the Visund platform. The contract is worth NKr 3.1 billion.

19. Torstein Moland resigns from his post as central bank governor after being given a penalty tax by the Oslo Tax Board due to gross negligence in the so-called Airbus case. Moland has appealed the decision to the Superior Tax Assessment Board.

21. The presidents of Bosnia, Croatia and Serbia sign an extensive peace agreement which may entail the end of a war that has lasted for nearly four years.

21. The Norwegian Competition Authority does not give its approval to the book agreement which regulates the sale of Norwegian books. The Competition Authority demands that the sale of school books and textbooks be exempt from the agreement.

21. The Storting decides to extend Norsk Hydro's electricity agreement for the aluminium plant in Årdal.

22. As expected, OPEC's ministerial council decides to extend the current production quota of 24.52 million b/d into 1996.

23. Negotiations break down between the Norwegian Fishermen's Union and the state concerning a new fisheries agreement for 1996.

24. Along with NCC, Eeg-Henriksen is awarded a contract worth NKr 510 million for internal construction and the terminal building at Gardermoen airport. Including related contracts, the project is worth about NKr 1.1 billion.

30. Odfjell Drilling signs a letter of intent for a three-year contract with Statoil for upgrading an older drilling rig. The contract is worth a good NKr 500 million.

## December

1. The Government presents the Final Budget Bill. In spite of the NKr 3.5 billion increase in expenditure after the presentation of the National Budget, the surplus and transfers to the Petroleum Fund rise from NKr 10.6 billion to NKr 12.6 billion.

1. Spain's Foreign Minister Javier Solana is appointed new Secretary General of NATO.

3. Minister of Fisheries Jan Henry T. Olsen orders a halt in all feeding of salmon over two kilos to prevent further surplus production. The ban will apply until 15 January 1996.

5. Moen Slip in North Trøndelag signs a contract with Independent Fisheries Ltd. in New Zealand for the construction of a stern trawler. The contract is worth NKr 70 million and safeguards 60 jobs through 1996.

7. The state sells just under 100 million shares in Christiania Bank, at a loss of NKr 1.1 billion. The state still owns 51 per cent of the shares in the bank.

7. Kværner Pulping Inc. in the US is awarded a contract worth about NKr 160 million by one of North America's largest pulp and paper manufacturers. The contract, which relates to supplies of a Chemrec Recovery Booster with an accompanying system, represents a commercial breakthrough for this technology developed and patented by Kværner.

9. Skibsaksjeselskapet Storli in Bergen orders two new chemical tankers for delivery in 1998 from Kværner Florø. The ships have a total price of $ 150 million. The shipping company has an option for the delivery of an additional two ships in 1999.

14. Statoil acquires the Irish oil company Aran Energy. Statoil is willing to pay more than NKr 2 billion for the company, which has 40 employees and turnover amounting to almost NKr 1 billion in 1995.

16. Haugesund Mekaniske Verksted signs a letter of intent with Kværner Rosenberg AS on the construction of a steel jacket for the Visund platform. The contract is worth about NKr 300 million.

16. Minister of Industry and Energy Jens Stoltenberg presents plans for the development of the Åsgard field on Haltenbanken. The development will cost NKr 27 billion.

16. The Storting's Finance Committee presents its report on next year's government budget. The Government has a majority against it on budget items amounting to about NKr 300 million, in addition to changes of about NKr 2.5 billion that were made in the Government's programme last autumn.

16. In connection with the development of the Njord field, Norsk Hydro awards two contracts, worth NKr 365 million, to Coflexip Stena Offshore Norge AS.

22. ABB is awarded a contract worth NKr 650 million for the subsea system of Esso's Balder field in the North Sea. ABB will supply the entire system for subsea production. In addition, the contract contains an option for an additional 11 wells with a value of about NKr 500 million.

22. Raufoss Automotive (RAA) is awarded a contract by Volvo worth more than NKr 2 billion. RAA will supply

bumper systems and other body components to Volvo Personvagnar AB. A condition for the contract is that Raufoss invests NKr 250 million in a new component plant in Gothenburgh.

23. Nocon AS, the export company for construction in Veidekke and Selmer, is awarded a contract for building tunnels in Italy worth NKr 150 million.

## January 1996

9. Dyno is awarded a contract, worth NKr 116 million, by Saga Petroleum. The contract relates to supplies of production chemicals for the Snorre and Vigdis fields.

17. Kværner pulping wins a contract, worth NKr 440 million, for modernizing a chemical pulp plant in Monte Alegre.

22. Allocations in the 15th round of licences on the Norwegian continental shelf are announced by the Ministry of Industry and Energy. The Norwegian operator companies Statoil, Norsk Hydro and Saga Petroleum receive an offer for operator responsibility of 8 out of a total 18. The French company Elf and the US company Conoco, whose cost overruns have previously entailed that the state has lost NKr 5 billion, were not allotted operator responsibility and are thus without new assignments in Norway. The oil companies have a one-week deadline to accept the offers.

22. The Board of the Post Office considers a report which concludes that the post office network must be substantially reduced. The reorganization will require a reduction of 3 500 man-years and a closure of 900 post offices by 1999.

23. The Government authorizes both Den norske Bank and the Dutch company Aegon to buy the insurance company Vital. In practice, this means the DnB will buy Vital since 99 per cent of the shareholders in Vital want DnB as owners. DnB, which already has a 10 per cent stake in Vital, will have to pay NKr 2.8 billion for the remainder of the company.

25. The Storting gives the Norwegian State Railways (NSB) permission to sell its shares in Narvesen. NSB today owns 41 per cent of the shares in Narvesen.

26. Raufoss AS invests NKr 250 million in a production plant for plastic moulding, lacquering and assembling bumper systems in Gothenburgh (see 22 December 1995). Volvo stipulated as a condition that Raufoss had to move its production to a location close to Volvo's plant in Gothenburgh when the long-term supply contract was igned. Between 170 and 200 jobs at Raufoss will be affected by the move.

26. The licensees on the Varg field, Saga Petroleum and Statoil, decide that the field will be developed, pending the authorities' approval. Three main contracts are awarded in this connection. Far East Livingston Shipbuilding will sup-

ply production ships (contract worth about NKr 1.5 billion), Aker Verdal, in cooperation with Saipem UK, will supply the installed wellhead platform (contract worth about NKr 250 million) and Coflexip Stena Offshore Norge will supply field cables and risers (contract worth about NKr 130 million).

29. All oil companies that were offered operator responsibility in the 15th round of licences accept the offer.

## February

1. Statnett decides that it will invest NKr 120 million in new power lines and transformer stations in Hadeland and in Ringerike.

5. The Government approves Esso Norge's plan for developing and operating the Balder field 180 kilometres west of Stavanger. Development costs are estimated at a little less than NKr 5 billion. Balder is identical to the first licence that was awarded in Norway in 1965, but it is only recently that sufficiently advanced technology has been developed to make it profitable to develop the Balder field. Recoverable reserves in the field are estimated at 170 million barrels of oil.

# A green GDP — Do we need it?[1]

*Knut H. Alfsen*

*The gross domestic product (GDP), in the form in which it is regularly published and used to evaluate policy proposals, is apt both to give a false impression of our economic well-being and a false basis for deciding how much we can spend of what we earn. Hence there are good reasons for improving the GDP measure. This is especially true in regard to issues such as our depletion of oil and gas reserves at the expense of coming generations, extermination of threatened plant and animal species, and pollution of the environment. The proposal for a so-called "green" GDP is intended to achieve such an improvement. The idea is that adjusting GDP for depletion of natural resources, for degradation of the environment and for expenditure on combating environmental degradation should provide a better measure of changes in the community's well-being and an improved tool for appraising various policy proposals. The present article argues that this is (unfortunately) not a simple matter. Indeed it is argued that we should avoid constructing a green GDP. There are alternatives to a green GDP, and some of these are described in the following. In short, we argue for supplementing GDP with other types of indicators and information, rather than overburden an already overexploited indicator with yet another interpretation.*

## Introduction

One reason for Norway's wealth is its unusually ample supplies of natural resources such as hydropower, forests, fish and not least oil and gas. Moreover, Norway is a beautiful country whose natural environment possesses a richness and quality that are the envy of many. Given this fortunate situation it is natural to ask whether we are taking adequate care of our natural wealth. For example, is the present generation depleting more than its fair share of the petroleum wealth at the expense of coming generations? Are we polluting the country "excessively" (however this may be defined)? Are we taking proper care of our flora and wildlife? Probably many people have felt that Norway's economic progress over the past century has not led to a corresponding increase in the quality of life, partly as a result of greater pollution of earth, air and water and partly as a result of changes in social patterns accompanied by isolation, family breakdowns, etc.

In recent years these and other factors have led to calls for an *environment-adjusted gross domestic product* - a so-called "green" GDP. Such calls are rooted in a notion that politicians and others responsible for guiding social development use GDP as an important strategic indicator, not least when faced with a choice between various policy proposals. If GDP is growing quickly, the policy is sensible and the country is on a good trend. If growth is slow or non-existent then we are on a correspondingly poor trend and the policy proposal should be dropped. The green or environment-adjusted GDP is intended to take account of the degradation of the environment and draining of resources that accompany increased economic activity. The belief is that the green GDP will thereby reflect changes in welfare better than the traditional GDP measure.

Figure 1 and 2 shows the trend in GDP in Norway over the past 130 years and the trend in global average temperature. Although both curves show an upward trend, the link between GDP and temperature is neither a direct nor simple one.

We see that GDP has expanded dramatically over the past hundred years or so. Indeed it is probably widely agreed that we are better off now than a hundred years ago. Nevertheless most people will probably question the notion that we are *vastly* better off. Some even contend that the economic growth we have seen since the 1960s reflects no improvement whatsoever in our welfare. One tangible sign of this may be the unease felt by many today owing to the threat of global climate changes.

The proponents of a green GDP single out two factors in particular that they believe should be applied to adjust traditional GDP: 1) extraction of natural resources or "draining" of the resource wealth, and 2) activities devoted to protecting the environment against degradation. For example, the oil income is included in GDP although the income partly stems from draining of oil reserves and can therefore be said to be at the expense of the income of subsequent generations. Again, GDP may grow when, for instance, we install double or triple glazing in order to keep out noise. It goes without saying that noise diminishes rather than enhances our quality of life, at variance with the trend in GDP. It is a simple matter to find examples where quality of life and GDP are on conflicting trends, see for instance Mishan (1967) for some early examples.

The calls for a green GDP raise a number of issues. Some, of a somewhat philosophical character, involve the nature of welfare: how it should be measured, and whether it is

**Figure 1. GDP for Norway**
Billion Nkr



Source: Statistics Norway.

**Figure 2. Global mean temperature**
Centigrades



—— Observations    ----- 10 year running
average

Source: http//www.giss.nasa.gov/Data/GISTEMP.
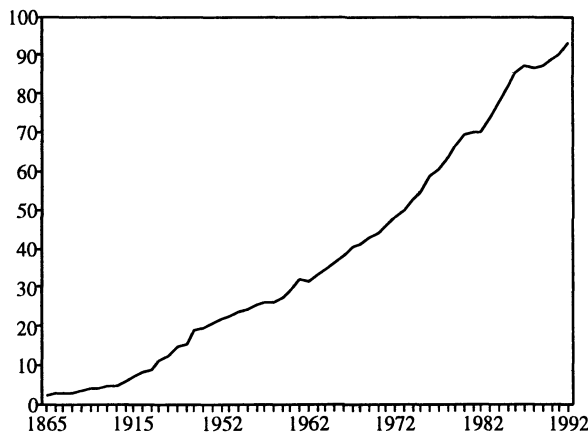
meaningful to compare the welfare of two persons, let alone two countries. On a more pragmatic level there is the question of how natural resources and the environment - should be valued: what are nature and the environment worth measured in money terms? Some resources such as oil and gas are traded in markets which of course provides some information on their value. But is this sufficient to value them reliably? For other resources, for instance most environmental assets, there are no markets to provide price information, and this of course compounds the problem of valuation.

Assuming that we find solutions to these problems, there is still the question of whether GDP *ought* to be adjusted. In this article I discuss some of these problems and attempt to draw conclusions about the appropriateness of a green GDP. Other researchers, such as Lone (1992), Nyborg and Aaheim (1991) and Aaheim and Nyborg (1995), have previously discussed this issue from other angles and arrived at roughly the same conclusions.

However, before discussing GDP adjustment it would be useful to take a brief look at some national accounts concepts to clarify what, if anything, is to be adjusted.

## GDP and other national accounts concepts

GDP and a number of other aggregates or economic indicators are calculated on the basis of data from the *national accounts (NA)*. The United Nations (UN) has drawn up a "recipe book" on how to design national accounts called the *System of National Accounts*, or SNA for short. There are many reasons for a country to keep an account of its activities, but the national accounts are primarily intended to provide a conceptual framework and data for evaluating and analysing the functioning of the economy; in other words to tell us whether the economy is in good shape, (i.e. running at a high level of activity), or in poor shape
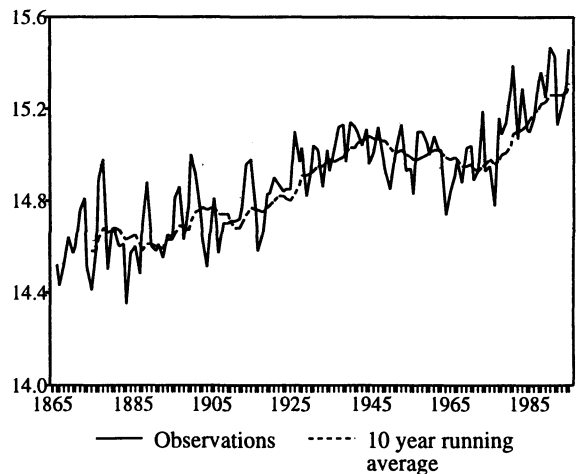
(low activity level), say in Norway. Sometimes the intention is to compare Norway with other countries, at other times we are most interested in comparing the trend within Norway over time.

The national accounts are intended to cover all economic transactions in society, including in principle those that are illegal. The national accounts also include certain goods and services that are not traded in the usual manner in a market and whose prices therefore have to be fixed on a more discretionary basis. The value of farm produce used in the farm's own household is a pertinent example. The value of living in one's own house is another.

However the SNA also leaves out a lot, for example the value of housework in the home and some aspects of what economists call *external effects*. A transaction between two agents (persons or enterprises) will not normally affect others than those involved; one hands over an amount of money and receives a good or service in return, while for the other the converse applies. Sometimes however economic transactions of this kind can affect other agents in a positive or negative direction without their being involved. It is these secondary effects that are called *external effects*. An example of a (trivial) positive effect would be my purchasing an evening course in gardening. This would probably result in a nicer garden which would benefit my neighbours without their having helped to pay for the course. While the cost of the evening course is covered by the national accounts, the same is not true of the benefit accruing to the neighbours. Serious negative external effects attach to air and water pollution, road accidents and aggravating noise. To some extent such factors reduce our efficiency in the economic sense. Polluted water can for example force me to stay away from work for a time. This is captured in the national accounts via a reduction of economic activity. However, pollution also causes a welfare loss which does not necessarily affect my economic pro-

ductivity. These effects are *not* covered by the national accounts.

It is important to realize that what is included or not included in the national accounts, i.e. the extent to which transactions are quantified in the SNA on a discretionary basis, is not based on any "deep" economic principle, but is a function of the use to which the SNA is put. Hence it is difficult to criticise for instance GDP on the basis of principles alone. Criticism must take into account how the GDP measure is actually used (or misused).

The aggregated economic indicator *gross domestic product (GDP)* is constructed on the basis of the national accounts. Formally GDP can be defined as the value of a nation's overall economic production as shown in the national accounts, less the value of labour and inputs. In other words, GDP is a measure of *value added* in the economy and hence of what is available for consumption, investment and export. One important use of what we produce is to maintain machinery, buildings and other capital equipment used in production. Failure to perform such maintenance reduces our ability to produce in the future. If annual capital consumption is deducted from GDP, we obtain what is known as *net domestic product[2] (NDP)*, which in many ways is a better measure of the income actually at our disposal in the longer term, but it suffers from the weakness that capital consumption has as a rule to be estimated in a rather stereotyped manner.

## Use of the national accounts and GDP

The most important uses for national accounts aggregates today can be summarized in three points: to monitor economic developments over time, to study relationships between various parts of the economy and to compare economic developments between countries.

Through the national accounts it is possible to follow the trend in a number of economic aggregates such as private consumption, investment, exports, imports, wages, taxes, etc. It is also possible to calculate the value of various economic indicators such as net borrowing, to find out how much is saved and invested in various sectors, and the goods and services balance. Such information enables economic trends to be followed over time, and hopefully this will give politicians and others enough information to make sensible economic policy decisions. However, it is worth noting that GDP alone cannot fill this role; it has to be supplemented by a number of other economic indicators.

The national accounts can also be used to *study the relationships between various parts of the economy*. The goods and services balance, public deficits, inflation and unemployment are relevant headwords here. Economic models based on national accounts data enable the study of the economic effects of various policy proposals, for instance how increased governmental activity will affect unemployment, inflation and the goods and services balance.

Since most countries prepare national accounts on the same pattern (SNA), it is possible to *compare economic developments between countries*. This is usually done by comparing, say, GDP or GDP per capita. This type of information is also used when fixing dues or contributions to various international organisations such as the United Nations or the World Bank, or when fixing the size of international aid.

National accounts in general, and GDP and the other indicators in particular, serve a variety of uses. In most cases it is easy to point to flaws in such indicators. It would however be impossible to construct indicators capable of answering all questions satisfactorily. On the contrary, GDP and a number of other indicators represent compromises between the need for standardized, compact and simple information on the one hand and sufficient relevance to the issues they address on the other.

## GDP and welfare

It is obvious to all that the welfare of a nation, i.e. the quality of life it provides, depends on a number of factors that are not captured by GDP or any other national account indicator. Suffice it to mention personal freedom, law and order, health and educational facilities and - of course - the state of the environment, all of which are important factors that are omitted. Hence economic indicators such as GDP or GDP per capita alone are unable to tell us very much about the trend in welfare in a country over time or about welfare differences between countries.[3]

Even measuring welfare changes for a single person over time presents major fundamental difficulties. Not only do a person's surroundings change, the person himself changes in a complex manner. Similarly it is difficult to compare the welfare of two individuals in a meaningful way. A fairly common observation is that many people in developing countries seem "happier" in the poverty of their everyday lives than the wealthy people of the industrialized world do. Perhaps our *perception* of our surroundings is more important than the actual nature of our surroundings in objective terms. Or is it the relative differences in a society that are important? Assessing the welfare of the society as a whole becomes even more problematic. Should an increase in my welfare count just as much as

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2   Sometimes one comes across the terms net national income (NNI). Net national income equals NNP pluss net primary income from foreign units.

3   Many proposals have been put forward for welfare indicators other than GDP. They include indicators constructed by Cobb and Daly (1989) (Index for Sustainable Economic Welfare - ISEW), Nordhaus and Tobin (1972)(Measure of Economic Welfare - MEW) and Uno (1992)(Net National Welfare - NNW). Perhaps the most "official" indicator is the Human Development Index (HDI) from the UN Development Programme (UNDP). It is beyond the scope of this article to give a description and detailed critique of all the above. Common to all of them however is their more or less explicit valuation of selected social, resource and environmental factors.

that of a person who is far worse off (someone earning less, jobless or seriously ill, etc)? I believe we should be careful not to reduce welfare to numerical values of indicators, green or otherwise.

## Does GDP increase with road accidents, noise and pollution?

An often heard objection to GDP is that when someone is admitted to hospital, for instance as a result of a road accident, GDP increases. In the same way GDP grows when, say, cleaning equipment for atmospheric pollution is installed. It seems paradoxical that accidents and pollution should lead to increased GDP; welfare certainly does not increase with the number of accidents and quantity of pollution! Further comments are in order here.

First, it is reasonable to believe that once an accident, or pollution, has taken place, being taken to hospital or cleaning up the discharge entails an improvement in welfare. Hence the fact that GDP increases as a result need not be a bad thing even if GDP is interpreted as an indicator of welfare (which it is not).

Second, it cannot be taken for granted that GDP increases, say, with hospital admissions. The accident victim may have been engaged in productive work which he or she was unable to complete after the accident. This leads to a GDP loss. The question then is whether this loss is compensated for by the value added that arises in the hospital when doctors and nurses "repair" the victim.

Taking the argument a step further, if society were such that accidents were few and far between, fewer hospital staff would need to be trained and employed. This would free labour and other resources which could be applied in other productive activity. In other words, treating accident victims displaces other productive activity. Therefore, all in all it is reasonable to believe that a society where few accidents occur will generate a _higher_ GDP than a similar society afflicted by a higher accident rate, even though hospital work is included in GDP. The same reasoning can be applied to pollution. A society causing little pollution, and which does not need to spend resources on cleaning and other measures will as a rule generate higher added value than a similar society which causes pollution that has to be cleaned up to avoid adverse affects on public health and other disadvantages.

In particular, removing expenditure on hospitals and purification measures from GDP will not automatically provide a better measure of welfare changes than GDP does. Such expenditures are termed _defensive expenditures_. Adjusting GDP for such expenditures would not only invite the problem of double-counting referred to above; it would also incur the problem of defining and separating defensive expenditures from expenditures on consumption. Cleaning measures are obviously included among defensive expenditures. But should expenditure on national defence be included? What about expenditure on police services. Indeed, it can even be argued that expenditure on food is expenditure on defence against hunger. What should be taken out of GDP becomes a question of what the "adjusted" GDP measure should be used for, and in particular of what other information is available to throw light on the issue in question. At any rate it is probably useful in most cases to have the traditional (unadjusted) GDP measure as a reference.

## The significance of GDP in policy discussion

The fact remains that GDP, or rather changes in GDP, often appear in debates about for example environmental protection measures. However, I do not think the significance of GDP or GDP-like indicators should be overstated. Even when the aim is the narrower one of assessing economic developments, other indicators can clearly be equally prominent: unemployment and the exchange rate are two indicators which naturally spring to mind in our time. However, this is not to say that the trend in GDP is without significance. An argument often encountered is that a particular environmental protection measure will be too expensive on the ground that it will reduce GDP, or even GDP expansion, by a certain percentage. Let us therefore take a closer look at what would be required _if_ it were desired to adjust the GDP measure for changes in the state of the environment and extraction of natural resources.

## The value of environmental assets

Most valuation in the national accounts is done on the basis of market prices, i.e. prices that are actually used in transactions in shops and elsewhere. In a hypothetical ideal economy free from external effects these prices would reflect the value of the goods in the sense that the supply of the goods, i.e. that which is produced, would exactly match the demand for the goods at these prices. People are in other words willing to buy all goods produced at these prices, neither more nor less. When valuation is such a simple matter it makes good sense to aggregate variables from the national accounts up to GDP.

Valuation of goods which are not traded in any market, for example environmental assets, is more problematic. Even so, such valuation is absolutely essential if we are to adjust GDP or any other economic indicator for changes in the state of the environment. The problem of environmental pricing can be illustrated with an example.

Consider a plant which uses river water in the production process and discharges polluted water. Suppose a town situated downstream uses the river to supply drinking water. What is the value of pure water in this case? From the _supply side_ it can be argued that the _cost of purifying_ the water to an acceptable drinking quality represents the value of the water. In other words the value of the water is determined on the basis of the cost of procuring pure drin-

king water. Seen from the *demand side* on the other hand the value the water equals the town's willingness to pay[4] The two methods of valuation are likely to give widely differing results, and it is by no means obvious which of them should be used to adjust GDP.

The problem is compounded by the following factors. If the factory had in fact purified its waste water its production costs would increase, and thus probably the price of its products too. This would in turn affect other prices in the economy which would lead to changes both in what is produced and consumed in the economy. Finally GDP itself would be affected. This is especially the case if the action taken is "big" in the sense that it affects large sections of the economy. General objectives of reducing emission levels in a country may be an example of a "big" initiative. In other words it is not enough merely to find the value of the water in order to adjust the value of the water for pollution; the traditional GDP measure also has to be adjusted. Doing this requires a model of the economy, and the entire task of adjusting GDP becomes a fairly wide-ranging analysis of inter-relationships in the economy, an analysis that differs from what we usually associate with keeping accounts. The distinction between analysis and accounts is not always clear-cut, but in vague terms we could say that analysis results depend on a greater number of assumptions (often hypothetical and thus controversial) than those required for accounting purposes. The same of course applies if the value of the water is determined from the demand side.

The above is intended to illustrate some of the problems faced in valuing environmental assets. This is not to say that information on willingness to pay or cleaning costs is without relevance. On the contrary, it is important for decision-takers such as politicians to be provided with such information. But it is not correct for accountants to take controversial decisions about the value of environmental assets and to incorporate such decisions, and to some extent conceal them, in apparently neutral information about the trend in an environment-adjusted GDP. Such information should be presented by way of analyses whose assumptions and suppositions are clearly presented and discussed.

If the conclusion from the above is that adjusting GDP for changes in the state of the environment is a complicated matter, it may perhaps be hoped that fewer problems are presented by natural resources that are traded in the market? In the case of Norway it should at least be possible to adjust GDP for the oil and gas that we drain from the North Sea each year? Let us consider this now.

## Natural resource wealth

A central element in the call for sustainable development is that our wealth should be passed on to the next generation intact. Besides foreign claims, fixed capital (machinery, buildings and infrastructure) and human capital (knowledge and technical insight), this wealth comprises *natural capital*. One question therefore is how big is the natural

## Figure 3. The petroleum wealth and extraction



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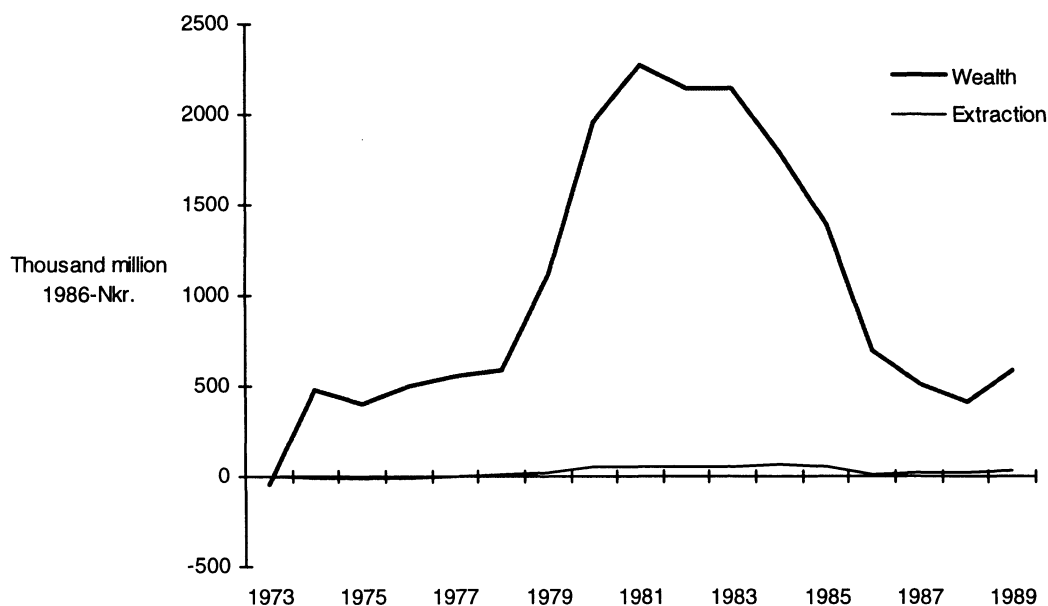
4   A further aspect is that surveying willingness to pay in a reasonably reliable manner may pose problems. In the same way the factory's clean-up costs may be difficult to determine. Perhaps the factory has been issued with an injunction to prevent it polluting the river, and, instead of purifying its emissions, it closes down or starts producing other goods. What in this case is the "purification cost"? We will let these problems lie for the present.

capital. A pertinent concrete example is Norway's petro-leum wealth, i.e. the value of Norwegian oil and gas.

The value of a capital asset is usually reckoned as the total discounted income accruing from it. In other words the value of Norwegian oil and gas equals the current value of future income from oil and gas production. If $p_t$ is the (net) price of oil and gas in future year $t$ and $x_t$ is the quantity of extracted oil and gas, the oil wealth is given by

$$V0 = {}^{txt}\!/_{(1+r)t}$$

where $r$ is the (constant) discount rate. Hence the value of the oil (the oil wealth) depends on *future* earnings, and is therefore determined on the basis of what we believe are reasonable future prices and production methods and le-vels. In practice it turns out that people hold widely diffe-ring views as to what are reasonable price and production paths. For example, Repetto and associates at the World Resources Institute have in some contexts assumed that fu-ture prices will rise at a constant rate of increase according to the so-called Hotelling rule. Others, such as El Serafy at the World Bank, employ a constant price. It goes without saying that the results, i.e. the estimated values of oil re-serves, vary widely.

Economists at Statistics Norway (Brekke et al., 1989) have estimated the value of the oil wealth on the basis of govern-ment price projections in various contexts. Figure 3 shows the result of this.

The thin line shows the value of the drained reserves, while the thick line shows how the estimate for the oil and gas wealth has changed over the period 1973-1989. The year-on-year changes in the oil wealth are essentially due to changes in price expectations. For several years in the period these changes exceed actual GDP! In other words the uncertainty as to future oil prices is so great that adjusting GDP for changes in the oil wealth renders the traditional GDP measure virtually irrelevant. Nonetheless analyses such as this represent useful information for politicians and others. But once again we find that the ana-lysis results should not without further ado be incorporated in the accounts and in the indicators based on them. Adjusting GDP for oil depletion is not as simple a matter as our intuition might lead us to believe.

## An attempt at recapitulation and conclusion

A reasonable interpretation of the concept of sustainable development is that national spending should not exceed national income in the long run. The question however is how to define income. The desire to adjust GDP can be seen in the light of this question. A definition of income that has gradually gained currency and is often attributed to the English economist John Hicks[5] is the following: in-come is that part of the monetary flow that a person or or-ganisation can spend in the course of, say, one year with-out being worse off at the end of the year than at the start of the year. For simplicity's sake this could be said to correspond roughly to the net national product - NNP, i.e. GDP less consumption of real capital in the traditional national accounts. Adjusting GDP or, better, NNP would then include removal of consumption of natural and environmental capital. Some would assert that resources devoted to preventing environmental degradation etc., should also be taken out of GDP, but, as we have seen, this can lead to inconsistencies and double-counting. At any rate, defining and delimiting what should be allocated to defensive expenditures is no easy task.

We have also argued that defining the value of environ-mental capital in an uncontroversial manner is highly pro-blematic. Calculating the consumption of such capital is of course no less difficult and controversial. Indeed, even for an "ordinary" commodity such as oil it proved difficult to find usable figures for the wealth it represents. These pro-blems are closely related to the fact that definition of income depends on our vision of future events. John Hicks was himself very aware of the problems this entails for the concept of income. He says in the chapter containing his definition of income quoted above: "It is hard to believe that the social income which economists discuss so much can be nothing else but a mere aggregate of possible incon-sistent explanations." And a little later he goes on to say that the concept of income is "one which the positive economist only employs in his argument at his peril". The problem of course is that since the concept of income is critically dependent on expectations as regards future events the concept gives precious little guidance as to what conduct should be adopted. Put another way: if a mistake is made, a mistake is made - and not even an environment-adjusted GDP can say much more than that about what arrangements should be made.

## Life without a green GDP

What, then, can be done to persuade decision-makers and others to take sufficient account of the environment and natural resources? My proposal is two-pronged.

In the first place they should be made aware of what has happened to the environment and natural resources over time. This is best done by showing for example the trend in reserves of natural resources in *physical units*. Further-more, priority should be given to devising a set of environ-mental indicators that provides concise information on the state of the nation's environment. Work in this field is in progress under the auspices of the Ministry of the Environ-ment, and Statistics Norway has contributed to this debate (see for example Alfsen et al., 1992, Alfsen and Sæbø, 1993). Such information, based on data expressed in physi-cal units of measurement, can provide a useful basis for politicians to judge the gravity of problems faced in the sphere of resource and environmental management. Put

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5   Chapter 14 of *Value and Capital*.

briefly, my recommendation is to incorporate information on *physical* natural resources and the environment in the accounts.

Second, analyses should be made, based on economic and other models, of how various policy proposals can affect economic growth, the composition of such growth, the stock of natural resources and the state of the environment. The objective of Statistics Norway is to base these analyses on information about the physical effects of environmental degradation on the functioning of the economy. An example might be the effect of air pollution on the number of sickdays in the workforce. If this is worked into the economic model, the model will calculate what the *value* of a lost workday represents for Norway. Adopting this approach avoids bringing in more or less controversial problems of valuation but at the same time omits important aspects of environmental assets. Cleaner air results not only in fewer sickdays, but also in other benefits, which however are difficult to quantify in monetary terms. Other analyses might address the problem of valuing the petroleum wealth as well as the wealth of other natural resources, and how this depends on factors believed to determine future prices. This could help to indicate whether we are spending more of our return on this wealth today, in other words whether we are "consuming" the family silver. These and other analyses will always be controversial, i.e. build on more or less well-founded suppositions about valuation of environmental "goods" and natural resources. The analyses will however point to uncertainties and prompt debate on central assumptions in quite a different manner from figures in a set of accounts. In other words, we believe that neither the environment nor public discussion are served by squeezing all this information into a single figure presented as an adjustment to another figure.

Of course these proposals face politicians and other decision-makers with a task more difficult than that of assessing a single indicator - a green GDP. On the other hand, they may serve to increase politicians' awareness that the challenge of ensuring sustainable development is wider than assessing one indicator value against another. Reality, and all the uncertainty attached to future developments, must be squared up to. A green GDP will in many contexts do more to obscure problems than resolve them.

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# Research publications in English

# New titles

*Hilde Christiane Bjørnland:*
**Trends, Cycles and Measures of Persistence in the Norwegian Economy**
SES no. 92, 1995. pp. 109.
ISBN 82-537-4220-7

This study analyses empirically the business cycles in Norway using quarterly national accounts from 1967 to 1994. To extract the cyclical component, we need to eliminate the trend component in the data. However, the cycle will not be invariant to whether we describe the trend as stochastic or deterministic. Testing for unit roots allows us to determine whether a series is best described by a stochastic trend or by a deterministic (linear) trend. By using a test for unit roots that allows for a structural break in the slope or the drift of the linear trend alternative, we can reject the unit root hypothesis for e.g. unemployment and investment, and instead describe them by a linear trend with one structural break. The structural break point is unknown a priori, and for unemployment and investment it is estimated to have occurred in the late 1980s. To extract cyclical components in the economic variables, we use a variety of stochastic and deterministic trend alternatives. The detrended data (the business cycles), are thereafter analysed both in the time domain and the frequency domain. In the time domain we concentrate on persistence and correlations, whereas in the frequency domain we establish whether the cycles we have estimated have any important periodic components. We then investigate whether the business cycle components are sensitive to the methods of trend extraction used. We find that for some variables, the measures of business cycles are qualitatively independent of the way we have extracted the trend, although quantitatively, the results may differ somewhat. For instance, analysing the correlations between GDP and other economic time series, we find that some variables are persistently procyclical (e.g. consumption, import, investment and productivity) or persistently countercyclical (e.g. unemployment). However, the magnitude of these correlations varies. For other variables, the business cycles vary considerably with the detrending methods used. For example, traditional exports, real wage and consumer prices show both a procyclical and countercyclical pattern, depending on how we define the trend component in these series. The sensitivity of business cycles to the measurement of the trend, implies that one should be careful not to extract the trend component without first examining the dynamic properties in the data.

## Reports

*Einar Bowitz, Nils-Øyvind Mæhle, Virza S. Sasmitawidjaja and Sentot B. Widoyono:*
**MEMLI - The Indonesian Model for Environmental Analysis. Technical Documentation**
Reports 96/1, 1996. pp. 70.
ISBN 82-537-4223-1

The Indonesian model for environmental and macroeconomic analysis (MEMLI) is documented. MEMLI is a 29 sector nationwide model designed to analyse effects of traditional economic policy measures as well as new policies such as tax-based environmental policies, within the government administration in Indonesia. According to the model changes in energy prices induce factor substitution. Energy in physical units and $CO_2$ emissions due to combustion of fuels are among the variables included. The model captures important elements from the traditions of input-output modelling, general equilibrium modelling and macroeconomic modelling. The report contains the equation structure and simulations of changes in a number of policy variables. According to the model, there is a significant potential for reducing pollution by using the market mechanism without harmful effects on traditional macroeconomic variables.

## Discussion Papers

*Jørgen Aasness, Erik Biørn, and Terje Skjerpen:*
**Distribution of Preferences and Measurement Errors in a Disaggregated Expenditure System**
DP no. 149, 1995. pp. 51.

A complete system of consumer expenditure functions with 28 commodity groups is modelled and estimated by means of Norwegian household panel data. Measurement errors are carefully modelled. Total consumption expenditure is modelled as a latent variable, purchase expenditures on different goods and two income measures are considered as indicators of this basic variable. The distribution of individual differences in preferences, represented by individual, time invariant latent variables in the expenditure functions, is structured by means of a two level utility tree which permits a partimonious parameterization. The usual assumption of no measurement error in total expenditure is clearly rejected. The standard assumption in factor analysis of uncorrelated measurement errors (purchase residuals) of food groups which may be explained by rational shopping behavior of the households. The purchase residuals for automobiles show negative serial correlation and positive correlation with the volatile components of latent total expenditure, which is reasonable for such a durable good. The first and second order moments of the observed variables, which are the input in the analysis, consist of 2015 elements which are modelled by means of 213 structural parameters in our reference model. The maximum likelihood estimates of the latter have, with only a few exceptions, the expected sign and a reasonable size.

*Tor Jakob Klette and Svein Erik Førre:*
**Innovation and Job Creation in a Small Open Economy. Evidence from Norwegian Manufacturing Plants 1982-92**
DP no. 159, 1995. pp. 34.
It is often claimed that the opportunities to create new manufacturing jobs in open, high-cost economies such as Norway, are concentrated in products which are technologically advanced and knowledge intensive. This paper examines the relationship between job creation and innovation, as measured by R&D investments, in Norwegian manufacturing. We compare job creation in plants belonging to R&D firms to plants belonging to firms without R&D. We also compare job creation in plants belonging to high and low tech industries. Our data set covers more than 80 per cent of manufacturing employment in Norway over the period 1982-92. The paper chal-

lenges the optimistic view about job creation in R&D intensive firms and high-tech industries. Some main findings are: (i) Net job creation is not higher in high-tech industries. (ii) There is no clear-cut positive relationship between net job creation and the R&D-intensity of the firm. (iii) There is less net job creation and less job-security in R&D-intensive firms in the late 1980s and early 1990s.

*Steinar Holden, Dag Kolsrud and Birger Vikøren:*
**Noisy signals in target zone regimes. Theory and Monte Carlo experiments**
DP no. 160, 1995. pp. 27.
Previous empirical evidence indicates that uncovered interest rate parity (UIP) does not hold for target zone exchange rates, like those in the European Monetary System and in the Nordic countries. We explore a target zone model where the market infers the probability of a realignment of the band on the basis of a noisy signal. We show theoretically and through Monte Carlo simulations that if the market overrates the information content in the signal, then this may explain the empirical results obtained from testing UIP for target zone exchange rates.

*Torbjørn Hægeland:*
**Monopolistic Competition, Resource Allocation and the Effects of Industrial Policy**
DP no. 161, 1996. pp. 22.

An indicator of allocation effects of industrial policy is derived from a theoretical framework of monopolistic competition. The indicator gives a qualitative picture of how industrial policy affects industry structure and resource allocation, it identifies the policy measures that work as industry assistance under various assumptions about underlying parameters, and it allows a consistent comparison of the assistance effects of different measures. Indicator calculations of industrial policy represent an efficient alternative to numerical general equilibrium analyses, especially in international comparisons. Illustrative indicator calculations of Norwegian industrial policy are presented.

*Sverre Grepperud:*
**Soil Conservation as an Investment in Land**
DP no. 163, 1996. pp. 19.

Most studies on the problem of optimal soil conservation have analysed soil conservation measures as being time-limited in their effect. This paper extends previous analyses of the soil conservation decision

by allowing farmers to make investments in soil conservation structures such as terraces, bundles and ditches. It shows that the main conclusions arrived at in previous studies remain valid. The long-term effects of unanticipated permanent changes in prices and discount rates may go either way independent of whether conservation measures are time-limited or have lasting effects on the soil base.

*John K. Dagsvik, Dag G. Wetterwald and Rolf Aaberge:*
**Potential Demand for Alternative Fuel Vehicles**
DP no. 165, 1996. pp. 43.

This paper analyses the potential household demand for alternative fuel vehicles in Norway, by applying data from a stated preference survey. The alternative fuel vehicles we consider are liquid propane gas and electric powered vehicles in addition to a dual-fuel vehicle. In this survey each respondent, in a randomly selected sample, was exposed to 15 experiments. In each experiment the respondent is asked to rank three hypothetical vehicles characterized by specified attributes, according to the respondent's preferences. Several versions of a random utility model are formulated and estimated. They include the ordered logit model and a model with preferences that are correlated across experiments. The model is applied to predict changes in demand resulting from price changes, and to assess the willingness to pay for alternative fuel vehicles.

## Documents

*Dag Kolsrud:*
**Documentation of Computer Programs that Extend the SEEM Model and Provide a Link to the RAINS Model**
Documents 96/1, 1996. pp. 41.

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# Appendix

## List of tables                                                                **Page**

# NATIONAL ACCOUNTS FOR NORWAY

## Table A1. Macroeconomic figures. At current prices. Million kroner

| | 1994 | 1995 | 94:1 | 94:2 | 94:3 | 94:4 | 95:1 | 95:2 | 95:3 | 95:4 |
|---|---|---|---|---|---|---|---|---|---|---|
| Final consumption expenditure of households and NPISH.......... | 437070 | 458668 | 102809 | 103795 | 110952 | 119514 | 106769 | 109517 | 117691 | 124692 |
| Goods...................................... | 236196 | 249483 | 54503 | 55626 | 58333 | 67734 | 57324 | 59340 | 61962 | 70857 |
| Services.................................... | 199050 | 205783 | 48516 | 48073 | 52166 | 50295 | 49869 | 49440 | 54228 | 52246 |
| Direct puchases abroad by resident households................. | 17540 | 18136 | 2933 | 3868 | 6739 | 4000 | 2825 | 3957 | 7138 | 4217 |
| - Direct purchases in Norway by non-residents............................ | -15716 | -14734 | -3143 | -3772 | -6286 | -2515 | -3249 | -3220 | -5637 | -2628 |
| Final consumption expenditure of general government............... | 185485 | 190683 | 45482 | 45911 | 46809 | 47284 | 47316 | 48047 | 47193 | 48126 |
| Final consumption expenditure of central government............. | 75094 | 76495 | 18435 | 18594 | 18937 | 19129 | 18798 | 19317 | 18798 | 19583 |
| Central government, individual Central government, defence | 21325 | 21887 | 5225 | 5277 | 5385 | 5437 | 5377 | 5527 | 5166 | 5817 |
| Final consumption expenditure of local government ................. | 110391 | 114187 | 27048 | 27317 | 27872 | 28155 | 28518 | 28730 | 28395 | 28544 |
| Gross fixed capital formation....... | 175969 | 189331 | 39083 | 45164 | 44462 | 47259 | 43318 | 46245 | 45264 | 54503 |
| Crude petroleum and gas extraction and transport via pipelines | 54189 | 48741 | 12384 | 16869 | 13325 | 11611 | 10402 | 11996 | 12314 | 14029 |
| Ocean transport and oil drilling.. | 2304 | 1428 | 1368 | 792 | 930 | -787 | 782 | 1147 | -1271 | 771 |
| Mainland industries.................... | 119476 | 139162 | 25331 | 27503 | 30206 | 36435 | 32134 | 33102 | 34222 | 39703 |
| Manufacturing and mining.......... | 12089 | 16558 | 2135 | 2633 | 3283 | 4037 | 3074 | 4032 | 4389 | 5062 |
| Production of other goods.......... | 11387 | 11983 | 2137 | 3258 | 2981 | 3011 | 2319 | 3208 | 3012 | 3442 |
| General government ................. | 27701 | 29412 | 5619 | 5842 | 6608 | 9632 | 6177 | 6425 | 7419 | 9392 |
| Dwelling services........................ | 23191 | 27332 | 4822 | 5251 | 6142 | 6976 | 6697 | 6612 | 6822 | 7201 |
| Other services............................ | 45108 | 53876 | 10617 | 10520 | 11192 | 12779 | 13867 | 12825 | 12578 | 14606 |
| Changes in inventories............... | 19496 | 28420 | 9836 | 5325 | 2234 | 2101 | 12312 | 7157 | 4012 | 4939 |
| Gross capital formation............... | 195465 | 217751 | 48920 | 5048 | 46695 | 49360 | 55630 | 53402 | 49277 | 59442 |
| Final domestic use of goods and services....................................... | 818020 | 867102 | 197210 | 200195 | 204456 | 216158 | 209715 | 210966 | 214161 | 232260 |
| Demand from Mainland-Norway.. | 742031 | 788513 | 173622 | 177209 | 187967 | 203233 | 186219 | 190666 | 199106 | 212521 |
| Exports....................................... | 334746 | 352519 | 78934 | 81978 | 83946 | 89888 | 89165 | 85950 | 87725 | 89679 |
| Traditional goods....................... | 128103 | 143193 | 29700 | 30751 | 32031 | 35621 | 38020 | 33718 | 34657 | 36798 |
| Crude oil and natural gas.......... | 106440 | 111546 | 25624 | 27131 | 24756 | 28929 | 28000 | 27546 | 25734 | 30266 |
| Ships and platforms................... | 11029 | 11095 | 2171 | 1970 | 2499 | 4390 | 2064 | 3647 | 3549 | 1835 |
| Services.................................... | 89174 | 86685 | 21438 | 22127 | 24660 | 20948 | 21081 | 21039 | 23785 | 20780 |
| Total use of goods and services | 1152766 | 1219621 | 276144 | 282174 | 288402 | 306046 | 298880 | 296916 | 301886 | 321939 |
| Imports....................................... | 282436 | 29675 | 67174 | 70218 | 71565 | 73479 | 71059 | 73358 | 74554 | 77780 |
| Traditional goods....................... | 184361 | 202468 | 43402 | 44855 | 45843 | 50261 | 49207 | 49698 | 49168 | 54395 |
| Crude oil.................................... | 867 | 1113 | 221 | 207 | 232 | 207 | 326 | 356 | 270 | 161 |
| Ships and platforms.................. | 12620 | 9849 | 4455 | 3813 | 1950 | 2402 | 2725 | 2542 | 2026 | 2556 |
| Services.................................... | 84588 | 83321 | 19096 | 21343 | 23540 | 20609 | 18801 | 20762 | 23090 | 20668 |
| Gross domestic product........... | 870330 | 922870 | 208970 | 211956 | 216837 | 232567 | 227821 | 223558 | 227332 | 244159 |
| Mainland-Norway...................... | 736772 | 786091 | 177217 | 178009 | 184930 | 196617 | 193952 | 189539 | 195064 | 207536 |
| Oil activities and ocean transport...................................... | 133558 | 136778 | 31753 | 33947 | 31908 | 35950 | 33869 | 34018 | 32268 | 36623 |
| Mainland industries................... | 657729 | 698411 | 159391 | 158909 | 165116 | 174312 | 174266 | 167731 | 173175 | 183239 |
| Manufacturing and mining......... | 101825 | 116228 | 24738 | 25951 | 24037 | 27099 | 29653 | 28972 | 27378 | 30225 |
| Production of other goods......... | 71532 | 78548 | 17550 | 14043 | 19838 | 20100 | 20811 | 16107 | 20240 | 21389 |
| General government................. | 139124 | 144941 | 34085 | 34434 | 35130 | 35477 | 35483 | 36150 | 36073 | 37235 |
| Private services........................ | 345248 | 358694 | 83018 | 84481 | 86112 | 91636 | 88318 | 86502 | 89484 | 94389 |
| Correction items....................... | 79043 | 87680 | 17826 | 19099 | 19813 | 22305 | 19687 | 21808 | 21888 | 24297 |

For the 4th quarter of 1995 the calculations are based upon forecasts or available estimations done by Statistics Norway

# NATIONAL ACCOUNTS FOR NORWAY

## Table A2. Macroeconomic figures. At constant 1992-prices. Million kroner

| | 1994 | 1995 | 94:1 | 94:2 | 94:3 | 94:4 | 95:1 | 95:2 | 95:3 | 95:4 |
|---|---|---|---|---|---|---|---|---|---|---|
| Final consumption of households and NIPSH | 422064 | 433577 | 99892 | 100413 | 106998 | 114761 | 101413 | 103574 | 111197 | 117393 |
| Goods | 227528 | 234294 | 53050 | 53676 | 55884 | 64918 | 54040 | 55612 | 58119 | 66522 |
| Services | 192925 | 196060 | 47059 | 46624 | 50825 | 48417 | 47763 | 47141 | 51756 | 49401 |
| Direct puchases abroad by resident households | 16900 | 17315 | 2826 | 3748 | 6504 | 3823 | 2722 | 3870 | 6795 | 3929 |
| - Direct purchases in Norway by non-residents | -15289 | -14092 | -3042 | -3636 | -6215 | -2396 | -3112 | -3048 | -5472 | -2459 |
| Final consumption expenditure of general government | 176675 | 177819 | 43881 | 43924 | 44396 | 44474 | 44512 | 44677 | 44245 | 44385 |
| Final consumption expenditure of central government | 71303 | 71142 | 17733 | 17743 | 17919 | 17908 | 17673 | 17978 | 17507 | 17985 |
| Central government, individual and collective | 51420 | 51259 | 12783 | 12827 | 12902 | 12908 | 12752 | 12951 | 12821 | 12734 |
| Central government, defence | 19882 | 19883 | 4950 | 4916 | 5017 | 5000 | 4920 | 5027 | 4685 | 5251 |
| Final consumption expenditure of local government | 105372 | 106677 | 26148 | 26181 | 26477 | 26566 | 26840 | 26699 | 26738 | 26400 |
| | | | | | | | | | | |
| Gross fixed capital formation | 167394 | 176001 | 37464 | 42883 | 42498 | 44549 | 40616 | 43221 | 41877 | 50287 |
| Crude petroleum and gas extraction and transport via pipelines | 51149 | 44889 | 11769 | 16038 | 12540 | 10802 | 9682 | 11122 | 11309 | 12777 |
| Ocean transport and oil drilling | 1919 | 623 | 1272 | 673 | 844 | -870 | 592 | 1086 | -1628 | 573 |
| Mainland industries | 114326 | 30488 | 24423 | 26172 | 29114 | 34617 | 30341 | 31013 | 32197 | 36937 |
| Manufacturing and mining | 11650 | 15696 | 2056 | 2539 | 3193 | 3862 | 2935 | 3824 | 4167 | 4770 |
| Production of other goods | 10969 | 11285 | 2064 | 3142 | 2886 | 2877 | 2196 | 3037 | 2841 | 3210 |
| General government | 26639 | 27698 | 5465 | 5626 | 6375 | 9173 | 5861 | 6055 | 6973 | 8809 |
| Dwelling services | 22386 | 25529 | 4753 | 5109 | 5888 | 6636 | 6314 | 6169 | 6352 | 6694 |
| Other services | 42683 | 50281 | 10085 | 9756 | 10772 | 12070 | 13036 | 11928 | 11863 | 13455 |
| Changes in inventories | 20466 | 29917 | 9813 | 5607 | 2595 | 2451 | 12107 | 7316 | 5055 | 5438 |
| Gross capital formation | 187860 | 205918 | 47277 | 48490 | 45093 | 47000 | 52723 | 50538 | 46933 | 55725 |
| | | | | | | | | | | |
| Final domestic use of goods and services | 786598 | 817314 | 191050 | 192827 | 196487 | 206235 | 198649 | 198788 | 202374 | 217503 |
| Demand from Mainland-Norway | 713065 | 741884 | 168196 | 170509 | 180507 | 193852 | 176267 | 179264 | 187638 | 198715 |
| | | | | | | | | | | |
| Exports | 332230 | 344441 | 80392 | 81008 | 82300 | 88530 | 85695 | 82998 | 86969 | 88779 |
| Traditional goods | 126514 | 132038 | 29925 | 30730 | 31338 | 34520 | 34492 | 31211 | 31983 | 34352 |
| Crude oil and natural gas | 114741 | 124298 | 28974 | 28264 | 26267 | 31236 | 30327 | 29525 | 30080 | 34365 |
| Ships and platforms | 10889 | 11531 | 2150 | 1996 | 2447 | 4296 | 2172 | 3621 | 3807 | 1931 |
| Services | 80086 | 76574 | 19342 | 20018 | 22247 | 18478 | 18704 | 18640 | 21098 | 18131 |
| | | | | | | | | | | |
| Total use of goods and services | 1118828 | 1161756 | 271442 | 273834 | 278787 | 294766 | 284344 | 281786 | 289343 | 306282 |
| | | | | | | | | | | |
| Imports | 272635 | 283911 | 64927 | 68318 | 69160 | 70230 | 67817 | 70906 | 71298 | 73889 |
| Traditional goods | 180522 | 196805 | 42528 | 44255 | 45098 | 48641 | 47801 | 48467 | 48027 | 52510 |
| Crude oil | 976 | 1281 | 243 | 238 | 260 | 236 | 361 | 396 | 340 | 183 |
| Ships and platforms | 12348 | 9760 | 4357 | 3750 | 1900 | 2341 | 2684 | 2588 | 1967 | 2522 |
| Services | 78789 | 76064 | 17798 | 20076 | 21903 | 19012 | 16972 | 19455 | 20964 | 18673 |
| | | | | | | | | | | |
| Gross domestic product | 846193 | 877845 | 206515 | 205516 | 209626 | 224536 | 216526 | 210880 | 218045 | 232394 |
| Mainland-Norway | 708149 | 731194 | 172227 | 171361 | 177305 | 187257 | 180934 | 175895 | 182020 | 192346 |
| | | | | | | | | | | |
| Oil activities and ocean transport | 138044 | 146651 | 34288 | 34156 | 32322 | 37279 | 35593 | 34985 | 36026 | 40048 |
| Mainland industries | 639748 | 658884 | 156541 | 155084 | 160114 | 168009 | 164135 | 158597 | 163572 | 172580 |
| Manufacturing and mining | 97217 | 100540 | 23707 | 24901 | 22924 | 25686 | 25937 | 25237 | 23244 | 26122 |
| Production of other goods | 72256 | 78344 | 18205 | 14369 | 19675 | 20007 | 20133 | 15793 | 20608 | 21811 |
| General government | 131792 | 133829 | 32770 | 32644 | 33083 | 33296 | 33113 | 33111 | 33502 | 34103 |
| Private services | 338482 | 346171 | 81860 | 83170 | 84433 | 89020 | 84952 | 84455 | 86219 | 90545 |
| Correction items | 68401 | 72311 | 15686 | 16277 | 17190 | 19248 | 16799 | 17299 | 18447 | 19766 |

For the 4th quarter of 1995 the calculations are based upon forecasts or available estimations done by Statistics Norway

# NATIONAL ACCOUNTS FOR NORWAY

## Table A3. Macroeconomic figures. At constant 1992-prices. Percentage change in volume from the same periode the previous year

| | 1994 | 1995 | 94:1 | 94:2 | 94:3 | 94:4 | 95:1 | 95:2 | 95:3 | 95:4 |
|---|---|---|---|---|---|---|---|---|---|---|
| Final consumption expenditure of households and NPISH.............. | 4.6 | 2.7 | 5.6 | 4.9 | 4.2 | 4.0 | 1.5 | 3.1 | 3.9 | 2.3 |
| Goods..................................... | 5.3 | 3.0 | 8.1 | 5.5 | 4.3 | 3.8 | 1.9 | 3.6 | 4.0 | 2.5 |
| Services.................................. | 4.2 | 1.6 | 4.5 | 4.6 | 4.2 | 3.4 | 1.5 | 1.1 | 1.8 | 2.0 |
| Direct puchases abroad by resident households................ | 8.6 | 2.5 | 1.8 | 8.8 | 11.1 | 9.4 | -3.7 | 3.3 | 4.5 | 2.8 |
| - Direct purchases in Norway by non-residents........................... | 13.3 | -7.8 | 32.6 | 13.5 | 13.2 | -4.5 | 2.3 | -16.2 | -11.9 | 2.6 |
| Final consumption expenditure of general government.............. | 1.1 | 0.6 | 1.3 | 1.3 | 0.9 | 1.0 | 1.4 | 1.7 | -0.3 | -0.2 |
| Final consumption expenditure of central government.............. | -0.6 | -0.2 | -0.3 | -0.4 | -1.0 | -0.8 | -0.3 | 1.3 | -2.3 | 0.4 |
| Central government, individual and collective........................ | -0.2 | -0.3 | 0.2 | 0.4 | -0.8 | -0.4 | -0.2 | 1.0 | -0.6 | -1.3 |
| Central government, defence | -1.8 | 0.0 | -1.7 | -2.3 | -1.6 | -1.8 | -0.6 | 2.3 | -6.6 | 5.0 |
| Final consumption expenditure of local government................. | 2.3 | 1.2 | 2.4 | 2.5 | 2.2 | 2.2 | 2.6 | 2.0 | 1.0 | -0.6 |
| Gross fixed capital formation...... | 5.5 | 5.1 | 7.9 | 14.7 | 6.6 | -4.5 | 8.4 | 0.8 | -1.5 | 12.9 |
| Crude petroleum and gas extrac-tion and transport via pipelines | -7.6 | -12.2 | -1.6 | 13.8 | -10.9 | -29.2 | -17.7 | -30.7 | -9.8 | 18.3 |
| Ocean transport and oil drilling | 60.0 | -67.5 | 35.9 | -213.4 | -861.4 | -189.9 | -53.4 | 61.4 | -292.9 | -165.8 |
| Mainland industries.................. | 12.0 | 14.1 | 12.0 | 9.6 | 12.4 | 13.8 | 24.2 | 18.5 | 10.6 | 6.7 |
| Manufacturing and mining........ | 6.5 | 34.7 | -4.1 | -3.6 | 7.7 | 20.7 | 42.7 | 50.6 | 30.5 | 23.5 |
| Production of other goods........ | -4.4 | 2.9 | -9.9 | 4.1 | -12.9 | 0.6 | 6.4 | -3.3 | -1.5 | 11.6 |
| General government............... | -0.8 | 4.0 | -0.2 | -5.4 | -1.2 | 2.1 | 7.2 | 7.6 | 9.4 | -4.0 |
| Dwelling services..................... | 25.9 | 14.0 | 17.2 | 26.5 | 30.7 | 28.0 | 32.8 | 20.8 | 7.9 | 0.9 |
| Other services......................... | 22.1 | 17.8 | 28.6 | 18.4 | 24.2 | 18.3 | 29.3 | 22.3 | 10.1 | 11.5 |
| Changes in inventories.............. | 53.2 | 46.2 | -2.7 | -775.5 | -33.3 | . | 23.4 | 30.5 | 94.8 | 121.8 |
| Gross capital formation.............. | 9.2 | 9.6 | 5.5 | 32.6 | 3.0 | 0.3 | 11.5 | 4.2 | 4.1 | 18.6 |
| Final domestic use of goods and services............................. | 4.9 | 3.9 | 4.6 | 9.8 | 3.1 | 2.5 | 4.0 | 3.1 | 3.0 | 5.5 |
| Demand from Mainland-Norway | 4.8 | 4.0 | 5.3 | 4.6 | 4.6 | 4.9 | 4.8 | 5.1 | 4.0 | 2.5 |
| Exports..................................... | 8.5 | 3.7 | 11.4 | 4.2 | 7.8 | 10.7 | 6.6 | 2.5 | 5.7 | 0.3 |
| Traditional goods..................... | 13.3 | 4.4 | 11.0 | 9.3 | 19.8 | 13.5 | 15.3 | 1.6 | 2.1 | -0.5 |
| Crude oil and natural gas......... | 11.6 | 8.3 | 18.9 | 10.2 | 8.4 | 9.3 | 4.7 | 4.5 | 14.5 | 10.0 |
| Ships and platforms................. | -11.0 | 5.9 | -13.2 | -53.6 | -21.0 | 82.4 | 1.0 | 81.4 | 55.6 | -55.0 |
| Services.................................. | 0.8 | -4.4 | 5.3 | 1.8 | -2.5 | -0.7 | -3.3 | -6.9 | -5.2 | -1.9 |
| Total use of goods and services | 5.9 | 3.8 | 6.5 | 8.1 | 4.5 | 4.8 | 4.8 | 2.9 | 3.8 | 3.9 |
| Imports..................................... | 6.6 | 4.1 | 7.6 | 11.1 | 4.7 | 3.6 | 4.5 | 3.8 | 3.1 | 5.2 |
| Traditional goods..................... | 15.0 | 9.0 | 14.1 | 17.9 | 16.3 | 11.9 | 12.4 | 9.5 | 6.5 | 8.0 |
| Crude oil................................. | -17.8 | 31.3 | -16.5 | -6.1 | -21.1 | -25.0 | 48.5 | 66.8 | 31.1 | -22.2 |
| Ships and platforms................. | -33.7 | -21.0 | -7.8 | -10.9 | -56.4 | -56.0 | -38.4 | -31.0 | 3.5 | 7.7 |
| Services.................................. | -0.0 | -3.5 | -1.6 | 3.1 | -3.0 | 1.8 | -4.6 | -3.1 | -4.3 | -1.8 |
| Gross domestic product............. | 5.7 | 3.7 | 6.2 | 7.1 | 4.4 | 5.2 | 4.8 | 2.6 | 4.0 | 3.5 |
| Mainland-Norway...................... | 4.8 | 3.3 | 4.4 | 5.9 | 4.5 | 4.6 | 5.1 | 2.6 | 2.7 | 2.7 |
| Oil activities and ocean transport..................................... | 10.3 | 6.2 | 15.9 | 13.8 | 3.7 | 8.5 | 3.8 | 2.4 | 11.5 | 7.4 |
| Mainland industries..................... | 4.5 | 3.0 | 3.9 | 5.5 | 4.4 | 4.3 | 4.9 | 2.3 | 2.2 | 2.7 |
| Manufacturing and mining........... | 5.6 | 3.4 | 2.8 | 8.0 | 5.7 | 5.9 | 9.4 | 1.4 | 1.4 | 1.7 |
| Production of other goods........... | 2.2 | 8.4 | 0.5 | 5.8 | 2.2 | 1.2 | 10.6 | 9.9 | 4.7 | 9.0 |
| General government................... | 1.8 | 1.5 | 1.9 | 1.8 | 2.0 | 1.4 | 1.0 | 1.4 | 1.3 | 2.4 |
| Private services......................... | 5.8 | 2.3 | 5.9 | 6.3 | 5.5 | 5.7 | 3.8 | 1.5 | 2.1 | 1.7 |
| Correction items........................ | 8.0 | 5.7 | 9.9 | 9.2 | 6.1 | 7.1 | 7.1 | 6.3 | 7.3 | 2.7 |

For the 4th quarter of 1995 the calculations are based upon forecasts or available estimations done by Statistics Norway

# NATIONAL ACCOUNTS FOR NORWAY

Table A4. Macroeconomic figures. Price indices. 1992=100. Percentage change in prices from the same periode the previous year

| | 1994 | 1995 | 94:1 | 94:2 | 94:3 | 94:4 | 95:1 | 95:2 | 95:3 | 95:4 |
|---|---|---|---|---|---|---|---|---|---|---|
| Final consumption expenditure of households and NPISH............... | 1.3 | 2.2 | 1.4 | 1.0 | 1.5 | 1.3 | 2.3 | 2.3 | 2.1 | 2.0 |
| Goods........................................ | 1.6 | 2.6 | 1.5 | 1.4 | 2.0 | 1.7 | 3.2 | 3.0 | 2.1 | 2.1 |
| Services.................................... | 0.8 | 1.7 | 1.3 | 0.5 | 0.7 | 0.8 | 1.3 | 1.7 | 2.1 | 1.8 |
| Direct puchases abroad by resident households.................. | 2.6 | 0.9 | 1.7 | 2.2 | 3.6 | 1.9 | -0.0 | -0.9 | 1.4 | 2.6 |
| - Direct purchases in Norway by non-residents............................ | 0.9 | 1.7 | 1.4 | 0.7 | 0.9 | 0.7 | 1.0 | 1.8 | 1.8 | 1.8 |
| Final consumption expenditure of general government.................. | 2.2 | 2.1 | 2.1 | 2.1 | 2.4 | 2.3 | 2.6 | 2.9 | 1.2 | 2.0 |
| Final consumption expenditure of central government................. | 2.0 | 2.1 | 1.8 | 1.8 | 2.3 | 2.0 | 2.3 | 2.5 | 1.6 | 1.9 |
| Central government, individual and collective............................ | 1.5 | 1.9 | 1.4 | 1.2 | 2.0 | 1.6 | 1.8 | 2.6 | 1.2 | 1.9 |
| Central government, defence.... | 3.1 | 2.6 | 3.0 | 3.6 | 2.8 | 3.1 | 3.5 | 2.4 | 2.7 | 1.9 |
| Final consumption expenditure of local government..................... | 2.4 | 2.2 | 2.3 | 2.2 | 2.5 | 2.5 | 2.7 | 3.1 | 0.9 | 2.0 |
| Gross fixed capital formation......... | 2.2 | 2.3 | 2.2 | 3.1 | 1.4 | 2.2 | 2.2 | 1.6 | 3.3 | 2.2 |
| Crude petroleum and gas extraction and transport via pipelines | 3.0 | 2.5 | 2.6 | 4.2 | 2.7 | 3.0 | 2.1 | 2.5 | 2.5 | 2.1 |
| Ocean transport and oil drilling.. | -25.2 | 91.0 | -13.8 | 66.3 | . | -24.4 | 22.8 | -10.3 | -29.2 | 48.8 |
| Mainland industries..................... | 2.3 | 2.1 | 2.9 | 3.0 | 1.3 | 2.2 | 2.1 | 1.6 | 2.4 | 2.1 |
| Manufacturing and mining........... | 1.0 | 1.7 | 2.4 | 1.1 | 0.0 | 0.9 | 0.8 | 1.7 | 2.5 | 1.5 |
| Production of other goods........... | 1.1 | 2.3 | 1.7 | 1.1 | 0.8 | 0.7 | 2.0 | 1.9 | 2.7 | 2.5 |
| General government.................... | 2.1 | 2.1 | 1.9 | 2.2 | 1.6 | 2.4 | 2.5 | 2.2 | 2.6 | 1.5 |
| Dwelling services........................ | 2.8 | 3.3 | 1.2 | 2.1 | 3.4 | 3.9 | 4.5 | 4.3 | 3.0 | 2.3 |
| Other services........................... | 2.9 | 1.4 | 4.8 | 5.2 | 0.4 | 2.0 | 1.0 | -0.3 | 2.0 | 2.5 |
| Changes in inventories................. | -3.2 | -0.3 | -0.8 | -27.7 | -16.5 | 415.1 | 1.4 | 3.0 | -7.8 | 5.9 |
| Gross capital formation................ | 1.5 | 1.6 | 1.6 | 2.6 | 0.4 | 1.6 | 2.0 | 1.5 | 1.4 | 1.6 |
| Final domestic use of goods and services........................................ | 1.6 | 2.0 | 1.6 | 1.6 | 1.5 | 1.6 | 2.3 | 2.2 | 1.7 | 1.9 |
| Demand from Mainland-Norway... | 1.7 | 2.1 | 1.8 | 1.6 | 1.7 | 1.7 | 2.3 | 2.3 | 1.9 | 2.0 |
| Exports...................................... | -2.2 | 1.6 | -6.1 | -2.9 | -1.5 | 1.4 | 6.0 | 2.3 | -1.1 | -0.5 |
| Traditional goods....................... | 0.8 | 7.1 | -1.9 | -0.6 | 0.9 | 4.5 | 11.1 | 8.0 | 6.0 | 3.8 |
| Crude oil and natural gas............ | -8.3 | -3.3 | -16.2 | -8.5 | -6.8 | -1.8 | 4.4 | -2.8 | -9.2 | -4.9 |
| Ships and platforms.................... | 1.9 | -5.0 | 3.8 | -1.3 | 1.9 | 3.0 | -5.9 | 2.1 | -8.7 | -7.0 |
| Services.................................... | 1.4 | 1.7 | 1.4 | 1.3 | 1.4 | 1.8 | 1.7 | 2.1 | 1.7 | 1.1 |
| Total use of goods and services... | 0.4 | 1.9 | -0.7 | 0.3 | 0.6 | 1.5 | 3.3 | 2.3 | 0.9 | 1.2 |
| Imports...................................... | 1.0 | 0.9 | 1.4 | 1.8 | 0.8 | 0.3 | 1.3 | 0.7 | 1.1 | 0.6 |
| Traditional goods....................... | 0.5 | 0.7 | 1.2 | 0.8 | -0.1 | 0.4 | ,0.9 | 1.2 | 0.7 | 0.3 |
| Crude oil................................... | -7.7 | -2.2 | -5.2 | -7.0 | -11.2 | -6.8 | -0.7 | 3.1 | -11.2 | -0.0 |
| Ships and platforms.................... | 0.1 | -1.3 | -3.6 | 9.2 | -1.3 | -1.3 | -0.7 | -3.4 | 0.4 | -1.2 |
| Services.................................... | 2.5 | 2.0 | 3.5 | 2.6 | 3.2 | 0.7 | 3.2 | 0.4 | 2.5 | 2.1 |
| Gross domestic product............... | 0.3 | 2.2 | -1.3 | -0.2 | 0.5 | 1.9 | 4.0 | 2.8 | 0.8 | 1.4 |
| Mainland-Norway........................ | 1.8 | 3.3 | 1.4 | 1.4 | 1.8 | 2.4 | 4.2 | 3.7 | 2.7 | 2.8 |
| Oil activities and ocean transport...................................... | -7.4 | -3.6 | -14.9 | -7.9 | -6.5 | -0.6 | 2.8 | -2.2 | -9.3 | -5.2 |
| Mainland industries...................... | 1.0 | 3.1 | 1.2 | 0.7 | 1.5 | 0.4 | 4.3 | 3.2 | 2.7 | 2.3 |
| Manufacturing and mining............. | 3.1 | 10.4 | 1.2 | 1.7 | 2.3 | 6.9 | 9.6 | 10.2 | 12.3 | 9.7 |
| Production of other goods............. | 1.0 | 1.3 | 0.7 | 1.0 | 1.1 | 1.0 | 7.2 | 4.3 | -2.6 | -2.4 |
| General government ..................... | 2.8 | 2.6 | 2.6 | 2.7 | 2.6 | 3.2 | 3.0 | 3.5 | 1.4 | 2.5 |
| Private services........................... | -0.4 | 1.6 | 0.7 | -0.5 | 1.0 | -2.5 | 2.5 | 0.8 | 1.8 | 1.3 |
| Correction items.......................... | 8.9 | 4.9 | 2.8 | 7.2 | 4.3 | 21.0 | 3.1 | 7.4 | 2.9 | 6.1 |

For the 4th quarter of 1995 the calculations are based upon forecasts or available estimations done by Statistics Norway

# NATIONAL ACCOUNTS FOR NORWAY

## Table A5. Balance of payments. Summary. Current prices. Million kroner

|  | 1994 | 1995 | 94:1 | 94:2 | 94:3 | 94:4 | 95:1 | 95:2 | 95:3 | 95:4 |
|---|---|---|---|---|---|---|---|---|---|---|
| Exports.................................. | 334746 | 352519 | 78934 | 81978 | 83946 | 89888 | 89165 | 85950 | 87725 | 89679 |
| Goods................................ | 245572 | 265834 | 57496 | 59851 | 59286 | 68940 | 68084 | 64911 | 63940 | 68899 |
| Services............................. | 89174 | 86685 | 21438 | 22127 | 24660 | 20948 | 21081 | 21039 | 23785 | 20780 |
| Imports.................................. | 282436 | 296751 | 67174 | 70218 | 71565 | 73479 | 71059 | 73358 | 74554 | 77780 |
| Goods................................ | 197848 | 213430 | 48078 | 48875 | 48025 | 52870 | 52258 | 52596 | 51464 | 57112 |
| Services............................. | 84588 | 83321 | 19096 | 21343 | 23540 | 20609 | 18801 | 20762 | 23090 | 20668 |
| External balance...................... | 52310 | 55768 | 11760 | 11760 | 12381 | 16409 | 18106 | 12592 | 13171 | 11899 |
| Primary income and current transfers from abroad............... | 28730 | 29699 | 9409 | 6399 | 5790 | 7132 | 7881 | 7144 | 7820 | 6854 |
| Interest................................ | 19030 | 20720 | 6090 | 4377 | 3996 | 4567 | 5689 | 5125 | 5263 | 4643 |
| Dividends etc. ........................ | 1868 | 3022 | 1009 | 355 | 280 | 224 | 526 | 942 | 764 | 790 |
| Reinvested earnings............... | -1419 | -2351 | -280 | -461 | -336 | -342 | -413 | -788 | -550 | -600 |
| Current transfers to Norway.... | 9251 | 8308 | 2590 | 2128 | 1850 | 2683 | 2079 | 1865 | 2343 | 2021 |
| Primary income and current transfers to abroad.................. | 59990 | 53216 | 15153 | 14043 | 12794 | 18000 | 14766 | 14588 | 12506 | 11356 |
| Interest................................ | 24846 | 23157 | 6957 | 6211 | 4721 | 6957 | 6896 | 6613 | 4710 | 4938 |
| Dividends etc. ........................ | 10256 | 10233 | 3487 | 4615 | 1026 | 1128 | 3686 | 4408 | 1066 | 1073 |
| Reinvested earnings............... | 4170 | -774 | 358 | -1134 | 2489 | 2457 | -710 | -1110 | 1956 | -910 |
| Current transfers from Norway | 20718 | 20600 | 4351 | 4351 | 4558 | 7458 | 4894 | 4677 | 4774 | 6255 |
| Primary income and current transfers, net........................... | -31260 | -23517 | -5744 | -7644 | -7004 | -10868 | -6885 | -7444 | -4686 | -4502 |
| Current external balance, net... | 21050 | 32251 | 6016 | 4116 | 5377 | 5541 | 11221 | 5148 | 8485 | 7397 |
| Reconciliation.......................... | 2470 | 14089 | -2144 | 2563 | 3255 | -1204 | 11605 | 248 | -144 | 2380 |
| Total net inflow on capital transactions............................ | -1084 | -1061 | -271 | -271 | -271 | -271 | -75 | -61 | -59 | -866 |
| Decrease in the net debt of Norway................................... | 22436 | 45279 | 3601 | 6408 | 8361 | 4066 | 22751 | 5335 | 8282 | 8911 |

For the 4th quarter of 1995 the calculations are based upon forecasts or available estimations done by Statistics Norway Reconciliation due to changes in exchange rates

Statistisk sentralbyrå

Economic Survey 1/96

**Statistisk sentralbyrå**
**Statistics Norway**

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