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-	Nil
0 } 0.0 }	Less than half the final digit shown

## HARD LANDING?

Norges Bank's *Inflation Report* for the fourth quarter of 1997 indicates that the Norwegian economy is entering a period of pronounced cyclical fluctuations. The economy is expected to continue to expand at a brisk pace over the next two years. Constraints on the supply side in the economy - primarily in the form of labour shortages - will ultimately result in a cyclical turnaround. The prospect of a new downturn at the turn of the millenium must therefore be seen in connection with the current vigorous growth rates, accompanied in all likelihood by higher wage growth and a tightening of the labour market.

Pronounced cyclical fluctuations can in principle be attenuated through economic policy. In the current situation, a tightening of economic policy would produce a more stable course, with slower growth over the next couple of years, paving the way for a more moderate decline in production and employment growth towards the end of the upturn.

In evaluating the formulation of policy, emphasis must be placed on the uncertainties inherent in the economic situation,

which can naturally go both ways. For example, we may have underestimated the flexibility of the labour market. However, current economic conditions would imply that there is reason to guard against expansionary shocks, and it is possible to orient overall economic policy in such a way that we are better positioned to cope with such shocks.

The prospects for an overheating of the economy and the risk that new shocks may amplify cyclical fluctuations therefore imply that a tight economic policy is required. The alternative may be a "hard landing" for the Norwegian economy a few years ahead.

Norges Bank is under the obligation to maintain a stable exchange rate. This entails that monetary policy cannot be used to influence cyclical developments. Fiscal policy has shifted from having a contractionary effect on economic growth to a virtually neutral effect on growth in 1997 and 1998. Thus the social partners will have to carry even greater responsibility than previously.

*Kjell Storvik*

### NORGES BANK'S INFLATION REPORT

Pursuant to the Norges Bank Act, the central bank has an advisory function in the area of monetary, credit and foreign exchange policy. In its executive capacity, Norges Bank shall ensure the stability of the krone's value measured against European currencies. Sustained low price and wage inflation in line with or lower than that of trading partners is a necessary condition for a stable krone exchange rate.

The *Inflation Report* provides a survey of price trends and factors that influence price and wage inflation. It contains a broad review of the situation in the Norwegian economy and provides Norges Bank's professional evaluation of the outlook for prices for the next two years. In the leader above, the Governor provides a summary of Norges Bank's assessment of the situation.

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*The cut-off date for this report was 10 December 1997.*

# 1 SUMMARY

The estimates in this report underline that the cyclical upturn in the Norwegian economy will continue to gather momentum over the next two years. Growth in private consumption and exports is contributing to the high demand for labour and sharp decline in unemployment. If the wage restraint shown so far in the 1990s continues, a tighter labour market will push up wage growth from 4% in 1997 to 5% in 1998, and 6% in 1999.

Despite higher wage growth, the rise in consumer prices will be moderate. Consumer price inflation is projected to rise from 2½% in 1997 to 2¾% in 1998, and 3% in 1999.

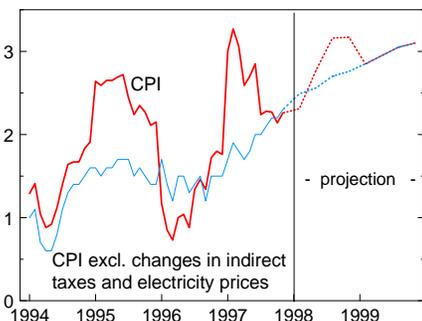
This issue of the *Inflation Report* also contains medium-term projections for the Norwegian economy to 2001. According to the baseline scenario for the medium-term projections, the Norwegian economy will experience a pronounced cyclical shift at the turn of the century, with employment growth coming to a halt and a possible increase in unemployment towards the end of the projection period. Price inflation will edge up throughout the period, and may reach 3½% in 2001.

The marked cyclical turnaround in the baseline scenario from the year 2000 must be seen in connection with the deterioration in competitiveness as a result of high wage growth and a tight labour market. Weaker profitability and lower capacity utilisation, in conjunction with an expected decline in investment in the petroleum sector, will also contribute to a contraction in business fixed investment. This will be reflected in a slowdown in economic growth and lead to rising unemployment.

The estimates in this report are based on key assumptions about economic policy, among other things. In the final section of this report, the uncertainty attached to the projections is discussed in addition to the fiscal orientation required to achieve more balanced growth than in the baseline scenario. A tightening of public expenditure of about 1¼% of mainland GDP in 1998, against a corresponding increase towards the end of the period, will result in a more stable trend in employment and price and wage inflation.

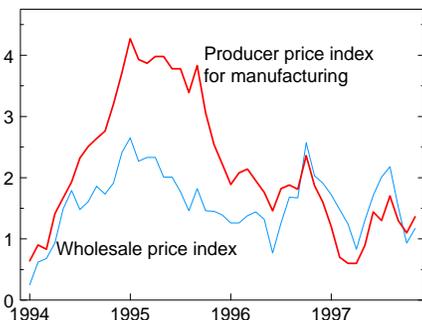
On the other hand, certain developments may engender imbalances on an even greater scale than in the baseline scenario. Should wage growth exceed the level indicated by our macroeconomic model RIMINI at low rates of unemployment, confidence in the Norwegian economy may deteriorate and engender expectations of a depreciation of the krone and a rise in interest rates. This may result in more pronounced cyclical fluctuations than in the baseline scenario, with a more marked cyclical turnaround towards the end of the period.

**Chart 2.1** *CPI, total and excluding indirect taxes and electricity prices. Historical figures and projections. 12-month rise in per cent*



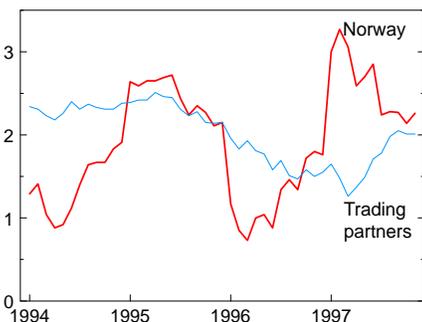
Source: Statistics Norway and Norges Bank

**Chart 2.2** *Wholesale and producer prices. 12-month rise in per cent*



Source: Statistics Norway

**Chart 2.3** *Consumer prices in Norway and abroad. 12-month rise in per cent*



Source: Statistics Norway and OECD

## 2.1 The economic news

### *Rising underlying inflation*

Consumer price inflation has continued to move downwards between February, when the 12-month rise was 3.3%, and July. This partly reflects changes in indirect taxes and electricity prices. In recent months, the 12-month rise in consumer price index has hovered between 2.1-2.3%.

Excluding changes in indirect taxes and electricity prices, the underlying rise in prices has tended upwards in 1997, rising from an average of 1.5% in 1996 to 2.3% in November 1997. House rents and services in particular have contributed to the increase. The rise in prices for goods has remained stable or edged down. The subdued rise in import prices partly reflects the strong krone exchange rate last winter.

Over the last year the rise in consumer prices has been higher in Norway than among trading partners, although the difference has narrowed in recent months. According to the harmonised price index, price inflation in the EU was 1.7% in October and 1.9% in Norway.

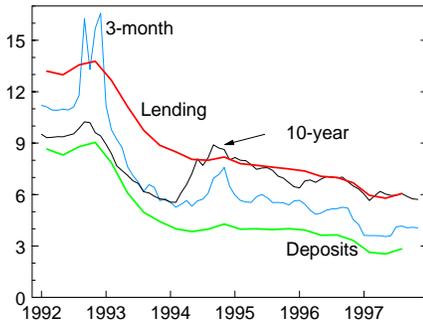
### *Stable interest and exchange rates*

In the course of the autumn, Norwegian interest rates have moved to a level on a par with German rates, and are now among the lowest in Europe. The 0.5 percentage point differential against German three-month rates in September has now been eliminated. This partly reflects Norway's lack of response to the Bundesbank's decision to raise the repo rate by 0.3 percentage point in October.

The three-month Euro-krone rate has remained virtually unchanged since the September *Inflation Report*. Currently at 4.0%, the three-month rate is about 1 percentage point lower than the average for 1996. The Bundesbank's decision to raise the repo rate was followed by an increase in key rates in a number of other European countries, and the negative differential against the theoretical ECU rate has widened from 0.5 to 0.8 percentage point since the September *Inflation Report*.

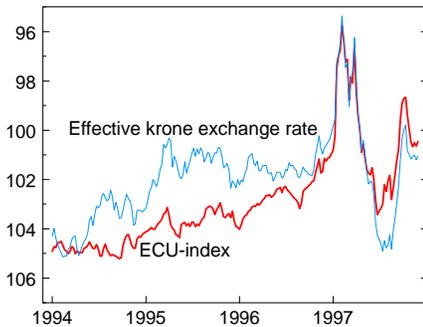
The increase in Norwegian interest rates in the summer was followed by about an 0.3 percentage point increase in interest rates charged to households and businesses from the second quarter of this year. The impact was somewhat swifter than has previously been the case in the Norwegian money market. This is most likely due to the strong competition in the market and, as a result, tight interest rate margins in the banking industry. However, lending rates are still

**Chart 2.4** Interest rate movements in Norway. Banks' average deposit and lending rates, 3-month Euro-krone rate and 10-year government bond yield



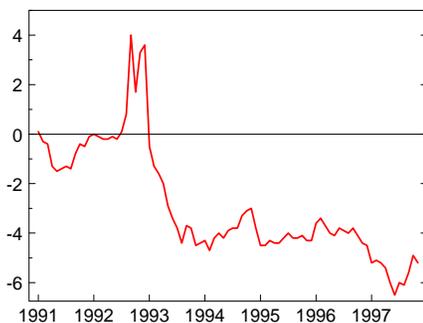
Source: Norges Bank

**Chart 2.5** ECU index and manufacturing industry's effective krone exchange rate. Rising curve denotes appreciation



Source: Norges Bank

**Chart 2.6** Norges Bank's Monetary Conditions Index (MCI). January 1992 = 0



When aggregating, the real interest rate is given a weight of  $\frac{3}{4}$  and the real effective exchange rate a weight of  $\frac{1}{4}$ .

Source: Norges Bank

1.5 percentage points below the level prevailing at the beginning of 1996.

Norwegian long rates have edged down since the last *Inflation Report*. The difference between Norwegian and German ten-year bond yields is a little less than 0.2 percentage point, which is considerably narrower than the differential against other Nordic countries.

Measured against the ECU, the krone has weakened by 0.8% since the September *Inflation Report*. Over the last year, however, the krone has appreciated by about 1%. Measured by manufacturing industry's effective krone exchange rate, the krone has appreciated somewhat since the last *Inflation Report*. This partly reflects a depreciation of USD.

Since the beginning of 1996, monetary policy has had an expansionary effect on the economy. Norges Bank's monetary conditions index (MCI) summarises the effects of changes in real interest and exchange rates on domestic demand. A fall in the index indicates that interest and exchange rate conditions are having a more expansionary effect on the economy. According to the MCI, the expansionary effect of the orientation of monetary policy is about the same as at the last *Inflation Report*.

The expansionary monetary policy is also reflected in the fact that monetary and credit growth is now higher than mainland nominal GDP growth. Gross domestic debt (C2) expanded by 9.8% in the year to end-October. Annual growth has shown a steady rising trend since October 1992. The year-on-year growth in the registered money supply (M2), which has risen each month since March, fell from 7.3% in September to 5.6% in October. Narrow money (M1) is also growing at a faster pace than mainland nominal GDP.

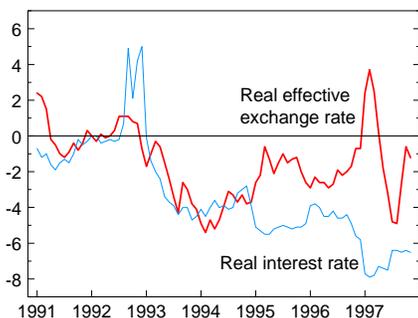
### *Demand growth remains robust*

Preliminary national accounts figures for the third quarter show that growth is continuing at a brisk pace. Mainland demand grew by 5.0% in the third quarter compared with the same period one year earlier, which is a higher rate of growth than in the first six months. Demand growth has primarily been fuelled by private consumption and investment in the mainland economy. A substantial share of the growth in investment reflects local government investment in connection with the school reform. Total demand has also been boosted by the sharp rise in petroleum investment and strong growth in exports.

Mainland GDP continued to expand in the third quarter, primarily reflecting output growth in the manufacturing, power and construction industry. Thus far in 1997, mainland GDP has increased by 3.2% compared with the same period one year earlier.

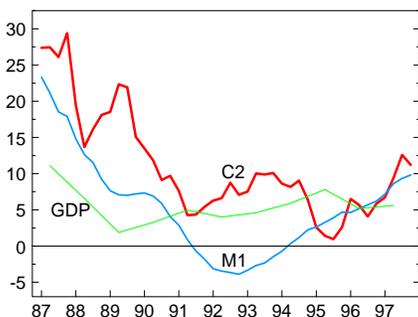
According to Labour Force Survey (LFS) figures from Statistics Norway and employment figures from the quarterly

**Chart 2.7** Components of the MCI.  
January 1992 = 0



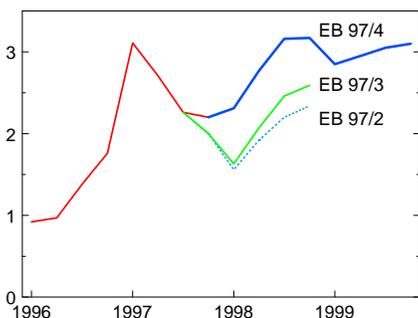
Source: Norges Bank

**Chart 2.8** Total domestic credit (C2), money supply (M1) and nominal mainland GDP. Growth from same period previous year



Source: Statistics Norway and Norges Bank

**Chart 2.9** Current and earlier projections for consumer price inflation. 12-month rise in per cent



Source: Statistics Norway and Norges Bank

national accounts, employment rose by close to 65 000, or 3%, compared with the same period last year. LFS unemployment was 4.1% in the third quarter, and unemployment has fallen by an average  $\frac{3}{4}$  percentage point thus far in 1997. The decline in unemployment is confirmed by the Labour Directorate's figures for the number of registered unemployed.

The fiscal policy programme for 1998 seems to be more expansionary than assumed earlier. The tightening effect is now estimated at  $\frac{1}{4}$ % of mainland GDP, against  $\frac{3}{4}$ % in the National Budget for 1998.

## 2.2 Norges Bank's inflation projections

The average rise in consumer prices between 1996 and 1997 is still projected at 2½%, whereas the projection for 1998 has been revised upwards from 2¼% to 2¾%. The higher projection primarily reflects the increase in indirect taxes in 1998, which is expected to contribute to a 0.4 percentage point rise in price inflation, whereas the decline in electricity prices from the high level prevailing in the winter of 1997 will, in isolation, have a dampening impact on price inflation. The rise in consumer prices is projected at 3% in 1999.

Excluding indirect taxes and electricity prices, underlying price inflation is projected to rise from 2% in 1997 to 2½% in 1998, and 3% in 1999. The rise in underlying price inflation primarily reflects a higher rise in wage growth and import prices from 1998. The projection for 1999 is based on the technical assumption that indirect taxes are changed in pace with the general rise in prices.

### Moderate external price impulses

Growth prospects for Continental Europe are now more auspicious, with continued high capacity utilisation in the US and UK. Price inflation among trading partner, which is estimated at 1¾% in 1997, is expected to remain subdued in the period ahead, partly because monetary policy is geared towards maintaining low inflation in a number of countries. The financial market turbulence in Asia is also contributing to low international price inflation, although with limited effect in trading partner countries. Consumer price inflation is expected to edge up among trading partners, to 2¼% in 1998 and close to 2½% in 1999. On the basis of these estimates, price inflation will be slightly lower among trading partners than in Norway over the next two years.

Manufacturing industry's effective exchange rate has appreciated slightly since the September *Inflation Report*. As in previous reports, the underlying technical assumption is that the average exchange rate prevailing in the previous month will remain constant in the coming period. This entails a  $\frac{1}{2}$ % appreciation in the effective exchange rate between 1996 and 1997, and a depreciation of almost  $\frac{1}{4}$ % be-

**Table 2.1** Consumer prices. Norges Bank's projections. Percentage change from previous year

	1997	1998	1999
USA	2 1/2	2 3/4	2 3/4
Japan	1 3/4	1	1
Germany	1 3/4	2 1/4	2 1/4
UK <sup>2)</sup>	3	3 1/4	3
Sweden	1	2	2 1/2
Finland	1 1/4	2 1/4	2 1/4
Denmark	2 1/4	2 1/2	2 3/4
Norway's trading partners	1 3/4	2 1/4	2 1/2
EU-12-countries <sup>1)</sup>	2	2 1/4	2 1/4

<sup>1)</sup> ECU index weights.

Source: Norges Bank and Consensus Forecasts

tween 1997 and 1998. The rise in import prices has been subdued over a long period. A higher rise in import prices is expected as result of somewhat higher price inflation internationally, and because import prices tend to rise in pace with the increase in capacity utilisation and costs in Norwegian enterprises. Import prices for traditional goods are expected to fall by 1/2% in 1997, and to rise by 1% in 1998 and 1 1/4% in 1999. This implies slightly stronger, albeit still moderate, external price impulses over the next two years.

In accordance with the exchange rate regulation, a return of the krone to its initial range, ie the range of the exchange rate maintained since the krone was floated in December 1992, will in isolation push up consumer price inflation by a good one quarter percentage point in 1998 and about a half percentage point in 1999 (see box).

## INFLATION AND THE EXCHANGE RATE

This box describes the effects of a change in the assumptions about the exchange rate on consumer price inflation. The assumption normally underlying the baseline scenario is that the effective exchange rate remains constant throughout the projection period. Any other assumption about the exchange rate will have a direct effect on price and wage inflation and produce a different trend in demand and production.

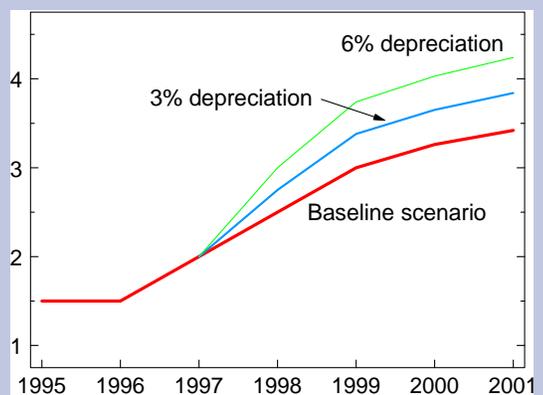
Empirical evidence suggests that there is a fairly substantial lag between a change in the exchange rate and a change in consumer prices. According to Norges Bank's macroeconomic model RIMINI, 15-20% of a change in the exchange rate will translate into a change in domestic price inflation after one year. It will take 7-8 years for the full effect to occur. This indicates that the depreciation of the import-weighted exchange rate in the period from 1982 to 1993 has a long-term inflationary effect in the Norwegian economy. However, since 1994, the import-weighted exchange rate has appreciated somewhat, albeit while fluctuating widely. Applying the relationships in the RIMINI model, the exchange rate fluctuations have not, therefore, made an isolated contribution to consumer price inflation in 1997.

According to the exchange rate regulation issued in May 1994, the krone is to be held stable against European currencies over time based on the range maintained since the krone was floated on 10 December 1992. In order to illustrate

the effects of a depreciation from the prevailing exchange rate, we have estimated the effects on consumer price inflation using the RIMINI model. The chart below shows the effects of a depreciation of three and six per cent from the first quarter of 1998. About half the depreciation feeds through to price inflation within the time horizon in the chart.

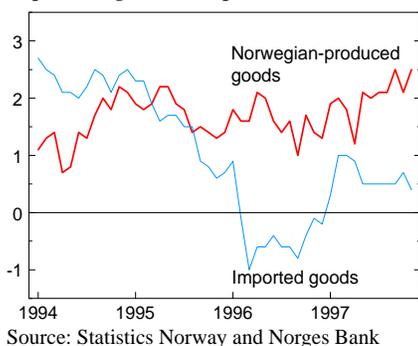
The calculations do not include an evaluation of the effect of exchange rate changes on interest rates. Should the krone be exposed to substantial depreciation pressures, as was the case in the previous cyclical upturn, it would be reasonable to assume an increase in interest rates in relation to other European countries. This would imply lower demand growth and thus a more moderate impact on consumer prices than indicated in the chart.

**Chart 1** Underlying annual rise in consumer prices based on alternative assumptions of a depreciation in the first quarter of 1998



Source: Norges Bank

**Chart 2.10** Consumer prices, excl. indirect taxes and electricity prices. Norwegian-produced goods and imported goods. In per cent



Source: Statistics Norway and Norges Bank

**Table 2.2** Various institutions' projections for consumer price inflation in Norway in 1998 and 1999<sup>1</sup>). Percentage change from previous year

	1997	1998
Ministry of Finance	2 <sup>1</sup> / <sub>2</sub>	–
Statistics Norway	2.7	2.4
OECD <sup>2)</sup>	2 <sup>3</sup> / <sub>4</sub>	3
IMF	2 <sup>1</sup> / <sub>2</sub>	–
Norges Bank	2 <sup>3</sup> / <sub>4</sub>	3
Private institutions <sup>3)</sup>		
highest estimate	3.2	3.7
average	2.7	3.0
lowest estimate	2.3	2.3

1) Latest official projections from the respective institutions.

2) Consumption deflator.

3) Based on projections from 12 private institutions for 1998 and 8 private institutions for 1999

### *Tighter labour market exerts upward pressure on wage growth*

Annual wage growth is estimated at 4% this year. The labour market has been characterised by brisk growth in employment and a rising supply of labour in recent years. Although unemployment is still slightly higher than during previous periods of expansion, there is clear evidence of growing labour shortages in the labour market. With continued robust activity in the Norwegian economy, labour demand will remain high, accompanied by mounting pressures in the labour market. Experience indicates that such a situation eventually translates into rising wage growth. On the other hand, profitability gains in the exposed sector have been moderate this year, which will contribute to countering the effect of a tighter labour market on wage growth. Our projections are based on the assumption of a continuation of the wage formation achieved in the 1990s (see section 3). Wage growth is projected to rise to 5% in 1998 and 6% in 1999.

Productivity gains in the Norwegian business sector were modest in 1996, and are expected to be weak in 1997. An improvement is expected later in the projection period, with productivity growth on a par with the trend growth in productivity over the last ten years. This will contribute to softening the effects of wage growth on business costs and thereby consumer prices.

### *Normalisation of electricity prices*

Electricity prices charged to households have fallen by a substantial margin in the period to July of this year, but have edged up in the last two months. It appears that electricity prices have returned to the level prevailing before the sharp rise last winter, and are now steady compared with the volatile prices recorded over the last year. However, weather conditions may contribute to recurrent volatility. Our forecasts are based on the assumption that electricity prices will move in pace with the general rise in consumer prices in the period ahead. This implies somewhat stronger price impulses from this component than assumed in the previous *Inflation Report*.

### *House rents edge up*

House rents have risen at a slightly faster pace this year. This is partly due to the pressures in the housing market after several years' of moderate increases. House rents are expected to rise in pace with the general rise in consumer prices. This implies somewhat stronger price impulses from this component in relation to previous years and a slightly higher estimate for the next two years.

### *Inflation expectations*

Norges Bank collects inflation estimates from 12 private institutions. On average, these institutions expect a rise in prices of 2.7% in 1998, ie the same rate as in September. Of the private institutions, 8 have submitted price inflation estimates for 1999. The average for 1999 is 3.0%, with the estimates ranging between 2.3-3.7%.

**Table 3.1** *Supply and use of goods and services. Percentage growth from previous year*

	1997	1998- 1999 <sup>1)</sup>	2000- 2001 <sup>1)</sup>
Mainland demand	4½	3¼	1½
Private consumption	3½	4¼	2¼
Public consumption	2	2¼	1¾
Mainland fixed investm.	10¾	1¼	-1¼
Fixed investment in oil ex- traction and pipeline transp.	25	-9	-14½
Exports	4¾	6	3¾
Of which:			
Oil, gas and pipeline transport	1	8¾	2¾
Traditional goods	8	5½	3¾
Imports	9¾	3¾	2½
Traditional goods	8	3½	2½
GDP	3¾	3¾	1¼
Mainland GDP	3½	3	¾

1) Average annual growth.

Source: Norges Bank

### 3.1 Main features of economic developments

It is now clear that we are approaching a cyclical peak and that a tight economic policy is essential in order to ensure that the upturn can shift to a period of balanced growth. This is discussed further in section 4.

The estimates indicate that growth in economic activity will remain at a high level the next two years, with buoyant demand for labour, lower unemployment and a tighter labour market. Based on historical wage formation, a sharp decline in unemployment over the next few years may translate into markedly higher wage growth.

This cost trend is expected to result in a deterioration in Norwegian manufacturing industry's competitive position the next few years. In the slightly longer run this will contribute to lower profitability and a fall in employment in exposed sectors of Norwegian industry and commerce, particularly perhaps in import-competing manufacturing industry. Moreover, production and employment in the public sector and in sheltered industries will expand throughout the period. The structure of the Norwegian economy will thereby change as a result of a transfer of resources from exposed to sheltered sectors. This must also be viewed in connection with a shift in the growth impetus from investment and exports to private consumption.

As a result of higher production capacity combined with a deterioration in competitiveness, business fixed investment is projected to decline during the projection period, particularly in manufacturing industry. It also appears that petroleum investment may fall from 1999, which will contribute to curbing the demand impetus in the Norwegian economy. Employment growth will gradually come to a halt, and unemployment may rise towards the end of the projection period.

The projection of a pronounced cyclical shift appears to be fairly robust even with moderate changes in the assumptions. There is particular uncertainty attached to the intensity of the cyclical fluctuations. The effects of changes in various assumptions concerning economic policy are discussed in section 4.

Historically, such projections have generally had a tendency to underestimate the intensity of cyclical fluctuations because a baseline scenario of this type does not embody assumptions that the economy will be affected by new shocks, eg in the form of international events, which by definition cannot be anticipated. Experience shows, however, that such shocks can either trigger or heavily influence cyclical fluctuations, and they occur fairly frequently. For example, shocks like the oil price fall in 1986,

the deregulation of international financial markets in the 1980s, German reunification and the subsequent high interest-rate policy in EU countries have had a substantial impact on developments in the Norwegian economy the past ten years.

Based on such experience, it is natural to assume that cyclical fluctuations the next few years may be more pronounced than that indicated by the calculations in this report. The uncertainty in the calculations, however, goes both ways. For example, a change in the profile of economic policy, more cautious household saving behaviour or greater flexibility in the labour market may result in a steadier cyclical path.

### 3.2 The international environment

#### *Stronger growth in continental Europe*

Growth prospects among our traditional trading partners have changed very little since the last *Inflation Report*. GDP is projected to expand by 2¾ % both in 1997 and 1998, with growth edging down in the period 1999-2001. In the US and the UK, which have recorded robust growth for some time, the growth rate is expected to slow in 1998, whereas growth in continental European countries and in Sweden is projected to pick up. Short-term data confirm that real economic activity in continental Europe increased through the second and third quarter. Growth has primarily been fuelled by exports, which have been buoyed by exchange rate changes and investment. Private consumption is also expected to exhibit gradually higher growth and, combined with continued growth in investment, this will contribute to higher aggregate demand in continental Europe.

The recent turmoil in financial markets in Asia may, in isolation, contribute to curbing international growth next year, and adds to the uncertainty attached to economic developments in the period ahead. The consequences for the real economy, however, are greatest for those countries that are directly affected. If the situation stabilises, the effects will probably be confined to countries in the region.

Interest rates in Europe will probably converge in the months ahead of EMU. We have assumed a gradual tightening of monetary policy through 1998 and 1999 in response to a quickening of inflation and a narrowing of the output gap in Europe. This entails that at the turn of the century the three-month rate in the euro area will be a little more than 1 percentage point higher than the current level of German rates.

#### *Moderate rise in export prices*

Norwegian export prices are largely determined by price movements in international commodity markets and by exchange rate changes. Prices for metals, pulp and paper and industrial chemicals have exhibited the strongest increase through 1997. A slight appreciation of the Norwegian krone, however, will curb the rise in export prices, measured in

**Table 3.2** *Projected GDP. Percentage change from previous year*

	1997	1998	1999
USA	3¾	2½	2
Japan	½	1¾	2
Germany	2½	2¾	2¾
UK	3½	2½	2¼
Sweden	2	2½	2½
Finland	4½	4	3¼
Denmark	3½	2¾	3
Norway's trading partners <sup>1)</sup>	2¾	2¾	2½

<sup>1)</sup> Weighted by export weights.

Source: Norges Bank

## COMPARISON OF CURRENT PROJECTIONS WITH DECEMBER 1996 PROJECTIONS

In this box we compare projections for macro-economic aggregates from the *Inflation Report* published in December 1996 with the projections presented in this report. For 1997, it is now estimated that mainland demand will be 1¼% higher than was projected one year earlier. This primarily reflects higher-than-projected growth in consumption and fixed investment in the public sector, whereas no change has been made to the estimate for private consumption. Growth in housing investment also appears to have been approximately as envisaged one year earlier. Fixed investment in the petroleum sector, on the other hand, has been considerably higher, and traditional merchandise exports also appear to have exhibited stronger growth. Mainland GDP growth is now expected to be half a percentage point higher. Employment growth has been revised upwards by a substantial margin, from 30 000 to a good 60 000. Since the labour force has also been adjusted upwards, the estimate for unemployment shows little change. Wage growth seems to be more moderate than expected, whereas the estimate for consumer price inflation is the same as indicated one year earlier.

The projections in the *Inflation Report* presented in December 1996 for the years 1997 to 2000 showed a slowing of economic growth from 1996. According to these estimates, unemployment would gradually decline to 3% and wage and price inflation would edge up throughout the projection period. The medium-term projections presented in this report point to stronger economic growth the first few years, with a more pronounced decline in growth towards the end of the projection period. Average annual growth in mainland demand is now expected to be a good 1 percentage point higher in the period 1997 to 1999 than was assumed last year (Chart 1). Projected growth in petroleum investment shows little change after 1997. The higher growth in demand has its corollary in a slightly higher estimate for the growth in mainland GDP during this period (Chart 2). Employment growth has been revised upwards by a considerable margin the first few years, but comes to a halt towards the end of the projection period (Chart 3). Unemployment falls by the same margin, but begins to

*Estimates for main macroeconomic aggregates for 1997. Percentage change from previous year, if not otherwise stated*

	BUL 1996/4	BUL 1997/4
<b>Real economy</b>		
Mainland demand	3¼	4½
Private consumption	3½	3½
Public consumption	1	2
Gross investment	5½	10¾
Accrued petroleum investment	8	25
Exports, traditional goods	6½	8
Imports, traditional goods	5	7
GDP	3½	3¼
Mainland Norway	3	3½
Employment	1½	3
Labour force, LFS	1	2¼
Unemployment, LFS	4½ <sup>1</sup>	4¼
Consumer prices	2½	2½
Annual wages	4¾	4

<sup>1</sup> The estimate was originally 4% according to the earlier calculation method in the labour force accounts. For purposes of comparison, the estimate from Economic Bulletin 1996/4 has been revised to accord with current calculation methods.

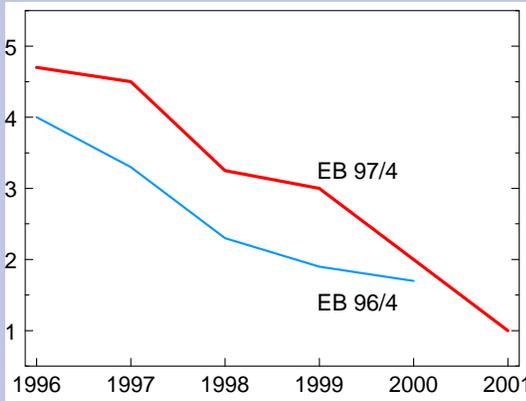
Source: Norges Bank

edge up at the turn of the millennium (Chart 4).

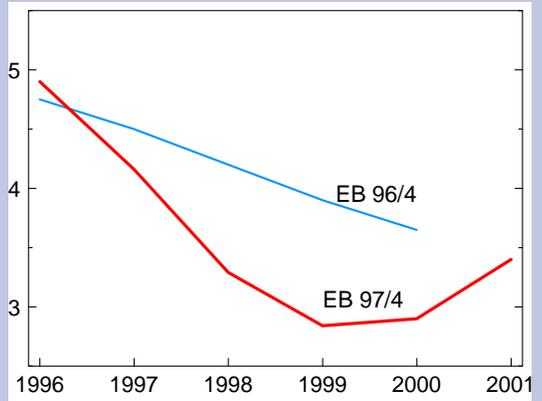
Wage growth is now projected to be lower both in 1997 and 1998 than was estimated in December 1996, but will be substantially higher in subsequent years (Chart 5). As unemployment begins to rise, however, wage growth will also be slightly lower. The estimates for consumer price inflation show no dramatic change compared with the estimates last year, but there are growing signs of rising price inflation (Chart 6).

There are several reasons why we now expect growth the next few years to be higher than we assumed last year. General government demand appears to be expanding at a higher rate than assumed earlier, and higher transfers to households will boost consumption growth. Lower productivity gains in the years ahead along with higher growth in the labour supply the first few years will contribute to a faster growth in employment. This will result in a further increase in household income. Interest rates were lower in 1997 than estimated last year, and the exchange rate was somewhat weaker, entailing that a more expansionary monetary policy may also contribute to higher demand the next few years.

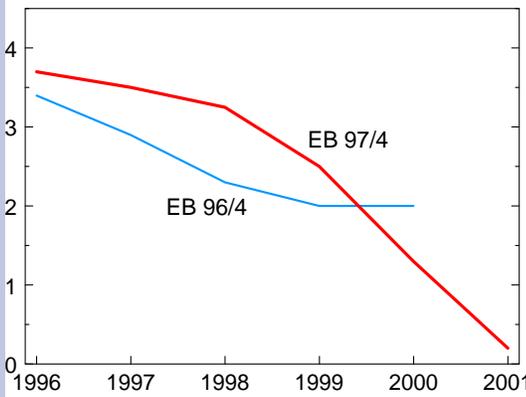
**Chart 1 Mainland demand**



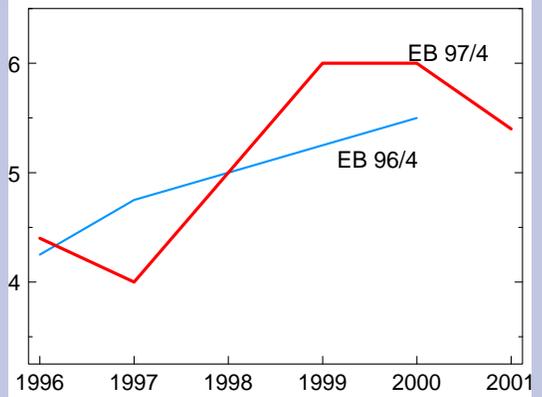
**Chart 4 Unemployment**



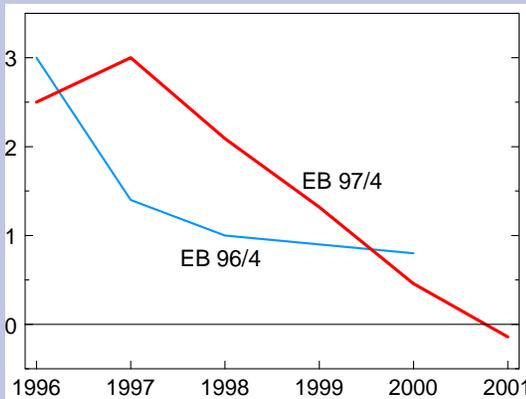
**Chart 2 Mainland GDP**



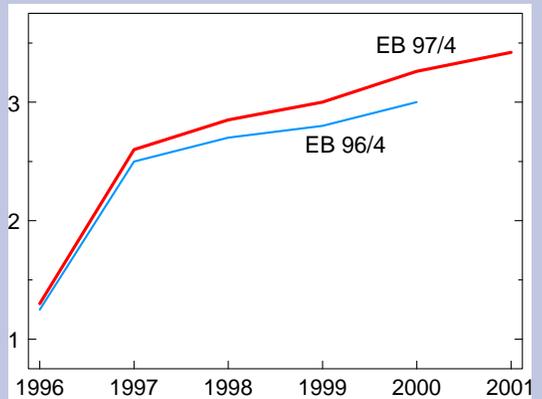
**Chart 5 Wage growth**



**Chart 3 Employment growth**

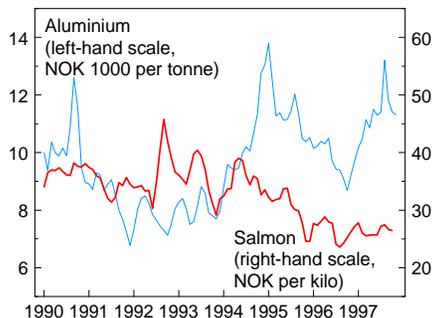


**Chart 6 Consumer price inflation**



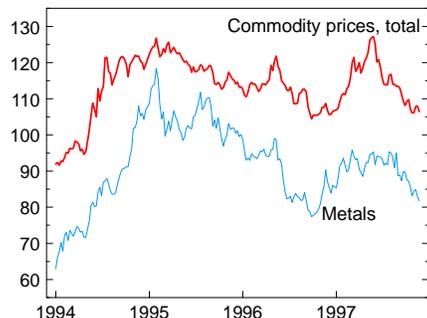
Source: Statistics Norway and Norges Bank

**Chart 3.1** Prices for aluminium and salmon. In NOK



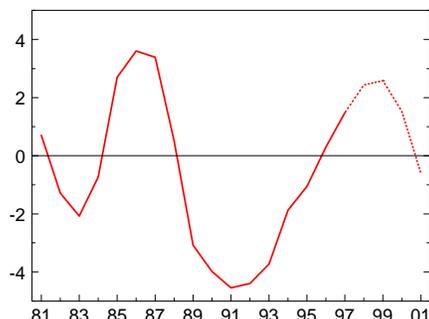
Source: Statistics Norway and the Economist

**Chart 3.2** Commodity prices measured in SDRs, total and metals



Source: The Economist

**Chart 3.3** Output gap. Difference between actual and trend GDP in mainland Norway. Percentage points



\* A positive output gap entails that production capacity is utilised more than trend GDP would indicate

Source: Statistics Norway and Norges Bank

NOK, this year. All in all, prices for traditional export goods are estimated to rise by 1 per cent between 1996 and 1997. Increased economic activity in Europe will probably contribute to a moderate rise in export prices, but the unrest in Asia and possible contagion effects on production trends in other regions represent an element of uncertainty for demand and commodity and oil prices in the period ahead. Export prices are projected to rise by 2% in 1998, moving up at a faster, albeit moderate pace in the years 1999 to 2001.

### *... and subdued inflationary impetus to the Norwegian economy*

Import prices for traditional goods have edged down so far this year, which must partly be viewed in connection with the strong krone exchange rate at the beginning of 1997. Import prices are expected to fall by ½ % between 1996 and 1997 and rise by 1¼-1½% as an annual average in the period 1998-2001.

### **3.3 Production and the labour market**

#### *Output growth will gradually shift from being higher to lower than the long-term growth potential*

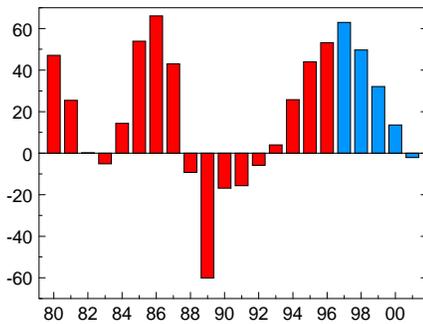
Domestic output growth is expected to show fairly wide cyclical fluctuations, with high growth the next few years followed by slower growth and rising wage and price inflation. Continued growth in private consumption and exports will contribute to buoyant output growth in the first part of the period. Vigorous investment growth will amplify this trend in 1998. Mainland GDP is projected to expand by 3½% in 1997 and 3¼% next year. Growth will then have been stronger than the long-term growth potential (trend growth) for the Norwegian economy throughout this period of expansion, which began in 1993.

Chart 3.3, which shows the output gap, illustrates that the Norwegian economy has now entered a cyclical phase with growing shortages of various factor inputs. Growth in 1998 will also be stronger than the long-term growth potential, as reflected in accelerating wage and price inflation. From 1999 a pronounced slowdown of investment growth will contribute to reducing mainland GDP growth to a more moderate level. After expanding by about 2½% in 1999, mainland GDP growth will fall to ¼% towards the end of the projection period. The calculations indicate that 2000 may be the first year of the next cyclical downturn in Norway.

#### *Continued employment growth and sharp fall in employment over the next two years*

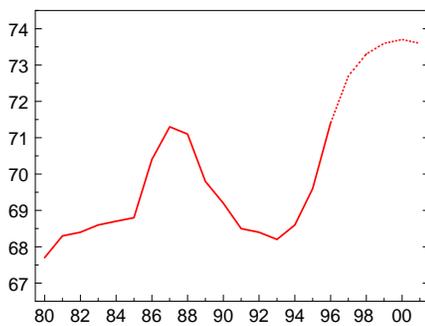
This production picture will result in a continued strong impetus to employment over the next two years, but employment growth will gradually moderate as a result of

**Chart 3.4** *Number employed.*  
Change from previous year. 1000 persons



Source: Statistics Norway and Norges Bank

**Chart 3.5** *Participation rates.*  
Labour force as a share of the working-age population (16-74 years)



Source: Statistics Norway and Norges Bank

slower growth in the economy. Following an estimated growth of nearly 3% this year and a little more than 2% next year, employment growth will be reduced later in the projection period, and we may record a fall in employment towards the very end of the period. This is essentially ascribable to lower employment in exposed sectors of the economy, reflecting a deterioration in competitiveness as price and wage inflation in Norway rises to a level which exceeds that of our trading partners. The calculations indicate a considerably sharper fall in employment in the period after 2001.

So far during this cyclical upturn, a substantial share of the growth in employment has been offset by an increase in the labour supply, entailing that unemployment has fallen at a more moderate pace. About three out of four new employees are recruited from outside the labour force. Labour force participation rates have therefore risen considerably and are currently at record levels and among the highest in the OECD area. Labour force participation among women is an important explanation for the increased labour supply. Moreover, labour force participation among young people in the age group 16-24 has risen somewhat the last few years.

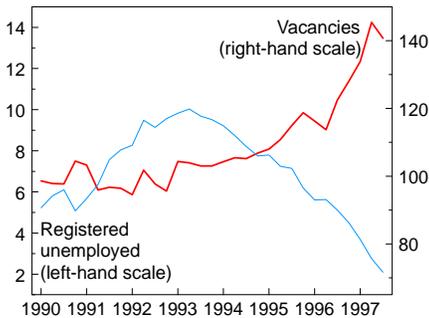
Even though there is probably still a potential for some increase in labour force participation, also for women, sustained growth in excess of the level implied by demographic conditions seems unlikely. Early retirement schemes, post-qualifying education reforms and the introduction of cash grants for families with small children may, in isolation, curtail the growth in labour force participation. All in all, we expect developments in employment and the labour force to result in a sharp reduction in LFS unemployment, from 4¼% this year to 3¼% in 1998, edging down to about 2¾% in 1999. Registered unemployment may then fall to a little less than 2% around the turn of the century, ie almost down to the level recorded at the last cyclical peak in 1986-1987. A cyclical turnaround at the turn of the century, however, will reverse the trend in unemployment. In our baseline scenario, unemployment looks set to rise considerably at the start of 2002, with the possibility of a period of persistently higher unemployment. From the growth peak in the last business cycle, it took 6-7 years to reach the peak levels recorded at the beginning of this decade.

### 3.4 Wages and prices

#### *Acceleration in wage growth and deterioration in relative cost competitiveness*

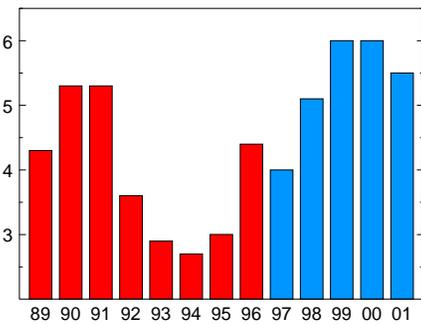
Traditionally, wage and price inflation has picked up markedly at this stage of the business cycle. So far in the 1990s wage growth has been moderate and not significantly higher than among our main trading partners. Price inflation has also been subdued and on a par with inflation internationally.

**Chart 3.6** Number of registered unemployed and vacancies. 1000 persons. Seasonally adjusted



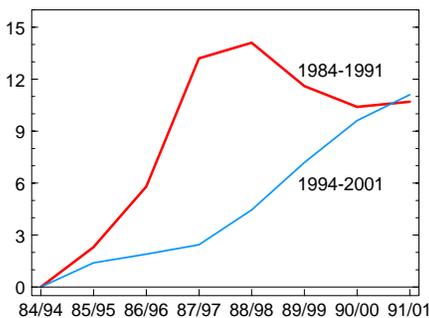
Source: Directorate of Labour

**Chart 3.7** Annual wage growth in Norway. Percentage change from previous year



Source: Technical Reporting Committee on the Income Settlement and Norges Bank

**Chart 3.8** Wage cost differentials between Norway and trading partners. Accumulated differential in per cent



Source: OECD, IMF, Statistics Norway and Norges Bank

The moderate wage settlements in the 1990s can largely be ascribed to the high level of unemployment. A very flexible labour supply has so far offset a large share of the growth in employment. Unemployment has therefore shown a more moderate and gradual decline from an historically high level in 1993 than employment growth alone would indicate. Wage settlements in the 1990s may largely be looked upon as a continuation of traditional wage formation in Norway, where high unemployment has contributed to moderate wage growth. Wage growth in 1997, however, will probably be lower than might be expected with a tighter labour market. One possible reason for this is the introduction of early retirement schemes, which most likely contributed to moderating wage demands.

Our calculations show that unemployment will fall substantially over the next two years. A number of sectors and industries are already experiencing a shortage of qualified labour. According to the Enterprise Survey conducted by the labour market authorities in 1997, comprising 10 000 companies, almost 40% of enterprises reported that they were experiencing problems in recruiting qualified labour, ie an increase of 12 percentage points on one year earlier. The sharp reduction in the number of unemployed has in recent months been accompanied by a pronounced rise in the number of vacancies, indicating growing mismatches between the qualifications of the labour force and demand in the market. These factors may contribute to pushing up wages in the competition for qualified labour.

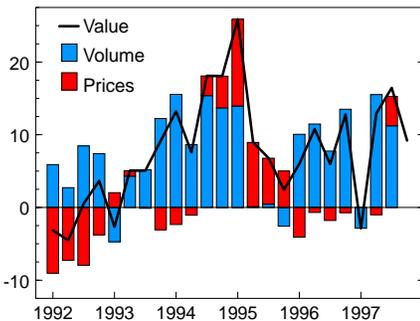
Based on the results of this year's wage settlements, wage statistics from the Norwegian Confederation of Business and Industry and our own assessments of wage drift, wage growth in 1997 is estimated at about 4%, the same as in the last *Inflation Report*. Our projections embody the assumption that wage formation in the period 1998-2001 will be the same as in the 1990s. Moreover, we have assumed that the phasing in of early retirement schemes from 1997 will continue to have a moderating effect on wage levels in the years ahead. Based on this assumption, wage growth may be 5% in 1998. Lower unemployment will translate into higher wage growth in 1999, and may then reach 6%. Wage growth will be reduced slightly towards the end of the projection period as a result of a resumed rise in unemployment.

Thus far in the cyclical upturn, wage growth has been moderate and closer in line with that of our trading partners than during the previous cyclical upswing. However, it is too early to ascertain whether cost trends will be substantially different during this business cycle compared with the 1980s.

### Price inflation may reach 3½% in 2001

Wage growth will contribute to a higher rate of price inflation throughout the projection period. The introduction of

**Chart 3.9** *Traditional merchandise exports according to External Trade Statistics. Volume, price and value. Percentage rise from same quarter previous year*



Source: Statistics Norway

early retirement schemes will also push up costs for Norwegian enterprises and gradually feed through to consumer price inflation. On the other hand, price inflation among our trading partners is expected to be moderate, albeit rising. Underlying price inflation in Norway is estimated to edge up from 2½% in 1998 to 3% in 1999 and may reach 3½% towards the end of the projection period.

### 3.5 The balance of payments

*Reduced competitiveness will result in lower export growth...*

Traditional merchandise exports were buoyant in the first three quarters of 1997. A substantial share of the growth both in 1996 and 1997 reflects higher exports to Asia and eastern Europe. Traditional merchandise exports are projected to

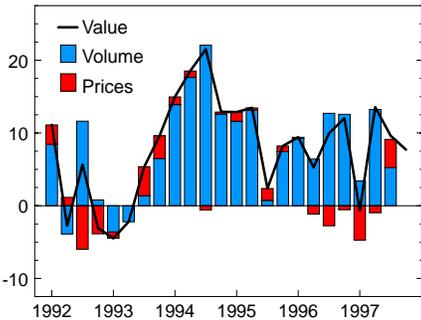
## NEW DATA IN RIMINI MODEL

The changeover to new national accounts in Statistics Norway from 1995 has entailed considerable challenges as regards work with our macroeconomic model RIMINI. The changeover resulted in a number of definitional changes in the national accounts. The aim is to re-estimate the entire RIMINI model based on the new data once the regressive series are available.

As a result of the changeover, the implementation of the new national accounts in the RIMINI model has been gradual. Among other things, we have had to extend existing numerical series from the old national accounts using growth rates from the new accounts for those variables for which data are available. In addition, quarterly statistics for some key areas have not been available, such as the factor income and employment accounts. For this *Inflation Report* we have established a complete numerical set using a new base year for the period 1994-1996 based on growth rates in the new national accounts. We have therefore established new constants in the model, whereas all other parameters remain unchanged. Simulations provide no clear indication of unreasonable assumptions in using this method. We therefore have a somewhat sounder basis on which to assess the model's predictive properties in recent years using the new national accounts.

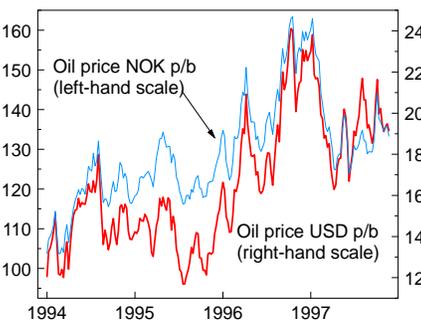
This has generally confirmed previous assessments of relationships in the model. The model's predictive properties have deteriorated for some variables where definitions were changed for components such as investment in services and distributive trades, as a result of the changeover. On the other hand, the model's properties have improved as regards the wage equation for the manufacturing sector and the construction industry. Whereas we have previously assumed that the model has overpredicted wage growth in these sectors, it seems that the model's predictive properties based on the new data are satisfactory for previous years. However, wage growth for 1997 is still overpredicted. Assuming that the model is specified correctly, this may be due to the agreement on early retirement schemes, which may have compensated for moderate nominal increases, or it may imply a potential catch-up of the wage level in 1998. The projection for wage growth from 1998 is based on the assumption that about half of the model bias in 1997 is carried over as a permanent effect on the wage level. This implies slightly lower wage growth than with a free simulation of the model. One possible interpretation is that the phasing in of early retirement schemes will have a dampening impact on wage growth over the next few years.

**Chart 3.10** *Traditional merchandise imports according to External Trade Statistics. Volume, price and value. Percentage rise from same quarter previous year*



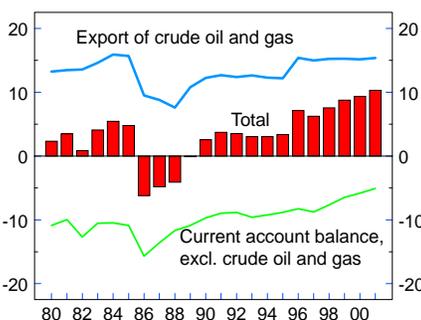
Source: Statistics Norway

**Chart 3.11** *Oil prices in NOK and USD*



Source: The Economist

**Chart 3.12** *Current account balance. In per cent of GDP*



Source: Statistics Norway and Norges Bank

expand in volume by 8% this year and 6% next year, with growth slowing to a little less than international market growth in the following years. This partly reflects reduced competitiveness in Norwegian manufacturing industry and weaker demand for Norwegian export goods as investment growth becomes less of a driving force behind the cyclical upturn abroad.

A continued expansion in domestic demand has contributed to further growth in imports in 1997. The volume of traditional merchandise imports is projected to rise by 8% in 1997 and 5% in 1998. Total import growth may reach nearly 10% this year, reflecting high investment in oil production and pipeline transport and brisk growth in exports, which have a fairly high import content, and vigorous growth in direct purchases abroad by resident households. Later in the projection period, growth in domestic demand is expected to slow. Along with a decline in petroleum investment, this will contribute to lower import growth. On the other hand, reduced competitiveness in import-competing manufacturing sectors and a higher degree of international specialisation over time may lead to higher growth in imports than in aggregate demand. All in all, merchandise imports are projected to show an annual growth of a little more than 2% in the period 1999 to 2001.

### *...but continued high current-account surpluses*

Oil prices have dropped in recent weeks following a temporary increase earlier this autumn. Measured in NOK, the oil price was NOK 135 p/b in November, and so far in 1997 the price has averaged about NOK 136 p/b, ie 2.2% higher than in 1996. Oil prices are assumed to fall to NOK 125 p/b in 1998 and remain at approximately this level through the projection period. Moreover, petroleum production is expected to rise by more than 25% in the same period.

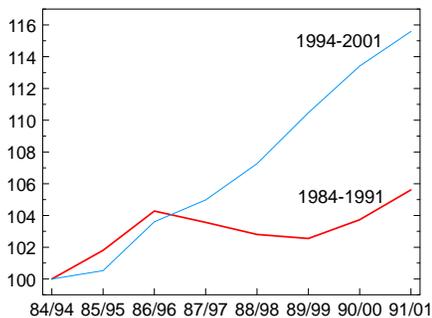
Despite weaker competitiveness and a cautious assumption concerning oil prices, the current-account surplus is expected to rise from 6¼% of GDP in 1997 to about 10¼% at the end of 2001. This is partly ascribable to lower import growth as a result of the downturn towards the end of the projection period, a continued rise in petroleum exports and a reduction in the deficit on the interest and transfers balance as Norway accumulates foreign assets.

## **3.6 Domestic demand**

### *Buoyant private consumer demand*

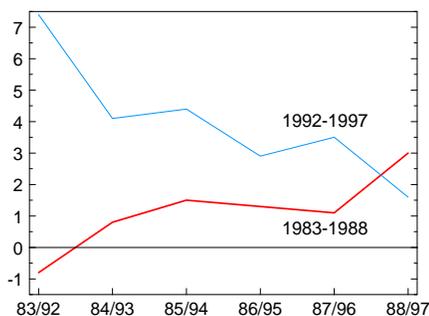
Private consumption is projected to expand by 3½% in 1997, 4% next year, and 4¼% in 1999. Consumption growth in the period 2000-2001 is estimated at about 2¼% as an annual average, which is slightly higher than the projected growth in household income in this period.

**Chart 3.13 Real wages. Index**  
1984/1994 = 100



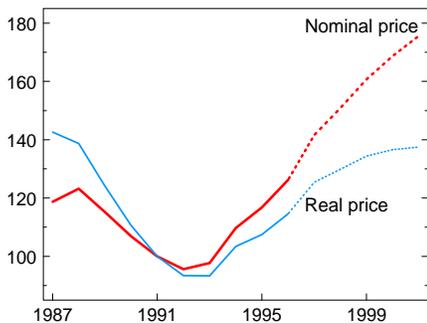
Source: Statistics Norway and Norges Bank

**Chart 3.14 Real interest rates after tax. Average marginal tax**



Source: Statistics Norway and Norges Bank

**Chart 3.15 Resale house prices. Index 1991 = 100**



Source: Statistics Norway, ECON and Norges Bank

Real wage growth during this cyclical upturn has been markedly higher than in the 1980s in spite of relatively moderate nominal increases. Moderate increases have been the very precondition for the low rise in prices. Furthermore, moderate wage growth has contributed to the strong growth in employment. Combined with reduced interest expenditure, this has resulted in brisk growth in household real disposable income. The rise in income has led to a buoyant growth in consumption, but household saving has also remained at a high level. Continued growth in employment the next few years and a substantial rise in real wages will result in robust growth in household real disposable income in the period ahead.

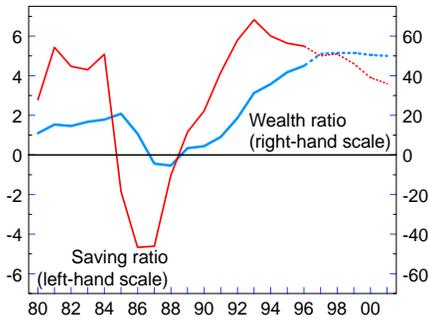
Growth, however, is expected to slow later in the projection period, primarily due to sluggish employment trends following the turn of the century. In 1998, higher minimum pensions from 1 May and the introduction of cash grants for families with one-year-olds without a government subsidised day-care place from 1 August will boost transfers to households by a considerable margin. The full annual impact of these decisions will be felt in 1999. Any expansion of the cash grant arrangement will result in a faster rise in transfers later in the period.

Positive net investments in financial assets and substantial valuation gains in household financial wealth have increased the value of this sector's net financial assets over the past few years. The value of housing wealth has increased in step with the rise in prices for existing dwellings. As a whole, the household wealth position is more favourable than at any time earlier in the 1990s.

Continued low real interest rates will probably result in a continued rise in house and share prices, and in isolation will contribute to further improving household wealth. This will contribute to boosting consumption growth, although so far in the 1990s this effect has been weaker than during the previous cyclical upturn. The rise in house prices is projected to slow from nearly 12% in 1997 to 4% at the end of the period. This nevertheless entails that prices for resale homes will in real terms be about 4% lower than in 1987 when prices for existing dwellings peaked.

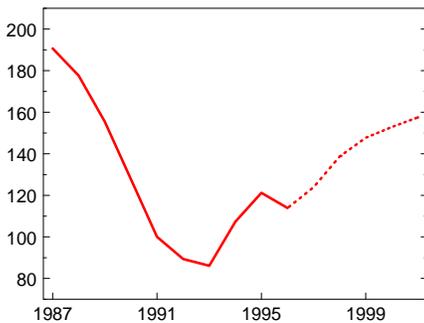
The household saving ratio has edged down in recent years. However, this must be seen in conjunction with the fact that a substantial share of consumption growth has related to purchases of consumer durables, such as cars. Adjusting for this effect, the saving ratio has shown a slight rise in recent years and is now at a relatively high level. This must partly be viewed in connection with the growth in housing investment. Based on the historical relationships embodied in the RIMINI model, the saving ratio is projected to drift down in the projection period as a whole, from 5.5% in 1996 to about 3¾% at the end of the period.

**Chart 3.16** Household saving ratio and wealth/disposable income ratio



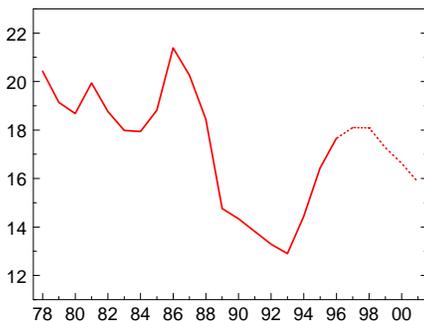
Source: Statistics Norway and Norges Bank

**Chart 3.17** Housing investment. Index 1991 = 100



Source: Statistics Norway and Norges Bank

**Chart 3.18** Investment rate for mainland enterprises. In per cent



Source: Statistics Norway and Norges Bank

*Continued rise in house prices will contribute to higher housing investment*

Housing investment is projected to rise by nearly 9% this year. Continued low real interest rates and the favourable trend in household income and wealth will probably result in a high level of activity in the housing market and a further rise in resale home prices in real terms. Higher prices for existing dwellings will make new housing projects increasingly profitable. Housing investment is therefore projected to show continued growth in the period ahead, with growth estimated at 12% in 1998, declining to 3% towards the end of the period. With a slight increase in the average size of dwellings, this scenario means that altogether 23 000 dwellings will be built annually in the period 1998-2001. When residential construction last peaked in 1986, housing starts came to 29 000.

*Robust growth in business fixed investment, followed by a levelling-off as a result of reduced competitiveness and fall in petroleum investment*

The investment rate (the ratio of investment to gross output) for mainland enterprises has picked up since 1994 and is now at a high level. This has resulted in a substantial growth in capital stock in recent years. At the same time, however, output growth has been so buoyant that capital intensity, measured as the ratio of capital stock to gross output, has declined for mainland enterprises. This means that there is less capital behind each unit produced now than when fixed investment began to pick up in earnest. Capacity utilisation has thereby increased in spite of strong investment growth and expanded capacity in enterprises.

Continued buoyant demand and high capacity utilisation indicate that investment will remain at a high level. Investment trends in recent years, however, must also be seen in connection with the implementation of large-scale public investment projects, including the development of Gardermoen airport and the new National Hospital. The completion of these projects will contribute to reducing investment growth to some extent in the period ahead. Lower domestic demand growth from 1999 and weaker competitiveness will have the same effect. Moreover, petroleum investment will probably fall. After growing by an estimated 25% this year and about 2% next year, petroleum investment is expected to decline by an average 16% annually in the period 1999-2001. This will free up capacity and, in isolation, reduce the investment needs of mainland enterprises. After expanding by an estimated 5¾% in 1997 and 3¾% next year, business fixed investment is projected to decline by nearly 3% on average in the period 1999-2001. Investment trends in both the mainland economy and offshore sector will thereby contribute to a slowdown of growth in the Norwegian economy

later in the projection period. The effect of declining petroleum investment is discussed further in section 4.

### *Approximately neutral fiscal policy*

The projections are based on the fiscal policy as presented in the National Budget for 1998, the subsequent supplementary proposition and the budget compromise in the Storting. The upward adjustment of minimum pensions and the phasing in of cash grants for families with small children will contribute to a substantial growth in general government expenditure next year, and to further growth when the annual impact is felt in 1999. In accordance with the decision to introduce a cash grant scheme for parents of small children, we have assumed that the scheme will be expanded annually to include one new cohort. It has been assumed, however, that a considerable share of the costs will be covered by other transfers to households.

In addition to high growth in public sector transfers, local government consumption is expected to show sharp growth next year. The effect on demand will be curbed to some extent by low growth in central government consumption. Furthermore, public sector investment is projected to decline substantially next year, which must be seen in the context of close to 30% growth in 1997. The sharp rise in investment this year must largely be ascribed to the primary school reform in 1997. Following a real growth in general government expenditure of a little more than 3% in 1997, the growth rate is expected to slow to 2% next year. Real spending growth is projected at 2¼% in 1999 and around 1¼% in subsequent years. The programme for direct and indirect taxes for next year has been incorporated on the revenue side, and rates are held constant through the projection period. Growth in public sector employment is estimated at around 1½% annually through the projection period.

## 4 CHALLENGES TO THE NORWEGIAN ECONOMY

### 4.1 Which course will developments take?

The final section of the *Inflation Report* focuses on uncertainties regarding future economic developments. The baseline scenario in the report presents expected trends in the Norwegian economy over the next two years, and also illustrates possible developments to the year 2001 as described by Norges Bank's macroeconomic model RIMINI.

The first element of uncertainty is linked to the shocks which may affect the economy (see section 3.1). At the same stage in the business cycle ten years ago, several such shocks occurred, including the fall in oil prices in 1986 and the stock market crash and reduction in working hours in 1987. The second element of uncertainty is that there may have been structural changes in the economy in recent years which have reduced the predictive power of the model. Last, but not least, the baseline scenario does not include possible policy responses to redress developments. For example, rising price and wage inflation, as projected in the baseline scenario, will create serious imbalances in the economy over time. It would normally be expected, therefore, that the authorities would seek to counteract such a trend, even though such policy responses may in the short term result in some costs. In the following, emphasis has been placed on describing the inherent uncertainty and possible developments in the Norwegian economy based on assumptions other than those underlying the baseline scenario.

### 4.2 How to achieve a balanced economy?

Experience indicates that the economy is best served in the long term by stable growth and that substantial fluctuations in the growth rate may result in imbalances which take a long time to remedy. Furthermore, a stronger growth rate than implied by the long-term basis is not possible to sustain over time. Based on international experience and experience from previous cyclical fluctuations in Norway, there is reason to believe that a later correction would require more difficult and costly adjustments than correction at an earlier stage before the imbalances in the economy become excessive.

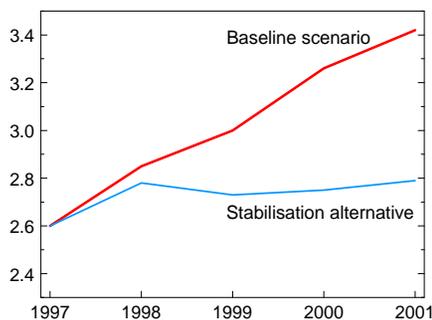
According to the baseline scenario, the Norwegian economy will grow at a faster pace than the long-term trend in GDP in 1998 as well. This sustained robust growth will generate considerable pressures on resources in the economy, which subsequently will result in a cyclical turnaround in the baseline scenario. Towards the end of the projection period there are clear signs that inflation will accelerate and economic growth more or less grind to a halt.

As long as monetary policy in Norway is geared towards the objective of maintaining a stable exchange rate, the main responsibility for smoothing fluctuations in the economy must lie with fiscal policy. Should a situation arise with low growth and accelerating inflation, policy-makers will face a serious dilemma. A policy geared towards controlling inflation will amplify the downturn. On the other hand, a policy oriented towards stimulating growth would tend to generate upward pressure on inflation.

As an illustration of how to prevent such a situation, we have looked at the effects of orienting fiscal policy towards smoothing fluctuations in the economy in relation to the baseline scenario. With such a stabilisation alternative, it would be appropriate to slow growth in demand as early as next year, so that production is consistent with the underlying growth in production capacity, which is not likely to exceed 2½% per year. Based on calculations in RIMINI and upward-adjusted projections for demand and production next year, this will require a reduction in public expenditure of around 1¼% of mainland GDP in 1998, compared with the adopted fiscal policy programme. On the other hand, we have assumed an equivalent additional increase in public expenditure over the years 2000 and 2001, when the economy will show slower growth.

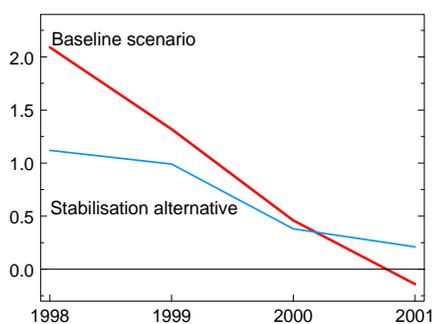
Such a shift in expenditure will produce more balanced growth in the economy and, according to the model-based calculations, will contribute to stabilising inflation in Norway at 2¾%, which is roughly in line with projected inflation for trading partners. As a result of the fiscal tightening, the rise in employment will be weaker in the first few years, but towards the end of the projection period will be higher than in the baseline scenario. According to these calculations, lower price and wage inflation will result in a more favourable cost trend for business and industry and improved conditions for continued growth in employment, compared with the baseline scenario. Such a stabilisation alternative would, however, not be sufficient to prevent the tendency towards a cyclical downturn at the turn of the century. In addition to the effects taken into account in the calculations, such an approach would, however, provide a more favourable investment climate than assumed in the projections, with a more favourable employment trend than indicated by the calculations.

**Chart 4.1** *Effects of a shift in public expenditure. Consumer prices. Percentage rise from previous year*



Source: Norges Bank

**Chart 4.2** *Effects of a shift in public expenditure. Employment. Percentage rise from previous year*



Source: Norges Bank

### 4.3 Risks

We would like to conclude this report by highlighting some relevant elements of uncertainty which may contribute to amplifying the cyclical trend over the next few years, and subsequently a more pronounced downturn. The effects of a more expansionary fiscal policy which were discussed in the last *Inflation Report* still constitute an element of uncer-

tainty. In the following, a number of other factors which may have an expansionary effect or result in higher inflation are highlighted.

*Petroleum investment may be higher than projected,...*

In the baseline scenario it is assumed that petroleum investment will fall on average by around 16% each year in the period 1999-2001. According to the RIMINI model, this will slow growth in mainland GDP by around half a percentage point each year in the same period. The fall in petroleum investment will thereby contribute to the anticipated slowdown in growth towards the end of the projection period. There is, however, considerable uncertainty attached to the projection for petroleum investment, and experience has shown that there are often substantial deviations between projections and actual investment. If petroleum investment remains at the current level for the entire projection period, demand impulses in the mainland economy will be stronger than the projections in the baseline scenario, with the strongest impact occurring as early as 1999. However, a change in petroleum investment does not entail any substantial change in the main scenario involving slower growth and signs of an incipient downturn in the economy. The effects on price and wage inflation will only come into evidence over time, primarily due to a tighter labour market. Price inflation may reach a good 4% in 2001, ie 0.6 percentage point higher than in the baseline scenario, whereas the rise in wages may be as high as 7% towards the end of the period.

*...the labour market may be tighter than anticipated,...*

A continuation of the wage formation experienced in the 1990s has been assumed for the period 1998-2001, which is in line with historical experience as embodied in our macroeconomic model RIMINI. The relationship between unemployment and wage growth may, however, be different from that indicated by the wage equation in RIMINI, particularly at low levels of unemployment. In the models used by the Ministry of Finance and Statistics Norway, the wage curve is steeper at low unemployment levels than in the RIMINI model. On the other hand, wage growth rises at a faster pace in RIMINI in the event of a decline in unemployment from high unemployment levels. The statistical properties of the different wage equations do not differ substantially, making it difficult to determine which representation of the relationship between unemployment and wage growth will best coincide with the actual trend. There are, however, studies which indicate that a combination of the wage equation in RIMINI, and those embodied in the models used by the Ministry of Finance and Statistics Norway, may show better statistical

**Table 4.1** *Deviation from growth rates in the baseline scenario with unchanged petroleum investment. Percentage points*

	1998	1999	2000	2001
Mainland GDP	0	0.6	0.5	0.5
Employment	0	0.4	0.3	0.2
Wages	0	0.2	1.1	1.4
Consumer prices	0	0.0	0.4	0.6

Source: Norges Bank

properties than each equation in isolation.<sup>1</sup> It could therefore be argued that the wage equation in RIMINI displays better properties at higher unemployment levels than the wage equation in the models used by Statistics Norway and the Ministry of Finance, whereas the opposite may be the case at low unemployment levels.

Had we assumed such a relationship between wage growth and unemployment with a kink at a given level of unemployment, the growth projection would have been slightly higher than in the baseline scenario. Interpreted in the light of the current economic situation, such a kink could indicate that at a given low unemployment level it will be difficult for the social partners to exercise wage restraint due to strong underlying pressures in the labour market. We have tried to illustrate the effects of this wage formation alternative by excluding the assumption in the baseline scenario that the phasing in of early retirement schemes from this year will have a permanent effect on the wage level.

Such an assumption entails that wages increase by a good 3% more than in the baseline scenario in the four-year period 1998-2001. Higher wage growth than projected in the baseline scenario implies an inflation rate which is 0.4 percentage point higher than in the baseline scenario at the end of the period. This will result in a further deterioration in the long-term basis for employment, among other things due to a decline in competitiveness in business and industry. Experience shows that it is a costly operation to return the real economy to a course which is compatible with stable and durable growth in employment once price and wage inflation is out of control.

*...or there may be expectations of a depreciation and an increase in interest rates.*

Experience from the 1970s and 1980s shows that in a situation with mounting pressures in the labour market the economy may experience a period of both high price and wage inflation and a nominal currency depreciation as a result of diminishing confidence in the Norwegian economy. If the Norwegian economy continues to grow at a pace which exceeds the long-term growth potential, with accelerating price and wage inflation, this situation may recur. Such market pressures could entail substantial fluctuations in the exchange rate and interest rates.

As a model-based illustration, we have looked at a scenario where the krone depreciates by 5% in the first six months of 1998. In such a situation, monetary policy will have to be geared towards curbing depreciation expectations. It has

**Table 4.2** *Deviation from growth rates in the baseline scenario with higher wage growth. Percentage points*

	1998	1999	2000	2001
Mainland GDP	0.0	0.2	0.2	0.2
Employment	0.0	0.0	0.0	0.0
Wages	0.7	1.0	0.9	0.7
Consumer prices	0.2	0.3	0.4	0.4

Source: Norges Bank

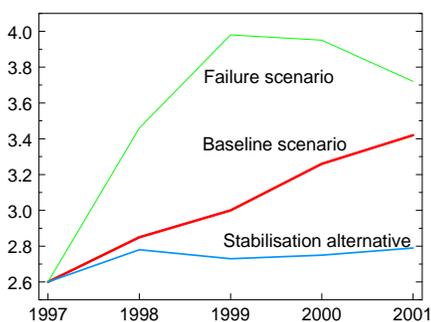
<sup>1</sup> Evjen and Nymoen (1997), "Has the solidarity alternative contributed to low wage growth in manufacturing", *Sosialøkonomen* 51, 2, 10-19.

**Table 4.3** Deviation from growth rates in the baseline scenario with depreciation in NOK and higher interest rates. Percentage points

	1998	1999	2000	2001
Mainland GDP	-0.8	-0.6	-0.3	-0.3
Employment	0.0	-0.2	-0.5	-0.5
Wages	0.4	0.3	-0.3	-0.6
Consumer prices	0.5	0.7	0.3	-0.1

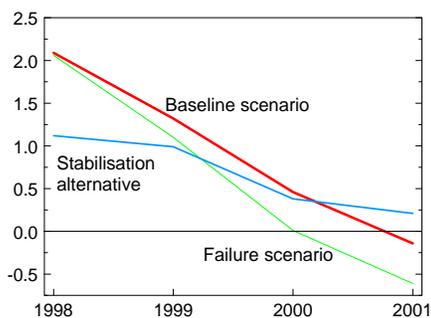
Source: Norges Bank

**Chart 4.3** Consumer prices. Percentage rise from previous year



Source: Norges Bank

**Chart 4.4** Employment. Percentage rise from previous year



Source: Norges Bank

also been assumed that interest rates will rise by 3 percentage points against short-term ECU rates. Such a trend will show some similarities with the situation in the latter half of the 1980s. In isolation, the depreciation will have an expansionary effect and will push up inflation. The rise in interest rates will have the opposite effect. Due to strong competition and narrow interest rate margins in the banking industry, we have assumed that this will quickly translate into higher mortgage rates for households, as experienced following the rise in interest rates last summer.

The depreciation will push up consumer price inflation to 3¼% as early as next year and 3¾% in 1999. However, the contractionary effect of the increase in interest rates will gradually dominate, and consumer price inflation will return to 3¼% at the end of the period. As regards employment, this will entail a far weaker trend in the labour market around the turn of the century, with a fall in employment in 2001 of roughly 11 000, or 0.5 percentage point in relation to the baseline scenario.

### Several forces may come into play

Naturally, the possibility that several unexpected events may occur at the same time cannot be ruled out, as discussed in the introduction to section 3. For example, the likelihood of diminishing confidence in the Norwegian economy is greater if wage pressures prove to be stronger than projected in the baseline scenario. Developments in the 1980s show that this may be associated with substantial costs in the form of a wide and positive interest rate differential against European rates. Charts 4.3 and 4.4 show the overall effect of higher wage growth, a depreciation of the krone and higher interest rates, as described above. In this hypothetical scenario, a situation similar to that of the end of the 1980s may recur. Price inflation may reach 4% in 1999 before higher interest rates curb demand and push inflation down again. However, price inflation will still be higher in 2001 than in the baseline scenario, and the fall in employment may be substantial. The policy dilemma discussed in section 4.2 would therefore be even more apparent in this alternative and the challenges to fiscal policy may be even greater.

## MAIN MACROECONOMIC AGGREGATES

*Percentage change from previous year, if not otherwise stated*

	1997	1998	1999	2000-2001 <sup>1)</sup>
<b>Real economy</b>				
Private consumption	3½	4	4¼	2¼
Public consumption	2	2	2½	1¾
Total gross investment	14½	2¼	-4¾	-4
Accrued petroleum investment	25	2	-19	-14½
Mainland Norway	10¾	2½	0	-1¼
Enterprises	5¾	3¾	-2	-3¼
Dwellings	8¾	12	6½	3¼
General government	28	-7½	1	¼
Mainland demand	4½	3¼	3	1½
Exports	4¾	7¾	4¼	3¼
Oil, gas and pipeline transport	1	13½	4¼	2¾
Traditional goods	8	6	5	3¾
Imports	9¾	4¾	1¾	2½
Traditional goods	8	5	2	2½
GDP	3¼	5	2¾	1¼
Mainland Norway	3½	3¼	2½	¾
<b>Labour market</b>				
Employment	3	2	1¼	¼
Labour force, LFS	2¼	1¼	¾	½
Unemployment, LFS	4¼	3¼	2¾	3½ <sup>2)</sup>
<b>Prices and wages</b>				
Consumer prices	2½	2¾	3	3½ <sup>2)</sup>
Annual wages	4	5	6	5¾
Import prices, traditional goods	-½	1	1¼	1½
Export prices, traditional goods	1	2	2½	2¾
Crude oil prices, NOK (level)	136	125	123 <sup>3)</sup>	120 <sup>3)</sup>
<b>External account</b>				
Trade surplus, NOKbn (level)	85	99	117	140 <sup>2)</sup>
Current account surplus, NOKbn (level)	67	88	108	139 <sup>2)</sup>
Current account surplus, % of GDP (level)	6¼	7½	8¾	10¼ <sup>2)</sup>
<b>Memo</b>				
Household saving ratio	5	5	4½	3¾

1) Average annual growth.

2) At end of period.

3) 1998-kroner