Economic Survey 2/92

Economic Trends in Norway

Stocks, catches and quotas in Norwegian fisheries

Central Bureau of Statistics of Norway
P.O. Box 8131 Dep. N-0033 Oslo
Tel.: +47-2-86 45 00. Telefax: +47-2-86 49 73

Economic Survey

is published four times a year by the Research Department of the Central Bureau of Statistics of Norway. The issues contain comments and analysis of economic trends in Norway, based on the latest quarterly national accounts data.

Economic Survey no.1 presents the first set of preliminary national account figures for the previous year.

The publication also contain articles on other topics, selected from the outcome of various projects in the Research Department.

The board can be contacted on

Address: P.O.Box 8131 Dep. N-0033 Oslo
Tel.: +47-2-86 45 00
Telefax: +47-2-11 12 38

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Møllergt. 17
P.O.Box 8134 Dep.
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Tel.: +47-2-11 67 70
Telefax: +47-2-42 05 51

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The current issue of Economic Survey contains a review of current economic trends in Norway and an outlook for 1992 and 1993. The main source of information is the quarterly national account system. The quarterly calculations are carried out on a less detailed level than the annual national accounts. The cut-off date for information used in the publication was 3 June 1992.

Economic Trends has been prepared by the Research Department in the Central Bureau of Statistics. Inquiries should be directed to Knut Moum or Øystein Olsen.

In addition the present issue includes an overview of recent developments in stocks of fish species important for Norwegian fisheries.

Economic trends

SUMMARY

Preliminary figures from the quarterly national accounts show close to zero growth in demand from mainland Norway in the first quarter of 1992. Private consumption fell by about 1/2 per cent (seasonally adjusted) from the fourth quarter of 1991, after rising through the second half of last year. Investment demand in the mainland economy remains weak, partly as a result of a noticeable decline in housing and manufacturing investment. Thus far in 1992 growth in demand from mainland Norway can almost exclusively be ascribed to the public sector.

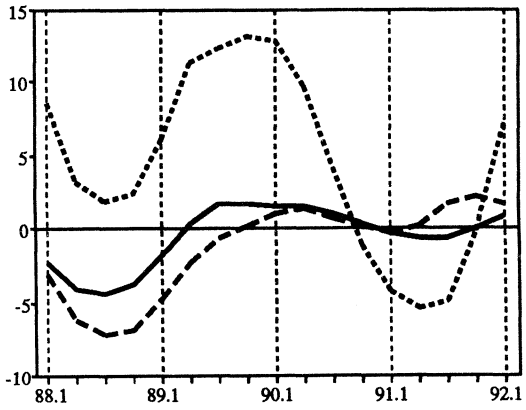
The international contribution to growth in the Norwegian economy in 1992 will probably remain weak. A long-awaited economic upturn in the U.S. will probably be offset by weak growth in other important trading partner countries. A growth in traditional goods of 6.8 per cent from the fourth quarter of 1991 to the first quarter of this year can primarily be attributed to the Mongstad refinery which is again producing at full capacity following maintenance work towards the end of last year.

Along with the demand impetus from the public sector, oil activities represent the most important growth factor in the Norwegian economy. The total production of crude oil and natural gas increased by 3.4 per cent (seasonally adjusted) from the fourth quarter of 1991 to the first quarter of this year. Investment activity in the North Sea is likely to show further growth this year.

Output growth in industries other than the petroleum sector is still weak, and this is also influencing the development in employment. Following a decline in employment in 1991, however, the figures for the first quarter of this year indicate that the negative trend is coming to a halt. Unemployment has nevertheless continued to rise thus far this year due to a growth in the labour force.

Price inflation in Norway, measured by the rise in the Consumer Price Index from the same month one year earlier, was relatively stable around 2.4 per cent through the first four months of 1992. This is still noticeably lower than the inflation rate of our trading partners, which however, is also falling rapidly.

CYCLICAL DEVELOPMENT
(Per cent growth from previous quarter.
Seasonally adjusted and smoothed. Annual rates.)



1) Excl. oil and ocean transport.

MAIN TRENDS IN ECONOMIC DEVELOPMENTS. Growth from previous quarter, seasonally adjusted. Per cent[1)]

	91.2	91.3	91.4	92.1
Demand and output volume indicators				
Final domestic use of goods and services	0.4	-1.7	3.5	-4.8
- Demand from mainland Norway	-1.7	2.1	0.8	0.1
- Private consumption	-1.9	2.1	0.6	-0.6
- Government consumption	-0.0	2.0	-1.5	3.7
- Gross fixed capital formation, mainland Norway	-3.5	2.0	5.4	-2.9
Exports	6.0	-1.8	1.7	4.4
- Traditional goods	0.5	-4.0	-1.2	6.8
Imports	6.7	-4.3	9.1	-9.1
- Traditional goods	4.0	-3.6	5.2	-1.4
GDP	0.8	-0.8	0.7	1.2
- Mainland Norway	0.2	-0.7	0.1	0.7
Labour market				
Man-hours worked	-1.1	0.1	0.4	-0.5
Employed persons	-0.5	1.1	-0.3	-0.6
Unemployment rate[2)]	5.3	5.7	5.7	5.8
Prices				
Consumer Price Index[3)]	4.1	3.4	2.3	2.4
Income				
Current balance, NOK bn[4)]	10.8	12.3	2.4	3.4

1) See "Technical comment".
2) Seasonally adjusted levels in per cent.
3) Growth from same period previous year.
4) Unadjusted levels in NOK bn.

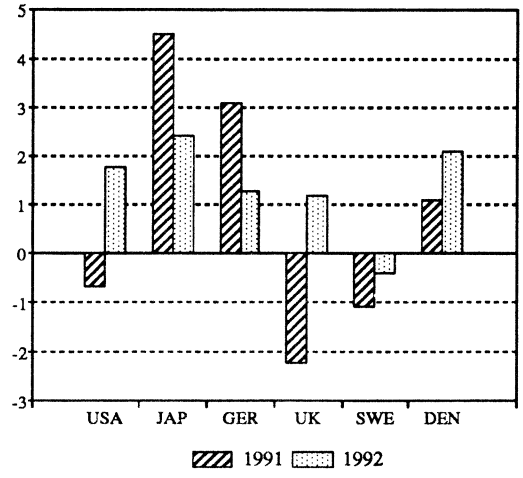
International economy: Moderate upturn in the U.S, but continued high interest rates are restraining growth in Europe

There are now clear signs that economic developments in the *U.S.* are improving. Preliminary national accounts figures showed a surprisingly strong GDP growth in the first quarter of this year, and the latest figures for several important cyclical indicators seem to confirm the upward trend. As usual, it is private consumption which is the main driving force in the upswing in the U.S. economy. In addition, the current economic upturn must be viewed in connection with the sizeable reduction in the interest rate level during the last nine months. This has contributed to a noticeable rise in housing investment, and other components of investment demand have also picked up. Even though there is likely to be some upward revision in the forecast for GDP growth for 1992 as a whole - to about 2 per cent - the economic upturn will probably be moderate. An important factor of uncertainty is the development in the labour market in the period ahead. Persistently high unemployment may restrain the growth in domestic demand and thereby weaken the economic recovery. With regard to interest rates, we cannot rule out the possibility of a further reduction in the Federal Funds rate, from a level of 3.75 per cent, during the next few weeks. There is, however, reason to believe that the interest rate level will move upward again after the presidential election in November this year, partly because the current large differentials in short-term interest rates between the U.S. and other countries cannot be maintained.

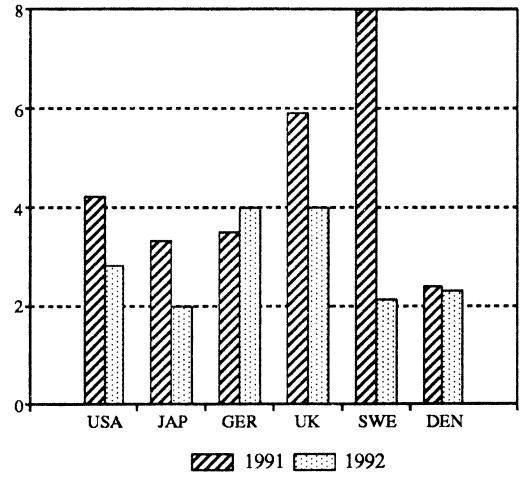
A new feature of the international economy during the past year is a sharp reduction in domestic demand in *Japan*. This may contribute to restraining the economic upturn in the OECD area. The growth in Japan's exports has also been reduced, but due to an even stronger slowdown in imports - a decline was registered through large parts of 1991 - the surplus on the current account is increasing. The Japanese authorities have introduced a number of measures to stimulate the economy and boost growth. The discount rate has been lowered substantially, to 3.75 per cent, and in the recently presented budget the Government proposed bringing forward some projects and appropriations. In spite of this stimulus the economic outlook in Japan in the period ahead is very uncertain. The sharp fall in the Nikkei index thus far in 1992 illustrates this.

Developments in *Germany* represent the second major factor of uncertainty in the international economy. The rate of growth in Germany (west) tapered off considerably through the second half of last year, and GDP growth for 1992 is now estimated at about 1 per cent, a decline from some 3 per

GNP/GDP GROWTH FOR SELECTED COUNTRIES
Per cent



GROWTH IN CONSUMER PRICES
Per cent



cent in 1991 and 4 1/2 per cent in 1990. For a long time the reconstruction of eastern Germany provided a strong stimulus for the German economy, but this growth impetus has now been substantially reduced. At the same time, tax increases introduced to finance the sizeable transfers from government budgets have contributed to curbing demand in the west. In particular, the rate of growth in private consumption has tapered off considerably. This trend is also the background for the high pay demands which have been characteristic of wage settlements in Germany. The pay increases which have now been recommended by the organizations are higher than the level considered acceptable by the Bundesbank in order to reduce interest rates. Along with a continued strong money supply growth, this entails that any major reduction in the German interest rate level is not very likely until the end of this year. High German interest rates may in the event inhibit the emerging signs of recovery in other European countries which, through exchange

rate systems, have in practice linked movements in their interest rates to changes in the German's interest rate level.

The economic downturn in the *UK* now appears to have come to a halt without any clear indications of resumed growth. Economic developments in 1992 will probably be weaker than previously estimated; the growth in GDP will probably be as low as 1 per cent. It is primarily developments in private consumption that have been weaker than forecasted. A high interest rate level has spurred financial savings, and mounting unemployment has probably also dampened consumer demand. Unemployment has continued to rise thus far in 1992, by about 30,000 persons per month on average, and the unemployment rate will probably reach 10 per cent for the year as a whole.

In *Sweden*, the economic situation continues to be marked by a sluggish trend in domestic demand which is depressing the growth in production and employment. GDP fell by some 1 per cent in 1991, and a slight negative growth is likely again this year. Unemployment will probably rise to nearly 5 per cent this year and about 6 per cent in 1993. In its recently presented revised budget the Government proposes a SEK 30 billion reduction in public spending over the next three years. At the same time, a number of tax changes are proposed. It is suggested that the VAT rate be reduced to 22 per cent as from 1993. Energy taxes for manufacturing industry will be eliminated and be replaced by higher carbon taxes. Here, however, the increase will be noticeably lower for manufacturing industry than for ordinary consumers (8 and 32 øre per kilo CO_2 emissions respectively).

In *Denmark*, the economic outlook at the moment seems relatively bright. Danish manufacturing industry has improved its competitiveness as a result of a low rise in wages and prices over several years, and the economy may thus receive a substantial boost from an international economic upturn. In 1992, however, the situation for some export industries that have been relying on deliveries to Germany might deteriorate slightly as a result of a lower growth rate in the German economy. On the other hand, both private consumption and housing investment are expected to make a positive contribution to economic growth in 1992. Unemployment remains at a high level - the jobless rate was nearly 11 per cent in March this year. To remedy the unemployment problem the Danish Parliament at the beginning of May this year arrived at a broadly-based compromise which entails an obligation to provide young people under the age of 25 either a job or education.

From a price of about USD 17 a barrel at the beginning of March (Brent Blend), *crude oil prices* rose later in the second quarter and excluded USD 20 a barrel at the end of May. Signs of a higher underlying growth in demand, inter alia in some OECD countries, more than offset the seasonal variations involving lower oil consumption. Prices, however, have shown marked fluctuations over the last few weeks due to uncertainty surrounding the supply situation in Russia and the question of whether the UN will permit Iraq to export crude oil. In a slightly longer time perspective - say one year - there are few indications that the price of oil will pick up considerably from the current level of between USD 20 and 21 a barrel.

Norway: Strong growth in exports of energy goods in first quarter

According to preliminary figures from the quarterly national accounts, traditional merchandise exports grew by 6.8 per cent on a seasonally-adjusted basis in the first quarter of this year, following a decline of 2.9 per cent from 1990 to 1991. The growth this year can primarily be ascribed to higher exports of refined oil products following the halt for maintenance work at Mongstad last autumn. If refined oil products and electric power are excluded, traditional merchandise exports have shown little change through the last five quarters. The early stages of recovery in the U.S. are gradually expected to spread to other countries and the growth in Norway's export markets may reach 3-4 per cent this year. This indicates a slight rise in traditional merchandise exports, excluding energy goods, through the year, entailing that the overall growth in traditional exports may be about 2 per cent in 1992.

The volume of oil and gas exports rose by about 17 per cent last year following a moderate increase from 1989 to 1990. The growth continued in the first quarter of this year, and it now appears that petroleum exports will expand in volume by some 10 per cent in 1992.

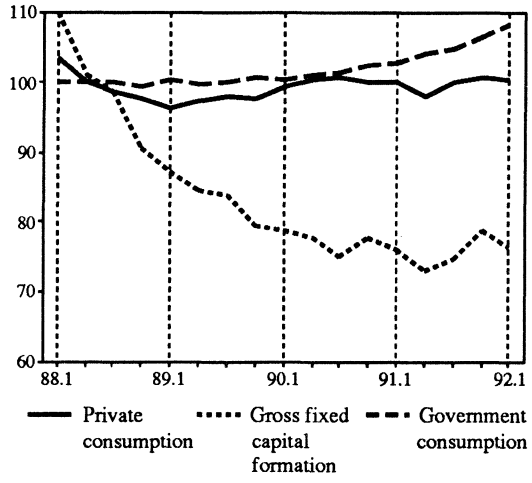
Mainland Norway at a standstill

Demand from mainland Norway was approximately unchanged from the fourth quarter of 1991 to the first quarter of this year, adjusted for normal seasonal variations. Private consumption, which accounts for nearly 60 per cent of demand from mainland Norway, fell by 0.6 per cent (seasonally adjusted) in the first quarter of this year after declining by 0.3 per cent from 1990 to 1991.

Revised national accounts data show that household real disposable income expanded by 2.4 per cent last year. Along with the weak trend in private consumption, this entailed that the household savings ratio increased from 0.4 per cent in 1990 to some 3 per cent in 1991. With an approximately

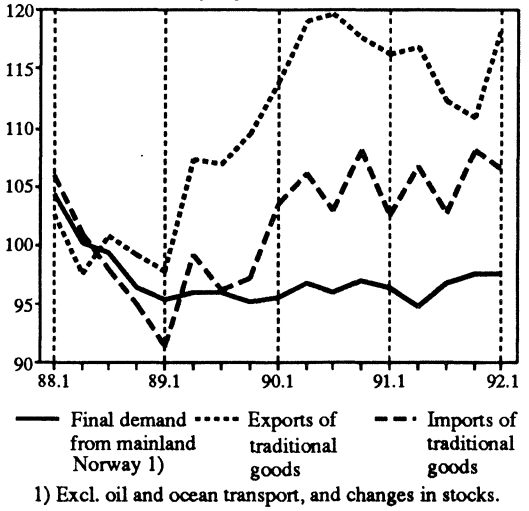
TOTAL EXPORTS, IMPORTS AND FINAL DOMESTIC USE
1988 = 100. Seasonally adjusted

CONSUMPTION AND FIXED CAPITAL FORMATION, MAINLAND NORWAY 1)
1988 = 100. Seasonally adjusted



1) Excl. oil and ocean transport, and changes in stock.

EXPORTS, IMPORTS AND DOMESTIC DEMAND, MAINLAND NORWAY
1988 = 100. Seasonally adjusted



1) Excl. oil and ocean transport, and changes in stocks.

unchanged level of households' fixed investment from 1990 to 1991, this provided - according to figures from Credit Market Statistics - scope for accumulating net financial assets of about NOK 15 billion.

The weak trend in household demand for fixed assets and the rapid buildup of net financial assets reflect the household sector's adaptation to the high real interest rate level. The real after-tax interest rate will probably increase further by more than 1 1/2 percentage points from 1991 to 1992, indicating that financial consolidation will continue. With a projected growth of 3.5 per cent in real disposable income from 1991 to 1992 and a growth in private consumption in the range of 1.5 to 2 per cent, the savings ratio will increase further to about 5 per cent this year.

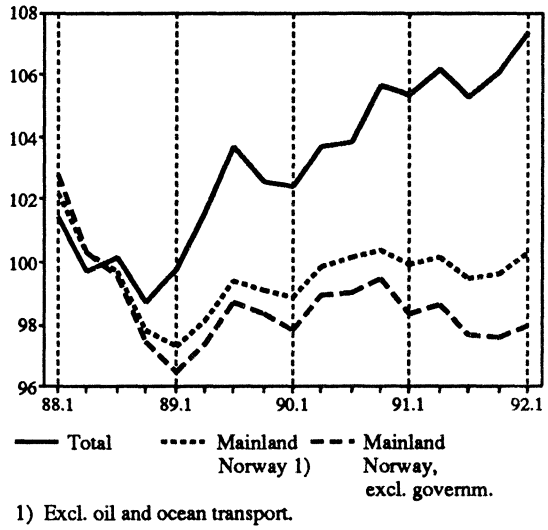
Public consumption grew by 2.3 per cent last year. The growth was highest for local government consumption, while zero growth in military spending reduced the growth in total central government consumption to 1.7 per cent. In the Revised National Budget for 1992 public consumption is estimated to increase by nearly 3 per cent this year. Gross fixed investment in the public sector is projected to rise by 4.9 per cent this year following a growth of nearly 16 per cent last year. The estimated growth in total demand from the public sector in 1992 represents a contribution of slightly less than 1 per cent to the growth in total demand from mainland Norway.

Following a clear upturn through 1990 manufacturing investment fell through 1991. The decline continued in the first quarter of this year and, according to the CBS' investment survey from February this year, manufacturing investment is likely to decline by 15 per cent from 1991 to 1992. According to preliminary estimates, investment in other goods-producing industries grew by 2.7 per cent in the first quarter of this year (seasonally adjusted) after having increased through most of last year as well.

Housing investment fell by about 25 per cent from 1990 to 1991, and it appears that the decline continued at an undiminished pace in the first quarter of 1992. There are nevertheless signs that the fall in housing starts is now coming to a halt. With the current high real interest rate level, however, there is little reason to expect any major turnaround of housing investments through the rest of the year.

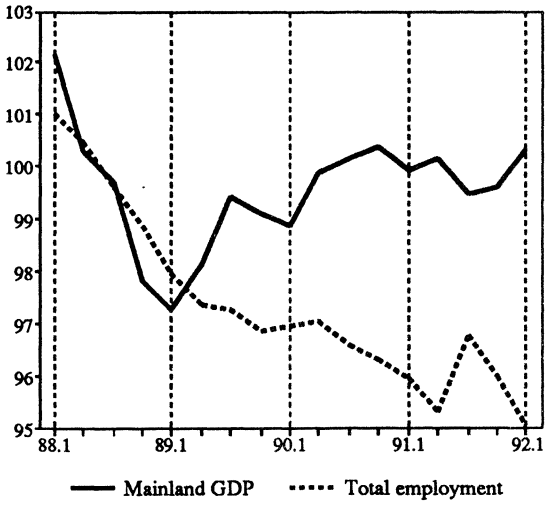
Accrued investment costs in the oil sector (including pipeline transport) rose by nearly NOK 11 billion from 1990 to 1991 and preliminary estimates indicate a further growth of NOK 6 billion this year. This represents a real demand impetus equi-

GROSS DOMESTIC PRODUCT
1988 = 100. Seasonally adjusted



1) Excl. oil and ocean transport.

PRODUCTION AND EMPLOYMENT
1988=100. Seasonally adjusted volume indices



valent to about 1 per cent of GDP for mainland Norway.

Little change in traditional imports

Traditional merchandise imports fell by nearly 1 1/2 per cent (seasonally adjusted) in the first quarter of this year, after showing close to zero growth from 1990 to 1991. Major purchases of aircraft and submarines have contributed to pronounced fluctuations in imports of traditional goods the last few years. As a result of the weak trend in demand, the underlying growth in traditional imports has been very moderate. The projected moderate upturn in demand from mainland Norway through this year may result in a growth in traditional imports of some 2 per cent from 1991 to 1992.

Moderate growth in manufacturing output in first quarter

GDP for mainland Norway has shown little change through the last five quarters, adjusted for normal seasonal variations.

The growth in activity in the public sector has helped to boost production, while a marked decline in output in goods-producing industries, excluding manufacturing, contributes negatively. Production in manufacturing industry and private services exhibited a sluggish trend in 1991, but manufacturing output picked up somewhat in the first quarter of this year. Production in import-competing manufacturing sectors rose by more than 5 per cent, and in sheltered sectors by some 4 per cent. The output growth of about 3 per cent in export-oriented manufacturing industry is largely a result of the "catch-up" following the halt in production at the Mongstad refinery last autumn.

Higher domestic demand through the year may result in a growth in mainland GDP of about 1 1/2 per cent this year, while the increase in total GDP may be some one percentage point higher as a result of a new strong growth in oil and gas production.

No signs of decline in unemployment

Information from the CBS' labour market survey (LMS) indicate that the level of employment in the first four months of this year was about the same as in the corresponding period of 1991. Even though it is difficult to interpret developments through 1991, it may now appear that the decline in employment is coming to a halt. Both the LMS survey and statistics from the Directorate of Labour indicate, however, that unemployment continues to rise. With continued gains in productivity, the projected 1 1/2 per cent growth in mainland GDP is probably not sufficient to prevent a slight decline in employment this year. Even with only a weak growth in the labour force the unemployment rate may increase to 6 per cent as an average for 1992.

Slower rise in prices and wages

Price inflation fell substantially through 1991. Measured by the increase in the Consumer Price Index from the same month one year earlier, the rise in prices was in the range of 2.3-2.5 per cent in the first four months of the year. In April 1991, by way of comparison, the year-on-year increase was 3.8 per cent. Moderate agreed increases in the wage settlements and persistently high unemployment entail that the rate of price inflation will remain low in 1992, and the annual increase will probably be close to the average of 2.4 per cent recorded in the first four months. The rise in prices for Norway's trad-

ing partners is also declining; in the first quarter of 1992 this was 1 percentage point higher than price inflation in Norway (12-month rates).

Now that the key wage settlements have been completed, it is clear that the growth in wages in 1992 will be moderate. While the growth in hourly wages in the economy as a whole was 5 per cent in 1991, the average growth in wages this year is expected to be reduced to 3-3 1/2 per cent.

Lower current account surplus in 1992

The surplus on the current account of the balance of payments is estimated at NOK 32.4 billion in 1991. Preliminary and uncertain figures for the first quarter show a current account surplus of NOK 3.4 billion in this period, half the level recorded in the first quarter of 1991. The reduction can partly be ascribed to a decline in the surplus in the balance of goods and services, inter alia as result of higher imports, and partly to a deterioration in the balance of interest and transfers. The latter is related to high payments of share dividends to foreign owners in the first quarter, a phenomenon which was also registered in the same period last year. With oil prices and a dollar exchange rate at about the current level, it is nevertheless probable that the current account will show a surplus of NOK 20 billion for 1992 as a whole.

DEVELOPMENT TRENDS IN SELECTED MACROECONOMIC VARIABLES

Percentage change in volume in 1990 prices [1)]

	NOK billion	Growth from same period previous year					Growth from previous quarter, seasonally adjusted			
	1991	1991	91.2	91.3	91.4	92.1	91.2	91.3	91.4	92.1
Private consumption	336.4	-0.3	-2.1	-0.4	0.8	0.7	-1.9	2.1	0.6	-0.6
Goods	208.1	-0.6	-2.7	-0.4	0.2	0.1	-2.0	2.3	-0.4	-0.3
Services	118.9	2.7	2.5	3.8	2.1	0.9	-0.4	1.2	0.2	-0.9
Norwegian consumption abroad	20.7	-8.6	-16.7	-8.5	6.8	15.1	0.0	7.6	12.1	-4.4
- Non-residents' consumption	11.3	7.9	5.9	16.6	15.6	17.0	20.2	5.8	-0.5	-7.1
Government consumption	142.4	2.3	1.2	4.7	-0.2	4.1	-0.0	2.0	-1.5	3.7
Central government	56.7	1.1	-1.1	6.8	-5.5	2.5	-1.8	3.7	-5.9	7.2
Civilian	35.0	2.7	0.9	10.2	-5.5	4.5	-1.7	5.3	-9.3	11.3
Military	21.7	-1.4	-4.1	0.6	-5.5	-1.6	-2.0	1.2	-0.3	1.0
Local government	85.7	3.2	2.8	3.5	4.0	5.1	1.2	0.9	1.4	1.5
Gross fixed capital formation	125.9	1.0	4.8	1.4	0.2	-7.9	-13.1	-2.4	13.7	-8.8
Oil and shipping	31.9	11.4	32.8	9.6	-7.1	-43.4	-34.3	-16.7	46.6	-25.7
Mainland Norway	94.0	-2.1	-4.4	-0.7	-7.7	3.5	-3.5	2.0	5.4	-2.9
Manufacturing and mining	15.6	6.0	17.1	10.1	-11.3	-12.5	-2.1	-7.7	-4.1	-2.5
Production of other goods	12.8	-3.5	-5.2	-4.2	9.1	23.9	6.4	3.6	5.1	2.7
Other services	65.6	-3.5	-8.8	-2.3	5.0	4.0	-5.7	4.3	7.8	-4.1
Stocks (contribution to GDP growth)[4)]	5.0	(-1.0)	(-1.1)	(-0.9)	(-0.5)	(-1.4)	1.4	-1.9	1.8	-1.9
Ships and oil platforms in progress (contribution to GDP growth)[4)]	11.1	(-0.7)	(-1.6)	(-1.4)	(0.6)	(-0.1)	0.9	-0.9	2.0	-1.5
Other stocks[3)] (contribution to GDP growth)[4)]	-0.6	(-0.3)	(0.5)	(0.5)	(-1.1)	(-1.3)	0.5	-1.0	-0.3	-0.4
Final domestic use of goods and services	609.7	-0.5	-1.0	0.1	-0.1	-1.8	0.4	-1.7	3.5	-4.8
- gross capital formation in oil and shipping (incl. stocks)[2)]	43.0	-3.3	-0.1	-18.5	2.9	-28.8	-17.6	-27.6	85.7	-35.1
- demand from mainland Norway	572.8	0.1	-1.6	0.8	0.9	2.0	-1.7	2.1	0.8	0.1
Exports	311.1	6.3	9.2	7.1	4.1	11.8	6.0	-1.8	1.7	4.4
Traditional goods	112.8	-3.0	0.3	-5.7	-5.7	4.9	0.5	-4.0	-1.2	6.8
Crude oil and natural gas	103.6	17.0	24.6	15.1	11.2	14.2	6.1	-5.8	8.6	5.3
Ships and oil platforms	14.3	33.9	13.1	85.9	57.1	151.3	111.3	13.8	-12.4	19.2
Services	80.5	4.1	5.3	7.3	3.1	5.0	4.0	3.4	0.4	-2.7
Total use of goods and services	920.8	1.7	2.3	2.4	1.2	2.7	2.3	-1.8	2.9	-1.7
Imports	246.8	1.3	0.2	3.8	3.2	3.1	6.7	-4.3	9.1	-9.1
Traditional goods	151.0	-0.1	2.1	0.4	0.2	6.5	4.0	-3.6	5.2	-1.4
Crude oil	1.7	2.5	11.8	-47.5	13.0	-39.6	120.9	-74.9	120.7	-50.5
Ships and oil platforms	17.9	-5.9	-19.7	13.7	-7.4	-60.8	17.6	-33.1	72.4	-72.1
Services	76.3	6.0	2.4	9.4	13.5	12.1	7.6	4.6	4.8	-5.6
Gross domestic product (GDP)	674.0	1.9	3.2	1.9	0.5	2.6	0.8	-0.8	0.7	1.2
- Mainland Norway	548.4	0.1	1.1	0.0	-0.7	1.3	0.2	-0.7	0.1	0.7
Oil activities and shipping	125.5	10.5	13.0	12.0	5.9	8.3	3.1	-1.3	3.2	3.2
Mainland industry	507.4	-0.2	1.3	-0.4	-1.1	1.2	0.2	-0.9	-0.0	0.8
Manufacturing and mining	91.5	-1.0	3.4	-2.7	-1.5	3.1	4.0	-4.0	1.1	3.6
Production of other goods	68.6	-5.1	-6.6	-6.2	5.7	-3.6	-3.3	-2.6	-0.4	-1.1
Other services	347.3	1.1	2.1	1.6	0.0	1.6	-0.1	0.3	-0.3	0.4
Correction items[5)] (contribution to GDP growth)[4)]	41.0	(0.2)	(-0.0)	(0.3)	(0.2)	(0.0)	0.6	2.0	2.3	-0.1

[1)] Notes, see "Technical comment".

PRICE INDICES FOR SELECTED MACROECONOMIC VARIABLES

		Percentage change from the same period the year before				Growth from previous quarter, seasonally adjusted. Per cent			
	1991	91.2	91.3	91.4	92.1	91.2	91.3	91.4	92.1
Private consumption	3.7	4.1	3.6	2.8	2.7	0.9	0.7	0.7	0.6
Government consumption	3.4	3.7	3.1	2.3	2.7	-0.0	1.0	0.9	0.8
Gross fixed captial formation	0.4	0.2	1.9	0.2	2.3	0.3	1.8	-1.2	1.7
- mainland Norway	-1.2	-1.3	-1.3	-0.4	2.4	0.1	0.4	0.5	1.2
Final domestic use of goods and services	2.9	3.4	3.1	1.8	3.2	0.7	0.7	-0.8	2.3
- demand from mainland Norway	2.8	3.1	2.7	2.1	2.6	0.5	0.7	0.7	0.8
Exports	-0.8	8.2	1.4	-12.1	-9.1	0.8	-0.4	-2.3	-7.1
- traditional merchandise exports	-0.4	3.0	1.6	-6.7	-8.7	-0.8	-1.0	-2.7	-4.4
Total use of goods and services	1.6	4.9	2.5	-3.0	-1.2	0.7	0.4	-1.3	-1.1
Imports	0.9	0.6	3.5	1.0	2.8	1.7	1.9	-1.1	0.6
- traditional merchandise imports	-0.3	0.1	1.1	0.5	3.5	2.8	0.7	-0.5	0.6
Gross domestic product (GDP)	1.9	6.6	2.1	-4.4	-2.6	0.3	-0.2	-1.3	-1.6
- mainland Norway	3.1	3.5	2.8	1.6	0.6	-0.6	0.3	0.3	0.2

TECHNICAL COMMENT ON THE QUARTERLY ACCOUNTS FIGURES

Footnotes: 2) Including ships, oil platforms and platform modules in progress. 3) Excluding ships, oil platforms and platform modules in progress. 4) Contributions to GDP growth are calculated as the difference between corresponding figures calculated as a percentage of GDP. 5) Corrected for free bank services and certain excises.

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. The quarterly national accounts figures for the years up to and including 1989 have been reconciled against the most recently published annual accounts figures.

Gross fixed capital formation: Total gross fixed capital formation is heavily influenced by significant fluctuations in investment in oil activities. These fluctuations are inter alia due to the fact that platforms that have been under construction for several years are counted as investment in the quarter and with the capital value they have at the time they are towed out to the field.

Seasonally-adjusted figures: The quarterly national accounts are not seasonally-adjusted, as these accounts are attempts to register the actual transactions that have taken place in each quarter. Many of the statistical series thus show clear seasonal variations. These are therefore seasonally adjusted on the detailed accounts level and then added together with the other statistical series to obtain the figures presented in the tables and charts of this volume. Seasonal adjustments for the public sector's purchase of goods and services are based on estimates, as there is not enough information available yet to map out the seasonal pattern.

Underlying trend: The Norwegian economy is so small that random or single important occurrences can give wide variations in the figures. The seasonally adjusted figures are therefore smoothed so that it is possible to find the underlying trend for each series. Smoothing is an attempt to distinguish between random and systematic variations in the series.

REVISIONS OF UNDERLYING TREND

Per cent growth from previous quarter. Seasonally adjusted and smoothed. Annual rates

Publ.	88.2	88.3	88.4	89.1	89.2	89.3	89.4	90.1	90.2	90.3	90.4	91.1	91.2	91.3	91.4	92.1
GDP mainland Norway																
Feb.- 89	-1	-1	-2													
June -89	-2	-3	-4	-3												
Sept.-89	-2	-4	-4	-2	1											
Dec.- 89	-2	-4	-4	-2	1	3										
Feb.- 90	-2	-3	-3	-1	2	3	2									
June -90	-4	-4	-3	-1	1	1	0	-2								
Sept.-90	-4	-4	-3	-2	1	1	1	1	3							
Dec.- 90	-4	-4	-3	-2	1	1	1	2	3	3						
Feb.- 91	-4	-4	-3	-1	1	2	1	1	2	2	2					
June -91	-4	-5	-5	-3	0	1	1	1	1	1	0	-1				
Sept.-91	-4	-5	-5	-3	0	1	1	1	1	1	0	0	-1			
Dec.-91	-4	-5	-5	-3	0	1	1	1	1	1	0	0	-1	-1		
Feb.-92	-4	-5	-5	-3	0	1	1	1	1	1	0	0	0	0	1	
Jun.-92	-4	-5	-4	-2	0	2	2	2	2	1	1	0	-1	-1	0	1
Final demand from mainland Norway																
Feb.- 89	-5	-4	-3													
June -89	-5	-5	-4	-3												
Sept.-89	-6	-7	-6	-4	0											
Dec.- 89	-5	-6	-6	-5	-2	0										
Feb.- 90	-5	-6	-6	-4	-2	0	1									
June -90	-6	-7	-7	-4	-2	-1	-1	-1								
Sept.-90	-6	-7	-7	-5	-2	0	1	2	3							
Dec.- 90	-6	-7	-7	-5	-2	-1	0	1	2	2						
Feb.- 91	-6	-7	-7	-5	-2	0	1	1	2	2	2					
June -91	-6	-8	-7	-5	-3	-1	0	1	1	0	0	-2				
Sept.-91	-6	-8	-7	-5	-3	-1	0	1	1	0	-1	-2	-3			
Dec.-91	-6	-8	-7	-5	-3	-1	0	1	1	0	-1	-2	-2	0		
Feb.-92	-6	-8	-7	-5	-3	-1	0	1	1	0	-1	-1	0	3	4	
Jun.-92	-6	-7	-7	-5	-2	-1	0	1	1	1	0	0	0	2	2	2

COMMENTS ON THE REVISIONS

Revisions can either be due to new/revised quarterly figures for the current year, new/revised annual national accounts figures for previous years, or a change to a new base year for prices. Because the growth rates following the change-over to an annual rate are rounded off to the nearest whole per cent, a 1 percentage point change in the growth rate can be due to different rounding.

Published:	Price basis:	New annual accounts:	Other comments:
Feb.- 89	1986	1985-87	
June -89	1987	1986-87	
Sept.-89	"		Revised seasonal adjustment programme
Dec.-89	"		
Feb.-90	"		
June -90	1988	1987-88	
Sept.-90	"		
Dec.-90	"		
Feb.-91	"		
June -91	1989	1988-89	
Sept.-91	"		
Dec.-91	"		
Feb.-92	"		
Jun.-92	1990	1989-90	

OUTLOOK FOR 1992 AND 1993

This section presents projections for macroeconomic developments in 1992 and 1993 based on the Central Bureau of Statistics' macroeconomic quarterly model, KVARTS. The table below also includes projections from other institutions.

The projections for output growth have been revised downwards for both 1992 and 1993 compared to the estimates provided in Economic Survey, published in February this year. The lower growth projections are due in part to downward revisions in estimates for traditional merchandise exports inasmuch as the growth in production and imports in our export markets appears to be even weaker than previously estimated. In addition, the growth in the mainland economy has failed to materialize; in the first quarter of this year there were few signs of a turnaround in key components of domestic demand. The projections for petroleum production, however, have been revised upwards as a result of new data from the oil companies. This improves the external account, but does not generate any direct demand impetus to the Norwegian economy. The estimates from the Revised National Budget for 1992 have been used as a basis for assuming growth in public consumption, which is noticeably higher than that projected by both the Central Bureau of Statistics and the Government itself half a year ago.

The new projection results in a growth in mainland GDP of 1.4 per cent in 1992, or 0.3 percentage points lower than the forecast from February this year. As a result of markedly stronger growth in petroleum production, GDP for the entire economy is forecasted to increase by 2.6 per cent. The projections still indicate stronger growth in demand and output in 1993. The effect on unemployment, however, will probably be modest.

THE DEVELOPMENT OF MAIN ECONOMIC INDICATORS
Percentage change in volume from previous year unless otherwise noted[1)]

	1991	1992			1993
	Accounts	CBS	MoF	NB	CBS
Private consumption	-0.3	1.7	2.5	2	2.6
Public consumption	2.3	2.9	2.9	1	2.4
Gross fixed capital formation[2)]	1.0	4.4	-3.5	9	17.4
- mainland Norway	-2.1	-3.7	-1.4	3	3.5
Exports	6.3	2.6	2.5	2	5.4
- traditional exports	-3.0	1.9	1.0	4	4.1
Imports	1.3	1.9	-1.0	3	5.0
- traditional imports	0.0	2.2	3.0	3	3.7
Gross Domestic Product (GDP)	1.9	2.6	2.9	2	3.7
- mainland Norway	0.1	1.4	1.4	2	3.4
Man-hours worked, employees	-1.1	-0.3	-	0	1.6
Unemployment rate (level)	5.5	5.9	-	-	5.4
Rise in wages per man-hour	5.0	3.4	3.0	3	3.3
Consumer Price Index	3.4	2.4	2.5	3	2.8
Current account (level, bill. NOK)	32.4	20.0	25.8	41	30.7

1) CBS: Forecast according to Central Bureau of Statistics, Economic Survey no. 5/92.
MoF: Forecast according to Ministry of Finance, National Budget Proposal 1992.
NB: Forecast according to Bank of Norway, Exonomic Bulletin. 1991/4.
2) Includes oil platforms. In the National Account these are measured as "investments" at the time they are installed offshore. As a consequence, the growth rates may show significant fluctuations.

Higher market growth in second half of the year

The projection of the KVARTS model is based on the assumption that production and imports in Norway's export markets will pick up in the second half of the year and that the upturn will gather momentum through 1993. During the last few months the growth forecasts have been revised downwards for key countries, both for 1992 and 1993. Traditional merchandise exports have also exhibited a sluggish trend so far this year when adjustments are made for the catch-up in exports of refined oil products. We now expect a growth of 1.9 per cent in traditional merchandise exports in 1992 and some 4 per cent in 1993. Export prices for traditional goods will probably improve in the second half of the year and through 1993 as a result of the international economic upturn.

Higher growth in public consumption and investment

In the projection public consumption rises by about 3 per cent in 1992, which is considerably stronger than assumed in Economic Survey. Public sector investment is also expected to show a sizeable growth. The figures for public consumption in 1992 and 1993 are influenced by the scaling down of major military procurement programmes, which results in a decline in military spending both years. We assume that the growth in civilian spending will be about the same in 1993 as in 1992. For the household sector, we have included a relief in direct taxation equivalent to about NOK 5 billion in 1992 compared with unchanged average taxes from 1991.

Low increases in prices and wages

Consumer prices rose less in the first half of the year than previously envisaged. With key wage settlements now completed, it appears that the rise in prices and wages will be noticeably lower in 1992 than last year. In the projection, the rise in consumer prices is estimated at 2.4 per cent on average in 1992, while average hourly wages are projected to rise by a little less than 3 1/2 per cent. The rise in consumer prices, however, will increase somewhat again in 1993, partly as a result of a rise in import prices.

Turnaround in mainland investment in second half of the year

The decline in key components of fixed investment in the mainland economy has persisted thus far this year. Following a decline in manufacturing investment in 1992, we expect an upturn in 1993. More important to domestic demand, however, are housing investment and investment in private services, especially commercial buildings. We expect this component of investment to level off in 1992 and pick up slightly in 1993.

A considerable growth impetus for the mainland economy will come from (accrued) oil investment and from investment activity in the public sector in both 1992 and 1993.

Household demand

Private consumption fell slightly in 1991, and so far in 1992 no clear signs of recovery have been registered in spite of an estimated strong growth in household real income. We assume, however, that consumption will begin to rise in the second half of the year and that the decline in housing investment will level off. The growth projections for private consumption in 1992 and 1993 are now 1.7 and 2.6 per cent, respectively. With an expected growth in real disposable incomes of close to 3 1/2 per cent in 1992, we assume that households will continue to strengthen their net financial asset position in the projection period.

Higher output growth, but limited effects on unemployment

The growth in production will pick up through 1992 and 1993 as a result of higher demand in both the export market and domestically. The upturn in the mainland economy, however, will be modest this year, entailing that employment will still fall, measured as an annual average. The output growth from the second half of 1992, however, will be sufficiently strong to allow employment to grow more than the labour force. Unemployment will thus decline somewhat in 1993.

Balance of payments

The increase in domestic demand and production will result in higher imports in the projection period. Partly for this reason the trade surplus for traditional goods is expected to decline in both 1992 and 1993. A continued rise in oil exports, however, will have a positive effect on the current account. The projection entails an assumption that crude oil prices will average NOK 119 a barrel in 1992 and NOK 130 in 1993. The decline in Norway's net debt as a result of the sizeable current account surpluses the last few years will result in lower net interest expenditures. All total, the surplus on the current account will be lower in 1992 than in 1991, but will increase noticeably again in 1993.

Stocks, catches and quotas in Norwegian fisheries

A positive trend has been observed in the stock of North-East Arctic cod, which was estimated to 1.2 million tonnes in 1991. The catch quota for 1992 is 300 000 tonnes, of which Norwegian fishermen are allowed to catch 125 000 tonnes. They are also permitted to catch 40 000 tonnes of Norwegian coastal cod. The spawning stock of Norwegian spring-spawning herring was estimated to be about 1.6 million tonnes at the beginning of 1991. The 1983 year class accounts for more than 80 per cent of this stock. There has been a marked increase in the stock of Barents Sea capelin since 1990, and fishing of this species was allowed in 1991 for the first time since 1986.

The total catch of fish in Norwegian fisheries was about 1.9 million tonnes in 1991. This is 380 000 tonnes more than in 1990. Including crustaceans, molluscs and seaweed the total catch in 1991 was 2.1 million tonnes, with a first-hand value of NOK 5.6 billion.

The export value of fish products (including reared salmon) increased by 12 per cent in 1991 to almost NOK 15 billion. Export of salmon accounted for about NOK 4.5 billion. For the first time ever, there was a decrease in the export value and the export volume of reared salmon, even though salmon production in 1991 reached a record high level of between 150 000 and 160 000 tonnes.

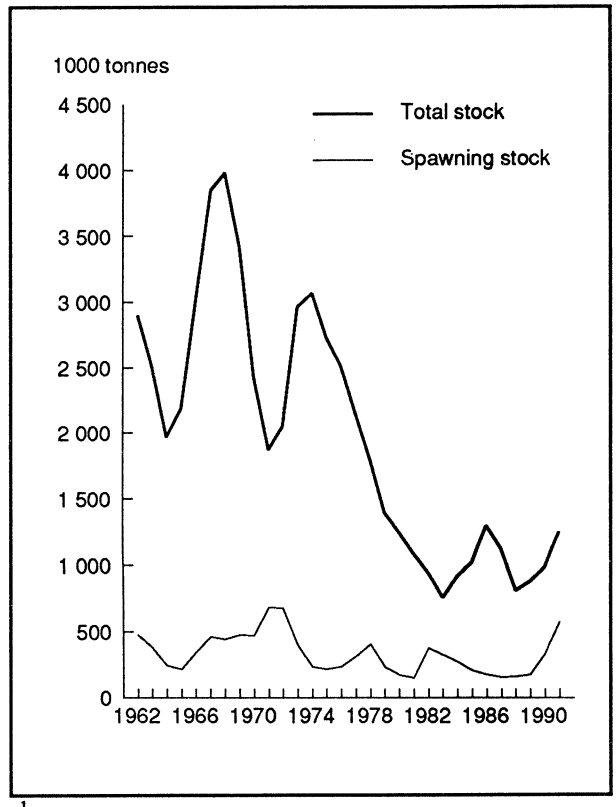
Stock development

This section reviews the development of some important fish stocks, based mainly on reports from the International Council for the Exploration of the Sea (ICES).

North-East Arctic Cod

The size of the stock of North-East Arctic cod was estimated to 1 240 000 tonnes at the beginning of 1991, see figure 1. The estimate of the spawning stock is 570 000 tonnes. The accounted stock of North-East Arctic cod includes fish that are more than 2 years old at the turn of the year. Figure 2 shows recruitment to the stock, measured in terms of the strength of the year classes when they enter the accounted stock as three-year-olds. All the year classes from the 1980s, except for the strong year class in 1983 and the more "normal" year classes in 1981 and 1982, were weak. Spawning seems to have been good, however, in both 1990 and 1991. Cod usually mature when 7 or 8 years old.

Figure 1. Total stock[1] and spawning stock of North-East Arctic cod. 1962-1991. 1 000 tonnes.



[1] Fish over 2 years of age.

Figure 2. Recruitment of North-East Arctic cod. 1962-1988. Millions of three-year old individuals

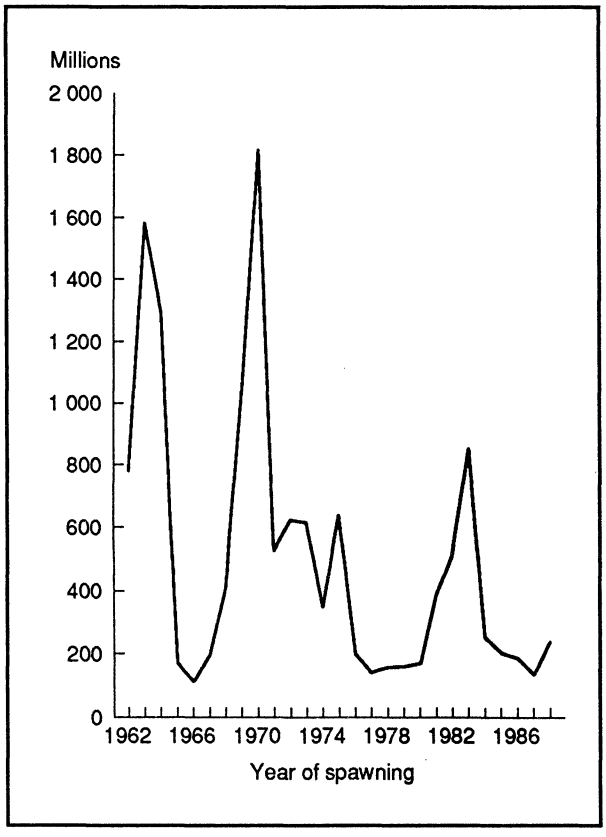
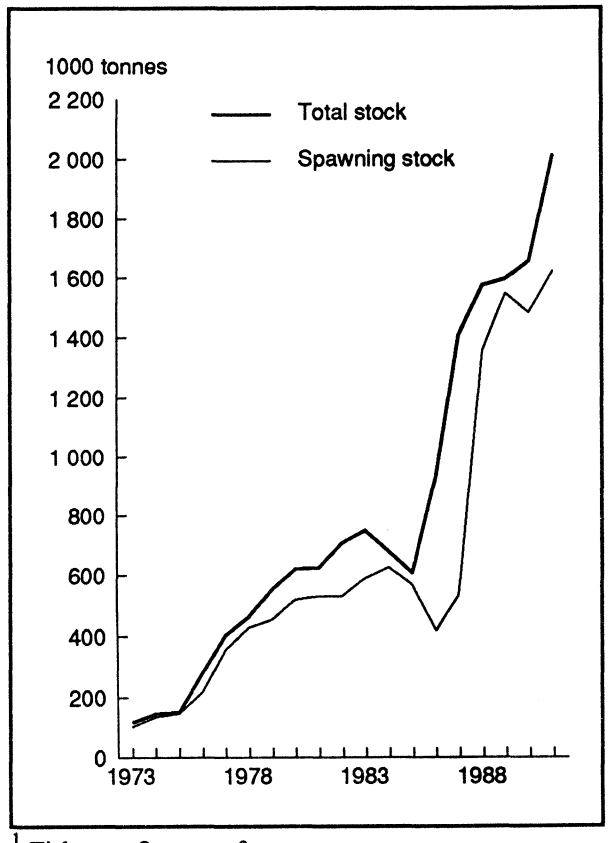


Figure 3. Total stock[1] and spawning stock of Norwegian spring-spawning herring. 1973-1991. 1 000 tonnes.



[1] Fish over 2 years of age.

Table 1. Stock development[1]. North-East Arctic cod. 1975-1991. 1 000 tonnes.

Year	Initial estimate (1)	1991-estimate (2)	Re-evaluation (3) = (2) - (1)
1975	3 600	2 730	-870
1976	4 110	2 510	-1 600
1977	2 500	2 150	-350
1978	1 920	1 790	-130
1979	1 690	1 390	-300
1980	1 500	1 240	-260
1981	1 560	1 090	-460
1982	1 410	940	-470
1983	960	750	-260
1984	730	910	180
1985	1 020	1 010	-10
1986	1 880	1 290	-590
1987	1 500	1 120	-380
1988	900	810	-90
1989	680	870	190
1990	830	980	150
1991	1 240	1 240	.

[1] Initial stock size estimate and estimate in 1991.

Based on the most recent estimates of the stock, marine researchers carry out recursive calculations for the development of the stock, using data on the catch and on natural mortality. In this way the estimates of the stock size in previous years are re-evaluated. Table 1 shows the size of the stock of North-East Arctic cod as estimated for the first time each year and as estimated in 1991. In 1991 the 1987 stock was estimated to have been 1 120 000 tonnes; 380 000 tonnes less than the original estimate.

Norwegian spring-spawning herring

The stock of Norwegian spring-spawning herring was estimated to be 1.7 million tonnes in 1990, see figure 3. A prognosis from ICES estimated the total stock of Norwegian spring-spawning herring to be 2.0 million tonnes as per 1 January 1991.

The stock was fished down from a level of between 7 and 10 million tonnes in the 1950s, and right down at the end of the 1960s. No spawning stock was registered at the beginning of the 1970s, but a reasonably good year class in 1969 produced about 80 000 tonnes of mature herring, most of which spawned in 1973. Recruitment was fairly good from some of the year classes from 1973 onwards, and a particularly rich year class was registered in 1983, see figure 4. This year class has now been recruited to the spawning stock. The estimated spawning stock of about 1.6 million tonnes in 1991 is about three times as large as the spawning stock in 1987. The year classes since 1983 are expected to make a poor contribution to the spawning stock, which is expected to decrease in the short term, even if no fishing takes place. Preliminary investigations indicate, however, that the 1991 year class will be a very good one. The development of the stock is very uncertain, and is strongly dependent on what happens to the 1983 and 1991 year classes in the next few years. The year class from 1983 accounts for about 80 per cent of both the number and the biomass of herring that are three years old or more. Norwegian spring-spawning herring mature between 3 and 6 years of age.

In 1991 the catch quota for herring was 85 000 tonnes. The recommended maximum quota for 1992 is 78 000 tonnes. By comparison, during the period 1964-1967, total annual catches of Norwegian spring-spawning herring varied from 1.3 to 2 million tonnes.

Barents Sea capelin

Figure 5 gives estimated size of the capelin stock (fish that are two years old or more) in the Barents Sea based on acoustic measurements in autumn. During the period 1986-1989 the stock was very small, but since 1989 has

Figure 4. Recruitment of Norwegian spring-spawning herring. 1973-1988. Millions of three-year old individuals

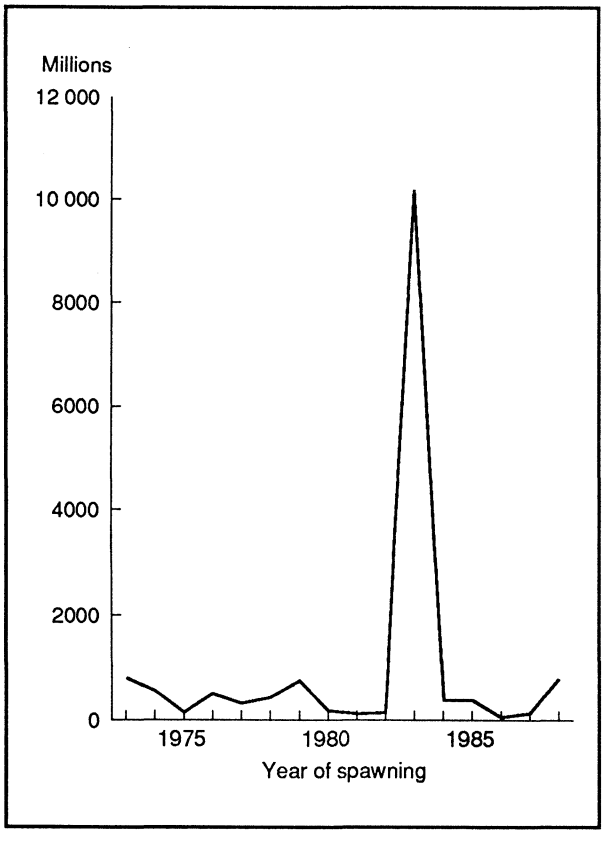
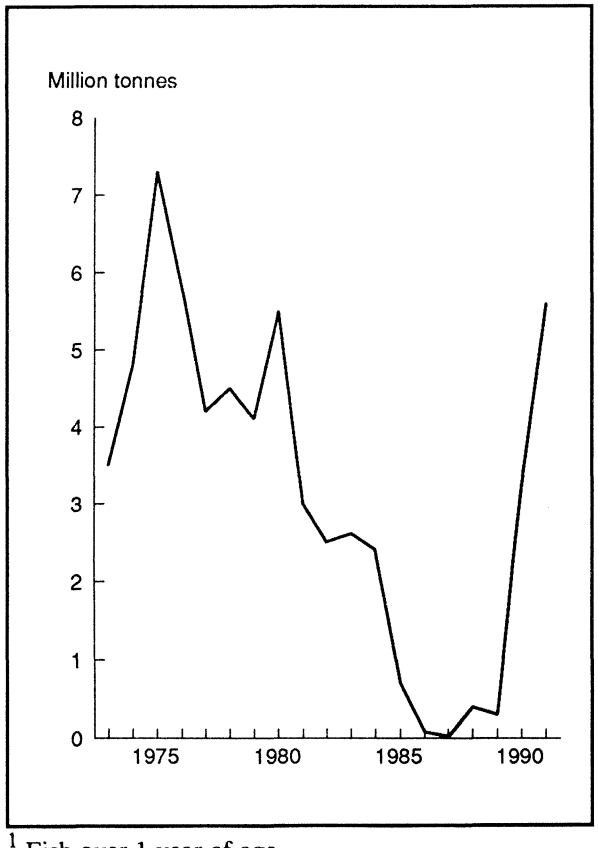


Figure 5. Size of the capelin stock[1] in the Barents Sea in autumn. 1973-1991. Million tonnes.



[1] Fish over 1 year of age.
Source: Norwegian Institute of Marine Research.

increased strongly. In autumn 1991 it was estimated to be 5.6 million tonnes.

The positive development of the capelin stock implied that fishing of the species was permitted in 1991 for the first time since 1986.

Other important fish stocks

Table 2 shows the development of several stocks of importance to Norwegian fisheries.

There was a drastic decrease for a time in the stock of North-East Arctic haddock. In 1984 the stock reached a bottom level of 60 000 tonnes, about 5 per cent of its size in 1973. This down period was followed by a period of rapid growth, reaching a figure of 340 000 tonnes in 1986. Since then the size of the stock has fluctuated somewhat. The estimate for 1991 is 250 000 tonnes, and it is recommended that care is taken not to overtax the haddock stock.

The estimated size of the stock of North-East Arctic saithe is about 430 000 tonnes for 1991. The stocks of haddock and saithe in the North Sea are decreasing, and the spawning stocks of these two species reached a historic minimum in 1990.

Quotas and catches

Table 3 shows quotas and catches of North-East Arctic cod, North-East Arctic haddock, North-East Arctic saithe and Barents Sea capelin.

Preliminary figures for North-East Arctic cod fished in 1990 indicate a catch of 250 000 tonnes, plus 26 000 tonnes of Norwegian coastal cod. For 1992 the total quota of North-East Arctic cod is fixed at 300 000 tonnes (including Murman cod). To this is added 40 000 tonnes of Norwegian coastal cod. After transfer of part of the earlier Soviet Union's quota to Norway, Norwegian fishermen are allowed to fish 125 000 tonnes North-East Arctic cod in 1992, plus 40 000 tonnes Norwegian coastal cod. Figure 6 shows the relationship between quota and catch of North-East Arctic cod since 1978.

After 1984, there was a slight increase in the stock of haddock, and the quotas were fixed at about 250 000 tonnes for both 1987 and 1988. In both these years, however, the catch was much lower than the quota; 151 000 tonnes in 1987 and 92 000 tonnes in 1988. Nor did the catch reach the permitted quota of 83 000 tonnes in 1989. In 1990 and 1991, the quotas of less than 30 000 tonnes were fished. The pro-

Table 2. Stock development[1]. 1976-1991. 1 000 tonnes.

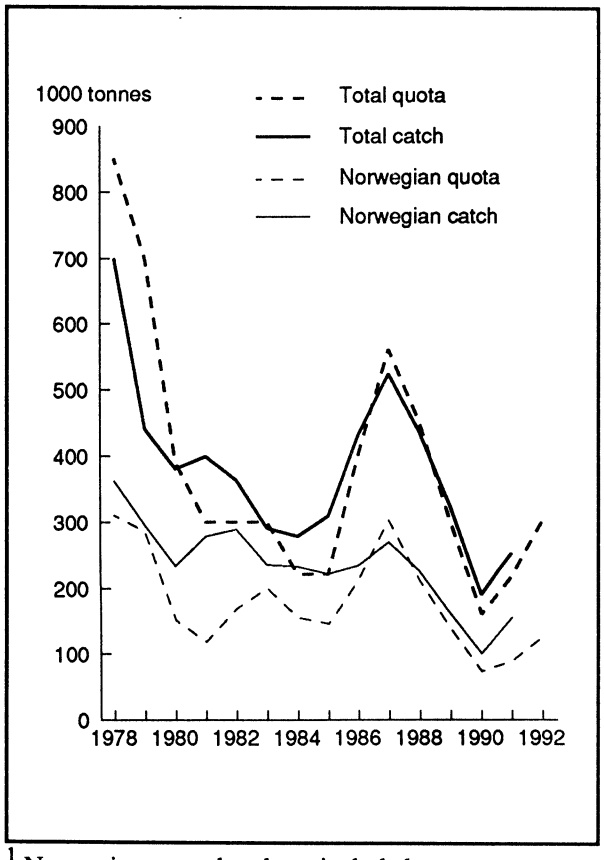
Year	North-East Arctic cod	North-East Arctic haddock	North-East Arctic saithe	Barents Sea capelin[2]	Norwegian spring-spawning herring	North Sea cod	North Sea saithe
1976	2 510	470	620	3 800	290	240	630
1977	2 150	310	490	2 700	400	240	430
1978	1 790	280	470	2 000	460	200	360
1979	1 390	280	440	1 600	550	290	340
1980	1 240	240	570	3 600	620	270	320
1981	1 090	190	560	1 200	620	280	410
1982	940	120	520	1 200	710	310	430
1983	750	70	540	700	750	200	380
1984	910	60	460	1 000	680	200	390
1985	1 010	160	450	300	600	170	390
1986	1 290	340	420	40	930	180	380
1987	1 120	300	450	1	1 410	120	300
1988	810	220	460	4	1 560	170	240
1989	870	210	500	30	1 600	130	180
1990	980	220	460	400	1 660	100	200
1991	1 240	250	430	600	2 010	130	220

[1] Fish over 2 years of age. [2] Stock in autumn according to acoustic measurements.

Table 3. Quotas and catches by stock. 1978-1992. 1 000 tonnes.

	North-East Arctic cod		North-East Arctic haddock		North-East Arctic saithe		Barents Sea capelin	
	Quota	Catch	Quota	Catch	Quota	Catch	Quota	Catch
1978	850	699	150	95	160	154	.	1 894
1979	700	441	206	104	153	164	1 800	1 783
1980	390	381	75	88	122	145	1 600	1 649
1981	300	399	110	77	123	175	1 900	1 987
1982	300	364	110	47	130	168	1 700	1 759
1983	300	290	77	22	130	157	2 300	2 375
1984	220	278	40	17	103	159	1 500	1 481
1985	220	308	50	41	85	107	1 100	868
1986	400	430	100	97	75	70	120	123
1987	560	523	250	151	90	92	-	-
1988	451	435	240	92	100	115	-	-
1989	300	323	83	55	120	122	-	-
1990	160	189	25	25	103	105	-	-
1991*	215	250	28	28	90	100	1 100	..
1992*	300	.	55	.	115	.	834	.

Figure 6. Quotas and catch. North-East Arctic cod. 1978-1992. 1 000 tonnes.



[1] Norwegian coastal cod not included.
[2] Included transfers from the USSR quota.
[3] Murman cod included.

spects for the stock of haddock have improved slightly, and the quota for 1992 has been fixed at 55 000 tonnes.

As mentioned above, there has been a strong increase since 1989 in the stock of capelin. In 1991, fishing of this species was permitted and a total quota of 850 000 tonnes was agreed for the winter fishing and 250 000 tonnes for the autumn fishing. The Norwegian catch was 564 000 tonnes (of a total Norwegian quota of 590 000 after transfers of fishing rights). A total quota of 834 000 tonnes has been agreed for the winter fishing in 1992, of which Norway is allowed to catch 500 000 tonnes. The possibility of autumn fishing will be considered at a later date.

Catches in 1991

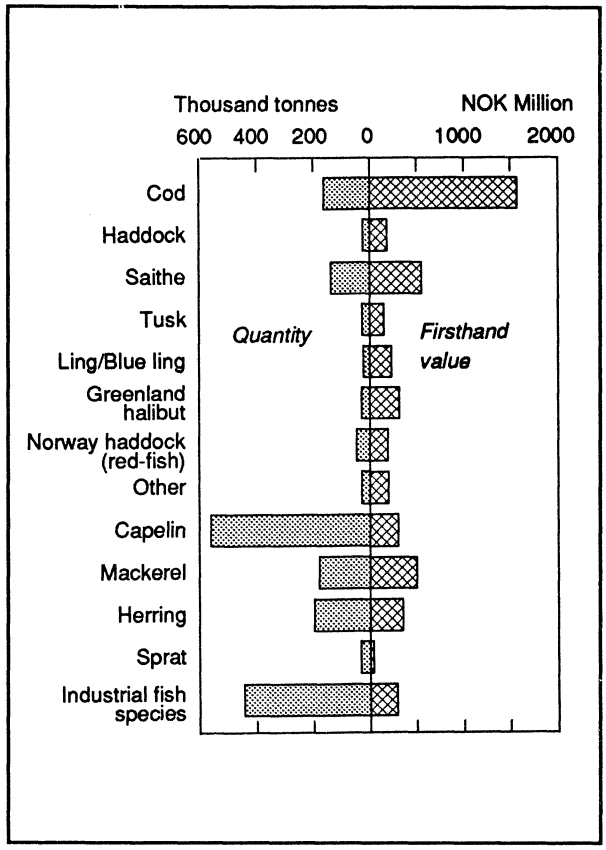
Table 4 shows Norwegian catches in the years 1986-1991. Figure 7 shows the first-hand value and amounts of the catch in 1991. The total amount fished in 1991 was 1.9 million tonnes. This is 380 000 tonnes more than in 1990. The increase was mainly due to the re-opening of capelin fishing in the Barents Sea, and that the capelin catch increased six-fold to

Table 4. Norwegian catch by group of fish species. 1986-1991. 1 000 tonnes.

	1986	1987	1988	1989	1990*	1991*
Total	1 790	1 804	1 686	1 725	1 521	1 899
Cod	270	305	252	186	124	162
Haddock	58	75	63	39	22	24
Saithe	131	152	148	144	112	137
Tusk	33	30	23	32	28	26
Ling/blue ling	28	25	24	29	24	23
Greenland halibut	8	7	9	11	22	29
Norway haddock (red-fish)	24	18	25	27	41	47
Others and unspecified	24	34	29	29	39	30
Capelin	273	142	73	108	92	564
Mackerel	157	159	162	143	150	179
Herring	331	347	339	275	207	198
Sprat	5	10	12	5	6	34
Other industrial fish species[1]	450	500	526	696	654	446

[1] Includes lesser silver smelt/grater silver smelt, Norway pout, sandeel, blue whiting, horse mackerel.

Figure 7. Norwegian catch by group of fish species. 1991. 1 000 tonnes and NOK million.



more than 560 000 tonnes. Catches of cod, saithe, Greenland halibut and mackerel all increased by 20 to 30 per cent. The catch of industrial fish species decreased by 32 per cent, or just over 200 000 tonnes.

The first-hand value of the fish species included in table 4 increased by 23 per cent to NOK 4.9 billion. The total first-hand value of the fisheries in 1991 (including crustaceans, molluscs and seaweed) increased to NOK 5.6 billion. The total catch was about 2.1 million tonnes; a catch of 360 000 tonnes more than in 1990.

Transfer of fishing rights

In 1977, Norway established a 200 mile economic zone after many years of over-exploitation of fish resources. There is a general ban on foreign fishing within the 200 mile zone, but the Government may permit regulated and limited foreign fishing in accordance with bilateral agreements.

The most important fisheries agreements entered into by Norway are with the EC on fishing in the North Sea and with the earlier Sovi-

et Union on fishing in the Barents Sea. (In future, Russia will be the other party to the agreement on the Barents Sea). The purpose is to ensure a reasonable balance between the fishing carried out by the two parties to the agreement and to establish rules for cooperation concerning effective management of common stocks.

Exclusive stocks, that is to say, stocks which occur only in the zone of one particular country, are owned and managed by this country alone.

In the Barents Sea, cod, haddock and capelin are regarded as common stocks. Cod and haddock are divided equally between Norway and the earlier Soviet Union, while 60 per cent of the capelin belongs to Norway and 40 per cent to the earlier Soviet Union.

As far as the North Sea is concerned, the parties have agreed on a zone division for cod, haddock, saithe, whiting, plaice and North Sea herring, see table 5, but have not yet reached agreement on the division of North Sea mackerel.

No special regulatory measures have been agreed for other common stocks in the North Sea. Neither a distribution ratio nor a TAC (Total Allowable Catch) has been fixed for these stocks, since they are not thought to be threatened by the present level of fishing.

Table 5. Division of stocks in the North Sea. Per cent

Stock	Norway	EC
Cod	17	83
Haddock	23	77
Saithe	52	48
Whiting	10	90
Plaice	7	93
North Sea herring[1]	25-32	75-68

[1] Depends on the size of the spawning stock. In 1991 the distribution was 29 per cent to Norway and 71 per cent to the EC.

The annual fishery negotiations with the EC, the earlier Soviet Union, the Faero Islands and other countries have two objectives. The first is to fix a TAC, based on recommendations from the International Council for Exploration of the Sea (ICES). The second is to divide and transfer fishing rights, so that each of the parties will be able to fish to an extent best suited to its own particular needs. The TAC is divided in accordance with the agreed zone distribution, and these zone quotas then form the basis for the exchange of fishing rights referred to below as transfers.

Table 6 shows the extent and balance of the exchange agreements between Norway and other countries in 1991. By fixing weight values, the transfers are translated from tonnes of each fish species to equivalent quantities of cod, or cod equivalents.

The table shows that, in 1991, the balance sheet of transfers between Norway and the Soviet Union was in Norway's disfavour. The balance with the EC was slightly in the EC's favour. The Soviet Union's gain was less in 1991 than in 1990. The reason is a reduction in transfers from Norway of Norway haddock (red fish) and blue whiting. The fishery agreement with the earlier Soviet Union also covers sealing, with a Norwegian quota in the White Sea and a Soviet quota in the Jan Mayen area. These quotas are not included in the transfer balance sheet.

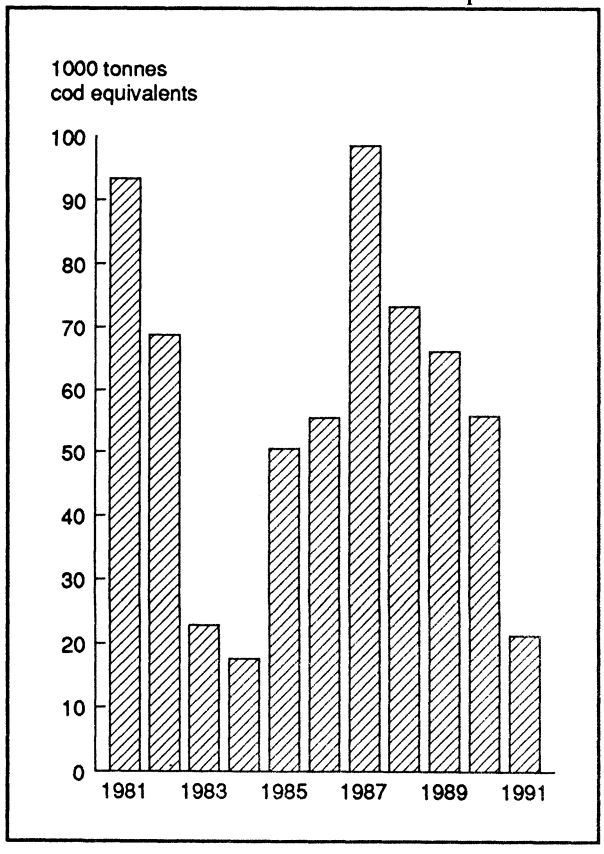
Figure 8 shows changes in Norway's balance of transfers with other countries during the period 1981 to 1991.

Table 6. Transfer of fishing rights between Norway and other countries. 1991. 1 000 tonnes cod equivalents

	Transfer to Norway (1)	Transfer from Norway (2)	Balance in favour of Norway (3)=(1)-(2)
Total	119.7	140.9	-21.2
EC	74.0	74.4	-0.4
Soviet Union .	28.6	50.9	-22.3
Faroe Islands .	12.3	9.5[1]	2.8
Others	4.8	6.0	-1.2

[1] Quotas in the Svalbard zone not included.

Figure 8. Net transfers from Norway to foreign countries. 1981-1991. 1 000 tonnes cod equivalents



In the agreement with the Faero Islands it is decided that also the quota assigned to the Faero Islands by the Soviet authorities can be fished in the Norwegian zone. It has also been agreed that the Faroese can fish in the fishery protection zone around Svalbard. These agreements are not regarded formally as transfers from Norway, and are therefore not included in table 6.

Quotas to other countries include Swedish fishing in the Norwegian part of the North Sea and Skagerak, and Polish quotas, mainly from Norwegian stocks of Norway haddock (red fish) and blue whiting in the Barents Sea and around Jan Mayen. "Other transfers" in table 6 also includes transfers to Norway from Canada.

In connection with the draft EEA agreement, new rules have been proposed for distribution of quotas of North-East Arctic cod to the EC. Previously, as part of the balanced exchange of fishing rights, the EC has received a cod quota of between 2 and 5 per cent of the total quota (TAC). In 1991 the EC's share was 2.14 per cent. For the years 1993 to 1997 this share will be fixed at 2.9 per cent. During this period Norway is required to place an additional quota at the disposition of the EC outside the balance framework, that is to say, without Norway receiving a quota of other fish species as compensation. This extra quota will increase from 6 000 tonnes in 1993 to 11 000 tonnes in 1997, on the condition that the TAC increases from 300 000 tonnes to 700 000 tonnes during the same period. This means that the EC's total quota will be 4.9 per cent in 1993 and 4.5 per cent in 1997. After 1997 the total quota will be fixed as the average for the years 1993-1997. The whole quota will then be incorporated into the balanced exchange of fishing rights.

Aquaculture

There has been a marked increase in production of reared fish since this activity was started at the beginning of the 1970s. Figure 9 shows the development of the production of reared fish since 1980. According to the official statistics, 146 000 tonnes of reared salmon was slaughtered in 1990, as against 111 000 tonnes the year before. Trout production amounted to 3 800 tonnes. According to preliminary figures calculated for the Norwegian Fish Farmers' Association, salmon production increased in 1991 to between 150 000 and 160 000 tonnes, while trout production was between 5 000 and 6 000 tonnes. Both in 1990 and in 1991, production was higher than sales, leading to an accumulation of large stocks of frozen salmon. Prognoses indicate a production of about 120 000 tonnes of salmon in 1992, and of about the same amount of trout as in 1991.

Salmon and trout were slaughtered at a total of 739 stations in 1990, see table 7. Hordaland was the county with the largest number of production stations and the largest amount of slaughtered fish.

Investments in fish farming amounted to NOK 326 million in 1990. Of this amount, NOK 69 million were invested in hatcheries and units for rearing fingerlings, and NOK 257 million in units for rearing fish for food. A total of 4 500 persons were employed in the fish farming industry in 1990, distributed between

1 000 persons in hatcheries and fingerling rearing units and 3 500 persons at stations for rearing fish for food.

The increased production has been accompanied by a strong increase in the use of medicines in the fish farming industry. The substances used belong to three main groups: antibacterial agents, anti-parasitic agents and sedatives. Table 8 shows changes in the use of antibacterial agents. Total consumption reached a peak

Table 7. Rearing of fish for food, by county. 1990

County	Number of stations	Slaughtered quantity Tonnes
Total	739	149 786
Rogaland	55	11 647
Hordaland	134	30 483
Sogn og Fjordane .	74	17 101
Møre og Romsdal .	107	24 361
Sør-Trøndelag	72	12 242
Nord-Trøndelag ...	53	9 422
Nordland	132	28 783
Troms	60	9 382
Finnmark	32	4 518
Others	20	1 849

Figure 9. Rearing of fish. Slaughtered quantities of salmon and rainbow trout. 1981-1991. 1 000 tonnes.

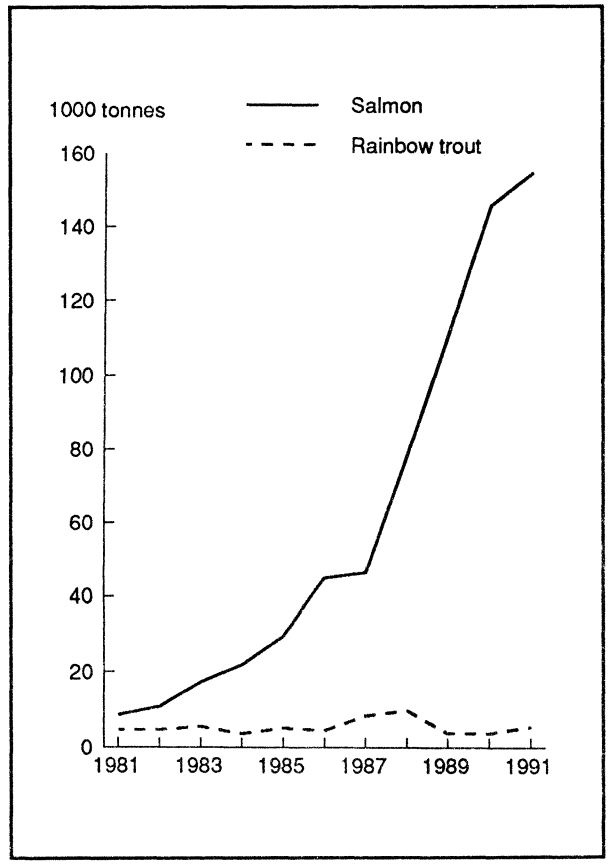


Table 8. Use of antibiotics in fish farming. 1981-1991. Kg of active agent.

Year	Total	Oxytetra-cycline chloride	Nifura-zolidone	Oxolinic acid	Trimetoprim + sulfadiazine (Tribrissen)	Sulfa-merazine	Flumequine
1981	3 640	3 000	-	-	540	100	-
1982	6 650	4 390	1 600	-	590	70	-
1983	10 130	6 060	3 060	-	910	100	-
1984	17 770	8 260	5 500	-	4 000	10	-
1985	18 700	12 020	4 000	-	2 600	80	-
1986	18 030	15 410	1 610	-	1 000	10	-
1987	48 570	27 130	15 840	3 700	1 900	-	-
1988	32 470	18 220	4 190	9 390	670	-	-
1989	19 350	5 014	1 345	12 630	32	-	329
1990	37 432	6 257	118	27 659	1 439	-	1 959
1991	26 798	5 751	131	11 400	5 679	-	3 837

Source: Norwegian Medicinal Depot.

in 1987 and has since fluctuated from year to year. In 1991 total consumption of antibacterial agents amounted to 27 000 kg, almost 30 per cent less than in 1990. Consumption of antiparasitic agents was 6 000 kg and of sedatives 800 kg.

Treatment of nets with antifouling agents containing heavy metals is also an environmental problem.

Export of fish products

Table 9 shows the exported quantities of the most important fish products during the period 1981-1991, including exports of reared fish. Figure 10 shows the export value of some fish products. Total exports increased in 1991 by 12 per cent in terms of value and by 28 per cent in terms of volume. Only the export value of fresh fish, fillets and canned fish remained unchanged or was slightly reduced. Export of whole frozen fish accounted for almost fifty per cent of the increase in exports, and now accounts for almost the same share of exports as fresh fish. The largest increase refers to sales of frozen mackerel. The rest of the increase in exports is distributed between smoked and salted fish, dried fish and fish meal. As far as dried fish is concerned, the higher export value is a result of better prices, but in the case of smoked and salted fish is due to a much larger export volume.

In 1991, the export value of reared fish decreased for the first time after an annual growth of almost 40 per cent throughout the 1980s. The exports consist mainly of salmon. Most of the trout is consumed in Norway. Table 10 shows that 127 000 tonnes of reared salmon was exported in 1991 (just over 80 per cent of the reared quantity), to a value of NOK 4.5 billion. This represents 31 per cent of the total export value of fish and fish products in 1991. The export value of both fresh and frozen salmon was slightly less than in 1990.

The total export value of fish products increased to NOK 14.6 billion in 1991, see table 11. This equals about 13.3 per cent of the total traditional export of commodities (export of commodities excluding crude oil, natural gas, ships and oil platforms etc.).

Table 9. Export of fish products. 1981-1991. 1 000 tonnes.

Year	Fresh	Frozen	Fillets	Salted or smoked	Dried	Canned	Meal	Oil
1981	24.6	58.7	74.0	13.6	86.2	15.0	266.5	107.3
1982	46.2	100.2	76.3	14.9	68.8	11.2	228.6	101.1
1983	91.5	62.6	91.6	24.9	59.4	22.4	283.9	128.0
1984	72.9	78.7	98.5	24.6	69.5	22.7	248.9	76.9
1985	74.5	79.5	95.9	20.3	64.6	23.4	173.9	114.3
1986	139.4	98.8	95.2	22.7	62.9	24.4	92.6	38.8
1987	189.6	114.2	105.0	38.0	40.6	24.3	88.3	71.3
1988	212.5	126.7	105.1	36.9	47.0	22.9	68.9	45.6
1989	215.1	159.8	95.2	46.2	48.0	23.2	45.4	39.1
1990	238.8	263.4	71.0	34.6	50.6	23.9	45.3	42.7
1991*	250.0	366.7	62.6	48.8	50.2	23.0	110.8	58.8

Table 10. Export of reared salmon. 1981-1991

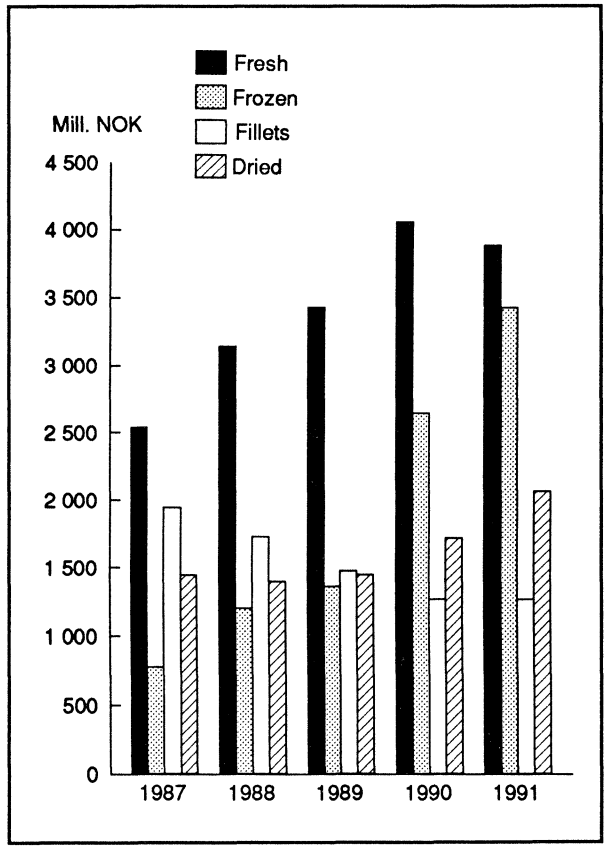
Year	Total		Fresh		Frozen	
	Quantity 1000 tonnes	Value Mill.NOK	Quantity 1000 tonnes	Value Mill.NOK	Quantity 1000 tonnes	Value Mill.NOK
1981	7.4	292.9	5.5	211.4	1.9	81.5
1982	9.2	395.3	7.9	330.8	1.3	64.5
1983	15.4	709.1	13.0	582.6	2.4	126.5
1984	19.7	944.9	17.3	819.1	2.4	125.8
1985	24.0	1 308.3	21.4	1 160.6	2.6	147.8
1986	38.9	1 663.7	34.4	1 458.6	4.5	205.1
1987	43.2	2 174.4	39.2	1 967.3	4.0	207.1
1988	66.0	3 079.7	56.0	2 594.9	10.0	484.8
1989	95.5	3 486.1	81.1	2 954.6	14.4	531.5
1990	130.7	4 834.9	92.8	3 423.8	37.9	1 411.1
1991*	126.9	4 453.3	91.6	3 152.8	35.4	1 300.5

Table 11. Export value of fish products[1] in million NOK and as percentage of other traditional exports. 1981-1991.

Year	Fish and fish products	Fish and fish products as percentage of total Norwegian exports of commodities	Fish and fish products as percentage of Norwegian exports of commodities, except crude oil, natural gas, ships and oil platforms
	Mill. NOK	Per cent	
1981	5 955	5.7	11.6
1982	5 931	5.2	11.4
1983	7 368	5.6	12.4
1984	7 675	5.0	11.1
1985	8 172	4.8	11.0
1986	8 749	6.5	12.6
1987	9 992	6.9	12.4
1988	10 693	7.3	11.6
1989	10 999	5.8	10.2
1990	13 002	6.1	11.6
1991*	14 599	6.6	13.3

[1] The table includes a few more products than included in table 9.

Figure 10. Exports of fresh fish, frozen fish, fillets and dried fish. 1987-1991. Million NOK



New Research Reports

DISCUSSION PAPER

Anne Brendemoen and Haakon Vennemo:
A CLIMATE CONVENTION AND THE NORWEGIAN ECONOMY: A CGE ASSESSMENT
Discussion Paper no. 64, 1991. 19 pages.

Using a multisector computable general equilibrium (CGE) model, the paper studies the impact of a climate convention on the Norwegian economy. A wide range of implications are discussed, including main macroeconomic indicators, economic growth, the market for energy, and the impact on emissions of other pollutants than CO2. Utilizing the consumer expenditure survey data base, we also assess the impact of the reform on the distribution of welfare in the regional, socioeconomic and income dimensions. The results indicate that a climate convention will not dramatically reduce economic growth and welfare in Norway. CO2 emissions will decrease, as will other emissions to air. Contrary to popular opinion, there are no particular impacts on redistribution in any of the dimensions studied.

Kjell Arne Brekke:
NET NATIONAL PRODUCT AS A WELFARE INDICATOR
Discussion Paper no. 65, 1991. 17 pages.

Weitzman (1976) claimed that in the case of linear utility, NNP is proportional to welfare, defined as the discount value of future utility. We first demonstrate that this theory only applies to economies with stationary economic policy and no technical progress. Furthermore Weitzman's result does not generalize to the case of nonlinear utility. We also prove that only under the assumption of unchanged economic policy and with constant shadow value of investment is marginal changes in NNP a measure of marginal changes in welfare. Thus the theory gives no justification of attempts to maximize NNP growth. Finally we point out that levels or growth rates of NNP for different countries, is no indicator of relative welfare or the relative success of economic policy. In the last part of the paper we discuss national wealth as a potential welfare measure. We point out that in a small open economy, welfare will be an increasing function of national wealth. Unfortunately, this will no longer be true if we relax the assumption that the economy is small and open.

Einar Bowitz and Erik Storm:
WILL RESTRICTIVE DEMAND POLICY IMPROVE PUBLIC SECTOR BALANCE?
Discussion Paper no. 66, 1991. 40 pages.

A policy simulation on the Norwegian macroeconomic model MODAG indicates that there are large automatic stabilizers in the system of government revenues and expenditure in Norway, especially in the short and medium term. A relatively large part of transfers (in addition to unemployment benefits) is found to be influenced by changes in unemployment. The consequence of this is that the potential for improving public sector balances means of a restrictive demand policy, may be more modest than usually believed. The paper also contains a long term projection of government expenditure, with special emphasis on effects of ageing of the population and the maturing of the pension system, implying increases in pension payment per beneficiary in the future. The government expenditure projections indicate that transfers (mainly old-age and disability pensions) will increase by 5 percentage-points of GDP from 1990 to 2030, given that unemployment returns to the estimated NAIRU in the future. In addition increased demand for medical care due to ageing, may be said to warrant additional increases in (public) health consumption of a somewhat smaller size. This work is part of the project "macroeconomics and the welfare state", financed by NORAS (Norwegian council for applied social research).

Ådne Cappelen:
MODAG. A MEDIUM TERM MACROECONOMIC MODEL OF THE NORWEGIAN ECONOMY
Discussion Paper no. 67, 1991. 41 pages.

This paper describes the main structure of the MODAG model, an annual macroeconomic model of the Norwegian economy. A short description of the main features of the model including forcasting performance is followed by a more detailed look at the various parts of the model.

Brita Bye:
MODELLING CONSUMERS' ENERGY DEMAND
Discussion Paper no. 68, 1992. 33 pages.

The modelling of consumers demand for energy in a general consumer demand system is discussed. Electricity, fuel-oil, the stock of electricity using durables and housing are assumed to be separable from other consumer commodities. This lower level demand system is modelled using a Gorman Polar form. The linear expenditure system is nested hypothesis of the more general Gorman Polar form and the two systems are estimates and tested against each other. A dynamic version of the linear expenditure system is also estimated. As expected the results indicate that the Engel elasticities for electricity and fuel-oil differ considerably, and that the stock of electricity using durables contributes to explain the use of electricity and fuel-oil over the period.

Knut H. Alfsen, Anne Brendemoen and Solveig Glomsrød:
BENEFITS OF CLIMATE POLICIES: SOME TENTATIVE CALCULATIONS
Discussion Paper no. 69, 1992. 35 pages.

Consequences for the Norwegian economy of an active policy against anthropogenic climate change can be analyzed by use of an economic model evaluating

the differences between a reference scenario without control policies and alternative paths using economic incentives to reduce emissions of greenhouse gases. In traditional economic models the effect of the new taxes usually appears as reduced growth in macroeconomic indicators such as GDP, gross production and private consumption. When measures against climate change nevertheless are contemplated, it is due to a belief that the benefits of a policy more than outweighs the costs. Many benefits are hard to quantify. This is true for instance for the effects associated with the general welfare of people under different climatic conditions. However, it is possible to associate some tentative figures with some of the benefits likely to emerge from an introduction of a vigorous climate policy.

In this paper we try to evaluate some usually neglected benefits associated with an introduction of a carbon tax. The benefits emerge from reduction in local pollution levels and the ensuing reduction in environmental damages to forests and lakes, health damages and damages to certain types of materials. In addition, benefits accruing from reduced traffic congestion, road damage, traffic accidents and noise levels are quantified. We find that the benefits thus accounted for go a long way toward compensating the economic loss measures as a reduction in GDP by the macroeconomic model MODAG. The uncertainty in the estimates of the benefits is assessed, and distributional consequences of the carbon tax are analysed.

Rolf Aaberge, Xiaojie Chen, Jing Li and Xuezeng Li:
THE STRUCTURE OF ECONOMIC INEQUALITY AMONG HOUSEHOLDS LIVING IN URBAN SICHUAN AND LIAONING, 1990
Discussion Paper no. 70, 1992. 45 pages.

This paper presents the results from a descriptive analysis of economic inequality among households living in urban regions of two Chinese provinces, Sichuan and Liaoning, in 1990. The results refer to distributions of households income, expenditure and savings and are based on data from the State Statistical Bureau's Urban Household Survey.

Knut H. Alfsen, Kjell Arne Brekke, Frode Brunvoll, Hilde Lurås, Karine Nyborg and Hans Viggo Sæbø:
ENVIRONMENTAL INDICATORS
Discussion Paper no. 71, 1992. 67 pages.

The report discusses logical structures and content of a set of environmental indicators for Norway. The emphasis is on structure; proposals for specific indicators and data presented are of a more preliminary nature.

Brita Bye and Erling Holmøy:
DYNAMIC EQUILIBRIUM ADJUSTMENT TO A TERMS OF TRADE DISTURBANCE
Discussion Paper no. 72, 1992. 45 pages.

This paper investigates how a fall in the price of imports will have dynamic effects in an open economy. We analyse the effects within an aggregated intertemporal equilibrium model with internationally mobile capital. We assume the domestic product to be an imperfect substitute for a foreign product. Hence, the model is characterized by an endogeneous domestic product price and a path dependent steady state solution. Using a numerical model calibrated to the Norwegian economy we study the effects of both anticipated and unanticipated changes in the import price.

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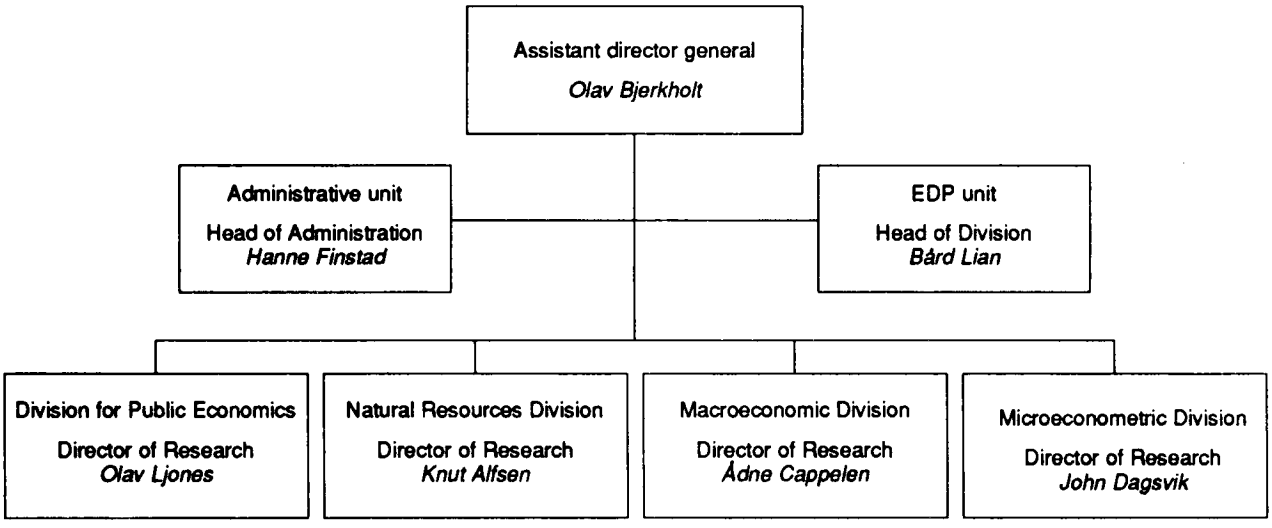

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Central Bureau of Statistics of Norway
P.O. Box 8131 Dep. N-0033 Oslo
Tel.: +47-2-86 45 00. Telefax: +47-2-86 49 73

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