

Reports from the Central Bank of Norway No 3/2006

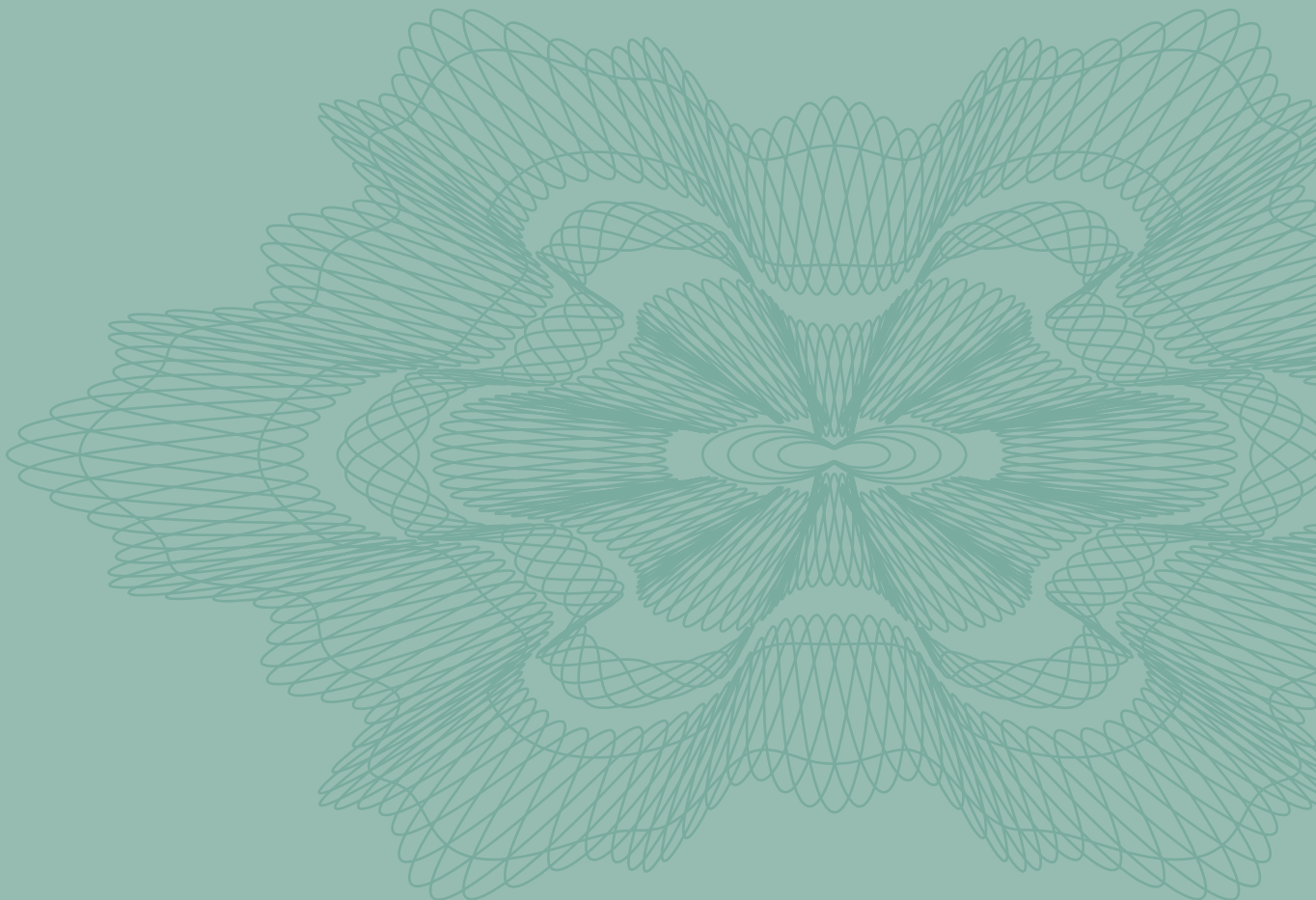


# Inflation Report

with monetary policy assessments

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# Norges Bank's *Inflation Report* with monetary policy assessments

Norges Bank's *Inflation Report* is published three times a year, in March, June and November. The *Report* presents an assessment of the monetary policy outlook. The report contains projections for developments in the Norwegian economy, boxes in which particular themes are dealt with more fully, and a summary of Norges Bank's regional network reports.

At its meetings on 14 and 29 June, Norges Bank's Executive Board discussed the main content of the *Inflation Report* and endorsed the analyses and projections for future interest rate developments in the *Report*. At its meeting on 29 June, the Executive Board approved a monetary policy strategy based on these discussions for the period to the next *Inflation Report*, which will be published on 1 November 2006. The strategy is presented in Section 1. In the period to the next *Inflation Report*, the Executive Board will hold monetary policy meetings on 16 August, 27 September and 1 November.

The *Inflation Report* is published three times a year, and together with *Financial Stability*, is part of Norges Bank's series of reports. The report is also available on Norges Bank's website:

<http://www.norges-bank.no>.

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# Inflation Report 2/2006

## with monetary policy assessments

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The Inflation Report is based on information in the period to 22 June 2006  
The monetary policy strategy in Section 1 was approved by the Executive Board  
on 29 June 2006

# Monetary policy in Norway

## *Objective*

The operational target of monetary policy is low and stable inflation, with annual consumer price inflation of approximately 2.5% over time.

In general, direct effects on consumer prices resulting from changes in interest rates, taxes, excise duties and extraordinary temporary disturbances are not taken into account.

## *Implementation*

Norges Bank operates a flexible inflation targeting regime, so that weight is given to both variability in inflation and variability in output and employment.

Monetary policy influences the economy with long and variable lags. Norges Bank sets the interest rate with a view to stabilising inflation at the target within a reasonable time horizon, normally 1–3 years. The relevant horizon will depend on disturbances to which the economy is exposed and how they will affect the path for inflation and the real economy in the period ahead.

## *The decision-making process*

The main features of the analysis in the *Inflation Report* are presented to the Executive Board for discussion at a meeting about two weeks before the *Report* is published. On the basis of the analysis and discussion, the Executive Board assesses the consequences for future interest rate developments and adopts a monetary policy strategy for the period to the next *Inflation Report*. The strategy is presented in Section 1 of the *Inflation Report*.

The key interest rate is set by Norges Bank's Executive Board. Decisions concerning interest rates and other important changes in the use of instruments will normally be taken at the Executive Board's monetary policy meeting every sixth week. The analyses and the monetary policy strategy presented in Norges Bank's *Inflation Report*, together with assessments of price and cost developments and conditions in the money and foreign exchange markets, form a basis for monetary policy decisions.

## *Communication of the interest-rate decision*

The monetary policy decision is announced at 2pm on the day of the meeting, and the Bank holds a press conference at 2:45 pm on the same day. The press release provides an account of the main features of economic developments that have been of importance for the interest rate decision and the Executive Board's assessments. The press release and the press conference are available on <http://www.norges-bank.no>.

## *Reporting*

Norges Bank reports on the conduct of monetary policy in the *Inflation Report* and the *Annual Report*. The Bank's reporting obligation is set out in Section 75c of the Constitution, which stipulates that the Storting shall supervise Norway's monetary system, and in Section 3 of the Norges Bank Act. The *Annual Report* is submitted to the Ministry of Finance and communicated to the King in Council and to the Storting in the Government's Kredittmeldingen (Credit Report). The Governor of Norges Bank provides an assessment of monetary policy in an open hearing before the Standing Committee on Finance and Economic Affairs in connection with the Storting deliberation on the Credit Report.

# Editorial

## *Unchanged pace*

The cyclical expansion in the Norwegian economy is continuing. Profitability in the business sector is solid. Enterprises are borrowing and investing. Building starts are high. High oil prices are supporting strong growth in activity in Norway's coastal regions and among suppliers to the petroleum sector. Export companies are benefiting from buoyant foreign markets. Household demand is still on the rise and house prices are moving up. Local government demand is also on the increase. In this *Report*, the forecasts for capacity utilisation in the Norwegian economy have been revised upwards.

Underlying inflation remains low. Over a period, falling import prices, moderate pay increases and strong productivity growth pushed down inflation. Inflation has now picked up, albeit at a slower pace than we expected. Underlying inflation has remained fairly steady at 1-1½% since summer 2005. According to our regional network, competition is strong in retail trade and few enterprises are planning to increase prices for consumer goods.

For a longer period, employment growth measured by the number employed was lower than in earlier upturns. The fall in sickness absence and cross-border labour flows increased the supply of labour. The analyses in this *Report* indicate that the upturn in the Norwegian economy may have entered a new phase. At present, employment is rising rapidly and unemployment is falling. Sickness absence is rising again. A steadily rising number of enterprises in Norges Bank's regional network report that labour shortages constitute a constraint. We are facing growing competition from other countries for foreign labour. As expected, wage growth will be somewhat higher this year than in 2005. Commodity prices are high even though they have fluctuated somewhat this spring. Prices for imported consumer goods have become more stable. Our assessment is that price and cost inflation will continue to rise gradually in the period ahead.

The upturn has also taken hold in other countries in recent months. The exception is the US where growth in household demand for goods and services has moderated in line with expectations. Energy prices are high and inflation expectations are rising in several countries. Interest rates are edging up. The fall in equity markets may reflect concern about the outlook for the global economy. On the other hand, such corrections are not unusual after a period of sharply rising share prices.

Over the past 2-3 years, the interest rate level in Norway has been exceptionally low. Since 2005, interest rates have been moving up again. In the first six months of 2006, the key rate was raised in two increments of 0.25 percentage point. With only a gradual rise in inflation, there are prospects that the key rate will be increased further at approximately the same pace. The economy is expanding at a brisk pace and capacity utilisation is high. Economic policy must increasingly reflect the capacity constraints facing Norwegian enterprises.

29 June 2006  
Svein Gjedrem

# 1 | Monetary policy assessments and strategy

## The economic situation

As a result of a marked reduction in interest rates in 2003 and into 2004, monetary policy has made a contribution to boosting demand for goods and services. Increased petroleum investment and favourable prices in buoyant export markets have also contributed to high growth in the production of goods and services. The initial phase of the recovery was marked by ample supply of labour and high productivity growth. The decline in sickness absence as from summer 2004 and foreign labour inflows were conducive to rapid growth in production without accelerating price and wage inflation.

Real income growth has been solid for both the household and enterprise sectors. Many Norwegian export companies are operating at full capacity, with high margins in spite of a high domestic cost level. High prices for Norway's export goods have made a substantial contribution to the improvement in the terms of trade. Investment activity in both mainland enterprises and the petroleum sector is making a solid contribution to growth. At the same time, growth in general government demand for goods and services is buoyant. Changes in trade patterns and a fall in prices for many of Norway's imported consumer goods have kept inflation at a low level. A strong krone exchange rate has pushed down the fall in prices for imported consumer goods to a further extent.

In addition, intensified competition in many Norwegian product markets has increasingly made a contribution to keeping underlying inflation at a low level. Price and wage inflation has gradually picked up, but at a slower pace than in previous upturns.

In the past six months, labour shortages in the Norwegian economy have come into clearer evidence. Employment has gathered momentum and unemployment is now falling rapidly. Capacity utilisation is on the rise and many industries are facing constraints. Wage growth appears to be somewhat stronger this year than in 2005, albeit not higher than projected.

The current upturn in the global economy is the strongest recorded since the beginning of the 1970s. The upturn is particularly pronounced in Asia, but the expansion in the US has also been strong. Economic conditions have also improved in several European countries. Economic growth among Norway's trading partners is expected to remain firm. Long-term interest rates in the US, the euro area and the UK have increased since the previous *Report*. At the beginning of May, rates fell back somewhat, reflecting the prospect of higher inflation and higher policy rates, thereby adding to the uncertainty surrounding the growth outlook. Mounting concern about growth prospects also led to a

## Criteria for an appropriate future interest rate path

The following criteria may be useful in assessing whether a future interest rate path appears reasonable compared with the monetary policy objective.

1. If monetary policy is to anchor inflation expectations around the target, the interest rate must be set so that inflation moves towards the target. Inflation should be stabilised near the target within a reasonable time horizon, normally 1-3 years. For the same reason, inflation should also be moving towards the target well before the end of the three-year period.
2. Assuming that inflation expectations are anchored around the target, the inflation gap and the output gap should be in reasonable proportion to each other until they close.<sup>1</sup> The inflation gap and the output gap should normally not be positive or negative at the same time further ahead.
3. Interest rate developments, particularly in the next few months, should result in acceptable developments in inflation and output also under alternative, albeit not unrealistic assumptions concerning the economic situation and the functioning of the economy.
4. The interest rate should normally be changed gradually so that we can assess the effects of interest rate changes and other new information about economic developments.
5. Interest rate setting must also be assessed in the light of developments in property prices and credit. Wide fluctuations in these variables may in turn constitute a source of instability in demand and output in the somewhat longer run.
6. It may also be useful to cross-check by assessing interest rate setting in the light of some simple monetary policy rules. If the interest rate deviates systematically and substantially from simple rules, it should be possible to explain the reasons for this.

<sup>1</sup> The inflation gap is the difference between actual inflation and the inflation target of 2.5%. The output gap measures the percentage difference between actual and projected potential mainland GDP.

marked fall in equity and commodity markets. Volatility in equity and commodity markets has led to renewed interest in safe investment products such as government bonds.

Since the previous *Report*, the oil price has varied to some extent, but has been higher than assumed. Futures prices for Brent crude indicate that the oil price might hover around USD 70 per barrel over several years ahead, which is almost USD 10 higher than in March. High oil prices appear to be primarily driven by strong demand, but supply-side conditions also seem to have influenced prices in recent months. So far, high oil prices have not curbed growth in the global economy. Idle capacity in many countries probably explains to some extent why oil prices not have fed through to inflation to a greater extent. Even though non-oil commodity prices have fallen recently, prices are still high after rising sharply earlier this year. There are now prospects that inflation among our trading partners will be somewhat higher than projected earlier.

After consumer price inflation abated markedly from 2003, monetary policy in Norway has been aimed at bringing inflation up towards the target of 2.5%. Even though the underlying rise in consumer prices has picked up from its lowest level two years ago, it is still moderate and clearly lower than the inflation target. At the same time, a sharp rise in electricity prices has led to considerably higher-than-expected CPI inflation so far this year. In May, year-on-year CPI inflation was 2.3%.

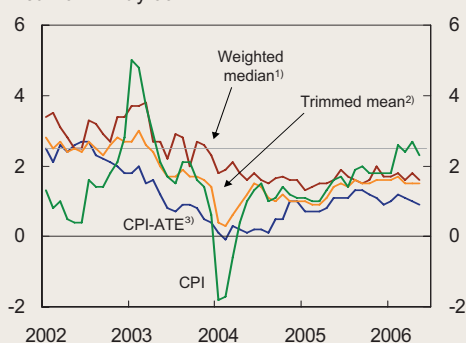
The year-on-year rise in the CPI adjusted for tax changes and excluding energy products, CPI-ATE, was 0.7% in May. Adjusted for lower day-care rates, the estimated rise was 0.9% in May. CPI-ATE inflation has been somewhat lower than projected in the previous *Report*. The rise in prices for domestically produced goods and services has been unexpectedly low.

The CPI-ATE does not only exclude temporary effects of changes in indirect taxes and swings in energy prices, but also trend changes in these variables. Different indicators of underlying inflation have been in the interval 1-1½% since summer 2005 (see Charts 1.1 and 1.2 and box on recent price developments). In real time it will always be difficult to determine which price movements are permanent and those which only have short-term effects on the CPI. Different measures of underlying inflation can shed light on the prospects for consumer price inflation ahead. There is no one indicator that provides a precise picture of underlying inflationary pressures in all situations.

## Baseline scenario

Norges Bank lowered the key rate to a very low level when inflation fell and approached zero in an environment where there was idle capacity in the Norwegian economy. The interest rate was forecast to remain low until there were clear signs of a pick-up in inflation. Real interest rates are

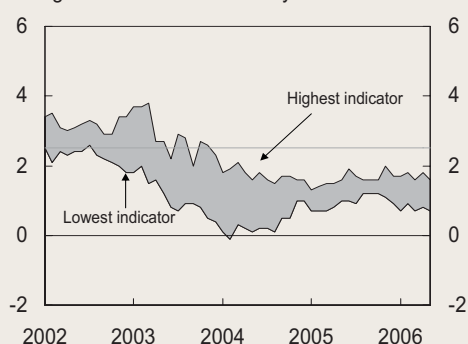
**Chart 1.1** CPI and indicators of underlying inflation. 12-month change. Per cent. Jan 02 – May 06



<sup>1)</sup> Estimated on the basis of 146 sub-groups of the CPI.  
<sup>2)</sup> Price changes accounting for 20% of the weighting base are eliminated.  
<sup>3)</sup> CPI-ATE: CPI adjusted for tax changes and excluding energy products. A further adjustment is made for the estimated effect of reduced maximum day-care rates from January 2006.

Sources: Statistics Norway and Norges Bank

**Chart 1.2** Interval of uncertainty for underlying inflation. Highest and lowest indicator.<sup>1)</sup> 12-month change. Per cent. Jan 02 – May 06



<sup>1)</sup> Highest and lowest indicator of CPI-ATE, weighted median, trimmed mean, volatility weighted inflation, volatility adjusted inflation and inflation excluding the most volatile components. See separate box on recent price developments.

Sources: Statistics Norway and Norges Bank

still lower than what we look upon as a neutral level. This difference – the real interest rate gap – has been negative since 2004 (see Chart 1.3).

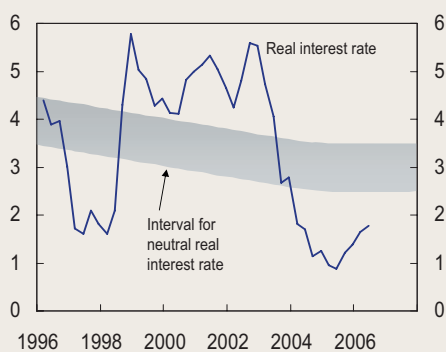
The low rate of inflation does not reflect an excessively low level of demand in the economy today, but rather favourable conditions on the production side both in the Norwegian and international economy. The impact on inflation has nevertheless been smaller than observed in the 1980s and 1990s (see Chart 1.4). If the fall in inflation had been driven by a downturn in the economy, the interest rate would probably have been reduced to a lower level and held at a lower level for a longer period. Output and employment have exhibited strong growth, however, and monetary policy trade-offs have warranted a somewhat longer horizon for bringing inflation up again.

The interest rate is now gradually being brought back to a more normal level. Over the past year, the key rate has been raised by a total of 1 percentage point and there are prospects for further interest rate increases.

Underlying CPI-ATE inflation has been lower than projected in recent months. Other measures of underlying inflation are higher and have shown a more stable profile, but are still markedly lower than the inflation target. Several factors point to a pick-up in inflation, however. Capacity utilisation is rising. Employment growth is now strong after showing lower-than-expected growth last year. Our regional network reinforces the impression of labour shortages in many sectors. The favourable period of ample labour supply may have come to an end. Sickness absence is now rising, and inflows into disability benefit schemes are again rising. Increased activity and demand for labour in the rest of Europe may limit the supply of labour from other countries in the years ahead. Labour shortages are likely to lead to higher wage growth in the coming years. According to our regional network, consumer price inflation is nevertheless not expected to be high.

Falling import prices marked the inflation developments in the first half of this cyclical upturn. The integration of new large emerging economies, such as India and China, into global trade has led to a fall in prices for imported consumer goods over several years. Since the beginning of the year, the fall in prices has abated and prices for imported consumer goods have been somewhat higher than in the previous *Report*. Energy prices have risen. Non-oil commodity prices have also risen sharply so far this year. Combined with a smaller margin of spare capacity in the global economy, this has translated into higher producer and consumer prices among our trading partners. Although global competition is strong and an increasing range of goods and services can be imported from low-cost countries, prices for imported goods and services are expected to decline at a somewhat slower pace in the period ahead. The increase in energy and non-oil commodity prices is

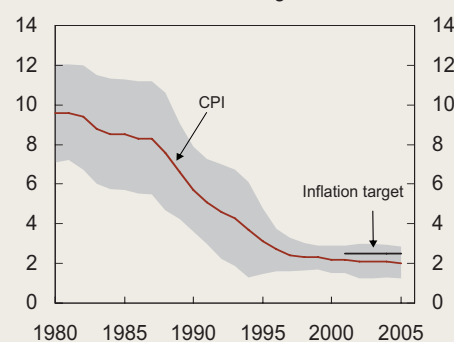
**Chart 1.3** 3-month real interest rate<sup>1)</sup> and the neutral real interest rate in Norway. Per cent. Quarterly figures. 96 Q1 – 06 Q2



<sup>1)</sup> 3-month money market rate deflated by inflation measured by CPI-ATE.

Source: Norges Bank

**Chart 1.4** CPI. Moving 10-year average<sup>1)</sup> and variation<sup>2)</sup>. Per cent. Annual figures. 1980 – 2005<sup>3)</sup>



<sup>1)</sup> The moving average is calculated 7 years back and 2 years ahead.

<sup>2)</sup> The band around the CPI is the variation in the average period, measured by +/- one standard deviation.

<sup>3)</sup> Projections for 2006 – 2007 in this Report form the basis for this estimate.

Sources: Statistics Norway and Norges Bank



# Monetary policy since the previous *Inflation Report*

Norges Bank's projections for economic developments in *Inflation Report 1/06* – which was presented on 16 March 2006 – implied a sight deposit rate in the interval 2¼ - 3¼% in the period to end-June. The monetary policy strategy was conditional on economic developments' being broadly in line with the projections. The Executive Board's assessment was that the interest rate should gradually – in small, not too frequent steps – be brought back towards a more normal level. It was assumed that this interest rate path would provide a reasonable balance between the objective of bringing inflation up towards the target and the objective of stabilising developments in output and employment.

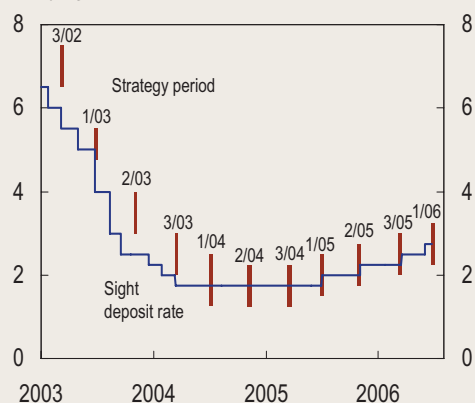
*Inflation Report 1/06* indicated that continued strong shifts in the import pattern and increased domestic competition might result in lower-than-expected inflation. The *Report* also underlined the risk that a long period of low real interest rates might result in more rapid output and employment growth and higher-than-projected price and cost inflation.

At the monetary policy meeting on 16 March, the Executive Board noted that consumer price inflation had been lower than expected. The objective of bringing inflation back towards the target and anchoring inflation expectations implied a continued expansionary monetary policy. On the other hand, output growth was strong, and employment was rising more rapidly than expected. The high rate of economic growth implied that price and cost inflation would edge up after a period. The sight deposit rate was increased by 0.25 percentage point to 2.50% at the monetary policy meeting.

The key rate was kept unchanged at the monetary policy meeting on 26 April. The Executive Board noted that employment was rising faster than expected, and that credit and house prices were increasing sharply. Prices for oil and other commodities had picked up further. Underlying consumer price inflation had been approximately as expected, but the year-on-year rise was still low. At the same time, the krone was stronger than assumed. Overall, the Executive Board was of the opinion that there were not sufficient grounds for changing the outlook for inflation and output or the risk assessment.

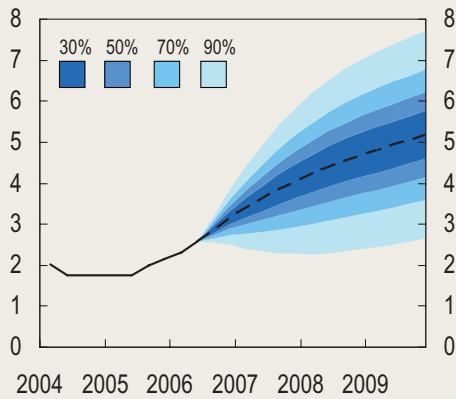
In line with the forecast in the March *Inflation Report*, there were prospects of an interest rate increase in the second quarter – at the monetary policy meeting in May or June – and a further increase thereafter. New information prior to the monetary policy meeting on 31 May confirmed that activity in the Norwegian economy was high. Employment was increasing faster and unemployment had fallen more than projected. The Executive Board pointed out that there were now signs of capacity constraints in a number of industries. Share prices fell considerably in May, but so far there were no indications that financial market turbulence would have substantial negative effects on domestic or global economic growth. There were prospects of a further increase in interest rates among our trading partners. The Executive Board pointed out that underlying consumer price inflation remained low, and that the krone had appreciated further. On the other hand, the inflation outlook would be influenced by the rise in prices for a number of commodities. It was also likely that continued high growth in output and employment would result in higher price and cost inflation, although this might take time. The interest rate would therefore be set so that monetary policy gradually became less expansionary. The sight deposit rate was increased by 0.25 percentage point to 2.75% at the monetary policy meeting.

**Chart 1** Interval for the sight deposit rate at the end of each strategy period and actual developments. Daily figures. Per cent. 1 Jan 03 – 22 Jun 06



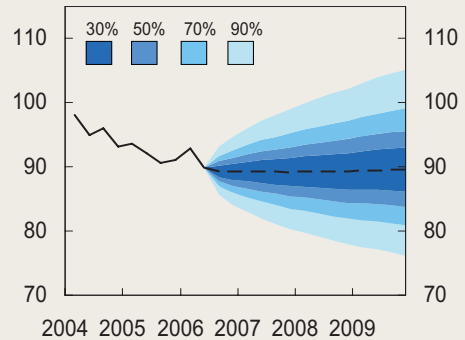
Source: Norges Bank

**Chart 1.5a** The sight deposit rate in the baseline scenario with fan chart. Per cent. Quarterly figures. 04 Q1 – 09 Q4



Source: Norges Bank

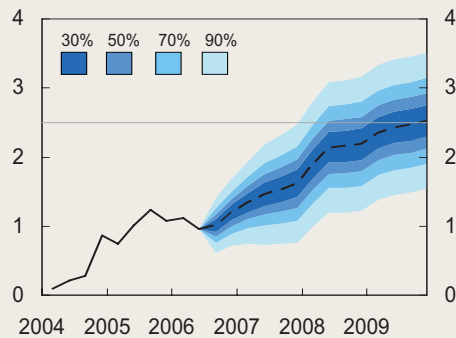
**Chart 1.5b** Import-weighted exchange rate (I-44)<sup>1)</sup> in the baseline scenario with fan chart. Quarterly figures. 04 Q1 – 09 Q4



<sup>1)</sup> A rising curve denotes a weaker krone exchange rate. It is assumed that strengthening by a certain percentage is just as likely as weakening by the same percentage.

Source: Norges Bank

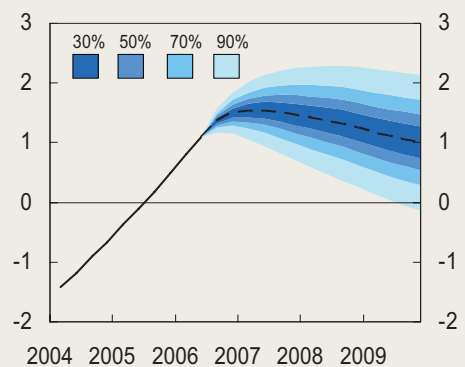
**Chart 1.5c** Projected CPI-ATE<sup>1)</sup> in the baseline scenario with fan chart. 4-quarter change. Per cent. 04 Q1 – 09 Q4



<sup>1)</sup> CPI-ATE: CPI adjusted for tax changes and excluding energy products. A further adjustment is made for the estimated effect of reduced maximum day-care rates from January 2006. Other measures of underlying inflation are shown in Chart 1.1.

Sources: Statistics Norway and Norges Bank

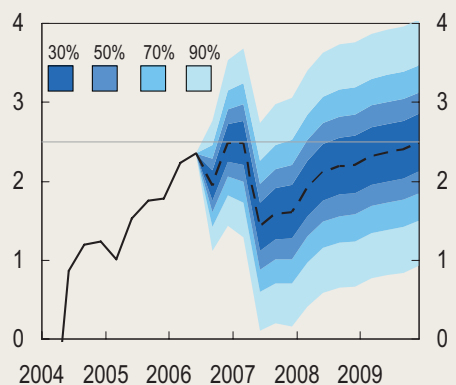
**Chart 1.5d** Estimated output gap in the baseline scenario with fan chart<sup>1)</sup>. Per cent. Quarterly figures. 04 Q1 – 09 Q4



<sup>1)</sup> Uncertainty surrounding the current situation is not taken into account in the calculation. See box in *Inflation report 3/05*.

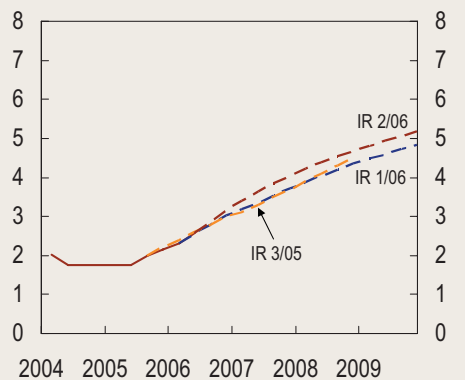
Source: Norges Bank

**Chart 1.5e** Projected CPI in the baseline scenario with fan chart. 4-quarter change. Per cent. 04 Q1 – 09 Q4



Sources: Statistics Norway and Norges Bank

**Chart 1.6** The sight deposit rate in the baseline scenario in IR 3/05, IR 1/06 and IR 2/06. Per cent. Quarterly figures. 04 Q1 – 09 Q4



Source: Norges Bank

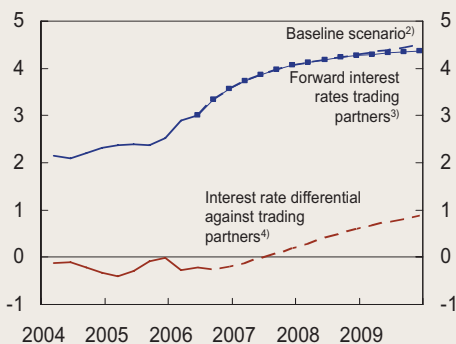
also exerting upward pressure on costs for input goods for Norwegian producers.

High oil prices have also influenced the outlook for fiscal policy. The value increase in the expected real return on the Government Pension Fund – Global implies that fiscal policy may be more expansionary at a juncture where the Norwegian economy is expanding at brisk pace.

Interest rates are still low among a number of our trading partners, but since the previous *Report* policy rates have been raised in for example the US, Sweden, Canada, China, the euro area, Switzerland and Australia. Interest rate developments in the US and the UK indicate that a normal interest rate level may still be around 5%. Market expectations concerning policy rates among our trading partners have increased since the previous *Report*. Next year, interest rates are expected to increase in the euro area, the UK, Sweden, Switzerland, the US, Japan and Australia. Such a development will curb the effects on the krone exchange rate from further interest rate increases in Norway.

Growth in the Norwegian economy this year seems to be higher than projected earlier. There are prospects that inflation will pick up, but this may take time. The subdued rise in prices for domestically produced goods and services in recent months may be a sign of continued strong productivity growth in the economy and intensified competition. At the same time, the krone exchange rate is strong. Developments since the *March Report* nevertheless support a gradual rise in inflation. Economic policy must increasingly reflect the emergence of capacity constraints in the domestic economy. An overall assessment therefore suggests that we should raise interest rates further. Compared with the previous *Report*, there are prospects that interest rates may be somewhat higher in the period ahead (see Charts 1.5 and 1.6).

**Chart 1.7** Interest rate forecasts for trading partners and interest rate differential. Money market rates.<sup>1)</sup> Quarterly figures. 04 Q1 – 09 Q4



<sup>1)</sup> Money market rates are approximately 0.2 percentage point higher than the sight deposit rate.

<sup>2)</sup> As in the previous reports, forward rates are adjusted somewhat at the end of the projection period.

<sup>3)</sup> A weighted average of trading partners' forward rates at 22 June.

<sup>4)</sup> Interest rate differential against trading partners in the baseline scenario from 06 Q2 (broken line).

Source: Norges Bank

Exchange rate movements are difficult to predict, and the krone exchange rate is now stronger than assumed in the previous *Report*. The appreciation does not appear to be directly related to interest rate differentials between Norway and its trading partners. Norges Bank applies the assumption that money market rates among our trading partners will move up gradually to 4.5 per cent over the next three years (see Chart 1.7). As in previous *Reports*, the projections are based on the assumption that domestic and external interest rates will rise at a somewhat faster pace in the longer term than implied by prevailing forward rates. In isolation, the path for domestic and external interest rates does not seem to suggest significant changes in the krone exchange rate.

Charts 1.5a-e show Norges Bank's projected path for the Norwegian economy based on the projected interest rate path, the krone exchange rate and other driving forces that are described further in Sections 2 and 3. The CPI-ATE, adjusted for changes in day-care rates, is projected to rise

from the current level of about 1% towards 1¾% at the end of 2007. As a result of high electricity and oil prices, total CPI inflation may remain higher than 2 per cent through 2006. The rise in energy prices will gradually subside and the rise in these prices is assumed to be approximately on a par with the rise in the CPI-ATE in the years ahead. There are prospects that inflation will be close to the target of 2½% at the three-year horizon.

The output gap is an expression of our assessment of total capacity utilisation in relation to a normal level. Capacity utilisation is now higher than normal. Buoyant global growth is generating high demand and favourable prices for Norwegian exporters. Even though petroleum investment is probably passing a peak this year, the prospect of continued high oil prices should sustain demand from the petroleum sector at a high level. High oil prices are also resulting in increased transfers to the Government Pension Fund – Global. Fiscal policy is assumed to provide a larger impetus to total demand and production in 2008 and 2009. A gradual increase in interest rates will curb growth in demand after a period.

Household debt and house prices have risen sharply over many years, reaching historically high levels. House prices now appear to be somewhat high relative to developments in income, interest rates, unemployment and building starts. Prospects for a gradual normalisation of the interest rate may restrain the rise in credit and house prices. The interest burden is low, but will edge up in pace with rising interest rates (see Chart 1.8). Stronger competition in the financial industry has reduced lending margins, which has to some extent curbed the rise in interest expenses. A further increase in the interest rate will reduce household disposable income and may mute growth in household demand.

Developments in inflation and capacity utilisation in Chart 1.9 seem to provide a reasonable balance between the various objectives of monetary policy. The interest rate is sufficiently low for allowing inflation to pick up and approach the target of 2.5%, while the increase in the interest rate is sufficient to prevent capacity utilisation from becoming too high.

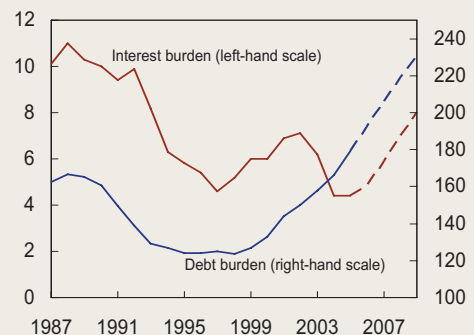
## Uncertainty surrounding the projections

The fan charts illustrate the uncertainty surrounding our projections for the interest rate, the krone exchange rate, inflation and the output gap (see Charts 1.5a-e).<sup>1</sup> The wider the fan charts are, the more uncertain the projections. The width of the fan charts are based on historical disturbances.<sup>2</sup> The uncertainty surrounding the interest rate

<sup>1</sup> There is also uncertainty surrounding the current situation. See box in *Inflation Report* 3/05.

<sup>2</sup> A further discussion of the fan charts are presented in Bergo, J. (2006): "Projections, uncertainty and the choice of interest rate assumptions in monetary policy", *Economic Bulletin* 1/2006 p. 16, Norges Bank.

**Chart 1.8** Projections of household interest burden<sup>1)</sup> and debt burden<sup>2)</sup>. Per cent. Annual figures. 1987 - 2009

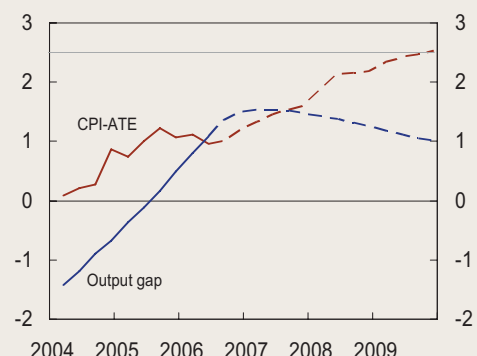


<sup>1)</sup> Interest expenses after tax as a percentage of disposable income less estimated reinvested dividends, less return on insurance claims and plus interest expenses.

<sup>2)</sup> Loan debt as a percentage of disposable income less estimated reinvested dividends, less return on insurance claims.

Sources: Statistics Norway and Norges Bank

**Chart 1.9** Projected CPI-ATE<sup>1)</sup> and output gap in the baseline scenario. Quarterly figures. Per cent. 04 Q1 – 09 Q4



<sup>1)</sup> CPI-ATE: CPI adjusted for tax changes and excluding energy products. A further adjustment is made for the estimated effect of reduced maximum day-care rates from January 2006.

Sources: Statistics Norway and Norges Bank

reflects the fact that monetary policy reacts to unexpected disturbances to the other variables. This increases the uncertainty surrounding future interest rates but also limits the uncertainty surrounding the other variables.

Monetary policy cannot fine-tune developments in the economy, but can prevent the largest effects when the economy is exposed to disturbances. In certain situations, it may be appropriate to guard against particularly adverse developments.

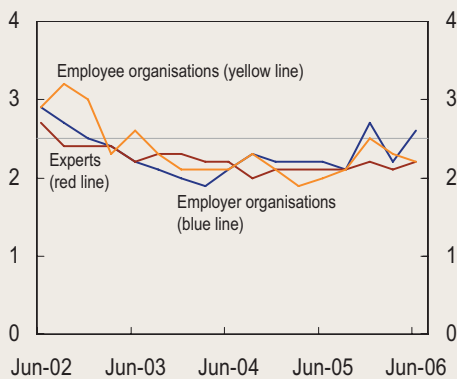
A particularly adverse situation would be if inflation does not pick up, but becomes entrenched at a low level with a simultaneous sharp fall in demand. Such a fall might occur, for example, as a result of an international downturn. Rising or persistently high oil prices may gradually bring down growth among our main trading partners. A slowdown may take place gradually. The imbalances in the global economy may nevertheless lead to corrections in exchange rates or saving behaviour, which may be so pronounced that economic growth weakens markedly. With a strong real krone exchange rate and a high cost level in Norway, Norwegian manufacturing will be particularly vulnerable to a downturn in the global economy. The risk of such a profile may, in isolation, warrant a monetary stance that is more expansionary in advance than otherwise in order to anchor inflation expectations at target. There are no signs that inflation expectations are substantially lower than the inflation target in spite of the past period of low inflation (see Chart 1.10).

Another adverse development would be a rapid rise in cost inflation in an environment of extensive resource shortages and high household debt. It might then prove necessary to increase the interest rate markedly in order to bring down price and cost inflation. With a high debt burden, such an interest rate increase will translate into an appreciable fall in disposable income. Against this background, the risk of economic instability increases. In order to guard against such a situation, it would be appropriate to raise interest rates to a higher level than would otherwise have been the case.

There is considerable uncertainty as to how close the Norwegian economy is to alternative paths. The projections in this *Report* are based on a fairly steady path for nominal and real variables. There is uncertainty as to the functioning of the economy and how long it takes for the resource shortages observed in some sectors of the Norwegian economy to translate into higher inflationary pressures. The risk that a period of low inflation will be followed by deflation seems to have diminished.

In the baseline scenario, the interest rate is gradually raised towards a more normal level. Norges Bank regularly assesses the effects of interest rate changes and other new information about economic developments. Disturbances to the economy may result in changes in the projections. It may be

**Chart 1.10** Expected consumer price inflation 2 years ahead. Employee/employer organisations and experts<sup>1)</sup>. Per cent. Quarterly figures. 02 Q2 – 06 Q2



<sup>1)</sup> Employees in financial industry, macroanalysts and academics.

Source: TNS Gallup

difficult to distinguish between transitory effects and more long-lasting disturbances. It may therefore take time before interest rate setting can be based on economic developments that differ from the path outlined in this *Report*.

Charts 1.11a-c analyse developments under alternative scenarios for the economy. Interest rate setting must be assessed in the light of the reasons for, and the expected duration of the disturbances. The later monetary policy responds to such disturbances, the wider the fluctuations in output and inflation will be.

The shift in the trade pattern may be more pronounced than we have assumed, and it may take longer for prices for imported goods to pick up. Strong domestic competition may curb the rise in prices for domestically produced goods and services. The charts illustrate a path where inflation is about a half percentage point lower than in the baseline scenario without an attendant change in the projections for the real economy.<sup>3</sup> Lower inflation implies, in isolation, an interest rate path that is lower than in the baseline scenario. The lower interest rate path implies a gradual increase in the output gap to a level that is higher than in the baseline scenario. Inflation rises gradually, but is lower over the next three years than the central projection (see Charts 1.11a-c).

The economy may also expand faster than projected. Real interest rates have been very low. We have little experience with respect to such low interest rates over a long period, and the effects on the Norwegian economy may thus be stronger than in the baseline scenario. It is uncertain how quickly prices and wages will rise when output and employment pick up. We have already seen that wage growth can accelerate sharply in periods. High oil prices may also have a greater impact on consumer prices than seen so far. In addition, stronger external price impulses from our trading partners may result in higher-than-expected imported inflation.

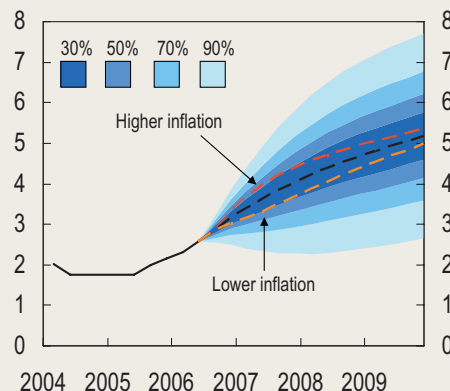
A possible monetary policy reaction to such an alternative profile where growth in the Norwegian economy is stronger than assumed and inflation rises faster than expected is illustrated in Chart 1.11a.<sup>4</sup> The outcome for inflation and the output gap is illustrated in Charts 1.11b-c.<sup>5</sup> Such a development suggests, in isolation, a faster increase in interest rates than in the baseline scenario in order to prevent the persistence of the high output gap level and inflation from overshooting the target after a period.

<sup>3</sup> It is assumed that the central bank applies the interest rate in the baseline scenario during the first months, and does not react to disturbances until autumn 2006. Other market participants, households and enterprises are also uncertain whether the economy will follow a different path before that time. The background for the delayed reaction is that it may take time to realise that the economy is moving on a different path.

<sup>4</sup> The output gap is assumed to rise by 1 percentage point in relation to the baseline scenario.

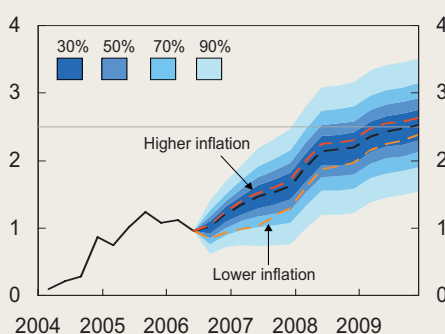
<sup>5</sup> This alternative is also based on the assumption that it takes time to reveal the causes and to adjust monetary policy.

**Chart 1.11a** Sight deposit rate in the baseline scenario and in the alternatives with lower (yellow line) and higher (red line) inflation. Per cent. Quarterly figures. 04 Q1 – 09 Q4



Source: Norges Bank

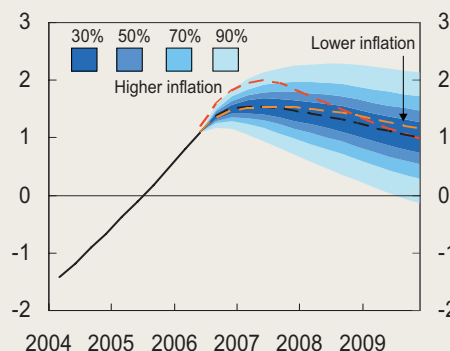
**Chart 1.11b** Projected CPI-ATE<sup>1)</sup> in the baseline scenario and in the alternatives with lower (yellow line) and higher (red line) inflation. 4-quarter change. Per cent. 04 Q1 – 09 Q4



<sup>1)</sup> CPI-ATE: CPI adjusted for tax changes and excluding energy products. A further adjustment is made for the estimated effect of reduced maximum day-care rates from January 2006.

Sources: Statistics Norway and Norges Bank

**Chart 1.11c** Estimated output gap in the baseline scenario<sup>1)</sup> and in the alternatives with lower (yellow line) and higher (red line) inflation. Per cent. Quarterly figures. 04 Q1 – 09 Q4

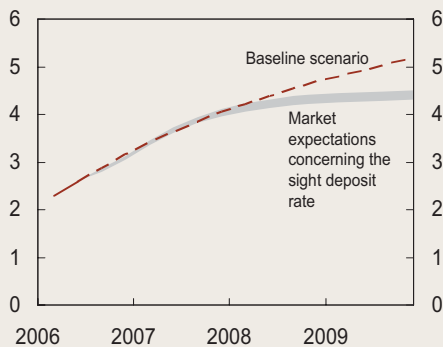


<sup>1)</sup> Uncertainty surrounding the current situation is not taken into account when calculating the fan chart.

Source: Norges Bank

## Cross-checks

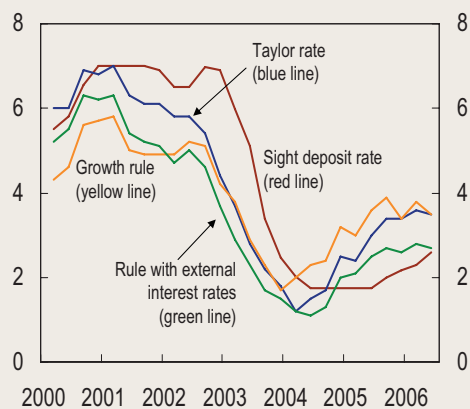
**Chart 1.12** Sight deposit rate in the baseline scenario and market expectations concerning the sight deposit rate<sup>1)</sup>. Per cent. Quarterly figures. 06 Q1 – 09 Q4



<sup>1)</sup> Derived from estimated forward rates. A credit risk premium and a technical difference of 0.20 percentage point were deducted in calculating the sight deposit rate. The grey, shaded interval shows the highest and lowest interest rates in the market's sight deposit rate path in the period 9 – 22 June 06.

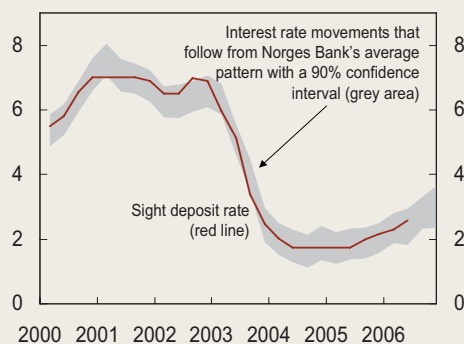
Source: Norges Bank

**Chart 1.13** Sight deposit rate, Taylor rule, growth rule and rule with external real interest rates. Per cent. Quarterly figures. 00 Q1 – 06 Q2



Source: Norges Bank

**Chart 1.14** Sight deposit rate and interest rate developments that follow from Norges Bank's average pattern for the setting of interest rates<sup>1)</sup>. Per cent. Quarterly figures. 00 Q1 – 06 Q4



<sup>1)</sup> The interest rate movements are explained by developments in inflation, mainland GDP growth, wage growth and 3-month interest rates among trading partners. See Inflation Report 3/04 for further discussion.

Source: Norges Bank

Market expectations, as reflected in forward rates, will be a way of cross-checking the Bank's interest rate forecast. Estimated forward rates have risen somewhat since the previous *Report*. Long-term forward rates have shown the strongest rise, moving up by about ½ percentage point. There are now expectations that the key rate will increase gradually to 4½% in 2009 (see Chart 1.12). The interest rate forecast in this *Report* largely follows market expectations up to the latter half of 2008. Thereafter, Norges Bank's interest rate forecast is somewhat higher than market interest rate expectations. Market participants may have a different perception of the interest rate path necessary to stabilise inflation at target. The difference for long-term interest rate expectations remains virtually unchanged since the previous *Report*.

Simple monetary policy rules seem to indicate that the interest rate is too low at present (see Chart 1.13). The Taylor rule<sup>6</sup> applies the output gap and inflation. The growth rule<sup>7</sup> instead applies observed GDP growth and inflation. The rules have some limitations as a reference for a small, open economy. An immediate increase in the interest rate level in line with the rules will probably entail a marked appreciation of the krone so that it takes considerably longer for inflation to reach target.

The rule involving external interest rates should be better suited for a small, open economy.<sup>8</sup> This rule implies a somewhat lower interest rate than the other rules because external interest rates are low.

Norges Bank has also estimated a reaction function on the basis of the Bank's previous interest rate setting (see box in *Inflation Report 3/04*). A rule based on this reaction function suggests some degree of tightening up to end-2006 (see Chart 1.14). The reaction function implies higher interest rates ahead primarily as a result of high GDP growth. The reaction function entails approximately the same interest rate as in the previous *Report*.

Other more long-term developments can shed light on relationships between monetary policy and inflation. Historically, there has been a relationship between inflation and M2 growth (see box for further analysis).

<sup>6</sup> The Taylor rule: Interest rate = Inflation target + equilibrium real interest rate + 1.5 (inflation – inflation target) + 0.5 output gap. See Taylor J.B. (1993): "Discretion versus policy rules in practice", Carnegie-Rochester Conference Series on Public Policy 39, pages 195-214. We have used the CPI-ATE as a measure of inflation. Other measures of underlying inflation, that have been higher than CPI-ATE inflation, entail a higher interest rate path.

<sup>7</sup> Growth rule: Interest rate = Inflation target + equilibrium real interest rate + 1.5 (inflation – inflation target) + 0.5 growth gap. Athanasios Orphanides proposes to replace the output gap with the difference between actual growth and trend growth in the economy (growth gap). One reason for this is that the Taylor rule is sensitive to errors in the measurement of the output gap. See Orphanides A. (2003): "The quest for prosperity without inflation", *Journal of Monetary Economics*, vol. 50, Number 3 pages 633-663.

<sup>8</sup> The external real interest rate rule: Interest rate = inflation target + equilibrium real interest rate + 1.5 (inflation – inflation target) + 0.5 output gap + 1.0 (real interest rate among Norway's trading partners – real interest rate in Norway).

## Conclusions – monetary policy strategy

The Executive Board's assessment is:

- Growth in the Norwegian economy appears to be higher in 2006 than projected earlier. There are prospects that inflation will pick up, but this may take time. The subdued rise in prices for domestically produced goods and services in recent months may be a sign of strong productivity growth and increased competition. At the same time the krone exchange rate is strong. Developments since the March *Report* still indicate that inflation will gradually pick up.
- The interest rate path presented in this *Report* will provide a reasonable balance between the objective of bringing up inflation towards target and the objective of stabilising developments in output and employment, conditional on the information currently available to Norges Bank.
- The interest rate may gradually – in small, not too frequent steps – be brought back towards a more normal level.
- The sight deposit rate should be in the interval 2¾ - 3¾% in the period to the publication of the next *Inflation Report* on 1 November 2006, conditional on economic developments that are broadly in line with projections. New information may reveal aspects of economic developments that indicate that the Norwegian economy is moving on a different path than projected. On the one hand, marked trade shifts, strong competition and a strong krone exchange rate may result in low inflation. On the other hand, low real interest rates may lead to a higher-than-projected rise in output and inflation. Interest rate setting must be assessed in the light of the reasons for, and the duration of the disturbances.



# Money, credit and prices - a monetary cross-check

Trend money growth can be indicative of the trend rise in prices and a rough cross-check against inflation projections generated by other models.

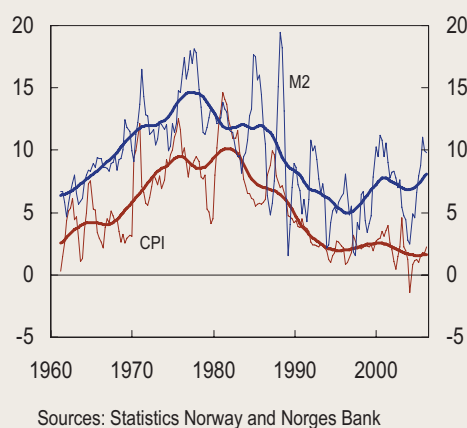
Recent studies of the relationship between money and prices in the euro area apply statistical methods that distinguish between high-frequency and low-frequency movements in economic time series.<sup>1</sup> Such methods can be useful when economic variables show wide and erratic short-term variations that obscure useful information in trend, long-frequency movements. Euro-area studies indicate that there may be a positive correlation over time between trend inflation and trend money growth.<sup>2</sup>

We have used the same methodology for Norwegian data. Chart 1 shows the rise in consumer prices and M2 growth - and the trend rate for the two variables - since 1961. There seems to be wide and apparently erratic quarterly variations in both inflation and money growth, but the low-frequency components show that over time there has been a positive correlation between the trend rise in the two variables. There is a tendency for higher money growth to be accompanied by higher price inflation and lower money growth to be accompanied by lower inflation.<sup>3</sup>

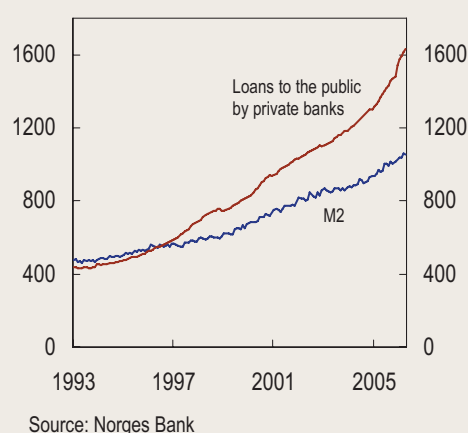
In recent years, consumer price inflation has exhibited a falling trend. A lower rise in consumer prices may reflect favourable supply-side conditions in Norway and the global economy. Prices for imported goods have fallen. Competition in product markets has increased and productivity growth has been high at home and abroad.

The trend rate of money growth has increased, however. Higher money growth must be seen in the light of strong growth in the Norwegian economy with an accommodative monetary stance and high credit growth. Chart 2 shows developments in banks' lending and money growth. Credit and money are complementary variables, banks' lending and deposits respectively. The chart indicates that high credit growth has been an important factor behind higher money growth. The increase in lending is used to finance consumption and investment - such as housing - and translates into an increase in money growth. While favourable conditions on the production side both in the domestic and international economy are exerting downward pressure

**Chart 1** Consumer prices (CPI) and money supply (M2). Computed trend growth. 4-quarter growth. Per cent. 61 Q1 - 06 Q1



**Chart 2** Money supply (M2) and loans to the public by private banks. In billions NOK. Monthly figures. Jan 93 - Apr 06



on consumer prices, high credit growth has resulted in higher money growth.

In recent years, a wider deviation between trend monetary growth and trend inflation has been observed (see Chart 1).<sup>4</sup> The correlation between these variables in Norway does not provide a clear picture of the causal relationship between them.<sup>5</sup> The implications of the wide deviation are therefore not clear. On the one hand, it cannot be ruled out that the low rate of inflation in recent years will gradually push down monetary growth. The high rate of money growth may, however, also indicate that demand growth in the economy is strong and that inflation will gradually pick up.

## References

Bårdsen, G., Ø. Eitrheim, E. S. Jansen and R. Nymoén (2005) “The Econometrics of Macroeconomic Modelling”, Oxford University Press.

Bruggeman, A., G. Camba-Mendez, B. Fischer and J. Sousa (2005) “Structural filters for monetary analysis: The inflationary movements of money in the euro area”, Working Paper 470, European Central Bank, see [www.ecb.int](http://www.ecb.int).

Eitrheim, Ø. (1998) “The demand for broad money in Norway, 1969 – 1993”, *Empirical Economics*, 23, 339-354.

Pill, H. (2006) “Communication, money and monetary policy”, presentation at the conference “Evaluating monetary policy” in Norges Bank 30 March 2006, see [www.norges-bank.no](http://www.norges-bank.no).

<sup>1</sup> An economic time series can more precisely be broken down into three components (i) low-frequency, long-term movements (ii) movements that follow the business cycle and (iii) short-term noise. Low-frequency movements are those that express the long-term trend in the series. Pill (2006) showed applications of the method in a presentation given at the conference “Evaluating monetary policy” at Norges Bank on 30 March 2006. For a further description of the method, see for example Bruggeman, Camba-Mendez, Fischer and Sousa (2005).

<sup>2</sup> See Pill (2006).

<sup>3</sup> The correlation between inflation and money growth is probably strongest when inflation either rises or falls markedly, as in the 1970s and the 1980s. It is nevertheless reasonable to believe that there must be a relationship between trend inflation and trend money growth also when inflation remains low and stable over time.

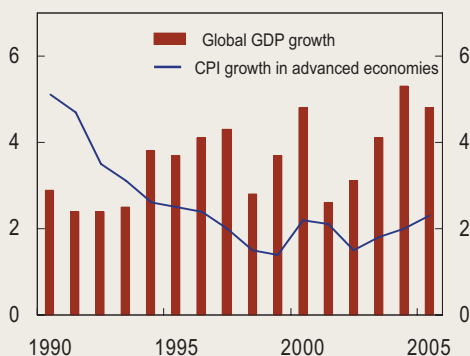
<sup>4</sup> According to the quantity theory of money, the deviation between money growth and inflation reflects growth in the economy and changes in money velocity.

<sup>5</sup> See Eitrheim (1998) for an empirical analysis of these causal relationships using Norwegian data, and see Chapter 8 in the book *The econometrics of macroeconomic modelling* by Bårdsen, Eitrheim, Jansen and Nymoén (2005) for a further analysis of the relationship between money growth and inflation using both data for Norway and the euro area.

## 2 | International conditions

### Economic developments

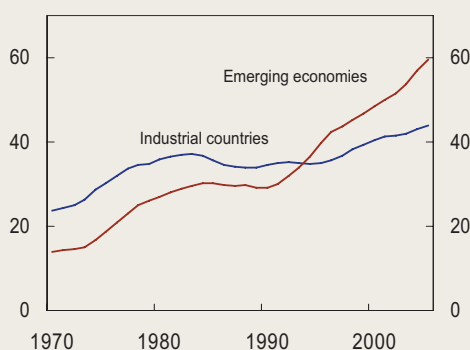
**Chart 2.1** Global GDP<sup>1)</sup> and consumer prices in advanced economies. Annual change. Per cent. 1990 – 2005



<sup>1)</sup> Growth rates are aggregated using purchasing power parity weighted GDP.

Source: IMF

**Chart 2.2** International trade<sup>1)</sup> as a share of GDP. 5-year moving average. Annual figures. 1970 – 2005



<sup>1)</sup> Sum of imports and exports.

Source: IMF

**Table 2.1** Projections for GDP growth in other countries. Change from previous year. Per cent

	2006	2007	2008	2009
US	3¼	2¾	3	3
Japan	3	2	1½	1¼
Germany	1¾	1½	1½	1½
France	2	2	2	2
UK	2¼	2½	2½	2½
Sweden	3¾	2¾	2½	2¼
Trading partners <sup>1)</sup>	3	2½	2½	2½
Euro area <sup>2)</sup>	2	2	2	2
China <sup>3)</sup>	10	9	9	8

<sup>1)</sup> Export weights

<sup>2)</sup> Weights from Eurostat

<sup>3)</sup> Projections from Consensus Forecasts

Sources: Consensus Forecasts and Norges Bank

Global growth has been high in recent years. At the same time, the rise in consumer prices in advanced economies has been low (see Chart 2.1). Increased globalisation, with strong growth in international trade and intensified competition, has probably contributed to pushing down consumer price inflation (see Chart 2.2). High productivity growth has resulted in a fall in prices or a very low rise in prices for some goods. Increased monetary policy credibility has also contributed to keeping inflation low.

Growth in the US and in China has been high for a long period. In 2005, growth in Japan picked up, and this year the conditions are in place for increased growth in the euro area. Since *Inflation Report* 1/06, however, the prospect of increased inflationary pressures has led to expectations of higher policy rates and long-term interest rates. At the same time, the volatility in financial and commodity markets has increased somewhat, and recently there has been a broad-based fall in equity prices. This may indicate that equity market participants are somewhat more uncertain with respect to developments ahead and are less willing to take risk. This may also be a reaction to the sharp rise in equity prices earlier this year, particularly in emerging economies. So far, however, current statistics for most countries show few signs of a slowdown in the real economy. Our assessment is that global growth will moderate between this year and next, but that growth will remain firm in line with previous projections.

### Favourable growth prospects

The upturn over the past few years was partly set into motion by an expansionary economic policy in many countries. Since then, fiscal policy has been tightened somewhat, and key rates have increased. Fiscal policy is expected to be neutral ahead, with a continued rise in interest rates.

GDP growth among Norway's trading partners appears to be high this year, and is expected to remain strong for the next few years (see Table 2.1). We have previously assumed that the difference in growth rates among major OECD countries will narrow. Developments since the previous *Inflation Report* have moved in this direction. This will be beneficial in view of the substantial imbalances in the global economy. Compared with *Inflation Report* 1/06, GDP growth among our trading partners has been revised up slightly for 2006, largely because first-quarter growth was somewhat stronger than expected.

Growth in the US has been strong in recent years. Private consumption has been one of the main driving forces behind the upturn, with rapidly rising house prices boosting growth in consumption. The housing market has been expected to weaken ahead. This has now come into clear evidence as

reflected in slower house price inflation and lower housing start figures. Housing investment is projected to fall in the period ahead, and consumption growth is projected to moderate. However, solid business sector profitability will probably contribute to increased investment and employment growth, resulting in only marginally lower total growth.

Growth in the euro area has picked up (see Chart 2.3) and appears to be broad-based. Business sentiment indicators for manufacturing are now higher than observed for a long period (see Chart 2.4), and business sector profitability is solid. We therefore expect continued investment growth and higher employment. Household confidence in economic developments has improved, indicating that consumption will increase further in the period ahead. However, growth probably remains vulnerable to a further appreciation of the euro.

Growth in the UK has gathered pace again, and there are signs that industrial output is increasing. At the same time, growth in the service sector is continuing. However, employment growth is low, and unemployment has increased. In spite of a renewed rise in house prices, consumption growth is projected to be moderate. Solid growth in export markets, increased investment and continued consumption growth will contribute to supporting growth in the period ahead.

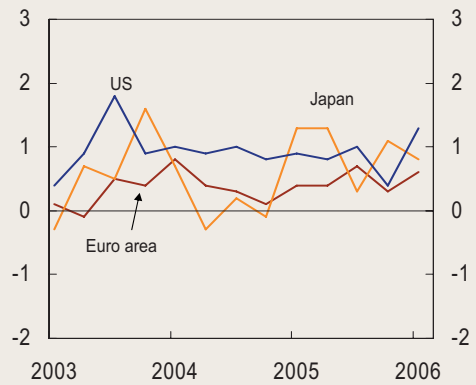
The Swedish economy has expanded at a markedly faster pace so far this year. Strong growth among the country's trading partners, solid corporate profitability, an expansionary fiscal policy and low interest rates are driving the upturn. Growth is assumed to decline towards the trend in the next few years.

The Chinese economy is still expanding at a very high rate. Investment growth is the most important driving force, but private consumption is also increasing at a rapid pace. Growth is expected to remain buoyant.

In Japan, continued solid business sector profitability and an improvement in the labour market indicate that the broad-based recovery will continue. Growth is nevertheless expected to decline gradually towards the economy's long-term growth capacity.

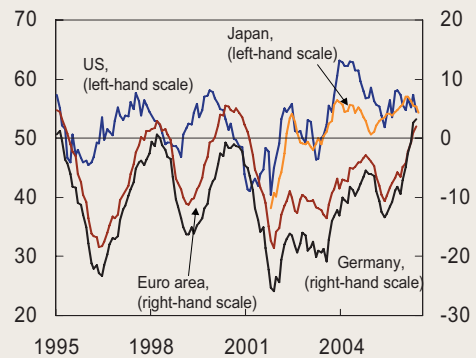
As a result of solid growth in recent years, capacity utilisation in the US and Japan is approximately normal at present. In the UK, weak growth in 2005 eased pressures in the economy, and there is probably a limited margin of spare capacity. There is still some margin of spare capacity in Sweden. For the euro area, capacity utilisation is expected to remain lower than normal for a few years ahead.

**Chart 2.3** GDP growth in the US, the euro area and Japan. Seasonally adjusted quarterly growth. Volume. Per cent. 03 Q1– 06 Q1



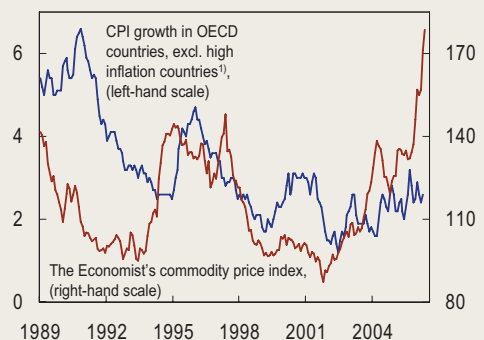
Sources: EcoWin and Norges Bank

**Chart 2.4** Business sentiment indicators for manufacturing. Seasonally adjusted diffusion indices. Monthly figures. Jan 95 – May 06



Source: EcoWin

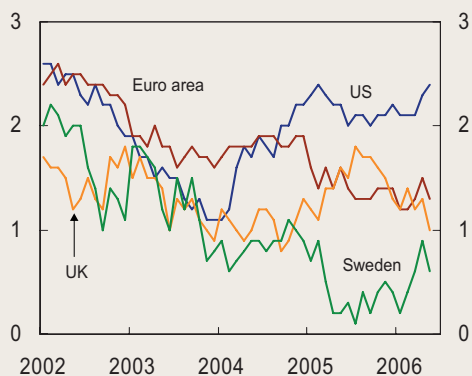
**Chart 2.5** Commodity prices and inflation. Commodity price index 2000 = 100. 12-month change in CPI. Per cent. Monthly figures. Jan 89 – May 06



<sup>1)</sup> Excluded countries are Turkey, Czech Republic, Hungary and South Korea.

Sources: EcoWin, OECD and Norges Bank

**Chart 2.6** Core inflation.<sup>1)</sup> 12-month change. Per cent. Jan 02 – Apr 06



<sup>1)</sup> US: CPI excl. food and energy. Euro area, UK and Sweden: CPI excl. energy, food, alcohol and tobacco.

Sources: EcoWin and Norges Bank

**Table 2.2** Projections for consumer prices in other countries. Change from previous year. Per cent

	2006	2007	2008	2009
US	3½	2½	2½	2½
Japan	¾	1	1¼	1¼
Germany	2	2½	1¾	1¾
France	2	1¾	2	2
UK	2¼	2	2	2
Sweden	1½	2¼	2¼	2
Trading partners <sup>1)</sup>	2¼	2¼	2¼	2
Euro area <sup>2)</sup>	2¼	2¼	2	2
China <sup>3)</sup>	2	2½	3	3

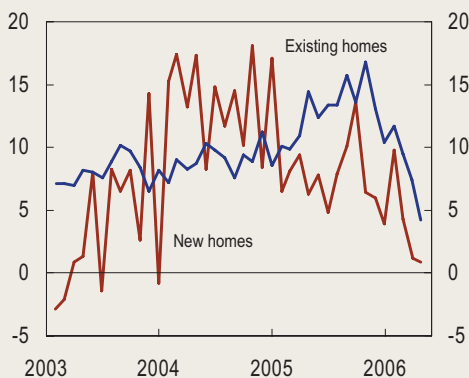
<sup>1)</sup> Import weights, Norway's 25 most important trading partners

<sup>2)</sup> HICP. Weights from Eurostat (each country's share of total euro area consumption)

<sup>3)</sup> Projections from Consensus Forecasts

Sources: Consensus Forecasts and Norges Bank

**Chart 2.7** House prices in the US. Median price in USD. 12-month change. Jan 03 – Apr 06



Sources: EcoWin and Norges Bank

## Stronger inflationary impulses, but still moderate inflation

Inflation remains moderate among trading partners, even though high energy and commodity prices have fed through to inflation to some extent.

Energy and commodity prices have increased considerably for several years, and since the beginning of the year commodity prices measured in USD have risen by a further 14% (see Chart 2.5). Whereas the increase in energy and non-oil commodity prices has had little impact on core inflation to date (see Chart 2.6), the feed-through to consumer prices has been more pronounced, particularly in 2004 and 2005. The year-on-year rise in consumer prices has accelerated somewhat in recent months, partly because oil and non-oil commodity prices have risen again. The rise in producer prices has gathered pace. The increase is partly due to the fact that energy products and commodities are directly included in producer price indices. The increase in prices for these products may also have led to a rise in prices for other products, particularly for commodity- and energy-intensive products.

When commodity prices began to rise, there was substantial idle capacity in the global economy. High unemployment may have curbed demands for wage compensation for higher energy prices. Companies in many countries have posted very high earnings, which may have limited their need to pass on higher energy costs to product prices. Increased competition and globalisation may also have made companies more reluctant to pass on cost increases to prices and employees more cautious with respect to wage demands.

As idle resources are gradually employed, and pressures in the economy increase, wage growth may pick up. If prices are not increased, corporate margins may be reduced. The rise in oil and non-oil commodity prices may feed through to other prices to a greater extent than we have seen so far, as indicated by recent inflation developments in some countries. The rise in energy and non-oil commodity prices since the March *Inflation Report* indicates that inflation among our trading partners may be about ¼ percentage point higher this year and in 2007 than projected in *Inflation Report* 1/06.

It is nonetheless assumed that idle capacity in some countries and monetary policy tightening will contribute to continued moderate inflation (see Table 2.2). Futures prices indicate relatively stable oil prices in the period ahead. Where higher energy prices have fed through to consumer prices, it is assumed that the rise in prices will slow relatively rapidly again. This may change if energy prices should rise further.

## Important risk factors persist

Energy and commodity prices have remained high for a long period. So far, the rise in prices for commodities may have been perceived as temporary. If the rise now is regarded as more permanent, the spillover from higher costs to other

prices may be greater than expected. If inflation projections are to be revised upwards in the period ahead, interest rates will probably rise more than implied in the current outlook. This would have a dampening effect on growth among trading partners. More moderate growth prospects could also result in a further fall in equity prices. This could amplify the negative impact on consumption and investment.

There are still imbalances in the US economy, with large trade and budget deficits and low household saving. There are signs of a slower rise in house prices (see Chart 2.7) and a lower level of activity in the housing market, which may gradually lead to increased household saving. The dollar has also depreciated somewhat since *Inflation Report 1/06*, without any considerable problems for other countries. If corrections in saving behaviour or the dollar exchange rate are sufficiently abrupt and pronounced, growth could weaken substantially. A sharp downturn in the US would have negative consequences for the wider global economy. The export-driven Asian economies would be particularly vulnerable, and some euro area countries also have substantial export sectors which would be adversely affected.

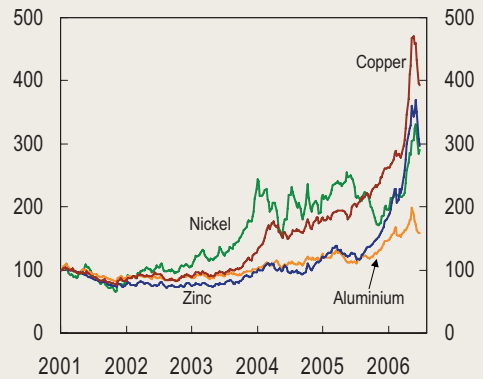
The high investment level in China may have led to investments which in retrospect will prove unprofitable. This could lead to an abrupt drop in investment and curb economic growth. A sudden downturn in China would be felt by other countries first and foremost in the form of weaker export opportunities and weaker commodity and freight markets. Such an evolution could have a negative impact on the Norwegian economy.

On the other hand, corporate earnings in many countries are solid, and investment may increase more rapidly than we have assumed. In Europe, it is also possible that increased employment and signs of greater optimism may result in higher-than-expected consumption growth.

## Commodity markets

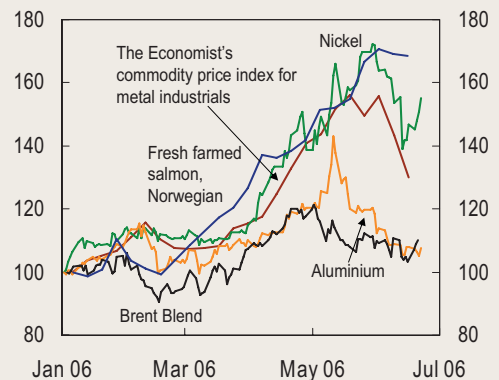
The international expansion has contributed to a sharp rise in commodity prices. The rise in metal prices has been particularly high (see Charts 2.8 and 2.9). Since the beginning of the year, prices for copper and zinc have risen by 50% and 60%, respectively. Although prices have dipped recently, they remain very high. Strong economic growth and increased demand for metals in China are one of the main factors behind the high level of prices. A rise in prices for important factor inputs such as energy and non-oil commodities may also account for a portion of the rise in these prices. Financial operators' participation in commodity markets has probably contributed to both the price rise this spring and the recent fall. Prices for metals for forward delivery have also risen since the previous *Inflation Report*. Forward prices appear to follow developments in spot prices to a large extent.

**Chart 2.8** Spot metal prices in USD. Indices, Week 1 2001 = 100. Weekly figures. Week 1 2001 – week 25 2006



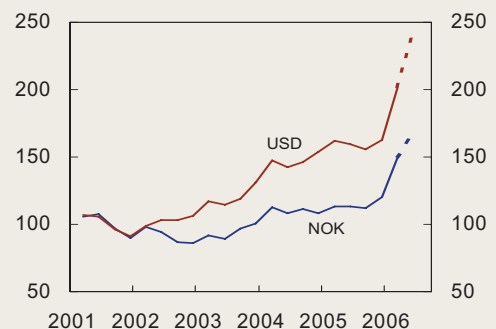
Sources: EcoWin and Norges Bank

**Chart 2.9** Commodity prices in USD. Indices, 2 Jan 06 = 100. Daily and weekly figures. 2 Jan 06 – 22 Jun 06



Sources: EcoWin and Norges Bank

**Chart 2.10** Price index<sup>1)</sup> for export of non-ferrous metals<sup>2)</sup> from Norway in USD and NOK. 2001 = 100. Quarterly figures. 01 Q1 – 06 Q2<sup>3)</sup>



<sup>1)</sup> Norges Bank's estimates are based on the world market prices.

<sup>2)</sup> Aluminium, nickel, copper and zinc.

<sup>3)</sup> Projections for 2006 Q2 are based on information in the period to 22 June.

Sources: EcoWin, Statistics Norway and Norges Bank

**Chart 2.11** Oil price (Brent Blend) in USD per barrel. Daily figures. 2 Jan 03 – 22 Jun 06. Futures prices from 10 Mar and 22 Jun 06. Monthly figures. Apr 06 – Dec 08



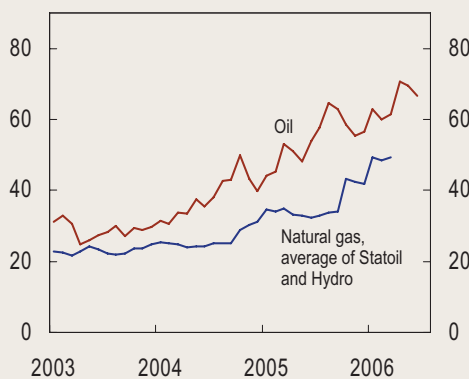
Sources: EcoWin, Reuters and Norges Bank

**Chart 2.12** Petrol stocks in the US. In million barrels. Weekly figures. Week 1 2003 – week 24 2006



Source: Energy Information Administration (EIA)

**Chart 2.13** Crude oil prices (Brent Blend) and prices for Norwegian natural gas exports. USD per barrel oil-equivalent. Monthly figures. Jan 03 – Jun 06<sup>1)</sup>



<sup>1)</sup> The oil price in June is the average price up to and including 22.

Sources: Reuters, Statoil, Hydro and Norges Bank

For Norwegian exports, the effect of the strong rise in metal prices has been dampened by the depreciation of USD. Chart 2.10 shows movements in a price index for non-ferrous metals measured in USD and NOK. The weights in the index reflect the composition of Norwegian exports. Whereas prices for these commodities have doubled since 2001 measured in USD, the rise is about half as large measured in NOK. The high prices have nonetheless contributed to an improvement in Norway's terms of trade in recent years, also for non-oil commodities.

### *The oil market*

In the last two years, oil prices have doubled, measured in USD. Broad-based, strong global growth has led to a sharp rise in demand for oil. Production capacity has not increased in pace with demand. With limited spare production capacity, even minor disruptions to supply or demand may have a relatively strong impact on prices.

The increase in oil prices in recent months primarily reflects supply-side factors. Production disruptions in the US, Russia, Nigeria and Iraq have contributed to the current oil price of around USD 70 per barrel. The tense situation surrounding Iran's nuclear programme has had a relatively strong effect on oil prices. It is likely that global growth will remain buoyant in 2005. This may sustain oil prices at a high level. Futures prices imply an oil price of over USD 70 per barrel over the next few years (see Chart 2.11).

Conditions in the US petrol market have a strong influence on international petrol prices. Petrol inventories fell rapidly through spring, and are still lower than one year earlier (see Chart 2.12). Fuel regulations will be tightened in the US this year, and there are fears that hurricanes may hit US refineries again this year. These factors are behind the very high level of petrol prices internationally, also compared with the price of crude oil.

A sustained period of high oil prices may reduce demand. Consumers may increase their efforts to cut oil consumption both by improving energy efficiency and by switching to other sources of energy. In recent months, the International Energy Agency (IEA) has revised downwards its projection for growth in oil demand in 2006, partly against the background of lower-than-expected consumption so far this year and a relatively mild winter. The IEA also notes that high oil prices may have a dampening effect on demand. The reduction in price subsidies for oil products in a number of countries may amplify this effect.

The export price for Norwegian natural gas largely follows developments in oil prices, with a time lag. Since autumn 2005, prices for Norwegian gas exports have risen substantially according to the quarterly reports of the oil companies Statoil and Hydro (see Chart 2.13). In the next few years, natural gas will account for a steadily rising share of total petroleum production on the Norwegian continental shelf.

## Developments in financial markets

### *Added uncertainty in fixed income markets*

Since the previous *Inflation Report*, policy rates have been raised by 0.5 percentage point in the US, Canada and Switzerland and 0.25 percentage point in the euro area, Sweden and Australia. Short-term expectations concerning policy rates have increased in most countries (see Chart 2.14). Both a favourable growth outlook and prospects for higher inflation have contributed to this upturn. The US Federal Reserve is expected to raise its policy rate by 0.5 percentage point in the course of the summer. Thereafter, market participants consider an unchanged policy rate as the most likely profile. Policy rates in the euro area and Sweden are expected to increase by 0.75 and 1.0 percentage point, respectively, in the next 12 months. Market participants expect the policy rate in the UK to be raised by 0.5 percentage point in the next year, and that the Japanese central bank will depart from its zero-interest rate policy in the course of the summer and raise its policy rate by a total of 0.75 percentage point in the next 12 months.

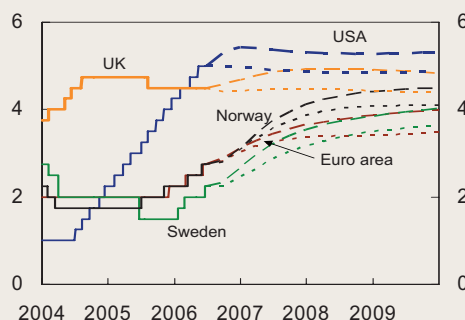
In Norway, the key rate was raised by 0.25 percentage point on both 16 March and 31 May, and is now 2.75%. Expectations regarding future key rates have increased a little less in Norway than among our trading partners. Market participants expect the key rate to be raised by 1.0 percentage point over the next year. At end-2009, the key rate is expected to be lower in Norway than in the US and the UK, but higher than in the euro area and Sweden.

Norwegian long-term interest rates have largely paralleled movements in international interest rates. Long-term rates in the US, the euro area and the UK have risen since the March *Inflation Report*. In early May, however, the upward movement came to a halt (see Chart 2.15). The prospect of higher inflation and higher key rates added to the uncertainty surrounding the growth outlook, and long-term interest rates edged back. Growing concern about the outlook for growth has also caused a fall in equity and commodity markets. The fall has been particularly pronounced in emerging economies. The turbulence in equity and commodity markets has in turn increased interest in safe investment instruments such as government bonds.

A number of factors may have contributed to the very low long-term interest rates observed in recent years. In earlier *Reports*, we pointed to factors such as low inflation expectations, high demand for long-term bonds and an ample supply of short-term liquidity as a result of low policy rates. The contribution from these factors appears to have receded somewhat since the March *Inflation Report*.

Long-term interest rates are still relatively low in most industrial countries, however (see Chart 2.16). In the euro area and Japan, this is probably related to the fact that potential growth is lower than in the US. A number of fac-

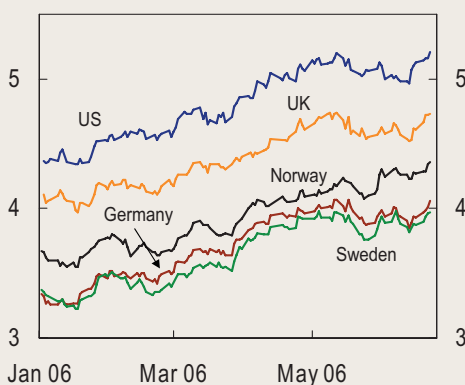
**Chart 2.14** Interest rate expectations. Actual developments and expected key rates on 10 Mar and 22 Jun 06.<sup>1)</sup> Daily and quarterly figures. 1 Jan 04 – 1 Jan 10



<sup>1)</sup> Broken lines show expectations on 22 June 2006. Dotted lines show expectations on 10 March 2006. Expectations are based on interest rates in the money market and interest rate swaps.

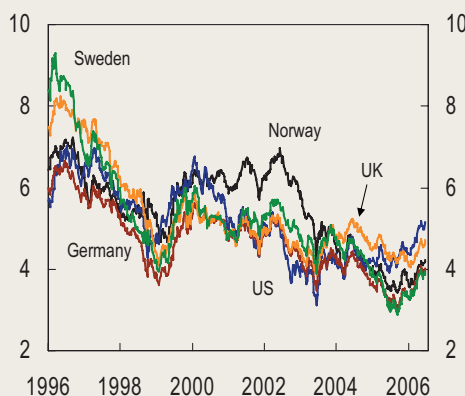
Sources: Reuters and Norges Bank

**Chart 2.15** 10-year yield in various countries. Per cent. Daily figures. 2 Jan 06 – 22 Jun 06



Source: Bloomberg

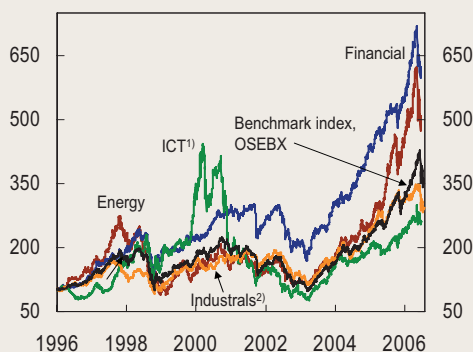
**Chart 2.16** 10-year yield in various countries. Per cent. Weekly figures. Week 1 1996 – Week 25 2006



Source: Bloomberg



**Chart 2.17** Developments in some sub-indices on the Oslo Stock Exchange. 2 Jan 96 = 100. Daily figures. 2 Jan 96 – 22 Jun 06



¹) Average of IT and telecommunications indices.  
²) Average of industrials and materials indices.

Sources: Bloomberg and Norges Bank

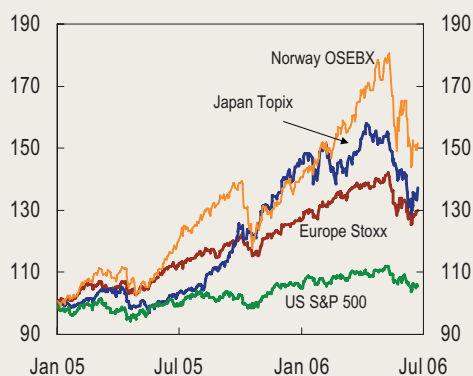
tors may contribute to keeping long-term interest rates low in the period ahead. Underlying inflation remains low in many countries, and a number of countries are facing unresolved structural problems that are placing constraints on their long-term growth potential. Low-cost countries have taken larger market shares and are contributing to keeping price impulses from internationally traded goods at a subdued level. Coupled with high savings in several countries, this may also contribute to continued low long-term rates.

### Wide fluctuations in equity markets

Equity prices in Norway and internationally have shown a general rise since 2003. In the period to mid-May, the Oslo Stock Exchange benchmark index reached a new peak (see Chart 2.17). Corporate performance was higher than expected and high oil prices led to expectations of higher future earnings. Similarly, higher-than-expected corporate profits led to a rise in equity prices internationally. In May, the Morgan Stanley global equity index reached higher levels than the previous record-level just prior to the fall in 1999-2000.

**Chart 2.18** International equity indices.

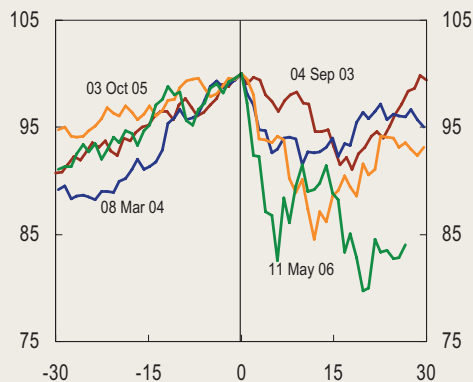
1 Jan 05 = 100. Daily figures.  
3 Jan 05 – 22 Jun 06



Sources: EcoWin and Norges Bank

In mid-May and in June, equity prices dropped sharply (see Chart 2.18). The price fall was particularly sharp in emerging economies and on the Oslo Stock Exchange. The decline in other international equity markets was somewhat less pronounced. Expectations of both higher inflation and higher interest rates contributed to the correction, and developments in commodity prices resulted in a particularly sharp decline in equity prices on the Oslo Stock Exchange (see Chart 2.19). There have been relatively wide fluctuations in equity prices in recent weeks. It is uncertain whether the decline is a short-term correction, or the start of a more persistent decline. Since the previous *Inflation Report*, the Oslo Stock Exchange has fallen by about 2½%. US and European equity markets have fallen by 3% and 5½%, respectively.

**Chart 2.19** Periods of large declines in the benchmark index on the Oslo Stock Exchange 2003 – 2006. Peak in the period (date at curve) = 100. Development 30 business days before/after peak



Sources: EcoWin and Norges Bank

### Developments in the krone exchange rate

The krone appreciated through most of 2004 and 2005. Towards the end of 2005 and in early 2006, the krone depreciated temporarily, but in recent months it has strengthened again (see Chart 2.20). Since the March *Inflation Report*, the krone exchange rate, as measured by the import-weighted exchange rate index (I-44), has strengthened by 1.2%. Foreign exchange market participants point to the favourable outlook for the Norwegian economy as a contributory factor. The real exchange rate has also strengthened. Measured by relative labour costs in a common currency, the real exchange rate is estimated to be about 8.9% stronger this year than the average for 1970-2005 (see Chart 2.21). Measured by relative consumer prices in a common currency, the real exchange rate may be about 8.7% stronger. These estimates are based on exchange rate developments to date in 2006 and the projections for the exchange rate, inflation and wage growth in this *Report*.

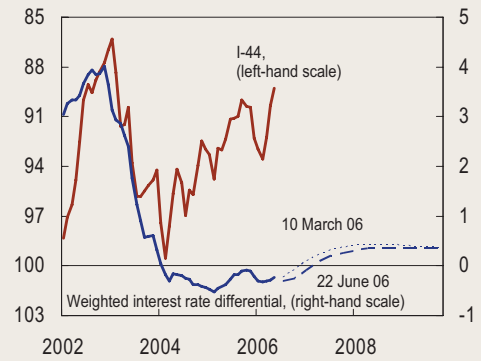
Since mid-March, market interest rate expectations for Norway's trading partners have increased somewhat more than expectations for Norwegian interest rates. In isolation, this would imply a certain depreciation of the krone. Factors other than the interest rate have therefore influenced movements in the krone exchange rate recently.

According to statistics on foreign exchange transactions, foreign market participants now dominate the krone market. Chart 2.22 shows that developments in the krone exchange rate are in fairly close correlation with foreign banks' net purchases of NOK. Market participants note that hedge funds and model-based funds have purchased NOK, but that these positions were reduced somewhat towards the end of the period. Sveriges Riksbank has announced that for diversification purposes they have increased the share of NOK in their foreign exchange reserves from 0 to 10%.

The weakening of the US dollar is one of the factors contributing to the appreciation of the Norwegian krone. The prospect of an end to the tightening cycle in the US, coupled with expectations of higher interest rates in a number of other countries, has made it less attractive to invest in USD. In addition, foreign exchange market participants have become more concerned with the substantial US current account deficit. They have accordingly sold USD and purchased other currencies, including the Norwegian krone. Towards the end of the period, however, this trend has been partly reversed.

The appreciation of the krone since *Inflation Report* 1/06 coincided with a relatively sharp increase in oil prices. Historically, oil prices have influenced the krone exchange rate in some periods, while in others there has been no clear relationship. However, the strong increase in oil prices has apparently induced foreign exchange market participants to give increased weight to oil price developments. The prospect (as expressed in forward prices) that oil prices will remain high in the period ahead is probably an additional incentive to buy NOK. Market participants expect high oil prices to lead to increased petroleum revenue spending in the Norwegian economy, continued strong growth in investment in the petroleum industry and a high share of foreign investors on the Oslo Stock Exchange. Recently, however, the fall in oil prices and growing risk aversion among market participants have prompted selling of NOK, and the krone has depreciated somewhat.

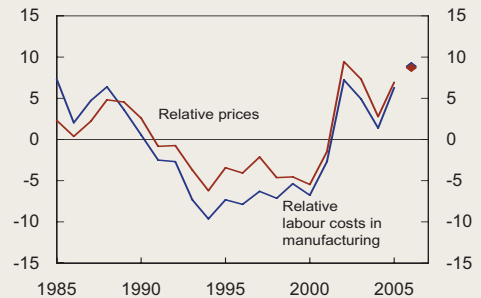
**Chart 2.20** 3-month interest rate differential and import-weighted exchange rate (I-44).<sup>1)</sup> Monthly figures. Jan 02 – Dec 09



<sup>1)</sup> A rising curve denotes a stronger krone exchange rate.

Sources: Reuters and Norges Bank

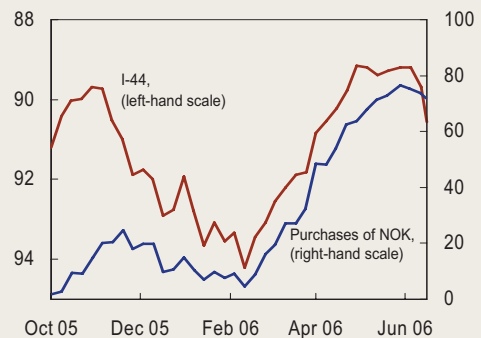
**Chart 2.21** Real exchange rates (relative consumer prices and labour costs in a common currency). Deviation from average 1970 – 2005. Annual figures. Per cent. 1985 – 2006<sup>1)</sup>



<sup>1)</sup> Average nominal exchange rate (TWI), consumer price inflation and wage growth in 2006 are based on the baseline scenario in IR 2/06.

Sources: Statistics Norway, Technical Reporting Committee on Income Settlements, Ministry of Finance and Norges Bank

**Chart 2.22** Foreign banks' net accumulated purchases of NOK (billions) and import-weighted exchange rate (I-44).<sup>1)</sup> Weekly figures. Week 40 2005 – week 25 2006

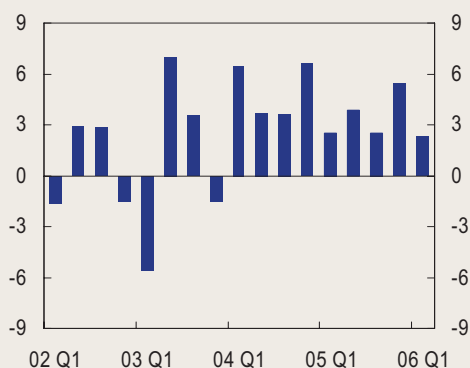


<sup>1)</sup> A rising curve denotes a stronger krone exchange rate.

Source: Norges Bank

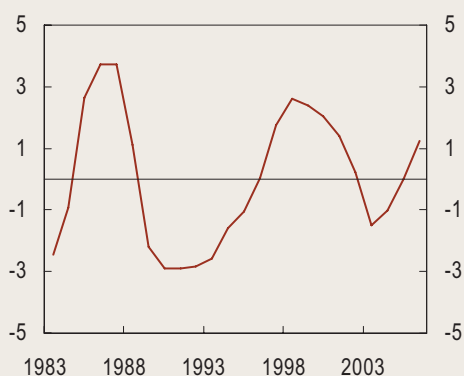
# 3 | Developments in the Norwegian economy

**Chart 3.1** Mainland GDP. Seasonally adjusted, annualised quarterly growth. Per cent. 02 Q1 – 06 Q1



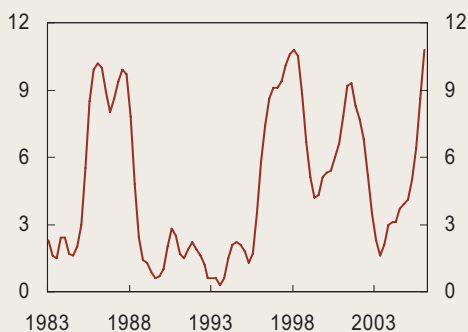
Sources: Statistics Norway and Norges Bank

**Chart 3.2** Estimates of the output gap. Per cent. Annual figures. 1983 – 2006



Source: Norges Bank

**Chart 3.3** Business climate index. Labour shortages in manufacturing.<sup>1)</sup> Smoothed. Per cent. Quarterly figures. 83 Q1 – 06 Q1



<sup>1)</sup> Share of companies reporting that labour shortage is a production constraint.

Source: Statistics Norway

## The economic situation

### *Demand, output and capacity utilisation*

Growth in the Norwegian economy has been high since summer 2003. The reduction in Norges Bank's key rate through 2003 and into 2004 resulted in low interest rates. Low interest rates have contributed to a relatively sharp rise in household demand throughout this upturn. At the same time, solid growth in other countries has generated increased demand and high prices for many Norwegian export goods. Investment in the petroleum sector has risen sharply, resulting in higher demand for goods and services supplied by mainland enterprises. Fixed investment in the rest of the business sector has also gradually edged up.

So far in the upturn, the mainland economy has grown by an average of close to 4% quarterly, measured as an annualised rate (see Chart 3.1). In this period, output has risen more rapidly than potential output. The projections in this *Report* are based on the assumption that mainland GDP was somewhat higher than its potential level in 2006 Q2. Idle capacity has been utilised and the output gap is now positive (see Chart 3.2). The rate of growth this year seems to be somewhat higher than projected in the previous *Inflation Report*.

The output gap reflects our assessment of overall capacity utilisation in the economy in relation to a normal level. In assessing the size of the output gap, technical calculations based on developments in mainland GDP are compared with other information about capacity utilisation in the economy.<sup>1</sup> For example, we receive information about capacity utilisation from our contacts in Norges Bank's regional network. In the last round of interviews, 53% of our contacts reported that they were facing capacity problems. This share has increased, supporting the assessment that the output gap is positive.

Capacity utilisation varies across industries. Reports from the regional network indicate that capacity utilisation is high in the construction industry and in manufacturing, particularly among suppliers to the petroleum industry. There is a shortage of engineers and project managers. Many of our contact enterprises in corporate services also report increasing skills shortages. Idle capacity is reported in retail trade and in household services. Statistics Norway's business tendency survey shows that an increasing share of manufacturing leaders are reporting capacity problems and a shortage of qualified labour (see Chart 3.3). The Directorate of Labour's business survey for 2006 shows that recruitment problems have increased compared with last year, particularly in the property management and

<sup>1</sup> See box on "Norges Bank's estimate of the output gap" in *Inflation Report 2/04* for a more detailed account of methods for estimating the output gap.

commercial services sectors. However, according to the survey, these problems are still less severe than they were in the period 1998-2002.

Labour market developments suggest that resource utilisation is now at a fairly normal level and that the supply of available labour is becoming limited. Normally, the number of people entering the labour market increases when demand for labour rises. Through the first part of the upturn, both the labour force and employment showed moderate growth (see Chart 3.4). However, employment and the labour force picked up markedly into 2006 and are now approximately at their estimated trend levels (see Chart 3.5).

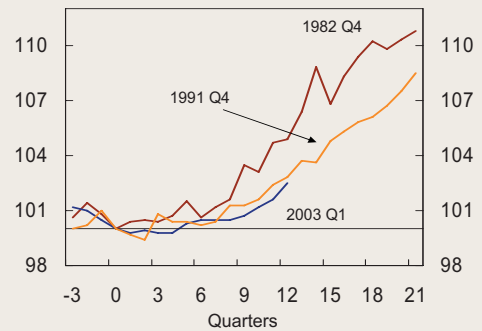
Through the first part of the upturn, output growth was largely due to a sharp increase in person-hours worked. This partly reflected a marked increase in average working hours when sickness absence declined through 2004. Higher activity did not therefore result in substantial labour market tightening. It is likely that there were still available person-hour resources in the economy through 2005. Sickness absence is now increasing again. Even though the rise in the number of person-hours worked has also moderated, it is estimated to be near trend.

Additional labour inflows following the enlargement of the EU in 2004 also contributed to increasing potential output. A substantial share of inward labour migration is accounted for by foreign companies with contracts in Norway. The number of foreign employees from the new EU countries still seems to be rising sharply (see Chart 3.6), increasing the supply of labour, particularly in the construction industry. On the other hand, a rise in sickness absence and in the number of people on disability benefits are pushing down potential output this year.

Higher capacity utilisation is also reflected in the recent marked decline in unemployment, which is now at a low level. At the end of May, registered unemployment adjusted for seasonal factors was 65 900, or 2.7% of the labour force (see Chart 3.7). This is 0.8 percentage point lower than one year ago. Unemployment has declined for all occupational groups, and has been most pronounced in manufacturing, the construction industry and in the engineering and ICT sectors. The number of new job-seekers has declined since the beginning of 2003, and at the end of May this year was at its lowest level since the Directorate of Labour started recording these figures in 1999. Unemployment as measured by Statistics Norway's Labour Force Survey (LFS) has also decreased. Measured as a percentage of the labour force, seasonally adjusted unemployment was 4.0% in the three-month period from February to April, a seasonally adjusted decline of 0.3 percentage point on the previous three-month period.

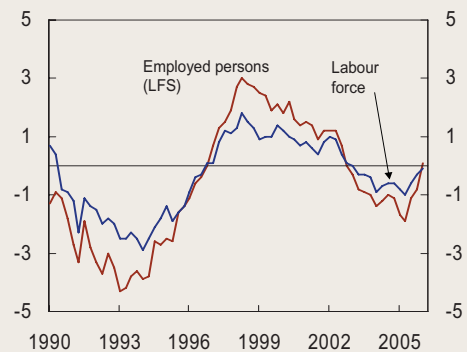
Real wage growth may be an indicator of labour market tightness and so far suggests that the labour market is somewhat less tight than implied by other information.

**Chart 3.4** Number employed (QNA). Developments after the start of a cyclical upturn. Index, quarter 0 = 100



Sources: Statistics Norway and Norges Bank

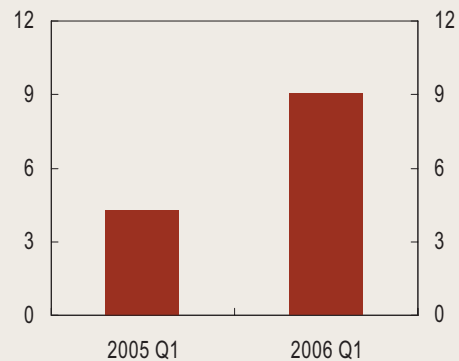
**Chart 3.5** Employment and labour force. Percentage deviation from trend.<sup>1)</sup> Quarterly figures. 90 Q1 – 06 Q1



<sup>1)</sup> Trend calculated using HP-filter. See Staff Memo 2005/2 ([www.norges-bank.no](http://www.norges-bank.no)) for further information.

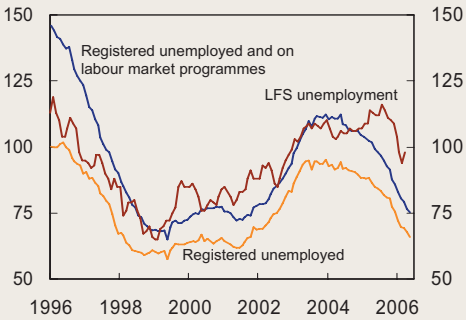
Sources: Statistics Norway and Norges Bank

**Chart 3.6** Number of registered foreign workers from new EU accession countries. In thousands



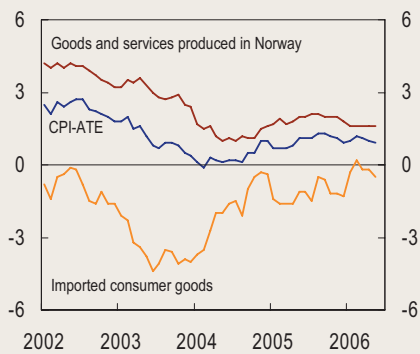
Source: Central Office – Foreign Tax Affairs

**Chart 3.7** Unemployed. LFS unemployment, registered unemployment and persons on ordinary labour market programmes. In thousands. Seasonally adjusted. Monthly figures. Jan 96 – May 06



Sources: Statistics Norway and the Directorate of Labour

**Chart 3.8** CPI-ATE.<sup>1)</sup> Total and by supplier sector.<sup>2)</sup> 12-month change. Per cent. Jan 02 – May 06

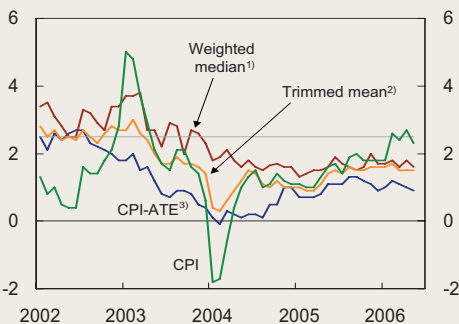


<sup>1)</sup> CPI-ATE: CPI adjusted for tax changes and excluding energy products. A further adjustment is made for the estimated effect of reduced maximum day-care rates from January 2006.

<sup>2)</sup> Norges Bank's calculations.

Sources: Statistics Norway and Norges Bank

**Chart 3.9** CPI and indicators of underlying inflation. 12-month change. Per cent. Jan 02 – May 06



<sup>1)</sup> Estimated on the basis of 146 sub-groups of the CPI.

<sup>2)</sup> Price changes accounting for 20 per cent of the weighting base are eliminated.

<sup>3)</sup> CPI-ATE: CPI adjusted for tax changes and excluding energy products. A further adjustment is made for the estimated effect of reduced maximum day-care rates from January 2006.

Sources: Statistics Norway and Norges Bank

Stable real wage growth, in line with developments in productivity, will be an indication that the labour market is in balance. The level of unemployment that is consistent with such a balance, however, is uncertain and probably varies over time. In spite of the considerable decrease in unemployment towards the end of last year, which has continued so far this year, it does not appear that real wage growth will increase from 2005 to 2006. Solid corporate profitability could also have resulted in higher real wage growth. On the other hand, employment has risen relatively sharply, and various sectors report skills shortages and a limited number of new job-seekers. Norges Bank's therefore judges that the labour market is now tight and consistent with a positive output gap.

In the quarters ahead, growth in the Norwegian economy is expected to be strong and somewhat stronger than projected in the previous *Inflation Report*. Statistical models for GDP growth ahead support this picture (see box on short-term projections). High growth in household demand will continue to fuel activity. Manufacturing output picked up markedly towards the end of last year and has remained at a high level so far this year. Statistics Norway's business tendency survey, combined with a high number of new orders and order backlogs, points to a further pick-up in manufacturing investment. Solid employment growth is expected to continue in the next few quarters, even though the growth rate will probably edge down. The rise in the number of person-hours, however, may be more moderate as a result of higher sickness absence. There are prospects that capacity utilisation in the economy will rise further. The output gap this year is estimated at 1¼%, i.e. ¼ percentage point higher than in the previous *Inflation Report*. The changes in the projections since the previous *Inflation Report* are discussed further in a box.

## Inflation

Once the upturn became more broadly based, inflation began to edge up from the beginning of 2004. In the second half of 2005, the year-on-year rise in consumer prices adjusted for tax changes and excluding energy products (CPI-ATE) varied between 1 and 1½% (see Chart 3.8). The introduction of lower maximum day-care rates from January 2006 has pushed down CPI-ATE inflation by 0.2 percentage point. Adjusted for this, inflation slowed slightly at the beginning of the year and has remained close to 1% in 2006. The rise in energy prices has on average been higher than CPI-ATE inflation over the past 10-15 years, and the CPI-ATE may therefore indicate a level of underlying inflation that is too low. Other indicators of underlying inflation have largely ranged between 1 and 1½% since last summer, and have been higher than the CPI-ATE throughout this period (see Chart 3.9 and box on recent price developments). Our assessment is that underlying inflation is now in this interval.

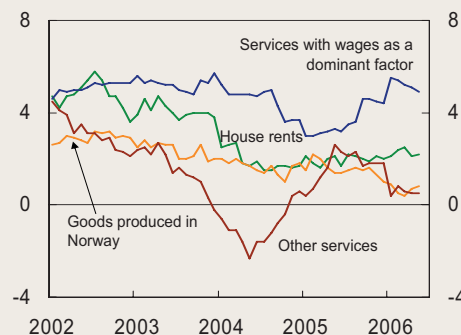
From autumn 2004 to autumn 2005, the rise in prices for domestically produced goods and services picked up. Domestic inflation has fallen back somewhat since the beginning of the year and has been 1.3% so far in 2006. Adjusted for the reduction in day-care rates in January this year, the year-on-year rise in domestic prices has been 1.6%. In *Inflation Report 1/06*, domestic inflation was projected to rise through spring and summer. This has not occurred so far (see Chart 3.10). The rise in prices has been lower than expected for both goods and services. There may be several factors behind the low rise in prices. Strong competition among different producers in the food and building materials industries to sell their products through large chains may have had a moderating impact on inflation. In addition, productivity growth in retail trade has been high in the past few years. Intensified competition may have contributed to curbing the rise in prices for banking and insurance services. The Internet has made it easier to compare prices for these services, and comparisons of prices for financial services are also regularly published in the media. Competition has also intensified due to an increase in the number of foreign banks.

Prices for imported consumer goods have fallen for several years, but so far in 2006 the fall in prices over the past twelve months has decelerated. The rise in prices for imported consumer goods has been somewhat higher than expected. Higher energy and commodity prices have been reflected in higher producer and consumer prices among our trading partners and will also contribute to somewhat higher external price impulses ahead. The appreciation of the krone since the previous *Inflation Report* points in isolation to lower imported price inflation, but will probably have a limited effect this year.

The CPI rose by 2.3% in the twelve months to May 2006. The sharp rise in electricity prices last winter has in particular contributed to widening the difference between the CPI and the CPI-ATE (see Chart 3.11), although petrol prices are also considerably higher than at the same time last year. When information emerged at the end of April that EU quotas for CO<sub>2</sub> emissions in 2006 would not constitute any restriction on the estimated emissions for several countries, market prices for electricity fell sharply. This will result in lower CPI inflation through summer.

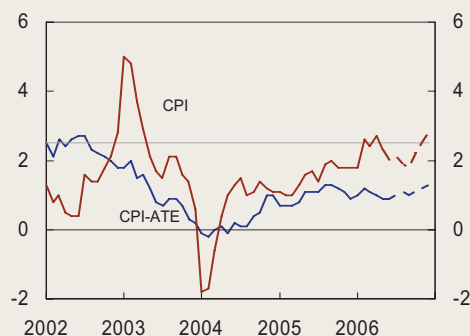
The effect on the year-on-year rise in consumer prices of the slower rise in food prices last autumn will unwind during autumn. In addition, capacity utilisation is increasing in the Norwegian economy. Inflation is assumed to edge up towards the end of the year (see Chart 3.12). If the effects of reduced day-care rates are excluded, the year-on-year rise in the CPI-ATE is projected to be approximately 1½% at the end of the year.

**Chart 3.10** Changes in prices for goods and services produced in Norway. By supplier sector. Adjusted for taxes. 12-month change. Per cent. Jan 02 – May 06



Sources: Statistics Norway and Norges Bank

**Chart 3.11** CPI and CPI-ATE.<sup>1)</sup> 12-month change. Per cent. Jan 02 – Dec 06<sup>2)</sup>

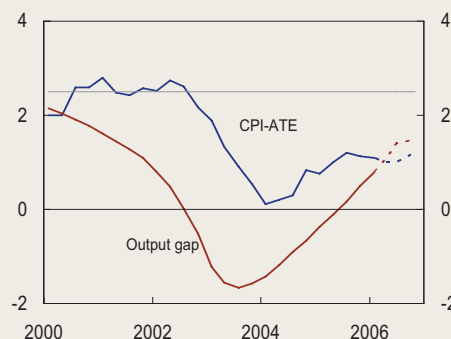


<sup>1)</sup> CPI-ATE: CPI adjusted for tax changes and excluding energy products. A further adjustment is made for the estimated effect of reduced maximum day-care rates from January 2006.

<sup>2)</sup> Projections for period Jun 06 – Dec 06.

Sources: Statistics Norway and Norges Bank

**Chart 3.12** CPI-ATE<sup>1)</sup> and estimates of the output gap.<sup>2)</sup> Per cent. Quarterly figures. 00 Q1 – 06 Q4<sup>3)</sup>



<sup>1)</sup> CPI-ATE: CPI adjusted for tax changes and excluding energy products. A further adjustment is made for the estimated effect of reduced maximum day-care rates from January 2006.

<sup>2)</sup> Quarterly figures for the output gap have been derived from annual figures.

<sup>3)</sup> Projections for period 06 Q2 – 06 Q4.

Sources: Statistics Norway and Norges Bank

## Outlook for the years ahead

### Households

Growth in household demand has been high in recent years and has been an important factor behind the upturn in the Norwegian economy. Lower interest expenses as a result of the decrease in interest rates and relatively high real wage growth have increased household purchasing power (see chart 3.13). Rising house and share prices may also have contributed to private consumption growth.

With increased employment and falling unemployment, consumption growth is expected to be high again this year. A continued rise in house prices may contribute to holding up consumption growth. Intensified competition in the financial sector has contributed to lower interest margins on banks' lending, dampening the impact on interest expenses from the rise in the key rate. When the interest rate gradually normalises, household interest expenses will increase. Combined with projected lower employment growth and higher inflation, this might reduce growth in household purchasing power in the years ahead. Higher wage growth would have the opposite effect. Overall, moderate growth in household purchasing power is expected to result in lower consumption growth ahead. We have assumed that the adaptation leading to slower consumption growth will take place gradually, which means that the saving ratio may fall somewhat through the projection period (see Chart 3.14).

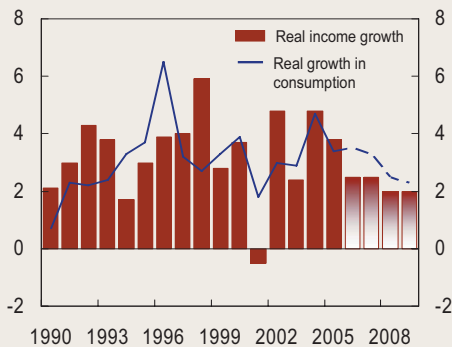
It appears that high activity in the housing market will continue in 2006. In the past two years, housing investment has risen to a very high level. In 2005, the number of housing starts was the highest since the beginning of the 1980s. This may in itself result in lower growth in housing investment ahead. A gradual increase in the interest rate will probably curb activity in the housing market. Housing investment is expected to grow through this year, although less rapidly than last year. Housing investment growth will thereafter moderate further, and may be somewhat reduced towards the end of the projection period. The rise in house prices is expected to slow (see Chart 3.15).

Household indebtedness has increased in tandem with high activity in the housing market. Higher interest rates and lower house price inflation will gradually reduce household debt growth in the next few years.

### Public sector

The fiscal rule entails a gradual phasing-in of petroleum revenues into the economy, approximately in pace with the expected real return on the Government Pension Fund – Global, which is estimated at 4%. The guidelines for petroleum revenue spending clearly state that spending should take the economic situation into account.

**Chart 3.13** Real growth in household disposable income<sup>1)</sup> and consumption. Per cent. Annual figures. 1990 – 2009<sup>2)</sup>

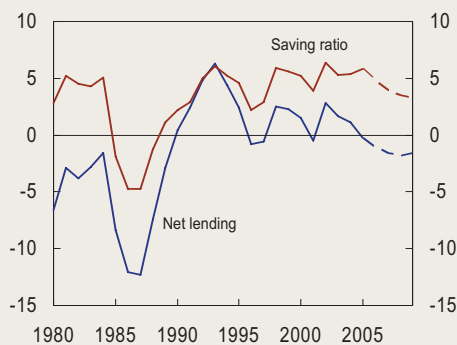


<sup>1)</sup> Adjusted for estimated reinvested share dividends since 2001.

<sup>2)</sup> Projections for period 2006 – 2009.

Sources: Statistics Norway and Norges Bank

**Chart 3.14** Household saving ratio and net lending as a share of disposable income.<sup>1)</sup> Annual figures. 1980 – 2009<sup>2)</sup>

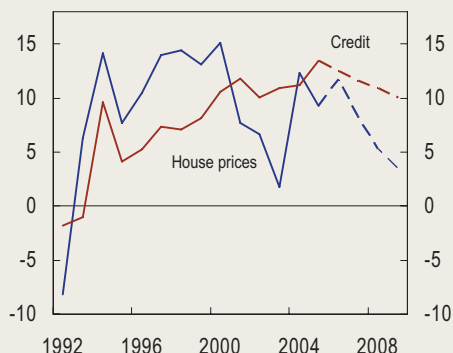


<sup>1)</sup> Adjusted for estimated reinvested share dividends since 2001.

<sup>2)</sup> Projections for period 2006 – 2009.

Sources: Statistics Norway and Norges Bank

**Chart 3.15** House prices (annual rise) and credit to households (C2, change in stock at the end of the year). Annual figures. Per cent. 1992 – 2009<sup>1)</sup>



<sup>1)</sup> Projections for period 2006 – 2009.

Sources: Norwegian Association of Real Estate Agents, Association of Real Estate Agency Firms, Finn.no, ECON and Norges Bank

Fiscal policy was less expansionary in 2005 than previously assumed, in part as a result of higher direct and indirect tax revenues. In the Government's proposal for the Revised National Budget for 2006, the structural non-oil budget deficit, measured as a percentage of trend mainland GDP, is estimated to increase from 4.0% in 2005 to 4.5% in 2006. Measured by this indicator, the budget for 2006 will have a more expansionary effect on the economy than assumed in the previous *Inflation Report*.

The Revised Budget for 2006 implies underlying nominal growth in expenditure over the central government budget of 5.3% in relation to 2005 (see Chart 3.16). This is an increase of 0.8 percentage point in relation to the projection in the Amendment to the Budget presented by the Stoltenberg Government. Spending growth is somewhat higher than the Government's estimate for nominal growth in mainland GDP of 5.1%.

The Revised National Budget for 2006 implies that NOK 10.3bn more than the expected real return on the Government Pension Fund – Global will be spent. The structural, non-oil budget deficit is assumed to remain unchanged from 2006 to 2007. Projected spending of petroleum revenues in 2007 will thus be approximately 4% of the estimated value of the Government Pension Fund – Global (see Chart 3.17). The Government has stated that the overall level of direct and indirect taxes will be brought back to the 2004 level. We therefore assume that taxes will be raised by around NOK 2bn from 2006 to 2007.

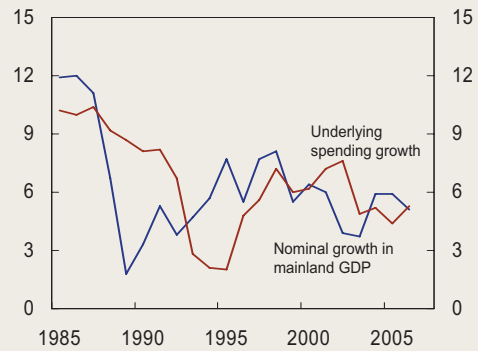
Strong growth in the Government Pension Fund – Global is in prospect in the years ahead. Given our assumption for oil price developments ahead (oil futures), spending in line with the expected real return on the Fund implies that the structural, non-oil deficit can increase by close to NOK 15bn (2006 prices) in both 2008 and 2009. With a period of strong expansion in the Norwegian economy, somewhat lower petroleum revenue spending will be in line with the fiscal rule. In our projections, it has been assumed that fiscal policy will generate some stimulus to total demand and output in 2008 and 2009, but somewhat less than the expected return on the Fund.

### Petroleum investment

Investment in petroleum activities has reached a high level after three years of strong growth (see Chart 3.18). In 2005, investment was close to NOK 87bn, and it is expected to edge up again this year. The large Ormen Lange and Snøhvit projects have contributed to high petroleum investment, and high oil prices have fuelled activity, even in oil fields that have been in operation for some time.

Information from our regional network suggests that petroleum investment provides considerable impulses to activity

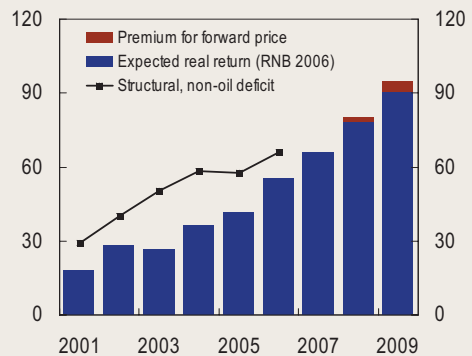
**Chart 3.16** Underlying spending growth in the government budget and nominal growth in mainland GDP. Per cent. Annual figures. 1985 – 2006<sup>1)</sup>



<sup>1)</sup> Projections for 2006 from the Ministry of Finance.

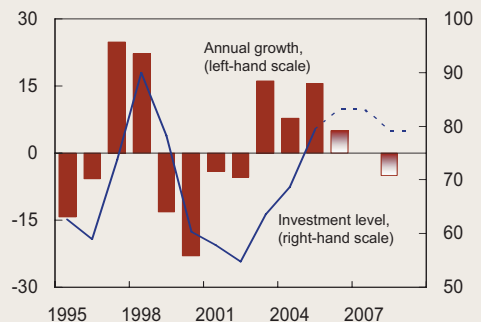
Sources: Ministry of Finance (The Revised National Budget 2006) and Statistics Norway

**Chart 3.17** Expected real return on the Government Pension Fund – Global. In billions of 2006-NOK. Annual figures. 2001 – 2009



Sources: Ministry of Finance (The Revised National Budget 2006) and Norges Bank

**Chart 3.18** Investment in oil and gas recovery incl. pipeline transport. Investment level in billions of NOK (constant 2003-prices) and annual growth in per cent. 1995 – 2009<sup>1)</sup>

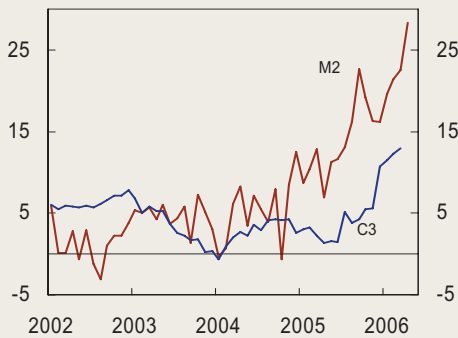


<sup>1)</sup> Projections for period 2006 – 2009.

Sources: Statistics Norway and Norges Bank



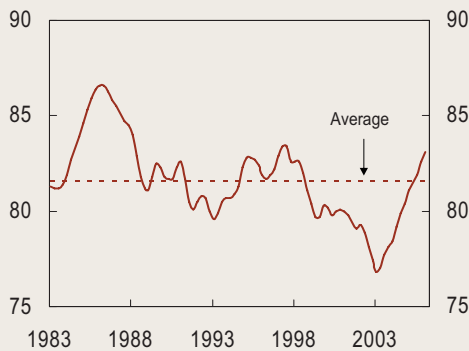
**Chart 3.19** Credit to enterprises<sup>1)</sup> and enterprises' liquid assets.<sup>2)</sup> 12-month change. Per cent. Jan 02 – Apr 06



<sup>1)</sup> Total credit to non-financial enterprises in mainland Norway (C3). As a result of a change in the foreign component in C3, the figures presented here have been considerably revised on earlier versions, see <http://www.norges-bank.no/front/statistikk/en/k3/> for further information.  
<sup>2)</sup> Non-financial enterprises' liquid assets (M2).

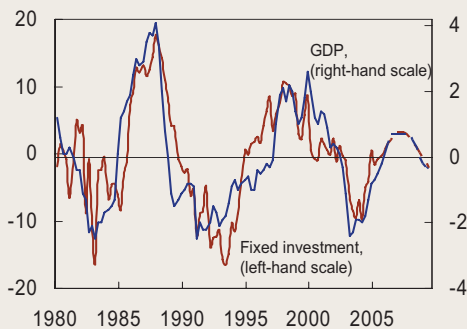
Source: Norges Bank

**Chart 3.20** Capacity utilisation rate in manufacturing. Trend. Per cent. Quarterly figures. 83 Q1 – 06 Q1



Sources: Statistics Norway and Norges Bank

**Chart 3.21** GDP and fixed investment. Mainland Norway. Percentage deviation from trend<sup>1)</sup>. Quarterly figures. Per cent. 80 Q1 – 09 Q2<sup>2)</sup>



<sup>1)</sup> Trend calculated using HP filter. See Staff Memo 2005/2 ([www.norges-bank.no](http://www.norges-bank.no)) for further details.

<sup>2)</sup> Based on annual projections for 2006 – 2009.

Sources: Statistics Norway and Norges Bank

along the coast of Norway. According to the network, suppliers to the petroleum sector are expecting strong growth to continue in the coming months.

The level of investment is assumed to remain high next year, then decline somewhat the following year when Ormen Lange and Snøhvit are scheduled for completion. No plans have so far been adopted for new projects of a similar size, but continued high oil prices are expected to contribute to high investment both in exploration and in fields in operation in the years ahead.

### Mainland business investment

Increased business investment in mainland Norway has contributed over the past two years to the upturn in the economy. Corporate profitability is solid, and enterprises hold a positive view of the outlook ahead. In the May round of interviews in Norges Bank's regional network, most industries reported an increase in profitability. According to TNS Gallup's fourth-quarter business sentiment survey, solid profitability is expected to continue in the year ahead. Enterprises' holdings of liquid funds (M2) have increased at an annualised rate of over 20% in the past few months (see Chart 3.19).

In manufacturing, the orders situation is very positive, and optimism is high in most manufacturing sectors. Capacity utilisation has increased to a high level (see Chart 3.20), and enterprises are planning to expand production capacity through higher investment and recruitment. Corporate debt is rising.

According to our regional network, the market situation is also positive in corporate services. Many of our contact enterprises are planning to increase investment. In the construction industry, order backlogs for non-residential buildings have risen sharply. Continued employment growth in service industries may result in a considerable increase in investment in commercial buildings.

Fixed investment in mainland Norway shows wider fluctuations than mainland GDP (see Chart 3.21). With prospects of continued high capacity utilisation in the Norwegian economy, solid profitability, ample liquidity and a high level of optimism among enterprises, strong growth in investment is expected again this year. As economic growth gradually slows, investment growth is also expected to moderate.

### Foreign trade

Continued solid growth among our trading partners is in prospect. As global capacity utilisation increases to a more normal level, demand for Norwegian exports might remain buoyant. The krone appreciation in recent months will

have the opposite effect. At the same time, a stronger krone probably to some extent reflects high prices for Norway's export goods and an improvement in Norway's terms of trade.

More export enterprises are facing capacity constraints, particularly in the production of metals and refined petroleum products. Export growth in the years ahead will probably occur in industries such as the engineering and shipbuilding industries. Production growth is now high in these sectors, and employment is rising after declining for several years.

Import growth is usually higher than GDP growth in periods of strong domestic demand. This is partly because demand shifts towards goods with a higher import component, for example holiday travel. In addition, domestic producers may find it difficult to accommodate the increase in demand for goods and services. In isolation, the appreciation of the krone since the previous *Inflation Report* is also contributing to the increase in imports. It is therefore assumed that the share of imports will rise more in the projection period than has been the case on average over the past few decades.

### Output

Norway's economy is in a period of strong expansion. Due to continued low interest rates, a high global activity level and considerable petroleum investment, output in mainland Norway will increase more than potential output both this year and next (see Table 3.1). Higher interest rates, more moderate global growth and developments in petroleum investment will gradually lead to lower demand growth. In addition, pressures on economic resources will push up wage growth. Higher costs alone may have a dampening impact on output growth ahead. Towards the end of the projection period, it is expected that the output gap will decline somewhat, but will be held up by a positive fiscal stimulus.

### Labour market

Employment is now increasing rapidly. Growth is particularly strong in commercial and financial services and in the health care sector. Employment is projected to increase by 2¼% from 2005 to 2006. In the event, this will be the sharpest rise recorded since 1998. The labour force has also expanded markedly since mid-2005, and growth is expected to be 1½% from 2005 to 2006. According to our projections, LFS unemployment will decline from 4.6% last year to 3¾% this year.

The number of person-hours worked increased more than employment in both 2004 and 2005, partly as a result of the sharp decline in sickness absence through 2004. At the end of 2005, sickness absence constituted 6.7% of the number

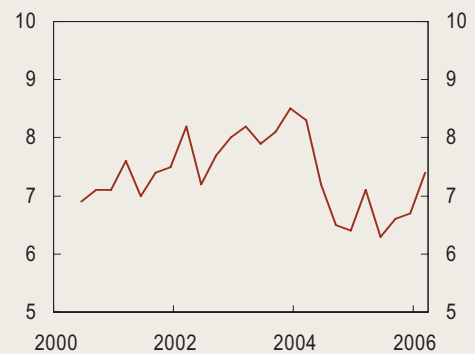
**Table 3.1** Projections for main macroeconomic aggregates. Change from previous year in per cent unless otherwise stated

	2006	2007	2008	2009
Mainland demand				
Private consumption	4¼	3	2½	2½
Public consumption	3½	3¼	2½	2¼
Mainland fixed investment	3	1¾	3¼	3¼
Petroleum investment	8	4¾	2¼	1½
Traditional exports	5	0	-5	0
Imports	6¼	3¾	3¼	3¼
GDP, mainland Norway	6¼	3¾	2	2¾
Output gap <sup>1)</sup> , M-Norway	3¾	2¾	2¼	2¼
Employment	1¼	1½	1¼	1
LFS unemployment <sup>2)</sup>	2¼	1	½	¼
CPI-ATE <sup>3)</sup>	3¾	3½	3½	3¾
Annual wage growth <sup>4)</sup>	1	1½	2	2½
	4	4¾	4¾	4¾

<sup>1)</sup> Deviation in per cent between actual and projected potential GDP.  
<sup>2)</sup> Percent of labour force.  
<sup>3)</sup> CPI-ATE: CPI adjusted for tax changes and excluding energy products. A further adjustment is made for the estimated effect of reduced maximum day-care rates from January 2006.  
<sup>4)</sup> Based on TRCIS definitions and calculations. Includes costs related to the introduction of mandatory occupational pensions.

Sources: Statistics Norway, Technical Reporting Committee on Income Settlements and Norges Bank

**Chart 3.22** Sickness absence in person-days for employees self-certified or certified by a doctor, for employees aged 16 - 69. In per cent of scheduled person-days. Quarterly figures. 00 Q2– 06 Q1



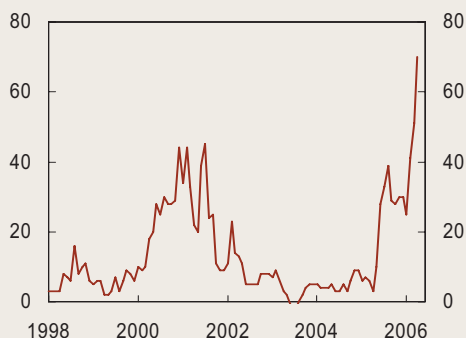
Source: Statistics Norway

**Table 3.2** Growth in population and labour force

	2006	2007	2008	2009
Growth in population aged 16-74	0.8	0.9	0.9	0.9
Contribution from demographic change in labour force	-0.2	-0.2	-0.3	-0.3
Contribution from increase in number of disability pensioners	-0.2	-0.2	-0.2	-0.2
Contribution from cyclical conditions	1	¼	0	0
Growth in labour force	1½	¾	½	½

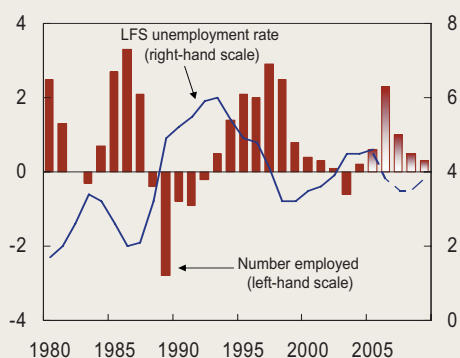
Sources Statistics Norway and Norges Bank

**Chart 3.23** Share of companies in the construction sector in Sweden reporting labour shortages as the most important production constraint. Seasonally adjusted. Per cent. Monthly figures. Jan 96 – Apr 06



Source: Konjunkturinstitutet

**Chart 3.24** Change in employment on previous year. Per cent. Unemployment<sup>1)</sup> as a percentage of labour force. Annual figures. 1980 – 2009<sup>2)</sup>



<sup>1)</sup> LFS unemployment.

<sup>2)</sup> Projections for 2006 – 2009.

Sources: Statistics Norway and Norges Bank

of contractual person-days, a decrease of 1.8 percentage points from the end of 2003 (see Chart 3.22). Sickness absence is now rising again, and was 7.4% in 2006 Q1. The rise in sickness absence is expected to come to a halt further ahead, and the use of overtime, which was high last year, will be somewhat reduced. Overall, an increase in person-hours worked of 1½% is expected this year.

The working-age population will grow fairly strongly in the years ahead (see Table 3.2). Older people, who on average have lower labour force participation rates, will account for an increasing share, however. This will reduce the labour supply somewhat. In addition, the number of disability pensioners is expected to continue to rise ahead at approximately the same pace as over the past 10-15 years. On the other hand, experience shows that labour force participation rates increase when demand for labour is high. Overall, the labour force is projected to expand by ¾% in 2007. As employment growth slows, cyclical conditions will not contribute to any extent to labour force growth. In 2008 and 2009, the labour force is expected to grow by ½%.

The supply of labour is also influenced by inward labour migration. Labour inflows from the other Nordic countries have been substantial for a long period, but in the past few years, the use of labour from the new EU countries has also increased. These changes are difficult to measure in official labour market statistics, but on an uncertain basis, the use of foreign labour is estimated to increase by at least 5 500 person-years in 2006 (see box). This includes persons who are not registered as resident in Norway and who are either employed in Norwegian enterprises or on contract in Norway for enterprises registered in other countries.<sup>2</sup> Increased activity and demand for labour in the rest of Europe may limit the supply of labour from other countries ahead. In the construction industry in Sweden, for example, 70% of enterprises report that labour is the most important constraint on output growth (see Chart 3.23).

The unemployment rate in Norway is expected to slow further from 2006 to 2007. Towards the end of the projection period, employment growth is projected to be lower than labour force growth, with unemployment showing a marginal rise from 2008 to 2009 (see Chart 3.24).

### Productivity

In an upturn, enterprises will usually satisfy some of the increase in demand by utilising the existing labour force more efficiently before they hire new employees. Productivity will then increase somewhat more sharply in relation to the long-term trend. This did not occur in the current upturn. The fall in sickness absence provided

<sup>2</sup> In national accounts statistics, labour carried out in Norway for enterprises resident in other countries is registered as import of services.

enterprises with extra labour in the form of person-hours, allowing them to satisfy demand without an initial increase in person-hour productivity. Sickness absence is expected to rise somewhat this year, increasing productivity per person-hour by 2¼%. As enterprises adjust their workforces and growth in activity slows towards a more normal level, productivity is expected to approach trend growth of 2%.

### Wage growth

Unemployment is likely to be about ¾ percentage point lower this year than last year. Based on previous experience, this will result in higher wage growth. The centralised pay increases negotiated in this year's wage settlement imply annual wage growth of 4%, in line with the projection in the previous *Inflation Report* and somewhat higher than wage growth in 2005 (see Chart 3.25). The projection also includes costs related to the introduction of mandatory occupational pensions. Combined with projected inflation this year, measured by the CPI, this will result in real wage growth, including mandatory occupational pensions, of 1¾%, which is about the same as last year.

Several factors may explain why wage growth is likely to be moderate this year. An increase in inward labour migration and the opportunities provided by an international labour market may have resulted in greater emphasis on the high wage level in Norway relative to our trading partners. Inward labour migration has also contributed to reducing bottlenecks in some industries. Some of the decline in unemployment occurred after the wage negotiations had begun. It may therefore be the case that the negotiated pay increases do not fully reflect labour market tightness. If so, this implies a risk of higher wage drift through the year and higher pay increases next year than we have assumed. While earlier this spring enterprises in our regional network expected moderate wage growth in keeping with adopted budgets, in May a greater number expected that wage drift through the year might result in higher-than-budgeted wage growth.

Inward labour migration will probably continue to curb pressures on economic resources in Norway, although the moderating effects on wage growth are expected to wane. A general application of wage agreements has for example been introduced for several groups. Furthermore, the Government has announced a number of measures that will reduce the competitive advantage of foreign enterprises with assignments in Norway. A relatively tight labour market is expected to contribute to higher real wage growth ahead, before growth again moderates when the labour market becomes somewhat less tight towards the end of the projection period.

**Chart 3.25** Annual wage growth<sup>1)</sup> and LFS unemployment rate. Per cent. Annual figures. 1993 – 2009<sup>2)</sup>

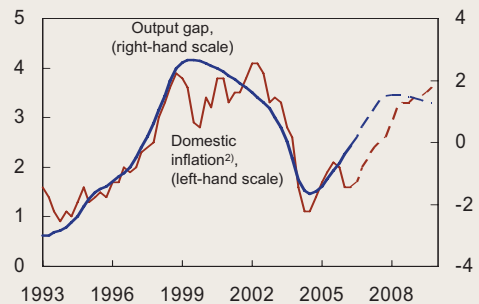


<sup>1)</sup> Average for all groups. Including estimated cost of increase in number of vacation days and introduction of mandatory occupational pension.

<sup>2)</sup> Projections for period 2006 – 2009.

Sources: Technical Reporting Committee on Income Settlements, Statistics Norway and Norges Bank

**Chart 3.26** Domestic inflation (4-quarter growth) and level of output gap (lagged 4 quarters). 93 Q1 – 09 Q4<sup>1)</sup>

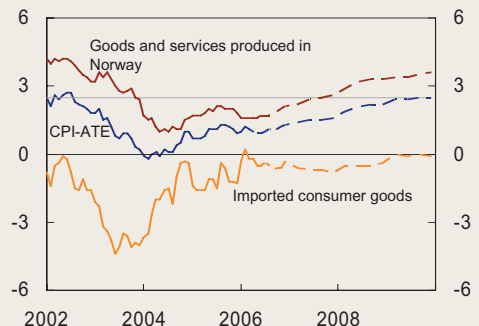


<sup>1)</sup> Projections for period 06 Q2 – 09 Q4.

<sup>2)</sup> An adjustment is made for the estimated effect of reduced maximum day-care rates from January 2006.

Sources: Statistics Norway and Norges Bank

**Chart 3.27** CPI-ATE.<sup>1)</sup> Total and by supplier sector.<sup>2)</sup> 12-month change. Per cent. Jan. 02 – Dec 09<sup>3)</sup>



<sup>1)</sup> CPI-ATE: CPI adjusted for tax changes and excluding energy products. A further adjustment is made for the estimated effect of reduced maximum day-care rates from January 2006.

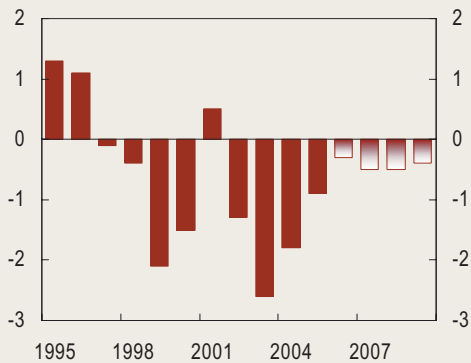
<sup>2)</sup> Norges Bank's calculations.

<sup>3)</sup> Projections for period Jun 06 – Dec 09.

Sources: Statistics Norway and Norges Bank

## Prices

**Chart 3.28** Indicator of external price impulses to imported consumer goods measured in foreign currency. Per cent. Annual figures. 1995 – 2009<sup>1)</sup>

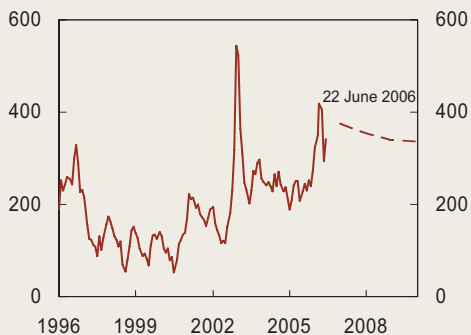


<sup>1)</sup> Projections for period 2006 – 2009.

Source: Norges Bank

A number of economic conditions point to a pickup in domestic inflation ahead. Capacity utilisation in the Norwegian economy is increasing and this will probably result in a higher rise in prices for domestically produced goods and services (see Chart 3.26). Labour market tightening will probably result in higher wage growth in the coming years. The rise in oil prices is pushing up producer input costs, and this is projected to boost the rise in consumer prices by approximately  $\frac{1}{4}$  percentage point this year and next. Increased electricity prices in the past year may also translate into higher prices for domestically produced goods and services. Overall, the rise in prices for domestically produced goods and services is projected to pick up gradually and stabilise at close to 3% in 2009 (see Chart 3.27).

**Chart 3.29** Electricity price. NOK/MWh. Monthly figures. Jan 96 – Jun 06.<sup>1)</sup> Forward prices 2006 – 2009

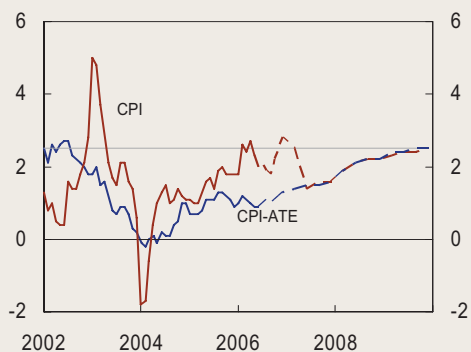


<sup>1)</sup> Monthly price for June 2006 is based on spot prices to 22 June and forward prices for the rest of the month.

Sources: Nordpool and Norges Bank

Price impulses from imported consumer goods measured in foreign currency have been negative virtually every year since the mid-1990s (see Chart 3.28). This is partly due to trade liberalisation and the shift in imports towards low-cost countries. In our projections, we have assumed that these trade shifts will have less impact from next year, but will still have a moderating effect on inflation. The increase in prices for oil and other commodities is expected to result in a sharper rise in producer and export prices among our trading partners in the near term. External price impulses are therefore expected to have a substantially weaker impact than in previous years. A stronger krone points to a slower rise in prices for imported consumer goods throughout the projection period, and will contribute to a continued slight fall in these prices in 2007. Prices for imported consumer goods are also influenced by developments in distribution and sales costs in Norway. As domestic inflation picks up, this is also expected to push up prices for imported consumer goods. From 2008, the rise in prices for imported consumer goods is projected to be close to zero.

**Chart 3.30** CPI and CPI-ATE.<sup>1)</sup> 12-month change. Per cent. Jan 02 – Dec 09<sup>2)</sup>



<sup>1)</sup> CPI-ATE: CPI adjusted for tax changes and excluding energy products. A further adjustment is made for the estimated effect of reduced maximum day-care rates from January 2006.

<sup>2)</sup> Projections for period Jun 06 – Dec 09.

Sources: Statistics Norway and Norges Bank

Wage growth is expected to pick up over the next two to three years. Increased competition both from foreign competitors and internally has contributed to subdued inflation. Higher demand may gradually provide scope for a higher markup in some product markets. Prospects for somewhat lower productivity growth in retail trade in Norway may also gradually contribute to pushing up the rise in prices for consumer goods. Overall, inflation measured by the CPI-ATE is projected to pick up gradually over the next three years towards 2½%. As monetary policy becomes less expansionary, growth in demand and employment will slow and wage growth may level off. This will curb the rise in inflation further ahead and stabilise inflation close to the target.

The total rise in prices, measured by the CPI, is expected to be higher this year than in 2005. The level of electricity prices in 2006 is substantially higher than in 2005 (see Chart 3.29) and, combined with high oil prices, this will contribute to keeping CPI inflation above 2% through 2006. The rise in energy prices will probably slow gradually, and from 2008 CPI inflation is projected to be in line with CPI-ATE inflation (see Chart 3.30).

## Boxes

Recent price developments

The projections in *Inflation Report 1/06* and *2/06*

Foreign labour in Norway

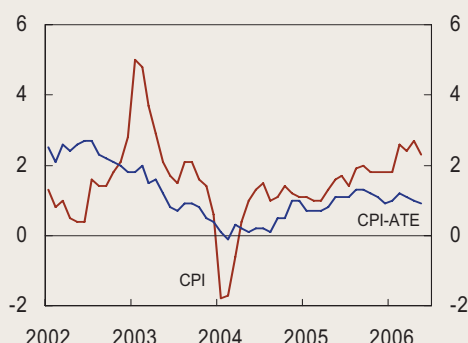
Short-term forecasts for mainland GDP in Norway





# Recent price developments

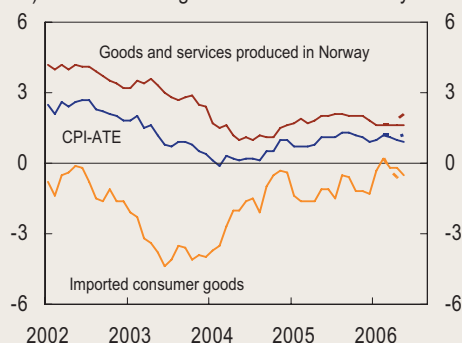
**Chart 1** CPI and CPI-ATE.<sup>1)</sup> 12-month change. Per cent. Jan 02 – May 06



<sup>1)</sup> CPI-ATE: CPI adjusted for tax changes and excluding energy products. A further adjustment is made for the estimated effect of reduced maximum day-care rates from January 2006.

Sources: Statistics Norway and Norges Bank

**Chart 2** CPI-ATE.<sup>1)</sup> Total and by supplier sector.<sup>2)</sup> Historical inflation and projections IR 1/06 (broken line). 12-month change. Per cent. Jan 02 – May 06

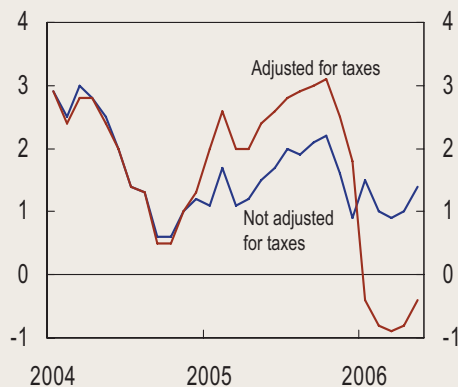


<sup>1)</sup> CPI-ATE: CPI adjusted for tax changes and excluding energy products. A further adjustment is made for the estimated effect of reduced maximum day-care rates from January 2006.

<sup>2)</sup> Norges Bank's calculations.

Sources: Statistics Norway and Norges Bank

**Chart 3** Prices for food and non-alcoholic beverages. Adjusted and not adjusted for taxes. 12-month change. Per cent. Jan 04 – May 06



Sources: Statistics Norway and Norges Bank

The year-on-year rise in the consumer price index (CPI) was 2.3% in May this year (see Chart 1). Inflation measured by the CPI has been higher than projected in the March *Inflation Report*. This is due to a stronger-than-expected increase in energy prices.

Inflation measured by the consumer price index adjusted for tax changes and excluding energy products (CPI-ATE) has been lower than projected, reflecting a lower-than-expected rise in domestic inflation. The year-on-year rise in the CPI-ATE, which was 1.0% in February, fell to 0.7% in May. Adjusted for the reduction in day-care rates in January this year, the year-on-year rise in prices was 0.9% in May.

## Low domestic inflation

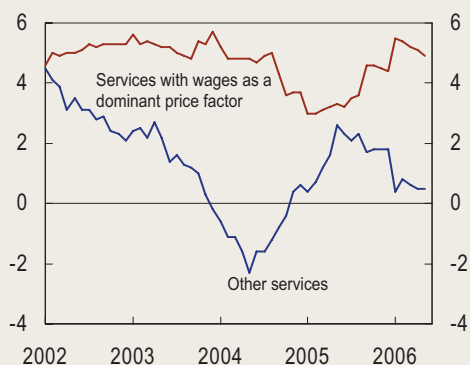
The 12-month rise in prices for domestically produced goods and services remained unchanged at 1.3% in the first five months of 2006 (see Chart 2). Adjusted for the reduction in day-care rates in January, domestic inflation was 1.6% for these months. Domestic inflation was 0.5 percentage point lower in May than projected in the March *Inflation Report*. The rise in prices was lower than expected for domestically produced goods, house rents and other services.

The rise in prices for food and non-alcoholic beverages has decelerated markedly since autumn 2005, when the year-on-year rise in prices adjusted for tax changes was over 3% (see Chart 3). In March 2006, the 12-month rate of decline was of 0.9%, which decelerated to 0.4% in May. The fall in prices for this product group appears to have come to a halt. Information from Norges Bank's regional network indicates that the low rise in food prices may be a result of intensified competition among chains and lower costs among chain operators as a result of more efficient purchasing systems. From 1 January 2006, VAT on food was increased from 11% to 13%. Statistics Norway's calculations of the CPI-ATE are based on the assumption that the VAT increase is immediately passed on to retail prices. In practice, the adaptation to new rates probably takes place over time, and the rise in food prices in the CPI-ATE may therefore have been somewhat underestimated in the early months of 2006. The low rise in food prices may also reflect the new method of measuring developments in food prices introduced by Statistics Norway in August 2005. Under the new

method, the weights are changed each month, so that changes in the demand pattern are captured in the month in which they occur. The CPI will now to a greater extent capture changes in households' food consumption pattern, and in isolation this may lead to a slower rise in food prices over time by this measure.

The 12-month rise in house rents has varied around 2% since April last year, and in May 2006 was 2.2%. The rise in prices for services other than house rents has edged down so far in 2006. The 12-month rise in prices for services where wages are the dominant cost factor declined from 5.5% in January to 4.9% in May (see Chart 4). The 12-month rise in prices for "other services" has also been declining since the March *Inflation Report*, and was 0.5% in May. Both lower day-care rates and a low rise in prices for financial and some other services have contributed to this decline.

**Chart 4** Groups of services in CPI-ATE<sup>1)</sup>, 12-month change. Per cent. Jan 02 – May 06

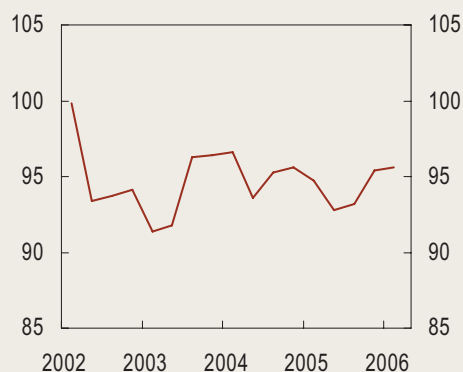


<sup>1)</sup> CPI-ATE: CPI adjusted for tax changes and excluding energy products.  
Source: Statistics Norway

### *Prices for imported consumer goods fall at a slower pace*

Prices for imported consumer goods have fallen markedly for several years (see Chart 2). In the period from January to May this year, however, these prices were on average only 0.2% lower than in the same period last year. Among other things, the fall in prices for clothing and footwear decelerated over the past year. In May 2006, prices for imported consumer goods were 0.5% lower than in the same month one year earlier. This was 0.4 percentage point higher than assumed in *Inflation Report 1/06*.

**Chart 5** Prices for imported consumer goods from External Trade Statistics. Index, 2000 = 100. Quarterly figures. 02 Q2 – 06 Q1



Sources: Statistics Norway and Norges Bank

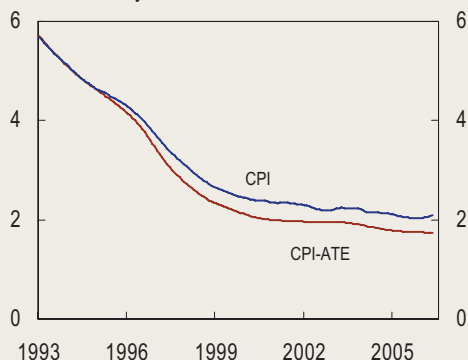
The slower fall in prices for imported consumer goods may also be related to the fact that import prices for consumer goods in external trade statistics have increased gradually since 2005 Q2, and continued to rise in 2006 Q1 (see Chart 5). The increase is probably due to a pick-up in inflation internationally. In isolation, the appreciation of the krone since the previous *Inflation Report* points to lower imported inflation ahead, but it will probably have little effect this year.

### *Underlying inflation*

Norges Bank monitors developments in a number of prices indices in order to form a picture of underlying inflation. Indicators of underlying inflation seek among other things to capture the portion of the rise in prices that may influence inflation ahead. It is always difficult to determine at a given time which price movements will persist and which will only have a short-term effect on inflation. No one indicator will provide a perfect measure of underlying inflation. An assessment of underlying inflationary pressures must therefore be based on several different indicators.<sup>1</sup>

Norges Bank has regularly published three measures of underlying inflation in its *Inflation Report* – the CPI-ATE, the weighted median and the trimmed mean. The CPI-ATE excludes the effects of changes in real taxes and energy prices. Since the early 1990s, the CPI-ATE has underestimated inflation measured by the CPI, because on average energy prices have increased more than other consumer prices, and the indirect tax level has increased slightly (see Chart 6). From 1993 to

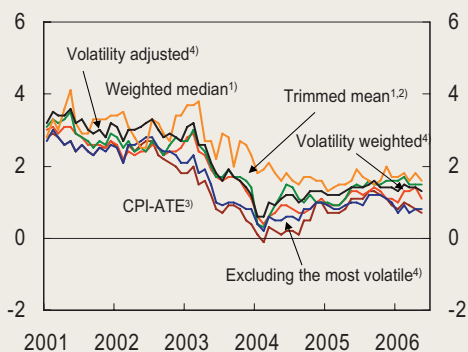
**Chart 6** CPI and CPI-ATE<sup>1)</sup>. 10-year moving average. 12-month change. Per cent. Jan 93 – May 06



<sup>1)</sup> CPI-ATE: CPI adjusted for tax changes and excluding energy products.

Sources: Statistics Norway and Norges Bank

**Chart 7** Various indicators of underlying inflation. 12-month change. Per cent. Jan 01 – May 06



<sup>1)</sup> Estimated on the basis of 146 sub-groups of the CPI.

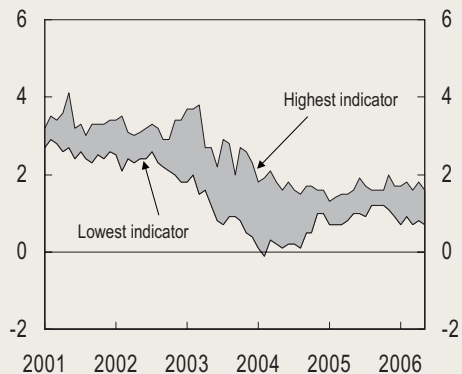
<sup>2)</sup> Price changes accounting for 20% of the weigh basis are eliminated.

<sup>3)</sup> CPI-ATE: CPI adjusted for tax changes and excluding energy products.

<sup>4)</sup> Estimated on the basis of 96 sub-groups of the CPI.

Sources: Statistics Norway and Norges Bank

**Chart 8** Interval of uncertainty for underlying inflation. Highest and lowest indicator.<sup>1)</sup> 12-month change. Per cent. Jan 01 – May 06



<sup>1)</sup> Highest and lowest indicator of CPI-ATE, weighted median, trimmed mean, volatility weighted inflation, volatility adjusted inflation and inflation excluding the most volatile components, see Chart 7.

Sources: Statistics Norway and Norges Bank

2005, the 12-month rise in the CPI-ATE was on average around 0.3 percentage point lower than the 12-month rise in the CPI. In recent years, the high rise in electricity prices has made the largest contribution to the difference between the CPI and the CPI-ATE. Other indicators of underlying inflation have on average remained closer to the CPI over time.

Chart 7 shows the 12-month rise in the CPI-ATE, the trimmed mean and the weighted median<sup>2</sup> together with the 12-month rise in three new indicators developed by Norges Bank.

- *Excluding the most volatile components.* We have studied 96 components of the CPI in the period from January 1993 to December 2005. The components that have varied most in this period have been excluded permanently.<sup>3</sup> In all, we have excluded components accounting for 10% of the weight basis in the CPI. Besides energy products, we have removed components such as air travel and telephone equipment (cellular phones).
- *Volatility-weighted.* This indicator is also based on 96 components of the CPI. The CPI weights have been replaced by weights that give the sub-indices with the widest historical fluctuations less weight, but no sub-index has been removed entirely.<sup>4</sup> This means that energy prices are included but have been given considerably less weight than in the CPI.
- *Volatility-adjusted.* This indicator differs from the *volatility-weighted* indicator in that the weights are a combination of the original CPI weights and those used in the *volatility-weighted* indicator. Since energy prices have a relatively high weight in the CPI, they will therefore have a somewhat higher weight in the *volatility-adjusted* than in the *volatility-weighted* indicator. In both indicators, however, energy prices have considerably less weight than in the CPI.

Measured by the 12-month rise in a trimmed mean, inflation was 1.5% in May. The year-on-year rise in the weighted median was 1.6%, while the volatility-weighted indicator was 1.1% higher than in the same month the previous year. The volatility-adjusted indicator was 1.3% higher. The indicator

from which the 10% most volatile components have been removed showed a 12-month rise of 0.8%. The CPI-ATE showed a year-on-year rise of 0.7% in May.

On the basis of the various indicators, we have estimated an interval for underlying inflation in Chart 8. The limits of the interval are set by the indicators that are highest and lowest at any time. There has been a tendency for the CPI-ATE to be the lowest of the different measures of underlying inflation. At the same time, all the measures indicate that inflation has been moderate in recent years.

The width of the interval may be an indication of the degree of uncertainty surrounding underlying inflation at any given time. The difference between the various indicators is larger than in 2005. This may indicate that the uncertainty surrounding underlying inflation is somewhat higher at present than in 2005.

<sup>1</sup> For a broad discussion of different measures of underlying inflation, see for example Silver, M. (2006): Core Inflation Measures and Statistical Issues in Choosing Among Them, IMF Working Paper No. 06/97. See also Jonassen, M. and E.W. Nordbø (2006): Alternative indicators of core inflation for Norway. Available at <http://www.unece.org/stats/documents/2006.05.cpi.htm>.

<sup>2</sup> The trimmed mean and weighted median are based on 146 components of the CPI. Each month, the 12-month rise in the various components is ranked in rising order, from the prices that fell most to those that increased most. In the trimmed mean, price changes corresponding to 10% of the CPI weights are removed from both the top and the bottom of the distribution. Thus a total of 20% of the weight basis is removed. The rise in prices is calculated on the basis of the remaining price observations. The weighted median is a special case of the trimmed mean. Here, all price observations except the middle one are removed when account is taken of the product groups' weight in the CPI.

<sup>3</sup> The volatility measure used is the standard deviation of the monthly difference between the 12-month rise in the CPI and the 12-month rise in the respective sub-index.

<sup>4</sup> The weights are based on the volatility measure in the previous indicator. The weight of a sub-index in a given year is determined by the historical volatility in the ten previous years.

# Projections in *Inflation Report 1/06* and *2/06*

This box presents an analysis of the changes made to the projections in the previous *Inflation Report*. The changes have been made partly because developments since March have differed somewhat from our projections. New information has also emerged concerning conditions that will have an impact on the economy in the period ahead. Moreover, we compare Norges Bank's projections for 2006 with projections from other institutions.

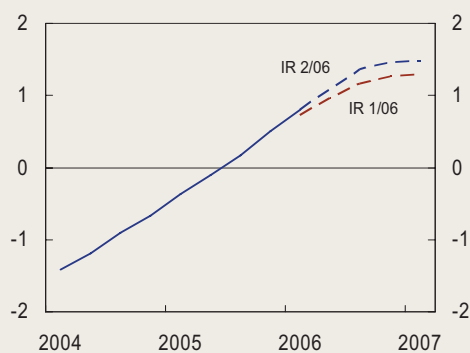
## *New information since the previous Inflation Report*

The most important new information since the previous *Report* is as follows:

- Our estimate for the output gap in the coming year has been revised upwards because the growth rate for mainland GDP is now projected to be somewhat higher (see Chart 1). This upward revision is primarily due to higher mainland investment and increased public consumption.
- Employment has been somewhat higher than previously projected.
- The krone has appreciated, but high export prices are curbing the negative effects on profitability in the export industries.

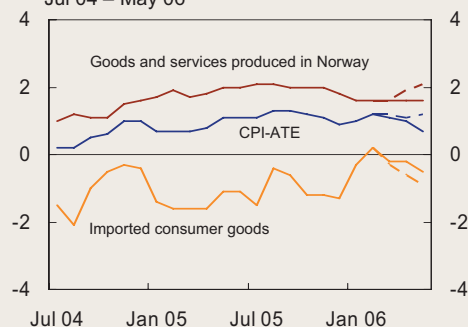
- Measured by the CPI-ATE, inflation has been somewhat lower than projected. The rise in prices for domestically produced goods and services has not picked up as expected (see Chart 2).
- Inflation measured by the CPI has been higher than projected. This is due to a stronger-than-expected increase in energy prices.
- Economic growth among Norway's trading partners has been somewhat stronger than expected so far in 2006.
- It appears that global inflation will be slightly higher this year and next than expected in the previous *Report*. This reflects a somewhat higher-than-expected increase in global capacity utilisation and somewhat higher-than-assumed prices for energy and other commodities.
- Our estimates of general government spending growth have been revised upwards somewhat in 2008 and 2009 as a result of prospects that the Government Pension Fund – Global will increase more than assumed over the next few years.

**Chart 1** Estimated output gap in the baseline scenario in IR 1/06 and IR 2/06. Per cent. Quarterly figures. 04 Q1 – 07 Q1



Source: Norges Bank

**Chart 2** CPI-ATE.<sup>1)</sup> Total and by supplier sector.<sup>2)</sup> Actual inflation and projections from IR 1/06. 12-month change. Per cent. Jul 04 – May 06



<sup>1)</sup> CPI-ATE: CPI adjusted for tax changes and excluding energy products. A further adjustment is made for the estimated effect of reduced maximum day-care rates from January 2006.

<sup>2)</sup> Norges Bank's calculations.

Sources: Statistics Norway and Norges Bank

### Effects on the interest rate path

Compared with the previous *Inflation Report*, the interest rate forecast in this *Report* has been raised somewhat, by an estimated  $\frac{1}{4}$  percentage point as an average for 2007 and 2008 (see Chart 3).

The change in the interest rate path since the previous *Inflation Report* is largely due to stronger growth in the Norwegian economy, which will also push up inflation. Employment has gathered momentum and unemployment is now falling rapidly. High oil prices have influenced the outlook for fiscal policy. In isolation, this points to a higher interest rate path than in the previous *Report*.

Lower inflation and a stronger-than-expected krone indicate that inflation in the period ahead will also be lower than previously assumed. In isolation, this has lowered the interest rate path. On the other hand, lower idle capacity in the global economy and high commodity prices may push up the rise in prices for Norway's imported goods. This will have the opposite effect on interest rates.

A stronger krone will also lead to a reduction in export enterprises' earnings. This will normally curb output growth and employment and imply monetary policy easing. Many export enterprises, however, are now operating at full capacity and have ample margins in spite of a strong krone and Norway's high cost level. These factors moderate the negative effects on output of a stronger krone.

### Changes in the projections ahead

The projections in this *Report* are based on the assumption that the interest rate will follow a path which, in the Executive Board's view, will provide a reasonable balance between the objectives of monetary policy. In the baseline scenario, the interest rate increases – in small, not too frequent steps

– towards a more normal level (see Chart 3). This is discussed further in Section 1. External interest rates are assumed to rise gradually over the next three years. As in the previous *Inflation Reports*, Norges Bank's projections are based on a somewhat more rapid rise in external and domestic interest rates further ahead than current forward rates would imply. Exchange rate movements are difficult to project, and the krone is now stronger than projected in the previous *Report*. It is likely that the interest rate path in Norway and abroad does not in itself point to substantial changes in the krone exchange rate (see Chart 4).

In this *Inflation Report*, growth in mainland GDP is projected to be slightly higher in 2006 than in the previous *Report* (see Table 1). This will result in a higher output gap (see Chart 5). In 2007, the output gap is expected to be about  $\frac{1}{4}$  percentage point higher than projected in the previous *Report*.

Unemployment developments have so far been approximately in line with our projections. Due to higher demand and output ahead, however, the labour market will be somewhat tighter over the next two years than projected in the previous *Report*. With somewhat lower unemployment, the rise in real wages will be somewhat higher in the years ahead than we previously envisaged.

No major changes have been made in the projections for the various demand components. As a result of higher house prices and activity in housing market, growth in housing investment has been revised upwards this year and next. Combined with a somewhat stronger increase in corporate investment than previously projected, it seems likely that growth in mainland investment will be relatively high in the years ahead. The projections for exports of traditional goods and services have been revised down as a result of the recent krone appreciation.

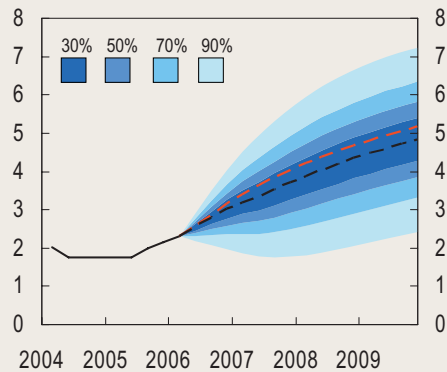
**Table 1** Projections for main macroeconomic aggregates in Inflation Report 2/06.  
Change from projections in Inflation Report 1/06 in brackets.

	2006	2007	2008	2009
Mainland demand	4¼ (½)	3 (0)	2½ (0)	2½ (0)
GDP, mainland Norway	3¾ (¼)	2¾ (0)	2¼ (-¼)	2¼ (0)
Employment	2¼ (½)	1 (0)	½ (-¼)	¼ (-¼)
LFS unemployment (per cent of labour force)	3¾ (0)	3½ (-¼)	3½ (-¼)	3¾ (0)
CPI-ATE <sup>1)</sup>	1 (-¼)	1½ (-¼)	2 (-¼)	2½ (0)
CPI	2¼ (½)	1¾ (0)	2 (-¼)	2½ (0)
Annual wage growth	4 (0)	4¾ (¼)	4¾ (0)	4¾ (0)

<sup>1)</sup> Adjusted to take into account that the reduction in maximum day-care rates pushes down the rise in the CPI-ATE by an estimated 0.2 percentage point in 2006.

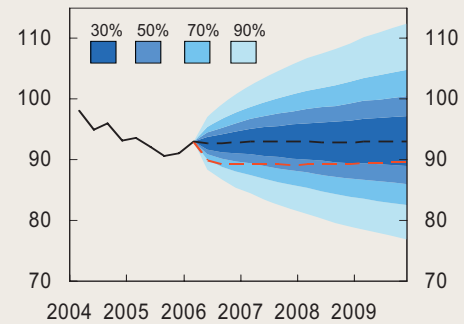
Sources: Statistics Norway and Norges Bank

**Chart 3** Sight deposit rate in the baseline scenario in IR 1/06 with fan chart and sight deposit rate in the baseline scenario in IR 2/06 (red line). Per cent. Quarterly figures. 04 Q1 – 09 Q4



Source: Norges Bank

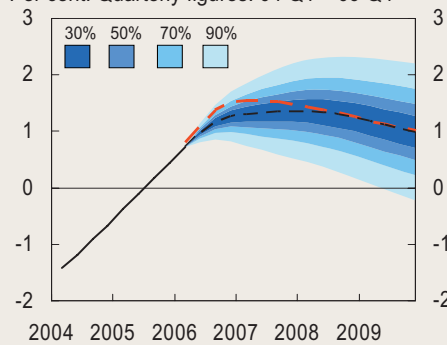
**Chart 4** Import-weighted exchange rate (I-44)<sup>1)</sup> in the baseline scenario in IR 1/06 with fan chart and I-44 in the baseline scenario in IR 2/06 (red line). Quarterly figures. 04 Q1 – 09 Q4



<sup>1)</sup> A rising curve denotes a weaker krone exchange rate. It is assumed that strengthening by a certain percentage is just as likely as weakening by the same percentage.

Source: Norges Bank

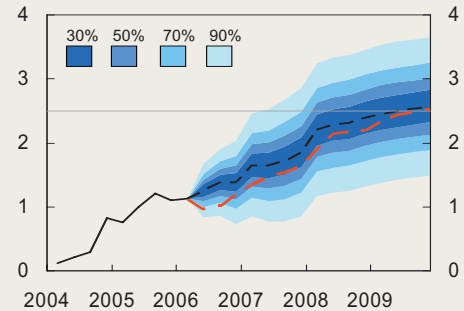
**Chart 5** Estimated output gap in the baseline scenario in IR 1/06 with fan chart<sup>1)</sup> and output gap in the baseline scenario in IR 2/06 (red line). Per cent. Quarterly figures. 04 Q1 – 09 Q4



<sup>1)</sup> Uncertainty surrounding the current situation is not taken into account in the calculation.

Source: Norges Bank

**Chart 6** Projected CPI-ATE<sup>1)</sup> in the baseline scenario in IR 1/06 with fan chart and CPI-ATE in the baseline scenario in IR 2/06 (red line). 4-quarter change. Per cent. 04 Q1 – 09 Q4



<sup>1)</sup> CPI-ATE: CPI adjusted for tax changes and excluding energy products. A further adjustment is made for the estimated effect of reduced maximum day-care rates from January 2006. Other measures of underlying inflation are shown in a separate box.

Sources: Statistics Norway and Norges Bank

The projection for inflation measured by the CPI-ATE has been revised downwards. The change in the inflation projection is largest for 2006 (see Chart 6). One important reason for this is that inflation so far this year has been lower than projected in the previous *Report*. In this *Report*, inflation gradually increases somewhat more rapidly than projected in March. Higher capacity utilisation and wage growth will contribute. The stronger krone exchange rate will have a dampening effect on inflation this year and next, but this effect will subsequently unwind. As previously, the gradual increase in the interest rate is projected to bring down capacity utilisation gradually, stabilising inflation close to the target.

### Projections from other institutions

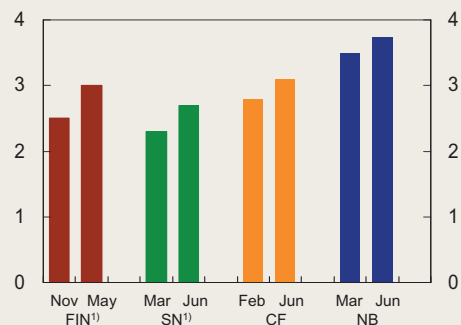
Norges Bank's projections for economic growth in 2006 are higher than projections from the Ministry of Finance, Statistics Norway and the average forecast from Consensus Forecasts (see Chart 7). Norges Bank projects that mainland growth will be 3¾% this year. This is ¼ percentage point higher than in the previous *Report*. When Statistics Norway published its forecasts in mid-June, mainland GDP growth was forecast at 2.7%, up from 2.3% in the March *Economic Survey*. In the Revised National Budget for 2006, the Ministry of Finance projects GDP growth at 3% this year, half a percentage point higher than in the Amendment to the Budget presented in November 2005. For 2006, Statistics Norway and the Ministry of Finance have reduced their forecasts for mainland GDP by 0.3 and 0.4 percentage point respectively, due to lower estimates for electricity production. Norges

Bank does not take account of a possible decline in electricity production in its projections for 2006. The average forecast from Consensus Forecasts has been revised upwards since the previous *Inflation Report*. In February, the average forecast for growth in mainland Norway was 2.8%, while in June it had risen to 3.1%.

In this *Inflation Report*, Norges Bank projects CPI-ATE inflation adjusted for the effects of reduced maximum day-care rates at 1% in 2006 (see Chart 8). The reduction in day-care rates will push down CPI-ATE inflation by an estimated 0.2 percentage point in 2006. The Ministry of Finance projects CPI-ATE inflation at 1¼% in 2006. The projection has been revised downwards by ¼ percentage point since November 2005. Since March 2006, Statistics Norway has revised down its projection for CPI-ATE inflation in 2006 by 0.4 percentage point to 0.9%. The Ministry of Finance and Statistics Norway do not take account of the reduction in maximum day-care rates in their calculations of the CPI-ATE. Consensus Forecasts does not compile forecasts for the CPI-ATE.

The Ministry of Finance's projections were published on 10 November 2005 and 12 May 2006. Statistics Norway published projections on 16 March and 15 June 2006. Consensus Forecasts compiled its forecasts on 13 February and 12 June 2006. As the institutions publish projections at different times, the information on which the projections are based will differ.

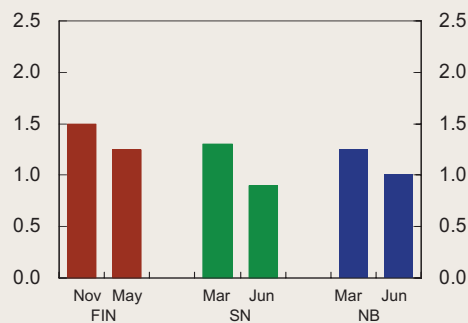
**Chart 7** Mainland GDP. The last two projections published for 2006. Percentage rise



<sup>1)</sup> Statistics Norway and The Ministry of Finance have reduced their mainland GDP projection by respectively 0.3 and 0.4 percentage point due to lower electricity production.

Sources: Amendment to 2006 budget, Revised National Budget 2006, Economic Survey 1/2006 and 3/2006, Inflation Report 1/06 and 2/06, Consensus Forecasts February 2006 and June 2006

**Chart 8** CPI-ATE.<sup>1)</sup> The last two projections published for 2006. Percentage rise



<sup>1)</sup> CPI-ATE: CPI adjusted for tax changes and excluding energy products. A further adjustment is made in Norges Bank's projections for the estimated effect of reduced maximum day-care rates from January 2006.

Sources: Amendment to 2006 budget, Revised National Budget 2006, Economic Survey 1/2006 and 3/2006, Inflation Report 1/06 and 2/06, Consensus Forecasts February 2006 and June 2006



# Foreign labour in Norway

In recent years, foreign labour has contributed to relieving the pressure on economic resources in Norway. This box presents a brief overview of the number of non-nationals employed in Norway, and Norges Bank's estimate of the number of equivalent person-years.

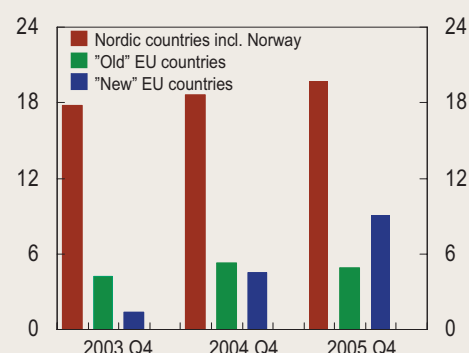
The Labour Force Survey (LFS) covers all employed persons who are registered as resident in Norway in the national population register. According to the LFS, 2 298 000 persons were employed in 2005 Q4. Almost 160 000 were non-nationals. This group accounted for almost the entire growth in employment from 2004 Q4 to 2005 Q4 (see Table 1a).

In addition, there are non-nationals who work in Norway for less than six months, and persons who cross the border daily to work in Norway. These groups are not regarded as residents, and are therefore not covered by ordinary LFS employment statistics. Non-nationals on short-term labour contracts are registered in various registers such as the Employee Register, Register of Pay and Tax Deduction Statements and data from the Central Office – Foreign Tax Affairs. One person may be registered in several registers. Statistics Norway has linked up the various registers and publishes figures for the number of wage earners who are not registered as resident in Norway.<sup>1</sup> These figures are published annually (in June) and cover the fourth quarter of the previous year. In 2005 Q4, almost 38 000 wage earners were not registered as resident in Norway (see Table 1b). The number has increased in

recent years, particularly for nationals of the new EU accession countries (see Chart 1). The figures cover individual employees and employees in foreign companies that perform short-term assignments in Norway. However, the figures do not include the self-employed. The statistics only provide information about the number of persons in the fourth quarter of each year, and not about how many have carried out paid work in the course of the year. Nor do they provide information about how much of each year the individual works in Norway. In order to be able to estimate the overall supply of labour, we have to estimate the number of normal person-years performed by non-resident, non-nationals.

The effect on various national accounting variables from work performed by non-resident, non-nationals in Norway will depend among

**Chart 1** Non-resident wage earners on short-term assignments in Norway. Number in thousands



Source: Statistics Norway

**Table 1a** Number of resident non-nationals employed in Norway by country/region of origin. 2005 Q4 and changes from 2004 Q4

	2005 Q4	Change	Percentage change
Total	2 298 000	8 966	0.4
Norway	2 138 740	8	0
Nordic countries	32 251	1 959	6.5
Old EU countries	20 920	1 540	7.9
New EU countries	10 359	2 563	32.9
Poland	6 738	1 921	39.9
Lithuania	1 162	383	49.2
Other countries	95 730	2 896	3.1

**Table 1b** Number of non-resident, non-nationals employed in Norway by country/region of origin. 2005 Q4 and changes from 2004Q4.

	2005 Q4	Change	Percentage change
Total	37 883	5 909	18.5
Nordic countries incl. Norway	4 012	-17	-0.4
"Old" EU countries	15 663	1 058	7.2
"New" EU countries	5 883	-396	-7.5
Poland	9 087	4 630	103.9
Lithuania	5 879	2 945	102.5
Other countries	2 094	1 098	110.2
Other countries	4 238	634	17.6

Sources: Statistics Norway and Norges Bank

other things on whether they are employed in a Norwegian company or whether they are employees of a foreign company that has been contracted for an assignment in Norway. Work carried out by Norwegian companies is regarded as Norwegian production, and hence as part of GDP. Work carried out by non-nationals employed by a foreign company is regarded as imported services. In both cases, the increased supply of labour reduces pressure on economic resources in Norway. Our estimates therefore also include non-nationals employed in foreign companies.

Table 2 shows Norges Bank's estimates for the annual number of non-residents employed in Norway. Table 3 shows estimates of the number of equivalent person-years. The estimates are based on the fourth-quarter figures from Statistics Norway. In our estimate of the total number in the course of a year, we assume that the number is probably higher in periods of the year other than the fourth quarter. We also take into account that the self-employed are not included in Statistics Norway's statistics. Our estimate of the number of full person-years is based on the assumption that non-nationals are generally employed for less than six months in Norway. On the other hand, their average weekly working hours are probably somewhat higher than a normal working week.

Measured in number of persons, the number of resident, non-nationals<sup>2</sup> employed in Norway is estimated to have increased from just over 46 000 persons in 2004 to about 57 000 in 2005. According to our estimates, they accounted for 2½% of total employment in 2005. If the official statistics for the number of LFS employees also included these employees, annual growth in employment in 2005 would have increased from 0.6% to 1.0%. We expect somewhat slower growth from 2005 to 2006 on the basis of the number of work permits granted so far this year by the Norwegian Directorate of Immigration and figures from the Central Office – Foreign Tax Affairs. From 2007 to 2009, we assume that non-national participation in the labour force will remain stable. Measured in person-years, the number of non-nationals on short-term assignments in Norway is estimated at 1¾% of total number of person-years worked in 2005. Looking ahead, we assume that the number of person-years will increase in pace with the number of non-resident, non-nationals employed in Norway.

**Table 2** Estimates of the number of non-resident, non-nationals employed in Norway. In thousand of persons. Annual figures.

	2004	2005	2006
Total	46.4	57.1	68.3
Norway	4.0	4.0	4.0
Nordic countries	19.1	20.4	21.4
Old EU countries	8.5	7.8	8.2
New EU countries	9.0	18.2	27.3
Other countries	5.8	6.8	7.8

Source: Norges Bank

**Table 3** Estimates of the number of person-years worked by non-resident, non-nationals in Norway. Annual figures.

	2004	2005	2006
Total	27.3	32.8	38.5
Norway	3.2	3.2	3.2
Nordic countries	12.4	13.2	13.9
Old EU countries	4.3	3.9	3.9
New EU countries	4.5	9.1	13.6
Other countries	2.9	3.4	4.0

Source: Norges Bank

<sup>1</sup> Employment and unemployment among short-term immigrants in Norway

<sup>2</sup> This measure also includes Norwegian nationals who are resident in a foreign country, but who are employed in Norway.

# Short-term forecasts for mainland GDP in Norway

Norges Bank's projections form an important basis for the conduct of monetary policy. The article "Forecasting work at Norges Bank" to be published in *Economic Bulletin* 3/2006 describes the work in preparing the forecasts in the *Inflation Report*. The forecasting work involves the use of a macromodel, but the model is primarily suited for more long-term projections. Projections for the coming quarters are largely based on current statistics, information from Norges Bank's regional network and forecasts obtained from a number of statistical and econometric models. The forecasts published are based on an overall assessment.

We use two different methodologies for projecting GDP for mainland Norway over the next quarters. Under the first methodology, we project imports and the different demand components, such as private and general government consumption, fixed investment and traditional exports. The GDP forecast is the sum of the demand components less the projection for imports. In addition, we use simple statistical models to forecast GDP growth directly.<sup>1</sup>

This box describes the models we use to forecast GDP growth directly, and discusses the forecast properties of the different models. The projections in *Inflation Report* 2/05 are compared with the projections these models would have produced at the time the projections in the *Report* were produced. Finally, the model-based projections for GDP over the next three quarters are presented.

## Short-term models for GDP

The following type of models is used to forecast GDP growth directly:

- *ARIMA models* (AutoRegressive Integrated Moving Average). These models only use historical variations in a single time series. ARIMA-based forecasts will thus be a function of lagged values of the variable and of historical errors, given the model. Forecasts based on this type of models can thus be looked upon as an advanced form of extrapolation and has produced good short-term forecasts for many variables. We use an ARIMA model that incorporates
- *GDP growth in the preceding one to four quarters.*
- *Classical VAR models* (Vector AutoRegressive). These models are based on historical relationships between two or more variables. The models take into account that there may be comovement between the variables. A VAR model with  $k$  endogenous variables therefore contains a system of  $k$  equations, one for each variable in the model. All the variables are a function of lagged values of the one variable and of the other variables. A bivariate VAR model contains two variables. We use over 50 bivariate VAR models where GDP is modelled together with variables such as credit growth, labour market data, production indices, Norsk Gallup's trend indicator for households and data from Statistics Norway's business tendency survey and surveys of investment intentions for manufacturing.
- *Bayesian VAR models, BVAR.* In these models, a priori restrictions are imposed on a VAR model. The restrictions can be based on economic theory, for example that a variable reverts to its equilibrium value over time. The restrictions are tested. We employ a BVAR model using the following variables: GDP, consumer prices and interest rates for Norway and its trading partners and the trade-weighted krone exchange rate index.<sup>2</sup>
- *Simple indicator models* for GDP. Short-term monthly indicator statistics are available before GDP figures are published a good two months after the end of the quarter. The indicators that covary with GDP and that cover the entire or parts of a non-published quarter in the national accounts can be used to project GDP for that quarter. We use an indicator model for GDP that contains effects of manufacturing production, employment, retail sales, hotel statistics and building starts. In order to forecast mainland GDP ahead, the explanatory variables in the indicator model are projected using ARIMA models. We also use an indicator model for GDP based on information from Norges Bank's regional network.

In the period ahead, we will further develop the models described above.<sup>3</sup> We also plan to develop similar models for the different GDP demand components. Moreover, we will develop and use other types of models to project short-term GDP growth.

### The models' forecast properties

An important aspect of evaluating the different models is their forecast properties. In order to examine these properties we have made a "historical" projection and calculated the standard deviations of the forecast errors one to four quarters ahead (see Table 1).

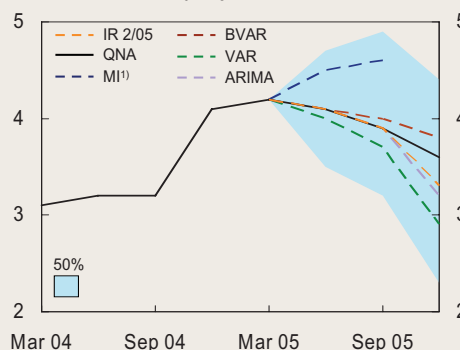
The table reports the forecast properties of the models, with the standard deviation of the forecast errors for each time horizon. The second column shows the standard deviations of the forecast errors from the ARIMA model. The third column shows the standard deviations of the forecast errors based on average forecasts for the ten best VAR models.<sup>4</sup> The fourth column shows the standard deviations for the BVAR model. The penultimate column shows the standard deviations of the forecast error for a "naïve" model, where seasonally adjusted growth ahead is equal to the growth rate in the last known quarter. For the model based on monthly indicators in the last column, we have only made historical one quarter ahead forecasts.

All the models produce more accurate forecasts than the "naïve" model at all horizons. The ARIMA model and the average of the 10 best VAR models have the lowest standard deviation for one quarter and two quarter ahead forecasts. The ARIMA model also performs best for horizons up to four quarters, while the best VAR models generate forecasts with lower accuracy than the other models for horizons over two quarters.

### Comparison of model-based short-term forecasts in Inflation Report 2/05

*Inflation Report 2/05* presented short-term forecasts for seasonally adjusted GDP growth. GDP forecasts for 2005 Q2-Q4 were based on an overall assessment of growth forecasts for demand and forecasts obtained from the ARIMA model and from the short-term model using monthly indicators (MI model). The forecasts from the ARIMA and MI models are presented in Chart 1. The chart also shows actual GDP growth, forecasts from the BVAR model and average forecasts from the ten best VAR models. The forecasts are based on the information prevailing in June 2005. The fan chart illustrates the historical uncertainty surrounding the forecasts for GDP growth. There is a 50% probability that actual GDP growth will lie in the blue area. The forecasts in the *Report* and the forecasts obtained from most of the models were close to actual GDP growth in the first two quarters. The BVAR and ARIMA model-based GDP forecasts were also fairly accurate for 2005 Q4, while the forecast from the VAR models was  $\frac{3}{4}$  percentage point below the outturn.

**Chart 1** GDP mainland Norway. Actual and projections 05 Q2 – 05 Q4. 4-quarter growth. Per cent. Seasonally adjusted.



<sup>1)</sup> Monthly indicators model

Sources: Statistics Norway and Norges Bank

**Table 1** Standard deviation of the forecast errors<sup>1)2)</sup>. Projections with 1-4 quarter horizon

Horizon	ARIMA	VAR <sup>3)</sup>	BVAR	Naïve model	Monthly indicator model
1	0.69	0.66	0.78	1.27	0.80
2	0.79	0.77	0.97	2.00	
3	0.95	1.69	1.15	2.53	
4	1.27	1.47	1.44	3.42	

<sup>1)</sup> The target variable is four-quarter GDP growth for mainland Norway.

<sup>2)</sup> The forecast errors are estimated as follows: The models were first estimated using data up to the 2000 Q1. The estimation results were then used to forecast GDP growth for the next quarters. The estimation period was then extended by one quarter and new GDP forecasts were produced. The procedure was repeated until 2005 Q3 was included in the estimation period. The figures in the table are based on 20 forecasts for each of the forecast horizons. The standard deviations of the forecast errors are estimated as  $(\sum e^2/N)^{1/2}$  where  $e$  is the forecast error and  $N$  ( $=20$ ) is the number of forecast errors.

<sup>3)</sup> Average of the 10 VAR models that have the lowest forecast error at the different forecast horizons.

Source: Norges Bank

## Short-term projections in Inflation Report 2/06

Chart 2 shows the projections for mainland GDP growth over the next four quarters obtained from the statistical short-term models and the projections based on an overall assessment presented in this *Report*. The statistical models show a fairly similar picture of GDP growth ahead. The model based on information from Norges Bank's regional network produces the highest growth rate. The forecasts in *Inflation Report 2/06* are in line with the forecasts from the statistical models.

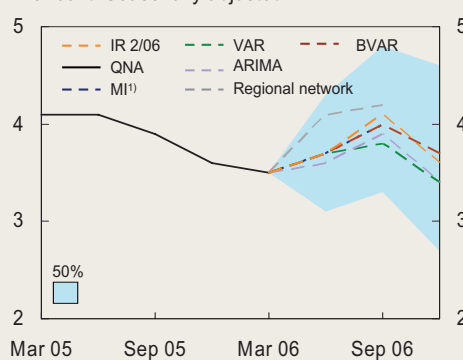
### References

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Gerdrup, Karsten R., Roger Hammersland and Bjørn E. Naug (2006) "Finansielle størrelser og utviklingen i realøkonomien" (Financial variables and developments in the real economy), *Penger og Kreditt*, 2/2006

Kloster, Arne and Kristin Solberg-Johansen (2006): "Prognosearbeidet i Norges Bank" (Forecasting work at Norges Bank), *Penger og Kreditt*, 2/2006

**Chart 2** GDP mainland Norway. Projections for period 06 Q2 – 06 Q4. 4-quarter growth. Per cent. Seasonally adjusted.



<sup>1</sup>) Monthly indicators model

Sources: Statistics Norway and Norges Bank

<sup>1</sup> Several central banks, including Sveriges Riksbank, have employed this type of models. See box *GDP indicators* in Sveriges Riksbank's *Inflation Report 2005:3*.

<sup>2</sup> The estimations are partly based on a program for estimating and evaluating VAR and BVAR models which was developed by Sveriges Riksbank.

<sup>3</sup> We will also incorporate the effects of several financial variables other than those that are included in the models today. Financial variables can be suited as a leading indicator for developments in real variables (see "Finansielle størrelser og utviklingen i realøkonomien" (Financial variables and developments in the real economy) in *Penger og Kreditt 2/2006*).

<sup>4</sup> Studies indicate that an average of model-based forecasts can over time outperform the forecasts obtained from individual models. See, inter alia, Clements and Hendry (2002).

# Earlier boxes 2002-2006

**2 / 06**

*Money, credit and prices – a monetary cross-check*

*Recent price developments*

*The projections in Inflation Report 1/06 and 2/06*

*Foreign labour in Norway*

*Short-term forecasts for mainland GDP in Norway*

**1 / 06:**

*Choice of interest rate path*

*Price developments*

*Productivity growth in Norway*

*The yield curve and economic outlook in the US*

*The projections in Inflation Report 3/05 and 1/06*

*Evaluation of Norges Bank's projections for 2005*

**3 / 05**

*Uncertainty surrounding future interest rates developments*

*Accuracy of short-term interest rate expectations*

*Output gap uncertainty*

*Increased imports from low-cost countries*

*The effects of high oil prices on the global economy*

*The projections in Inflation Report 2/05 and 3/05*

**2 / 05**

*Developments in the krone exchange rate*

*The projections in Inflation Report 1/05 and 2/05*

**1 / 05:**

*Criteria for an appropriate future interest rate path*

*Why are long-term interest rates so low?*

*Low inflation in the Nordic countries*

*Developments in household debt*

*Evaluation of Norges Bank's projections for 2004*

**3 / 04:**

*Estimated relationship for interest rate setting*

*Developments in household debt*

*Preliminary evaluation of the projections in Inflation Report 2/04*

*Norges Bank's foreign exchange purchases for the Government Petroleum Fund*

*The current account surplus and demand for Norwegian kroner*

**2 / 04:**

*Increase in number of working days in 2004*

*Financial stability*

*Norges Bank's estimate of the output gap*

*A change in inflation expectations?*

*Preliminary evaluation of the projections in*

*Inflation Report 1/04*

*What are the factors behind the rise in oil futures prices?*

**1 / 04:**

*Low external price impulses to the Norwegian economy*

*The pass-through from the krone exchange rate to prices for imported consumer goods*

*The effects of the reduction in interest rates on household income*

*The krone exchange rate and exchange rate expectations*

*Evaluation of Norges Bank's projections for 2003*

**3 / 03:**

*Direct effects of interest rates on house rents*

*Imbalances in the US*

*Assumptions concerning the exchange rate*

*Flexible inflation targeting and indicators of pressures in the real economy*

**2 / 03:**

*Low consumer price inflation*

*Evaluation of inflation reports in countries with inflation targets*

*Why does household debt growth remain high?*

*Levels of real capital in enterprises still too high?*

**1 / 03:**

*Factors behind the development in the krone exchange rate*

*Output gap*

*Imported price inflation and the exchange rate - the UK experience*

*Evaluation of Norges Bank's projections for 2001 and 2002*

**3 / 02:**

*The Scandinavian model of inflation-revisited*

**2 / 02:**

*Why has the krone exchange rate appreciated?*

*New expectations survey*

*Why have clothing prices fallen?*

*The impact of higher oil prices*

*How does the krone exchange rate influence the CPI?*

**1 / 02:**

*Evaluation of Norges Bank's projections for 2000*

*Wage growth*

*Have Norges Bank's interest rate decisions been expected?*

# Annex I Regional Network

# Norges Bank's regional network

Norges Bank's regional network was established in autumn 2002 and consists of enterprises, organisations and local authorities throughout Norway. Five times a year, we interview business and community leaders concerning financial developments in their enterprises and industries. Each round of interview comprises about 290 visits. The contacts reflect the production side of the economy, both in terms of industry sector and geographic area. The network comprises approximately 1500 individuals who are contacted once or twice a year.

The primary purpose of the regional network is to obtain up-to-date information on the state of the Norwegian economy. Regular communication with local contacts in Norway's business and community life provide us with information earlier and more frequently than available government statistics. It also provides us with supplementary information about areas not covered by other statistical sources, and we learn which issues are of particular concern

to enterprises. In addition, the regional network will provide us with insight into the effects of specific events and enable us to study relevant issues. Official statistics will continue to form the basis for our view of the state of the economy, but the time lags and revisions associated with these statistics make supplementary sources, such as our regional network, useful.

The information obtained from the regional network, along with other available information on economic developments, will form a basis for Norges Bank's projections as presented in the *Inflation Report* and other published material.

We have divided Norway into seven regions, and for six regions we have engaged regional research institutions to be responsible for the network in their respective regions and to have meetings with contacts on behalf of Norges Bank. The following institutions have been selected:

Region North (Nordland, Troms, Finnmark)	Kunnskapsparken Bodø
Region Central Norway (Nord-og Sør-Trøndelag)	Centre for Economic Research at the Norwegian University of Science and Technology
Region Northwest (Møre og Romsdal, Sogn and Fjordane)	Møreforskning in Molde
Region South-West (Rogaland og Hordaland)	IRIS
Region South (Aust- og Vest-Agder, Telemark, Vestfold)	Agderforskning
Region Inland (Hedmark og Oppland)	Østlandsforskning
Region East (Buskerud, Akershus, Oslo, Østfold)	Covered by Norges Bank



# Summary of the contact rounds since the previous *Inflation Report*

In the contact rounds since the previous *Inflation Report*, which were conducted in March and May, around 580 contacts in the regional network have been interviewed. A national summary and summaries from each region from the May round will be published on Norges Bank's website on 30 June. The summary below is based on regional reports from the institutes responsible for the various regions and does not necessarily represent Norges Bank's view of economic developments.

## *Demand, output and market outlook*

The general impression from the enterprises in the regional network is that growth in the Norwegian economy is still solid (see Chart 1). Growth is strongest in the building and construction industry, commercial services and petroleum-related industries. Economic activity is highest in Region South-West and lowest in Regions Northern Norway and Inland. In general, economic growth along the coast from southern to central Norway seems primarily to be petroleum-driven, while commercial services are providing a strong stimulus to growth in eastern Norway.

**Chart 1** Norges Bank's regional network. Growth in demand and production. Index<sup>1)</sup>. Oct 02 – May 06



<sup>1)</sup> The scale runs from -5 to +5, where -5 indicates a large fall and +5 indicates strong growth. See article "Norges Bank's regional network" in Economic Bulletin 3/05 for further information.

Source: Norges Bank

Reports from the domestic manufacturing sector indicate solid growth in demand and output in all regions, and growth in this industry is broadly based. Both producers of consumer durables such as furniture and boats and suppliers to the building and construction industry report increased demand. Newspapers and the media industry are experiencing vigorous growth as a result of high demand for vacancy advertisements in both the job and property markets.

On the whole, growth is solid in the export industry. The fish-farming industry is optimistic, with rising demand for Norwegian salmon and high prices. The picture is more varied in the fishing industry. Some producers are encountering commodity supply problems and developments also reflect the impact of the strong krone. Export-oriented technology is experiencing strong growth, while there are mixed signals from the process industry. High prices are resulting in growth in the aluminium and iron ore industries, while ferrosilicon production has decreased due to high electricity prices. There is mounting concern about the krone exchange rate in the export industry and internationally exposed domestic manufacturing. At the same time, enterprises' exchange rate management strategies seem to be better today than they were 3-4 years ago.

*Suppliers to the petroleum industry* report continued strong growth in both the domestic and export markets. Activity in petroleum-related industries is still marked by the impact of high oil prices and large-scale investment projects. In addition to exploration and operation in the traditional sense, activity has increased on small fields, existing installations are operating for longer periods and closed fields are being reopened.

*The building and construction industry* reports continued solid growth in spite of a high level of activity. Order reserves in many enterprises are equivalent to at least one year's production. Activity is highest in coastal regions from Southern to North-West Norway. The level of residential construction is still high, and growth is solid in commercial and public building construction. All enterprises report varying degrees of capacity problems. A number of operators are selecting their customers carefully, giving priority to profitability rather than further growth. The shortage of labour is a constraint, and an increasing number of operators are turning to foreign labour in order to increase capacity.

Growth is solid in *retail trade*. Sales of household goods such as building materials, electronics and furniture are rising, and there is continued strong growth in demand for leisure boats. Developments for clothing, footwear and groceries are more moderate.

Growth in *corporate services* has stabilised at a high level. Growth is particularly strong in the service-

intensive regions of Eastern and Southern Norway. This industry reflects activity in other sectors of the economy. In regions showing high growth in areas such as manufacturing and suppliers to the petroleum industry, demand for corporate services is also rising. This particularly applies to Western and Central Norway. Demand for consultancy services has increased in all regions, particularly in Eastern Norway. High activity in the economy in general, and particularly on the stock exchange, is also contributing to strong growth in the financial services industry. A tighter labour market, with strong competition for labour, is still boosting growth in employment services. Tourism and the hotel and restaurant industry are also benefiting from the high level of activity in the business sector and strong demand in the travel industry.

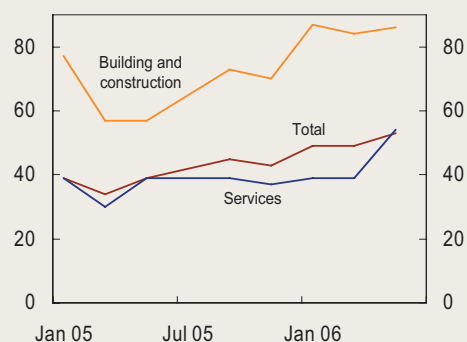
The *household services* sector is exhibiting slower growth than commercial services. However, growth is solid in the private banking market, and hotel and restaurant patronage is increasing.

The market outlook for the next six months indicates that growth will remain high in all sectors. Growth is expected to be highest among suppliers to the petroleum industry and in commercial services.

### Capacity utilisation and investment

In total, 53% of the enterprises interviewed in May reported that they would have some or considerable difficulty in accommodating a rise in demand (see Chart 2). This is an increase from 49% in the two previous rounds this year and higher than in autumn 2005. Idle capacity is still lowest in the building and construction and petroleum-related industries, but capacity problems in the services sector have increased since the previous rounds of interviews.

**Chart 2** Capacity utilisation. Regional network. Share reporting that they have some or considerable difficulty in accommodating an increase in demand. Per cent. Jan 05 – May 06



Source: Norges Bank

All industries report moderate to solid growth in planned investment over the next 6-12 months. 40% are planning to increase investment, while 10% will reduce investment. Manufacturing and the local government and hospital sectors are expecting the strongest growth. In the export industry, investment is broadly based and concentrated on capacity, production equipment, product improvement and rationalisation. The local government and hospital sector is investing in day-care centres, schools, nursing homes and psychiatric care services.

### Employment and the labour market

Employment is increasing in all sectors. Compared with last winter, employment is now also growing in the local government and hospital sector. Over the next three months, more rapid employment growth is expected in all sectors except manufacturing, where a somewhat slower pace is expected. 40% of the enterprises interviewed state that labour shortages are a constraint on production. This is an increase on last winter and confirms that the labour market is tightening. In the building and construction industry, three out of four enterprises report that labour shortages are a constraint on turnover. Manufacturing and services increasingly report labour supply problems. In manufacturing, engineers and skilled labour are in short supply, while it is difficult to procure engineering and financial services in the consultancy, auditing and advisory industry.

### Costs, prices and profitability

Expectations concerning annual wage growth in 2006 are higher than earlier this year. Annual wage growth is expected to average 4¼%. In the private sector, wage growth is expected to be in the interval 4-5%. Growth is expected to be highest in services, while wage growth is expected to be lowest in manufacturing and retail trade. Prices are rising in all industries except retail trade. The rise in prices is strongest in the export industry, petroleum-related industries, building and construction and corporate services. Compared with last winter, the rise in prices in the export industry and in corporate services has accelerated. More than half of the enterprises interviewed expect the rise in prices to remain unchanged over the next 12 months, while a good quarter expect a higher rise in prices. Profitability is improving in all sectors. Profitability is particularly strong in the offshore industry, but is also solid in the export industry, building and construction and services.

# Enterprises and organisations that have been interviewed in the work on this *Inflation Report*

2 brødre  
 3T Produkter AS  
 Abeo AS  
 AC Nielsen Norge AS  
 Adecco region Øst  
 Advanced Production and Loading AS  
 Advokatfirmaet Schjødt AS  
 Aetat Sør-Trøndelag  
 Aetat Vest-Agder  
 Aetat Vestfold  
 Ahlsell Norge AS  
 Air Products AS  
 Airlift AS  
 AIT Trykk Otta AS  
 Ajilon Norway AS  
 Aker Kværner ASA  
 Aker Kværner Offshore Partner AS  
 Aker Kværner Verdalen AS  
 Aker Langsten AS  
 Aker Seafoods J. M. Johansen AS  
 Aker universitetssykehus HF  
 Aker Yards Aukra AS  
 Akerhus fylkeskommune  
 Akershus Universitetssykehus  
 Akvasmart  
 Albert E Olsen AS  
 Alexandra Hotel AS  
 Alfr. Nesset AS  
 Alliance AS  
 Alphontronic AS  
 Alta Kommune  
 Alu-rehab AS  
 American Express  
 Anleggsgartnerfirma Strandman AS  
 Arendal Auto AS  
 Arendal kommune  
 AS Nesseplast  
 Asker kommune  
 Askim kommune  
 Asplan Viak AS  
 Atlantic Auto AS  
 Aure Kommune  
 Axxessit ASA  
 Bakers AS  
 Barel AS  
 Bautas AS  
 Bennett Bti Nordic Norge AS  
 Berendsen Tekstil Service AS  
 Bergen kommune  
 Berg-Hansen Reisebureau AS  
 Bertel O. Steen AS  
 BeWi Produkter AS  
 Biobag International AS  
 Birkenes kommune  
 Bjørn Bygg AS  
 BKK  
 Black Design AS  
 Block Berge Bygg AS  
 Block Watne AS  
 Bodø Transport & Caravan AS  
 Bohus Bomøbler AS  
 Boliden AS  
 Borealis Arkitekter AS  
 Br. Dyrøy AS  
 Br. Reme AS  
 Bravida Sørøst AS  
 Bright ID AS  
 Brude Safety AS  
 Brødrene Bakk AS  
 Brødrene Sperre AS  
 Buer Entreprenør AS  
 Busbygg AS  
 Bussen Trafikkselskap AS  
 Byggma ASA  
 Byggmester Grande AS  
 Bærum kommune  
 Bærum Rørleggerbedrift AS  
 Bølgen og Moi  
 Båtservice Holding ASA  
 CC Martn  
 Charlotte Gaver & Interiør AS  
 CHC Norway  
 Christie & Opsahl AS  
 City Syd AS  
 Clear Channel Norway AS  
 Comfort Hotel Hammer AS  
 Comrod AS  
 Connex Vest AS  
 ConocoPhillips Norge  
 Coop Elektro  
 Coop Inn-Trøndelag BA  
 COOP NKL BA  
 Coop Nordfjord og Sunnmøre BA  
 COOP Sambo BA  
 Coop Sunndalsøra BA  
 CSC Solutions  
 CTM UTVIKLING AS  
 Dale of Norway  
 Dale og Bang kommunikasjon AS  
 DDB Oslo AS  
 Deloitte Norge AS  
 Demex AS  
 Den Nationale Scene  
 Den Norske Bank ASA, Region Sørlandet  
 Destinasjon Skeikampen AS  
 Diakonhjemmet  
 Dinamo Norge AS  
 DIPLOM-IS AS  
 DNH Den Norske Høytalerfabrik AS  
 Dokka Fasteners  
 Domstein ASA  
 Drag Industrier AS  
 Drammen kommune  
 E. A. Smith - Bodø A/S  
 EFD Induction AS  
 Eidsvaag AS  
 Eiendomsmegler 1 AS  
 Eigersund Kommune  
 Einar Valde AS  
 Elektroteknisk Agder AS  
 Elkem Aluminium ANS  
 Elkem Mosjøen  
 Elkjøp Giganten Forus  
 ELKJØP Stormarked Skien  
 Eltek Energy AS  
 Elvemo og Hjertås Bygg AS  
 Emma EDB AS  
 Engerdal kommune  
 Enghav Domstein  
 Ernst & Young AS  
 Ernst & Young AS Tromsø  
 ESMERALDA AS  
 Euronics Norge AS  
 Eurosko Norge AS  
 Evje- og Hornnes kommune  
 Fagbokforlaget  
 Fame fotografene AS  
 Farstad Shipping AS  
 Ferner Jacobsen AS  
 Fesil ASA  
 Findus Norge AS  
 Finny Sirevaag AS  
 First Securities AS  
 First Victoria Hotel  
 Fjellpulken AS  
 Fjord 1  
 Fjord 1/MRF  
 Fjord Seafood Norway AS  
 Fjordkjøkken AS  
 Fjordline -Bergen  
 Fjällräven AS  
 Fokus Bank ASA  
 Fokus Bank Tromsø  
 Fosnavaag Seafood AS  
 Franzefoss Pukk AS  
 Fresenius Kabi Norge AS  
 Fritjof Kristiansen AS  
 Frøya kommune  
 Fundia Armeringsstål AS  
 Fundo Wheels AS  
 Fædrelandsvennen AS  
 Geelmuyden Kiese AS  
 Geoservice AS  
 Gilde Bøndernes Salgslag BA  
 Gilde Nord Norges Salgslag BA  
 GILDE Norsk Kjøtt AS  
 Gilde Vest BA  
 Gilstad Trelast AS  
 Gjensidige Forsikring  
 Gjestal Spinneri ASA  
 Gjøvik kommune  
 Glava AS  
 Goman Bakeriet Trondheim AS  
 Gozzi AS  
 Grieg Logistics AS, avd. Kristiansund  
 Gro Industrier AS  
 Grunnfjell Nord AS  
 Grytnes Entreprenør AS  
 Gunnar Karlsen AS  
 Gunnar Klo AS  
 Gyldendal ASA  
 H.J Økelsrud  
 Hadsel Kommune  
 Hafjell Alpsenter AS  
 Hamar kommune  
 Hank Sport AS  
 Harila Tromsø AS  
 Harstad kommune  
 Hatteland Group  
 Hedalm Anebyhus AS, region Nord-Vest  
 Hedmark Eiendom AS  
 Helgeland Sveiseindustrier AS  
 Helly Hansen Spesialprodukter AS  
 Helse Finnmark  
 Hepro AS  
 Herlige Stavanger AS  
 Hitra kommune  
 Horn Slakteri AS  
 Hotell Refsnes Gods AS  
 Hov Dokka AS  
 Hovden Møbel AS  
 Hunter Douglas Norge  
 H-vinduet Vatne AS  
 Hydro Aluminium AS  
 Hydro Aluminium Profiler AS  
 Hydro Polymers AS  
 Hydrolift  
 Haaland Installasjon AS  
 Hårek  
 ICA Distribusjon AS  
 Ikea AS  
 Ikon AS  
 InMedia AS  
 Interfil AS  
 Intersport Lillehammer AS  
 Intra AS  
 IPEC Kristiansand AS  
 ISS Norge AS  
 ISS Renhold Region Vest  
 It Partner Tromsø AS  
 Itet AS  
 Ivar Mjåland AS  
 Iver Bil AS  
 Jadarhus  
 JC Jeans & Clothes AS  
 Jernia ASA  
 Jiffy Products International AS  
 Johansen TH & Sønner AS  
 JOTUN AS  
 Julius Maske AS  
 Jørstad AS  
 Jøtul ASA  
 K. Haneseth AS  
 Kantega AS  
 Kappahl AS  
 Karmsund Maritime Service AS  
 KENO reklame AS  
 Kewa Invest AS  
 Kino1 Stavanger  
 Kitron Arendal AS  
 Kiwi Norge AS  
 Klausengruppen AS  
 Kleive Betongbygg AS  
 Klæbu kommune  
 Klaastad Brudd DA  
 Komplet AS  
 Kongsberg Automotive ASA  
 Kongssenteret  
 Kongsvinger kommune  
 KPMG Trondheim  
 Kristiansand Næringsforening  
 Krogsveen Tromsø AS  
 Kroken Caravan AS  
 Kruse Smith AS  
 Kvestor Eiendomsmegling AS  
 Kynningsrund AS  
 Lafopa Industrier AS  
 Landskapsentreprenørene AS  
 Landteknikk Fabrik AS  
 Lefdal Elektromarked AS Lade  
 Leiv Sand Transport AS  
 Lerum Fabrikker AS  
 Lerøy Midnor AS  
 Lillesand produkter AS  
 Lindesnes kommune  
 Lindstrøm Hotel AS  
 Link Arkitekter AS  
 Lofoten Not & Trål  
 Lofoten Pelagiske AS  
 Lund kommune  
 Løvenskiold Handel AS  
 Löwini Bodø AS  
 M. Peterson & Søn AS  
 Madsen Bil AS  
 Majas Salong AS  
 Maritime Hotell Flekkefjord  
 Maritime Pusnes AS  
 Martin M.Bakken AS  
 Meca Norway AS  
 Melbu Systems AS  
 Melby Snekkerverksted AS  
 Mesta AS  
 Minera AS  
 Mjosundet Båt og Hydraulikk AS  
 Mjøsplast A.S  
 Moelven Østerdalsbruket  
 Moi Rør AS  
 Molde Kommune  
 Montér  
 Multimaskin AS  
 My Travel  
 Møre Båtservice AS  
 Møre og Romsdal Fylkeskommune

Møre og Romsdal Kornsilø ANS  
Mørekjøtt AS  
Nannestad kommune  
Narud –Stokke-Wiig Arkitekter AS  
NCC Roads AS  
Nera Networks AS  
Nesje AS  
Neste Stopp AS  
Nexans Norway AS  
NOR- DAN AS  
NOR Tekstilservice AS  
Norac AS  
Norbohus Vinstra AS  
Norbook AS  
Norconsult AS  
Nordea Bank Norge ASA  
Nordek AS  
Nordic Comfort Products AS  
Nordic Semiconductor ASA  
Nordlaks AS  
Nordlandsbanken ASA  
Nordlandssykehuset  
Norengros Johs Olsen AS  
Norges Handels- og Sjøfartstidende AS  
Norisol Norge AS  
Norlense AS  
Norsk AS  
Norsk Sjømat AS  
Norsk Systemplan og Enøk AS  
Norske Skogindustrier ASA Skogn  
Nortroll AS  
Notar Eiendom AS  
Nycomed Pharma AS  
Nygård Trevarefabrikk AS  
Nylander Næringsmegling AS  
NYMO AS  
Næringsforeningen i Trondheim  
Næringsråd i Arendal kommune  
Nøstet Kjetting AS  
Oasen  
Oddstøl Elektronikk AS  
Olafsen Transport AS  
Ole K. Karlsen Entreprenør AS  
Oljedirektoratet  
Opera Software ASA  
Oppland Entreprenør AS  
Optimera Vest  
Oras Nordland AS  
Oras Trondheim AS  
Os kommune  
Oslo Entreprenør AS  
Osram AS  
Otta Sag og Høvleri AS  
Ottar Kristoffersen Eftf. AS  
Owens Corning Fiberglas Norway AS  
PA Consulting Group AS  
Pareto Securities AS  
Partner Møte AS  
Partner Reisebyrå AS  
Paulsen Eiendom AS  
PDC Tangen AS  
PEAB AS  
Pedersens Lastebiltransport AS  
Per Solem Arkitektkontor AS  
Per Strand AS  
Personalservice AS  
Petoro  
PGS Production Group  
Pitney Bowes avd Eidsiva  
PLASTAL AS  
Plasto AS  
PLAST-sveis AS  
Polimoon AS  
Pon Power  
Porsgrunds Porselænsfabrik AS  
Powel ASA  
PriceWaterhouseCoopers  
PricewaterhouseCoopers DA

Prior Norge BA  
Procter & Gamble  
Proffice AS  
Profil Lakkerings AS  
Prosaf AS  
Proxll AS  
På Håret AS  
Radisson SAS Hotel Tromsø  
Rambøll Norge AS  
Rana Gruber AS  
Rana Kommune  
Rana Plast AS  
Rapp Hydema AS  
Rasmussen K A AS  
Rec Sitech AS  
Reinertsen Anlegg AS  
Reinertsen Engineering AS  
Rema 1000  
Remvik & Standal AS  
Remøy Shipping AS  
Restco AS  
Rica Hotel Hamar AS  
Rica Hotel Norge AS  
Rica Hotels ASA  
Rica Hotels Midt-Norge AS  
Rica Maritim Hotel  
Rieber & Søn ASA  
Rieber & Søn Elverum  
Ring Mekanikk AS  
Ringsaker kommune  
Rio Doce Manganese Norway AS  
Robinson Scandinavia AS  
Rockwool AS  
Rofiskgruppen AS  
Rogaland Elektro AS  
Rogaland Fylkeskommune  
Rolfsen AS  
ROM Eiendomsutvikling AS  
Romerike Trelast AS  
Romsdals Budstikke AS  
Rosenborg Malerforretning AS  
Royal Garden Hotell  
Rygge kommune  
Rød Tråd AS  
Safari  
Saga Boats AS  
Samarbeidende Revisorer AS  
Sandefjord kommune  
SandnesGarn  
Santo AS  
SAP Norge AS  
Scandic Hotell  
ScanPartner AS  
Schenker Linjegods AS  
Schlumberger  
SEB Kort AB, Oslofilialen  
Securitas - Regionkontor Bergen  
Sengemakeriet Gullaksen Møbler AS  
Sentrum Regnskap - Hitra  
SG Equipment Finance AS  
SG-Finans AS  
Siemens AS  
Silvinova AS  
Simon Møkster Shipping AS  
SinkaBerg-Hansen AS  
SINTEF konsernstab  
Sjåtil og Fornæss AS  
Skagen Fondene  
Skanska Norge AS  
Skarvik AS  
Skeidar AS avd. Ålesund  
Skien kommune  
Skjalg A. Pettersen AS  
Skretting AS  
Smurfitt Norpapp AS  
Solstrand Fjordhotell AS  
Sortland Elektro AS  
Sortland Reisebyrå AS  
Sparebank 1 Nord-Norge, region

Nordland  
Sparebank 1 Vestfold  
Sparebank1 Romsdals Fellesbank  
Sparebanken Hedmark  
Sparebanken Ørsta Volda  
Sparebanken Øst  
Spærre Støperi AS  
Sport 1 Gruppen AS  
Sportshuset AS  
Sprice AS  
St. Olavs Hospital  
Stabburet AS  
Stantek Kongsvinger AS  
Star Tour  
Statens Vegvesen Region Sør  
Stavanger kommune  
Steertec Raufoss AS  
Stordal kommune  
Stordal Møbler AS  
Stormoa Butikksenter  
Strømsholm Fiskeindustri AS  
Subsea7 AS  
Sunnmørsposten AS  
Surnadal Transport AS  
Sykehuset i Vestfold HS  
Sykehuset Telemark HF  
Syljuåsen AS  
Sylteosen Betongvarefabrikk AS  
Sørensen Maskin AS  
Sør-Trøndelag fylkeskommune  
T.Stangeland Maskin AS  
Tanabygg AS  
Taubåtkompaniet AS  
Technor ASA  
Teknisk Bureau AS  
Tema Eiendomsselskap AS  
Thon Hotel Nordlys  
TIBE Reklamebyrå AS  
Tine Meierier Vest  
Tine Meierier Øst BA  
Titania AS  
Topp Auto AS  
Torpa Bilruter AS  
Toten Bygg og Anlegg AS  
Toten Transport A/L  
Totens Sparebank  
Toyota Hell Bil AS  
Toyota Nordvik AS  
Toyota Norge AS  
Trafikk & Anlegg AS  
Trioiving AS  
Trondheim kommune  
Trondheim Stål AS  
Trondheim Torg  
Trysilfjellet BA  
TV 2 Gruppen AS  
TV Nordvest AS  
Tvedestrand kommune  
Tyrholm & Farstad AS  
Tønsberg kommune  
Umoe Catering AS  
Umoe IKT AS  
UPC  
Valldal Høvleri AS  
Valle sparebank  
Varden AS  
Vefsn Kommune  
Vegdirektoratet  
Veidekke ASA  
Verdal kommune  
Vestbase AS  
Vesteråls-Revisjon AS  
Vestre Toten kommune  
Vestvik Reklame AS  
Vestvågøy Kommune  
Vetco Aibel AS  
Vikomar AS  
Vital næringseiendom AS

Vizrt  
Vokks Installasjon AS  
Volmax AS  
Våler Bygg AS  
Wennberg Trykkeri AS  
Wenaas AS  
Westnafa Industrier AS  
Westres Bakeri AS  
Widerøe Internett AS  
Widerøes Flyveselskap ASA  
Wiersholm Mellbye & Bech Adv. AS  
Windy Boats AS  
Xerox AS  
Yara International ASA  
YIT Building Systems AS  
Øster Hus Bygg AS  
Østerdal Billag AS  
Østereng & Benestad AS  
Øveraasen AS  
Øyer kommune  
Åge Nilsen AS  
Ålesund Kommune  
Ålesund Storsenter AS  
Aarbakke AS  
Årdal Stålindustri AS  
Aarsland Møbelfabrikk AS  
Aas Mek. Verksted AS  
Aasen Bygg AS

## Annex II

# Statistics, charts and detailed projections

# Monetary policy meetings in Norges Bank

*with changes in sight deposit rate*

Date	Sight deposit rate <sup>1)</sup>	Change
<b>Future meetings</b>		
13 December		
1 November 2006		
27 September 2006		
16 August 2006		
<b>Previous monetary policy meetings</b>		
29 June 2006	2.75	0
31 May	2.75	+0.25
26 April	2.5	0
16 March 2006	2.5	+0.25
25 January 2006	2.25	0
14 December 2005	2.25	0
2 November 2005	2.25	+0.25
21 September 2005	2	0
11 August 2005	2	0
30 June 2005	2	+0.25
25 May 2005	1.75	0
20 April 2005	1.75	0
16 March 2005	1.75	0
2 February 2005	1.75	0
15 December 2004	1.75	0
3 November 2004	1.75	0
22 September 2004	1.75	0
11 August 2004	1.75	0
1 July 2004	1.75	0
26 May 2004	1.75	0
21 April 2004	1.75	0
11 March 2004	1.75	-0.25
28 January 2004	2	-0.25
17 December 2003	2.25	-0.25
29 October 2003	2.5	0
17 September 2003	2.5	-0.5
13 August 2003	3	-1
25 June 2003	4	-1
30 April 2003	5	-0.5
05 March 2003	5.5	-0.5

<sup>1)</sup> The sight deposit rate is Norges Bank's key rate. The sight deposit rate is the interest rate on banks' deposits in Norges Bank. The sight deposit rate forms a floor for money market rates. By managing banks' access to liquidity, the central bank ensures that short-term money market rates are normally slightly higher than the sight deposit rate.

Table 1 Main macroeconomic aggregates

Percentage change from previous year/quarter	GDP	Mainland GDP	Private consumption	Public spending on goods and services	Mainland fixed inv.	Petroleum inv. <sup>1)</sup>	Exports trad. goods	Imports
1998	2.6	4.1	2.7	3.3	8.6	22.2	5.4	8.5
1999	2.1	2.7	3.3	3.2	-0.1	-13.1	2.2	-1.8
2000	2.8	2.5	3.9	1.3	-1.2	-23.0	5.1	2.7
2001	2.7	2.1	1.8	5.8	4.3	-4.1	1.5	0.9
2002	1.1	1.4	3.0	3.7	2.5	-5.3	0.4	0.7
2003	1.1	1.4	2.9	1.3	-3.7	16.1	4.4	1.1
2004	3.1	3.8	4.7	2.2	7.8	7.8	3.4	8.9
2005	2.3	3.7	3.4	1.5	8.8	15.6	5.8	7.4
2005 <sup>2)</sup> Q1	0.2	0.6	0.2	0.3	-4.6	-1.8	-0.4	-2.0
Q2	1.0	0.9	2.0	0.4	4.5	9.5	-0.8	3.9
Q3	0.8	0.6	0.6	-0.2	1.1	-4.9	4.3	3.6
Q4	0.3	1.3	0.0	0.4	7.9	14.5	2.1	1.4
2006 <sup>2)</sup> Q1	0.6	0.6	1.6	1.2	-5.3	-16.0	-1.1	0.9
Level 2005, in billions of NOK	1904	1410	796	388	252	88	230	534

1) Extraction and pipeline transport

2) Seasonally adjusted quarterly figures

Source: Statistics Norway

Table 2 Consumer prices

Twelve-month rise. Per cent	CPI	CPI-ATE <sup>1)</sup>	CPI-AT <sup>2)</sup>	CPI-AE <sup>3)</sup>	HICP <sup>4)</sup>	
1998	2.3			2.9	2.0	
1999	2.3			2.3	2.1	
2000	3.1			2.3	3.0	
2001	3.0	2.6	3.2	2.4	2.7	
2002	1.3	2.3	2.2	1.6	0.8	
2003	2.5	1.1	2.5	1.0	1.9	
2004	0.4	0.3	0.0	0.8	0.6	
2005	1.6	1.0	1.2	1.4	1.5	
2005	Jan	1.1	0.7	0.5	1.2	1.0
	Feb	1.0	0.7	0.4	1.3	0.8
	Mar	1.0	0.7	0.5	1.1	0.8
	Apr	1.3	0.8	0.8	1.3	1.1
	May	1.6	1.1	1.2	1.5	1.4
	Jun	1.7	1.1	1.3	1.4	1.6
	Jul	1.4	1.1	1.1	1.4	1.3
	Aug	1.9	1.3	1.5	1.6	1.8
	Sep	2.0	1.3	1.7	1.6	2.1
	Oct	1.8	1.2	1.5	1.4	1.8
	Nov	1.8	1.1	1.5	1.4	1.8
	Dec	1.8	0.9	1.5	1.3	2.0
2006	Jan	1.8	0.8	1.5	1.1	1.8
	Feb	2.6	1.0	2.3	1.2	2.7
	Mar	2.4	0.9	2.2	1.1	2.4
	Apr	2.7	0.8	2.6	1.1	2.8
	May	2.3	0.7	2.1	1.0	2.5

1) CPI-ATE: CPI adjusted for tax changes and excluding energy products

2) CPI-AT: CPI adjusted for tax changes

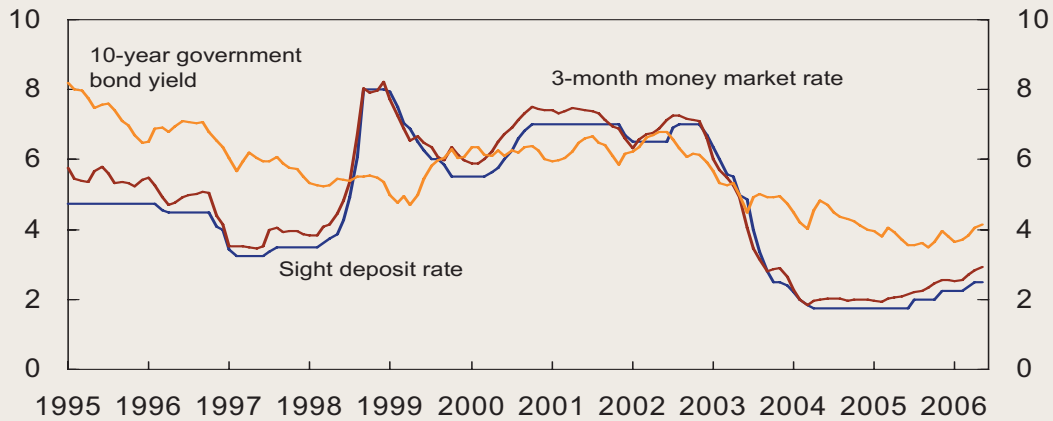
3) CPI-AE: CPI excluding energy products

4) HICP: The Harmonised Index of Consumer Prices. The index is based on international criteria drawn up by Eurostat.

Source: Statistics Norway

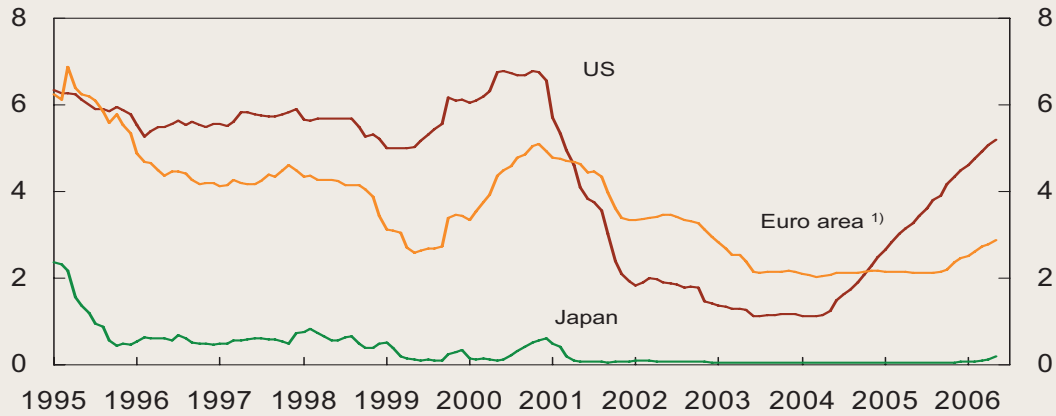
# Charts

**Chart 1** Norwegian interest rates. 3-month money market rate, sight deposit rate and 10-year government bond yield. Monthly figures. Jan 95 – May 06



Source: Norges Bank

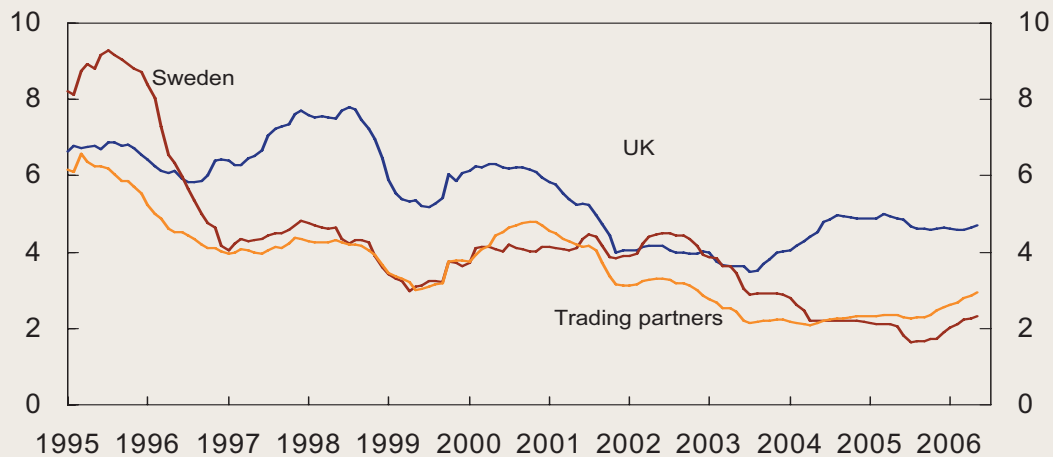
**Chart 2** 3-month interest rates in the US, the euro area and Japan. Monthly figures. Jan 95 – May 06



<sup>1)</sup> Theoretical ECU rate up to and including December 1998.

Source: EcoWin

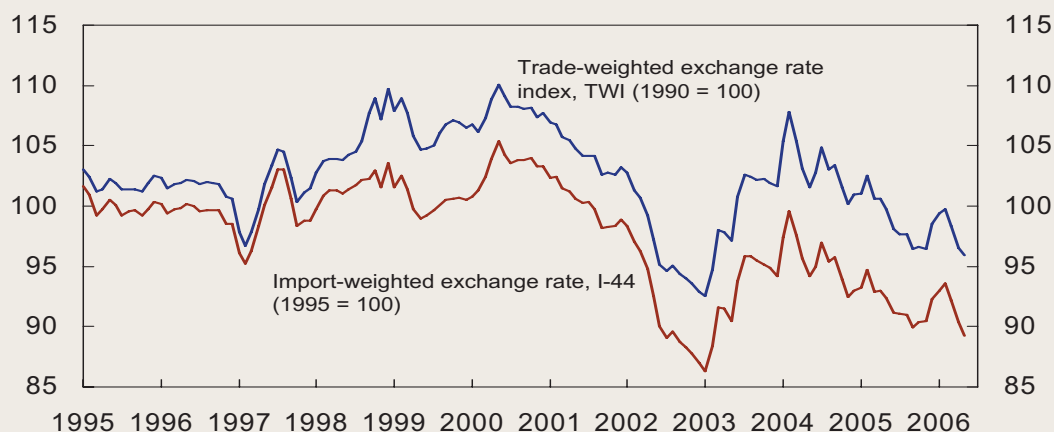
**Chart 3** 3-month interest rates in the UK, Sweden and among trading partners. Monthly figures. Jan 95 – May 06



Sources: EcoWin and Norges Bank



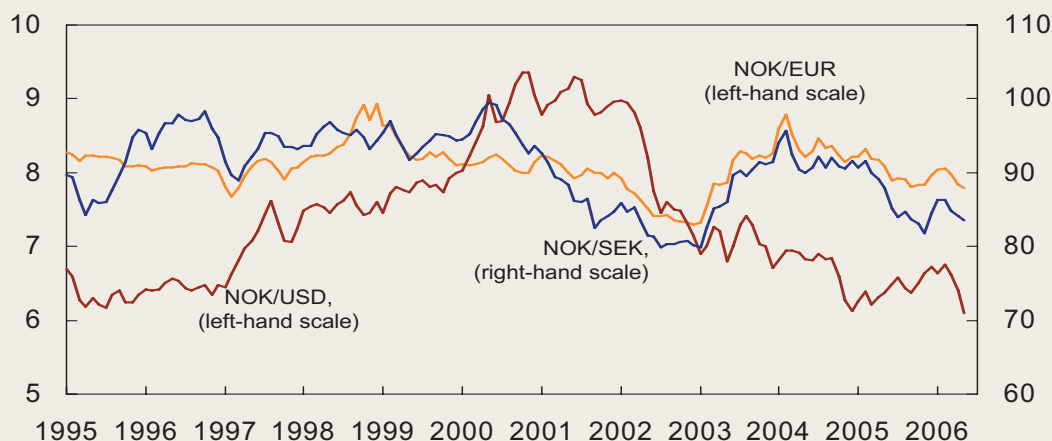
**Chart 4** Trade-weighted exchange rate index (TWI) and import-weighted exchange rate (I-44).<sup>1)</sup> Monthly figures. Jan 95 – May 06



<sup>1)</sup> A rising curve denotes a weaker krone exchange rate.

Source: Norges Bank

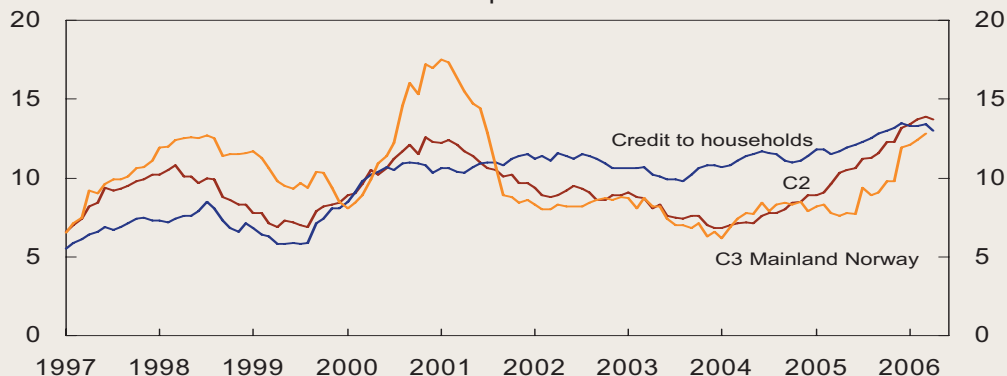
**Chart 5** Bilateral exchange rates.<sup>1)</sup> Monthly figures. Jan 95 – May 06



<sup>1)</sup> A rising curve denotes a weaker krone exchange rate.

Source: Norges Bank

**Chart 6** The credit indicator (C2), credit to households and total credit to the non-financial private sector and municipalities, mainland Norway (C3)<sup>1)</sup>. 12-month rise. Per cent. Jan 97 – Apr 06



<sup>1)</sup> As a result of a change in the foreign component in C3, the figures presented here have been considerably revised on earlier versions, see <http://www.norges-bank.no/front/statistikk/en/k3/> for further information.

Source: Norges Bank

Table 3 GDP growth in other countries

<b>Percentage change from previous year</b>								
<b>Projections for 2006-2009</b>								
	US	Japan	Germany	France	UK	Sweden	Trading-partners <sup>1)</sup>	Euro area <sup>2)</sup>
2005	3.5	2.7	1.1	1.4	1.8	2.7	2.5	1.4
Projections								
2006	3¼	3	1¾	2	2¼	3¼	3	2
2007	2¾	2	1½	2	2½	2¾	2½	2
2008	3	1½	1½	2	2½	2½	2½	2
2009	3	1¼	1½	2	2½	2¼	2½	2

1) Export weights, Norway's 25 main trading partners.

2) Weights from Eurostat

Sources: IMF, OECD, EU Commission and Norges Bank

Table 4 Consumer prices in other countries

<b>Percentage change from previous year</b>								
<b>Projections for 2006-2009</b>								
	US	Japan	Germany	France	UK	Sweden	Trading-partners <sup>1)</sup>	Euro area <sup>2)</sup>
2005	3.4	-0.3	1.9	1.9	2.0	0.5	2.0	2.2
Projections								
2006	3½	¾	2	2	2¼	1½	2¼	2¼
2007	2½	1	2½	1¾	2	2¼	2¼	2¼
2008	2½	1¼	1¾	2	2	2¼	2¼	2
2009	2½	1¼	1¾	2	2	2	2	2

1) Import weights, Norway's 25 main trading partners.

2) HICP. Eurostat weights (each country's share of total euro-area consumption)

Sources: IMF, OECD, EU Commission and Norges Bank

Table 5 Main macroeconomic aggregates

	In billions of NOK		Percentage change (unless otherwise stated)			
	2005	2005	Projections			
			2006	2007	2008	2009
<b>Real economy</b>						
Mainland demand <sup>1)</sup>	1435	3.8	4¼	3	2½	2½
- Private consumption	796	3.4	3½	3¼	2½	2¼
- Public consumption	388	1.5	3	1¾	3¼	3¼
- Fixed investment <sup>2)</sup>	252	8.8	8	4¾	2¼	1½
Petroleum investment <sup>3)</sup>	88	15.6	5	0	-5	0
Traditional exports	313	4.8	6¼	3¾	3¼	3¼
Imports <sup>2)</sup>	534	7.4	6¼	3¾	2	2¾
GDP	1904	2.3	2½	3½	3	1½
Mainland GDP	1410	3.7	3¾	2¾	2¼	2¼
Potential mainland GDP		2¾	2½	2½	2½	2½
Output gap, mainland Norway <sup>4)</sup>		0	1¼	1½	1¼	1
<b>Labour market</b>						
Employment		0.7	2¼	1	½	¼
Labour force, LFS		0.8	1½	¾	½	½
Registered unemployment (rate)		3.5	2¾	2½	2½	2¾
LFS unemployment (rate)		4.6	3¾	3½	3½	3¾
<b>Prices and wages</b>						
CPI		1.6	2¼	1¾	2	2½
CPI-ATE <sup>5)</sup>		1.0	1	1½	2	2½
Annual wage growth <sup>6)</sup>		3¼	4	4¾	4¾	4¾
<b>Interest rate and exchange rate</b>						
Sight deposit rate (level)		1.9	2¾	3¾	4½	5
Import-weighted exchange rate (I-44) <sup>7)</sup>		91.9	90¼	89¼	89¼	89½

1) Private and public consumption and mainland gross fixed investment.

2) The projections do not include the import of two frigates in 2006, and the import of one frigate in each year in the period 2007-2009. Each frigate is estimated to cost NOK 3.5 billion.

3) Extraction and pipeline transport.

4) The output gap measures the deviation in percent between actual and projected potential GDP.

5) CPI-ATE: CPI adjusted for tax changes and excluding energy products. In addition, it is adjusted to take into account that the reduction in maximum day-care rates pushes down the rise in the CPI-ATE by an estimated 0.2 percentage point in 2006.

6) Annual wage growth is based on the Technical Reporting Committee on Income Settlements' definitions and calculations. The projections include estimated costs related to the introduction of compulsory occupational pensions.

7) Level. The weights are estimated on the basis of imports from 44 countries, which comprises 97% of total imports.

Sources: Statistics Norway, the Technical Reporting Committee on Income Settlements, Directorate of Labour and Norges Bank

