NORGES BANK

Monetary Policy Report

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Monetary Policy Report
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Norges Bank

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Monetary Policy Report

The *Report* is published three times a year, in March, June and October/November. The *Report* assesses the interest rate outlook and includes projections for developments in the Norwegian economy and analyses of selected themes.

At its meeting on 11 August, the Executive Board discussed relevant themes for the *Report*. At the Executive Board meeting on 13 October, the economic outlook was discussed. On the basis of this discussion and a recommendation from Norges Bank's management, the Executive Board adopted a monetary policy strategy for the period to the publication of the next *Report* on 16 March 2011 at the meeting held on 27 October. The Executive Board's summary of the economic outlook and the monetary policy strategy is presented in Section 1. In the period to the next *Report*, the Executive Board's monetary policy meetings will be held on 15 December, 26 January and 16 March.

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This *Monetary Policy Report* is based on information in the period to 21 October 2010.

The monetary policy strategy in Section 1 was approved by the Executive Board on 27 October 2010.

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.

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

Monetary policy influences the economy with a lag. Norges Bank sets the interest rate with a view to stabilising inflation close to the target in the medium term. The horizon will depend on disturbances to which the economy is exposed and the effects on prospects for the path for inflation and the real economy.

The decision-making process

The main features of the analysis in the *Monetary Policy Report* are presented to the Executive Board for discussion at a meeting about two weeks before the *Report* is published. Themes of relevance to the *Report* have been discussed at a previous meeting. On the basis of the analysis and discussion, the Executive Board assesses the consequences for future interest rate developments, including alternative strategies. The final decision to adopt a monetary policy strategy is made on the same day as the *Report* is published. The strategy applies for the period up to the next *Report* and is presented at the end of Section 1 in the *Report.*

The key policy rate is set by Norges Bank's Executive Board. Decisions concerning the interest rate are normally taken at the Executive Board's monetary policy meeting every sixth week. The analyses and the monetary policy strategy, together with assessments of price and cost developments and conditions in the money and foreign exchange markets, form a basis for interest rate decisions.

Communication of the interest rate decision

The monetary policy decision is announced at 2pm on the day of the meeting. At the same time, the Executive Board's monetary policy statement is published. The statement provides an account of the main aspects of economic developments that have had a bearing on the interest rate decision and the Executive Board's assessments. The Bank holds a press conference at 2:45 pm on the same day. The press release, the Executive Board's monetary policy statement and the press conference are available on www.norges-bank.no.

Reporting

Norges Bank reports on the conduct of monetary policy in the *Monetary Policy Report a*nd 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 deliberations on the Credit Report.

Editorial

Low inflation

The world economy has expanded at a faster pace than expected a few months ago, but is still faced with trade imbalances and large budget deficits in advanced economies. In particular in the US, the UK and southern European countries household, corporate and public demand for goods and services has exceeded domestic supply. A rising share of demand in these countries is being met by China and other emerging market economies, where production costs are lower and currency values are being held down. This has led to falling consumer price inflation in our part of the world. In addition, economic growth is low and central bank interest rates are close to zero in many countries.

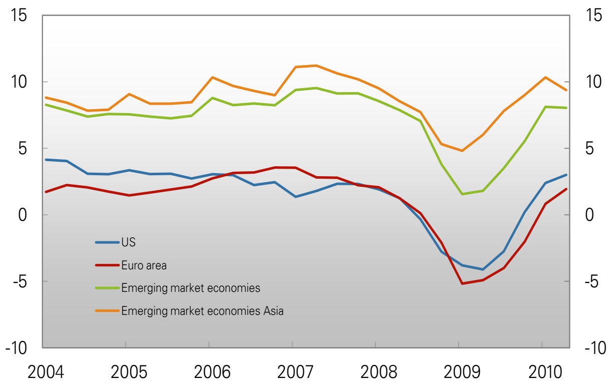
Inflation has also declined in Norway. The domestic interest rate level is higher than in other countries, but is still low. Moreover, the real krone exchange rate is strong. Labour costs and the price level in Norway are high. Low interest rates are inducing households to spend a larger share of income on goods and services than would otherwise be the case, but the strong real exchange rate is leading to a rising share of demand being met by foreign production.

The primary objective of monetary policy is to keep inflation low and stable. Major western countries are pursuing an accommodative monetary policy to prevent inflation from becoming too low. There are also prospects that inflation in Norway will be lower than the target of 2½% for a while, even though the economy is growing at a fairly sound pace. A markedly higher interest rate level in Norway than abroad will increase the risk of a krone appreciation and pull down further on inflation. In spite of a more balanced economic situation in Norway in relation to other countries, there are prospects that the key policy rate will be increased somewhat later than expected this past summer.

The Executive Board's strategy is that the key policy rate should be in the interval 1½% – 2½% in the period to the publication of the next *Report* on 16 March unless the Norwegian economy is exposed to new major shocks.

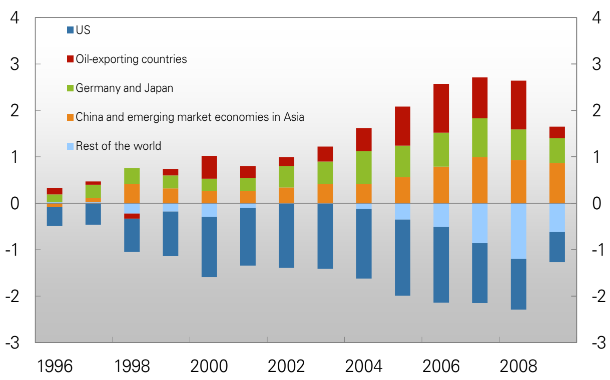
Svein Gjedrem, 27 October 2010

Chart 1.1 GDP in advanced economies and emerging market economies[1]. 4-quarter change. Per cent. 2004 Q1 – 2010 Q2



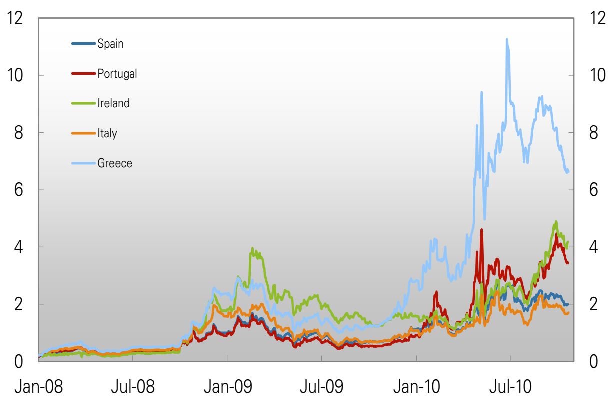
1) Weighted by GDP weights (PPP). See *Economic Commentaries* 8/2009 for an overview of countries included in the different regions
Sources: International Monetary Fund, Thomson Reuters and Norges Bank

Chart 1.2 Global imbalances. Current account as a percentage of world GDP. 1996 – 2009



Source: International Monetary Fund

Chart 1.3 CDS premiums on sovereign debt. 5-year maturity. Percentage points. 1 January 2008 – 21 October 2010



Source: Bloomberg L.P.

1 Monetary policy assessments and strategy

The economic situation

The outlook for the world economy is still shrouded in uncertainty. Growth so far this year has been higher than projected, but there are wide variations across regions. In the US, developments have been weaker than expected through summer and autumn. It would appear that unemployment is becoming entrenched at a high level, the housing market is still in a slump and household caution has increased. Europe is experiencing a downturn, but production has picked up in many northern European countries. Growth is vigorous in Asia and many emerging market economies (see Chart 1.1). Inflation is moderate in most countries.

Imbalances in the world economy have given rise to strains on international economic cooperation (see Chart 1.2). China's exchange rate policy has been under criticism. Other countries have also pursued a policy aimed at keeping down the value of their own currency. In Japan, South Korea and other Asian countries, central banks have intervened in the foreign exchange market, while Brazil has increased taxes on foreign purchases of securities.

Financial market participants are still concerned about the risk of sovereign debt default in some European countries. This autumn, Irish and Portuguese CDS prices rose to yet higher levels (see Chart 1.3), but the risk has been contained by measures taken by EU countries, the European Central Bank (ECB) and the International Monetary Fund (IMF). Cuts in public spending and tax increases have also contributed.

Central bank key rates are close to zero in many countries. The expected upward shift in interest rates has been deferred further ahead. Since the June *Report* the Japanese central bank has lowered its key rate to 0 – 0.1%.

In the US, the euro area and the UK, interest rate hikes are not expected until the end of 2011 at the earliest (see Chart 1.4). Sweden and commodity-exporting countries such as Australia, New Zealand and Canada have started raising their key rates. In Sweden and Canada, and to some extent in New Zealand, interest rates remain low, but have shifted upwards to a more normal level in Australia.

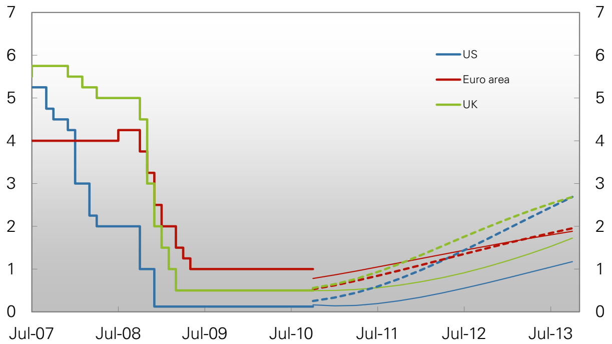
Long-term interest rates are also very low (see Chart 1.5). Since the June *Report,* US ten-year government bond yields have continued to move down and are now around 2.5%. The Federal Reserve has recently indicated that it will continue buying bonds. This is contributing to keeping down US long-term interest rates and has fed through to yields in other countries. Corporate bond yields have also fallen. Low long-term interest rates are discussed in a box on page 13.

While long-term interest rates have fallen, equity prices and commodity prices have moved up. Oslo Børs has gained around 10% since the June *Report*. Equity prices in emerging market economies have advanced by 17% in the same period. Oil spot prices (Brent Blend) have hovered around USD 75 per barrel since last autumn, but have recently drifted up. Futures prices imply a further increase in oil prices.

The effective exchange rate of the US dollar has depreciated by around 8% since the June *Report.* The Swedish krona and the euro have appreciated. The Norwegian krone has shown some variation, but remains broadly unchanged since June. The interest rate differential against other countries has narrowed somewhat.

The spread between money market rates and key rates is now around 0.6 percentage point. Premiums have fallen somewhat since the June *Report*, but are still high. Norges Bank has announced that measures will be introduced to enhance the functioning of the money market and to bring down premiums. Since October 2009, Norges Bank has raised the key policy rate by a total of 0.75 percentage point. The weighted average interest rate on new residential mortgages has increased by 0.45 percentage point in the same period (see Chart 1.6).

Chart 1.4 Key rates and estimated forward rates as at 23 June 2010 and 21 October 2010.[1)] Per cent. 1 July 2007 – 31 December 2013[2)]

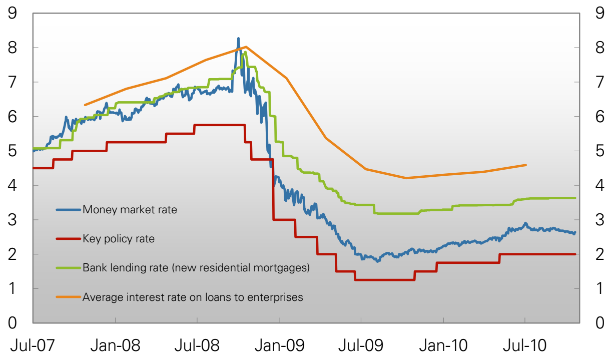


1) Broken lines show estimated forward rates as at 23 June 2010. Thin lines show forward rates as at 21 October 2010. Forward rates are based on Overnight Indexed Swap (OIS) rates
2) Daily figures from 1 July 2007 and quarterly figures as at 21 October 2010
Sources: Bloomberg L.P. and Norges Bank

Chart 1.5 Yield on 10-year government bonds. Per cent. 1 January 2000 – 21 October 2010

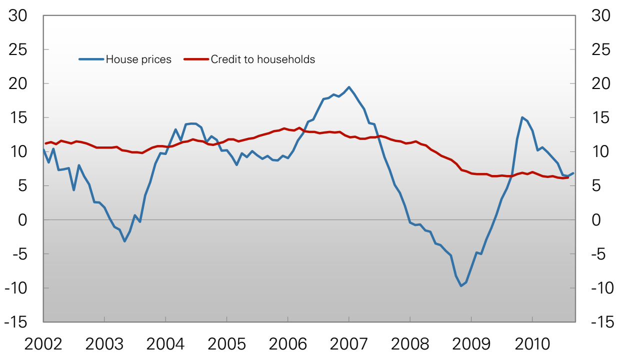
Source: Thomson Reuters

Chart 1.6 Key policy rate, money market rate[1)], the weighted average interest rate on new residential mortgages[2)] and on loans to enterprises[3)]. Per cent. 1 July 2007 – 21 October 2010



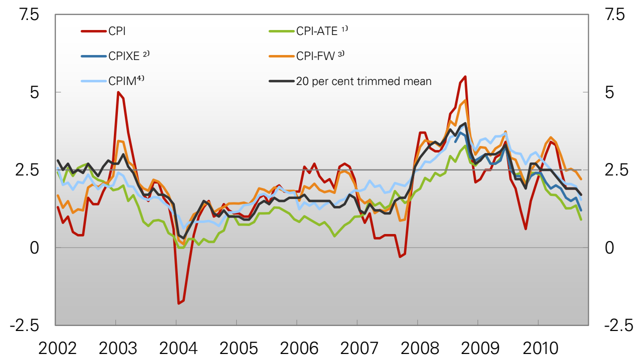
1) 3-month NIBOR (effective)
2) Interest rate on new residential mortgages of NOK 1m within 60% of purchase price with variable interest rate. Figures for the 20 largest banks, weighted according to market share
3) Non-financial corporations. 2007 Q2 – 2010 Q2
Sources: Norsk familieøkonomi AS, Statistics Norway and Norges Bank

Chart 1.7 Credit to households [1] and house prices.
12-month change. Per cent. January 2002 – September 2010[2]



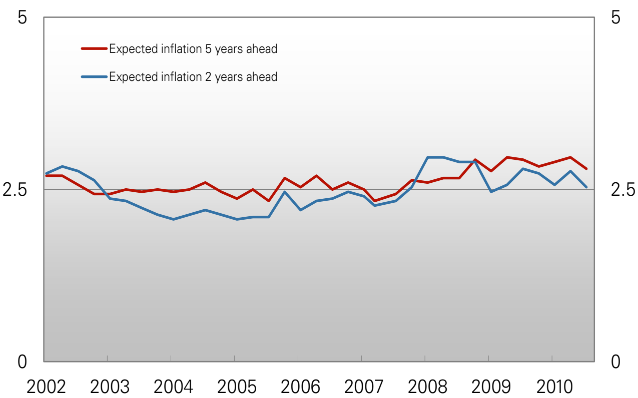
1) Credit from domestic sources, C2
2) House prices to September. Credit growth to August
Sources: Statistics Norway, OPAK, the real estate industry (NEF, EFF, FINN.no and ECON Pöyry), OBOS and Norges Bank

Chart 1.8 Consumer prices. 12-month change. Per cent.
January 2002 – September 2010



1) CPI adjusted for tax changes and excluding energy products
2) CPI adjusted for tax changes and excluding temporary changes in energy prices. Real time figures. See *Staff Memo* 7/2008 and 3/2009 from Norges Bank
3) CPI adjusted for frequency of price changes. See *Economic commentaries* 7/2009 from Norges Bank
4) Model-based indicator of underlying inflation. See *Economic commentaries* 6/2010 from Norges Bank and box on page 31
Sources: Statistics Norway and Norges Bank

Chart 1.9 Expected consumer price inflation 2 and 5 years ahead.[1]
Per cent. 2002 Q1 – 2010 Q3



1) Average of expectations of employer/employee organisations and economists (financial industry experts, macro analysts and academia)
Sources: TNS Gallup and Perduco

Growth in the Norwegian economy is continuing at a moderate pace and now seems to have gained a firm footing. The enterprises in Norges Bank's regional network reported in September that growth was solid through summer. Business investment is on the rise, particularly in service sectors. Corporate credit growth has picked up. Goods exports have risen. At the same time, growth in household demand for goods and services has been fairly low and credit growth is stable. House price inflation has moderated, but jumped up in September (see Chart 1.7). Banks have continued tightening credit standards for first-time residential mortgages in line with the guidelines issued by Finanstilsynet (Financial Supervisory Authority of Norway) in March. This may have contributed to curbing house price inflation. The saving ratio has increased and is now at a historically high level, according to institutional sector accounts from Statistics Norway. Figures from financial sector accounts may indicate that saving has been somewhat lower.

Employment has risen in recent months and registered unemployment has been a little less than 3% of the labour force for some time. Wage growth is estimated at 3½% this year. Productivity edged down through the economic downturn, but has picked up again.

Underlying inflation is now lower than the inflation target (see Chart 1.8). CPIXE inflation[1] has fallen through the year and was 1.4% in Q3. Lower capacity utilisation than normal, slower wage growth, the appreciation of the krone through 2009 and into 2010 and lower external price impulses have contributed to the fall in inflation over the past year.

According to Perduco's expectations survey, long-term inflation expectations fell in Q3, but expectations are still somewhat higher than the inflation target. The social partners and economists in the financial industry and academia expect inflation five years ahead to be around 3% (see Chart 1.9). Inflation expectations can also be derived from the expected five-year interest rate differential between Norway and the euro area five years ahead. Because of a higher inflation target in Norway, this long-term

1 Consumer price inflation adjusted for tax changes and excluding temporary changes in energy prices.

differential will normally be in the range ½ - 1 percentage point, depending on risk premiums. The differential is now around 1 percentage point (see Chart 1.10). As long-term interest rates have fallen markedly in both Norway and the euro area and the level is unusually low, this differential must now be interpreted with caution.

The outlook ahead

The operational target of monetary policy in Norway is low and stable inflation, with annual consumer price inflation of close to 2.5% over time. Over the past ten years, average inflation has been somewhat below but close to 2.5% (see Chart 1.11).

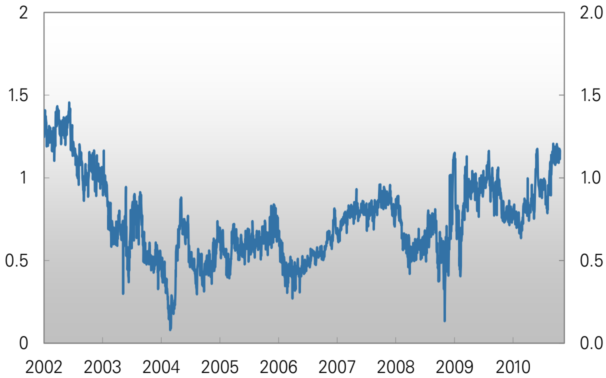
The key policy rate in Norway was reduced considerably in autumn 2008 and through the first six months of 2009 to prevent inflation from becoming too low and to curb the impact of the global downturn on the Norwegian economy. In autumn 2009, activity in the Norwegian economy started to pick up and the key policy rate was raised by a total of 0.75 percentage point to 2% in the period to May 2010. The growth projections for the Norwegian economy were revised down somewhat in the June 2010 *Report*. At that time, our analyses suggested that the key policy rate could be kept unchanged to around the turn of the year and then raised gradually.

New information since the June *Report* indicates on balance that further increases in the key policy rate will be moved forward slightly into the future.

Growth in the world economy is expected to be moderate ahead and lower than in the years preceding the financial crisis. The level of activity among Norway's trading partners is expected to be below normal for several years. This will contribute to holding down inflation abroad.

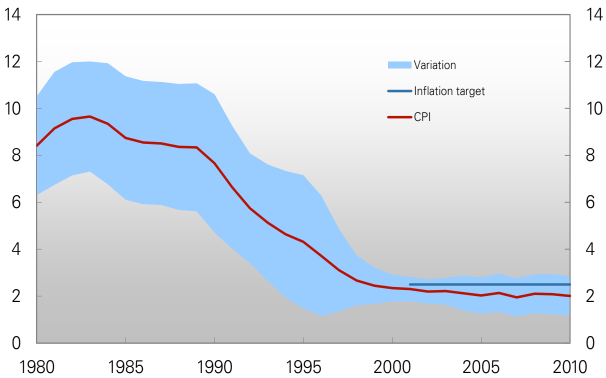
Market interest rate expectations among our trading partners have fallen further since the June *Report*, at both the short and the long end, and are now very low. In this *Report*, foreign interest rates are assumed to rise somewhat faster than currently implied by market interest rates (see Chart 1.12). This will be closer in line with our

Chart 1.10 5-year forward rate[1] differential 5 years ahead between Norway and the euro area. Percentage points. 1 January 2002 – 21 October 2010



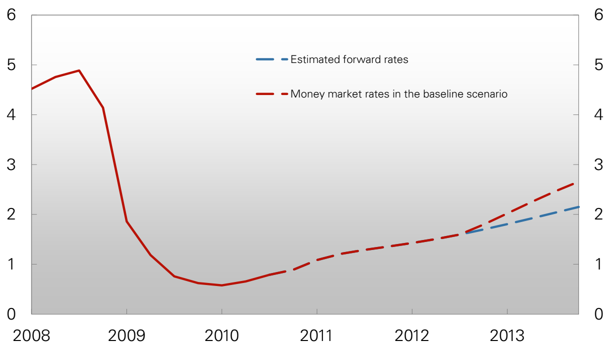
1) Based on swap rates
Sources: Thomson Reuters and Norges Bank

Chart 1.11 Inflation. Moving 10-year average[1] and variation[2] in CPI[3]. Per cent. 1980 – 2010



1) The moving average is calculated 10 years back
2) The band around the CPI is the variation in the CPI adjusted for tax changes and excluding energy products in the average period, measured by +/- one standard deviation
3) CPI projections in this *Report* form the basis for this estimate
Sources: Statistics Norway and Norges Bank

Chart 1.12 Three-month money market rates in the baseline scenario and estimated forward rates[1]. Trading partners. Per cent. 2008 Q1 – 2013 Q4



1) Forward rates are based on money market rates and interest rate swaps
Source: Thomson Reuters and Norges Bank

Why are long-term interest rates so low?

Long-term interest rates reflect expectations concerning the economy's growth potential and long-term inflation. They are also influenced by current economic conditions, the monetary policy stance and risk premiums in financial markets.

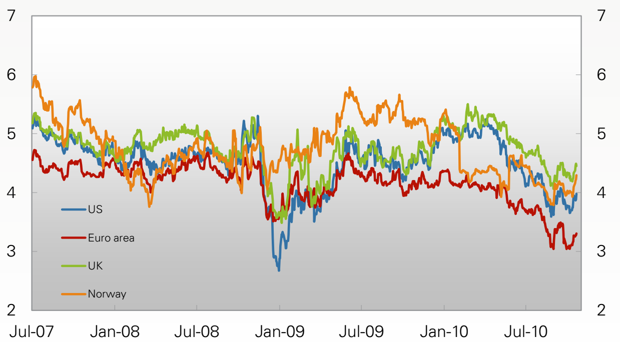
The 5-year rate 5 years ahead, which is less affected by the current economic situation, has also fallen (see Chart 1). The rate has recently shown a marked decline. This may reflect falling long-term inflation expectations, falling long-term growth expectations or lower risk premiums in the bond market.

Inflation expectations can be extracted from the yield spread between nominal and index-linked government bonds[1], referred to as the break-even inflation rate. By this measure, long-term inflation expectations in the US were particularly low during the financial crisis (see Chart 2). Inflation expectations can also be measured by means of inflation forecasting or by inflation swaps. All measures of inflation expectations now stand at around 2.5%-3% in the US (see Chart 2). Corresponding measures for the euro area are now at around 2% (see Chart 3). Inflation expectations seem therefore to be fairly well anchored around normal levels in both the US and the euro area and are probably not the reason for the decline in long-term interest rates.

Index-linked bond yields reflect market expectations regarding the economy's growth potential, but are also influenced by bond market risk premiums. Real interest rates have generally fallen in 2010 (see Chart 4). Both in the US and the euro area, the long-term real interest rate (5-year rate 5 years ahead) is now around 1.5%. In principle, it cannot be ruled out that market participants in the wake of the financial crisis and the European government bond market crisis have revised down their longer-term projections of economic growth potential and real interest rates. History has shown that economic growth may be low for many years following a financial crisis. Consensus Forecasts, which are averaged forecasts from international market participants, indicate on the other hand that long-term growth expectations in the US have held up.[2] In that case, the decline in long-term rates is not due to expectations of weaker growth potential or a fall in the long-term equilibrium interest rate in the economy.[3]

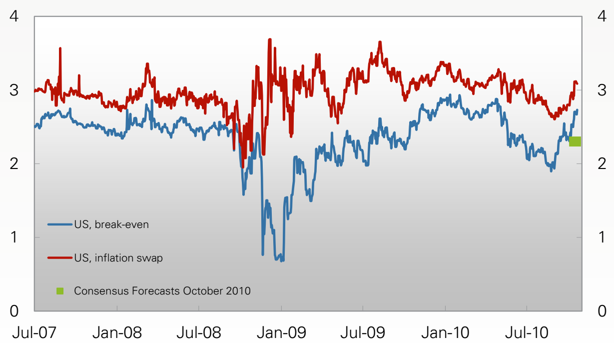
The Bank's analyses show that long-term government bond yields in the US can normally be explained fairly well by short-term rates on 3-month US Treasury bills, the ISM index[4], long-term inflation expectations and the current account as a percentage of GDP. Chart 5 shows a model for long-term interest rates based on these explanatory factors.[5] The model has fairly strong explanatory power over time, but the traditional explanatory factors cannot fully explain the current low long-term interest rate level. The reason for the difference may be that returns on these securities are currently being depressed below

Chart 1 Long-term nominal interest rates. 5-year 5 years ahead. Government bond yields. Per cent. 1 July 2007 – 21 October 2010



Source: Thomson Reuters

Chart 2 Inflation expectations. US. 5-year 5 years ahead. Per cent. 1 July 2007 – 21 October 2010



Source: Bloomberg L.P.

the level that reflects long-term market growth and inflation expectations. This may indicate that risk premiums in the US government bond market are negative at present.

Demand for German and US government securities has increased, driven by market fears concerning sovereign debt default in some European countries. This has probably pulled down on risk premiums for these securities. Moreover, there are strong expectations that the Federal Reserve will make large-scale bond purchases ahead. This has contributed to the fall in long-term real interest rates and risk premiums observed recently.[6]

The current low level of long-term interest rates seems to be due to particular conditions and probably does not provide an accurate picture of key rate expectations. It is therefore assumed that central bank key rates abroad and short-term rates will after a period rise somewhat more rapidly than currently reflected by long-term market rates (see Chart 1.12). The Bank's interest rate projections are instead more closely in line with our growth and inflation projections for Norway's trading partners.

1 The 5-year break-even inflation rate five years ahead is derived from yields on 5- and 10-year index-linked bonds and 5- and 10-year nominal bonds.

2 In Consensus Forecasts (CF) from October 2010, growth in the US in 2015 is forecast at 2.9% and annual growth for the period 2016 - 2020 at 2.6%. This is marginally higher than the forecast published in April 2010 (CF publishes long-term forecasts twice a year).

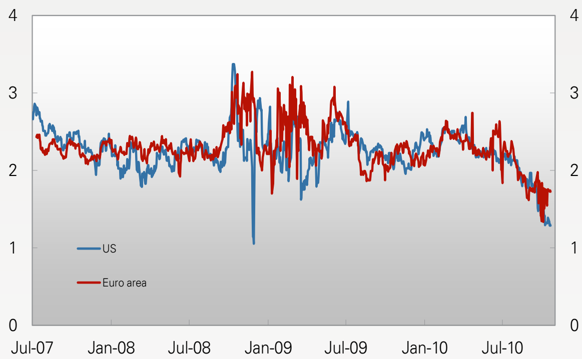
3 The long-term equilibrium interest rate is the interest rate that over time results in low and stable inflation close to a declared or implicit inflation target and in stability in output and employment when the economy is operating at full capacity.

4 The index measures US purchasing managers' assessment of activity in the manufacturing and service sector. In the model, the ISM index has broadly the same interpretation as an output gap.

5 For more details on the model, see *Economic Commentaries* 3/2010 on the Bank's website.

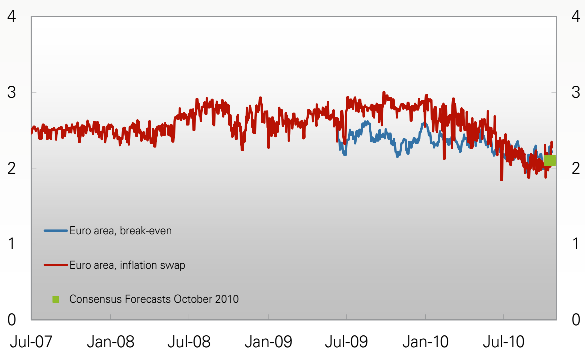
6 For more details on the effect of government bond yields on bond purchases, see Staff Report 441/2010 from the Federal Reserve Bank of New York and Fixed Income Weekly, 24 September 2010 from Deutsche Bank.

Chart 4 Real interest rates[1]. US and the euro area. 5-year 5 years ahead.
Per cent. 1 July 2007 – 21 October 2010



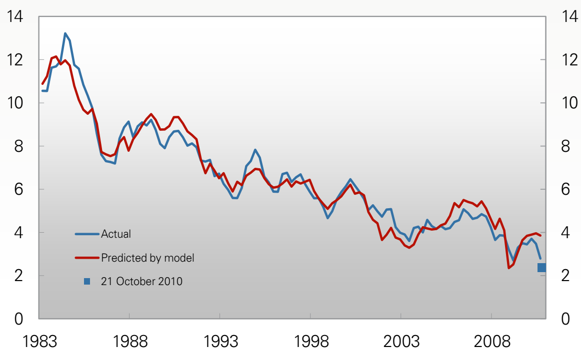
1) Real rates as calculated from index-linked bonds
Source: Thomson Reuters

Chart 3 Inflation expectations. Euro area. 5-year 5 years ahead.
1 July 2007 – 21 October 2010



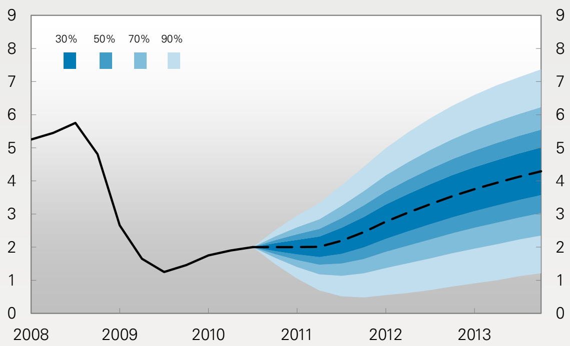
Source: Bloomberg L.P.

Chart 5 Actual and predicted 10-year US government bond.
Percent. 1983 Q1 – 2010 Q3



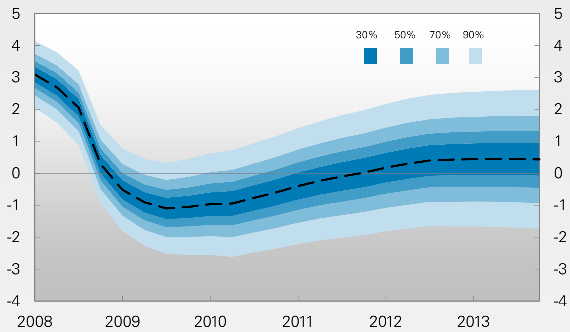
Sources: Bloomberg L.P., Norges Bank and Thomson Reuters

Chart 1.13a Projected key policy rate in the baseline scenario with fan chart. Per cent. 2008 Q1– 2013 Q4



Source: Norges Bank

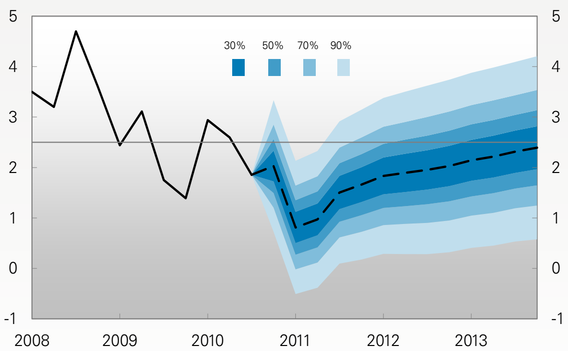
Chart 1.13b Estimated output gap[1] in the baseline scenario with fan chart. Per cent. 2008 Q1 – 2013 Q4



1) The output gap measures the percentage deviation between mainland GDP and projected potential mainland GDP

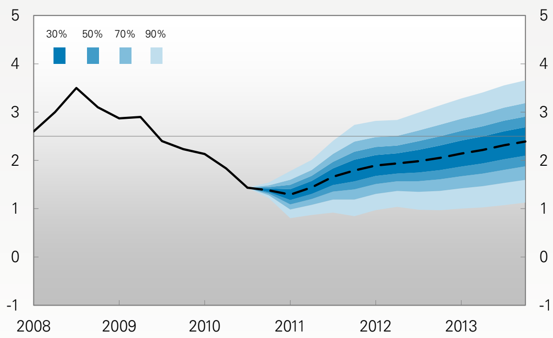
Source: Norges Bank

Chart 1.13c Projected CPI in the baseline scenario with fan chart. 4-quarter change. Per cent. 2008 Q1 – 2013 Q4



Sources: Statistics Norway and Norges Bank

Chart 1.13d Projected CPIXE[1] in the baseline scenario with fan chart. 4-quarter change. Per cent. 2008 Q1 – 2013 Q4



1) CPI adjusted for tax changes and excluding temporary changes in energy prices. As from August 2008, CPIXE is a real time series. See *Staff Memo* 7/2008 and 3/2009 from Norges Bank

Source: Norges Bank

projections for growth and inflation for trading partners (see box on page 13). The fall in interest rate expectations abroad still implies lower interest rates in Norway because a wider interest rate differential increases the risk of a pronounced appreciation of the krone so that inflation becomes too low.

Activity in the Norwegian economy is likely to continue to grow at a moderate pace in the period ahead, as projected in the June *Report*. Capacity utilisation is still assessed to be somewhat lower than normal.

Consumer prices have increased at a considerably slower rate than expected. CPIXE inflation is projected to remain at around 1½% in the period to summer 2011. The fall in cost inflation and capacity utilisation through 2009 is likely to continue to curb the rise in prices for domestically produced goods and services over several quarters ahead. In an environment of low consumer price inflation and falling prices for imported goods, there is a risk that inflation may remain below target over a longer period.

Both the consideration of keeping consumer price inflation close to 2.5% and the consideration of stabilising developments in output and employment imply a continued low key policy rate.

The key policy rate in Norway has been low for a fairly long period. The consideration of guarding against financial imbalances that may trigger abrupt and sharp falls in output and inflation somewhat further ahead suggest that the key policy rate should not be kept low for too long.

So far, there are no clear signs that the low interest rate level is fuelling household debt growth, but the debt level is high at the outset. Real house price inflation is moderate and growth in household spending on goods and services has been low.

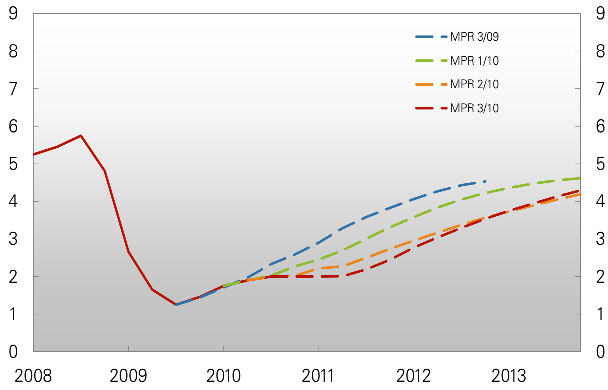
An overall assessment of the outlook and the balance of risks indicates that the key policy rate should be held at the current level over the coming quarters and then gradually raised towards a more normal level (see Charts 1.13 a-d). Developments since June suggest that the key policy rate should be raised somewhat later than projected in the June *Report* (see Chart 1.14 and box on page 22). Lower inflation and reduced interest rate expectations abroad pull down on the interest rate forecast. According to the forecasts, the key policy rate will be raised further in the course of summer 2011 and thereafter increased gradually to around 4% at the end of 2013.

With this path, the interest rate differential against other countries and the krone are projected to remain at approximately today's level ahead (see Chart 1.15). Premiums in the money market are expected to fall gradually and revert to the previous normal level of about 0.25 percentage point in the course of the projection period (see Chart 1.16). The measures announced to enhance the banks' reserve management system and the quoting of NIBOR are expected to make a contribution.

The interest rate is set with a view to keeping inflation close to 2.5% over time and bringing capacity utilisation back to a normal level (see Chart 1.17). Over a period ahead, low external price impulses will continue to have a dampening impact on inflation. CPIXE inflation is projected to rise gradually from the latter half of 2011. As capacity utilisation increases, inflation is likely to be pushed up by higher wage growth and somewhat lower productivity growth.

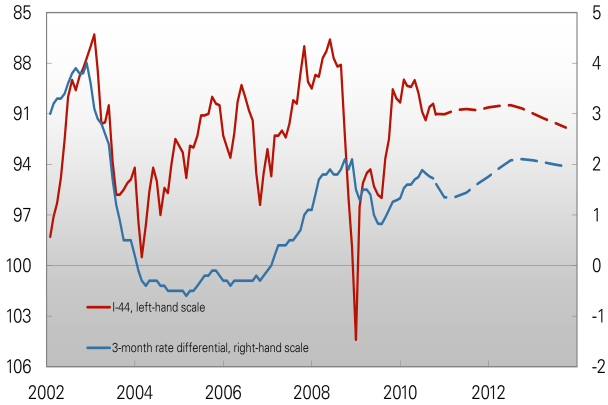
The low interest rate level is driving growth in household demand for goods and services. Private investment is growing and is projected to continue to grow, albeit at a somewhat slower rate ahead. Wage growth is projected to move up to around 4½% towards the end of the

Chart 1.14 Key policy rate in the baseline scenario in MPR 3/09, MPR 1/10, MPR 2/10 and MPR 3/10. Per cent. 2008 Q1 – 2013 Q4



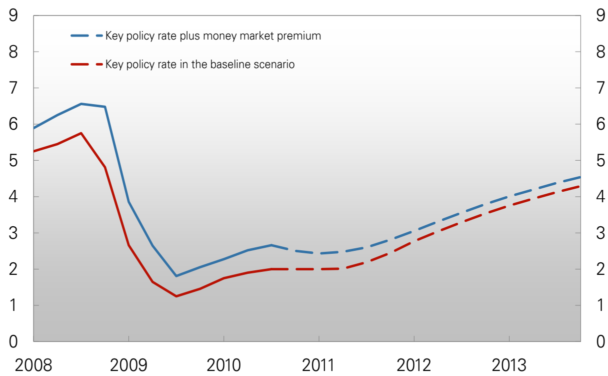
Source: Norges Bank

Chart 1.15 Three-month money market rate differential between Norway and trading partners and the import-weighted exchange rate index (I-44)[1]. Monthly-(historical) and quarterly figures (ahead). January 2002 – December 2013



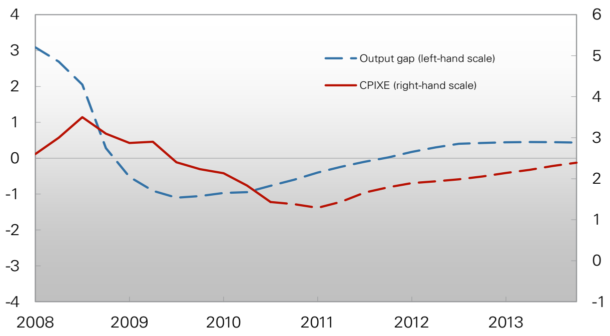
1) A rising curve denotes a stronger krone exchange rate
Sources: Thomson Reuters and Norges Bank

Chart 1.16 Key policy rate in the baseline scenario and key policy rate plus premiums in the Norwegian money market.[1] Per cent. 2008 Q1 – 2013 Q4



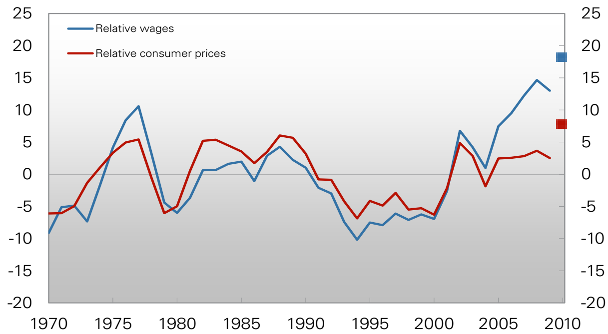
1) Norges Bank's projections from 2010 Q4
Source: Norges Bank

Chart 1.17 Projected inflation[1)] and output gap in the baseline scenario. Per cent. 2008 Q1 – 2013 Q4



1) CPIXE: CPI adjusted for tax changes and excluding temporary changes in energy prices. From August 2008, CPIXE is a real time series. See *Staff Memo* 7/2008 and 3/2009 from Norges Bank
Source: Norges Bank

Chart 1.18 Real exchange rate. Deviation from mean over the period 1970 – 2009. Per cent. 1970 – 2010[1)]



1) The squares show the average so far in 2010. A rising curve indicates weaker competitiveness
Sources: Statistics Norway, Technical Reporting Committee on Income Settlements, Ministry of Finance and Norges Bank

Criteria for an appropriate interest rate path

The operational target of monetary policy is low and stable inflation, with annual consumer price inflation of approximately 2.5% over time. In interest rate setting, the forecast for future interest rate developments should satisfy the following main criteria:

1) The interest rate should be set with a view to stabilising inflation at target or bringing it back to target after a deviation has occurred. The specific time horizon will depend on the type of disturbances to which the economy is exposed and their effect on the path for inflation and the real economy ahead.

2) The interest rate path should at the same time provide a reasonable balance between the path for inflation and the path for overall capacity utilisation in the economy.
In the assessment, potential effects of asset prices, such as property prices, equity prices and the krone exchange rate on stability in output, employment and inflation are also taken into account. Assuming the criteria above have been satisfied, the following additional criteria are useful:
3) Interest rate adjustments should normally be gradual and consistent with the Bank's previous response pattern.

4) As a cross-check for interest rate setting, any substantial and systematic deviations from simple, robust monetary policy rules should be explained.

Expressed mathematically, the degree to which the criteria are satisfied can be expressed in the form of a loss function[1]:

$$L_t = (\pi_t - \pi^*)^2 \; + \lambda \, (y_t - y_t^*)^2$$

$$+ \; \delta \, (i_t - i_{t-1})^2 \; + \kappa \left(i_t - i_t^{simple}\right)^2$$

The interest rate forecast that best satisfies the criteria above may be interpreted as the interest rate path that minimises the sum of current and future losses. Usually, the criteria cannot all be satisfied simultaneously in the short term. The various considerations must then be weighed against each other.
The parameters λ, δ and κ express the weights attached to the various considerations relative to the cost of deviating from the inflation target.[2]
The loss function above must be regarded as a simplified representation of the more extensive assessments underlying interest rate decisions. Situations may arise where weight will be given to considerations other than those expressed in the simple loss function. In certain situations, for example, a more aggressive interest rate response than usual may be necessary to prevent particularly adverse outcomes.

1 For further details, see box in *Monetary Policy Report* 2/10

2 In the calculations here, the model is solved using a loss function where λ =0.1, δ =0.25 and κ =0.25. These parameters will depend on the model and on how the model is solved (see Alstadheim et al. (2010). The consideration of a consistent response pattern over time indicates that the parameters should be quantified in keeping with the Bank's previous response pattern.

projection period. Norwegian labour costs have reached an unprecedented high level measured by relative labour costs, and cost competitiveness is likely to weaken somewhat further over the next couple of years (see Chart 1.18). With favourable prospects for oil suppliers and the metal industry, exports are still expected to show moderate growth in the coming years. Overall, capacity utilisation is projected to return to a normal level in the course of the first half of 2011 and registered unemployment is expected to remain low.

Assessment of the interest rate forecast

The interest rate forecast is an expression of Norges Bank's overall judgement and assessment based on the criteria for an appropriate interest rate path (see box below). Under the criteria, the key policy rate should be set to bring inflation back to target and to bring the level of overall output to its long-term sustainable level. At the same time, the key policy rate should be changed gradually and should not deviate too widely from simple and robust monetary policy rules. The interest rate cannot fully satisfy all the criteria simultaneously and the interest rate path is chosen so as to provide a balance between considerations.

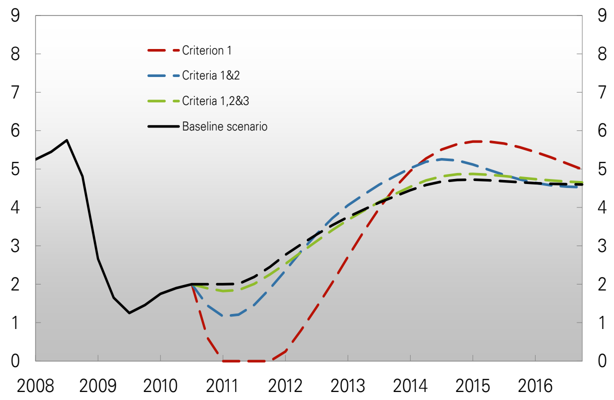
Charts 1.19 a-c show forecasts for the key policy rate, the output gap and inflation when the various criteria have been satisfied.[2]

If the sole objective of monetary policy were to bring inflation rapidly back to target, the key policy rate would be lowered at a swift pace to below 1%. Inflation would then fairly quickly rise to 2.5%, but such a policy would also result in wide fluctuations in output and employment. The interest rate would soon have to be raised sharply again to prevent inflation from becoming too high further ahead (see criterion 1 in Charts 1.19 a-c).

When the consideration that monetary policy should not cause wide fluctuations in output and employment is taken into account, inflation takes somewhat longer to return to target (see criteria 1 and 2 in Charts 1.19 a-c).

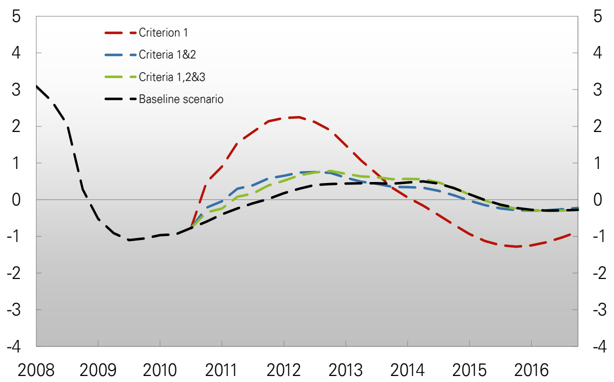
2 Illustrated using the macroeconomic model NEMO

Chart 1.19a Key policy rate. Per cent. 2008 Q1 – 2016 Q4



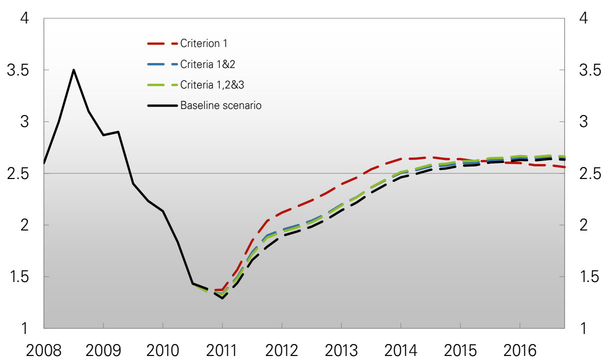
Source: Norges Bank

Chart 1.19b Output gap. Per cent. 2008 Q1 – 2016 Q4



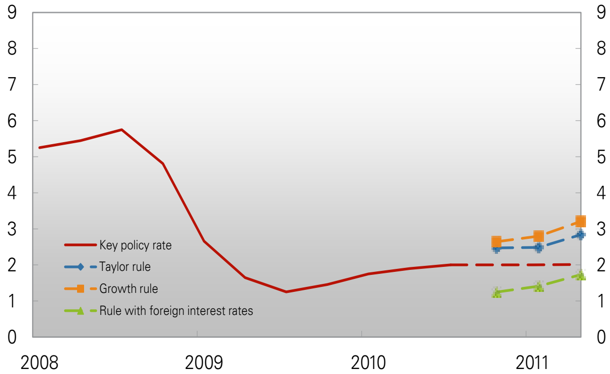
Source: Norges Bank

Chart 1.19c CPIXE[1)]. 12-month change. Per cent. 2008 Q1 – 2016 Q4



1) CPI adjusted for tax changes and excluding temporary changes in energy prices. As from August 2008, CPIXE is a real time series. See *Staff Memo* 7/2008 and 3/2009 from Norges Bank
Source: Norges Bank

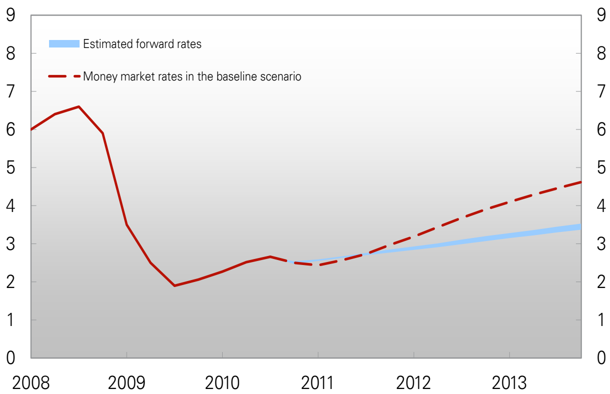
Chart 1.20 Key policy rate and calculations based on simple monetary policy rules[1]. Per cent. 2008 Q1 – 2011 Q2



1) The calculations are based on Norges Bank's projections for the output gap, consumer prices adjusted for tax changes and excluding temporary changes in energy prices (CPIXE) and three-month money market rates. To ensure comparability with the key policy rate, the simple rules are adjusted for risk premiums in three-month money market rates

Source: Norges Bank

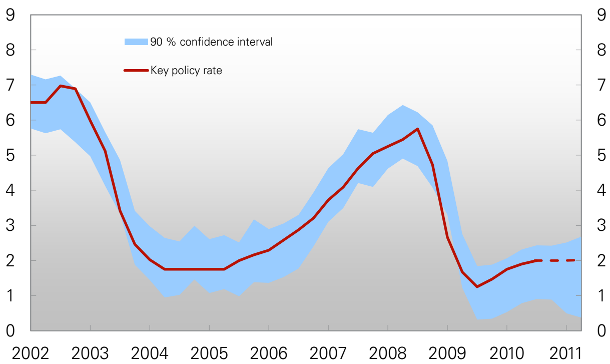
Chart 1.21 Three-month money market rates in the baseline scenario and estimated forward rates[1]. Per cent. 2008 Q1 – 2013 Q4



1) Forward rates are based on money market rates and interest rate swaps. The blue band shows the highest and lowest forward rates in the period 8 October – 21 October 2010

Sources: Thomson Reuters and Norges Bank

Chart 1.22 Key policy rate and interest rate developments that follow from Norges Bank's average pattern of interest rate setting.[1] Per cent. 2002 Q1 – 2011 Q2



1) Interest rate movements are explained by developments in inflation, mainland GDP growth, wage growth and key rates among trading partners. The equation is estimated over the period 1999 Q1 – 2010 Q3. See *Staff Memo* 3/2008 for further discussion

Source: Norges Bank

Abrupt and sharp interest rate changes can generate financial market instability and involve costs for unprepared households and firms. If this is also taken into account, the interest rate should not be lowered to such an extent, but rather be held at a low level for a longer period. The cost this involves is that inflation will take longer to rise to 2.5% and for capacity utilisation to decrease towards a more normal level (see criteria 1, 2 and 3 in Charts 1.19 a-c).

Our models provide an incomplete description of the functioning of the economy, and the interest rate forecast is therefore vulnerable to model imperfections or errors. Simple monetary policy rules can be more robust to different assumptions about the functioning of the economy. Monetary policy will probably be slightly less vulnerable to weaknesses in the system of analysis if some weight is also given to these simple rules.

Chart 1.20 shows three simple monetary policy rules. The Taylor rule uses the output gap, inflation and the interest rate level. The rule calls for an interest rate in a normal situation of a little less than 5%. The growth rule uses GDP growth and inflation. The rule involving foreign interest rates also takes account of changes in the interest rate level among Norway's trading partners that may result in changes in the exchange rate and thereby influence the inflation outlook. The Taylor rule and growth rule imply a key policy rate somewhat above Norges Bank's interest rate forecast. The rule involving foreign interest rates implies a key policy rate of below 2% at the end of the year.

If the Taylor rule is given some weight, the key policy rate will remain at the current level for a period and then increase gradually, pushing down inflation and the output gap a little further, in line with the baseline scenario in this *Report* (see Charts 1.19 a-c).

Changes in the economy since the previous *Monetary Policy Report* are given considerable weight when producing a new interest rate forecast. There is thus a risk that previous forecast errors are carried forward. This indicates that the level of the interest rate path should be assessed independently. The simple monetary policy rules described above are useful in providing cross-checks for an appropriate interest rate level.

Forward money market rates provide another cross-check for the interest rate forecast. Estimated forward rates indicate that financial market participants expect a rise in money market rates to occur later than currently projected (see Chart 1.21). With the recent high volatility of long-term interest rates, particular caution should be exercised in interpreting the level of these rates.

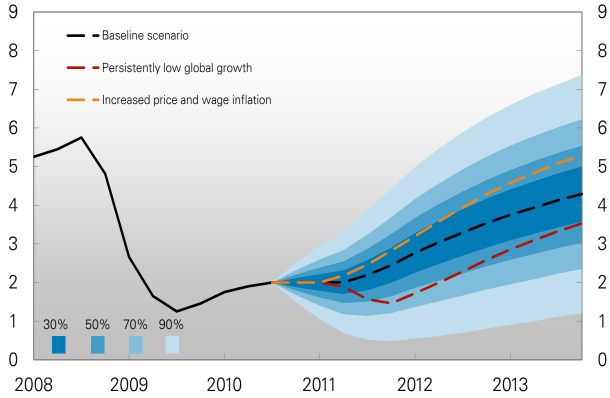
The interest rate can also be assessed in the light of the Bank's previous interest rate setting. Norges Bank has estimated an interest rate rule that seeks to provide a rough explanation of the Bank's previous interest rate setting based on inflation developments, wage growth, mainland GDP and other central bank key rates. The interest rate in the previous period is also important. This rule shows developments in the key policy rate ahead broadly in line with Norges Bank's projections (see Chart 1.22).

Uncertainty surrounding the projections

The projections for the key policy rate, inflation, output and other variables are based on Norges Bank's assessment of the economic situation and our perception of the functioning of the economy and monetary policy. If economic developments are broadly in line with projections, economic agents can expect that the interest rate path will also be approximately in line with that projected. However, the interest rate path may differ if the economic outlook changes or if the effect of interest rate changes on inflation, output and employment differs from that projected.

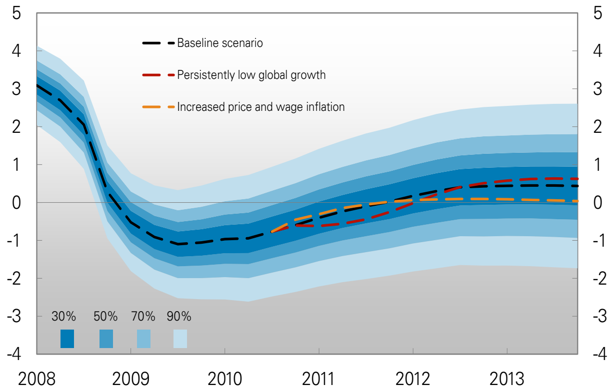
The uncertainty surrounding Norges Bank's projections is illustrated using fan charts (see Charts 1.13 a-d). The width of the fans is based on previous disturbances and therefore expresses an average that includes periods of high and low uncertainty.

Chart 1.23a Key policy rate in the baseline scenario and in the alternative scenarios. Per cent. 2008 Q1 – 2013 Q4



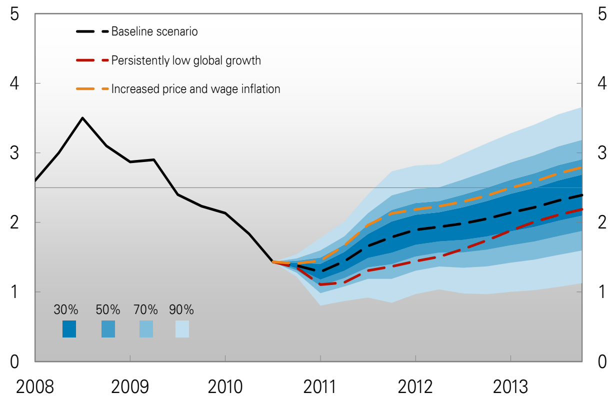
Source: Norges Bank

Chart 1.23b Output gap in the baseline scenario and in the alternative scenarios. Per cent. 2008 Q1 – 2013 Q4



Source: Norges Bank

Chart 1.23c CPIXE[1)] in the baseline scenario and in the alternative scenarios. 4-quarter change. Per cent. 2008 Q1 – 2013 Q4



1) CPI adjusted for tax changes and excluding temporary changes in energy prices. As from August 2008, CPIXE is a real time series. See *Staff Memo* 7/2008 and 3/2009 from Norges Bank

Source: Norges Bank

Long-term interest rate expectations among our trading partners are now very low. The Bank's projections are based on the assumption that foreign interest rates will after a period rise somewhat more rapidly than currently implied by long-term market rates. However, the possibility that market rates reflect the risk of a deep and prolonged downturn in the global economy cannot be excluded. History has shown that economic growth may remain low for many years following a financial crisis compared with pre-crisis years.

The impact of a deeper and more prolonged downturn in the global economy is illustrated in Charts 1.23 a-c (red lines). Foreign interest rates may then move more in line with long-term market rates. This alternative may be consistent with lower growth potential in the world economy, which could also push down the Norwegian economy's growth potential and the interest rate level that over time leads to inflation at target and stable output and employment. Normally, it will take time to gather adequate evidence that the economy is on such a path, so that the decrease in the interest rate will occur gradually. In the short term, inflation will probably slow as a result of reduced economic activity and lower prices for imported goods, but after a period the decrease in the interest rate will lead to higher capacity utilisation and rising inflation.

On the other hand, the effect of low interest rates on inflation in the Norwegian economy may be underestimated. Unemployment in Norway is low, indicating that available resources in the economy are limited. Should global economic growth pick up more rapidly, with rising inflation among Norway's trading partners, inflation in Norway may also pick up faster than projected.

Charts 1.23 a-c (yellow lines) illustrate a scenario where global economic growth picks up more quickly and prices for imported consumer goods increase more than expected. In this scenario, shortages in some segments of the labour market may fairly quickly lead to higher cost inflation. The interest rate would then be raised more rapidly to keep inflation low and stable and to prevent an upturn that is too sharp.

Changes in the projections since *Monetary Policy Report* 2/10

The interest rate forecast in this *Report* has been revised down slightly compared with the June *Report* (see Chart 1). The forecasts are based on an overall assessment of the situation in the Norwegian and global economy and on our perception of the functioning of the economy. The interest rate is set so that inflation is close to 2.5% over time.

Chart 2 shows a technical illustration of how news and new assessments have affected the changes in the interest rate forecast through their impact on the outlook for inflation, output and employment. The isolated contributions of the different factors are shown by the bars. The overall change in the interest rate forecast is shown by the black line.

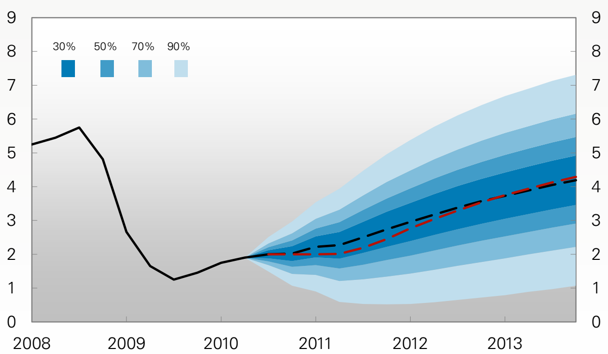
Prices for imported consumer goods in foreign currency have been revised down since the June *Report*. A slower rise in prices pulls down on the interest rate path at the beginning of the projection period (see red bars).

Central bank interest rate expectations abroad have fallen further. The analyses in this *Report* are based on the assumption that central bank interest rates abroad remain lower for a longer period than expected earlier, rising gradually towards the end of the projection period. This suggests a lower interest rate also in Norway as a higher interest rate differential in isolation implies a krone appreciation, leading to inflation that is too low (see green bars). The treatment of foreign interest rates is discussed in the box on page 13.

Overall, the projections for mainland GDP and capacity utilisation in the coming months are approximately as projected in the June *Report*. Increased oil investment and higher net exports slightly push up the interest rate forecast further ahead (see blue bars).

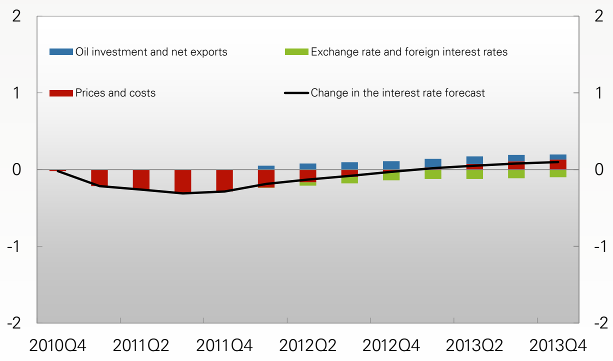
Changes in the projections for other key variables are summarised in Table 1. The changes in the projections reflect the change in the interest rate forecast as shown in Chart 2.

Chart 1 Key policy rate in the baseline scenario in MPR 2/10 with fan chart and key policy rate in the baseline scenario in MPR 3/10 (red line). Per cent. Quarterly figures. 2008 Q1 – 2013 Q4



Source: Norges Bank

Chart 2 Factors behind changes in the interest rate forecast since MPR 2/10. Accumulated contribution. Percentage points. 2010 Q4 – 2013 Q4



Source: Norges Bank

Table 1 Projections for macroeconomic aggregates in *Monetary Policy Report* 3/10. Percentage change from previous year (unless otherwise stated). Change from projections in *Monetary Policy Report* 2/10 in brackets.

	2010	2011	2012	2013
CPI	2¼ (-¼)	1¼ (-¼)	2 (-¼)	2¼ (0)
CPI-ATE	1½ (0)	1¼ (-½)	2 (-¼)	2¼ (0)
CPIXE[1)]	1¾ (0)	1½ (-½)	2 (-¼)	2¼ (0)
Annual wage growth	3½ (0)	3¾ (-¼)	4¼ (-¼)	4½ (-¼)
Mainland demand	1¾ (0)	4 (0)	3¼ (0)	2¼ (-¼)
GDP mainland Norway	1¾ (0)	3 (¼)	3 (¼)	2¾ (0)
Output gap mainland Norway[2)]	-¾ (0)	-¼ (0)	¼ (¼)	½ (¼)
Employment	0 (¼)	1 (¼)	1¼ (¼)	¾ (¼)
LFS unemployment (rate)	3 (0)	2¾ (-¼)	2½ (-¼)	2½ (0)

1) CPIXE: CPI adjusted for tax changes and exluding temporary changes in energy prices. See *Staff Memo* 7/2008 and *Staff Memo* 3/2009 from Norges Bank for a description of the CPIXE

2) The output gap measures the percentage deviation between mainland GDP and projected potential mainland GDP

Source: Norges Bank

Summary

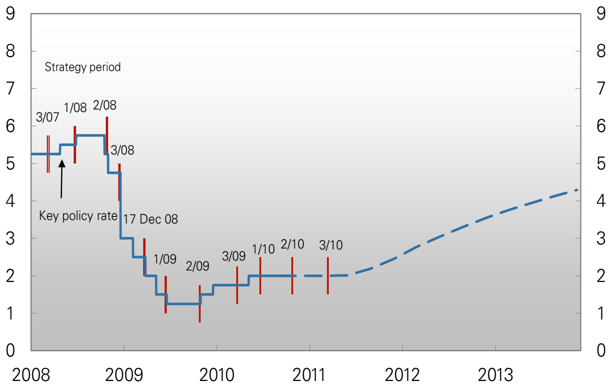
The outlook for the global economy is still shrouded in uncertainty. Growth so far this year has been higher than projected, but there are wide variations across regions. In the US, developments have been weaker than expected through summer and autumn. Europe is experiencing a downturn, but production has picked up in many northern European countries. Growth is vigorous in Asia and many emerging market economies. Imbalances in the world economy have given rise to strains on international economic cooperation.

Central bank key rates are close to zero in many countries and the expected upward shift in interest rates has been deferred further ahead. Unconventional monetary policy measures in major countries have probably contributed to very low long-term interest rates. The level of activity among Norway's trading partners is expected to be below normal for several years. This will contribute to holding down inflation abroad.

Since October 2009 Norges Bank has raised the key policy rate by a total of 0.75 percentage point. Growth in the Norwegian economy is continuing at a moderate pace and now seems to have gained a firm footing. Underlying inflation is projected to remain at around 1½% in the period to summer 2011. In an environment of low consumer price inflation and falling prices for imported goods, there is a risk that inflation may remain below target over a longer period. This implies a low key policy rate. On the other hand, the key policy rate in Norway has been low for a fairly long period. The consideration of guarding against financial imbalances that may trigger abrupt and sharp falls in output and inflation somewhat further ahead suggests that the key policy rate should not be kept low for too long.

An overall assessment of the outlook and the balance of risks suggests that the key policy rate should be held at the current level over the coming quarters and then gra-

Chart 1.24 Interval for the key policy rate at the end of each strategy period, actual developments[1)] and projected key policy rate in the baseline scenario. Per cent. January 2008 – December 2013



1) The Executive Board's decision of 27 October 2010 is not shown in the chart
Source: Norges Bank

dually raised towards a more normal level (see Chart 1.24). Developments since June suggest that the key policy rate should be raised somewhat later than projected in the June *Report*. Lower inflation and reduced interest rate expectations abroad pull down on the interest rate forecast.

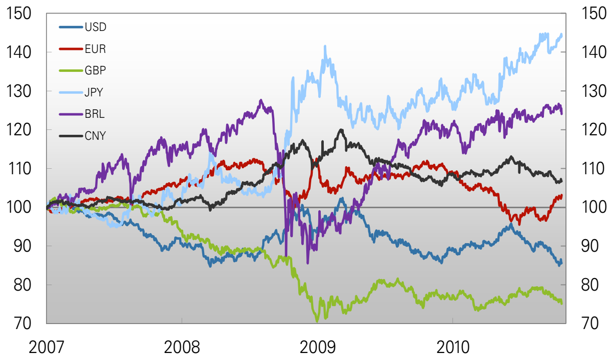
The projections are uncertain. New information may reveal aspects of economic developments that suggest the Norwegian economy is following a different path than projected. Should the downturn in the global economy be more prolonged than currently expected and more consistent with long-term market rates, activity and inflation in the Norwegian economy may be lower than projected. On the other hand, inflation may be higher than expected if global economic growth gains further momentum, accompanied by rising goods prices and a faster increase in employment.

Executive Board's strategy

The key policy rate should be in the interval 1½% – 2½% in the period to the publication of the next *Monetary Policy Report* on 16 March 2011 unless the Norwegian economy is exposed to new major shocks.

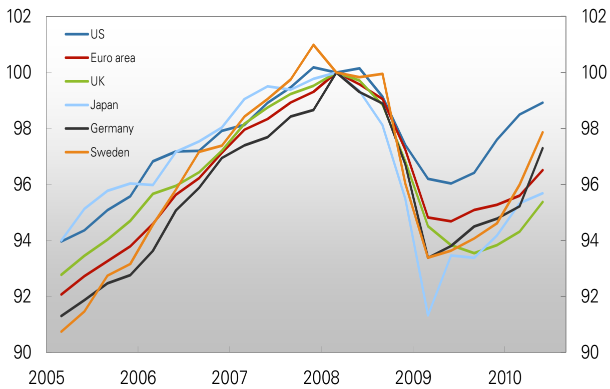
2 The projections

Chart 2.1 Effective exchange rates.[1] Index, 1 January 2007 = 100.
1 January 2007 – 21 October 2010



1) A rising curve denotes a stronger exchange rate
Sources: Bank of England, JPMorgan and Norges Bank

Chart 2.2 GDP in advanced economies. Index, 2008 Q1 = 100.
2005 Q1 – 2010 Q2



Source: Thomson Reuters

Table 2.1 Projections for GDP growth in other countries. Change from previous year. Per cent. Change from projections in *Monetary Policy Report* 2/10 in brackets

	2010	2011	2012-13[1]
US	2¾ (-¼)	2 (-½)	3 (0)
Euro area	1½ (¾)	1¼ (¼)	2 (0)
Japan	2¾ (0)	1½ (-½)	1¾ (0)
UK	1½ (¼)	2 (0)	2½ (0)
Sweden	4¼ (1¾)	3½ (¾)	3 (0)
China	10¼ (¼)	9¼ (0)	9 (0)
Trading partners [2]	3 (1)	2½ (¼)	2¾ (0)

1) Average annual growth
2) Export weights, 26 important trading partners

Sources: Eurostat and Norges Bank

The global economy

The international recovery following the financial crisis has been supported by low interest rates, tax reductions and increased public spending on goods and services. In addition, a boost has been provided by inventory rebuilding so far this year. Fiscal policy is now being tightened in many advanced economies. Growth prospects are weak and long-term interest rates have dropped to record-low levels. Japan and South Korea have intervened with the aim of reducing the value of their currencies and Brazil has increased taxes on capital inflows to reduce demand for the Brazilian real. Expectations of further quantitative easing in the US and the UK have led to a weakening of the US dollar and pound sterling (see Chart 2.1).

Developments since the latest *Monetary Policy Report* published in June have nevertheless been more favourable than expected in Asia, including Japan, and particularly in Sweden and Germany in Europe (see Chart 2.2). In the June *Report*, it was assumed that turbulence in the euro area would weaken confidence and economic activity to a further extent than has been the case so far. Growth has been lower than expected in the US. Revised national accounts show that consumption growth was markedly weaker around the turn of the year than projected earlier. On the whole, available data imply an upward revision of the projections for GDP growth among our trading partners in Europe and Asia, and a downward adjustment for the US.

It is unlikely that private demand for goods and services in advanced economies or emerging market economies will in the short term increase sufficiently to offset fiscal tightening and lower growth in inventory investment. Housing markets are still marked by overcapacity in the US and several European countries and housing investment will remain sluggish. The same applies to commercial property. In the US, households are still seeking to deleverage after many years of strong credit growth. At the same time, developments in both income and housing wealth are weak as a result of continued adverse labour and housing market conditions.

In Europe, activity has picked up. For the euro area as a whole, lower growth in the US and reduced public expenditure will drag down on growth in the coming years. Developments are expected to be uneven across countries and developments in financial markets reflect particularly high uncertainty concerning state finances in Ireland, Portugal and Greece. In these countries, growth will be low or negative. Activity is expected to show a more pronounced pickup in Germany and Sweden. These countries benefit from high exports to emerging market economies and have better balanced public finances.

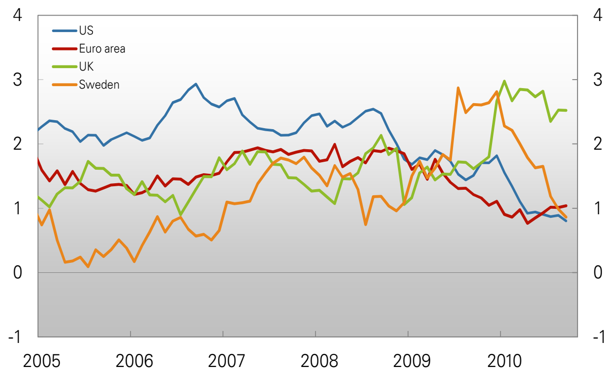
Growth in private demand for goods and services in Asia and Latin America is expected to remain high throughout the projection period. GDP growth will still slow somewhat, reflecting lower growth in public spending and weaker import growth among advanced economies. Many emerging market economies are running a current account surplus and have solid public finances, providing room for higher growth in domestic demand if external demand proves to be considerably weaker than assumed. It is nevertheless unlikely that the economies of Asia and Latin America can grow at a pace that alone is capable of reversing developments in the rest of the world.

The projections in this *Report* are based on a gradual pickup in household and corporate demand for goods and services in advanced economies through 2011 and 2012. Compared with previous recoveries, growth in most advanced economies is projected to be low throughout the projection period.

For our trading partners as a whole, projected growth for 2010 has been revised up by 1 percentage point compared with the June *Report.* Growth in Europe, particularly in Sweden, is the main factor behind the upward revision. GDP growth among trading partners is now projected at 3% in 2010 and 2½% in 2011 (see Table 2.1).

Inflation is low (see Chart 2.3). Inflation is expected to be low or moderate throughout the projection period (see Table 2.2). In advanced economies, capacity utilisation is low and the outlook for private consumption is weak. Wage growth is being dampened by high unemployment (see Chart 2.4) and in many countries moderate wage

Chart 2.3 Consumer prices excluding food and energy.[1)] 12-month change. Per cent. January 2005 – September 2010



1) HICP exluding energy, food, alcohol and tobacco for the euro area, UK and Sweden
Source: Thomson Reuters

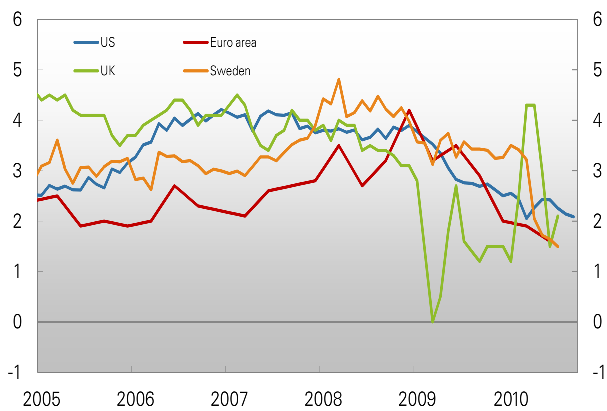
Table 2.2 Projections for consumer prices in other countries (change from previous year, per cent) and oil price. Change from projections in *Monetary Policy Report* 2/10 in brackets

	2010	2011	2012-13[1)]
US	1½ (-¼)	1 (-¼)	1¾ (-¼)
Euro area [2)]	1½ (¼)	1 (-¼)	1½ (0)
Japan	-1 (-¼)	-¼ (0)	¼ (0)
UK	3¼ (½)	2½ (¾)	1½ (-½)
Sweden	1 (0)	1¾ (-¼)	2½ (0)
China	3 (-¼)	2½ (0)	2¼ (¼)
Trading partners [3)]	1¾ (0)	1½ (0)	1¾ (0)
Oil price Brent Blend [4)]	78.6	85.0	88.1

[1)] Average annual rise
[2)] Weights from Eurostat (each country's share of euro area consumption)
[3)] Import weights, 26 important trading partners
[4)] Futures prices (average for the past five trading days). USD per barrel. For 2010, an average of spot prices so far this year and futures prices for the rest of the year is used

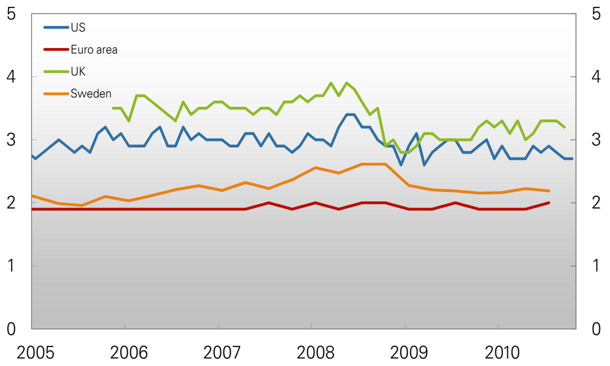
Sources: Eurostat, Thomson Reuters and Norges Bank

Chart 2.4 Wage growth in advanced economies. 12-month change. Per cent. January 2005 – September 2010



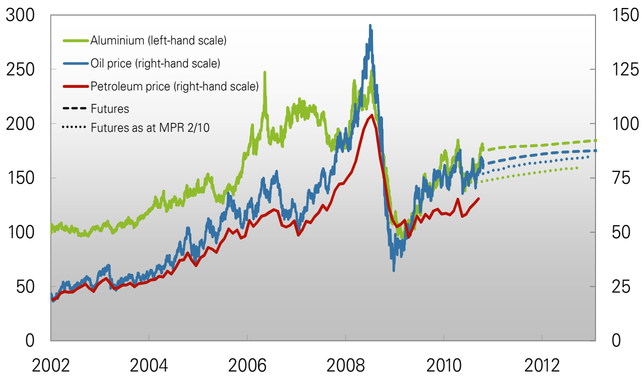
Source: Thomson Reuters

Chart 2.5 Long-term survey-based inflation expectations.[1)]
January 2005 – October 2010



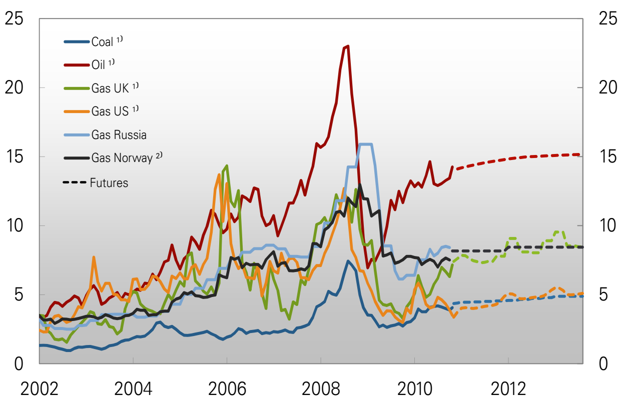
1) US: University of Michigan 5-year inflation expectations. UK: YouGov/Citigroup inflation expectations for the next 5-10 years. Euro area: ECB Survey of Professional Forecasters (SPF) 5-year inflation expectations. Sweden: Prospera/SCB 5 -year inflation expectations
Source: Thomson Reuters

Chart 2.6 Oil price (Brent Blend), prices for Norwegian petroleum exports[1)] (USD/barrel) and aluminium prices (USD/metric tons). Index, January 2002 = 100.
January 2002 – May 2013



1) Weighted average of Norwegian crude oil and gas exports
Sources: Statistics Norway,Thomson Reuters and Norges Bank

Chart 2.7 Prices for coal, oil and natural gas. USD per MMBTU.
January 2002 – August 2013



1) For October 2010 calculated as daily average.
2) Calculation of future gas prices for Norway based on assumptions in 2011 National Budget
Sources: IMF, Thomson Reuters, Statistics Norway, Ministry of Finance and Norges Bank

agreements were concluded during the crisis that will apply to 2012. Moreover, productivity growth has picked up. Continued well anchored inflation expectations are still expected to hold up inflation (see Chart 2.5). Oil prices and other commodity prices will have the same effect. Tax increases are also expected in many countries. Inflation projections for trading partner countries have been little changed in relation to the June *Report*, but the projections for the US have been revised down for the entire projection period.

Oil prices have generally ranged between USD 70 and 80 per barrel over the past year. Since the June *Report*, oil prices have exceeded USD 80, partly reflecting the depreciation of the US dollar. The projections in this *Report* are based on the assumption that oil prices move in line with futures prices (see Table 2.2 and Chart 2.6). This implies oil prices in 2011-2013 at a good USD 5-10 above today's spot price. The outlook for oil prices reflects expectations of continued solid growth in emerging market economies and OPEC's aim of holding up prices. Moreover, the cost of developing new oil reserves in non-OPEC countries is high. If growth in the world economy proves to be substantially lower than projected in this *Report*, oil prices may drop in the short term, primarily owing to high levels of oil stocks in OECD countries and considerable OPEC spare capacity.

Export prices for Norwegian gas have been weaker than implied by the historical link between gas and oil prices. This can probably be explained by a decline in the share of long-term gas contracts where prices follow oil product prices with a lag. At the same time, gas spot prices have fallen in relation to oil prices. Prices for Norwegian gas may move up somewhat in the period ahead because oil prices remain high, gas spot prices have increased since spring and futures prices imply a further rise (see Chart 2.7). On the other hand, increased gas production in the US and exports of liquefied natural gas from the Middle East may push down the price of Norwegian gas.

The Economist commodity-price index has increased since the June *Report*. This partly reflects the increase in prices for industrial metals, which is largely due to buoyant activity in emerging market economies, and partly to a rise in food prices mainly owing to poor harvest prospects in many regions.

The Norwegian economy in the year ahead

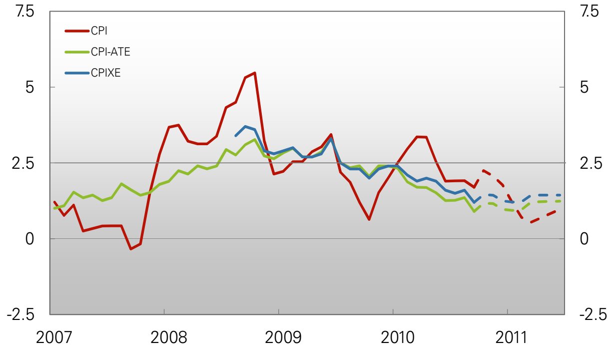
Prices

Inflation has slowed since the beginning of 2010. In September the consumer price index (CPI) was 1.7% higher than in the same month one year earlier (see Chart 2.8). Adjusted for tax changes and excluding temporary changes in energy prices (CPIXE), the rise in prices was 1.2%. Inflation adjusted for tax changes and excluding energy products (CPI-ATE) was 0.9% in September, which was lower than projected in the June *Report*.

The rise in prices for domestically produced goods and services in the CPI-ATE has fallen over the past year, with the annual rate of increase at 2.0% in September (see Chart 2.9). Lower cost inflation and low capacity utilisation were factors bringing down the rise in prices. Increased price competition in the grocery trade has also kept inflation subdued. In the coming months the rise in prices for domestically produced goods and services in the CPI-ATE is projected at about 2¼%. The decline in cost inflation has likely levelled off (see Chart 2.10), and annual house rent inflation is expected to hold up. The enterprises in Norges Bank's regional network expect broadly unchanged price increases in retail trade and household services over the next 12 months. Somewhat higher wage growth and increased capacity utilisation may lead to a further rise in prices for domestically produced goods and services as from 2011 Q2.

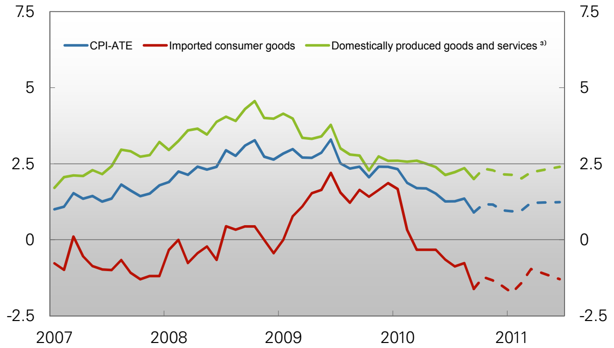
Lower external price impulses and the appreciation of the krone through 2009 and into 2010 have led to a marked fall in the rise in prices for imported consumer goods in the CPI-ATE. Strong price competition in certain goods markets has further curbed the rise in these prices. In September the annual rate of increase was -1.6%, down 0.8 percentage point as from August. It is assumed that some of the decline in September was temporary. The rise in prices for imported consumer goods is projected at about -1¼% in the coming quarters. The appreciation of the krone through 2009 and low prices abroad will likely hold down the rise in prices (see Chart 2.11).

Chart 2.8 CPI, CPI-ATE[1)] and CPIXE[2)]. 12-month change. Per cent. January 2007 – June 2011[3)]



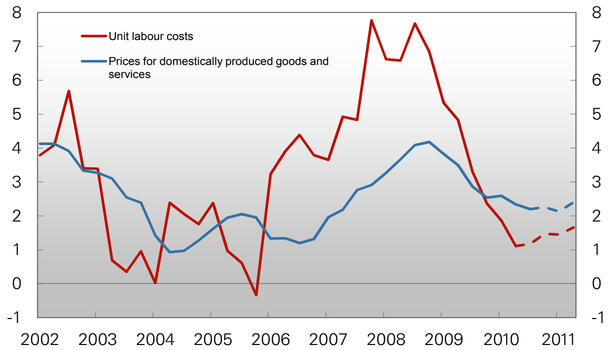
1) CPI adjusted for tax changes and excluding energy products
2) CPI adjusted for tax changes and excluding temporary changes in energy prices. Real time figures. See *Staff Memo* 7/2008 and 3/2009 from Norges Bank
3) Projections for October 2010 – June 2011 (broken lines). Monthly figures to March 2011, then quarterly figures
Sources: Statistics Norway and Norges Bank

Chart 2.9 CPI-ATE[1)]. Total and by supplier sector. 12-month change. Per cent. January 2007 – June 2011[2)]



1) CPI adjusted for tax changes and excluding energy products
2) Projections for October 2010 – June 2011 (broken lines). Monthly figures to March 2010, then quarterly figures
3) Norges Bank's estimates
Sources: Statistics Norway and Norges Bank

Chart 2.10 Unit labour costs in mainland Norway[1)] and prices for domestically produced goods and services in the CPI-ATE.[2)] Four-quarter change. Per cent. 2002 Q1 – 2011 Q2[2)]



1) Projections for 2010 Q3 – 2011 Q2 (broken lines)
2) Norges Bank's estimates. Projections for 2010 Q4 – 2011 Q2 (broken lines)
Sources: Statistics Norway and Norges Bank

CPIM: a model-based indicator of underlying inflation

Indicators of underlying inflation correct for temporary disturbances in consumer price inflation as measured by the consumer price index (CPI). Norges Bank monitors various indicators of underlying inflation. They have different characteristics and are based on varying assumptions regarding which price movements will have short-term effects on the CPI and which are permanent. The indicators presented in the *Monetary Policy Report* are calculated using various methods:

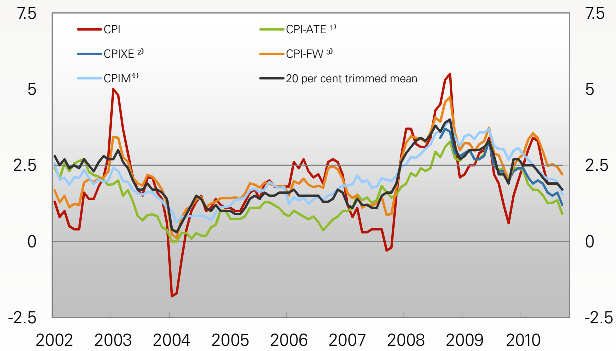
- CPI adjusted for tax changes and excluding energy products (CPI-ATE)
- CPI adjusted for tax changes and excluding temporary changes in energy prices (CPIXE)
- CPI excluding outliers from period to period (trimmed mean)
- CPI adjusted for frequency of price changes (CPI-FW)

The CPIM is a new indicator of underlying inflation introduced in this *Report*. The indicator is based on CPI forecasts and thus differs from the other indicators Norges Bank follows.[1] The CPIM is based on the CPI, which is divided into 34 sub-indices. For each sub-index, a simple model forecasts the CPI one month ahead. The weighted average of these 34 forecasts provides an aggregate CPI forecast. The sub-indices that over time have significant explanatory power for movements in the CPI are then given a high weight in the CPIM. Conversely, the sub-indices that are less successful at capturing movements in the CPI are downweighted. The weights are updated regularly. The weighted average forecast provides an indication of the underlying rise in the CPI. The CPIM is shown in Chart 1 along with other inflation measures.

The CPIM has good properties as an indicator of underlying inflation. While over time this indicator has, on average, broadly moved in line with the CPI, it has been more stable. As shown in Chart 2, the rise in the CPIM has over time remained close to a centered moving average of the CPI. Smaller variations, but broadly the same changes over time, may indicate that the CPIM removes noise in the CPI without changing the underlying rate of increase. An additional advantage is that no groups of goods in the CPI are removed from the indicator completely.

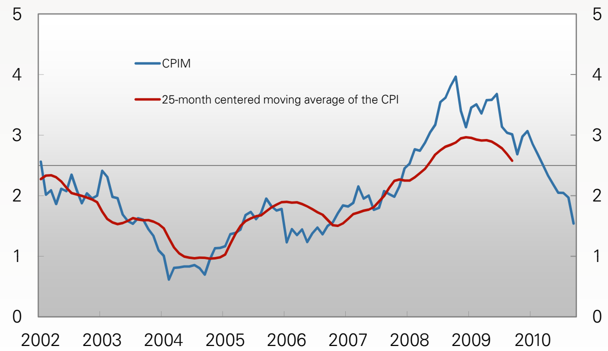
1 The CPIM is calculated on the basis of Ravazzolo, F., and Vahey, S. P. (2010). Forecast densities for economic aggregates from disaggregate ensembles. Norges Bank *Working Paper* No. 2010/02. The indicator is presented in Hov, M. N. (2010). CPIM: a model-based indicator of underlying inflation. *Economic Commentaries* 6/2010. Norges Bank

Chart 1 Consumer prices. 12-month change. Per cent. January 2002 – September 2010



1) CPI adjusted for tax changes and excluding energy products
2) CPI adjusted for tax changes and excluding temporary changes in energy prices. CPIXE is a real time series. See *Staff Memo* 7/2008 and 3/2009 from Norges Bank
3) CPI adjusted for frequency of price changes. See box *Economic Commentaries* 7/2009 from Norges Bank
4) Model-based indicator of underlying inflation. See *Economic Commentaries* 6/2010 from Norges Bank
Sources: Statistics Norway and Norges Bank

Chart 2 CPIM1) and 25-month centered moving average of the CPI. 12-month change. Per cent. January 2002 – September 2010



1) Model-based indicator of underlying inflation. See *Economic Commentaries* 6/2010 from Norges Bank
Sources: Statistics Norway and Norges Bank

Overall, CPI-ATE inflation is projected to be around 1% in the coming quarters. The projections are somewhat higher than the projections derived from the Bank's System for Averaging Models (SAM)[1] (see Chart 2.12). The reason is that SAM projects a larger share of the decline in inflation in September as permanent than projected in this *Report*.

Electricity and oil futures prices indicate that CPI inflation will slow markedly after a period, moving down to ¾% in the first half of 2011. Measures of underlying inflation that completely disregard the trend in energy price inflation may underestimate the underlying rise in prices. The CPIXE takes this into account, and this indicator shows somewhat higher inflation than the CPI-ATE in the coming quarters. For 2010 CPIXE inflation is projected at 1¾%, while CPI inflation is projected at 2¼%.

Output and demand

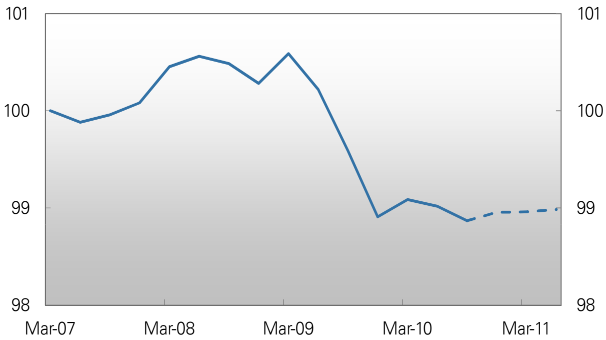
Activity in the Norwegian economy is now picking up broadly as expected. Seasonally adjusted mainland GDP grew by 0.5% in Q2. Excluding electricity, output growth was 0.7%. Growth in Q3 is expected to pick up to just below 1%. The cold winter, labour disputes over the wage settlement and the impact of the ash cloud may have curbed output somewhat in Q2. This suggests a certain catch-up in Q3. Through winter and spring, growth is projected at around ¾% per quarter, in line with the projections in the June *Report*. Activity is now projected to be driven somewhat more by investment, but also higher private consumption will contribute to growth.

In September, Norges Bank's regional network contacts reported a marked rise in activity the past three months. The enterprises expect growth to slow somewhat, but continue to be relatively strong in the coming quarters (see Chart 2.13). Growth appears to be fairly broad-based.

The projections for mainland GDP in the latter half of 2010 are in line with the SAM projections and slightly higher in the first half of 2011 (see Chart 2.14). One reason is that many of the individual SAM models attach weight to short-term indicators where interest rates have less of an impact than in the baseline projection. The

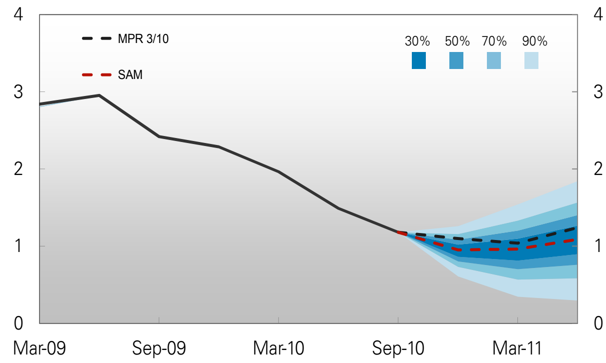
1 See Norges Bank website: http://www.norges-bank.no

Chart 2.11 Indicator of external price impulses to imported consumer goods measured in foreign currency. Index, 2007 Q1 = 100. 2007 Q1 – 2011 Q2[1)]



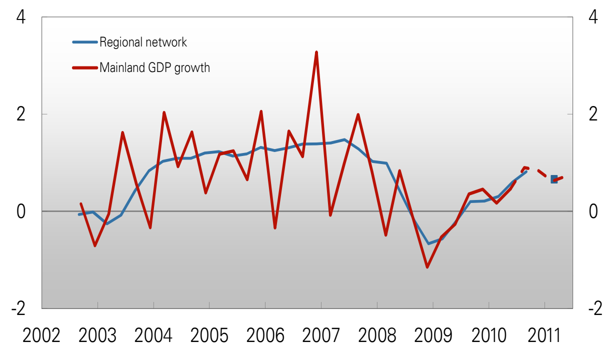
1) Projections for 2010 Q4 – 2011 Q2 (broken lines)
Source: Norges Bank

Chart 2.12 CPI-ATE[1)]. Actual figures, baseline scenario and projections by SAM[2)] with fan chart. Four-quarter change. Per cent. 2009 Q1 – 2011 Q2[3)]



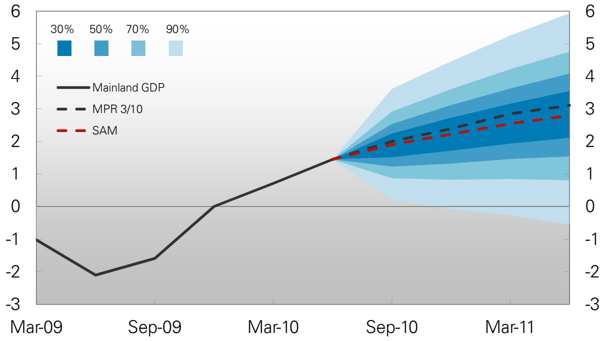
1) CPI adjusted for tax changes and excluding energy products
2) System for averaging models for short-term forecasting
3) Projections for 2010 Q4 – 2011 Q2 (broken lines)
Sources: Statistics Norway and Norges Bank

Chart 2.13 GDP mainland Norway[1)] and Norges Bank's regional network's indicator of change in production past three months and expected change in production next six months. Quarterly change. Per cent. 2002 Q3 – 2011 Q2[2)]



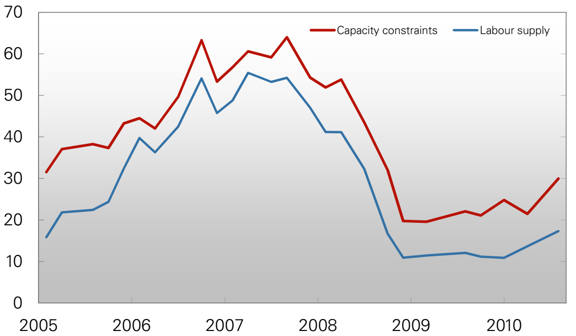
1) Seasonally adjusted. Volume
2) Last observation in the regional network is September 2010. Last GDP observation is 2010 Q2. Projections for 2010 Q3 – 2011 Q2 (broken line)
Sources: Statistics Norway and Norges Bank's regional network

Chart 2.14 Mainland GDP. Actual figures, baseline scenario and projections from SAM[1] with fan chart. Four-quarter change. Volume. Seasonally adjusted. Per cent. 2009 Q1 – 2011 Q2[2]



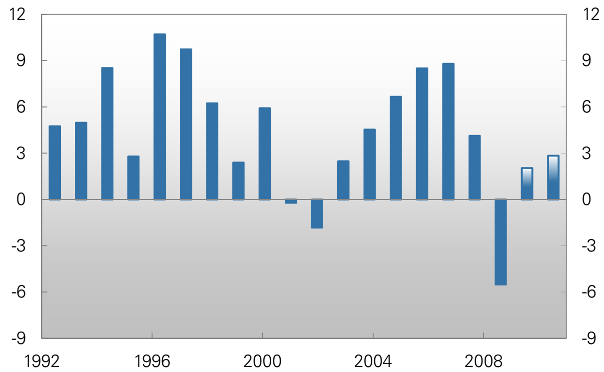
1) System for Averaging Models for short-term forecasting
2) Projections for 2010 Q3 – 2011 Q2 (broken lines)
Sources: Statistics Norway and Norges Bank

Chart 2.15 Capacity constraints and labour supply.[1] Per cent. January 2005 – September 2010



1) Share of contacts that will have some or considerable problems accommodating an (unexpected/expected) increase in demand, and the share of contacts where production is constrained by labour supply
Source: Norges Bank's regional network

Chart 2.16 Exports from mainland Norway. Annual change. Volume. Per cent. 1992 – 2011[1]



1) Projections for 2010 and 2011
Sources: Statistics Norway and Norges Bank

baseline path is nonetheless within the most likely range of outcomes in SAM.

Capacity utilisation in the Norwegian economy is somewhat lower than normal. Second quarter mainland GDP was still ¾% lower than the peak in 2008 Q2. Statistics Norway's business sentiment survey indicates considerable spare manufacturing capacity. A low share of regional network contacts report that they would have difficulty accommodating an increase in demand (see Chart 2.15). At the same time, enterprises reported that capacity utilisation had risen somewhat over the past months. This may indicate that growth in demand for goods and services is somewhat higher than growth in potential output. The outlook for growth through 2010 and the first half of 2011 appears to be broadly in line with that projected in the June *Report*. Capacity utilisation ahead will thus be approximately as projected in the June *Report*. The output gap will be negative through 2010 and closing thereafter.

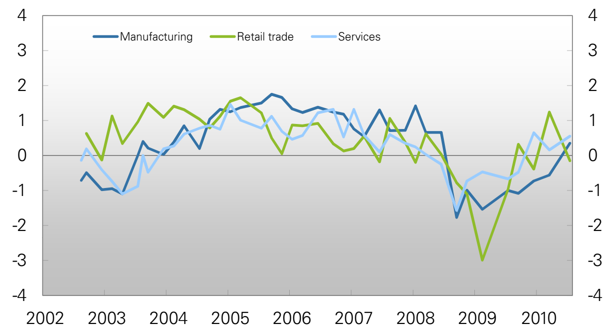
The international financial crisis and economic downturn probably weakened potential output in some sectors of the economy. Looking ahead, growth in potential GDP is expected to pick up somewhat. A normalisation of financial markets will improve firms' capacity to increase production. Higher demand for goods and services will probably enable firms to reemploy production capital that has been temporarily idle. Trend productivity growth is expected to gradually return to normal, but potential output is assumed to be permanently lower than would be the case if the financial crisis had not occurred.

The quarterly national accounts showed that traditional goods and services exports were broadly unchanged from Q1 to Q2. Goods exports grew by nearly 1%, while services exports fell noticeably. The export firms in Norges Bank's regional network reported a recent marked pick-up in production. They expect production to expand at about the same pace through autumn and into 2011. Imports among Norway's most important trading partners are projected to increase by around 5% in 2011. Overall, traditional goods and services exports are projected to grow by 2% in 2010 and 2¾% in 2011 (see Chart 2.16).

The quarterly national accounts showed that mainland business investment rose markedly in Q2 after falling by over 20% since the end of 2008. Investment in manufacturing and mining declined in Q2, while investment in other goods production and private services rose sharply. Investment is projected to continue to grow in the period ahead, though growth will be slower. Commercial building starts have increased substantially in 2010. Commercial building order intake and order backlog have also picked up. Retail trade firms in Norges Bank's regional network are planning somewhat lower investment in the next 12 months than in the previous 12-month period (see Chart 2.17). However, services and manufacturing firms are planning to increase investment. The most recent investment intentions survey indicates that investment in the electricity sector will increase substantially in 2011. Norges Bank's survey of bank lending has reported that credit standards for enterprises have eased in the past year and credit growth has picked up for mainland non-financial corporations. Business investment is projected to fall by 1½% in 2010 and rise by 7½% in 2011 (see Chart 2.18).

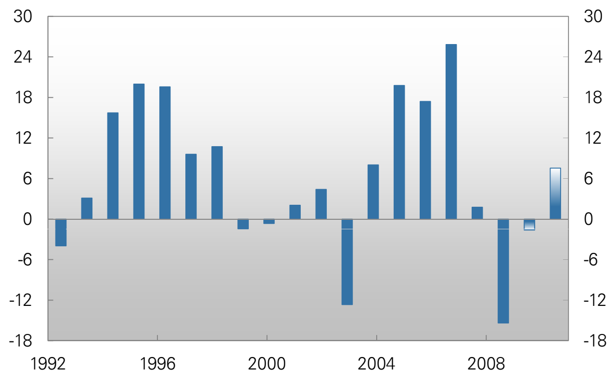
Private consumption has been lower than expected. High electricity prices have restrained growth in household real disposable income. At the same time, concern about government finances in several southern European countries may have prompted greater caution also among Norwegian households. Goods consumption and air traffic have nevertheless grown in recent months. In September, household services contacts in Norges Bank's regional network reported brisk growth in production. Low interest rates, relatively low unemployment, a high saving ratio and relatively high confidence indicators suggest solid growth in consumption ahead. Nevertheless, growth in consumption is projected to be lower than in the June *Report*. High levels of debt and tighter credit standards appear to be curbing growth in consumption more than anticipated. Despite low interest rates, house price inflation has been moderate and the rise in household indebtedness stable. There is also uncertainty associated with household saving. Financial sector accounts show lower household net lending than recorded in the household income accounts. Consumption is projected to grow by

Chart 2.17 Investment plans for next 12 months compared with past 12 months. Index.[1] October 2002 – September 2010



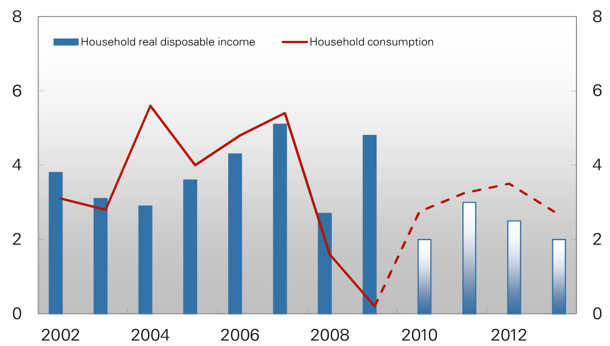
1) The scale runs from -5 to +5, where -5 denotes a sharp fall and +5 denotes strong growth. See article "Norges Bank's regional network" in *Economic Bulletin* 2/2009 for further information
Source: Norges Bank's regional network

Chart 2.18 Business investment in mainland Norway. Annual change. Volume. Per cent. 1992 – 2011[1]



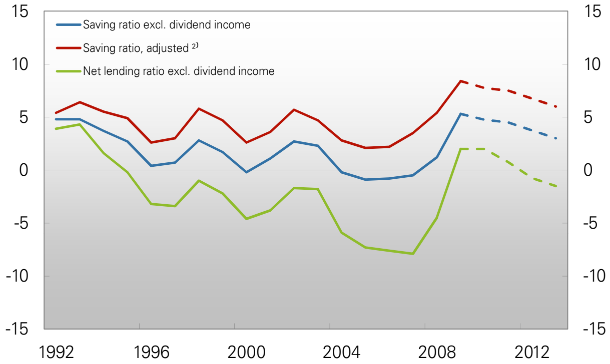
1) Projections for 2010 and 2011
Sources: Statistics Norway and Norges Bank

Chart 2.19 Household real disposable income[1] and consumption[2]. Annual change. Per cent. 2002 – 2013[3]



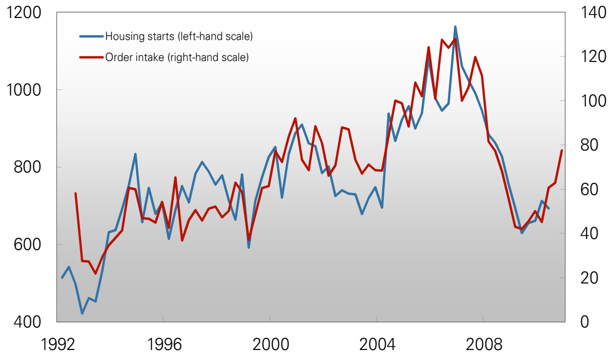
1) Excluding dividend income
2) Includes consumption in non-profit organisations. Volume
3) Projections for 2010 – 2013 (broken line)
Sources: Statistics Norway and Norges Bank

Chart 2.20 Household saving and net lending as a share of disposable income. Per cent. 1992 – 2013[1)]



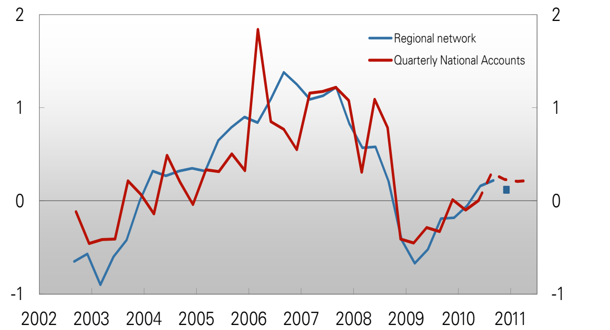
1) Projections for 2010 – 2013 (broken lines)
2) Adjusted for estimated reinvested dividend income for 2000 – 2005 and redemption/reduction of equity capital for 2006 – 2013
Sources: Statistics Norway and Norges Bank

Chart 2.21 Housing starts[1)] and order intake for residential construction.[2)] 1992 Q1 – 2010 Q2



1) In 1000s of square meters. Seasonally adjusted
2) Value index deflated by the price index for housing investment in the national accounts. Deferred two quarters forward
Sources: Statistics Norway and Norges Bank

Chart 2.22 Employment growth[1)] and Norges Bank's regional network's indicator of change in employment and expected change in employment next three months.[2)] Quarterly change. Per cent. 2002 Q3 – 2011 Q2[3)]



1) Seasonally adjusted
2) See article "Norges Bank's regional network" in *Economic Bulletin* 2/2009 for further information
3) Latest observation in the regional network is September 2010. Latest observation in the Quarterly National Accounts is 2010 Q2.
Projections for 2010 Q3 – 2011 Q2 (broken line)
Sources: Statistics Norway and Norges Bank's regional network

2¾% in 2010 and 3¼% in 2011 (see Chart 2.19). In the same period, household real disposable income (excluding dividend income) is projected to grow by 2% and 3%, respectively. Thus, the household saving ratio (excluding dividend income), as measured in the income accounts, is projected to fall from 5¼% in 2009 to 4¾% in 2010 and somewhat further in 2011 (see Chart 2.20).

Housing investment has been low the past year. In the second half of 2009 and the first half of 2010, the number of housing starts was 19,500. This is considerably lower than trend growth in housing demand. Residential construction is therefore expected to pick up. According to Statistics Norway, both order intake and order backlog for residential construction has increased. This indicates a rise in housing starts in the latter half of the year (see Chart 2.21). The number of housing starts is estimated at 22,500 in 2010 and 27,000 in 2011, close to the average for the past ten years.

The labour market

The decline in labour demand since autumn 2008 seems to have come to a halt. The quarterly national accounts show relatively stable employment in first half of 2010. Regional network contacts reported modest employment growth in the two most recent rounds in May and September. They expect that the use of labour will also increase somewhat in the period ahead (see Chart 2.22). Statistics Norway's Labour Force Survey (LFS) shows employment growth in recent months. The Norwegian Labour and Welfare Administration (NAV) reports that the overall number of new vacancies has remained fairly stable over the past few months, though with pronounced growth in business sector vacancies.

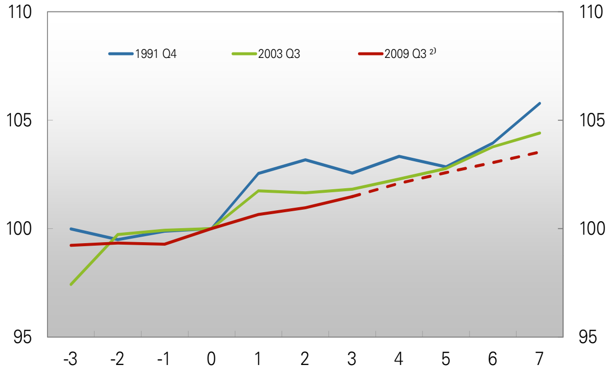
The number of hours worked and employment are expected to grow moderately at about the same pace in the period to summer. Average hours worked will thus show little change. Productivity growth has been weak over the past years, possibly reflecting the fact that businesses refrained from laying off employees pending a resumption of activity. The national accounts showed that productivity has increased since summer last year, indicating that firms have been making better use of the existing work-force. Productivity is expected to continue rising at broadly the same pace ahead. Nevertheless, productivity growth is projected to be somewhat lower than in previous upturns (see Chart 2.23).

The working age population has grown markedly in recent years, primarily through higher immigration. Nevertheless, labour force growth has been moderate since 2008. Many people exit, or do not opt to enter, the labour force when labour demand diminishes. This has led to a marked decline in labour force participation (see Chart 2.24), particularly among the youngest age groups. Many people have chosen to study rather than seek employment. Demographic developments indicate somewhat lower labour force participation ahead, as the large post-war cohorts are now in an age group where labour force participation is relatively low. Labour force growth is projected to be lower than implied by underlying population growth again in 2010, but will pick up in 2011 (see Table 2.3).

After declining in 2009, net inward migration has picked up again in recent quarters and has been stronger than expected (see Chart 2.25). Low unemployment, relatively high wages and generous welfare schemes probably explain why Norway is a desirable destination for foreign job seekers. Net immigration may therefore be expected to be somewhat higher than previously assumed, also in coming years. As a consequence, labour force growth may also be higher.

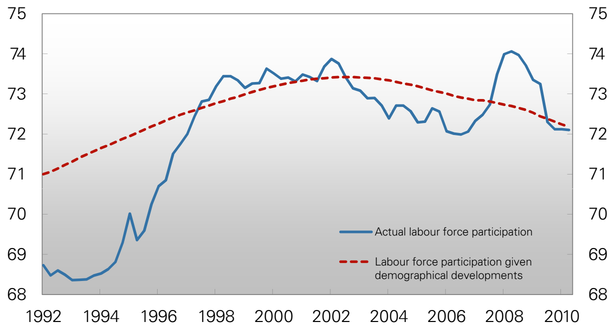
Unemployment has been somewhat lower than projected. According to LFS figures, unemployment has fallen by 8,000 since April. In July, seasonally adjusted LFS unemployment stood at 85,000, or 3.3% of the labour force. Registered unemployment remained relatively stable over the summer months, but rose somewhat in September, reflecting in part lower participation in ordinary labour market programmes. Seasonally adjusted, registered unemployment stood at 76,000 in September. Registered unemployment is projected to remain broadly unchanged

Chart 2.23 Developments in mainland productivity after a business cycle trough. GDP per person-hour. Seasonally adjusted quarterly figures. Index[1)]



1) The index is set at 100 in the quarter when capacity utilisation was at trough. Series labels refer to the peak quarter.
2) Projections for 2010 Q3 – 2011 Q2 (broken line)
Sources: Statistics Norway and Norges Bank

Chart 2.24 Actual labour force participation and change in labour force participation given demographic developments.[1)] As a percentage of the population 15 – 74 years. Seasonally adjusted quarterly figures. 1992 Q1 – 2010 Q2



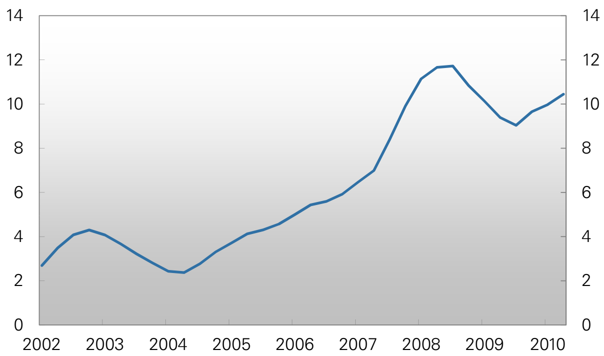
1) Average total labour force participation conditional on labour force participation in every age group being kept unchanged on the 2007 level
Sources: Statistics Norway and Norges Bank

Table 2.3 Population and labour force growth. Change from previous year. Per cent

	2010	2011
Population growth in the age group 15–74	1½	1½
Contribution from change in population composition	-½	-½
Cyclical contribution	-¾	0
Labour force growth	½	1

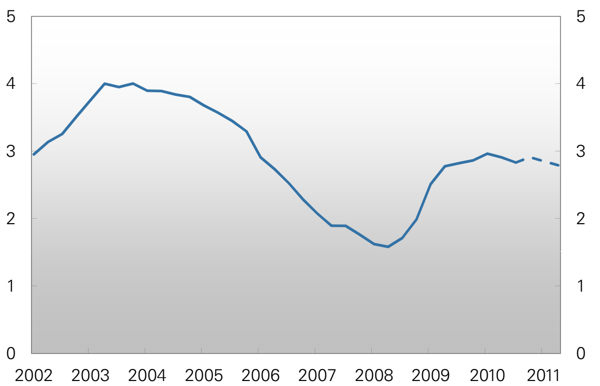
Sources: Statistics Norway and Norges Bank

Chart 2.25 Net inward migration. Average past four quarters. In 1000s. 2002 Q1 – 2010 Q2



Source: Statistics Norway

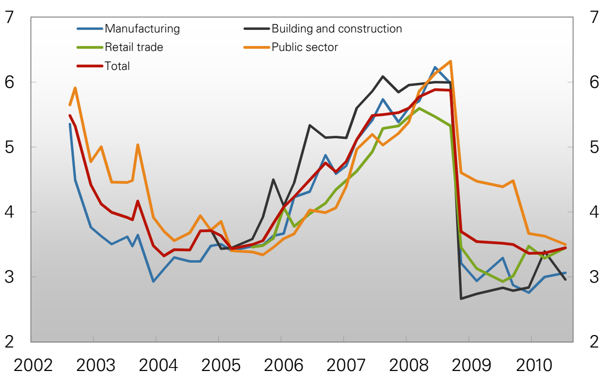
Chart 2.26 Registered unemployment. Percentage of labour force. Seasonally adjusted. 2002 Q1 – 2011 Q2[1)]



1) Projections for 2010 Q4 – 2011 Q2 (broken line)

Sources: Norwegian Labour and Welfare Administration, Statistics Norway and Norges Bank

Chart 2.27 Expected annual wage growth each year. Per cent. October 2002 – September 2010



Source: Norges Bank's regional network

until summer 2011 (see Chart 2.26), while LFS unemployment drifts upward. LFS unemployment is based on a sample survey and has historically shown somewhat higher monthly variations than registered unemployment. The past months' decline in LFS unemployment is therefore assumed to reflect in part temporary factors.

Wage growth

Wage growth is projected at 3½% in 2010. According to the social partners, the private sector wage settlement entailed a pay increase of around 3%. The increase was based on the assumption that wage drift through the year would be lower than the average for the past ten years. Public sector wage negotiations resulted in a pay increase of 3½%. Current statistics indicate that wage growth to date is in line with projections for 2010. The enterprises in Norges Bank's regional network expect average wage growth of 3.5% in 2010 (see Chart 2.27). According to Perduco's expectations survey for Norges Bank, the social partners expect average wage growth of 3.7% in 2010.

Wage growth in 2011 is projected to pick up to 3¾%, somewhat lower than projected in the June *Report*. The social partners expect average wage growth of 3.6% in 2011, according to Perduco's expectations survey. Wage growth among trading partners is expected to remain low. Norwegian export industry competitiveness will thus weaken further in the period ahead. At the same time, a more flexible labour market will likely dampen wage growth. Some of the persons who have exited the labour force during the downturn will probably be able to return as activity picks up. Sustained high labour immigration also indicates that many employers will be able to increase their workforces without considerably bidding up wages. On the other hand, relatively low unemployment in sectors that have not recruited as much foreign labour in recent years will boost wage growth.

Assumptions concerning fiscal policy and petroleum investment from 2010 to 2013

Fiscal policy

The National Budget for 2011 estimates the structural, non-oil budget deficit for 2010 at NOK 125bn at current prices, or 6.4% of mainland GDP. This is an increase of 0.6 percentage point from 2009. Nominal underlying growth in central government expenditure in 2010 is estimated at 5.1%.

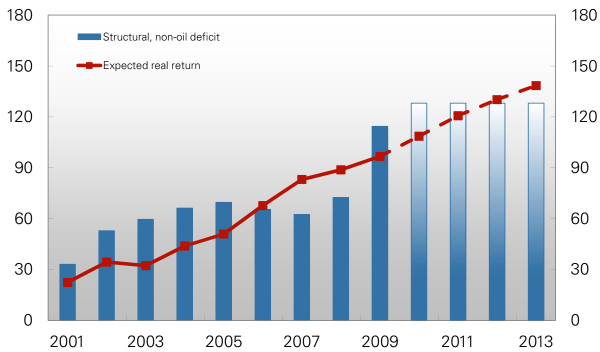
The budget for 2011 entails a broadly neutral orientation of fiscal policy. The structural[2], non-oil budget deficit in 2011 is estimated at NOK 128bn or 6.3% of mainland GDP (see Chart 2.28). The deficit is NOK 7.4bn higher than the real return on the Government Pension Fund Global (GPFG), or 4.2% of the capital of the GPFG. Nominal underlying growth in expenditure is estimated at 5.0%. Taxes are kept unchanged in real terms.

Nevertheless, petroleum revenue spending via the central government budget will increase further in 2011. The non-oil deficit[2] is projected to increase by NOK 13.5bn in 2011 (see Chart 2.29). Of the government's projected net petroleum revenues in 2011 of NOK 288.0bn, NOK 135.0bn will be spent via the central government budget, while NOK 153.0bn will be transferred to the GPFG. The budget for 2011 entails an increase in overall expenditure excluding the petroleum sector by more than NOK 270bn in the period 2006 to 2011.

The Bank's projections for the public sector for 2010 and 2011 are based on the projections in the National Budget for 2011. For 2012 and 2013, the Bank's projections are based on the technical assumption that the structural, non-oil deficit will remain unchanged at the 2011 level (see Chart 2.28). According to these projections the structural non-oil deficit will revert to 4% of the GPFG in 2012 and will be somewhat lower than 4% of GPFG capital in 2013.

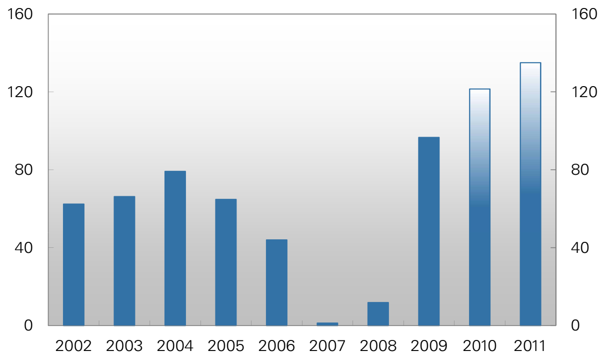
2 The structural deficit includes direct and indirect taxes and unemployment benefits estimated on the basis of trend growth. According to Ministry of Finance estimates, there is a substantial time lag between the fall in activity in 2009 and the full impact on taxes paid.

Chart 2.28 Structural, non-oil deficit and expected real return on the Government Pension Fund Global. In billions of 2011 NOK. 2001 – 2013[1)]



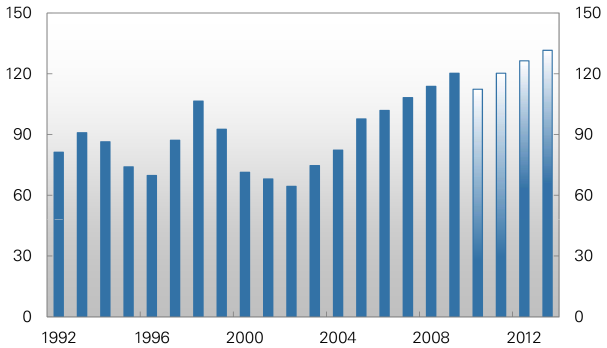
1) Projections for 2010 – 2013 (broken line)
Sources: Ministry of Finance and Norges Bank

Chart 2.29 Non-oil budget deficit. In billions of NOK. 2002 – 2011[1)]



1) Projections for 2010 and 2011
Source: Ministry of Finance

Chart 2.30 Petroleum investment. Constant 2007 prices. In billions of NOK. 1992 – 2013[1)]



1) Projections for 2010 – 2013
Sources: Statistics Norway and Norges Bank

Petroleum investment

Investment in the petroleum sector has nearly doubled since 2002 (see Chart 2.30). However, figures from the quarterly national accounts show that investment fell markedly from the beginning of 2009 until the first half of 2010. The decline reflects postponements of projects as a result of the financial crisis and the near completion of several large investment projects. Investment is expected to pick up in the latter half of 2010, partly as a result of increased investment in the Goliat and Gudrun fields. Overall, petroleum investment is projected to fall by 6½% in volume terms from 2009 to 2010. The value of investment is projected to fall by 2½%, in line with the latest investment intentions survey from Statistics Norway.

The investment intentions survey indicates that the value of petroleum investment will increase considerably from 2010 to 2011. The Bank's assumption is that the volume of investment will increase by 7% in 2011 and by 4-5% in 2012 and 2013. Expectations of higher gas prices and continued high oil prices will boost offshore activity in Norway in the coming years. Investment in 2011-2013 will be fuelled by major investments in the Goliat and Valemon fields and high activity in the Ekofisk and Sleipner areas, including in the Gudrun field.

Annex

Boxes 2006 – 2010

Publications in 2009 and 2010 on Norges Bank's website

Regional network: enterprises and organisations interviewed

Monetary policy meetings

Tables and detailed projections

Boxes 2006 – 2010

3 / 2010
Why are long-term interest rates so low?
CPIM: A model-based indicator of underlying inflation

2 / 2010
Criteria for an appropriate interest rate path

1 / 2010
The level of the normal interest rate
Evaluation of the projections for 2009

3 / 2009
Unwinding of extraordinary measures
CPI adjusted for the frequency of price changes

2 / 2009:
The arrangement for the exchange of government securities for bonds
Structural liquidity
Household behaviour

1 / 2009:
Deep downturn in the global economy
Evaluation of the projections for 2008

3 / 2008:
The NIBOR market
Norwegian financial crisis measures
How does the financial crisis affect developments in the real economy?
A summary of financial market events since June

2 / 2008:
Underlying inflation
SAM - System of models for short-term forecasting

1 / 2008:
Factors driving the rise in domestic and global food prices
Cross-checks for the krone exchange rate
Evaluation of the projections for 2007

3 / 2007:
Liquidity management in Norges Bank
Central bank response to financial turbulence
Household saving
NEMO - a new projection and monetary policy analysis model

2 / 2007:
Is global inflation on the rise?
Developments in productivity growth
How often do firms change their prices?

1 / 2007:
Will the global economy be affected by a slowdown in the US?
Uncertainty surrounding wage growth ahead
Competition and prices
Evaluation of projections for 2006

3 / 2006:
Output gap uncertainty

2 / 2006:
Money, credit and prices - a monetary cross-check
Foreign labour in Norway
Short-term forecasts for mainland GDP in Norway

1 / 2006:
Choice of interest rate path in the work on forecasting
Productivity growth in Norway
The yield curve and economic outlook in the US
Evaluation of Norges Bank's projections for 2005

Publications in 2009 and 2010 on Norges Bank's website

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4/2010	*Asset prices, investment, credit and financial vulnerability.* Magdalena D. Riiser
3/2010	*What determines developments in US long-term interest rates over time?* Erlend Hellum
2/2010	*Public finances – the difficult path back to sustainable levels.* Unni Larsen og Bente Støholen
1/2010	*What is the level of the normal interest rate?* Tom Bernhardsen og Arne Kloster
9/2009	*Housing and debt.* Bjørn Helge Vatne
8/2009	*Emerging market economies – an ever more important driver for the global economy*. Sofie Jebsen, Unni Larsen and Bente Støholen
7/2009	*CPI-FW: a frequency weighted indicator of underlying inflation*. Agnes Marie Simensen and Fredrik Wulfsberg
6/2009	*Temporary halt in labour migration to Norway?* Kaj W. Halvorsen, Marie Norum Lerbak and Haakon Solheim
5/2009	*The IMF in change – loan from Norges Bank.* Morten Jonassen, Bente Støholen and Pål Winje
4/2009	*Are household debt-to-income ratios too high?* Tor Oddvar Berge and Bjørn Helge Vatne
3/2009	*Norwegian krone no safe haven.* Alexander Flatner
2/2009	*Relationship between key rates and money market rates.* Ida Wolden Bache and Tom Bernhardsen
1/2009	*Higher risk premiums on government debt.* Tom Bernhardsen and Terje Åmås

Staff Memo

Staff Memos present reports and documentation written by staff members and affiliates of Norges Bank.

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9/2010	*Aspects of the international monetary system: International reserves and international exchange rate regimes.* Ingimundur Fridriksson
8/2010	*Monetary policy analysis in practice – a conditional forecasting approach.* Ida Wolden Bache, Leif Brubakk, Anne Sofie Jore, Junior Maih and Jon Nicholaisen
7/2010	*En oversikt over Norges Banks analyser av kronekursen* (An overview of Norges Bank's analyses of the krone exchange rate) Alexander Flatner, Preben Holthe Tornes and Magne Østnor. Norwegian only
6/2010	*Betalingskort og tosidige markeder – noen implikasjoner for policy* (Payment cards and two-sided market policy implications) Bent Vale. Norwegian only
5/2010	*Calculation of weights for the regional network.* Kjetil Martinsen and Fredrik Wulfsberg
4/2010	*Liquidity management system: Floor or corridor?* Tom Bernhardsen and Arne Kloster
3/2010	*Risikopremien på norske kroner* (The risk premium on the Norwegian krone). Leif Andreas Alendal. Norwegian only
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1/2010	*Dokumentasjon av enkelte beregninger til årstalen 2010* (Background information, annual address 2010). Norges Bank Pengepolitikk. Norwegian only
11/2009	*Beregning av vekter til Regionalt nettverk* (Calculation of weights for Norges Bank's regional network).

	Kjetil Martinsen and Fredrik Wulfsberg. Norwegian only
10/2009	*Banking crisis resolution policy - different country experiences*. David G. Mayes
9/2009	*Noregs Bank. Grunntrekk i administrasjon, oppgåver og historie* (Norges Bank. An overview of the Bank's administration, tasks and history). Egil Borlaug og Turid Wammer. Norwegian only
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4/2009	*Costs in the Norwegian payment system.* Olaf Gresvik and Harald Haare
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1/2009	*Effekten av en inndragning av 50-øremynten på inflasjonen* (The effect on inflation of the withdrawal of the 50-øre coin from circulation). Fredrik Wulfsberg. Norwegian only

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*Economic Bulletin articles included in Penger og Kreditt after 2/2009.

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A model for predicting aggregated corporate credit risk. Kjell Bjørn Nordal and Haseeb Syed.

Ein europeisk marknad for betaling (A European payments market). Gunnvald Grønvik. Norwegian only

Target 2 - Securities - billigere og sikrere verdipapiroppgjør i Europa? (Target 2 securities – cheaper and safer securitiessettlement in Europe?). Vigdis Husevåg. Norwegian only

Utdyping om stresstesten av bankenes kapitaldekning i Finansiell stabilitet 1/2010 (Section on stress testing of banks' capital adequacy in Financial Stability 1/2010). Norwegian only

2/2009:

Productivity growth in Norway 1948–2008. Kåre Hagelund

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Household net lending – what the micro data indicate. Magdalena D. Riiser

1/2009:

Evaluation of Norges Bank's projections for 2008. Bjørn E. Naug

Costs in the payment system. Olaf Gresvik og Harald Haare

Macroeconomic shocks – effects on employment and the labour supply. Haakon Solheim

Economic perspectives. Address by Governor Svein Gjedrem at the meeting of Norges Bank's Supervisory Council on 12 February 2009

Regional network: enterprises and organisations interviewed

Account-IT AS
Adecco Norge AS
Adecco Norge AS, Hamar
Advokatfirmaet Thommessen AS
AF gruppen ASA
Ahlsell Norge AS
Aibel AS
AIT Otta AS
Aker MH AS
Aktiv eiendomsmegling AS
Alcoa Norway ANS, Mosjøen
Alvdal kommune
Alvdal skurlag AL
Alvdal Tynset sport AS
Amfi Namsos
Arena treningssenter AS
Asko Agder AS
Asko Midt-Norge AS
Avigo AS
Axess AS
B&T låsservice AS
Bakehuset Nord-Norge AS
Bakers AS
Becotek AS
Bekk Consulting AS
Benteler Aluminium Systems Norway AS
Bergans fritid AS
Bilia AS
Bilsenteret Namsos AS
Birger Pedersen AS
Birkenes kommune
Bjørge ASA
Bjørn bygg AS
BN entreprenør AS
Bohus AS
Bohus Møbel-Sven AS
Boligpartner AS
Borregaard industries Ltd., Norge
Br. Dyrøy AS
Bring Logistics AS, Stavanger
Brødr Andersen AS
Brødrene Harsjøen AS
Bulldozer maskinlag entreprenør AS
Bus Pro IPEC AS
Bussbygg AS
Bygg og maskin AS
Byggservice Nord-Østerdal AS
Båtservice gruppen
Caiano hotelldrift AS
Celsa armeringsstål AS
Choice Hotels Scandinavia ASA
Comhouse AS
Dale + Bang reklame AS
DDB Oslo AS
De 4 roser AS
Deloitte AS
Diplom-Is AS, Brevik
DnB NOR eiendom AS, Bodø
Dromedar kaffebar AS
E A Smith AS
E. Flasnes transport AS
Eiendomsmegler 1 Midt-Norge AS
Eiendomsmegler Vest AS
Einar Øgrey Farsund AS
Elkjøp stormarked Bodø
Elverum kommune
Ernst & Young AS, Tromsø
Evensen & Evensen AS
Expert AS
Falkanger sko AS
Ferner Jacobsen AS
Fesil AS
Figgjo AS
Findus Norge AS
Finneid sveiseverksted AS
First Interactive AS
Fjeldseth AS
Fjordkjøkken AS
FMC BioPolymer AS
Forestia AS
Fosnavaag Seafood AS
Foss fabrikker AS
Fundator AS
Furnes-Hamjern holding AS
Furset gruppen AS
Galvano AS
Gange Rolv AS
Gausdal kommune
Gausdal landhandleri AS
Gilje tre AS
GK Norge AS
Gresvig ASA, Sport
Grunnarbeid AS
Grytnes betong AS
Hammerfest kommune
Hansa Borg bryggerier AS
Haram kommune
Hauans AS
Havhotellene AS
Helgeland holding AS
Helgeland sparebank AS
Helse Fonna HF
Helse Nord RHF
Helse Sunnmøre HF
Herlige Stavanger restauranter AS
Herøy kommune
Hoff norske potetindustrier SA
Holberg forvaltning AS
Hotel Alexandra AS
Hovden møbel AS
Hunderfossen familiepark AS
Huurre Norway AS
Hydro aluminium AS
Hå kommune
IKEA AS, Åsane

Ikon AS
Inmedia AS
ISS Facility Services AS
Iver bil AS
Johan Kjellmark AS
Jærentreprenør AS
Kirkenes trelast AS
Kitch'n Norge AS
KLP eiendom Trondheim AS
Komplett ASA
Kongsberg gruppen ASA
Kontali analyse AS
KPMG AS, Stavanger
Kragerø kommune
Krogsveen Hamar AS
Kvestor Pro AS
Kynningsrud AS
Landskapsentreprenørene AS
Larsen Atterås & Brosvik AS
Lier kommune
Lillehammer kommune
Link signatur AS
Litra AS
Lofotprodukt AS
L'Oréal Norge AS
Lyngdal byggeforretning AS
Lyse energi AS
Lønsethagen auto AS
Maihaugen
Majas salong AS
Malo sagbruk AS
Marine Cybernetics AS
Marthinsen Th. Sølvvarefabrikk AS
MB hydraulikk AS
Melby snekkerverksted AS
Mesta konsern AS
Mester grønn AS
Mills DA
Miras Grotnes AS
Moelven limtre AS
Moelven Van Severen AS
Moelven Våler AS
Molab AS
Momek Group AS
Mosjøen kulde og klimaservice AS
Multi Phase Meters AS
Møller bil Haugesund AS
Møre og Romsdal kornsilo ANS
Namsos kommune
NAV Nord-Trøndelag
NAV Vest-Agder
NCC Construction AS
Nesje AS
Nesseplast AS
Nexans Norway AS, Namsos
Nielsen Norge AS
Nikita gruppen AS
Noca AS
Norautron AS
Norbitech AS
Norcem AS
Norconsult AS, Bodø
Norconsult AS, Trondheim
NorDan AS, Hedmark/Oppland
Nordbø maskin AS
Nordea bank Norge ASA, Bodø
Norengros Johs Olsen AS
Norfolier AS
Norgesgruppen ASA
Norgestaxi Trondheim AS
Norpil
Norsk sjømat AS
Nortura BA, Forus
Notar eiendom Ålesund AS
Notodden mur- og entreprenørforretning AS
Nova Sea AS
Novagroup AS
Nycomed Pharma AS
Nygård trevarefabrikk AS
Obos
Offshore & Trawl Supply AS
Olav Thon eiendomsselskap ASA
Optimera AS
Oracle Norge AS
Orkidéekspressen AS
Os ID AS
Oslo Universitetssykehus HF
Overhalla cementvare AS
P4 radio hele Norge AS
PA Consulting Group AS
Peterson Linerboard AS, Ranheim
Petoro AS
Petter Gagama AS
Pettersson & Gjellesvik AS
Picasso frisør AS
Plasto AS
Privatmegleren AS
Proffice AS
Proffice Nord-Norge AS
Protan AS
ProxII AS
Quality Hotel Hafjell AS
Radisson Blu Hotel Norge, Bergen
Ragasco AS
Rasmus Tallaksen AS
Rasmussen K A AS
Redcats AS
Reinertsen AS
Reitan servicehandel Norge AS
Rema 1000 Norge AS, region vest
Restco AS
Revisorkonsult AS
Risør kommune
Rofiskgruppen AS
Romerike trelast AS
Romsdal bygg AS
Romsdals budstikke AS
Rygge kommune
Rygge Vaaler sparebank
Rype AS
Rørleggern Fauske AS
Røros kommune
Røros tweed AS
Rørosbanken Røros sparebank
Saga Boats AS

Samarbeidende revisorer AS
SATS Norge AS, Langnes
Scandic Hotel Kristiansand
Seadrill Norge AS / Seadrill Management AS
Sensonor AS
SG finans AS, Trondheim
Siemens AS, Industry Solutions
Sinkaberg-Hansen AS
SIVA selskapet for industrivekst SF
Skagerak energi AS
Skedsmo kommune
Slagen gruppen
Smurfit Kappa Norpapp AS
Sogn billag AS
Solem Hartmann AS
Soundgarden AS, avd Bodø
Spar kjøp AS
Sparebank 1 gruppen AS
Sparebank 1 SMN
Sparebank 1 Søre Sunnmøre avd. Volda
Sparebanken Hedmark, Nord-Østerdal
Sparebanken Møre region Romsdal og Nordmøre
Sparebanken Pluss
Stansefabrikken Lillesand AS
Stavanger kommune
Steni AS
Stiftelsen Akvariet i Bergen
Storvik AS
Strømsholm fiskeindustri AS
Sunnmørsposten AS
Sørlandet sykehus HF
Sør-Norge Aluminium AS
Tamnes transport AS
TeleD AS
Telenor Norge
Ticket feriereiser AS
Time sparebank
Toyota Førde AS
Trafikk & anlegg AS
Transportindustri AS
Trend trim Lillesand AS
Treningssenteret Moldehallen
Trondheim kommune
Tynset kommune
Tyrholm & Farstad AS
Tysvær kommune
Tønnesen sko AS
Vefsn kommune
Veidekke entreprenør AS, Indre Østland
Vestvågøy kommune
Via Travel Norge AS
Vizrt Ltd
Volmax AS
Weatherford Laboratories AS
Westco miljø AS
Westnofa industrier AS
Widerøe Internet AS
Widerøe’s flyveselskap AS
XXL sport & villmark AS, Kristiansand
YIT Building Systems AS
YIT Building Systems AS, Kristiansand
YIT Building Systems AS, Ålesund

Monetary policy meetings
with changes in the key policy rate

Date	Key policy rate[1)]	Change
26 January 2011		
15 December 2010		
27 October 2010	**2.00**	**0**
22 September 2010	2.00	0
11 August 2010	2.00	0
23 June 2010	2.00	0
5 May	2.00	+0.25
24 March	1.75	0
3 February	1.75	0
16 December	1.75	+0.25
28 October	1.50	+0.25
23 September	1.25	0
12 August 2009	1.25	0
17 June 2009	1.25	-0.25
6 May 2009	1.50	-0.50
25 May 2009	2.00	-0.50
4 February 2009	2.50	-0.50
17 December 2008	3.00	-1.75
29 October 2008	4.75	-0.50
15 October 2008	5.25	-0.50
24 September 2008	5.75	0
13 August 2008	5.75	0
25 June 2008	5.75	+0.25
28 May 2008	5.50	0
23 April 2008	5.50	+0.25
13 March 2008	5.25	0
23 January 2008	5.25	0
12 December 2007	5.25	+0.25
31 October 2007	5.00	0
26 September 2007	5.00	+0.25
15 August 2007	4.75	+0.25
27 June 2007	4.50	+0.25
30 May 2007	4.25	+0.25
25 April 2007	4.00	0
15 March 2007	4.00	+0.25
24 January 2007	3.75	+0.25

1) The key policy rate is the interest rate on banks' sight deposits in Norges Bank. This interest 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 key policy rate.

Table 1 Main macroeconomic aggregates

Percentage change from previous year/ quarter		GDP	Mainland GDP	Private con-sumption	Public con-sumption	Mainland fixed investment	Petroleum investment[1]	Mainland exports[2]	Imports
2006		2.3	4.9	4.8	1.9	11.9	4.3	8.5	8.4
2007		2.7	5.6	5.4	3.0	15.7	6.3	8.8	8.6
2008		0.8	1.8	1.6	4.1	-1.4	5.1	4.1	4.3
2009		-1.4	-1.4	0.2	4.7	-11.7	5.7	-5.5	-11.4
2009[3]	Q3	0.4	0.4	1.1	1.1	-5.5	-6.7	4.4	2.0
	Q4	0.1	0.5	1.3	-0.6	6.3	0.4	2.5	2.2
2010[3]	Q1	0.2	0.2	0.4	1.4	-11.2	-5.2	-3.1	0.2
	Q2	0.1	0.5	-0.6	1.2	7.3	1.3	0.1	5.5
2009-level, in billions of NOK		2381	1846	1015	533	353	134	418	656

[1] Extraction and pipeline transport
[2] Traditional goods, travel and exports of other services from mainland Norway
[3] Seasonally adjusted quarterly figures

Source: Statistics Norway

Table 2 Consumer prices

Annual rise/ Twelve-month rise. Per cent		CPI	CPI-ATE[1]	CPIXE[2]	CPI-AT[3]	CPI-AE[4]	HICP[5]
2006		2.3	0.8	1.2	2.0	1.0	2.5
2007		0.8	1.4	1.9	0.5	1.6	0.7
2008		3.8	2.6	3.1	3.9	2.5	3.4
2009		2.1	2.6	2.6	2.1	2.7	2.3
2010	January	2.5	2.3	2.4	2.6	2.4	2.7
	February	3.0	1.9	2.1	3.0	1.8	3.1
	March	3.4	1.7	1.9	3.5	1.6	3.6
	April	3.3	1.7	2.0	3.3	1.6	3.4
	May	2.5	1.5	1.9	2.7	1.5	2.6
	June	1.9	1.3	1.6	1.9	1.3	1.8
	July	1.9	1.3	1.5	2.0	1.3	1.8
	August	1.9	1.4	1.6	1.8	1.4	1.7
	September	1.7	0.9	1.2	1.7	1.0	1.4

[1] CPI-ATE: CPI adjusted for tax changes and excluding energy products
[2] CPIXE: CPI adjusted for tax changes and excluding temporary changes in energy prices. See *Staff Memo* 7/2008 and *Staff Memo* 3/2009 from Norges Bank for a description of the CPIXE
[3] CPI-AT: CPI adjusted for tax changes
[4] CPI-AE: CPI excluding energy products
[5] HICP: Harmonised Index of Consumer Prices. The index is based on international criteria drawn up by Eurostat

Sources: Statistics Norway and Norges Bank

Table 3 Projections for main economic aggregates

	In billions of NOK	Percentage change from previous year (unless otherwise stated)	Projections			
	2009	2009	2010	2011	2012	2013
Prices and wages						
CPI		2.1	2¼	1¼	2	2¼
CPI-ATE[1]		2.6	1½	1¼	2	2¼
CPIXE[2]		2.6	1¾	1½	2	2¼
Annual wage growth[3]		4.2	3½	3¾	4¼	4½
Real economy						
GDP	2381	-1.4	¾	2	2¼	1½
Mainland GDP	1846	-1.4	1¾	3	3	2¾
Mainland output gap[4]		-1	-¾	-¼	¼	½
Employment		-0.4	0	1	1¼	¾
Labour force, LFS		0	½	1	1	¾
LFS unemployment (rate)		3.2	3½	3½	3¼	3¼
Registered unemployment		2.7	3	2¾	2½	2½
Demand						
Mainland demand[5]	1902	-1.1	1¾	4	3¼	2¼
- Private consumption	1015	0.2	2¾	3¼	3½	2¾
- Public consumption	533	4.7	2¾	2	.	.
- Fixed investment, mainland Norway	353	-11.7	-2½	10	.	.
Petroleum investment[6]	134	5.7	-6½	7	5	4
Mainland exports[7]	418	-5.5	2	2¾	.	.
Imports	656	-11.4	8¼	6	.	.
Interest rate and exchange rate						
Key policy rate (level)[8]		1.8	2	2¼	3¼	4
Import-weighted exchange rate (I-44)[9]		93.8	90¼	90¾	90½	91½

[1] CPI-ATE: CPI adjusted for tax changes and excluding energy products
[2] CPIXE: CPI adjusted for tax changes and excluding temporary changes in energy prices. See *Staff Memo* 7/2008 and *Staff Memo* 3/2009 from Norges Bank for a description of the CPIXE
[3] Annual wage growth is based on the Technical Reporting Committee on Income Settlements' definitions and calculations
[4] The output gap measures the percentage deviation between mainland GDP and projected potential mainland GDP
[5] Private and public consumption and mainland gross fixed investment
[6] Extraction and pipeline transport
[7] Traditional goods, travel and exports of other services from mainland Norway
[8] The key policy rate is the interest rate on banks' deposits in Norges Bank
[9] Level. The weights are estimated on the basis of imports from 44 countries, which comprise 97% of total imports

. Not available

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

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