NORGES BANK

Monetary Policy Report

2|10

June

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Monetary Policy Report
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Norges Bank

Oslo 2010

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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 21 April, the Executive Board discussed relevant themes for the *Report*. At the Executive Board meeting on 9 June, 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 27 October 2010 at the meeting held on 23 June. 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 11 August and 22 September.

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This *Monetary Policy Report* is based on information in the period to 17 June 2010.

The monetary policy strategy in Section 1 was approved by the Executive Board on 23 June 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* and the *Annual Report*. The Bank's reporting obligation is set out in Section 75c of the Constitution, which stipulates that the Storting shall supervise Norway's monetary system, and in Section 3 of the Norges Bank Act. The *Annual Report* is submitted to the Ministry of Finance and communicated to the King in Council and to the Storting in the Government's Kredittmeldingen (Credit Report). The Governor of Norges Bank provides an assessment of monetary policy in an open hearing before the Standing Committee on Finance and Economic Affairs in connection with the Storting deliberations on the Credit Report.

Editorial

Renewed turmoil

Turbulence has flared up again in European financial markets. The banking sector is not the source this time, but countries with large budget deficits and high sovereign debt. At the same time, the world economy has fared better than anticipated some time ago. New figures show that trade and production are on the rise. Growth is strong in emerging market economies, but advanced economies have also experienced an upswing.

Deficits and debt increased in many countries during the long period of expansion up to 2007. With high deficits from the outset, the crisis has eroded government finances in many countries. States that have relied on large deficits must tighten fiscal policy sharply and swiftly in spite of an economic slump in these countries. Rescue packages have been implemented.

The turmoil in financial markets is also having an impact on Norway. Key rates abroad are now expected to remain low to support the economic recovery when fiscal policy is tightened. This influences the scope for Norway's monetary policy. The krone has fluctuated widely and premiums in the Norwegian money markets have increased. The turmoil is also reflected in equity prices and household confidence indicators.

As long as growth in Asia remains strong and commodity prices high, this will alleviate to some extent the negative effects of the turmoil in Europe on the Norwegian economy. In this *Report,* the economic recovery in Norway is projected to continue, but at a somewhat slower pace than expected earlier. Underlying inflation is around 2% and is expected to drift down further in the period to the end of the year.

It is difficult to ascertain whether the turmoil will fade out or intensify. Growth in trade and production may have a dampening effect, but the turbulence may in itself contribute to a renewed fall in economic activity. The balance of risks and recent developments suggest that the key policy rate should be raised somewhat later than envisaged in March. The outlook in this *Report* is based on the assumption that the turmoil in financial markets will gradually pass. 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 27 October unless the Norwegian economy is exposed to new major shocks.

Jan F. Qvigstad
23 June 2010

1 Monetary policy assessments and strategy

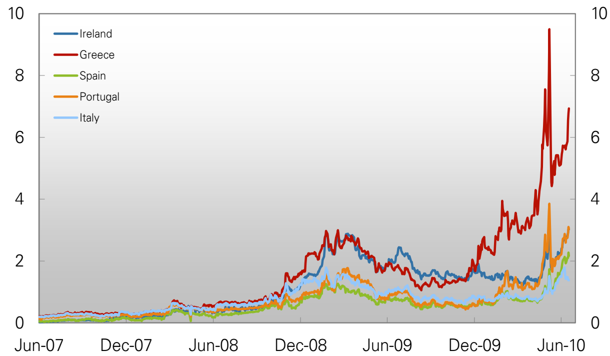
The economic situation

Recent months have been marked by renewed turbulence in financial markets. As fears of Greek sovereign debt default increased, Greek government bond yields rose sharply at the end of April. This also spread to other countries with weak government finances (see Chart 1.1). Greece, the IMF and euro area countries reached an agreement on 2 May making a total of EUR 110bn in loans available to Greece. The EU, IMF and ECB later implemented extensive measures to support countries experiencing market financing difficulties, including a loan package of EUR 750bn. In spite of the measures, financial markets are still marked by turbulence. Prices for insurance against credit risk have increased, and the spread between money market rates and central bank key rates has widened. Stock market volatility has increased worldwide. Overall, prices on Oslo Børs are now around 3% lower than at the time the previous *Monetary Policy Report* was published at the end of March (see Chart 1.2).

The recovery in the global economy is continuing. Output has risen, and global trade has picked up. Growth is strong in Asia and several emerging economies (see Chart 1.3). There are also signs of more rapid growth in output and employment in advanced economies, although growth is probably largely being driven by fiscal measures and low interest rates. Unemployment is high among many of Norway's trading partners and capacity utilisation is lower than normal.

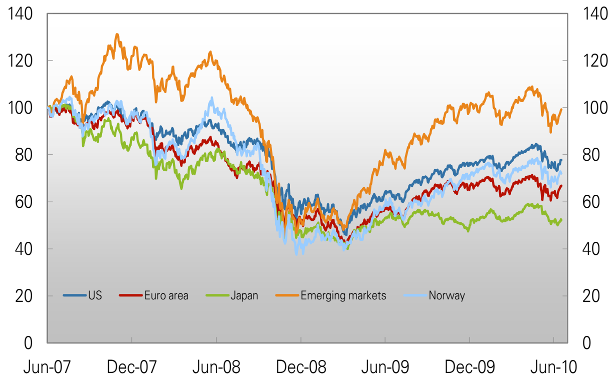
Central bank key rates remain close to zero in many countries, and as a result of financial market turbulence the expected increase in key rates has been moved forward into the future. Market participants do not expect a rise in key rates in the US, the euro area and the UK until the

Chart 1.1 Yield spreads against German 10-year government bonds. Percentage points. 1 June 2007 – 17 June 2010



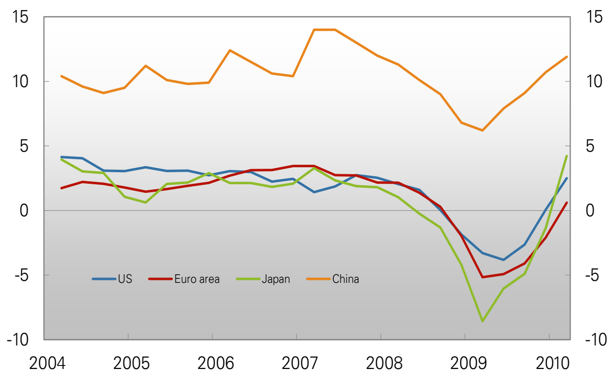
Source: Thomson Reuters

Chart 1.2 Developments in equity markets. Index. 1 June 2007 = 100. 1 June 2007 – 17 June 2010



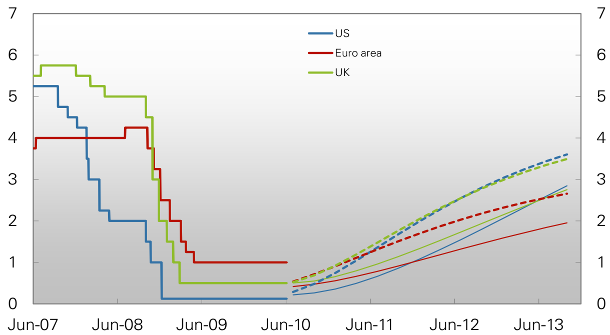
Source: Thomson Reuters

Chart 1.3 GDP in advanced economies and China. 4-quarter change. Per cent. 2004 Q1 – 2010 Q1



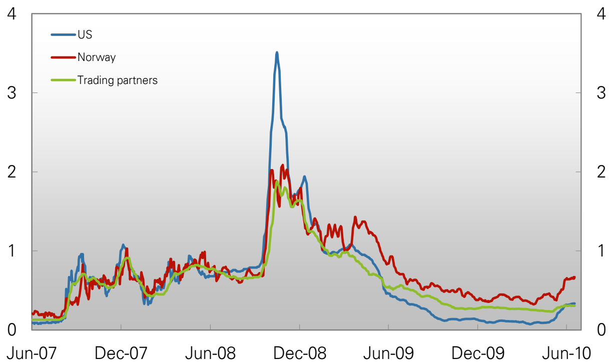
Source: Thomson Reuters

Chart 1.4 Key rates and estimated forward rates as at 24 March 2010 and 17 June 2010.[1] Per cent. 1 June 2007 – 31 December 2013[2]



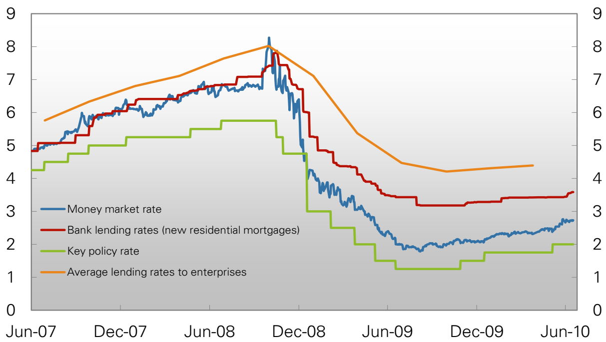
1) Broken lines show estimated forward rates as at 24 March 2010. Thin lines show forward rates as at 17 June 2010. Forward rates are based on Overnight Indexed Swap (OIS) interest rates
2) Daily figures from 1 June 2007 and quarterly figures as at 17 June 2010
Sources: Bloomberg L.P. and Norges Bank

Chart 1.5 Difference between 3-month money market rate and key rate expectations[1]. Percentage points. 5-day moving average. 1 June 2007 – 17 June 2010



1) Expected key rates are derived from Overnight Indexed Swap (OIS) rates. Norges Bank's projections for market key rate expectations are used for Norway
Sources: Bloomberg L.P., Thomson Reuters and Norges Bank

Chart 1.6 Key policy rate, money market rate[1], weighted bank lending rates on new loans[2] and average lending rates to enterprises[3]. Per cent. 1 June 2007 – 17 June 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 enterprises. 2007 Q2 – 2010 Q1
Sources: Norsk familieøkonomi AS, Statistics Norway and Norges Bank

turn of the year (see Chart 1.4). Key rates in the euro area are expected to remain below 2% until 2013. A number of countries are now implementing measures to reduce government deficits more rapidly than expected a few months ago. Low interest rates for a longer period may to a certain extent counterbalance the effect of fiscal policy tightening on demand for goods and services.

Commodity prices picked up through 2009 after falling sharply through autumn 2008. In recent months, commodity prices have fallen again, measured in terms of a stronger US dollar. Aluminium prices have decreased by around 12% since the end of March in dollar terms, while the spot price for oil (Brent Blend) has fallen to around USD 75 per barrel. Futures prices for oil and other commodities indicate that prices will edge up.

Exchange rates have shown wide fluctuations. The euro has depreciated considerably against the US dollar. The Norwegian krone appreciated up to the beginning of May, but has since depreciated somewhat. Measured by the import-weighted exchange rate (I-44), the krone is about 1% weaker and the interest rate differential against other countries somewhat higher than when the March *Report* was published. Foreign exchange market participants seem more reluctant to hold NOK in times of turbulence, as was the case during the financial crisis in autumn 2008.

The spread between money market rates and key rates widened substantially in autumn 2008. In the Norwegian money market, premiums reached 2 percentage points. Premiums then gradually fell until developments were reversed with the onset of renewed financial market turbulence in spring 2010. Three-month money market premiums are now around 0.7 percentage point (see Chart 1.5), which is somewhat higher than assumed in the March *Report*. Since October 2009 Norges Bank has raised the key policy rate by a total of 0.75 percentage point. Weighted lending rates on new residential mortgages have increased by 0.40 percentage point in the same period (see Chart 1.6).

The Norwegian economy is in a mild downturn. The decline in activity through 2008 was less pronounced than among Norway's trading partners (see Chart 1.7). Growth in the mainland economy picked up in the latter half of 2009. New information indicates that the recovery is continuing, albeit at a somewhat slower pace than previously envisaged. Enterprises in Norges Bank's regional network interviewed at the end of April and in the first half of May reported low capacity utilisation and moderate growth so far this year and they expected continued moderate growth ahead. Household demand for goods and services has increased less than expected and household confidence in the Norwegian economy ahead is somewhat lower. Credit growth is stable, but the rise in house prices has slowed somewhat (see Chart 1.8).

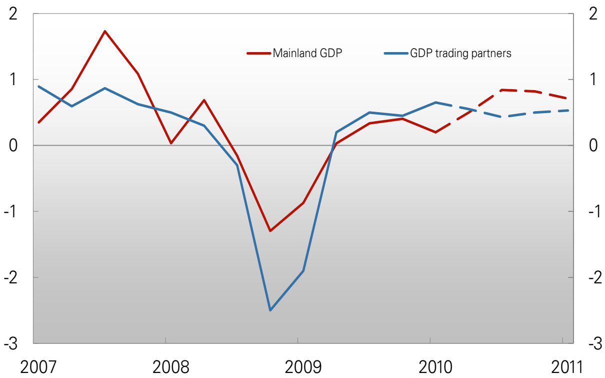
There has been a marked contraction in the labour force, curbing the rise in unemployment through the downturn. Registered unemployment appears to have levelled off and stood at 2.8% of the labour force in May. Productivity growth was low over a long period. This has pushed up enterprises' costs despite lower wage growth in 2009 compared with the past few years. The results of this year's wage settlement indicate that wage growth in 2010 will be slightly lower than projected in March.

Electricity prices fell this spring after rising considerably in winter. The overall consumer price index fell from 3.3% in April to 2.5% in May. Underlying inflation, measured by the CPIXE[1], has been close to 2% in recent months (see Chart 1.9). Lower wage growth, lower-than-normal capacity utilisation and the krone appreciation through 2009 have contributed to the fall in inflation over the past year.

According to Perduco's expectations survey, long-term inflation expectations rose somewhat in 2010 Q2. The social partners and economists in the financial industry and academia expect inflation five years ahead to be around 3% (see Chart 1.10). 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,

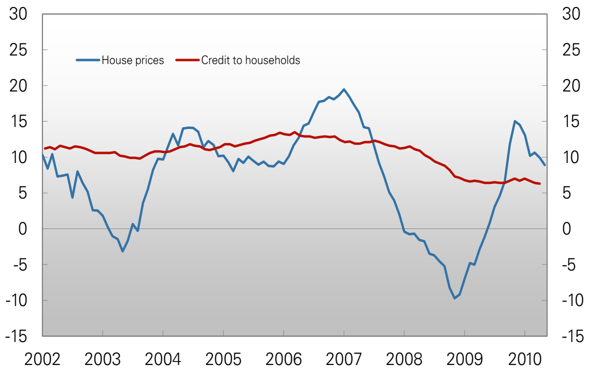
1 Consumer price inflation adjusted for tax changes and excluding temporary changes in energy prices.

Chart 1.7 GDP. Norway and trading partners. Quarterly change. Seasonally adjusted. Per cent. 2007 Q1 – 2011 Q1[1)]



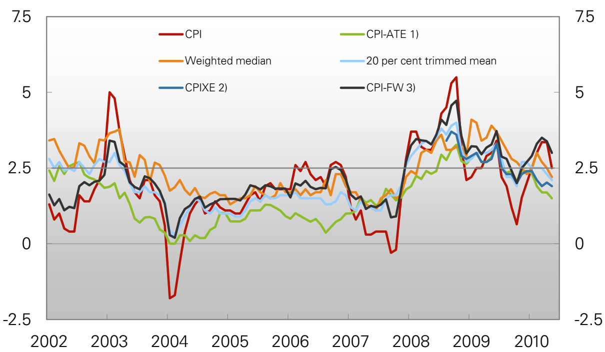
1) Projections from 2010 Q2
Sources: Statistics Norway, OECD, Thomson Reuters and Norges Bank

Chart 1.8 Credit to households [1)] and house prices.
12-month change. Per cent. January 2002 – May 2010[2)]



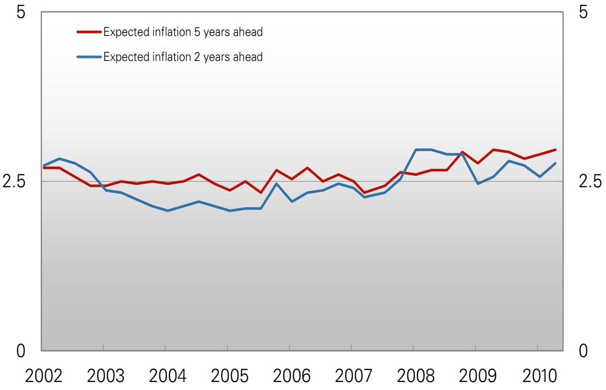
1) Credit from domestic sources, C2
2) House prices to May. Credit growth to April
Sources: Statistics Norway, OPAK, the real estate industry (NEF, EFF, FINN.no and ECON Pöyry), OBOS and Norges Bank

Chart 1.9 Consumer prices. 12-month change. Per cent.
January 2002 – May 2010



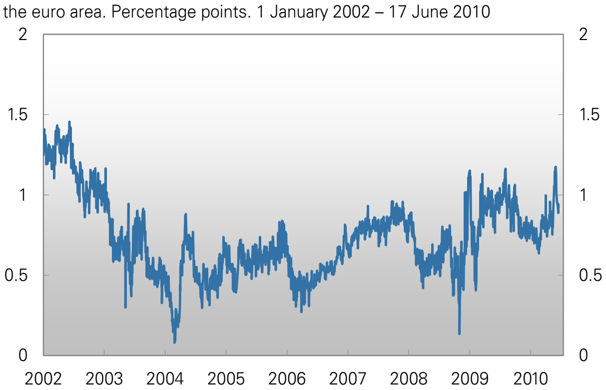
1) CPI adjusted for tax changes and excluding energy products
2) CPI adjusted for tax changes and excluding temporary changes in energy prices. CPIXE is a real time series. See *Staff Memo* 7/2008 and 3/2009 from Norges Bank for a description of the CPIXE
3) CPI adjusted for frequency of price changes. See *Economic commentaries* 7/2009 from Norges Bank for a description of the CPI-FW
Sources: Statistics Norway and Norges Bank

Chart 1.10 Expected consumer price inflation 2 and 5 years ahead.[1]
Per cent. 2002 Q1 – 2010 Q2



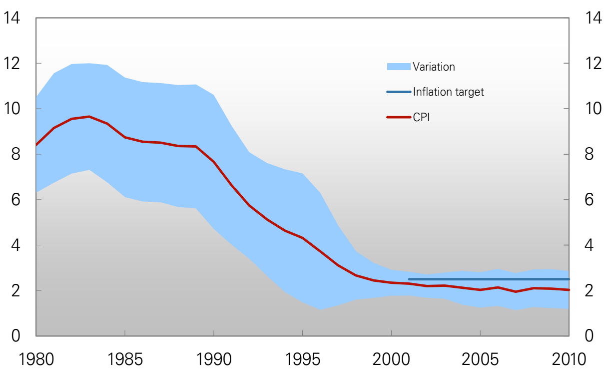
1) Average of expectations of employer/employee organisations and economists (financial industry experts, macro analysts and academia)
Sources: TNS Gallup and Perduco

Chart 1.11 5-year forward rate[1] differential 5 years ahead between Norway and the euro area. Percentage points. 1 January 2002 – 17 June 2010



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

Chart 1.12 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) Projections for CPI in this *Report* form the basis for this estimate
Sources: Statistics Norway and Norges Bank

this long-term 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 1.11).

The outlook ahead and monetary policy assessments

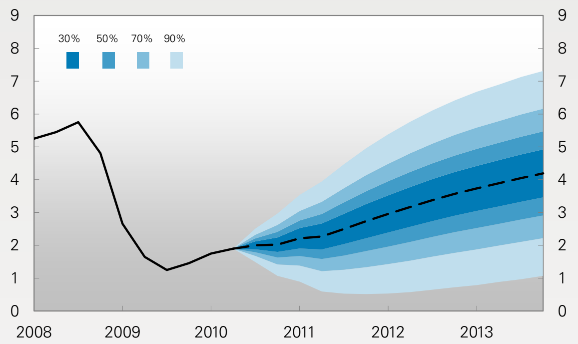
The operational target of monetary policy in Norway is low and stable inflation, with annual consumer price inflation of close to 2.5% over time. Over the past ten years, average inflation has been somewhat below but close to 2.5% (see Chart 1.12).

The key policy rate in Norway was reduced considerably in autumn 2008 and then more gradually in the period to summer 2009. The key rate was reduced to prevent inflation from falling too far below target and to mitigate the impact of the international downturn on the Norwegian economy. Activity in the Norwegian economy picked up in the latter half of 2009, and the key policy rate was raised by 0.50 percentage point to 1.75% in 2009 Q4. At the time of publication of the March *Report*, it appeared that the recovery was continuing, but that activity was increasing at a somewhat slower pace than anticipated in autumn 2009. The interest rate forecast was revised down somewhat. Norges Bank's analyses indicated at that time that the key policy rate could gradually be raised to around 2½% at the end of the year. In May, the key policy rate was increased to 2%.

New information that has emerged since the March *Report* indicates on balance that the further increase in the key policy rate will probably be moved forward slightly into the future.

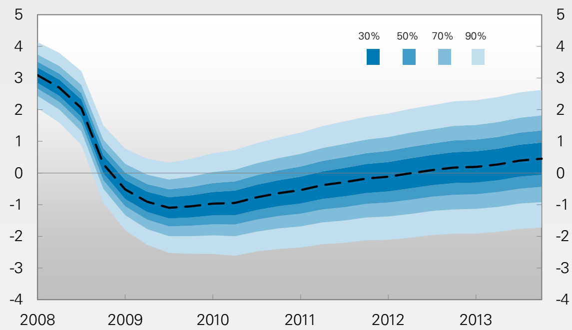
The outlook for Europe is uncertain. Many countries are compelled to implement substantial fiscal tightening in order to ensure sustainable developments in public finances. This will dampen economic activity ahead and may have an impact on other countries, both within and outside Europe. Nonetheless, growth is projected to continue to be strong in Asia and moderate in the US in the years ahead. Overall, projected growth among Norway's trading partners has been revised down and inflation is projected to remain fairly low ahead.

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



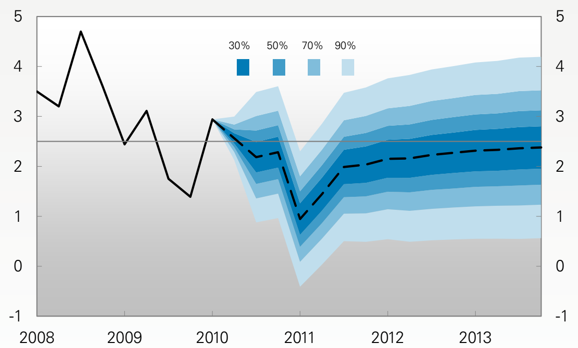
Source: Norges Bank

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



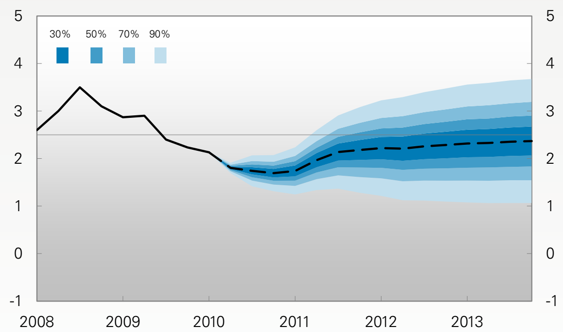
1) The output gap measures the percentage deviation between mainland GDP and projected potential mainland GDP
Source: Norges Bank

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

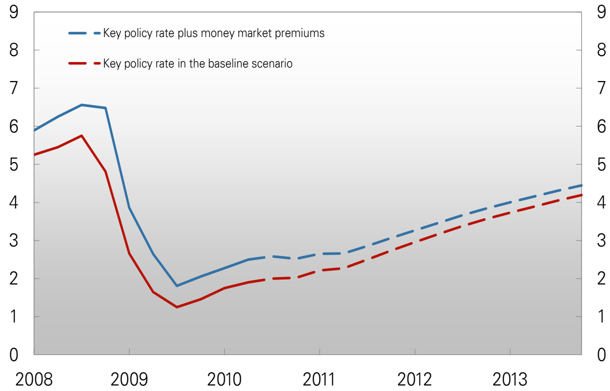


1) CPI adjusted for tax changes and excluding temporary changes in energy prices. As from August 2008, CPIXE is a real time series. See *Staff Memo* 7/2008 and 3/2009 from Norges Bank for a description of the CPIXE
Source: Norges Bank

The outlook for activity in the Norwegian economy is somewhat more subdued as a result of developments abroad. Norwegian firms may encounter lower demand in export markets, and financial market turbulence may affect household and corporate consumption and investment. Total capacity utilisation is assumed to remain somewhat lower than previously expected in coming months, although the assessment is uncertain. Slightly further ahead, higher oil investment will push up output growth. Underlying inflation has been approximately as expected and is now around 2%. Inflation is expected to drift down further in the period to the end of the year. Lower wage growth may contribute to holding inflation below target for a longer period than envisaged in March. Lower interest rate expectations among Norway's trading partners result, in isolation, in a higher expected interest rate differential against other countries. The krone may then appreciate, leading to inflation that is too low. Both the objective of keeping the rise in consumer prices close to the inflation target and the objective of stable developments in output and employment imply a low key policy rate (see description of criteria for an appropriate interest rate path on page 22).

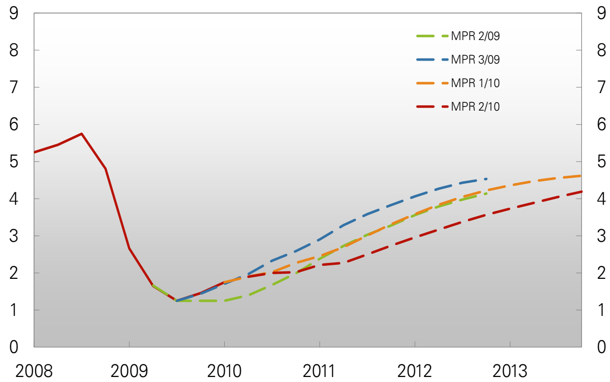
Higher money market premiums are also given weight in interest rate setting, but in the baseline scenario movements that are assumed to be temporary are to some extent disregarded. Premiums are assumed to gradually revert to a more normal level (see Chart 1.14). In the March *Report*, this was expected to occur more rapidly. Lower interest rate expectations abroad, the krone depreciation and higher money market premiums all stem from financial market turbulence and must therefore be viewed collectively.

Chart 1.14 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



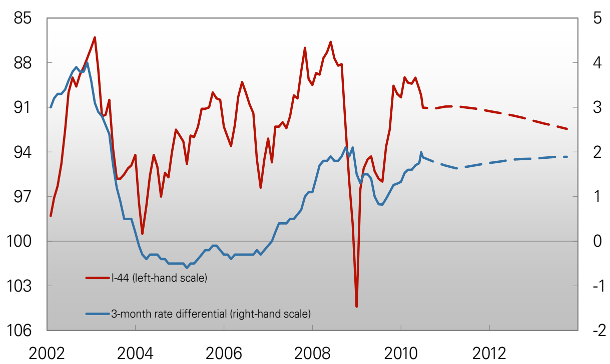
1) Norges Bank's projections from 2010 Q3
Source: Norges Bank

Chart 1.15 Key policy rate in the baseline scenario in MPR 2/09, MPR 3/09, MPR 1/10 and MPR 2/10. Per cent. 2008 Q1 – 2013 Q4



Source: Norges Bank

Chart 1.16 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 indicates a stronger krone exchange rate
Sources: Thomson Reuters and Norges Bank

Market turbulence reflects the risk of sovereign debt default in some EU member states and the risk of banks collapsing and triggering another crisis in the financial sector. The risk of prolonged turbulence, resulting in a weakened outlook for inflation, output and employment in the Norwegian economy, may indicate that the interest rate increase should be postponed.

The consideration of guarding against future financial imbalances that may disturb activity and inflation somewhat further ahead suggests, on the other hand, that the interest rate should be brought closer to a more normal level. Household credit growth has remained stable at around 6–7% over the past year. House prices are still rising, but at a slower rate than in 2009. Developments in private consumption have been more moderate than the low interest rate in isolation would imply. The low interest rate level has not so far triggered a pickup in household debt growth. In March, Finanstilsynet (the Financial Supervisory Authority of Norway) published guidelines for prudent residential mortgage lending, including limits on loan-to-value ratios, which will probably contribute to curbing household debt accumulation.

An overall assessment of the outlook and the balance of risks suggests that the key rate should be held at the current level for a period and then gradually raised towards a more normal level (see Charts 1.13 a–d). Developments since March suggest that the key policy rate should be raised somewhat later than projected in the March *Report* (see Chart 1.15 and box on page 20). The main factors that point in this direction are lower interest rates abroad, a weaker outlook for Europe, higher money market premiums in Norway, somewhat lower growth in the Norwegian economy and slightly lower wage growth. The key policy rate is projected to be kept unchanged until around the turn of the year and then to be raised at a measured pace to somewhat above 4% at end-2013.

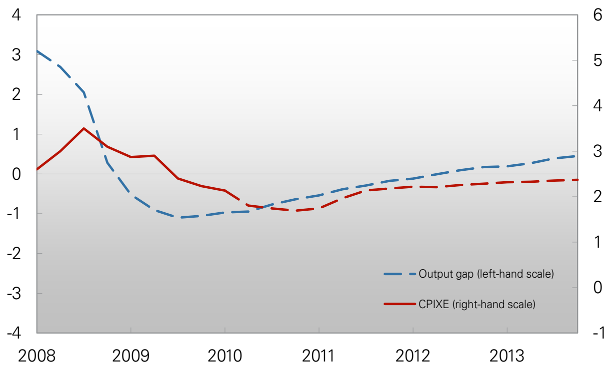
With this interest rate path, the interest rate differential against other countries and the krone are projected to remain at about the current level in the period ahead (see Chart 1.16).

The interest rate is set with a view to stabilising inflation close to 2.5% over time and to bringing capacity utilisation gradually back to a normal level (see Chart 1.17). Low interest rates are contributing to continued growth in household demand for goods and services and will over time push up growth in corporate demand. Housing investment is expected to pick up sharply over the next few years. An upswing in business investment is also expected. Even though wage growth has slowed, Norwegian labour has never been as costly as it is now, in terms of relative labour costs (see Chart 1.18). The Norwegian export industry will lose market shares ahead as a result. Exports are expected to show moderate growth in the coming years. Overall, capacity utilisation is projected to return to a normal level in the first half of 2012 and registered unemployment to remain close to 3% in the years ahead.

For a period ahead, inflation will be curbed by lower capacity utilisation and somewhat lower wage growth. Annual wage growth in 2010 is estimated at 3½%. As capacity utilisation increases, wage growth is expected to pick up to 4½–4¾% towards the end of the projection period. Productivity growth has revived recently and is expected to hold up ahead. Firms are expected to be able to expand margins as demand increases. There are prospects that underlying inflation will begin to pick up again in 2011 and that inflation will move up close to target towards the end of the projection period.

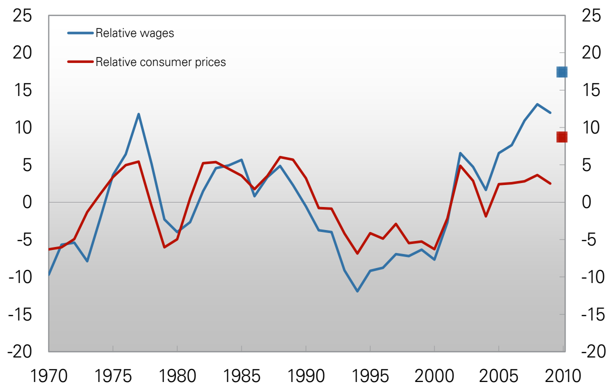
The projections are uncertain. The interest rate forecast is therefore assessed in the light of simple monetary policy rules that can be robust to different assumptions about the functioning of the economy. The Taylor rule is based on the output gap and inflation. The growth rule is based on GDP growth and inflation. The rule involving external 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 rate somewhat above Norges Bank's interest rate forecast (see Chart 1.19). The rule involving external interest rates implies a key rate of close to 2% at the end of the year. Unless there are prospects for abrupt changes in economic developments, monetary policy could be more

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



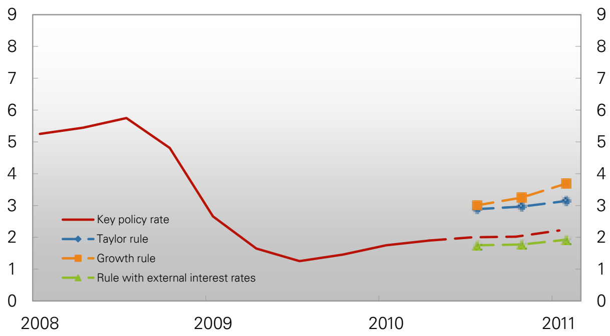
1) CPI adjusted for tax changes and excluding temporary changes in energy prices. From August 2008, CPIXE is a real time series. See *Staff Memo* 7/2008 and 3/2009 from Norges Bank for a description of the CPIXE
Source: Norges Bank

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



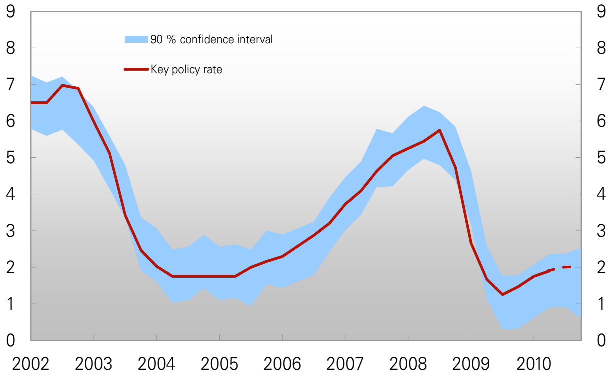
1) The squares show the average so far in 2010. A rising curve indicates weaker competitiveness
Sources: Statistics Norway, Technical Reporting Committee on Income Settlements, Ministry of Finance and Norges Bank

Chart 1.19 Key policy rate and calculations based on simple monetary policy rules1). Per cent. 2008 Q1 – 2011 Q1



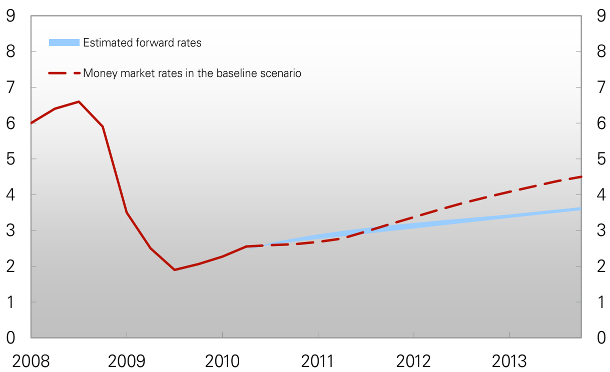
1) The calculations are based on Norges Bank's projections for the output gap, consumer prices adjusted for tax changes and excluding temporary changes in energy prices (CPIXE) and three-month money market rates. To ensure comparability with the key policy rate, the simple rules are adjusted for risk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

Chart 1.20 Key policy rate and interest rate developments that follow from Norges Bank's average pattern of interest rate setting.1) Per cent. 2002 Q1 – 2010 Q4



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 Q2. See *Staff Memo* 3/2008 for further discussion
Source: Norges Bank

Chart 1.21 Three-month money market rates in the baseline scenario and estimated forward rates1). 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 4 - 17 June 2010
Sources: Thomson Reuters and Norges Bank

robust if the interest rate level does not deviate too far from that implied by the simple rules. This consideration has been given some weight in interest rate setting (see box on page 22).

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 a few observable variables. The rule includes 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 1.20).

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). Relatively low long-term money market rates may reflect a preference for investment in countries with sound government finances. With the recent high volatility in fixed income markets, particular caution should be exercised in interpreting the level of long-term interest rates.

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 of 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.

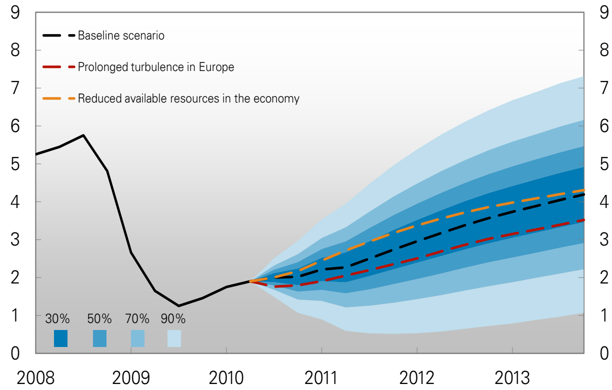
The uncertainty surrounding Norges Bank's projections is illustrated using fans (see Charts 1.13 a-d). The width of the fan charts is based on previous disturbances and therefore expresses an average that includes periods of high and low uncertainty.

Financial market turbulence flared up after Easter 2010. Government bond yields in Greece and a number of other countries rose to their highest level in early May. They subsequently fell back somewhat, but are still higher than normal. Norges Bank's projections are based on the assumption that markets will gradually normalise through summer and autumn. If the turbulence persists for a prolonged period and if developments in Europe prove to be even weaker than currently projected, the outlook may be considerably weaker. Long-term bank funding may dry up. The supply of dollar liquidity in Europe may also remain low over time and money market premiums may increase markedly. Central bank key rate expectations among Norway's trading partners may continue to fall, and commodity prices may decline. Growth and inflation abroad will probably fall. Norwegian export firms will encounter lower prices and demand. Businesses and households may find it more difficult to obtain loans, which may dampen growth in consumption and investment and contribute to keeping inflation low. At the same time, experience shows that the krone has depreciated in periods of severe turbulence. A krone depreciation may curb the decline in output and inflation in Norway.

Charts 1.22 a-c (red lines) illustrate possible developments in the event financial market turbulence lasts for a prolonged period, although uncertainty as to the form this may take is considerable. Norges Bank's projections are based on higher money market premiums, lower central bank key rate expectations abroad, lower output and inflation abroad and an immediate depreciation of the krone. In such a scenario, the key policy rate might be lowered. In isolation, a weaker krone exerts upward pressure on inflation. This would result in a less pronounced reduction in the key policy rate. As the situation normalises, the key rate could be raised gradually, although it will be lower than in the baseline scenario throughout the projection period. In such a scenario, inflation could remain below 2.5% through the projection period and the output gap may not close until 2013.

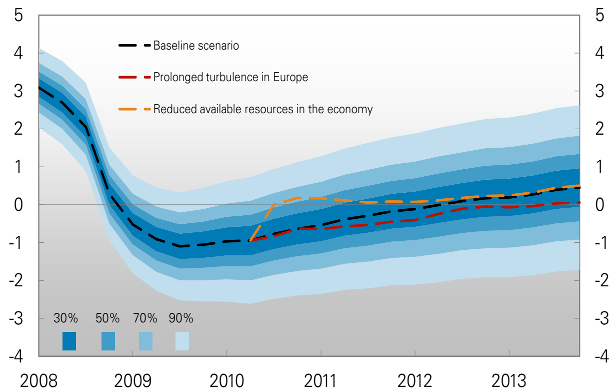
On the other hand, global economic growth has been robust so far in 2010. If the turbulence should rapidly abate, an unexpectedly strong upturn may follow, in Norway and abroad.

Chart 1.22a Key policy rate in the baseline scenario and in the alternative scenarios. Per cent. 2008 Q1 – 2013 Q4



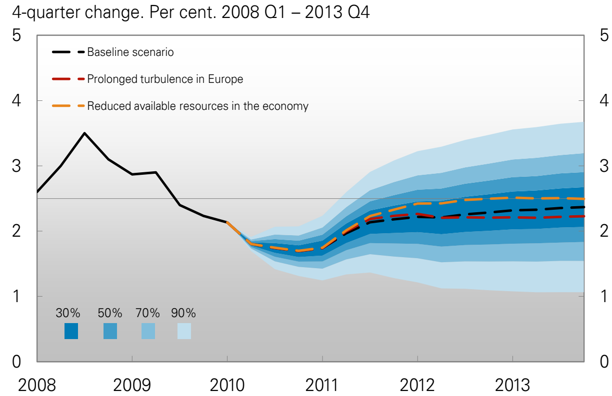
Source: Norges Bank

Chart 1.22b Output gap in the baseline scenario and in the alternative scenarios. Per cent. 2008 Q1 – 2013 Q4



Source: Norges Bank

Chart 1.22c 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 for a description of the CPIXE
Source: Norges Bank

It is always difficult to determine how high capacity utilisation in the economy actually is. Norges Bank's assessment is that it is now slightly lower than normal. This is based on reports from enterprises in the regional network indicating some spare capacity. Despite lower demand, many enterprises have maintained their workforces, resulting in lower productivity. Unemployment in this downturn has shown only a slight increase compared with previous downturns. Labour market developments thereby indicate that available resources in the economy are limited. Should capacity utilisation be higher than assumed and there is no basis for an increase in productivity, inflation may be higher than expected. The key rate may then be raised more rapidly, more in line with the forecast in the March *Report*. Charts 1.22 a-c (yellow lines) illustrate a scenario where capacity utilisation in the economy is higher and productivity rises less than assumed in the baseline scenario.

Summary

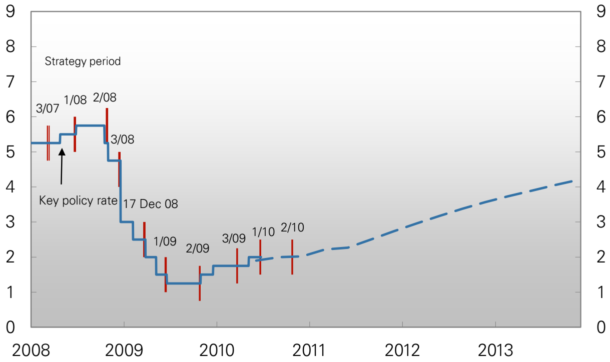
Recent months have been marked by renewed turbulence in financial markets. As fears of Greek sovereign debt default increased, Greek government bonds yields rose sharply at the end of April. This also spread to other countries with weak government finances. The outlook for Europe is uncertain. Many countries are compelled to implement substantial fiscal tightening. This will dampen economic activity ahead and may have an impact on other countries, both within and outside Europe. At the same time, global economic growth has been robust so far this year. Central bank key rate expectations have nonetheless fallen markedly in many countries.

Since October 2009, Norges Bank has raised the key policy rate by a total of 0.75 percentage point to 2%. The recovery in the Norwegian economy is continuing, albeit at a somewhat slower pace than envisaged in March. Underlying inflation is now around 2% and is expected to slow further towards the turn of the year. Lower interest rates abroad and a weaker outlook for Europe, higher money market premiums in Norway, somewhat lower growth in the Norwegian economy ahead and slightly lower wage growth suggest that the key policy rate should be raised somewhat later than projected in the March *Monetary Policy Report*.

The risk of a prolonged period of turbulence in financial markets, resulting in a weakened outlook for inflation, output and employment in the Norwegian economy, suggests that the increase in the key policy rate should be postponed. On the other hand, interest rates in Norway are low. The consideration of guarding against the risk of future financial imbalances that may disturb activity and inflation somewhat further ahead suggests that the interest rate should be brought closer to a more normal level.

The projections are uncertain. New information may reveal aspects of economic developments that suggest the Norwegian economy is following a different path than projected. If the financial market turbulence should rapidly abate, economic activity, in Norway and abroad, may increase more sharply than projected in this *Report* and result in higher inflation. Higher capacity utilisation

Chart 1.23 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 23 June 2010 is not shown in the chart
Source: Norges Bank

or lower productivity growth may also push up inflation more rapidly than currently projected. On the other hand, inflation may be lower if global developments prove to be substantially weaker than projected or the krone appreciates markedly.

Monetary policy cannot fine-tune developments in the economy, but it can mitigate the most severe effects when the economy is exposed to shocks. On balance, the outlook and the balance of risks suggest that the key policy rate should be held at the current level for a period and then be raised gradually towards a more normal level (see Chart 1.23).

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 27 October unless the Norwegian economy is exposed to new major shocks.

Changes in the projections since *Monetary Policy Report* 1/10

The interest rate forecast in this *Monetary Policy Report* has been revised down compared with the March *Report* (see Chart 1). The forecasts are based on an overall assessment of the situation in the Norwegian and global economies 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 in isolation have affected the changes in the interest rate forecast through their impact on the outlook for inflation, output and employment. The isolated contributions from the different factors are shown by the bars. The overall change in the interest rate forecast is shown by the black line.

Forward rates among trading partners have fallen markedly since the March *Report* and the expected interest rate differential between Norway and trading partners has widened. In isolation, this would suggest that the key policy rate should be lower to prevent a higher expected interest rate differential from feeding through fully to the krone, leading to a krone appreciation that may push down imported inflation (see green bars). On the other hand, the import-weighted krone exchange rate (I-44) has been somewhat weaker than projected in March. This contributes in isolation to a higher rise in prices for imported consumer goods and suggests a higher key policy rate (see orange bars).

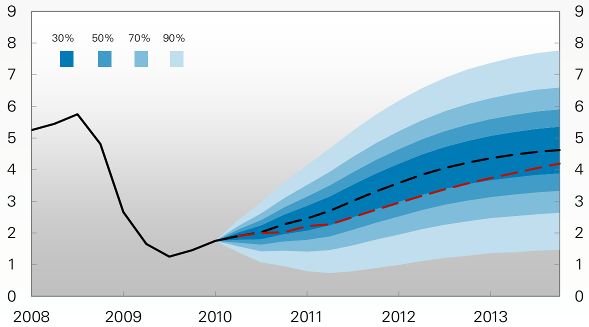
Money market premiums have risen since the March *Report*. In isolation, this pushes down the key policy rate somewhat. Norges Bank expects premiums to gradually revert to a more normal level. The consideration of avoiding abrupt and unexpected changes in the key policy rate suggests that the temporary rise in premiums should be disregarded. This interest rate smoothing is shown by the light blue bars.

Lower interest rate expectations abroad, the krone depreciation and higher money market premiums all stem from financial market turbulence and must therefore be viewed collectively. On balance, these factors suggest a lower key policy rate.

It appears that wage growth will be somewhat lower than previously projected. This will curb inflation ahead and suggests a lower key policy rate (see red bars).

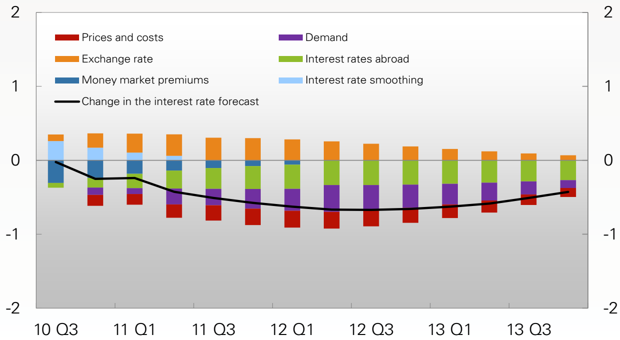
The outlook for activity in the Norwegian economy is somewhat more subdued. Private consumption in particular may be weaker than previously expected. This may be related to heightened uncertainty concerning economic developments abroad and their effect on the Norwegian economy.

Chart 1 Key policy rate in the baseline scenario in MPR 1/10 with fan chart and key policy rate in the baseline scenario in MPR 2/10 (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 1/10. Accumulated contribution. Percentage points. 2010 Q3 – 2013 Q4



Source: Norges Bank

Export growth has also been somewhat lower than expected and projected export growth has been revised down slightly in line with weaker global prospects. It appears that capacity utilisation in the coming period will remain slightly lower than projected in the March *Report*. Slightly further ahead, higher projected oil investment will push up productivity growth and contribute to gradually higher capacity utilisation than assumed in the March *Report*. On balance, however, developments in demand and output suggest that the key policy rate should be lower ahead (see purple 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.

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

	2010	2011	2012	2013
CPI	2½ (0)	1½ (-¼)	2¼ (-¼)	2¼ (-¼)
CPI-ATE	1½ (0)	1¾ (-¼)	2¼ (-¼)	2¼ (-¼)
CPIXE[1)]	1¾ (0)	2 (0)	2¼ (-¼)	2¼ (-¼)
Annual wage growth	3½ (-¼)	4 (-¼)	4½ (-¼)	4¾ (0)
Mainland demand	1¾ (-1¼)	4 (-¼)	3¼ (0)	2½ (¼)
Mainland GDP	1¾ (-½)	2¾ (0)	2¾ (¼)	2¾ (½)
Mainland output gap[2)]	-¾ (0)	-¼ (0)	0 (¼)	¼ (¼)
Employment	-¼ (-¼)	¾ (0)	1 (0)	½ (0)
LFS unemployment (rate)	3½ (-¼)	3¾ (0)	3½ (0)	3½ (0)

1) 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

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

Source: 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.

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 and equity prices, and the krone exchange rate on the prospects for 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) Interest rate developments should result in acceptable developments in inflation and output also under alternative assumptions concerning the economic situation and the functioning of the economy. Any substantial and systematic deviations from simple, robust monetary policy rules should be explained.

The interest rate forecast in the *Monetary Policy Report* is an expression of Norges Bank's overall judgement and assessment based on the criteria above.

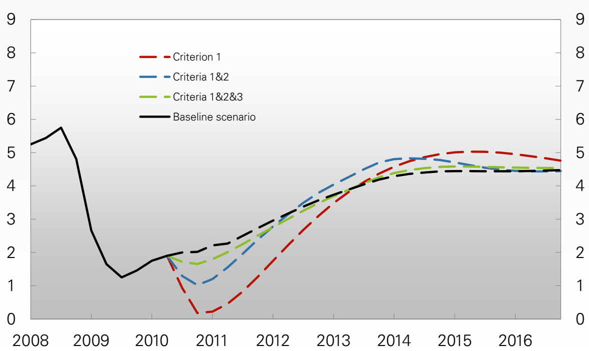
As a technical illustration of how the interest rate forecast can be constructed, and what the various criteria may signify, a calculation using the macroeconomic model NEMO is presented below to provide clarification.[1]

In the model, the interest rate forecast is the interest rate path that satisfies the criteria above to the farthest possible extent. Expressed mathematically, the degree to which the criteria are satisfied is represented by what is referred to as a "loss function"[2]:

$$L_t = (\pi_t - \pi^*)^2 + \lambda (y_t - y_t^*)^2 + \delta (i_t - i_{t-1})^2 + \kappa \left(i_t - i_t^{simple}\right)^2$$

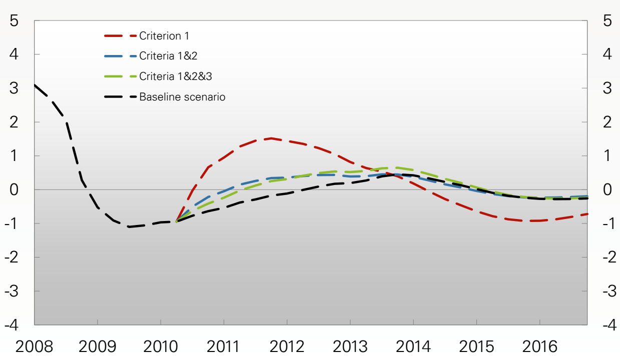
The first term in the equation represents criterion 1, where the loss is higher the more actual inflation π_t deviates from the inflation target π^*. The second term represents criterion 2 and shows that

Chart 1 Key policy rate. Per cent. 2008 Q1 – 2016 Q4



Source: Norges Bank

Chart 2 Output gap. Per cent. 2008 Q1 – 2016 Q4



Source: Norges Bank

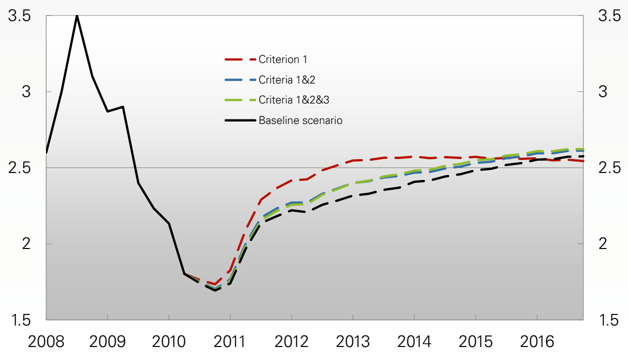
the loss increases with the degree of fluctuation in the level of activity, measured as the gap between actual output y_t and the normal level of output y_t^*. The third term represents the desire for gradual interest rate changes in criterion 3, i.e. that the current interest rate i_t should not deviate too far from the rate in the previous period i_{t-1}. The fourth term represents criterion 4 and can be interpreted to mean that there is also a cost or risk in setting an interest rate i_t that deviates substantially from the interest rate implied by simple monetary policy rules i_t^{simple}. Norges Bank's models provide an incomplete description of the functioning of the economy and the interest rate forecast is vulnerable to weaknesses and errors in the model. It is therefore useful to assess the interest rate forecast in the light of simple monetary policy rules that can be robust to differing assumptions about the functioning of the economy.[3] By giving some weight to the consideration that the key rate should not deviate too far from these rules, the forecast is thereby also more robust to weaknesses in the model. The loss function above must be regarded as a simplified representation of the more extensive assessments behind interest rate decisions. For example, situations may arise where weight will be given to considerations other than those expressed in the simple loss function. For example, it may in certain situations be necessary to employ a more aggressive interest rate response than usual in order to prevent particularly adverse outcomes.

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.[4]

The calculations in Charts 1-3 illustrate the various criteria. Monetary policy that only takes into account the consideration of bringing inflation rapidly back to target (criterion 1) would imply lowering the interest rate to below 1%. The interest rate would then have to be raised rapidly again to prevent activity and inflation from becoming too high further ahead. Such a strategy could be consistent with the desire to safeguard against inflation expectations falling and becoming entrenched below the inflation target, but will on the other hand have a substantial impact on output and employment (see Charts 2 and 3).

Developments will be more stable if weight is also attached to stabilising output (criteria 1 and 2). This would also first entail a decrease in the interest rate followed by an increase further ahead. Taking out-

Chart 3 CPIXE. 12-month change. Per cent. 2008 Q1 – 2016 Q4



Source: Norges Bank

put into account implies that inflation will be brought back to target somewhat later.
Abrupt shifts in the interest rate that must be rapidly reversed may involve costs for households and enterprises that have adapted their behaviour to previous communication from the Bank and may contribute to financial market instability. The consideration of achieving smooth interest rate developments indicates that smaller, temporary disturbances should not normally result in abrupt shifts in the interest rate. If this consideration is also given weight in interest rate setting (criteria 1, 2 and 3), changes in the interest rate will be less pronounced. The disadvantage of this alternative is that inflation and output will deviate slightly more from their target levels (see Charts 2 and 3).

In the technical calculation presented here, some weight has been attached to the Taylor rule (see discussion of monetary policy rules on page 14). This simple rule, which is not based on a particular economic model, gives weight to stabilising inflation and smoothing fluctuations in output and employment. The quantification of this rule implies that interest rate setting should not be very aggressive so that the interest rate based on the Taylor rule will not be far from its normal level unless very severe imbalances arise in the economy. When this consideration is included (criteria 1, 2, 3 and 4), 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*.

1 See for example Brubakk, L. and T. Sveen (2008), "NEMO – a new macro model for forecasting and monetary policy analysis", *Economic Bulletin* 1/2009 and Brubakk, L. et al (2006), "Finding NEMO: Documentation of the Norwegian Economy Model", *Norges Bank Staff Memo* 2006/6

2 See Alstadheim R., I. W. Bache, A. Holmsen, J. Maih and Ø. Røisland (2010), "Monetary Policy Analysis in Practice", *Norges Bank Staff Memo* (forthcoming) See also Svensson, L. E.O. (2010), "Inflation targeting", forthcoming in *Handbook of Monetary Economics.*

3 See Taylor, J.B. and J.Williams (2010), "Simple and Robust Rules for Monetary Policy", forthcoming in *Handbook of Monetary Economics.*

4 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.

2 The projections

The global economy

The turbulence in the European economy in recent months stands in contrast to developments in the world economy through spring. The upswing in global economic activity continued in 2010 Q1 and into Q2. Manufacturing production and world trade have continued to expand since the March *Monetary Policy Report* (see Chart 2.1). A number of short-term indicators suggest continued solid growth ahead. Developments in macro indicators could in isolation point to an upward adjustment of the growth outlook for this year and next, both for emerging market economies and advanced economies.

During the period of strong growth before the financial crisis in autumn 2008, many countries experienced a build-up of considerable domestic and external imbalances, with private and public sector debt rising to high levels. This has resulted in sizeable external deficits (see Chart 2.2). The extensive crisis-related measures and the sharp fall in government revenues have led to a marked deterioration in public finances in most advanced economies. Budget deficits and public debt have shown a pronounced increase (see Charts 2.3 and 2.4). In the March *Report*, our projections were based on fiscal policy tightening as from 2011 in the euro area, the UK, the US and Japan.

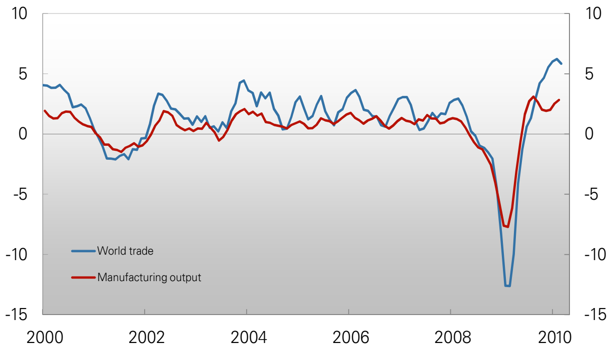
Since then, there has been growing focus on the negative developments in public finances in some euro area countries, resulting in considerable turbulence in financial markets. Long-term credit premiums have increased substantially, particularly in southern European countries facing current account deficits and rapidly rising sovereign debt. Governments in several European countries have responded by presenting measures with a view to bringing down budget deficits more rapidly. It is thus likely that government budgets in the euro area and the UK will be tightened more sharply than assumed in the March *Report*.

Table 2.1 Projections for GDP growth in other countries. Change from previous year. Per cent. Change from projections in *Monetary Policy Report* 1/10 in brackets

	2010	2011	2012-13[1]
US	3 (¼)	2½ (0)	3 (0)
Euro area	¾ (-¼)	1 (-½)	2 (-¼)
Japan	2¾ (1¼)	2 (¼)	1¾ (0)
UK	1¼ (0)	2 (-½)	2½ (-¼)
Sweden	2½ (¾)	2¾ (-¼)	3 (-¼)
China	10 (½)	9¼ (-¼)	9 (0)
Trading partners [2]	2 (0)	2¼ (-¼)	2¾ (-¼)

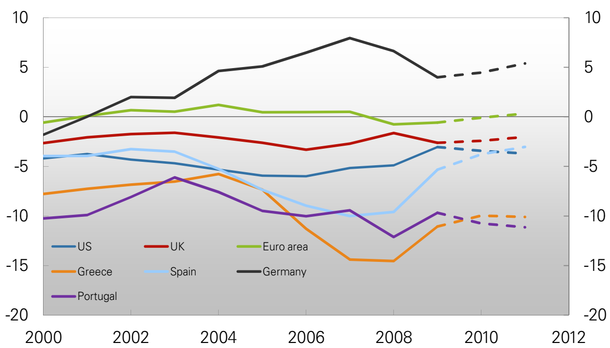
[1] Average annual growth
[2] Export weights, 26 important trading partners
Sources: Eurostat and Norges Bank

Chart 2.1 Indicator of world trade and manufacturing output. Past three months over previous three months. Percentage change. January 2000 – March 2010



Source: CPB Netherlands Bureau for Economic Policy Analysis

Chart 2.2 Current account. As a percentage of nominal GDP. 2000 – 2011. Projections from OECD for 2010 – 2011



Source: OECD Economic Outlook 87

The recent weeks' turmoil has led to a weaker euro. In isolation, this may result in higher demand for goods and services from euro area countries, although this is not expected to outweigh tightening measures, higher interest rate premiums and increased caution among firms and households. The cost level in southern European countries has worsened in relation to their trading partners through the 2000s (see Chart 2.5), making it more difficult to rely on growth to redress the imbalances.

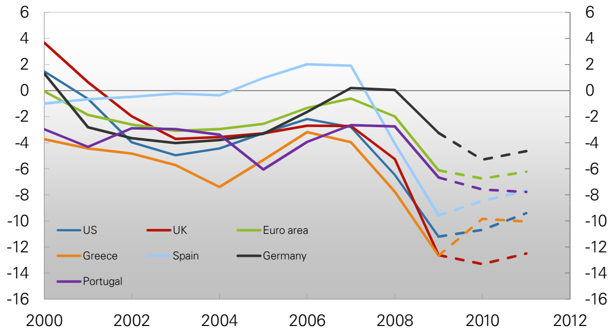
Public sector and labour market reforms now being implemented in many countries may increase the economies' growth potential over time. In the coming years, however, output growth in Europe is expected to be low. Weaker growth prospects for Europe and financial market turmoil are also expected to have an adverse impact on growth in the US and Japan this year and next. The prospects for Asia and the US are, however, considerably better than for Europe.

The setback in advanced economies is also likely to have an impact on emerging market economies in Asia and Latin America, where growth is nevertheless expected to remain solid. Manufacturing production and exports for Brazil, India and China rebounded rapidly after falling sharply in 2008 and 2009 and are now near, or higher than, pre-crisis levels. Both domestic and external demand for goods and services have fuelled the rapid upswing. High investment, strong productivity growth and considerable labour reserves are behind the favourable economic prospects for China and India, among other countries.

For trading partners as a whole, growth projections have been lowered by ¼ percentage point annually as from 2011 compared with the March *Report*, as a result of sluggish growth in Europe. GDP growth for our trading partners is now projected at 2% in 2010 and 2¼% in 2011 (see Table 2.1).

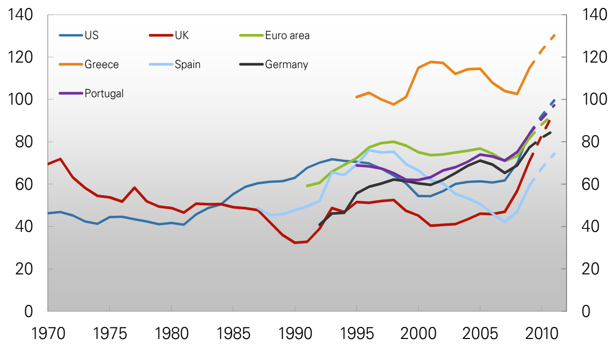
Inflation is expected to be moderate in the coming years. Capacity utilisation will probably be lower than normal in advanced economies through the projection period, and the prospects for growth in private consumption are weak. Wage growth is expected to remain low, partly reflecting continued high unemployment. In the coming year, underlying consumer price inflation is thus expected to con-

Chart 2.3 General government fiscal balances. As a percentage of nominal GDP. 2000 – 2011. Projections from OECD for 2010 – 2011



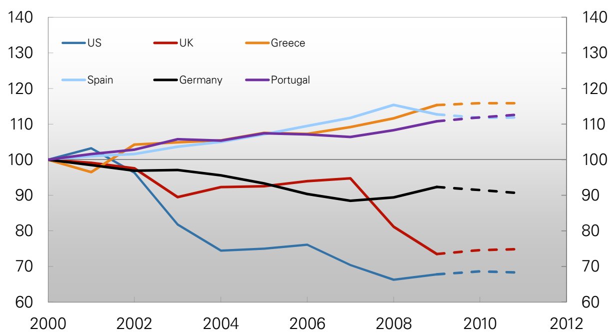
Source: OECD Economic Outlook 87

Chart 2.4 Government gross debt. As a percentage of nominal GDP. 2000 – 2011. Projections from OECD for 2010 – 2011



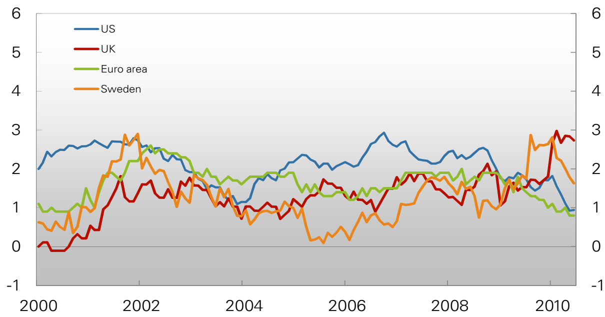
Source: OECD Economic Outlook 87

Chart 2.5 Relative labour costs in common currency[1]. Index, 2000 = 100. 2000 – 2011. Projections from the European Commission for 2010 – 2011



1) Relative to the rest of the EU-15
Source: EU Commission

Chart 2.6 Consumer prices excluding food and energy[1]. 12-month change. Per cent. January 2000 – May 2010



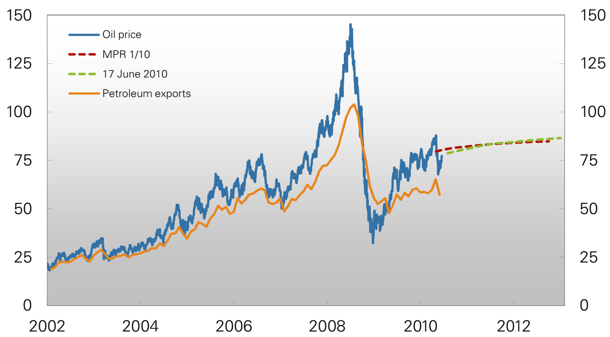
1) HICP exluding energy, food alcohol and tobacco for the euro area, UK and Sweden
Source: Thomson Reuters

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* 1/10 in brackets

	2010	2011	2012-13[1]
US	1¾ (0)	1¼ (-¼)	2 (½)
Euro area [2]	1¼ (0)	1¼ (¼)	1½ (0)
Japan	-¾ (¼)	-¼ (0)	¼ (0)
UK	2¾ (¾)	1¾ (¼)	2 (0)
Sweden	1 (-¼)	2 (-½)	2½ (-¼)
China	3¼ (¼)	2½ (0)	2 (0)
Trading partners [3]	1¾ (¼)	1½ (0)	1¾ (0)
Oil price Brent Blend [4]	77.6	81.7	85.4

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 2.7 Oil price (Brent Blend) and prices for Norwegian petroleum exports[1]. 1 January 2002 – 17 June 2010. In USD per barrel. Oil futures prices (broken lines) MPR 1/10 and 17 June 2010



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

tinue to drift down after having fallen considerably in most advanced economies (see Chart 2.6). On the other hand, many European countries are expected to raise indirect taxes in connection with fiscal tightening. For 2010, consumer price inflation has been revised up somewhat as a result of higher growth in activity and increased inflation so far this year. Consumer price inflation is projected at about 1½% in 2011 and is projected at 1¾% in 2012 and 2013 in annualised terms (see Table 2.1).

The price of oil is around USD 75 per barrel, somewhat lower than at the time of the March *Report*. Oil prices in euro and krone terms have risen, however. The projections in this *Report* are based on an oil price in line with futures prices (see Table 2.2 and Chart 2.7). These prices imply an oil price in 2011-2013 that is a good USD 5-10 higher than today's spot prices. This must be seen in connection with expectations of continued solid growth in emerging market economies, which are making a growing contribution to global oil demand. Oil prices may nevertheless fall if contagion effects on the world economy from the turbulence in Europe should prove to be more severe. On the other hand, oil prices may increase further if growth among emerging market economies proves to be even stronger than envisaged in this *Report*.

Gas exports account for a rising share of Norwegian petroleum exports. Norwegian gas exports have primarily been sold at long-term contracts where prices follow prices for oil products with some lag. A somewhat higher share of gas is currently sold at spot prices. The upswing in oil prices since spring 2009 now seems to be gradually leading to an increase in Norwegian gas prices. UK spot and futures prices for gas show the same tendency. The average price of Norwegian petroleum exports has increased in recent months (see Chart 2.7). Increased supply of gas in the US and liquid gas in general may nevertheless result in lower prices for Norwegian gas if the link to prices for oil products weakens.

The *Economist* commodity-price index has edged down since the March *Report*. Commodity prices are nevertheless expected to remain firm given continued strong growth in emerging market economies.

The Norwegian economy in the year ahead

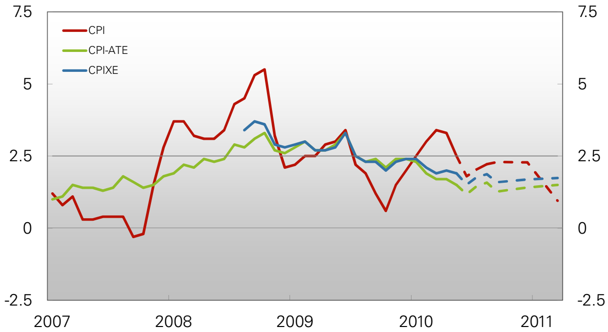
Prices

The consumer price index (CPI) was 2.5% higher in May 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 rate of increase was 1.9%. Electricity prices are higher than projected in the March *Report*. This has pushed up the energy price trend incorporated in the CPIXE calculation (see Chart 2.9). CPIXE inflation is thus somewhat higher than projected in the March *Report.* Inflation adjusted for tax changes and excluding energy products (CPI-ATE) has edged down since the beginning of 2009. In May, the annual rise was 1.5%. CPI-ATE inflation has moved approximately in line with that projected in the March *Report,* both for imported consumer goods and domestically produced goods and services.

The rise in prices for domestically produced goods and services in the CPI-ATE has receded by more than 2 percentage points over the past 18 months. In May, the annual rate of increase was 2.4%. Lower cost inflation and capacity utilisation have contributed to pushing down the rise in prices. The rise in food prices has fallen markedly. Last year's agricultural settlement entailed little change in food prices, and price competition in the grocery trade has increased. The rise in house rents has slowed as a result of lower interest expenses for landlords.

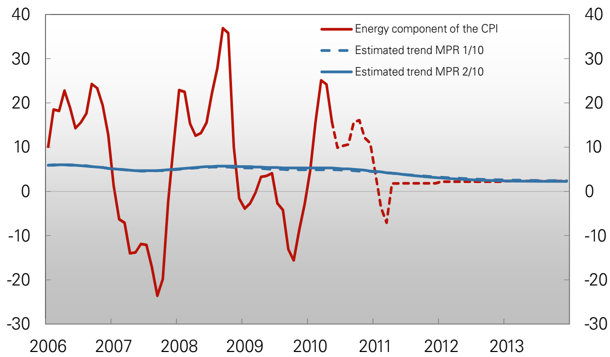
In the coming months, the rise in prices for domestically produced goods and services will probably fall further as a result of continued subdued wage growth and higher productivity growth (see Chart 2.10). This year's agricultural settlement is likely to have little impact on inflation and the rise in food prices is expected to remain subdued. On the other hand, demand for goods and services is expected to edge up ahead, providing room for firms to raise margins somewhat through higher prices. Overall, the rise in prices for domestically produced goods and services is projected at 2¼% in 2010 Q2, before rising to 2½% in 2011 Q1 (see Chart 2.11).

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



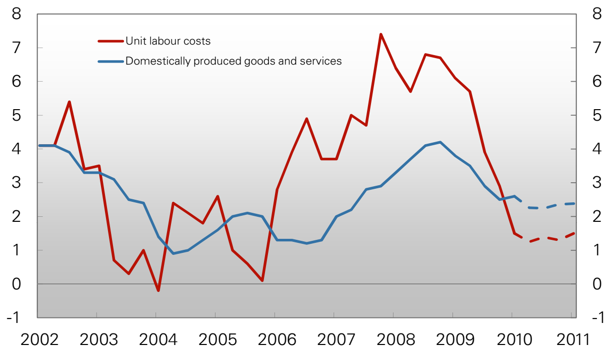
1) CPI adjusted for tax changes and excluding energy products
2) CPI adjusted for tax changes and excluding temporary changes in energy prices. Real time figures. See *Staff Memo 7/2008* and *3/2009* from Norges Bank for a description of CPIXE
3) Projections for June 2010 – March 2011 (broken lines).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

Chart 2.9 Energy component of the CPI[1)] and estimated trend[2)]. 12-month change. Per cent. January 2006 – December 2013[3)]



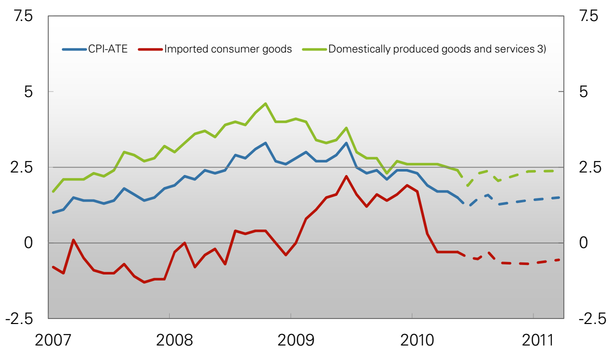
1) The product groups Electricity, gas and other fuels and Fuels and lubricants
2) The trend is estimated using an HP filter on the actual and projected movements of energy prices in the CPI, see *Staff Memo 2008/7* and *Staff Memo 2009/3* from Norges Bank
3) Projections for June 2010 – December 2013 (broken line)
Sources: Nord Pool, Statistics Norway and Norges Bank

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



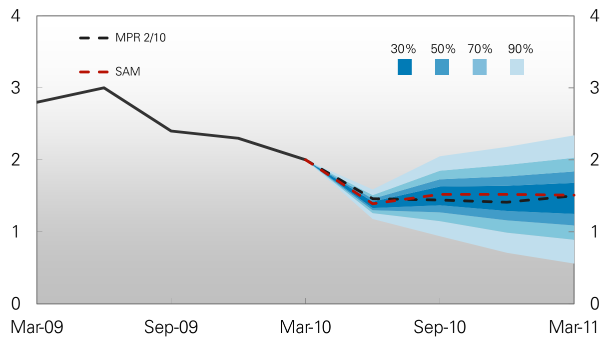
1) Norges Bank's estimates
2) Projections for 2010 Q2 – 2011 Q1 (broken lines)
Sources: Statistics Norway and Norges Bank

Chart 2.11 CPI-ATE[1)]. Total and by supplier sector.
12-month change. Per cent. January 2007 – March 2011[2)]



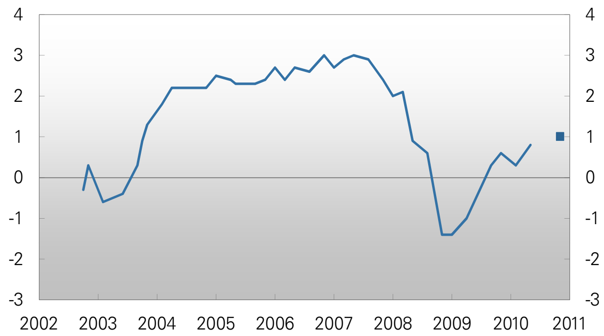
1) CPI adjusted for tax changes and excluding energy products
2) Projections for June 2010 – March 2011 (broken lines). Monthly figures to September 2010, then quarterly figures
3) Norges Bank's estimates
Sources: Statistics Norway and Norges Bank

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 Q1[3)]



1) CPI adjusted for tax changes and excluding energy products
2) System for averaging models for short-term forecasting
3) Projections for 2010 Q2 – 2011 Q1 (broken lines)
Sources: Statistics Norway and Norges Bank

Chart 2.13 Indicator of actual change in production past three months and expected change in production next six months. Index[1)].
October 2002 – November 2010[2)]



1) The scale runs from -5 to +5, where -5 indicates a sharp fall and +5 indicates strong growth. See article "Norges Bank's regional network" in *Economic Bulletin* 2/09 for further information
2) Last observation May 2010
Source: Norges Bank's regional network

The appreciation of the krone through 2009 and into 2010 has led to a marked fall in the rise in prices for imported consumer goods in recent months. Lower prices abroad for Norwegian imported goods have also pushed down the rise in prices. Prices for imported consumer goods in foreign currency are projected to fall by ½% in 2010, or at about the same pace as in 2009. The Norwegian krone is expected to be about 3¾% stronger in 2010 than the average for 2009. The annual rate of increase in prices for imported consumer goods in krone terms may then fall from 0.5% in 2010 Q1 to about negative ½% in 2011 Q1 (see Chart 2.11).

Overall, CPI-ATE inflation is projected to fall from 2% in Q1 to about 1½% in Q2 and remain unchanged to the end of the year. CPI-ATE inflation is projected at 1½% between 2009 and 2010. The projections are in line with the projections derived from the Bank's System for Averaging Models (SAM)[1] (see Chart 2.12).

Futures prices for electricity and oil indicate that energy prices will remain higher than last year and contribute to holding up CPI inflation. CPI inflation is projected at 2½% between 2009 and 2010, while CPIXE inflation is projected at 1¾%.

Output and demand

Activity in the Norwegian economy has been approximately in line with projections. Mainland GDP growth slowed in Q1 after rising moderately in the latter half of 2009. The production index for building and construction has been revised since the latest national accounts figures were published and shows that production was considerably higher in 2009 and 2010 Q1. Mainland GDP is expected to move up to ½% in Q2, partly owing to a number of building and construction projects that were postponed due to cold winter weather. In the latter half of the year, mainland GDP growth is projected at around ¾% per quarter, reflecting growth in private consumption and an increase in investment.

In May, Norges Bank's regional network enterprises expected moderate production growth in the coming quarters (see Chart 2.13). Enterprises in the building and con-

1 Norges Bank's System for Averaging Models. See box in MPR 2/2008

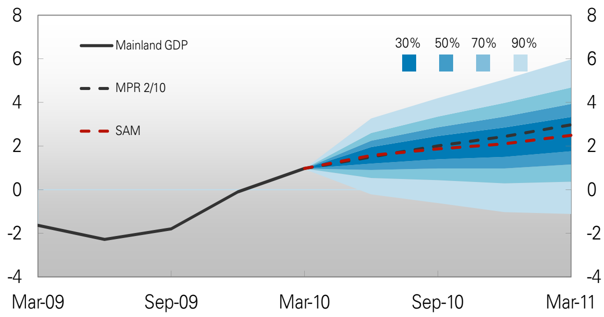
struction sector and in the petroleum supplier industry in particular, where there have been reports of falling production to date, are more optimistic about growth going forward.

Projected mainland GDP in the baseline scenario is slightly higher than the SAM-based projection in the final half of the year (see Chart 2.14). The SAM projections are partly based on confidence indicators, which have fallen recently. This may be related to heightened financial market turbulence. In the baseline scenario, it is assumed that financial markets will normalise in the course of autumn and that confidence will gradually improve, suggesting that GDP growth will be somewhat higher than the SAM-based projection. The baseline growth path is nonetheless well within the most likely range of outcomes in SAM.

Capacity utilisation is still fairly low. Statistics Norway's business sentiment survey indicates that there is still considerable spare manufacturing capacity. More regional network enterprises than normal report that they would have little difficulty accommodating an increase in demand (see Chart 2.15). GDP and capacity utilisation levels at the beginning of 2010 were probably as projected. It appears that GDP growth through 2010 will be somewhat lower than projected in the March *Report*, however. Capacity utilisation may thus prove to be slightly lower this year than projected in the March *Report*. Output growth is expected to be somewhat higher than potential output ahead. The output gap will be negative through 2010 and close thereafter.

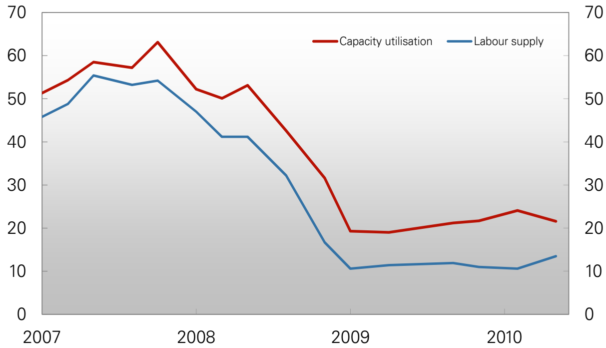
The financial crisis and the economic downturn weakened potential output in some sectors of the economy. Reduced access to credit amplified the cyclical downswing in investment and probably hampered business start-ups. Against the background of rising bankruptcy figures, real capital may have been lost in some firms and industries. Lower growth in labour immigration has curbed labour force growth. In addition, productivity declined. 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 will enable firms to reemploy production capital

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



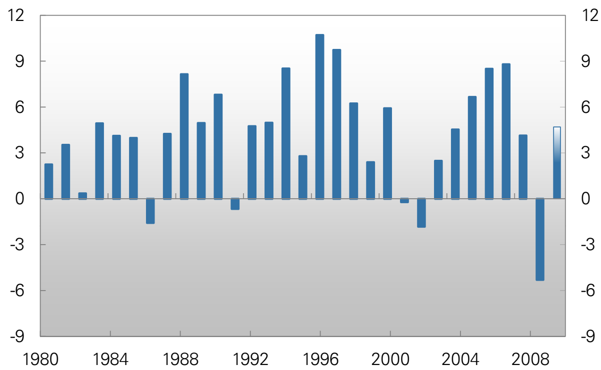
1) System for Averaging Models for short-term forecasting
2) Projections for 2010 Q1 – 2011 Q1 (broken lines). Projection for 2010 Q1 is based on quarterly national accounts and new information concerning production in building and construction from *Economic Survey 3/2010* from Statistics Norway
Sources: Statistics Norway and Norges Bank

Chart 2.15 Capacity utilisation and labour supply.[1] Per cent. January 2007 – May 2010



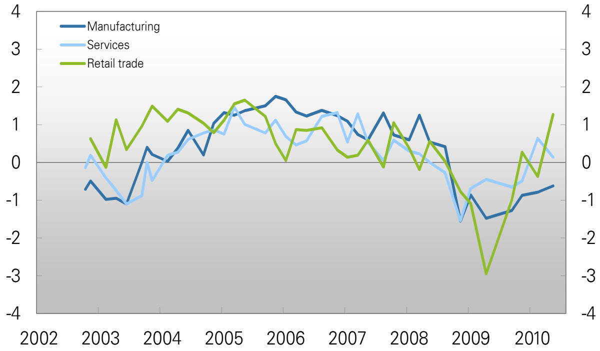
1) Share of contacts that will have some or considerable problems accommodating an (unexpected/expected) increase in demand, and the share of contacts where production is constrained by labour supply
Source: Norges Bank's regional network

Chart 2.16 Exports from mainland Norway. Annual change. Volume. Per cent. 1980 – 2010[1]



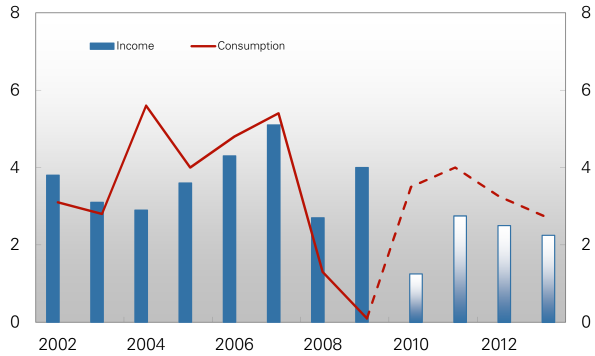
1) Projections for 2010
Sources: Statistics Norway and Norges Bank

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



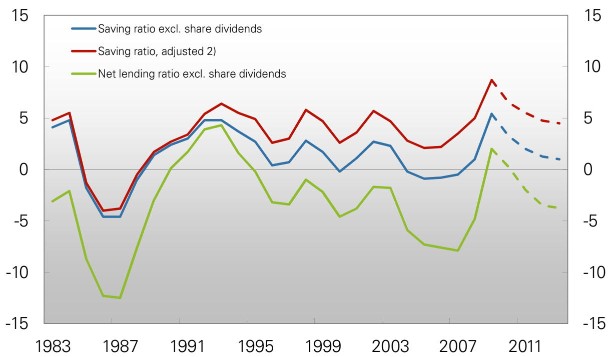
1) The scale runs from -5 to +5, where -5 indicates a sharp fall and +5 indicates strong growth. See article "Norges Bank's regional network" in *Economic Bulletin 2/09* for further information
Source: Norges Bank's regional network

Chart 2.18 Household real disposable income[1] and consumption[2]. Annual change. Per cent. 2002 – 2013[3]



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

Chart 2.19 Household saving and net lending as a share of disposable income. Per cent. 1983 – 2013[1]



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

that has been temporarily idle. Trend productivity growth is expected to gradually return to normal, but potential output will be lower than would have been the case if the financial crisis had not occurred.

Following a sharp upswing in traditional goods and services exports in the latter half of last year, exports edged down again in Q1. Lower electricity and services exports contributed to the decline, while there was growth in manufacturing and mining exports. Value figures from foreign trade statistics indicate moderate growth in the volume of exports in Q2. The export firms in Norges Bank's regional network report increased order intake and expect a rise in production over the next six months. World trade is expected to expand ahead and exports from mainland Norway are projected to grow by 4¾% between 2009 and 2010 (see Chart 2.16).

Mainland business investment fell by 4.6% in Q1 to 25% below the level prevailing at end-2007. The latest investment intentions survey indicates that investment in manufacturing and mining will decline further in 2010 and 2011, but that investment in the electricity sector will increase markedly in 2011. According to regional network contacts, there are prospects that investment in retail trade and private services will increase somewhat over the next year (see Chart 2.17). Norges Bank's survey of bank lending shows that banks continued to ease credit standards for enterprises in Q1. Banks also reported that corporate credit demand is rising. Investment is projected to pick up in Q2, partly reflecting catch-up on delays owing to the cold weather in Q1. Investment growth will probably pick up further in the period to winter. Owing to the decline through 2009 and 2010 Q1, business investment is nevertheless projected to fall by 7% between 2009 and 2010.

Growth in private consumption slowed more than expected in Q1. Temporarily high electricity prices resulted in a fall in household real disposable income. High house prices and low interest rates support continued growth in consumption, but growth this year seems to be considerably lower than previously projected. Indicators of consumer goods spending point to relatively weak growth in household spending again in Q2. Various confidence indicators have shown gradually rising household optimism, but optimism fell back somewhat in May. Heightened turbulence abroad has probably contributed to increased uncertainty. Combined with somewhat tighter credit standards, this may curb growth in consumption. At the same time, the projection for income growth has been revised down for this year. Household real disposable income (excluding dividend income) is now projected to grow by about 1¼% in 2010 (see Chart 2.18). Private consumption is projected to increase by 3½% this year. The saving ratio (excluding dividends), will then fall from 5.4% to 3¼% (see Chart 2.19). There is uncertainty associated with household saving. Financial sector accounts showed lower household net lending in 2009 than institutional sector accounts (see Chart 2.20). This may indicate that the household saving ratio was lower than 5.4% in 2009. If saving has been lower than assumed, growth in consumption may prove to be lower in the years ahead than projected in this *Report*.

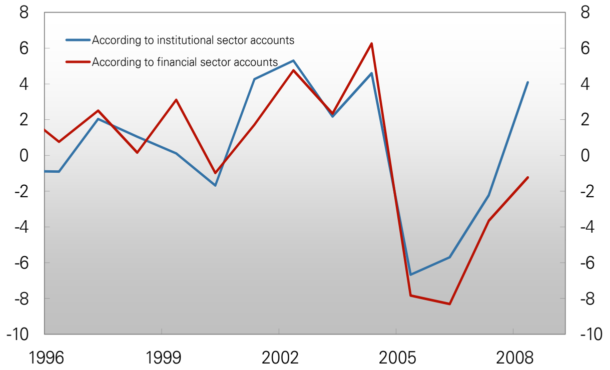
Housing investment was low in 2009. The number of housing starts came to 19 500, which is considerably lower than implied by long-term housing demand. Residential construction is therefore expected to pick up ahead. Housing starts seem to have increased somewhat more than expected in the March *Report* (see Chart 2.21). Figures from Boligprodusentenes forening[2] (residential builders association of Norway) confirm that housing starts are on the rise. The order situation for residential construction is still improving according to order statistics from Statistics Norway. Higher house prices may also fuel residential construction ahead. At the end of 2010, monthly housing start figures may come to an annualised 26 000. Housing investment will nevertheless fall by a little more than 3% between 2009 and 2010 owing to a sharp fall through 2009.

The labour market

The decline in labour demand seems to be coming to a halt, even if preliminary figures show a further fall in both the number of hours worked and employment in 2010 Q1.

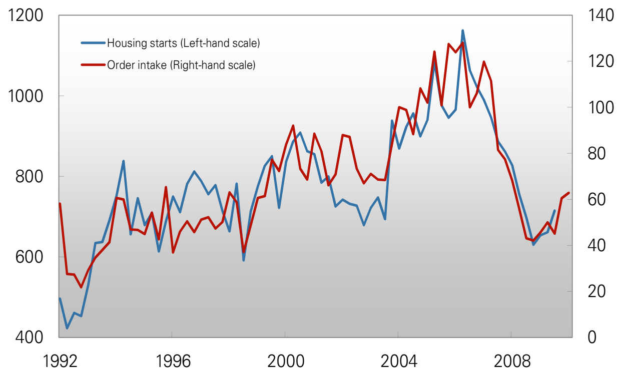
2 Survey of member enterprises that account for half of residential construction in Norway

Chart 2.20 Household net lending as a share of disposable income. Per cent. 1996 – 2009



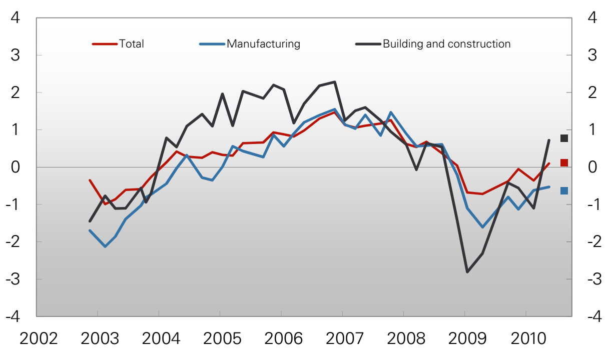
Source: Statistics Norway

Chart 2.21 Housing starts[1] and order intake for construction of new residential buildings[2]. 1992 Q3 – 2010 Q1



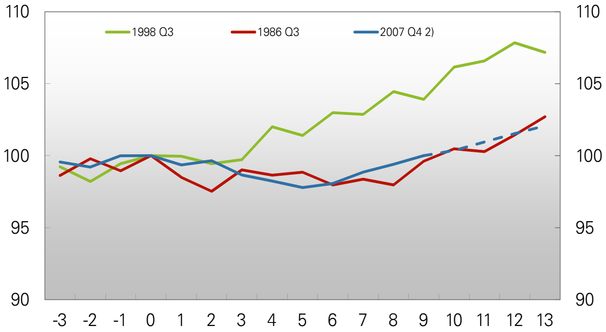
1) In 1000s of square meters. Seasonally adjusted
2) Value index deflated by the price index for housing investments in the national accounts. Displaced two quarters forward
Sources: Statistics Norway and Norges Bank

Chart 2.22 Indicator of actual change in employment and expected change in employment in next three months.[1] Per cent. October 2002 – August 2010[2]



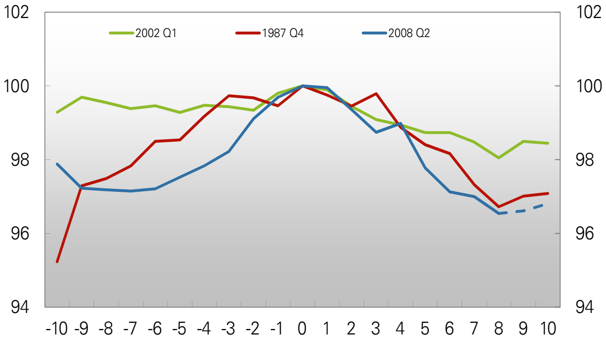
1) Mixed indicator until 2004. Split in to "last 3 months" and "3 months ahead" as from 2005
2) Last observation May 2010
Source: Norges Bank's regional network

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



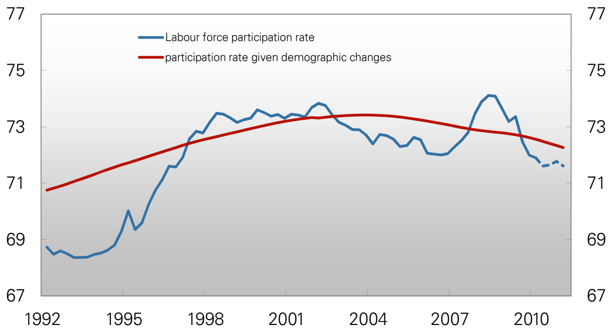
1) The index is set at 100 in the quarter when capacity utilisation was at its peak. Series labels refer to the peak quarter. Capacity utilisation is estimated using an HP filter
2) Projections for 2010 Q2 – 2011 Q1 (broken line)
Sources: Statistics Norway and Norges Bank

Chart 2.24 Developments in the labour force participation rate around the highest obervation in the series. Labour force as share of population aged 15 – 74. Seasonally adjusted quarterly figures.[1)]



1) The index is set at 100 in the quarter when labour force participation was at its peak. Series labels refer to the peak quarter
2) Projections for 2010 Q1 – 2010 Q4 (broken line)
Sources: Statistics Norway and Norges Bank

Chart 2.25 Actual labour force participation rate and developments in labour force participation rate given demographic changes. Per cent. Seasonally adjusted quarterly figures. 1992 Q1 – 2011 Q2[1)]



1) Average labour force participation rate given unchanged labour force participation in each age group from 2007
2) Projections for 2010 Q2 – 2011 Q1 (broken line)
Sources: Statistics Norway and Norges Bank

For the first time since autumn 2008, the contacts in Norges Bank's regional network in May reported growth in overall employment (see Chart 2.22). The contacts also expect moderate employment growth in the period ahead. Enterprises in retail trade and building and construction, in particular, plan to increase recruitment, while manufacturing firms anticipate a further fall in employment. Perduco's expectations survey for Norges Bank indicates that business leaders plan to increase their workforces somewhat over the next 12 months.

The use of labour is projected to pick up gradually through the year as the economic recovery gains a firmer footing. The average number of working hours is expected to show little change so that employment and the number of hours worked will rise broadly in tandem.

Productivity growth has been weak over the past years. At the beginning of a downturn, firms' use of labour is adjusted to a lesser extent than implied by production developments, which results in low growth, or a fall, in productivity (see Chart 2.23). Since summer last year, productivity has increased and is now expected to rise at about the same pace ahead as increased production leads to better use of the existing workforce.

In spite of sustained strong growth in the working age population, the labour force has not grown since autumn 2008. Some people exit, or do not opt to enter, the labour force when labour demand diminishes. Labour force participation has exhibited a rapid decline during this downturn (see Chart 2.24), particularly among the youngest age groups. Many people have chosen to study rather than seek employment. The sharp fall in labour force participation since autumn 2008 also reflects the strong growth in the labour force in preceding years. Demographic developments alone indicate that overall labour force participation will continue to fall somewhat ahead (see Chart 2.25). This is because the large post-war cohorts are now in an age group where labour force participation is relatively low. As the Norwegian economy is still in a downturn, labour force growth is projected to be lower than implied by underlying population growth again in 2010 (see Table 2.3).

The sharp fall in labour force participation has moderated the increase in unemployment. Unemployment measured by the Labour Force Survey (LFS) has moved up gradually since autumn 2008 and stood at 3.5% of the labour force in March, or close to the average unemployment level over the past ten years. After rising rapidly in winter 2008/2009, registered unemployment has been relatively stable at just below 3% of the labour force. Registered unemployment fell to a seasonally adjusted 2.8% in May. Unemployment has moved broadly in line with that projected in the March *Report*. In the period to year-end, registered unemployment is projected to hover around the level observed in recent months (see Chart 2.26). LFS unemployment is projected to continue to drift up to about 3¾% at the end of 2010.

Wage growth

It appears that wage growth will be somewhat lower this year than projected earlier. According to the social partners, the results of the centralised wage negations in the private sector entail a pay increase of around 3%. The increase is based on the assumption that wage drift through the year will be lower than the average for the past ten years. If activity increases, wage drift may prove to be somewhat higher than applied in the negotiations. A moderate and relatively stable unemployment rate may push in the same direction. On the other hand, reserves of temporary exits from the labour force and low wage growth abroad may contribute to dampening wage drift. The outcome of public sector wage negotiations points to a pay increase of 3½%. So far, it appears that overall wage growth this year may be 3½%, but there is some uncertainty surrounding wage developments through the year.

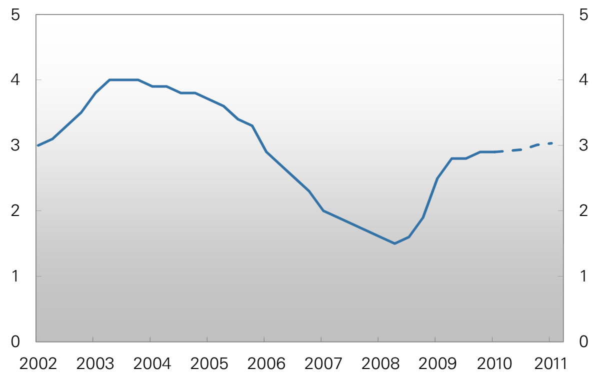
The enterprises in Norges Bank's regional network expect wage growth to be between 3.0% and 3.6% this year (see Chart 2.27). According to Perduco's expectations survey for Norges Bank, the social partners expect wage growth to range between 3.2% and 3.5% in 2010.

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	1¼
Contribution from change in population composition	-½	-½
Cyclical contribution	-¾	0
Labour force growth	¼	¾

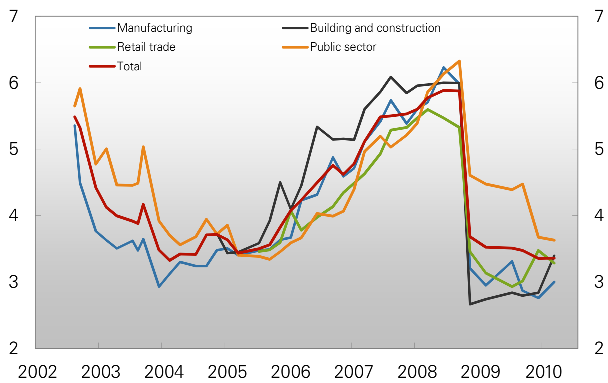
Sources: Statistics Norway and Norges Bank

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



1) Projections for 2010 Q2 – 2011 Q1 (broken line)
Sources: Norwegian Labour and Welfare Administration, Statistics Norway and Norges Bank

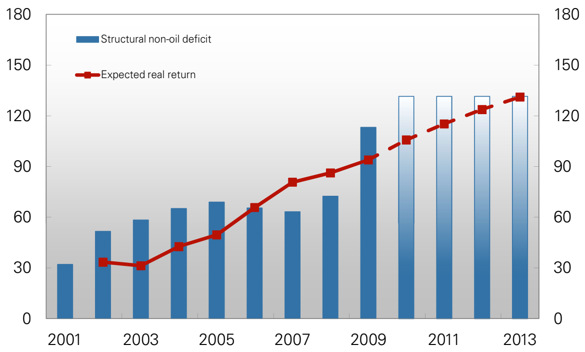
Chart 2.27 Expected annual wage growth each year. Per cent. October 2002 – May 2010



Source: Norges Bank's regional network

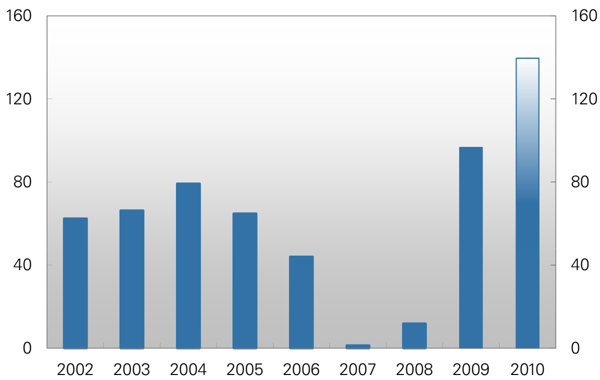
Assumptions concerning fiscal policy and petroleum investment from 2010 to 2013

Chart 2.28 Structural, non-oil deficit and expected real return on the Government Pension Fund Global. In billions of 2010 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 – 2010[1)]



1) Projections for 2010
Source: Ministry of Finance

Fiscal policy

Fiscal policy was expansionary in 2009. The change in the structural, non-oil budget deficit came to 2.1% of mainland GDP. The National Budget for 2010 provides a further, albeit milder, expansionary impulse this year. In the Revised National Budget for 2010, the change in the structural, non-oil budget deficit is estimated at 0.8% of mainland GDP. Nominal underlying growth in central government expenditure is estimated at 5.6%.

The structural, non-oil budget deficit is projected to reach NOK 131.5bn in 2010 (see Chart 2.28). The figure is close to NOK 26bn higher than the expected real return on the Government Pension Fund Global (GPFG), or 5.0% of the capital of the GPFG. The structural, non-oil budget deficit is estimated at 6.8% of mainland GDP in 2010.

The non-oil deficit amounted to NOK 96.6bn in 2009 (see Chart 2.29). Petroleum revenue spending is projected to increase by about NOK 43bn between 2009 and 2010. Of the government's projected net petroleum revenues in 2010, NOK 139.6bn will be spent via the central government budget, while NOK 121.9bn will be transferred to the GPFG.

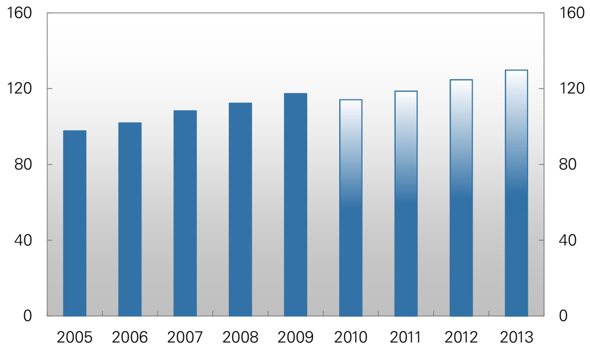
Our projections for the public sector for 2010 are based on the projections in the Revised National Budget. For 2011, 2012 and 2013, our projections are based on the technical assumption that the structural, non-oil budget deficit will remain at the level in 2010 (see Chart 2.28). The projections imply a gradual return of the structural, non-oil budget deficit to 4% of the GPFG in 2013.

Petroleum investment

Investment in the petroleum sector has increased appreciably in recent years, but fell through 2009. Petroleum investment is projected to fall this year and pick up from 2011 (see Chart 2.30). This is in line with the latest investment intentions survey from Statistics Norway.

The investment decline this year reflects postponements of projects as a result of the financial crisis and the near completion of several large investment projects. The decline will be curbed by the expected start-up this year of the Goliat and Gudrun projects and the construction of a new housing platform in the Ekofisk area. These projects and major investments in the Valemon field and the Ekofisk area will boost investment activity in the coming years.

Chart 2.30 Petroleum investment. Fixed 2007 prices. In billions of NOK. 2005 – 2013[1)]



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

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

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 rice 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 fore-casting
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

Economic commentaries

This series consists of short, signed articles on current economic issues.

3/2010 *What determines developments in the US long-term interest rates over time?* Erlend Hellum
2/2010 *Public finances – the difficult path back to sustainable levels.* Unni Larsen and Bente Støholen
1/2010 *What is the normal interest rate level?* Tom Bernhardsen and 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, the central bank of Norway.

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 og Magne Østnor. Norwegian only
6/2010 *Betalingskort og tosidige markeder – noen implikasjoner for policy* (Payment cards and two-sided markets - 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
2/2010 *Background information, annual address 2010.* Norges Bank Monetary Policy
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 and Turid Wammer. Norwegian only
8/2009 *Money and credit in Norway*. Christian Kascha
7/2009 *The basic balance*. Kathrine Lund
6/2009 *Solvensavstand og andre risikoindikatorer for banker* (Distance to insolvency and other risk factors for banks) Per Atle Aronsen and Kjell Bjørn Nordal. Norwegian only
5/2009 *Costs in the Norwegian payment system: questionnaires.* Olaf Gresvik and Harald Haare
4/2009 *Costs in the Norwegian payment system.* Olaf Gresvik and Harald Haare
3/2009 *Teknisk beregning av KPIXE* (Technical calculation of the CPIXE). Marius Nyborg Hov. Norwegian only
2/2009 *Renter og rentemarginer* (Interest rates and interest margins). Asbjørn Fidjestøl. Norwegian only
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

Economic Bulletin

The articles are written by Norges Bank employees and are peer-reviewed.

1/2010:

Obligasjoner med fortrinnsrett - et marked i sterk vekst (OMF covered bonds - a market in strong growth). Bjørn Bakke, Kjetil Rakkestad og Geir Arne Dahl.Penger og Kreditt 1/10. Norwegian only

Hva er virkningen av reguleringer av boliglån? (The impact of regulation on residential mortgage lending). Bjørn Helge Vatne. Penger og Kreditt 1/10. Norwegian only

A model for predicting aggregated corporate credit risk. Kjell Bjørn Nordal and Haseeb Syed. Penger og Kreditt 1/10

Ein europeisk marknad for betaling (A European payments market). Gunnvald Grønvik. Penger og Kreditt 1/10. Norwegian only

Target 2 - Securities - billigere og sikrere verdipapiroppgjør i Europa? (Target 2 securities – cheaper and safer securities settlement in Europe?) Vigdis Husevåg. Penger og Kreditt 1/10. 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). Penger og Kreditt 1/10. Norwegian only

2/2009:

Productivity growth in Norway 1948–2008. Kåre Hagelund

Norges Bank's regional network: fresh and useful information. Henriette Brekke and Kaj W. Halvorsen

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 and 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

NEMO – a new macro model for forecasting and monetary policy analysis. Leif Brubakk and Tommy Sveen

Regional network: enterprises and organisations interviewed

Adecco Norge AS, Bodø
Advanced Production and Loading AS
Airlift AS
Aker Seafoods Finnmark AS
Aker Seafoods J. M. Johansen AS
Aker Solutions ASA
Akershus fylkeskommune
Aksel L. Hansson AS
Albert E Olsen AS
Alfr. Nesset AS
Alliero AS
Alta kommune
Amfi Moa
Anlegg Øst AS
Applica AS
Arnes bilutleie AS
Atlantic Auto AS
Backe gruppen
BDT Viken revisjon AS, Horten
Bergen kommune
Berggren AS
Bertel O. Steen AS
Bewi produkter AS
Bilalliansen AS
BioMar AS
Block Watne AS
Bodø megleren AS
Boliden AS
Bring Logistics AS
Brødrene Midthaug AS
Brødrene Pedersen AS
Brødrene Sperre AS
Buer entreprenør AS, Skien
Bussen trafikkselskap AS
Byggmo eiendom AS
Bø kommune
Bølgen og Moi AS
Capgemini Norge AS
Caranord AS
CHC Norway AS
Christie & Opsahl AS
City syd AS
Clear Channel Norway AS
CrediCare AS, Førde
Daldata AS
DnB NOR bank ASA, Tønsberg
Domstein ASA
Domstein Enghav Haugesund AS
Drag industrier AS
EFG Hov Dokka AS
Eidskog Stangeskovene AS
Eidsvaag AS
Eiendomsmegler 1 Norge AS
Einar Valde AS
Elektrotema Agder AS
Elkem AS, Materials Kristiansand
Elkem AS, Salten verk
Elkjøp Finnsnes AS
Elmo AS
ErgoGroup AS, Trondheim
Ernst & Young AS
Ernst & Young AS, Bergen
Ernst & Young AS, Lillehammer
Euro sko Norge AS
Farstad Shipping AS
Farveringen AS
Fesil AS, Rana metall
Finnøy Gear & Propeller AS
Fiskars Brands Norge AS
Fjord 1 Nordfjord-Ottadalen AS
Fjällräven AS
Fokus bank bedriftsmarked
Framo Engineering AS
Fresenius Kabi Norge AS
Frøya havbruksservice AS
Frøya kommune
Frøysland industriservice AS
GE Money Bank
Gjensidige forsikring, privatmarked region Nord
Gjesdal kommune
Gjøco AS
Glava AS
Glava AS, Stjørdal
Glåma bygg AS
Grilstad AS
Grimstad kommune
H.J. Økelsrud AS
Hagen og Godager AS
Handelsbanken
Harstad sparebank
Hatteland Display AS
Haugesund sparebank
Havila Shipping ASA
Hedmark eiendom AS
Heimdal eiendomsmegling AS
Heimdal gruppen AS
Helgelandssykehuset HF
Helly Hansen Group AS
Helse Nordmøre og Romsdal HF
Hennig-Olsen is AS
Herregalleriet AS
Hitra kommune
Hotel Continental AS
Hotelldrift Ålesund AS
Hunter Douglas Norge AS
Huse I P
Hustadmarmor AS
Hydraulikk Finnmark AS
Hydrolift AS
Hymax AS
Ibas AS
Ica distribusjon AS, Arendal
Idecon AS
Impec AS
Indre Sogn sparebank

Ineos Norge AS, Rafnes
Intra AS
Island Offshore AS
ISS Facility Services AS, Kristiansand
Istad kraft AS
IT partner Bodø AS
Jadargruppen AS
Jangaard Export AS
Jemar Norpower AS
Johan G Olsen betong AS
Johs J Syltern AS
Jonas B. Gundersen AS, Mandal
Julius Jakhelln AS
Jøtul ASA
K. Haneseth AS
K. Lund AS
Kantega AS
Keno reklame AS
Kewa Invest AS
Kirkenes byggservice AS
Kitron Arendal AS
Kiwi Norge As
KL regnskap Hitra AS
Kluge advokatfirma DA
Klaastad brudd DA
Kolo veidekke distrikt Trøndelag
Kontali analyse AS
KPMG AS, Bodø
Kristiansand næringsforening
Kristiansund kommune
Kvadrat kjøpesenter
Kverneland Group ASA
Lefdal elektromarked AS Tiller
Lerøy Midnor AS
Lerøy Seafood Group ASA
Lillrent AS
Lindesnes kommune
Linjebygg Offshore AS
Living AS
Livsforsikringsselskapet Nordea Liv Norge AS
Lunde Group AS
Lørenskog kommune
Løvenskiold handel AS
Løvenskiold-Fossum
Madla handelslag SA
Mainstream Norway AS
Mandal kommune
Maritime hotell, Flekkefjord
Martin M. Bakken AS
Meca Norway AS
Melhus sparebank
Mesterjobb bemanning AS
Meyership AS
Min Boutique gruppen AS
Mindus AS
Moelven Nordia AS, Trondheim
Multiconsult AS, Trondheim
Møller bil Sør-Rogaland AS
Mørenot AS
Narud Stokke Wiig
Natre Vatne
NAV Sør-Trøndelag
NAV Telemark
Nedre Eiker kommune
Net Trans Services AS, Tønsberg
Nexans Norway AS
Norconsult AS
Nordlandsbanken ASA
Norges handels- og sjøfartstidende AS
Norisol Norge AS
NorSea AS
Nor-sport Bodø AS
Nortura BA
NOR-WAY bussekspress AS
Nycomed Pharma AS
Nymo AS
OKK entreprenør AS
Oppegård kommune
Os kommune
Parker ScanRope AS, Tønsberg
Pedersens lastebiltransport AS
Peterson Linerboard AS
Petroleum Geo-Services ASA
Polarkonsult AS
Poseidon Maritime AS
PricewaterhouseCoopers AS, Førde
PricewaterhouseCoopers AS, Trondheim
Proaktiv eiendomsmegling AS
Proffice AS
Profil lakkering AS
Profilhuset Meny-Ultra
Prosjekt- og teknologiledelse AS
På håret frisør AS
Ramsvik Frisør AS
Rapp Hydema AS
Remvik & Standal AS
Retro AS
Rica Hotel Hamar
Rica ishavshotell Tromsø
Rieber & søn ASA
Rieber & søn ASA, Elverum
Ring mekanikk AS
Ringsaker kommune
Rogaland fylkeskommune
Rolfs elektro AS
Rolls-Royce Marine AS
Rosenvold klær AS
Royal Garden Hotel
Ruukki Norge AS, Trondheim
Rørlegger D Åsheim AS
SAS Norge AS
Schenker AS, Trondheim
Schlumberger Norge AS
Sektor Kongssenteret drift AS
Selfa arctic Trondheim AS
Selstad AS, avd LNT
SG finans AS
Sig. Halvorsen AS
Signal bredbånd AS
Sintef MRB AS
Sjåtil og Fornæss AS

Skeidar AS
Skeikampen Resort
Skipsteknisk AS
Solsiden spa og velværesenter AS
Solstrand fjordhotell AS
Sortland kommune
Sparebanken Hedmark
Sparebanken Sør, Arendal
Sparebanken Vest
Sperre støperi AS
Spice AS
Sport 1 gruppen AS
St. Olavs hospital HF
Stabburet AS
Statens vegvesen, region Sør
Stavanger aftenblad ASA
Steertec Raufoss AS
Stiftelsen Sintef
Stjern AS
Storebrand ASA
Støren trelast AS
Swix sport AS
Sykehuset i Vestfold HF
Sykehuset Innlandet HF
Sykehuset Østfold HF
Södra interiør AS
Sønnico installasjon AS
Sørensen maskin AS
T. Johansen drift AS
Taubåtkompaniet AS
Thon Hotels
Tibe reklamebyrå AS
Tine BA
Topp auto AS
Toten sparebank
Toten transport AS
Trebetong AS
Tromsø kommune
Trotan AS
Trysilfjellet alpin AS
TV 2 gruppen AS
Tønsberg kommune
Umoe IKT AS, region Vest, Bergen
Veidekke ASA
Veidekke entreprenør AS, distrikt Bergen
Veolia transport Sør AS
Vestre Toten kommune
Vestvatn villmarkssenter AS
Ving Norge AS
Vital eiendom AS
Våler kommune
Weber Saint-Gobain byggevarer AS
West Contractors AS
Wiersholm Mellbye & Bech Adv. AS
Wonderland
Yamaha senter Sør AS
Yara International ASA
Øveraasen AS
Øyer kommune
Ålesund kommune
Aarbakke AS
Aas mek verksted AS
Åsen & Øvrelid AS

Monetary policy meetings

with changes in the key policy rate

Date	Key policy rate[1)]	Change
22 September 2010		
11 August 2010		
23 June 2010	**2.00**	**0**
5 May 2010	2.00	+0.25
24 March 2010	1.75	0
3 February 2010	1.75	0
16 December 2009	1.75	+0.25
28 October 2009	1.50	+0.25
23 September 2009	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 Mars 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
13 December 2006	3.50	+0.25
1 November 2006	3.25	+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 invest-ment[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		1.8	2.2	1.3	4.1	1.0	3.7	4.1	2.2
2009		-1.6	-1.6	0.1	4.8	-11.7	4.6	-5.3	-10.3
2009[3)]	Q2	-1.1	0.0	1.3	1.0	1.8	-7.2	-0.1	1.7
	Q3	0.5	0.3	1.3	1.1	-5.3	-7.6	5.0	0.7
	Q4	0.1	0.4	1.3	-0.7	5.4	-0.2	2.4	0.6
2010[3)]	Q1	-0.1	0.1	0.6	1.0	-12.3	2.9	-0.4	-0.5
2009-level. in billions of NOK		2401	1847	1014	533	361	134	418	657

1) Extraction and pipeline transport
2) Other goods. travel and other services
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

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	Percantage change from previous year (unless otherwise stated)				
			Projections			
	2009	2009	2010	2011	2012	2013
Prices and wages						
CPI		2.1	2½	1½	2¼	2¼
CPI-ATE[1]		2.6	1½	1¾	2¼	2¼
CPIXE[2]		2.6	1¾	2	2¼	2¼
Annual wage growth[3]		4.5	3½	4	4½	4¾
Real economy						
GDP	2401	-1.6	¾	1¾	2¼	1¾
Mainland GDP	1847	-1.6	1¾	2¾	2¾	2¾
Mainland output gap[4]		-1	-¾	-¼	0	¼
Employment		-0.4	-¼	¾	1	½
Labour force, LFS		0	¼	¾	¾	½
LFS unemployment (rate)		3.2	3½	3¾	3½	3½
Registered unemployment		2.7	3	3	2¾	2½
Demand						
Mainland demand[5]	1908	-1.1	1¾	4	3¼	2½
- Private consumption	1014	0.1	3½	4	3¼	2¾
- Public consumption	533	4.8	2½	2¼	.	.
- Fixed investment, mainland Norway	361	-11.7	-4¼	6½	.	.
Petroleum investment[6]	134	4.6	-2¾	4	5	4
Mainland exports[7]	418	-5.3	4¾	2¼	.	.
Imports	657	-10.3	2¾	5¼	.	.
Interest rate and exchange rate						
Key policy rate (level)[8]		1.8	1¾	2½	3¼	4
Import-weighted exchange rate (I-44)[9]		93.8	90	91	91	92

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) Other goods, travel and other services
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 comprises 97% of total imports

· Not available

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

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