



NORGES BANK

**1 | 15** MARCH

# MONETARY POLICY REPORT

WITH FINANCIAL  
STABILITY ASSESSMENT

# Norges Bank

Oslo 2015

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Editor: Øystein Olsen  
Design: Brandlab  
Printing: 07 Media AS  
The text is set in 9.5 pkt Azo Sans Light

ISSN 1894-0242 (print)  
ISSN 1894-0250 (online)

## Monetary Policy Report with financial stability assessment

The *Report* is published four times a year, in March, June, September and December. The *Report* assesses the interest rate outlook and forms the basis for Norges Bank's advice on the level of the countercyclical capital buffer. The *Report* includes projections of developments in the Norwegian economy.

At the Executive Board meeting on 4 March 2015, the economic outlook, the monetary policy stance and the need for a countercyclical capital buffer for banks were discussed. On the basis of this discussion and a recommendation from Norges Bank's management, the Executive Board adopted at its meeting on 18 March 2015 a monetary policy strategy for the period to the publication of the next *Report* on 18 June 2015. The Executive Board also approved Norges Bank's advice to the Ministry of Finance on the level of the countercyclical capital buffer. The Executive Board's assessment of the economic outlook and monetary policy strategy is provided in "The Executive Board's assessment". The advice on the level of the countercyclical capital buffer is submitted to the Ministry of Finance in connection with the publication of the *Report*. The advice is made public when the Ministry of Finance has made its decision. The *Report* is available at [www.norges-bank.no](http://www.norges-bank.no).

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This *Monetary Policy Report* is based on information in the period to 12 March 2015.

The monetary policy strategy was approved by the Executive Board on 18 March 2015.

# Monetary policy in Norway

## OBJECTIVE

Norges Bank's operational implementation of monetary policy shall be oriented towards low and stable inflation. The operational target of monetary policy is low and stable inflation, with annual consumer price inflation of close to 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 monetary policy stance is presented to the Executive Board for discussion at a meeting about two weeks before the *Monetary Policy 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. The final decision to adopt a monetary policy strategy is made on the day before the *Report* is published. The strategy applies for the period up to the next *Report* and is presented at the beginning of 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. The Executive Board has six monetary policy meetings per year.

## 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 Article 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 Financial Markets 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 Financial Markets Report.

# Countercyclical capital buffer

The objective of the countercyclical capital buffer is to bolster banks' resilience to an impending downturn and counter possible procyclical effects of banks' lending practice.

The Regulation on the Countercyclical Capital Buffer was issued by the Government on 4 October 2013. The Ministry of Finance sets the level of the buffer four times a year. Norges Bank draws up a decision basis and provides advice to the Ministry regarding the level of the buffer. The decision basis includes Norges Bank's assessment of systemic risk that is building up or has built up over time. In drawing up the basis, Norges Bank and Finanstilsynet (Financial Supervisory Authority of Norway) exchange relevant information and assessments. The advice and a summary of the background for the advice are submitted to the Ministry of Finance in connection with the publication of Norges Bank's *Monetary Policy Report*. The advice is published when the Ministry of Finance has made its decision.

The buffer rate shall ordinarily be between 0% and 2.5% of banks' risk-weighted assets. The buffer requirement will apply to all banks with activities in Norway, eventually including branches of foreign banks.

Norges Bank will recommend that the buffer rate should be increased when financial imbalances are building up or have built up. The buffer rate will be assessed in the light of other requirements applying to banks. The buffer rate may be reduced in the event of an economic downturn and large bank losses, with a view to mitigating the procyclical effects of tighter bank lending.

# EXECUTIVE BOARD'S ASSESSMENT

At its meetings on 4 March and 18 March 2015, the Executive Board discussed the monetary policy strategy. The starting point for the discussion was the strategy that the Executive Board adopted at its meeting on 10 December 2014 and the analysis in the December 2014 *Monetary Policy Report*. The Executive Board decided to reduce the key policy rate by 0.25 percentage point to 1.25% in December. The analysis in the December *Report* implied a key policy rate of 1¼% or somewhat lower in the period to end-2016. With this path for the key policy rate, there were prospects that inflation would lie close to 2.5% in the coming years. Capacity utilisation in the mainland economy was projected to decline in the coming year, but to edge up again thereafter.

In its discussions on 4 March and 18 March, the Executive Board placed emphasis on the following developments:

- Growth among Norway's trading partners remains moderate and has been broadly in line with that projected. Growth in emerging economies has slowed, but there are signs of a gradual improvement in a number of advanced economies.
- Consumer price inflation is low among most of Norway's trading partners and is close to zero in many countries.
- Market expectations concerning foreign policy rates are lower than in the December *Report*. Long-term interest rates have continued to decline. Several foreign central banks have further eased monetary policy. In Sweden, the Riksbank lowered its policy rate to -0.1% and at the same time announced purchases of government bonds. The European Central Bank (ECB) has expanded its asset purchase programme to include government bonds. In Denmark, the Nationalbank reduced the interest rate on certificates of deposit to -0.75%.
- In January, oil prices fell to their lowest level since 2008, but have since edged up. Recently, oil prices have hovered around USD 55 per barrel, which is some USD 15 below that anticipated in December. Futures prices have also declined.
- The krone has depreciated since the December *Report*. So far in Q1, the krone exchange rate has on average been approximately 3% weaker than that projected in December.
- Growth in the Norwegian economy was somewhat stronger in 2014 Q4 than projected in December, while growth in the preceding quarters was revised down. In January, the contacts in Norges Bank's regional network reported that output growth was slowing. Activity in the oil service industry has declined further, but the other sectors report continued growth. In the period ahead, network contacts expect growth to slacken further. Registered unemployment has so far remained stable and is slightly lower than expected.
- Banks have lowered their residential mortgage rates by a little more than ¼ percentage point. House prices are still rising at a fast pace and are somewhat higher than projected in December. The rate of household debt accumulation has been slightly lower than that projected, but debt continues to rise faster than household income.
- Wage growth was 3.1% in 2014, which is lower than that projected in the December *Report*.
- Consumer price inflation adjusted for tax changes and excluding energy products (CPI-ATE) was 2.4% in February, slightly lower than that projected in the December *Report*.

The point of departure for the Executive Board's assessment of monetary policy is that the key policy rate is set with a view to keeping inflation close to 2.5% over time. The objective of low and stable inflation is weighed against the objective of stable developments in output and employment. There is uncertainty surrounding economic driving forces and the functioning of the economy. This normally suggests a gradual approach in interest rate setting. Monetary policy seeks to be robust. In the event of major shocks, this may imply a more active monetary policy than normal. A robust monetary policy also takes into account the risk of a build-up of financial imbalances.

The Executive Board noted that the analyses in this *Report* show a weaker outlook for the Norwegian economy than in December. Oil prices have continued to fall, and activity in the petroleum industry appears to be declining to a further extent than previously assumed. Wage growth in 2014 proved to be lower than projected and there are expectations that wages will also increase somewhat less than previously projected. This will eventually result in a weaker rise in prices for domestically produced goods and services. Lower interest rates abroad also pull in the direction of lower interest rates in Norway. The analysis suggests a key policy rate of approximately 1% in the coming years, followed by a gradual increase. The path for the key policy rate is lower throughout the projection period than the path projected in the December *Report*. With this path for the key policy rate, the analysis in this *Report* suggests that inflation will increase somewhat in the coming quarters before edging down and lie slightly above 2% later in the projection period. Capacity utilisation in the mainland economy is assessed as being lower than what may be regarded as a normal level and is projected to decline further. Towards the end of the projection period, capacity utilisation is expected to rise to a more normal level.

The Executive Board discussed the effects of lower oil prices on the Norwegian economy. Lower oil prices will result in weaker developments in the mainland economy, but it will likely take time before the full impact becomes evident. A flexible labour market appears to be limiting the rise in unemployment and unemployment has so far only shown a slight increase. The krone exchange rate has been affected by changes in the oil price. The depreciation of the krone will contribute to underpinning inflation in the coming period and dampen the impact of lower oil prices on the Norwegian economy.

The Executive Board also discussed the consequences of low foreign interest rates for the Norwegian economy. Low foreign interest rates influence developments in the krone and hence inflation prospects and are also contributing to keeping interest rates low in Norway. Low interest rates may increase the pressure in the housing market. High house price inflation in turn pushes up debt growth.

In its discussion of monetary policy in the period ahead, the Executive Board gave weight to the fact that developments in the Norwegian economy so far have been broadly as expected, even though the outlook is slightly weaker than in December. The krone depreciation lifts inflation in the short term. The forces driving inflation further ahead are weaker. Both the objective of keeping inflation close to target and the objective of sustaining capacity utilisation in the years ahead imply a lower key policy rate. The key policy rate was reduced in December to counter the risk of a pronounced downturn in the Norwegian economy on account of lower oil prices. However, the effects of the fall in oil prices on the real economy have so far been relatively small. At the same time, house prices are still rising rapidly. This may increase household vulnerability and may trigger or amplify an economic downturn further ahead. An overall assessment led the Executive Board to conclude that the key policy rate now should be kept unchanged. If developments in the economy ahead prove to be broadly as projected, there are prospects that the key policy rate will be lowered.

At its meeting on 18 March, the Executive Board decided to keep the key policy rate unchanged at 1.25%. At the same meeting, the Executive Board decided that the key policy rate should lie in the interval ½%–1½% in the period to the publication of the next *Report* on 18 June, unless the Norwegian economy is exposed to new major shocks.

Øystein Olsen  
18 March 2015

# 1 ECONOMIC SITUATION

## INTERNATIONAL ECONOMY

Growth in the global economy remains moderate, but differences across countries are considerable. In the euro area, activity has picked up somewhat, but growth remains low (see Chart 1.1). Household consumption is rising, and there are signs that business investment will pick up ahead. However, high unemployment and further private and public sector deleveraging will likely weigh on activity for a long time ahead. Growth in the US economy is on a firm footing. Private consumption is showing solid growth, and the improvement in the labour market is continuing. Wage growth remains moderate, but lower petrol prices are boosting household purchasing power. In the UK and Sweden, private consumption is supporting GDP growth. At the same time, low growth in the euro area is having a dampening effect on these countries' exports.

In China, growth is slowing, primarily reflecting weaker growth in real estate investment. The decline in the housing market has continued into 2015, but increased infrastructure investment and continued solid growth in private consumption will likely contribute to sustaining growth. In oil-producing countries such as Russia and Brazil, economic activity is being restrained by the fall in oil prices.

The economic outlook for Norway's trading partners is broadly in line with that described in the December 2014 *Monetary Policy Report*. GDP growth is projected to pick up from 2% in 2014 to 2¼% in 2015, ¼ percentage point lower than projected in December (see Chart 1.2 and Annex Table 3). The downward revision primarily reflects lower growth in Russia. Further ahead in the projection period, GDP for trading partners as a whole is expected to grow by around 2½% annually. Growth in the global economy is projected at 3% in 2015, in line with the average for the past 30 years (see box on page 40 for further details on international developments).

Consumer price inflation is low among most of Norway's trading partners and is close to zero in many countries (see Chart 1.3). The fall in oil prices is holding down inflation. Core inflation is somewhat higher, but in the euro area and Sweden in particular, underlying inflation is also low. For advanced economies as a whole, consumer price inflation is now expected to

Chart 1.1 GDP. Seasonally adjusted volume index. 2008 Q1=100. 2008 Q1 – 2014 Q4

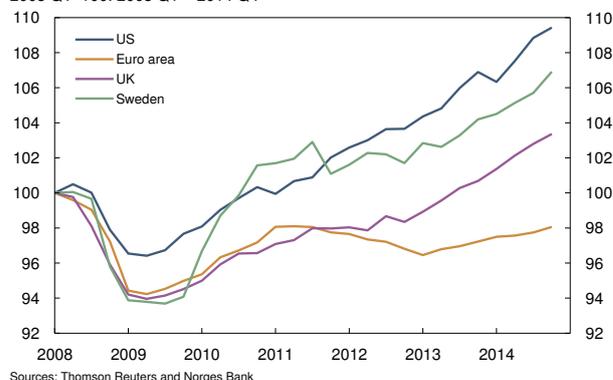


Chart 1.2 GDP for trading partners. Volume. Four-quarter change. Percent. 2010 Q1 – 2018 Q4<sup>1)</sup>

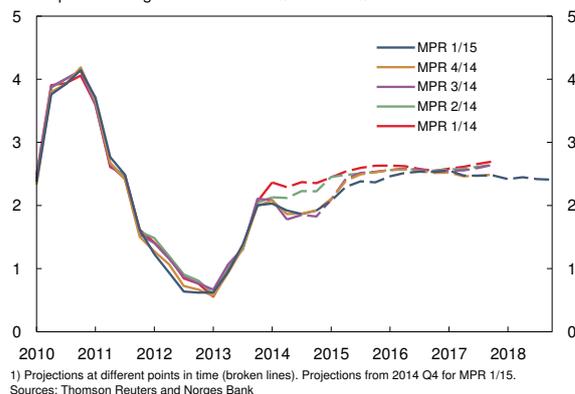


Chart 1.3 Consumer prices. Twelve-month change. Percent. January 2010 – February 2015<sup>1)</sup>

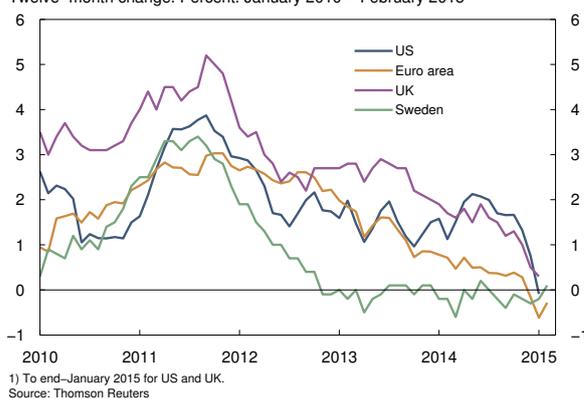
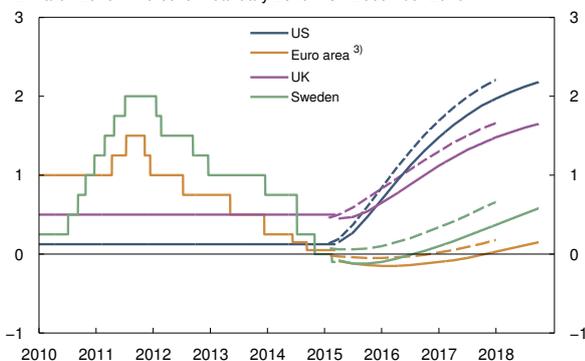


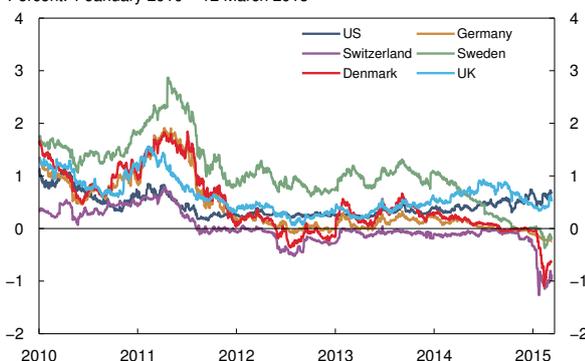
Chart 1.4 Policy rates and estimated forward rates at 5 December 2014 and 12 March 2015.<sup>1)</sup> Percent. 1 January 2010 – 31 December 2018<sup>2)</sup>



1) Broken lines show estimated forward rates at 5 December 2014. Thin lines show forward rates at 12 March 2015. Forward rates are based on Overnight Index Swap (OIS) rates.  
2) Daily data from 1 January 2010 and quarterly data from 2015 Q1.  
3) EONIA for the euro area from 2015 Q1.

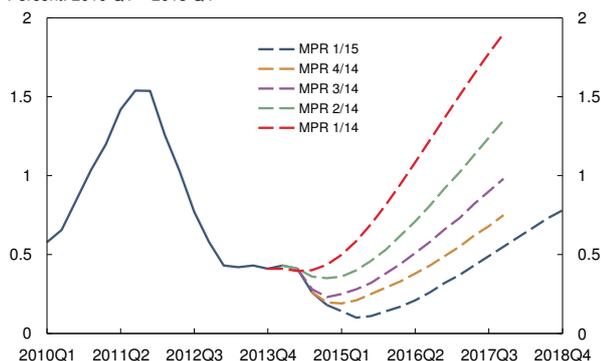
Sources: Thomson Reuters, Bloomberg and Norges Bank

Chart 1.5 Yields on 2-year government bonds. Percent. 1 January 2010 – 12 March 2015



Source: Bloomberg

Chart 1.6 Money market rates for trading partners. Percent. 2010 Q1 – 2018 Q4



1) Estimated forward rates at different points in time (broken lines). For MPR 1/15 forward rates from 12 March 2015 are used

Sources: Thomson Reuters and Norges Bank

be lower in 2015 than projected in the December Report. Market-based measures of long-term inflation expectations have recently edged up again in the US, UK and euro area, but are nonetheless lower than at the time of the December Report. Consumer price inflation for Norway's trading partners as a whole is expected to pick up from 1% in 2015 to 2¼% at the end of the projection period (see Annex Table 4).

Policy rates are close to zero in many countries and are expected to remain low for a long time (see Chart 1.4). Since the December Report, several central banks have further eased monetary policy. In January, the European Central Bank (ECB) decided to expand its asset purchase programme to include bonds issued by euro area central governments and by some European institutions. Combined monthly bond purchases amount to EUR 60bn. The purpose of the programme is to stimulate demand and push up inflation. Market prices indicate that the ECB will keep its policy rate near zero until summer 2018. In February, the Riksbank in Sweden lowered its policy rate to -0.1% and also announced purchases of government bonds. To maintain its euro peg, Denmark's Nationalbank lowered the rate on certificates of deposit to -0.75%. Loose monetary policies have resulted in a pronounced decline in yields, and government bond yields are now negative in a number of countries (see Chart 1.5). Forward interest rates indicate that the first policy rate increases in the US and the UK are expected in summer and autumn 2015, respectively. For Norway's trading partners as a whole, market expectations regarding money market rates abroad are lower than at the time of the December Report (see Chart 1.6).

Long-term government bond yields have continued to fall in many countries (see Chart 1.7). Long-term Norwegian yields have also fallen. Monetary accommodation, especially by the ECB, has probably contributed to these developments. Since the beginning of February, long-term interest rates have edged up in many advanced economies, while they have continued to fall or are broadly unchanged for most euro area economies.

After falling in January to their lowest levels since the financial crisis, oil prices have edged up. The price of oil has recently hovered around USD 55 per barrel.

This is some USD 15 lower than envisaged in December and nearly a halving of the average for the first half of 2014 (see Chart 1.8). Futures prices are also lower than in December. There are signs that the marked decline in oil prices will impact growth in non-OPEC oil supply. International oil companies have announced substantial investment cutbacks and fewer drilling rigs are active in the US, which have likely contributed to the oil price increase since January. On the other hand, surplus supply is still substantial and OECD oil stocks are at a very high level. The projections in this *Report* are based on the assumption that oil prices move in line with futures prices, which indicate a modest increase in oil prices ahead.

## FOREIGN EXCHANGE MARKETS

There have been considerable movements in the foreign exchange market since the *December Report*. The exchange rate movements have partly reflected different monetary policy prospects across countries. Negative interest rates and government bond purchases have weakened the euro and the Swedish krona. In the US and the UK, prospects for an increase in interest rates have led to a marked appreciation of the US dollar and sterling.

As measured by the import-weighted krone exchange rate index, the krone has depreciated since the *December Report* (see Chart 1.9). So far in 2015 Q1, the krone has on average been approximately 3% weaker than assumed in the *December Report*. The depreciation of the krone must be viewed in the context of the fall in oil prices, the reduction in the key policy rate in December 2014 and expectations of further rate cuts. Over the past six months, there has been a close correlation between the oil price and the krone. Moreover, poor liquidity in the krone market may in periods have reduced the krone's appeal.

## BANK INTEREST RATES

Banks have lowered their residential mortgage lending rates by an average of just over ¼ percentage point since the *December Report*. Rates on fixed-rate loans have fallen more than rates on variable-rate loans.

Banks' funding costs have fallen somewhat. Deposit rates have been reduced to approximately the same

Chart 1.7 Yields on 10-year government bonds. Percent. 1 January 2010 – 12 March 2015

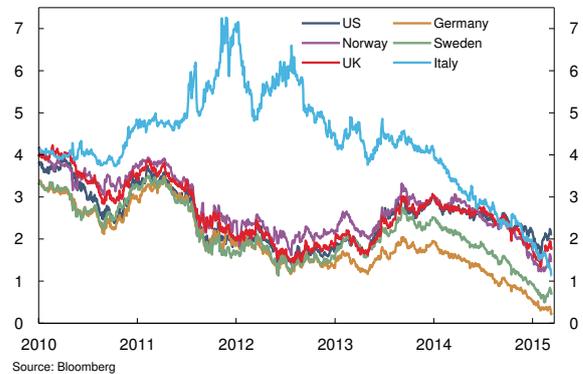
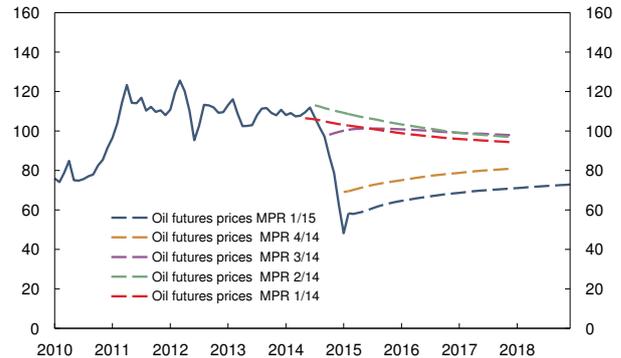
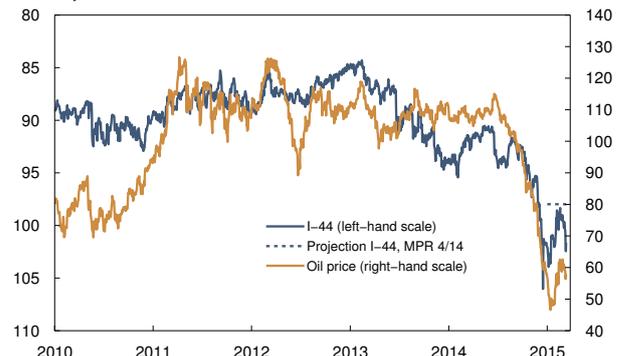


Chart 1.8 Crude oil prices. USD per barrel. January 2010 – December 2018 <sup>1) 2)</sup>



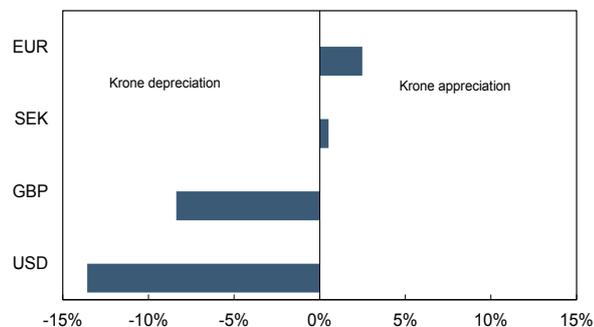
1) For March 2015 the latest observation used is 12 March 2015  
2) Projections for MPR 1/15 are based on futures prices from 12 March 2015

Chart 1.9 Oil price and import-weighted exchange rate index (I-44).<sup>1)</sup> 1 January 2010 – 12 March 2015



1) A positive slope denotes a stronger krone exchange rate.

Chart 1.10 Bilateral exchange rate movements - Norwegian krone. Change in effective exchange rates. Percentage. 5 December 2014 - 12 March 2015



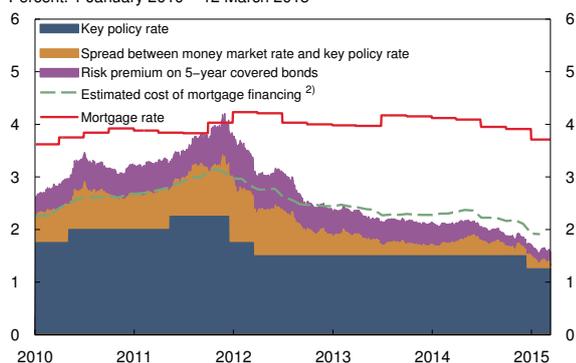
Sources: Bloomberg and Norges Bank

extent as lending rates. Premiums in Norwegian three-month money market rates have been at around ¼ percentage point for a long time and are expected to remain at that level. Risk premiums on bonds issued by banks and mortgage companies have declined in recent years (see Chart 1.11). New bonds are issued with a lower risk premium than maturing bonds. If risk premiums remain at current levels, the cost of funding residential mortgages is expected to edge down.

### THE REAL ECONOMY

Mainland GDP rose by 0.5% in 2014 Q4, somewhat more than projected in December. At the same time, growth in the preceding quarters was revised down, so that annual growth proved to be somewhat lower than projected. In January, the contacts in Norges Bank's regional network reported slackening output growth (see Chart 1.12). Activity in the oil service industry has declined, but the other sectors continue to report growth (see Chart 1.13). Network contacts expect a further slowdown in growth ahead.

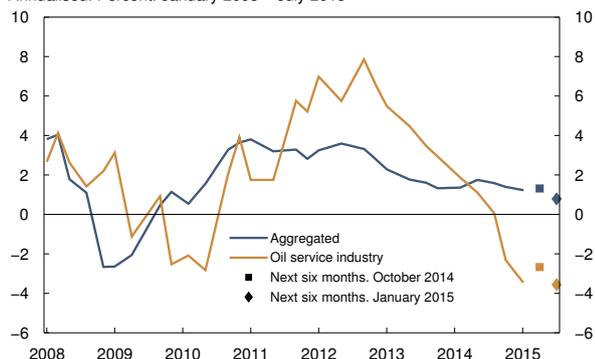
Chart 1.11 Residential mortgage lending rates<sup>1)</sup> and funding costs. Percent. 1 January 2010 - 12 March 2015



1) The interest rate on lines of credit secured on dwellings provided by all banks and mortgage companies in Norway. Lending rate as measured by end-quarter.  
 2) Estimated using weighted interest rates on covered bonds outstanding and weighted deposit rates.  
 Sources: DNB Markets, Statistics Norway and Norges Bank

Household consumption is growing at a moderate pace and the saving ratio remains high. Growth in goods consumption has been subdued in recent years, but solid growth in the consumption of services is sustaining overall consumption growth. Following weak developments in Q3, consumption picked up in Q4 and was somewhat higher than projected in the December Report. Regional network contacts continue to report moderate growth in household-oriented industries, but growth is expected to slow somewhat ahead. Consumer confidence indicators have fallen further since turning down in autumn 2014 (see Chart 1.14). Weak consumer confidence must be viewed in the light of lower oil prices and uncertainty regarding developments ahead. Continued moderate growth in consumption is projected for the period ahead. At the same time, saving is expected to remain high.

Chart 1.12 Norges Bank's regional network's indicator for output growth past three months and expected output growth next six months. Annualised. Percent. January 2008 - July 2015<sup>1)</sup>



1) Latest observation for regional network is January 2015.  
 Source: Norges Bank

House prices and housing market turnover have continued to rise. Since the December Report, house prices have risen somewhat more than expected. In February, house prices were 8.7% higher than one year earlier. The recent period's rapid rise in house prices likely reflects lower lending rates. Household debt growth has slowed somewhat, and the 6.2%

growth rate in January was somewhat lower than projected in the December *Report*.

Housing investment fell in 2014 and developments in Q4 were weaker than projected in the December *Report*. In January, enterprises in Norges Bank's regional network reported slowing growth in the construction sector. Contacts' expectations have also been revised down compared with the October round. At the same time, new home sales picked up through 2014 and sales have remained firm so far in 2015. Growth in housing investment is expected to pick up somewhat, but remain lower than projected in the December *Report*.

After several quarters of weak growth, mainland business investment fell in Q4 and was lower than projected in the December *Report*. Weak growth prospects and uncertainty regarding economic developments have probably contributed. As reported by the regional network, private sectors expect weak or negative investment growth in the period ahead (see Chart 1.15).

The fall in oil prices since December will likely result in lower petroleum investment than previously envisaged. Petroleum investment is projected to fall by 15% in 2015, 10% in 2016 and 5% in 2017, before picking up somewhat in 2018 (see box on page 16 for further details on the projections).

Annual growth in traditional goods and services exports picked up in 2014, but growth was somewhat lower than projected in the December *Report*. Even though the cost level in Norway relative to other countries remains high, a weaker krone is providing a boost to the competitiveness of Norwegian export firms. At the same time, weaker developments in global offshore investment may have a dampening impact on petroleum-related exports. Export-oriented manufacturing firms in the regional network reported a decline in output growth between October and January. Nevertheless, growth in overall traditional exports is expected to pick up somewhat.

Growth in the Norwegian economy has slowed, as expected. The mainland economy is now projected to grow at a quarterly rate of somewhat higher than ¼% in the period ahead. The projections are slightly

Chart 1.13 Norges Bank's regional network indicator for output growth past three months. Annualised. Percent. January 2008 – January 2015

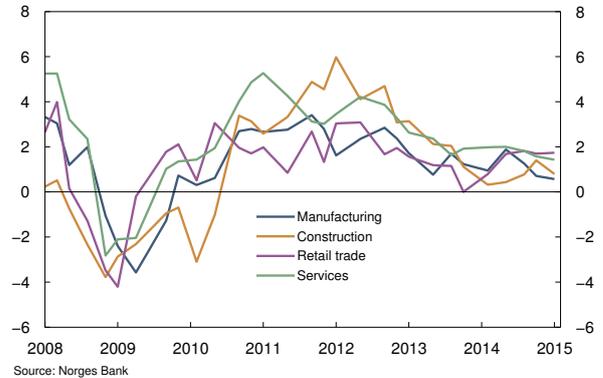
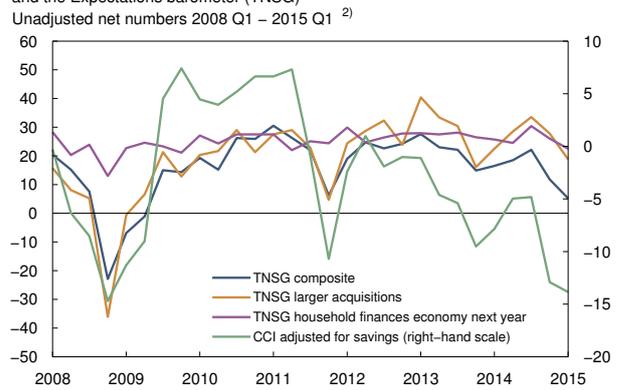
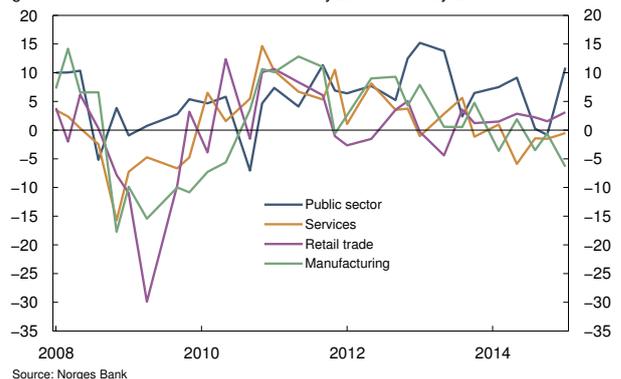


Chart 1.14 Consumer confidence. CCI adjusted for savings (Opinion) <sup>1)</sup> and the Expectations barometer (TNSG)



1) Average of subindices for household expectations as to their financial situation, the general economy and unemployment. For the CCI the average of monthly data is used as quarterly data.  
2) To February 2015 for CCI.  
Sources: TNS Gallup, Opinion and Norges Bank

Chart 1.15 Norges Bank's regional network's indicator for expected investment growth next twelve months. Percent. January 2008 – January 2015



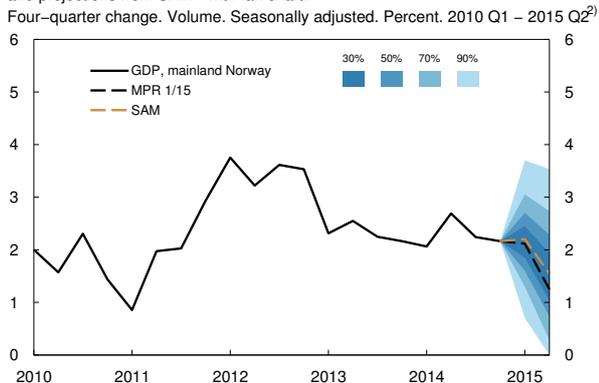
lower than those derived from Norges Bank's System for Averaging short-term Models (SAM) (see Chart 1.16), but somewhat higher than expected production growth as reported by Norges Bank's regional network (see Chart 1.17).

Unemployment has remained stable in the recent period (see Chart 1.18). In February, registered unemployment was 2.8% of the labour force, slightly lower than projected in the *December Report*. In regions and industries closely associated with the oil sector, unemployment has risen. So far, employment growth has remained high. Norges Bank's regional network expectations point towards low employment growth (see Chart 1.19). Moreover, the unemployed-to-

vacancy ratio indicates a less tight labour market (see Chart 1.20). Unemployment is expected to increase somewhat ahead.

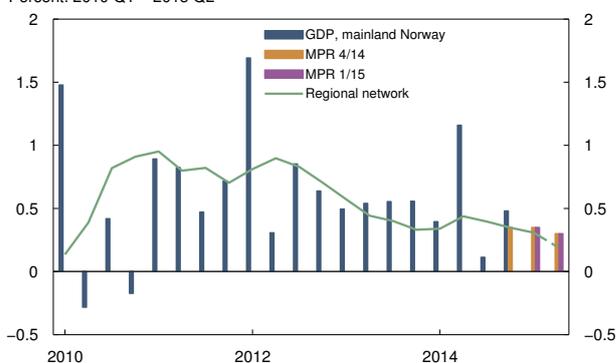
Capacity utilisation declined in 2014 and is now assessed as being lower than what may be regarded as a normal level. Few regional network enterprises report capacity constraints or difficulties obtaining qualified labour (see Chart 1.21). The share of enterprises reporting such constraints fell through 2014, but since the previous survey, the decline has been marginal. At the same time, unemployment has been slightly lower than projected. Overall, it therefore appears that capacity utilisation has declined somewhat less than projected in the *December Report*.

Chart 1.16 GDP for mainland Norway. Actual figures, baseline scenario and projections from SAM<sup>1)</sup> with fan chart. Four-quarter change. Volume. Seasonally adjusted. Percent. 2010 Q1 – 2015 Q2<sup>2)</sup>



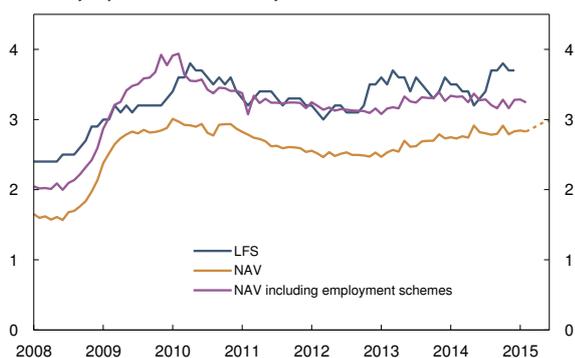
1) System for averaging short-term models.  
2) Projections for 2015 Q1 – 2015 Q2 (broken lines).  
Sources: Statistics Norway and Norges Bank

Chart 1.17 GDP for mainland Norway<sup>1)</sup> and Norges Bank's regional network's indicator for output growth past three months and expected output growth next six months. Percent. 2010 Q1 – 2015 Q2<sup>2)</sup>



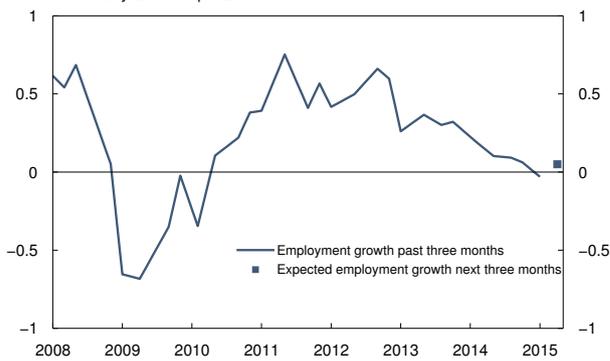
1) Seasonally adjusted quarterly change. Volume.  
2) Latest observation regional network is January 2015. Latest observation for GDP growth is 2014 Q4.  
Sources: Statistics Norway and Norges Bank

Chart 1.18 Unemployment rate. LFS<sup>1)</sup> and NAV<sup>2)</sup>. Seasonally adjusted. Percent. January 2008 – June 2015<sup>3)</sup>



1) Labour Force Survey.  
2) Norwegian Labour and Welfare Administration.  
3) Projections for March 2015 – June 2015 (broken lines).  
Sources: Statistics Norway, NAV and Norges Bank

Chart 1.19 Norges Bank's regional network indicator for employment growth past three months and expected growth next three months. Aggregated. Percent. January 2008 – April 2015



Source: Norges Bank

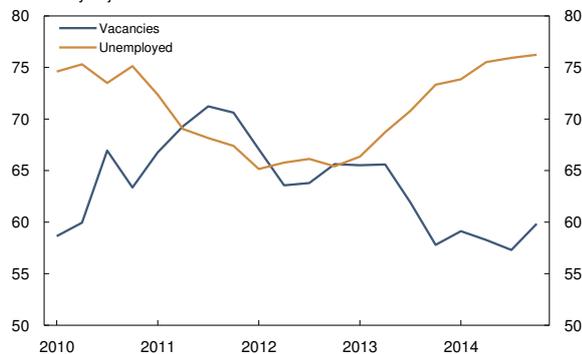
The Technical Reporting Committee on Income Settlements (TBU) estimates annual wage growth at 3.1% in 2014, lower than projected in the *December Report*. The wage carryover into 2015 is estimated at 1.4%, according to the TBU, appreciably lower than the usual carryover in years with interim settlements. Regional network contacts expect wage growth in 2015 of around 3%, somewhat lower than contacts' expectations in October. In the expectations survey conducted by Epinion, expected wage growth in 2015 was also revised down compared with the previous survey. Projected wage growth in 2015 is 3%, somewhat lower than in the *December Report*. In conjunction with temporarily higher inflation owing to a

weaker krone, real wage growth may reach its lowest level in 20 years (see Chart 1.22).

## CONSUMER PRICES

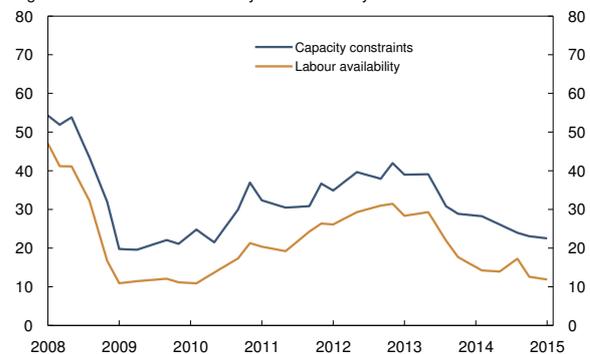
Inflation has been somewhat lower than projected in the *December Report*. In February, the year-on-year rise in consumer prices (CPI) was 1.9%, down from 2.0% in January (see Chart 1.23). Adjusted for tax changes and excluding energy products (CPI-ATE), inflation was 2.4% in February, slightly lower than projected in the *December Report*, but in line with the year-on-year rise recorded in the preceding months.

Chart 1.20 Number of vacancies and number of unemployed.<sup>1)</sup> 1000 persons  
Seasonally adjusted. 2010 Q1 – 2014 Q4



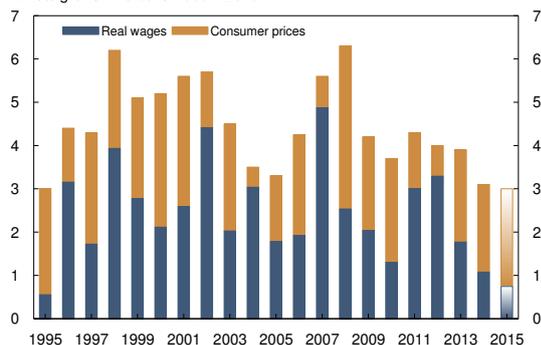
1) Registered unemployed.  
Sources: Statistics Norway, NAV and Norges Bank

Chart 1.21 Capacity constraints and labour availability<sup>1)</sup> as reported by Norges Bank's regional network. Percent. January 2008 – January 2015



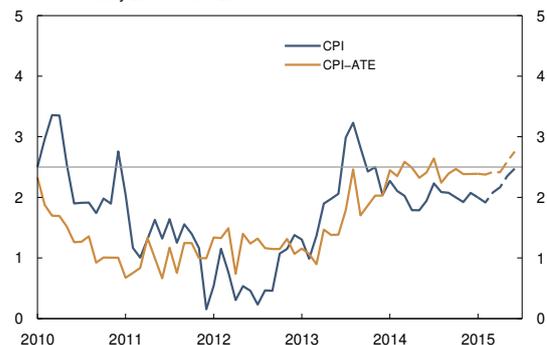
1) Share of contacts that will have some or considerable problems accommodating an increase in demand and the share of contacts where production is constrained by labour supply.  
Source: Norges Bank

Chart 1.22 Wages.  
Annual growth. Percent. 1995 – 2015<sup>1)</sup>



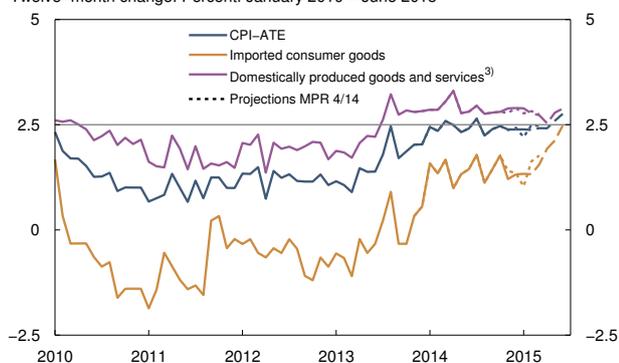
1) Projections for 2015.  
Sources: TBU, Statistics Norway and Norges Bank

Chart 1.23 CPI and CPI-ATE.<sup>1)</sup> Twelve-month change.  
Percent. January 2010 – June 2015<sup>2)</sup>



1) CPI adjusted for tax changes and excluding energy products.  
2) Projections for March 2015 – June 2015 (broken lines).  
Sources: Statistics Norway and Norges Bank

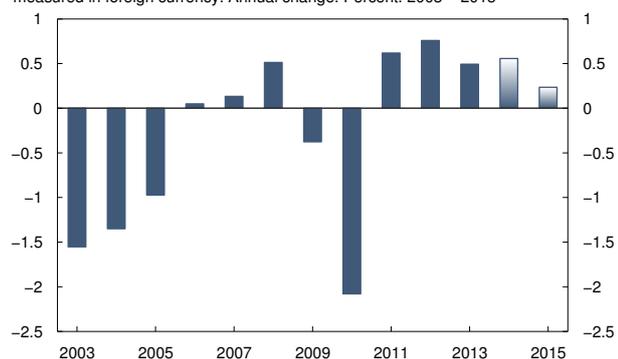
Chart 1.24 CPI-ATE.<sup>1)</sup> Total and by supplier sector.  
Twelve-month change. Percent. January 2010 – June 2015<sup>2)</sup>



1) CPI adjusted for tax changes and excluding energy products.  
2) Projections for March 2015 – June 2015 (broken lines).  
3) Norges Bank's estimates.  
Sources: Statistics Norway and Norges Bank

Prices for domestically produced goods and services in the CPI-ATE have risen by a little less than 3% in the recent period (see Chart 1.24). In February, the year-on-year rise in these prices was 2.8%, in line with that projected in December. The rise in prices for food and non-alcoholic beverages has been around 2.5% in recent months, but moved up to 3.1% in February. After slowing through 2014, the rate of increase in rental prices has edged up recently. The year-on-year rise in prices for other services has remained around 3% in recent months, but edged down in February. The rise in prices for domestically produced goods and services is projected at about 2¾% in the coming period.

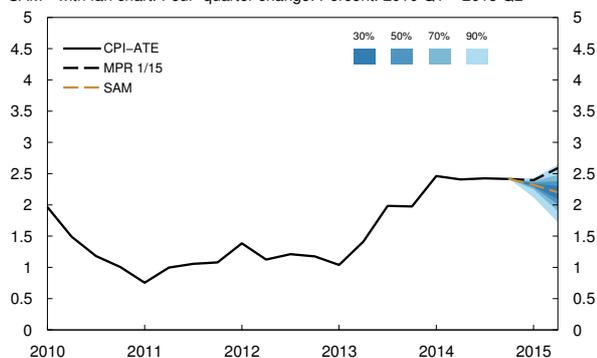
Chart 1.25 Indicator of external price impulses to imported consumer goods measured in foreign currency. Annual change. Percent. 2003 – 2015<sup>1)</sup>



1) Projections for 2014 and 2015.  
Source: Norges Bank

The year-on-year rise in prices for imported consumer goods was 1.3% in February, unchanged on the two preceding months. The year-on-year rise in February was somewhat lower than projected in the December *Report*. Although inflation has shown little change since December, the depreciation of the krone since autumn 2014 is expected to contribute to a higher rise in prices for imported consumer goods in the period ahead. At the same time, the rise in prices will be curbed by weaker external price impulses (see Chart 1.25). Overall, the rise in prices for imported consumer goods is projected to pick up in the coming quarters.

Chart 1.26 CPI-ATE<sup>1)</sup>. Actual figures, baseline scenario and projections from SAM<sup>2)</sup> with fan chart. Four-quarter change. Percent. 2010 Q1 – 2015 Q2<sup>3)</sup>



1) CPI adjusted for tax changes and excluding energy prices.  
2) System for averaging short-term models.  
3) Projections for 2015 Q1 – 2015 Q2 (broken lines).  
Sources: Statistics Norway and Norges Bank

The year-on-year rise in the CPI-ATE in the period ahead is expected to lie at about the same level as projected in the December *Report*. The projections for CPI-ATE inflation are higher than the projections from Norges Bank's System for Averaging short-term Models (SAM) (see Chart 1.26). It is assumed that the effect of the krone depreciation will be more pronounced than that captured by SAM.

## ASSUMPTIONS CONCERNING FISCAL POLICY

The fiscal policy assumptions are based on the final budget for 2015. Underlying spending of petroleum revenues is measured by the structural non-oil deficit, which is estimated at NOK 164bn in 2015. Growth in central government spending in 2015 is close to the average for the past 15 years. At the same time, approved tax reductions will have an impact in 2015.

The change in the structural non-oil deficit as a percentage of trend GDP for mainland Norway is used as a simple measure of the effect of the central government budget on demand for goods and services. By that measure, the structural non-oil deficit is projected to increase by 0.6 percentage point between 2014 and 2015. The projected deficit in 2015 corresponds to 2.5% of the value of the Government Pension Fund Global (GPF) at the end of 2014. The value of the GPF in NOK terms increased by as much as NOK 1 400bn in 2014, primarily reflecting the krone depreciation towards the end of 2014.

The technical assumption is applied that petroleum revenue spending will increase in the year ahead at about the same pace as that recorded since the fiscal rule was introduced in 2001 (see Chart 1.27), which corresponds to an annual increase in the non-oil structural deficit of about 0.3 percentage point of trend GDP for mainland Norway.

Chart 1.27 Structural non-oil deficit and 4% of the Government Pension Fund Global (GPF). Constant 2015 prices. In billions of NOK. 2003 – 2018<sup>1)</sup>



1) Projections for 2015 – 2018.  
Sources: Ministry of Finance and Norges Bank

## ASSUMPTIONS CONCERNING PETROLEUM INVESTMENT

Investment on the Norwegian continental shelf expanded rapidly between 2002 and 2013, driven by a sharp rise in oil prices, large and profitable discoveries and the need to upgrade older fields. Rapid investment growth also led to a sharp rise in costs in the petroleum sector. Costs continued to rise between 2011 and 2013, while oil prices remained stable at around USD 110. Weak profitability eventually prompted oil companies to take measures to reduce operating, maintenance and investment costs. At the same time, some large-scale upgrading projects were nearing completion. Investment therefore declined through 2014 despite the start-up of a number of large development projects in the preceding years. Already before oil prices began to fall in autumn 2014, investment was projected to show a pronounced decline in 2015.

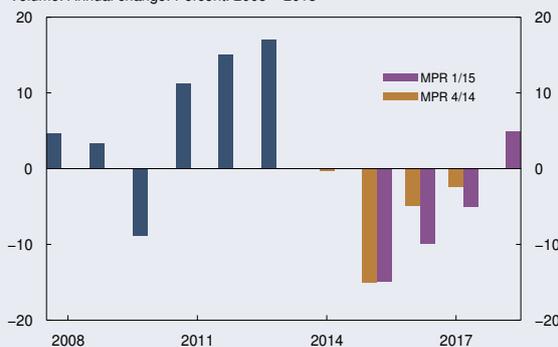
The effects of lower oil prices on petroleum investment will depend on the level of oil prices and the expected persistence of the decline. The price of oil has recently hovered around USD 55 per barrel. Compared with the average for the first half of 2014, the oil price has nearly halved. The projections in this *Report* are based on the assumption that oil prices will move in line with futures prices and that oil companies apply the same assumption. Futures prices indicate that oil prices will move up to a little more than USD 70 in 2018 (see Chart 1.8). Futures prices for 2018 have declined by almost USD 30 since summer 2014.

The decline in oil spot and futures prices has substantially reduced the expected profitability of investment projects on the Norwegian shelf. Some projects will therefore not be sufficiently profitable to be carried out. Oil companies are seeking to reduce project costs, partly by increasing drilling efficiency, standardising development, choosing simpler development solutions and negotiating lower prices in the rig market and other supplier markets. The cost-reduction measures will probably result in more projects being carried out, but several of them at a later time than initially planned. The decline in investment is being amplified by considerably lower cash flows among oil companies as a result of the oil price decline. Oil companies are seeking to finance investment and dividend payments using operating profits. Reduced cash flows, combined with the prevailing preference for maintaining high and stable dividend payments by oil companies, are therefore pulling down investment.

A substantial share of investments in 2015 is bound by earlier decisions and contracts that have been entered into. As oil companies had planned to reduce investments markedly in 2015 before oil prices fell, they will most likely have limited possibilities to reduce investments further in the short term. The feed-through from lower oil prices to investment is therefore expected to come into clear evidence after 2015. Petroleum investment is projected to fall by 15% in 2015, by a further 10% in 2016 and by 5% in 2017 (see Chart 1.28). As a result of the fall in oil spot and futures prices since the beginning of December, the investment projections for 2016 and 2017 have been revised down since the December *Report*. Owing to cost-cutting measures, a number of deferred projects will probably commence towards the end of the projection period. Investment is thus projected to pick up somewhat in 2018.

Lower investment in fields in production is the most important factor behind the decline in investment between 2014 and 2017 (see Chart 1.29). Upgrading of older fields has fuelled

Chart 1.28 Petroleum investment.  
Volume. Annual change. Percent. 2008 – 2018<sup>1)</sup>



<sup>1)</sup> Projections for 2015 – 2018.  
Sources: Statistics Norway and Norges Bank

investment in recent years. The need for upgrading will not be on an equal scale ahead. Savings measures undertaken by oil companies will also contribute to lower investment spending on fields in production in the course of the projection period. Investment in these fields is projected to fall by NOK 18bn in 2015 and by a further NOK 11bn between 2015 and 2017.

Spending on field development has increased markedly in recent years and was NOK 73bn in 2014. The high level of investment in 2014 reflected a number of large-scale field development projects on the Norwegian shelf. Some of these projects are now completed. The remaining projects are expected to be completed in the period 2015–2017. Investment in ongoing development projects excluding Johan Sverdrup is therefore likely to fall by over NOK 70bn between 2014 and 2018. Investment spending on the development of the Johan Sverdrup field is estimated at NOK 8bn in 2015 and NOK 20bn–30bn per year in the period 2016–2018. The estimates for spending on field development are based on the assumption that the development of the Maria field will commence in 2015 and the Zidane and Vette (Bream) fields in the course of 2016.

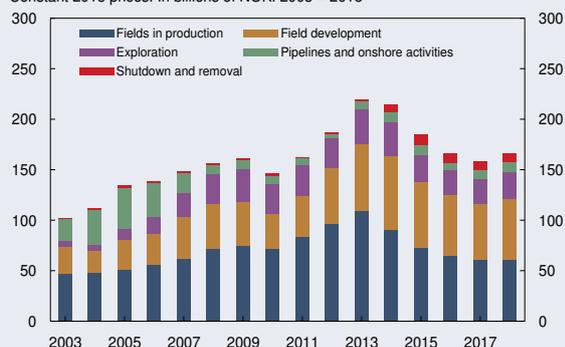
The Snorre 2040 project and the development of the Johan Castberg field are the largest development projects planned on the Norwegian shelf. Both projects have been postponed several times on account of weak profitability. The licence partners in the Snorre and the Johan Castberg projects are working to reduce investment costs in order to make them sufficiently profitable. The final investment decisions for both projects are planned for 2017. The estimates in this *Report* are based on the assumption that Snorre 2040 and the development of Johan Castberg will start in the latter half of 2017.<sup>1</sup>

Overall spending on field development is projected to fall by NOK 7bn in 2015 and by a further NOK 11bn between 2015 and 2017, as investment in new projects, including Johan Sverdrup, will not be sufficient to offset the decline in investment in ongoing projects (see Chart 1.30). New projects will contribute to some pick-up in investment in 2018.

The oil price decline will contribute to a pronounced fall in exploration activity between 2014 and 2015. Exploration investment is projected to continue to edge down in 2016. Lower demand for drilling rigs has resulted in a substantial fall in rig rates. This will in turn lead to lower drilling costs, which may lead to a pick-up in exploration activity towards the end of the projection period.

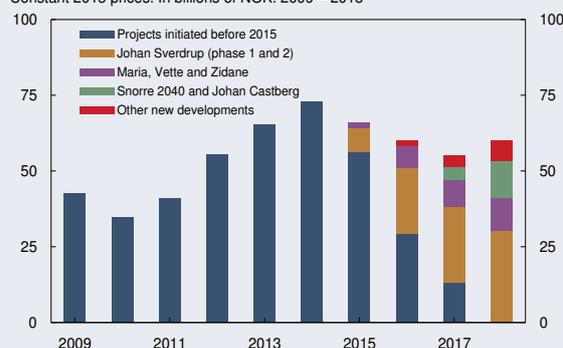
1) Snorre 2040 is a large development project involving a field in production. Norges Bank classifies this project as a field development project, in line with the classification of similar projects (such as Ekofisk Sør and Eldfisk II) in Statistics Norway's investment intentions survey.

Chart 1.29 Petroleum investment.  
Constant 2015 prices. In billions of NOK. 2003 – 2018<sup>1)</sup>



1) Projections for 2015–2018. Value figures from the investment intentions survey are deflated by the price index for petroleum investment in the national accounts.  
Sources: Statistics Norway and Norges Bank

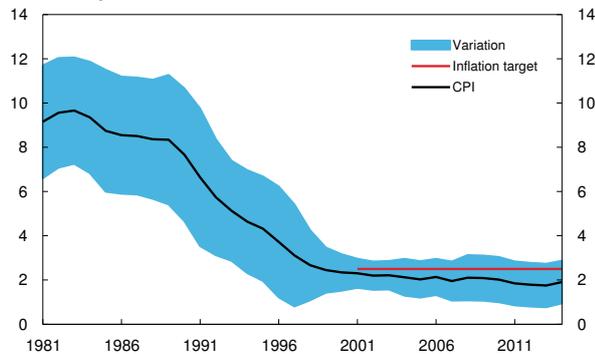
Chart 1.30 Field development.  
Constant 2015 prices. In billions of NOK. 2009 – 2018<sup>1)</sup>



1) Projections for 2015–2018. Value figures from the investment intentions survey are deflated by the price index for petroleum investment in the national accounts. The projections are based on the investment intentions survey for 2015 Q1, the projections in *The Shelf 2014* from the Norwegian Petroleum Directorate. Starting Propositions relating to projects commenced prior to 2015, impact assessments of new projects and current information on deferrals and assumed project commencements.  
Sources: Statistics Norway and Norges Bank

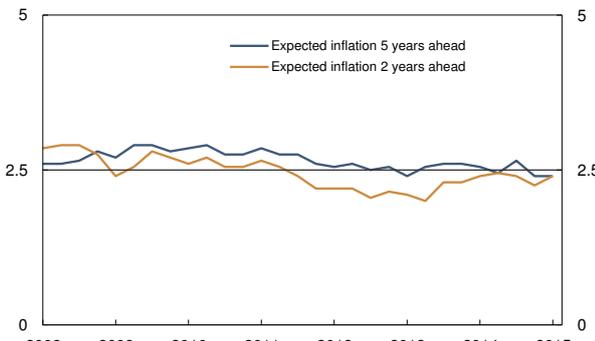
# 2 MONETARY POLICY OUTLOOK

Chart 2.1 10-year moving average<sup>1)</sup> and variation<sup>2)</sup> in CPI. Annual change. Percent. 1981 – 2014



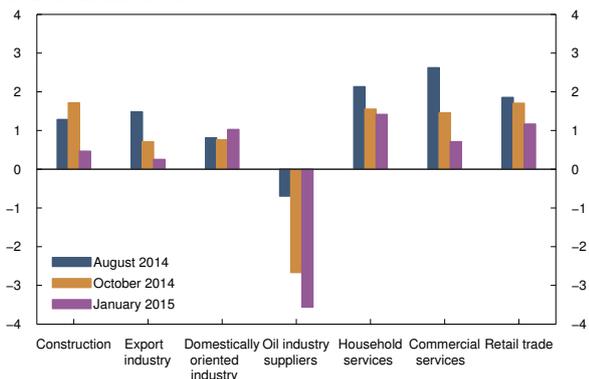
1) The moving average is calculated 10 years back.  
2) The band around the CPI is the variation in the CPI in the average period, measured by +/- one standard deviation.  
Sources: Statistics Norway and Norges Bank

Chart 2.2 Expected consumer price inflation 2 and 5 years ahead.<sup>1)</sup> Percent. 2008 Q1 – 2015 Q1



1) Average of expectations of employer/employee organisations and economists in the financial industry and academia.  
Sources: TNS Gallup, Opinion and Epinion

Chart 2.3 Expected output growth next six months in Norges Bank's regional network. Annualised. Percent



Source: Norges Bank

The operational target of monetary policy is low and stable inflation, with annual consumer price inflation of close to 2.5% over time. Over the past 10 years, average inflation has been somewhat below, but close to, 2.5% (see Chart 2.1). Inflation expectations as implied by expectations surveys also remain close to 2.5% (see Chart 2.2).

The key policy rate is set with a view to maintaining inflation close to 2.5% over time without causing excessive fluctuations in output and employment. The monetary policy assessment takes into account that there is uncertainty concerning the current situation, economic driving forces and the functioning of the economy. This normally suggests a gradual approach in interest rate setting. Monetary policy seeks to be robust. In the event of major shocks, it may be appropriate to implement measures to reduce uncertainty and stave off particularly adverse economic outcomes. This may imply a more active monetary policy than normal. A robust monetary policy also takes into account the risk of a build-up of financial imbalances.

In the December 2014 *Monetary Policy Report*, the key policy rate was projected to remain at 1¼% or somewhat lower to end-2016, rising somewhat thereafter through 2017. With the interest rate forecast in the December *Report*, there were prospects that inflation would remain close to 2.5% in the coming years. Capacity utilisation was assessed to be lower than what may be regarded as a normal level and was projected to decline through 2015 and then to increase again towards the end of the projection period.

## PROSPECTS AND DRIVING FORCES

When the key policy rate was lowered in December, weight was given to mitigating the risk of a pronounced downturn in the Norwegian economy as a result of the fall in oil prices. Developments in the Norwegian economy have so far been broadly in line with projections. Inflation is still close to 2.5% and unemployment has remained stable. In January, Norges Bank's regional network contacts reported a further decline in production growth, in line with that expected in the previous round.

The outlook for the Norwegian economy has weakened since the December *Report*. Oil prices have continued to fall and activity in the petroleum industry appears to be declining more than previously assumed. The decrease in oil investment will likely be more

pronounced than envisaged in the *December Report* (see box on page 16). According to Norges Bank's regional network, production growth expectations have fallen in most industries (see Chart 2.3). Unemployment is expected to edge up ahead, while capacity utilisation is projected to decrease. Wage growth in 2014 was lower than projected in the *December Report* and there are prospects that wage growth will also be lower ahead than projected earlier. This leads to weaker inflationary forces further out. On the other hand, the depreciation of the krone will contribute to underpinning inflation in the coming period.

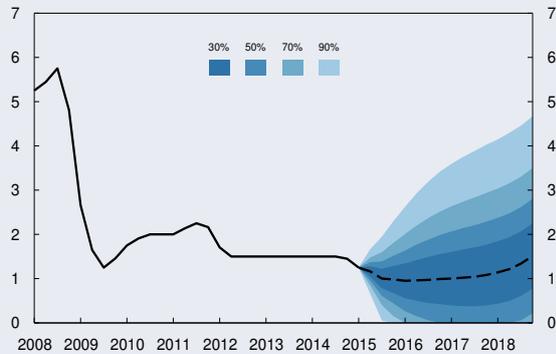
## ECONOMIC PROJECTIONS

The projections in this *Report* imply a key policy rate of around 1% in the coming years. The key policy rate is projected to increase gradually thereafter (see Charts 2.4 a-d). The projected path for the key policy rate is lower than in the *December Report* throughout the

projection period (see Chart 2.5). Both the aim of keeping inflation close to 2.5% and the aim of underpinning capacity utilisation in the coming years suggest a lower key policy rate. Monetary policy also seeks to be robust, and the risk of particularly adverse economic outcomes is taken into account when setting the key policy rate. The path for the key policy rate is somewhat higher than if weight had not been given to robustness (see box on monetary policy trade-offs and the criteria for an appropriate interest rate path on page 24). A further description of the factors behind the change in the key policy rate forecast is provided in the box on page 26. Bank lending rates are expected to follow developments in the key policy rate (see Chart 2.6).

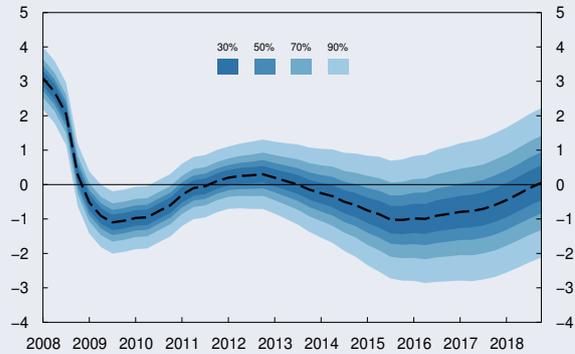
With a path for the key policy rate in line with that projected in this *Report*, the analyses in this *Report* suggest that inflation will increase somewhat in the coming quarters before falling again to a little more than

Chart 2.4a Projected key policy rate in the baseline scenario with fan chart. Percent. 2008 Q1 – 2018 Q4<sup>1)</sup>



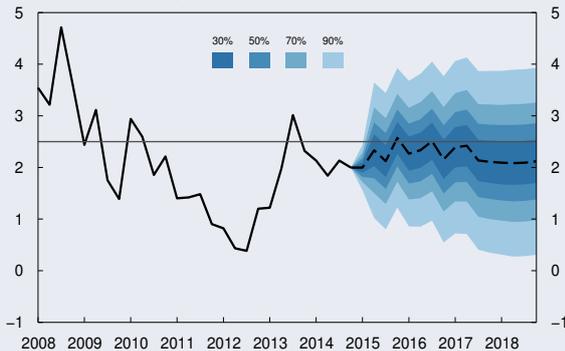
1) Projections for 2015 Q1 – 2018 Q4 (broken line).  
Source: Norges Bank

Chart 2.4b Projected output gap<sup>1)</sup> in the baseline scenario with fan chart. Percent. 2008 Q1 – 2018 Q4



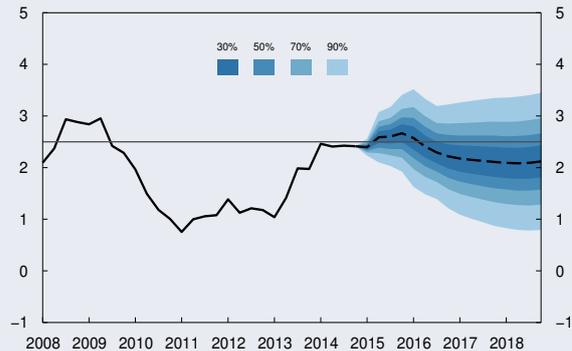
1) The output gap measures the percentage deviation between mainland GDP and projected potential mainland GDP.  
Source: Norges Bank

Chart 2.4c Projected CPI in the baseline scenario with fan chart. Four-quarter change. Percent. 2008 Q1 – 2018 Q4<sup>1)</sup>



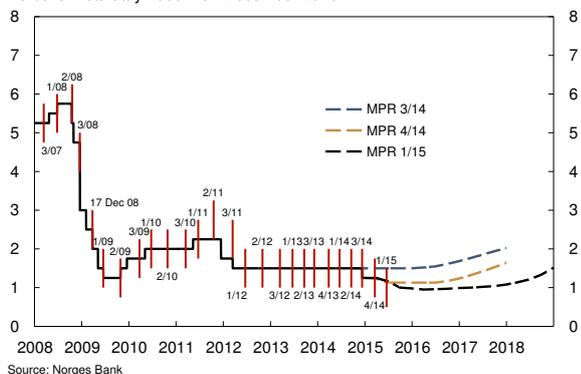
1) Projections for 2015 Q1 – 2018 Q4 (broken line).  
Sources: Statistics Norway and Norges Bank

Chart 2.4d Projected CPI-ATE<sup>1)</sup> in the baseline scenario with fan chart. Four-quarter change. Percent. 2008 Q1 – 2018 Q4<sup>2)</sup>



1) CPI adjusted for tax changes and excluding energy products.  
2) Projections for 2015 Q1 – 2018 Q4 (broken line).  
Sources: Statistics Norway and Norges Bank

Chart 2.5 Interval for the key policy rate at the end of each strategy period, actual developments and projected key policy rate in the baseline scenario. Percent. 1 January 2008 – 31 December 2018

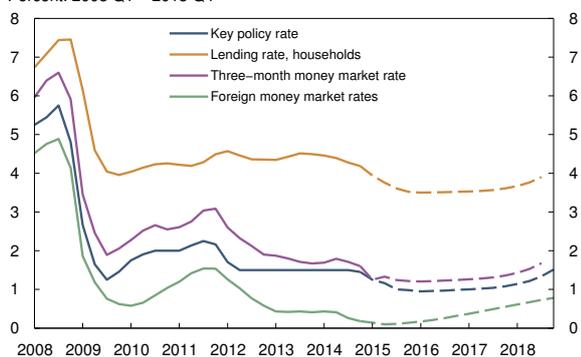


Source: Norges Bank

2%, where it will remain to the end of the projection period (see Chart 2.7). Capacity utilisation in the mainland economy is assessed to be lower than what may be regarded as a normal level and is projected to decline further. Towards the end of the projection period, capacity utilisation is expected to move up to a normal level.

Growth in the Norwegian economy is projected to slow from 2¼% in 2014 to 1½% in 2015, moving up again to 2% in 2016 and to an annual rate of about 2½% towards the end of the projection period. Employment growth is expected to slacken in pace with the decline in output growth. Labour immigration has been high in recent years and the supply of labour is historically shown to be flexible in response to changes in demand (see box on page 44). Labour supply flexibility is thus assumed to curb the rise in unemployment. Registered unemployment is projected to increase from 3% in 2015 to 3¼% in 2016, followed by some decline in the following years as growth in the mainland economy edges up.

Chart 2.6 Key policy rate, three-month money market rate<sup>1)</sup>, interest rate on loans to households<sup>2)</sup> and foreign money market rates in the baseline scenario. Percent. 2008 Q1 – 2018 Q4<sup>3)</sup>

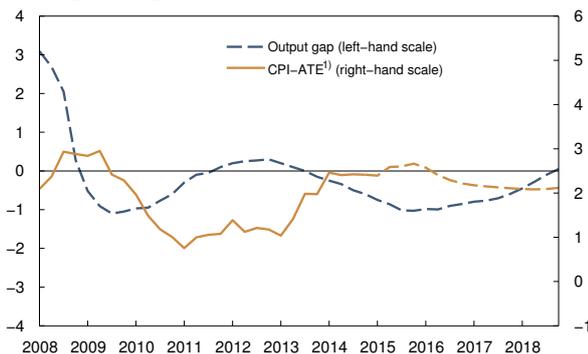


1) Key policy rate in the baseline scenario plus premiums in the Norwegian money market. The calculations are based on the assumption that announced interest rate changes are priced into the money market.  
 2) Average interest rate on all loans to households from banks and mortgage companies.  
 3) Projections for 2015 Q1 – 2018 Q4 (broken lines).  
 Sources: Statistics Norway and Norges Bank

Lower activity in the oil service industry will reduce demand for labour and restrain wage growth in both that industry and the wider economy. Wage growth is projected at about 3% in 2015 and in 2016. Further out in the projection period, wage growth is projected to increase as capacity utilisation rises.

The krone has been weaker than assumed in the *December Report*. In a historical context, the krone is weaker than implied by the expected interest rate differential and the oil price. This may reflect heightened uncertainty about the outlook for the Norwegian economy. The projections are based on gradually diminishing uncertainty ahead and a gradual increase in oil prices. The krone may thus appreciate somewhat ahead. In the light of lower oil futures prices and a narrower interest rate differential against other countries, the krone is nonetheless expected to remain weaker throughout the projection period than assumed in the *December Report* (see Chart 2.8).

Chart 2.7 Inflation and output gap in the baseline scenario. Percent. 2008 Q1 – 2018 Q4



1) CPI adjusted for tax changes and excluding energy products. Projections for 2015 Q1 – 2018 Q4 (broken line).  
 Sources: Statistics Norway and Norges Bank

Consumer price inflation is projected to move up somewhat at the start of the projection period, reflecting a temporary increase in the rise in prices for imported consumer goods owing to the depreciation of the krone since autumn 2014. Later in the projection period, the effect of the krone depreciation will diminish. Combined with a gradual appreciation of the krone, this will push down the rise in prices for imported consumer

goods further ahead. Wage growth turned out to be lower in 2014 than projected earlier. Combined with prospects for lower wage growth ahead, this will push down the rise in prices for domestically produced goods and services over the next few years. Towards the end of the projection period, domestic inflation will move up as wage growth increases. Overall consumer price inflation is projected to be lower in the years ahead than projected in the *December Report*.

Mainland productivity has grown by around 1% over the past year, a noticeably lower rate than pre-crisis. Productivity growth is projected to increase somewhat later in the projection period as capacity utilisation picks up. Labour immigration is expected to continue to make a positive contribution to growth in potential output in the years ahead, but weaker prospects for the Norwegian economy may curb immigration to some extent.

Consumption growth is expected to remain moderate in the coming years, somewhat higher than projected in the *December Report*. Prospects for lower real wage growth in 2015 will weigh down on household purchasing power, while lower interest rates may support consumption growth. Growth in private consumption is projected to increase from 1¾% in 2015 to 3% in 2017 (see Chart 2.9). The saving ratio is expected to remain at a high level, but lower wage growth and lower interest rates may result in somewhat lower saving than previously assumed (see Chart 2.10).

Growth in business investment is expected to be subdued in the coming year, partly reflecting continued uncertainty surrounding developments in the Norwegian economy. Further out in the projection period, low interest rates and higher demand are likely to push up growth in business investment. Housing investment is also expected to show stronger growth in the coming years, partly owing to relatively high house price inflation and a sustained rise in population.

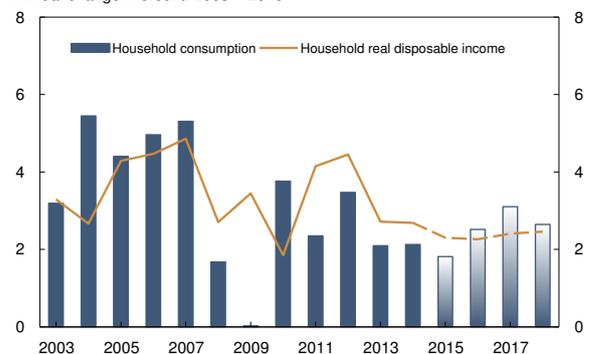
Growth in mainland exports is projected to accelerate from 3% in 2014 to 5% in 2015, in pace with growth in main export markets (see Chart 2.11). Improved competitiveness over the past two years due to a weaker krone put export firms in a better position to maintain market share. The Norwegian cost level is still high, however (see Chart 2.12). Further out in the projection period, export market growth supports continued growth in mainland exports, but a gradual appreciation of the krone contributes to a loss of

Chart 2.8 Three-month money market rate differential between Norway<sup>1)</sup> and trading partners<sup>2)</sup> and import-weighted exchange rate index I-44.<sup>3)</sup> January 2008 – December 2018<sup>4)</sup>



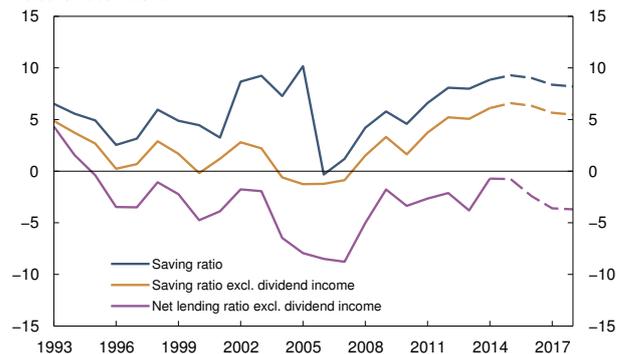
1) Key policy rate in the baseline scenario plus premiums in the Norwegian money market. The calculations are based on the assumption that announced interest rate changes are priced into the money market.  
 2) Forward rates for trading partners from 12 march 2015  
 3) A positive slope denotes a stronger krone exchange rate.  
 4) Projections in MPR 1/15 for 2015 Q2 – 2018 Q4 (broken lines).  
 Sources: Thomson Reuters and Norges Bank

Chart 2.9 Household consumption<sup>1)</sup> and real disposable income.<sup>2)</sup> Annual change. Percent. 2003 – 2018<sup>3)</sup>



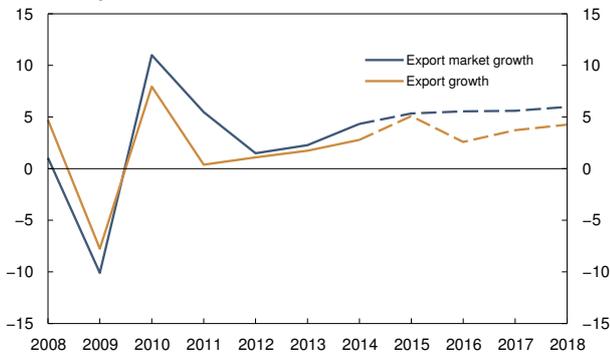
1) Includes consumption for non-profit organisations. Volume.  
 2) Excluding dividend income. Including income for non-profit organisations.  
 3) Projections for 2015 – 2018.  
 Sources: Statistics Norway and Norges Bank

Chart 2.10 Household saving and net lending as a share of disposable income. Percent. 1993 – 2018<sup>1)</sup>



1) Projections for 2015 – 2018 (broken lines).  
 Sources: Statistics Norway and Norges Bank

Chart 2.11 Export market growth<sup>1)</sup> and growth in Norwegian mainland exports. Annual change. Percent. 2008 – 2018<sup>2)</sup>

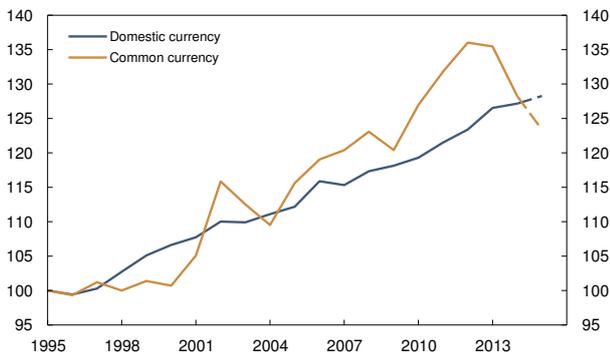


1) Export market growth is calculated as import growth among 25 trading partners  
2) Projections for 2015 – 2018 (broken lines).  
Sources: Thomson Reuters and Norges Bank

market share for Norwegian export firms. At the same time, petroleum-related exports, which account for about a quarter of mainland exports, are likely to shrink in pace with the decline in global offshore investment.

House price inflation is expected to remain high in the period ahead, followed by a gradual slackening later in the projection period (see Chart 2.13). Low interest rates on loans to households are expected to fuel the rise in house prices, while prospects for weaker income growth and somewhat higher unemployment will have a dampening impact further ahead. Growth in household debt will edge up in the coming years, reflecting the projected rise in house prices. Household debt ratios are thus likely to continue to increase ahead (see Chart 2.14). The household interest payment burden is projected to fall slightly in the coming year, followed by a moderate increase.

Chart 2.12 Labour costs<sup>1)</sup> relative to trading partners.<sup>2)</sup> Index. 1995=100. 1995 – 2015

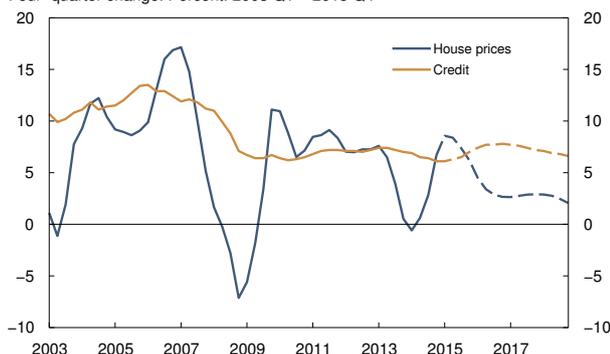


1) Hourly labour costs in manufacturing.  
2) Projections for 2015 (broken lines).  
Sources: TBU, Statistics Norway and Norges Bank

## FORECAST UNCERTAINTY

The projections for the key policy rate, inflation, capacity utilisation and other variables are based on Norges Bank's assessment of the economic situation and the functioning of the economy and monetary policy. There is uncertainty surrounding the projections. Monetary policy can respond to changes in the economic outlook and if relationships between the interest rate level, inflation and the real economy differ from those assumed. Hence, there is uncertainty about future interest rate developments. The uncertainty surrounding Norges Bank's projections is illustrated using fan charts (see Charts 2.4 a-d). The width of the fans reflects historical uncertainty.

Chart 2.13 Household debt<sup>1)</sup> and house prices. Four-quarter change. Percent. 2003 Q1 – 2018 Q4<sup>2)</sup>



1) Domestic credit to households (C2).  
2) Projections for 2015 Q1 – 2018 Q4 (broken lines).  
Sources: Statistics Norway, Eiendom Norge, Eiendomsverdi, Finn.no and Norges Bank

Growth in the Norwegian economy may prove to be weaker than currently envisaged. It is difficult to foresee the magnitude of the effect of lower oil prices and reduced activity in the petroleum sector on the mainland economy. The effect on the Norwegian economy may be more pronounced than currently envisaged, even if oil prices move in line with that assumed. Nor can the possibility that oil prices stabilise at current levels or fall further be ruled out. Should the decline in petroleum investment prove to be considerably more pronounced than currently projected, growth prospects for the Norwegian economy may weaken considerably and lead to a higher-than-projected rise in unemployment. Mainland exports are expected to contribute to sustaining activity in the Norwegian economy. Owing to the high cost level, Norwegian export firms may not fully benefit

from the expected market growth. Moreover, reduced global oil investment may pull down oil-related exports to a greater extent than projected. Movements in the foreign exchange market, especially the NOK market, have been substantial over the past six months. If the krone appreciates to a considerable extent ahead, both output and inflation will be lower than currently projected. Inflation may also remain low if wage growth turns out to be lower than projected. If inflation proves to be lower than projected, or developments in output and employment are weaker than projected in this *Report*, the key policy rate may be lowered to a greater extent than implied by the baseline scenario.

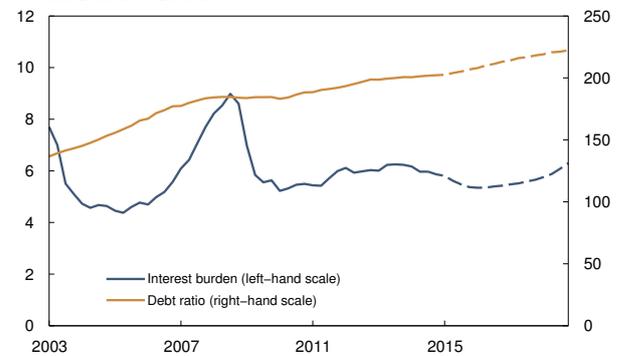
If growth in the Norwegian economy is stronger than currently projected, the key policy rate may be raised more quickly than implied by the baseline scenario. Should oil prices increase faster and more than implied by futures prices, petroleum investment may be higher than projected. The spillover effects of lower oil prices may also be less pronounced than assumed in this *Report*. A flexible labour market and a high degree of adaptability may keep unemployment at current levels and sustain economic growth. Low interest rates and household confidence in their own financial situation may also contribute to higher growth in household consumption than projected.

## CROSS-CHECKS OF THE INTEREST RATE FORECAST

Forward rates in the money and bond markets can function as a cross-check for the interest rate forecast. Estimated forward rates for the coming years are somewhat below Norges Bank's forecasts for the money market rate. Further out in the projection period, market expectations appear to be more in line with the projections in this *Report* (see Chart 2.15).

A simple rule based on Norges Bank's previous interest rate setting can also serve as a cross-check for the baseline key policy rate. Chart 2.16 shows such a rule, where the key policy rate is determined by developments in inflation, wage growth, mainland GDP and external interest rates. The interest rate in the previous period is also taken into account. The model parameters are estimated on historical relationships. The projections are based on the estimates for the variables included in this *Report*. The model uncertainty is expressed by the blue band. The chart shows that the baseline key policy rate is close to the middle of this band.

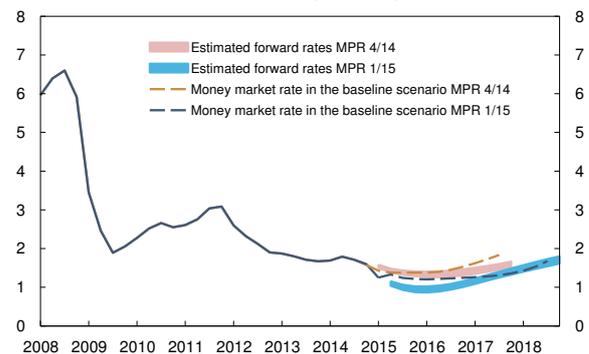
Chart 2.14 Household debt ratio<sup>1)</sup> and interest burden.<sup>2)</sup> Percent. 2003 Q1 – 2018 Q4<sup>3)</sup>



1) Loan debt as a percentage of disposable income adjusted for estimated reinvested dividend income for 2003 – 2005 and redemption/reduction of equity capital for 2006 Q1 – 2012 Q3.  
2) Interest expenses as a percentage of disposable income adjusted for estimated reinvested dividend income for 2003 – 2005 and redemption/reduction of equity capital for 2006 – 2012 Q3 plus interest expenses.  
3) Projections for 2014 Q4 – 2018 Q4 (broken lines).

Sources: Statistics Norway and Norges Bank

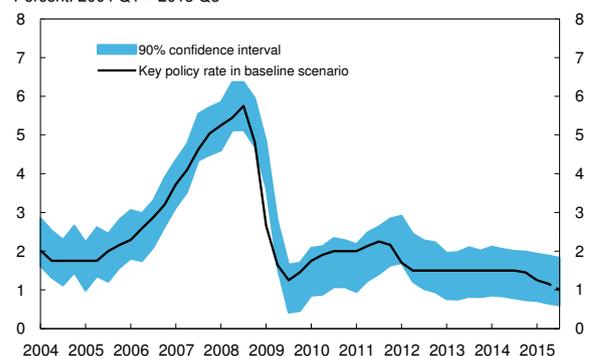
Chart 2.15 Three-month money market rate in the baseline scenario<sup>1)</sup> and estimated forward rates.<sup>2)</sup> Percent. 2008 Q1 – 2018 Q4



1) Key policy rate in the baseline scenario plus premiums in the Norwegian money market. The calculations are based on the assumption that announced interest rate changes are priced into the money market.  
2) Forward rates are based on money market rates and interest rate swaps. The red and blue bands show the highest and lowest rates in the period 24 November – 05 December 2014 and 27 February – 12 March 2015.

Sources: Thomson Reuters and Norges Bank

Chart 2.16 Key policy rate and interest rate developments that follow from Norges Bank's average pattern of interest rate setting.<sup>1)</sup> Percent. 2004 Q1 – 2015 Q3



1) Interest rate movements are explained by developments in inflation, mainland GDP growth, wage growth and three-month money market rates among trading partners, as well as the interest rate in the preceding period. The equation is estimated over the period 1999 Q1 – 2014 Q4. See *Norges Bank Staff Memo 3/2008* for further discussion.  
Source: Norges Bank

# CRITERIA FOR AN APPROPRIATE INTEREST RATE PATH

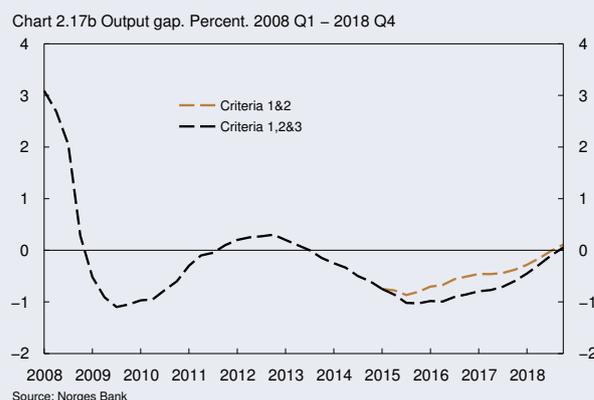
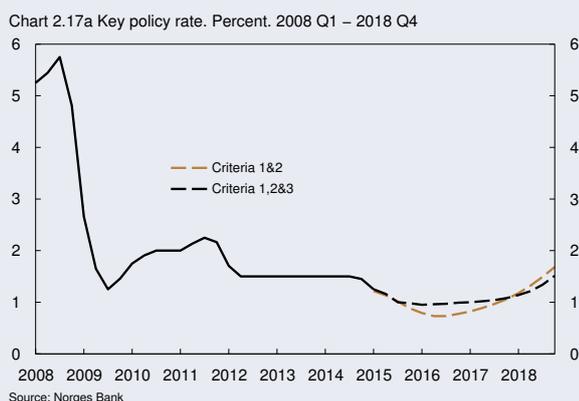
Norges Bank seeks to maintain inflation close to 2.5% over time. In its conduct of monetary policy, Norges Bank operates a flexible inflation targeting regime so that weight is given to both variability in inflation and variability in output and employment when setting the key policy rate. The following set of criteria can serve as a guideline for an appropriate interest rate path:

1. **The inflation target is achieved:**  
The interest rate path should stabilise inflation at target or bring inflation back to target after a deviation has occurred.
2. **The inflation targeting regime is flexible:**  
The interest rate path should provide a reasonable balance between the path for inflation and the path for overall capacity utilisation in the economy.

The assessment takes into account that the state of the economy and its functioning are not fully known. This normally suggests a gradual approach in interest rate setting. In addition, the following criterion is given weight:

3. **Monetary policy is robust:**  
The risk of particularly adverse outcomes for the economy should be taken into account when setting the key policy rate. In the event of major shocks, it may be appropriate to pursue a more active monetary policy than normal. Monetary policy should also mitigate the risk of a build-up of financial imbalances.

The various considerations expressed in the criteria are weighed against each other. Taking into account the consideration of robustness may yield improved performance in terms of inflation, output and employment over time.

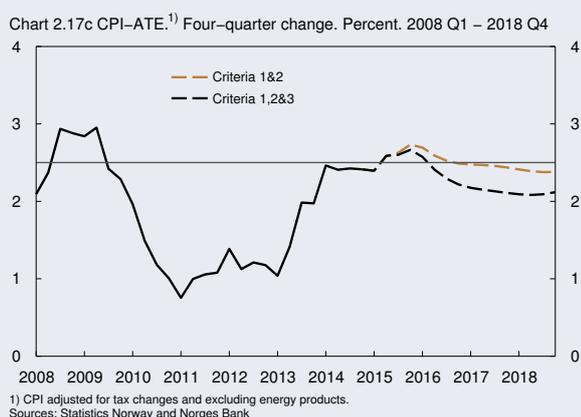


The trade-off between the criteria can be difficult to quantify. The Executive Board provides a qualitative account of the reasoning behind its judgement in “the Executive Board’s assessment” at the beginning of the *Report*.

Charts 2.17 a-c illustrate how different monetary policy strategies could affect the outcome for the key policy rate, the output gap and inflation. The paths for the key policy rate that follow from the different strategies reflect the trade-offs between the different monetary policy considerations. The distance between the different paths for the key policy rate will therefore depend on the state of the economy and the shocks to which the economy is exposed. Both the state of the economy and the shocks affecting the economy will change over time.

Monetary policy seeks to be robust. If Norges Bank had not taken into account the robustness criterion,

the key policy rate would, according to a technical model-based analysis, be reduced to 3/4% in the course of 2015 (see orange lines in the charts). In December, considerable weight was given to reducing the risk of a pronounced downturn in the economy as a result of the fall in oil prices. The robustness consideration then pointed towards a lower key policy rate at the beginning of the projection period. Monetary policy also aims to mitigate the risk of a build-up of financial imbalances. Further reductions in the key policy rate will increase the likelihood of continued high or rising house price inflation and faster debt growth. On the basis of an overall assessment of robustness, the key policy rate in the baseline scenario is somewhat higher than implied by the model analysis based on the first two criteria. In the baseline scenario, output and employment are projected to take longer to pick up, and inflation remains somewhat lower than if the robustness criterion is disregarded.



# CHANGES IN THE PROJECTIONS SINCE MONETARY POLICY REPORT 4/14

The interest rate forecast in this *Monetary Policy Report* has been revised down since the December 2014 *Report* (see Chart 2.18). The projections are based on the criteria for an appropriate interest rate path (see box on page 24), an overall assessment of the situation in the Norwegian and global economy and Norges Bank's perception of the functioning of the economy.

Chart 2.19 illustrates how news and new assessments have affected the interest rate forecast through their impact on the outlook for inflation, output and employment.<sup>1</sup> The isolated contributions of the different factors are shown by the bars in the chart. The overall change in the interest rate forecast from the December *Report* is shown by the black line.

Policy rates are close to zero in many trading partner countries. Market expectations concerning policy rates abroad in the years ahead are lower than in December. This contributes in isolation to a stronger

krone and thereby to lower domestic inflation and activity. Lower policy rates abroad therefore suggest a lower path for the key policy rate (see purple bars).

The outlook for demand is somewhat weaker than in the December *Report*. Oil prices have continued to fall and it appears that activity in the petroleum industry will be lower than previously anticipated. Petroleum investment is expected to fall more in 2016 and 2017 than envisaged in the December *Report*. Lower oil prices may also curb exports from the oil service industry as a result of weak investment growth in the offshore oil industry worldwide. Overall, weaker domestic demand prospects, and hence output and employment prospects, point towards a lower path for the key policy rate (see orange bars).

Wage growth in 2014 turned out to be lower than projected and wage growth expectations for 2015 have fallen. The projections for wage growth in the years ahead have been revised down compared with the projections in the December *Report*. Lower wage growth contributes to lower cost inflation and hence

<sup>1</sup> Illustrated using the macroeconomic model NEMO and based on the criteria for an appropriate interest rate path.

Chart 2.18 Key policy rate in the baseline scenario in MPR 4/14 with fan chart and key policy rate in the baseline scenario in MPR 1/15 (orange line). Percent. 2008 Q1 – 2017 Q4

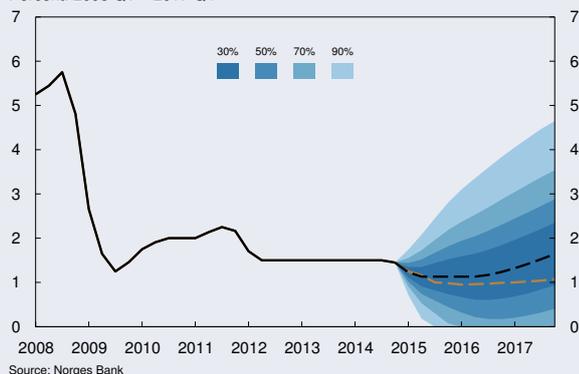
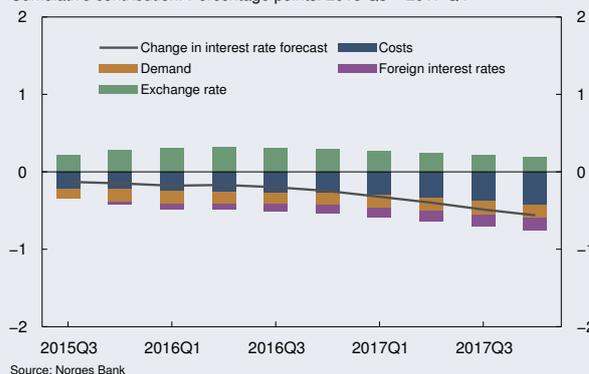


Chart 2.19 Factors behind changes in the interest rate forecast since MPR 4/14. Cumulative contribution. Percentage points. 2015 Q3 – 2017 Q4



to lower inflation. The dark blue bars show the downward revision of the path for the key policy rate that follows from lower wage growth.

The krone is weaker than assumed in the December *Report*, partly reflecting the fact that market expectations of the interest rate differential against other countries have fallen and been lower than the assumption underlying the analysis in the December *Report*. In addition, the drop in oil prices has probably

had an independent effect on the krone. Against the background of lower oil futures prices, the projections are based on the assumption that the krone will remain somewhat weaker throughout the projection period than assumed in the December *Report*. In isolation, this suggests a higher path for the key policy rate (see green bars).

A summary of changes in the projections of key variables is provided in Table 1.

**TABLE 1** Projections for macroeconomic aggregates in *Monetary Policy Report 1/15*. Percentage change from previous year (unless otherwise stated). Change from projections in *Monetary Policy Report 4/14* in brackets

	2015	2016	2017	2018
CPI	2¼ (-¼)	2¼ (-½)	2¼ (-¼)	2
CPI-ATE <sup>1</sup>	2½ (0)	2¼ (-½)	2¼ (-¼)	2
Annual wages <sup>2</sup>	3 (-¼)	3¼ (-¼)	3¾ (-¼)	4
Mainland demand <sup>3</sup>	1¾ (-½)	3¼ (¼)	3¼ (½)	2¾
GDP, mainland Norway	1½ (0)	2 (-¼)	2½ (0)	2¾
Output gap, mainland Norway (level) <sup>4</sup>	-1 (0)	-1 (0)	-¾ (0)	-¼
Employment, persons, QNA	½ (0)	½ (-¼)	1¼ (0)	1
Registered unemployment (rate, level)	3 (0)	3¼ (0)	3 (0)	3
<b>Level</b>				
Key policy rate <sup>5</sup>	1 (-¼)	1 (-¼)	1 (-½)	1¼
Import-weighted exchange rate (I-44) <sup>6</sup>	99½ (3¼)	97 (3¾)	95¾ (3¾)	94¾
Money market rates, trading partners <sup>7</sup>	0 (-¼)	¼ (-¼)	½ (-¼)	¾

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

2 Annual wage growth is based on the Technical Reporting Committee on Income Settlements' definitions and calculations.

3 Private and public consumption and mainland gross fixed investment.

4 The output gap measures the percentage deviation between mainland GDP and projected potential mainland GDP.

5 The key policy rate is the interest rate on banks' deposits in Norges Bank.

6 The weights are estimated on the basis of imports from 44 countries, which comprise 97% of total imports.

7 Market rates are based on money market rates and interest rate swaps.

Source: Norges Bank

# 3 DECISION BASIS FOR THE COUNTERCYCLICAL CAPITAL BUFFER

Norges Bank is responsible for preparing a decision basis and providing advice to the Ministry of Finance regarding the level of the countercyclical capital buffer four times a year. The buffer rate is set at 1%, effective from 30 June 2015 (see box below).

Norges Bank has formulated three criteria for an appropriate countercyclical capital buffer (see box on page 38). Banks should build and hold a countercyclical capital buffer when financial imbalances are building up or have built up. The buffer rate should be considered in the light of other requirements applying to banks, particularly when new requirements are introduced. In the event of an economic downturn and large bank losses, the buffer rate can be reduced to mitigate the procyclical effects of tighter bank lending.

## DEVELOPMENTS IN CREDIT AND PROPERTY PRICES

From the mid-1990s to 2008, total household and corporate debt in the mainland economy grew markedly faster than GDP (see Chart 3.1). Since the financial

crisis, credit growth has slowed somewhat. The credit indicator has remained fairly stable in recent years.

Although growth in household debt slowed slightly through 2014, household debt is still growing somewhat faster than household income (see Charts 3.2 and 3.3). High and rising debt-to-income ratios increase household vulnerability to a loss of income, interest rate increases and a fall in house prices.

Growth in bank retail lending has picked up in recent months (see Chart 3.4). Repayment loans secured on dwellings account for the largest share of the growth in lending.

There are signs that banks have eased credit standards for households slightly over the past year. The banks included in Norges Bank's lending survey expect household credit demand to be a little higher in 2015 Q1 (see Chart 3.5). Many banks have reduced mortgage lending rates in recent months.

## DECISION ON THE COUNTERCYCLICAL CAPITAL BUFFER

The level of the countercyclical capital buffer was laid down in the Regulation on the Level of the Countercyclical Capital Buffer of 12 December 2013:

### "Section 1

Banks, financial undertakings and parent companies of a financial group that is not an insurance group shall as from 30 June 2015 hold a countercyclical capital buffer comprising Common Equity Tier 1 capital amounting to one (1) percentage point.

### Section 2

The countercyclical capital buffer shall be calculated using the same risk-weighted assets as for the minimum regulatory capital requirement.

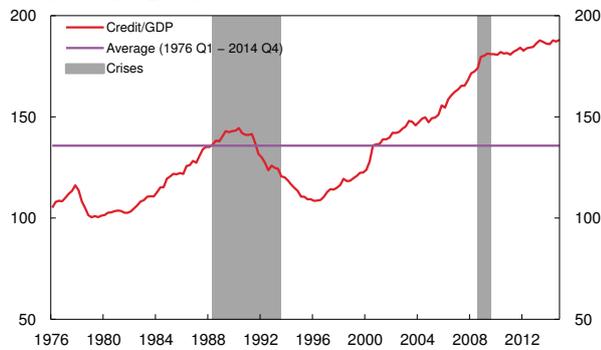
### Section 3

This regulation enters into force immediately."

In its letter to the Ministry of Finance of 10 December 2014, Norges Bank concluded that the decision basis did not warrant a change in the buffer rate.<sup>1</sup> The Ministry of Finance decided on 17 December to keep the buffer rate unchanged.

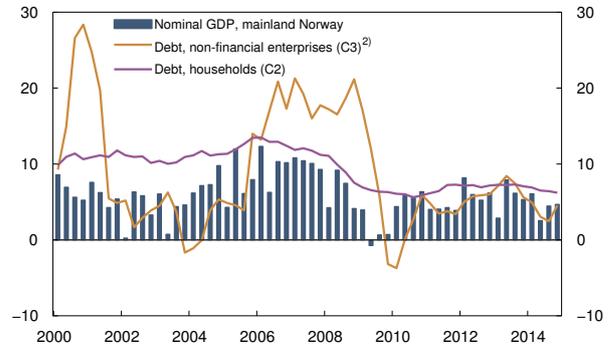
<sup>1</sup> See "Advice on the countercyclical capital buffer, 2014 Q4", Norges Bank.

Chart 3.1 Total credit<sup>1)</sup> mainland Norway as a share of mainland GDP. Percent. 1976 Q1 – 2014 Q4



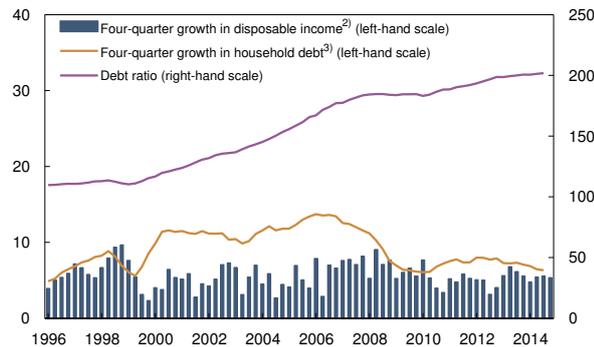
1) The sum of C2 households and C3 non-financial enterprises in mainland Norway (all non-financial enterprises pre-1995). C3 comprises C2 and foreign debt.  
Sources: Statistics Norway, IMF and Norges Bank

Chart 3.2 Debt held by households and non-financial enterprises and mainland GDP. Four-quarter growth.<sup>1)</sup> Percent. 2000 Q1 – 2014 Q4



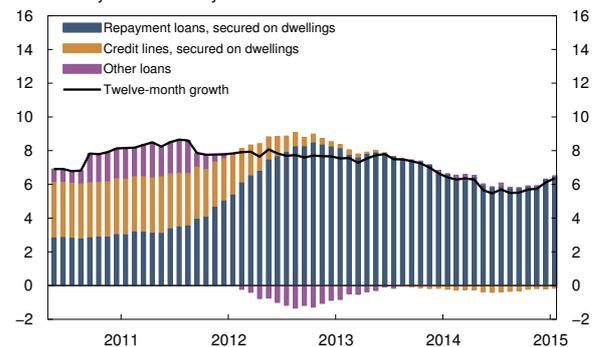
1) Change in stock of debt at the end of the quarter.  
2) Sum of C2 non-financial enterprises and foreign debt in mainland Norway.  
Sources: Statistics Norway and Norges Bank

Chart 3.3 Ratio of household debt to disposable income.<sup>1)</sup> Percent. 1996 Q1 – 2014 Q4



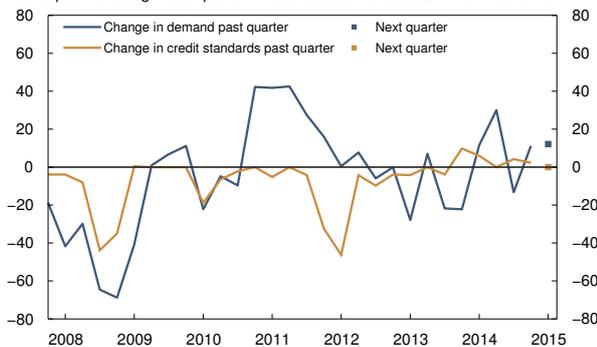
1) Loan debt for households and non-profit organisations as a percentage of disposable income, adjusted for estimated reinvested dividend income for 2000 – 2005 and redemption/reduction of equity capital for 2006 Q1 – 2012 Q3.  
2) Figures for 2014 Q3 and Q4 have been estimated on the basis of quarterly growth in disposable income after Statistics Norway's main revision. Historical data have not been revised.  
3) Change in stock of debt at the end of the quarter. Last observation 2014 Q3.  
Sources: Statistics Norway and Norges Bank

Chart 3.4 Bank<sup>1)</sup> retail lending.<sup>2)</sup> Twelve-month growth. Percent. May 2010 – January 2015



1) All banks and mortgage companies.  
2) The retail sector consists of employees, pensioners, social security recipients, students and others. The series has been break-adjusted for the start of OBOS-banken AS in December 2013.  
Sources: Statistics Norway and Norges Bank

Chart 3.5 Changes in credit demand and banks' credit standards past quarter and expected change next quarter.<sup>1)</sup> Households. Percent. 2007 Q4 – 2015 Q1



1) Negative figures denote lower demand or tighter credit standards.  
Source: Norges Bank

Chart 3.6 House prices. Twelve-month change and seasonally adjusted monthly change. Percent. January 2010 – February 2015



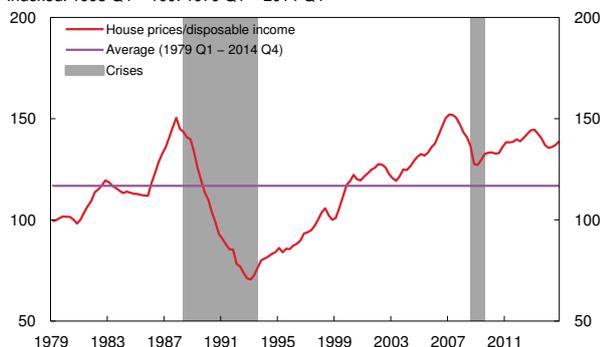
Sources: Eiendom Norge, Eiendomsverdi and Finn.no

House prices fell in 2013, but have since risen rapidly (see Chart 3.6). House price inflation was particularly high at the end of 2014. In February 2015, house prices were 8.7% higher than one year earlier. House prices rose more than household disposable income in the second half of 2014, but the house price indicator is still lower than at the beginning of 2013 (see Chart 3.7). Sales of existing homes have picked up (see Chart 3.8). Both the time it takes to sell a home and the stock of homes for sale at the end of the month fell through the second half of 2014. New home sales were slow at the beginning of 2014, but increased sharply through the year.

Developments in house prices show wide regional variations (see Chart 3.9). In the past year, the rise in house prices in Stavanger was fairly weak, while house prices surged in Tromsø. The rate of increase in house prices in Oslo picked up markedly in the second half of 2014.

Debt growth for non-financial enterprises has been moderate since the financial crisis (see Chart 3.2). Growth in bank lending, which is the primary credit source for enterprises, has been weak in recent years (see Chart 3.10). Growth in bond and note debt slowed through 2014 and contributed to a marked decline in overall corporate credit growth. In recent months, growth in both bank lending and bond debt has

Chart 3.7 House prices relative to disposable income. Indexed. 1998 Q4 = 100. 1979 Q1 – 2014 Q4



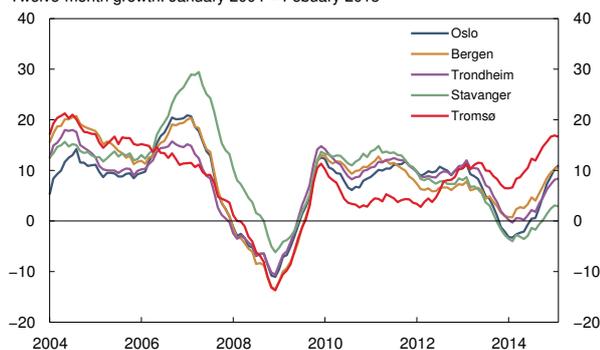
Sources: Statistics Norway, Eiendom Norge, Norwegian Association of Real Estate Agents (NEF), Finn.no, Eiendomsverdi and Norges Bank

Chart 3.8 Sales of existing homes and homes for sale in 1000s of dwellings. Selling times in days. Seasonally adjusted. January 2004 – February 2015



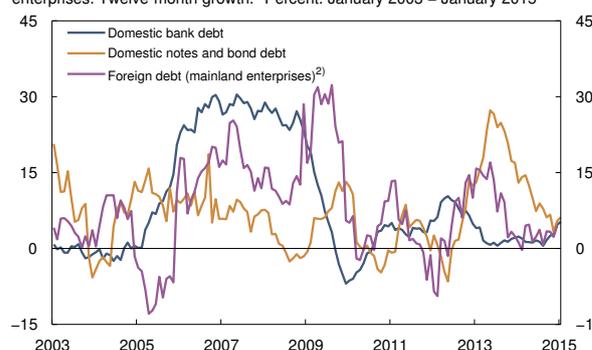
Sources: Eiendom Norge, Finn.no and Eiendomsverdi

Chart 3.9 House prices. Selected cities. Twelve-month growth. January 2004 – February 2015



Sources: Eiendom Norge, Finn.no and Eiendomsverdi

Chart 3.10 Credit from selected funding sources to Norwegian non-financial enterprises. Twelve-month growth.<sup>1)</sup> Percent. January 2003 – January 2015



1) Change in stock of debt.  
2) Growth based on transactions. To end-December 2014.  
Sources: Statistics Norway and Norges Bank

shown a small increase. Some of the increase may reflect the krone depreciation.

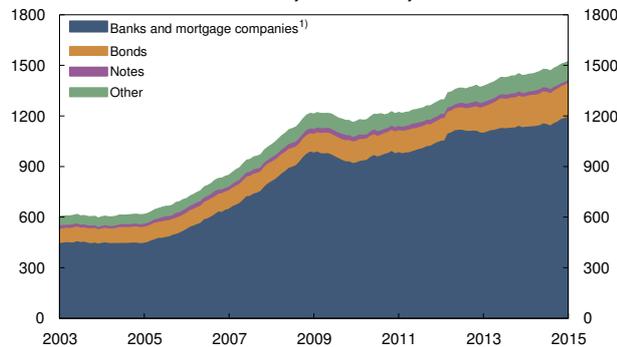
Bond and note debt account for close to 14% of domestic credit to Norwegian non-financial enterprises (see Chart 3.11). In the first half of 2014, issuance activity in the Norwegian bond market was elevated, particularly among high-yield enterprises (see Chart 3.12). In the second half of the year, the decrease in oil prices contributed to a sharp rise in risk premiums on oil-related high-yield bonds in both international and domestic markets. The volume of bond issues from high-yield Norwegian enterprises, and particularly oil-related enterprises, fell considerably through the second half of the year. Low-yield

enterprises still have ample access to bond market financing, and risk premiums have remained low and fairly stable over the past six months.

The banks in Norges Bank's lending survey reported unchanged corporate credit demand in 2014 Q4 compared with the previous quarter (see Chart 3.13). Bank credit standards were also assessed to be unchanged. For 2015 Q1, the banks expected slightly tighter credit standards for enterprises and somewhat lower credit demand.

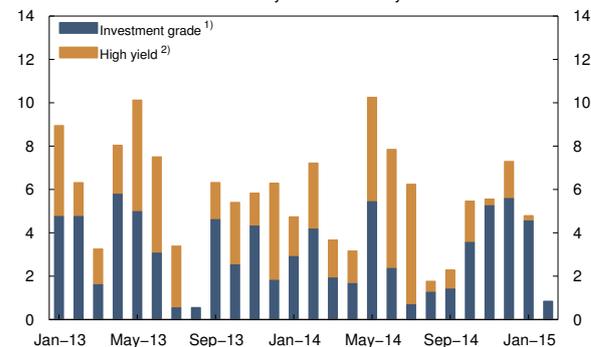
The enterprises in Norges Bank's regional network expect weak investment growth in the period ahead. Prospects are particularly weak for oil-related sectors.

Chart 3.11 Domestic credit to Norwegian non-financial enterprises (C2). Stocks of debt. In billions of NOK. January 2003 – January 2015



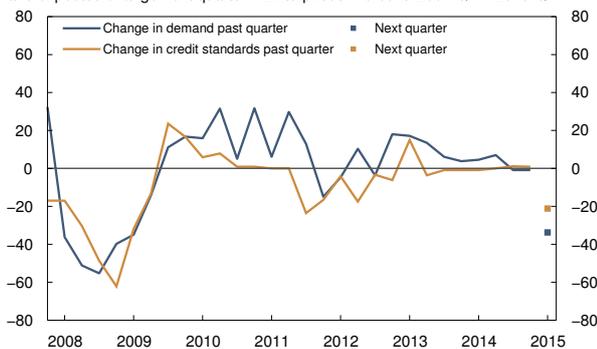
1) In Statistics Norway's statistics, Export Credit Norway is classified under "other sources" and Eksportfinans under "mortgage companies". The classification has been changed in the chart to include both Eksportfinans and Export Credit Norway as mortgage companies.  
Sources: Statistics Norway and Norges Bank

Chart 3.12 Volume of bond issues from Norwegian registered non-financial enterprises in the Norwegian bond market. In billions of NOK. Per month. January 2013 – February 2015



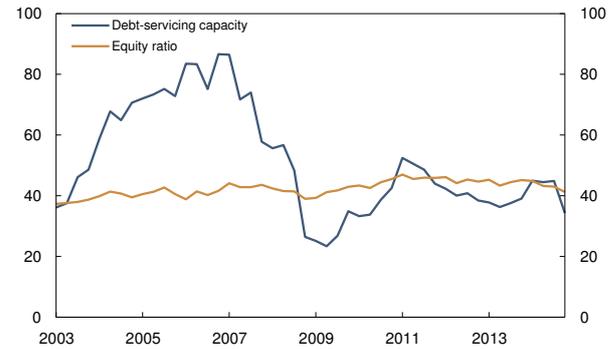
1) Enterprises with credit rating equal to or higher than BBB-.  
2) Enterprises with credit rating lower than BBB-.  
Source: Stamdata

Chart 3.13 Changes in credit demand and banks' credit standards past quarter, and expected change next quarter. 1) Enterprises. Percent. 2007 Q4 – 2015 Q1



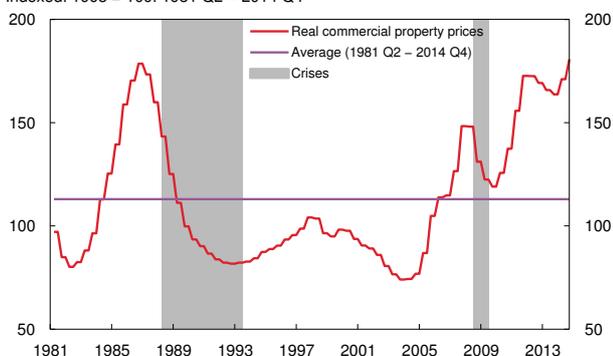
1) Negative figures denote lower demand or tighter credit standards.  
Source: Norges Bank

Chart 3.14 Debt-servicing capacity<sup>1)</sup> and equity ratio<sup>2)</sup> for listed companies. Percent. 2003 Q1 – 2014 Q4



1) Pre-tax profit plus depreciation and amortisation for the previous four quarters as a percentage of interest-bearing debt for non-financial companies included in the OBX Index (excluding Statoil).  
2) Equity as a percentage of assets for Norwegian registered non-financial companies on Oslo Børs (excluding Statoil).  
Sources: Bloomberg, Statistics Norway and Norges Bank

Chart 3.15 Real commercial property prices.<sup>1)</sup>  
Indexed. 1998 = 100. 1981 Q2 – 2014 Q4

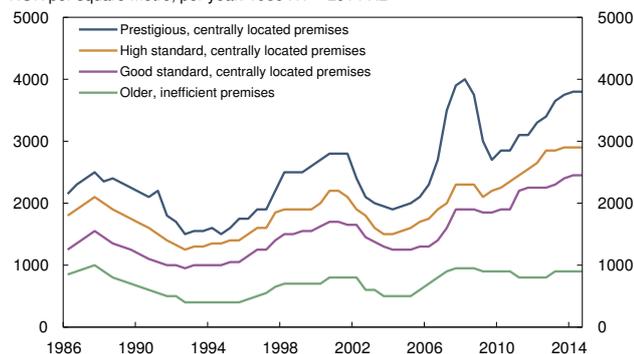


<sup>1)</sup> Estimated market prices for centrally located high-standard office premises in Oslo deflated by the GDP deflator for mainland Norway.  
Sources: Dagens Næringsliv, OPAK, Statistics Norway and Norges Bank

Low investment growth may contribute to continued moderate debt growth in the corporate sector ahead.

Enterprises' ability to withstand economic shocks partly depends on their debt-servicing capacity and proportion of equity financing. The debt-servicing capacity of listed companies is lower than pre-crisis (see Chart 3.14). In 2014 Q4, debt-servicing capacity for these companies declined. The depreciation of the krone may have contributed to the rise in NOK-denominated debt. In recent years, equity ratios have been fairly stable, but have fallen somewhat in recent quarters.

Chart 3.16 Rental prices for office premises in Oslo.  
NOK per square metre, per year. 1986 H1 – 2014 H2

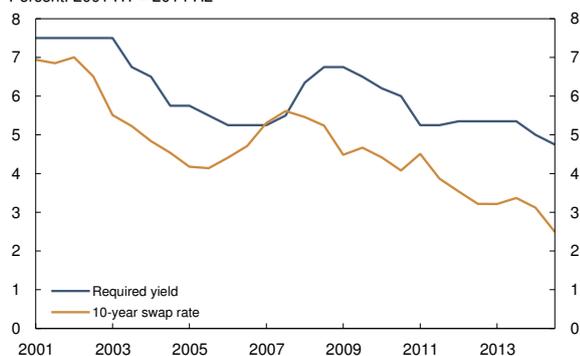


Sources: OPAK and Dagens Næringsliv

Norwegian banks' largest corporate credit exposure is to the commercial property market, which has been the main contributor to growth in bank lending to enterprises. Growth in lending to this sector has edged up in recent months.

Commercial property values are dependent on net rental income and investors' required rate of return. The commercial property price indicator is based on OPAK's estimated market prices for centrally located high-standard office premises in Oslo (see Chart 3.15). The estimated market price for such office premises rose considerably through 2014. Rental prices in Oslo have been stable over the past year (see Chart 3.16). The estimated required yield has also fallen (see Chart 3.17), probably reflecting the fall in long-term market rates.

Chart 3.17 Required yield<sup>1)</sup> for prime office space in Oslo and 10-year swap rate<sup>2)</sup>.  
Percent. 2001 H1 – 2014 H2



<sup>1)</sup> The required yield is based on assessments by Dagens Næringsliv's expert panel for commercial property.  
<sup>2)</sup> Semi-annual swap rate is calculated as an average of daily rates.  
Sources: Dagens Næringsliv and Thomson Reuters

The Investment Property Databank (IPD) estimates commercial property values on the basis of valuations in property companies' financial statements. According to the IPD, the value of office property in all areas of Oslo increased in 2014, while developments were more mixed in other regions (see Chart 3.18).

There are signs that office vacancy rates in the Oslo area have edged up recently. Vacancy rates may increase further in areas with a large share of oil-related business activity. An increase in the supply of new office premises may also, in isolation, contribute to slightly higher vacancy rates in 2015.

Banks' share of wholesale funding has previously risen in periods when growth in bank lending is particularly

strong. The share of wholesale funding rose markedly prior to the financial crisis and has remained at a stable, high level partly owing to high deposit growth combined with moderate lending growth (see Chart 3.19). Bond debt, primarily in the form of covered bonds, has accounted for an increasing share of wholesale funding (see Chart 3.20). Risk premiums on banks' long-term wholesale funding have declined in recent years (see Chart 3.21). Norges Bank's liquidity survey indicates that banks have ample access to wholesale funding.

The four indicators of developments in credit and property prices are at historically high levels (see Charts 3.1, 3.7, 3.15 and 3.19). They are also higher than several of the estimated long-term trends (see box on page 36). This indicates that financial imbalances have built up.

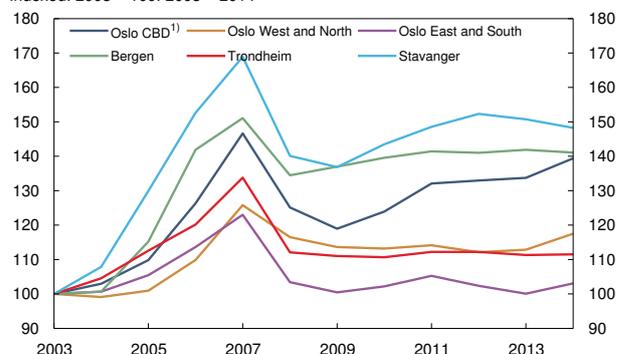
The gap between the credit indicator and the estimated trends has narrowed recently. Developments in overall credit do not, in isolation, suggest that financial imbalances have increased. On the other hand, the property price indicators have risen, also measured as deviations from trends. Property prices and credit can be mutually reinforcing. The rise in house and commercial property prices may be a sign that financial imbalances are building up further.

## THE BANKING SECTOR

The largest Norwegian banks<sup>1</sup> posted slightly lower earnings in Q4 than in Q3, partly as a result of lower net gains from financial instruments and slightly higher loan losses. The return on equity was 13.7% in 2014, which is slightly higher than the average for the past 20 years.<sup>2</sup>

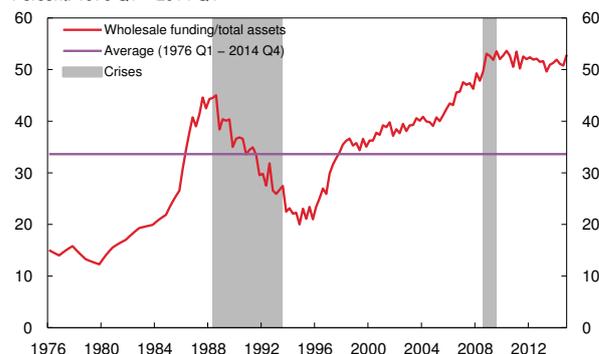
Banks have strengthened their capital ratios over the past year. The average Common Equity Tier 1 (CET1) ratio for the largest Norwegian banks was 12.4% at end-2014, assuming that dividend payments are in line with proposals. This is an increase of 0.8 percentage point compared with 2013. The depreciation of

Chart 3.18 Office property values. Selected regions. Indexed. 2003 = 100. 2003 – 2014



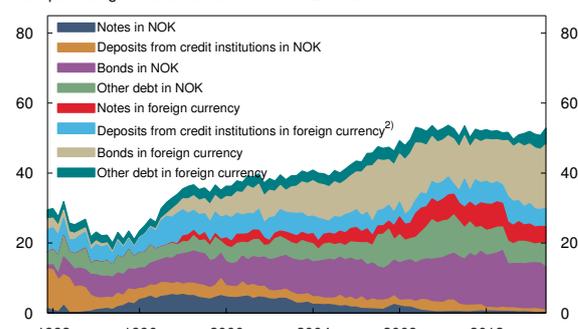
1) CBD stands for "Central Business District".  
Source: Investment Property Databank

Chart 3.19 Banks<sup>1)</sup> wholesale funding as a share of total assets. Percent. 1976 Q1 – 2014 Q4



1) All banks and covered bond mortgage companies in Norway excluding branches and subsidiaries of foreign banks.  
Source: Norges Bank

Chart 3.20 Decomposition of banks<sup>1)</sup> wholesale funding share. As a percentage of total assets. 1991 Q4 – 2014 Q4

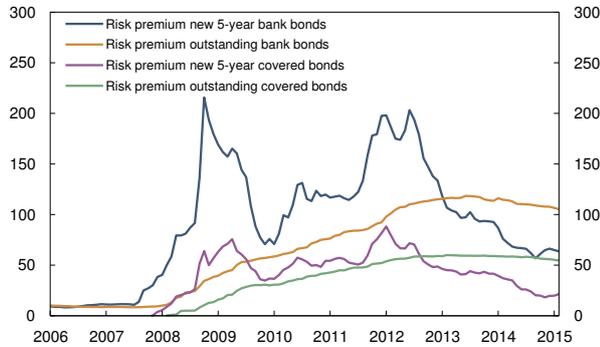


1) All banks and covered bond mortgage companies in Norway excluding branches and subsidiaries of foreign banks.  
2) Deposits from credit institutions include deposits from central banks.  
Source: Norges Bank

1 The seven largest Norwegian banking groups: DNB Bank, Nordea Bank Norge, SpareBank 1 SR-Bank, Sparebanken Vest, SpareBank 1 SMN, Sparebanken Sør and SpareBank 1 Nord-Norge.

2 See "Norwegian banks' adjustment to stricter capital and liquidity regulation", Staff Memo 18/2014, Norges Bank.

Chart 3.21 Average risk premiums<sup>1)</sup> on new and outstanding bond debt for Norwegian banks. Basis points. January 2006 – February 2015



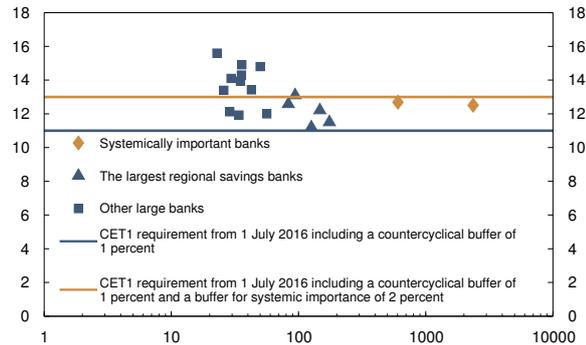
1) Difference against 3-month NIBOR.  
Sources: Bloomberg, Stamdata, DNB Markets and Norges Bank

the krone pushed down the CET1 ratio to some extent in Q4 as a result of an increase in risk-weighted assets.

As from 1 July 2014, the required CET1 ratio for Norwegian financial institutions is 10%. Under the measures already adopted by the Norwegian authorities, banks must hold a countercyclical capital buffer of 1% as from 1 July 2015. The systemically important banks must hold an additional 1% in CET1 capital as from 1 July 2015 and a further 1% as from 1 July 2016. Most of the elements in the new capital adequacy framework are now in place (see box on page 35).

At the end of 2014 Q4, all large Norwegian banking groups satisfied the required CET1 ratio by an ample margin (see Chart 3.22). The systemically important banks must continue to build capital to meet the higher requirements that will apply from summer 2016.

Chart 3.22 Banking groups<sup>1)</sup> Common Equity Tier 1 (CET1) capital ratios. Percent. Total assets.<sup>2)</sup> In billions of NOK. At 31 December 2014<sup>3)</sup>



1) Banking groups with total assets in excess of NOK 20bn, excluding branches of foreign banks in Norway.  
2) Logarithmic scale.  
3) Based on the banks' proposed dividends.  
Sources: Banking groups' quarterly reports and Norges Bank

## CHANGES TO NORWEGIAN CAPITAL ADEQUACY REGULATIONS

EU capital adequacy legislation (CRD IV/CRR) entered into force on 1 January 2014. The legislation will eventually apply in Norway through the EEA Agreement. The capital and buffer requirements in the legislation entered into force in Norway on 1 July 2013 (see the timetable for the phasing-in of the requirements in Chart 3.23). A number of clarifications have subsequently been issued regarding the capital adequacy regulations Norwegian banks are facing.

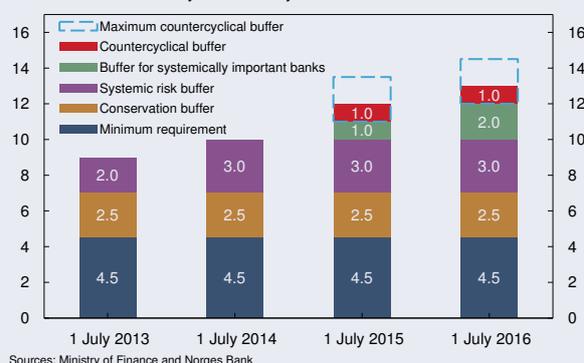
On 12 May 2014, the Ministry of Finance designated DNB ASA, Nordea Bank Norge ASA and Kommunalbanken AS<sup>1</sup> as systemically important. Systemically important financial institutions will be subject to an additional requirement, whereby the required Common Equity Tier 1 (CET1) ratio will be raised by 1 percentage point as from 1 July 2015 and 2 percentage points as from 1 July 2016. Finanstilsynet (Financial Supervisory Authority of Norway) will by the end of the first quarter each year provide advice to the Ministry of Finance as to which banks should be designated as systemically important. Financial institutions with total assets of at least 10% of mainland GDP and/or at least a 5% market share of the lending market in Norway are, as a main rule, to be designated as systemically important.<sup>2</sup>

New rules were introduced in 2014 for calculating residential mortgage risk weights. Banks using the Internal Ratings Based (IRB) approach were required as from 1 January 2014 to use a minimum loss-given-default (LGD) rate of 20%. This resulted in an increase in residential mortgage risk weights for all Norwegian IRB banks. On 1 July 2014, Finanstilsynet announced new requirements for calculating probability-of-default (PD) for residential mortgages.<sup>3</sup> These changes must be reflected in banks' reported capital ratios for 2015 Q1. According to Finanstilsynet, the risk weights on residential mortgage portfolios will increase to 20%–25% as a result of the changes in IRB models. Risk weights were 10%–15% at the end of 2013. The impact on banks' capital ratios will depend on the extent to which they are bound by the transitional rule.<sup>4</sup> For IRB banks that are still bound by the rule, the increase in residential mortgage weights will not entail a change in capital ratios. For banks that are not bound by the transitional rule, the increase in residential mortgage weights will result in higher risk-weighted assets and hence lower capital ratios.

On 22 August 2014, the Ministry of Finance issued interim regulations for the implementation of several of the remaining provisions of the EU capital adequacy legislation pending their incorporation into the EEA Agreement. At the same time, the Ministry of Finance decided that the SME discount, whereby banks are not required to hold a capital conservation buffer for loans to small and medium-sized enterprises, will not be included in Norwegian regulations. It was also decided that the systemic risk buffer requirement will apply to both the domestic and foreign exposures of Norwegian systemically important banks. The regulations will be reassessed before being incorporated into the EEA Agreement.

The Basel Committee has issued consultative documents concerning revisions to the standardised approach for credit risk, and changes in capital floors based on revised standardised approaches for credit, market and operational risk. The deadline for both consultations is 27 March 2015.

Chart 3.23 Common Equity Tier 1 capital requirements in the new regulatory framework. Percent. 1 July 2013 – 1 July 2016



1 Kommunalbanken AS is a wholly state-owned limited company that provides loans to the municipal sector in Norway.

2 See *Forskrift om identifisering av systemviktige finansinstitusjoner* [Regulation on the designation of systemically important financial institutions], Ministry of Finance 2014 (Norwegian only).

3 See *Krav til IRB-modeller for boliglån* [Requirements for IRB models for residential mortgages], Finanstilsynet 2014 (Norwegian only).

4 Under the transitional rule, the sum of risk-weighted assets for IRB banks must be at least 80% of the level that would have applied under Basel I. Under CRD IV, the transitional rule will continue to apply until 2017.

# MEASURING FINANCIAL IMBALANCES AND BUFFER GUIDE<sup>1</sup>

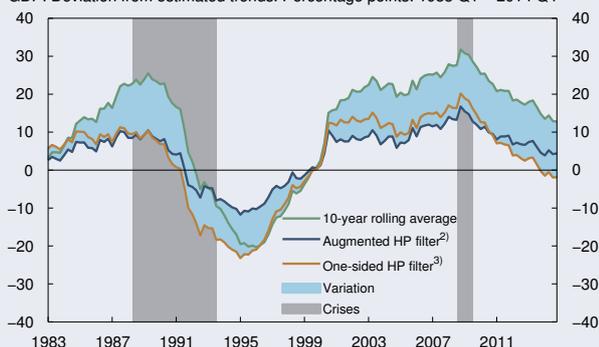
Norges Bank analyses developments in four key indicators and compares the current situation with long-term trends. There is considerable uncertainty related to trend calculations and hence to measures of financial imbalances. Given this uncertainty, different methods of calculating trends have been considered.

Norges Bank has so far used three methods to calculate trends<sup>2</sup>: a one-sided Hodrick-Prescott (HP) filter as applied by the Basel Committee on Banking Supervision, a one-sided HP filter estimated on data augmented with a simple projection, and historical averages. For house prices relative to disposable income and real commercial property prices, the average is calculated recursively throughout the

1 See also "Criteria for an appropriate countercyclical capital buffer", *Norges Bank Papers* 1/2013.

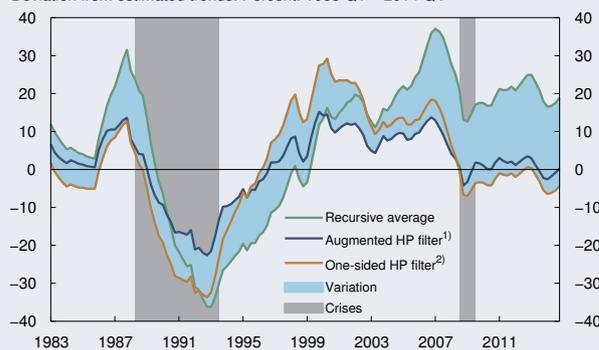
2 For further details, see box on measuring financial imbalances on page 30 in *Monetary Policy Report* 2/13.

Chart 3.24a Credit gap. Total credit<sup>1)</sup> mainland Norway as a share of mainland GDP. Deviation from estimated trends. Percentage points. 1983 Q1 – 2014 Q4



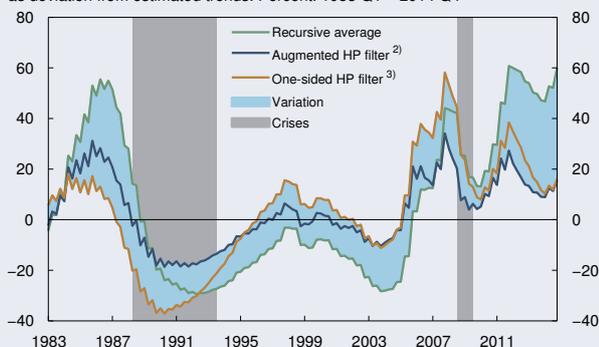
1) The sum of C2 households and C3 non-financial enterprises in mainland Norway (all non-financial enterprises pre-1995). C3 comprises C2 and foreign debt.  
2) One-sided Hodrick-Prescott filter estimated on data augmented with a simple projection. Lambda = 400 000.  
3) One-sided Hodrick-Prescott filter. Lambda = 400 000.  
Sources: Statistics Norway, IMF and Norges Bank

Chart 3.24b House price gap. House prices relative to disposable income. Deviation from estimated trends. Percent. 1983 Q1 – 2014 Q4



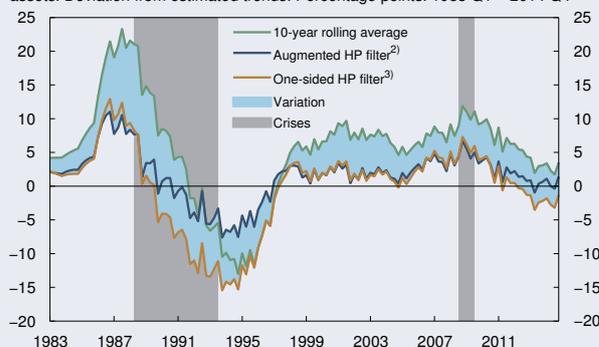
1) One-sided Hodrick-Prescott filter estimated on data augmented with a simple projection. Lambda = 400 000.  
2) One-sided Hodrick-Prescott filter. Lambda = 400 000.  
Sources: Statistics Norway, Eiendom Norge, Norwegian Association of Real Estate Agents (NEF), Finn.no, Eiendomsverdi and Norges Bank

Chart 3.24c Commercial property price gap. Real commercial property prices<sup>1)</sup> as deviation from estimated trends. Percent. 1983 Q1 – 2014 Q4



1) Estimated market prices for office premises in Oslo deflated by the GDP deflator for mainland Norway.  
2) One-sided Hodrick-Prescott filter estimated on data augmented with a simple projection. Lambda = 400 000.  
3) One-sided Hodrick-Prescott filter. Lambda = 400 000.  
Sources: Dagens Næringsliv, OPAK, Statistics Norway and Norges Bank

Chart 3.24d Wholesale funding gap. Banks<sup>1)</sup> wholesale funding as a share of total assets. Deviation from estimated trends. Percentage points. 1983 Q1 – 2014 Q4



1) All banks and covered bond mortgage companies in Norway excluding branches and subsidiaries of foreign banks.  
2) One-sided Hodrick-Prescott filter estimated on data augmented with a simple projection. Lambda = 400 000.  
3) One-sided Hodrick-Prescott filter. Lambda = 400 000.  
Source: Norges Bank

period. For credit relative to GDP and banks' share of wholesale funding, a 10-year rolling average is used.

Chart 3.24 a shows the credit indicator as deviation from the estimated trends. The gaps between indicator and trends have narrowed in recent years, but the indicator is still higher than two out of three trends. While the credit indicator was fairly stable in the years following the financial crisis, the trend calculated using the one-sided HP filter has continued to rise rapidly. If the rate of growth prevailing prior to the financial crisis is not sustainable, this method may underestimate financial imbalances. Experience shows that the credit gap is a better leading indicator of crises when the trend is based on an augmented HP filter. Charts 3.24 b–d show developments in the other key indicators as deviations from calculated trends. The house price gap and commercial property price gap have widened recently.

Norges Bank has developed early warning models for financial crises based on the indicators for developments in credit and property prices.<sup>3</sup> The blue area in

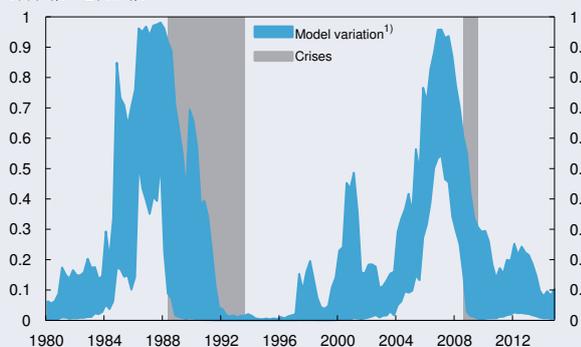
Chart 3.25 shows estimated crisis probabilities based on a large number of combinations of explanatory variables and trend estimation methods. The chart shows that estimated crisis probabilities have declined since the financial crisis, but that there is some spread between the predictions from the different models.

The Basel Committee has proposed a simple rule for calculating a reference rate for the countercyclical capital buffer based on the credit-to-GDP ratio.<sup>4</sup> Under the rule, the buffer will be activated when the credit gap exceeds 2 percentage points. When the credit gap is between 2 and 10 percentage points, the reference rate for the buffer requirement will vary linearly between 0% and 2.5%. When the credit gap is 10 percentage points or more, the reference rate will be 2.5%. The reference rate for the buffer requirement is 0% in 2014 Q4 when the trend is calculated using a one-sided HP filter. When the trend calculation is based on an augmented HP filter, the reference rate is ¾% (see Chart 3.26).

3 See box on page 40 of the September 2014 *Monetary Policy Report 3/14* and "Bubbles and crises: The role of house prices and credit", *Working Papers 14/2014*, Norges Bank.

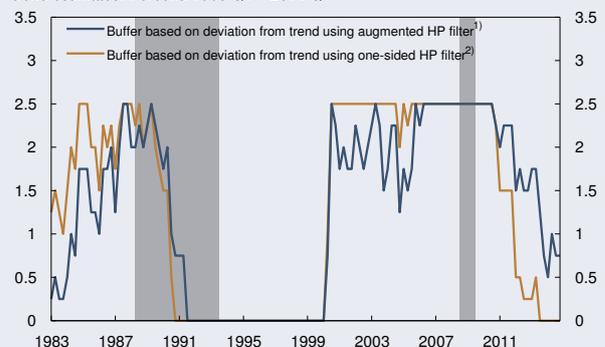
4 See Guidance for national authorities operating the countercyclical capital buffer, Basel Committee on Banking Supervision (2010), Bank for International Settlements.

Chart 3.25 Estimated crisis probabilities from various model specifications. 1980 Q1 – 2014 Q4



1) Model variation is represented by the highest and lowest crisis probability based on different model specifications and trend calculations. Source: Norges Bank

Chart 3.26 Reference rates for the countercyclical capital buffer under alternative trend estimates. Percent. 1983 Q1 – 2014 Q4



1) One-sided Hodrick-Prescott filter estimated on data augmented with a simple projection. Lambda = 400 000. 2) One-sided Hodrick-Prescott filter. Lambda = 400 000. Sources: Statistics Norway, IMF and Norges Bank

# CRITERIA FOR AN APPROPRIATE COUNTERCYCLICAL CAPITAL BUFFER<sup>1</sup>

The countercyclical capital buffer requirement should satisfy the following criteria:

1. ***Banks should become more resilient during an upturn***
2. ***The size of the buffer should be viewed in the light of other requirements applying to banks***
3. ***Stress in the financial system should be alleviated***

The countercyclical capital buffer should be increased when financial imbalances are building up or have built up. This will strengthen the resilience of the banking sector to an impending downturn and strengthen the financial system. Moreover, a countercyclical capital buffer may curb high credit growth and mitigate the risk that financial imbalances trigger or amplify an economic downturn.

Experience from previous financial crises in Norway and other countries shows that both banks and borrowers often take on considerable risk in periods of strong credit growth. In an upturn, credit that rises faster than GDP can signal a build-up of imbalances. Rising house and property prices tend to go hand in hand with increasing debt growth. When banks grow rapidly and fund new loans directly in the financial market, systemic risk may increase.

Norges Bank's advice to increase the countercyclical capital buffer will primarily be based on four key indicators: i) the ratio of total credit (C2 households and C3 mainland non-financial enterprises) to mainland GDP, ii) the ratio of house prices to household disposable income, iii) commercial property prices and iv) the wholesale funding ratio of Norwegian credit institutions.<sup>2</sup> The four indicators have historically risen ahead of periods of financial instability.

As part of the basis for advice on the countercyclical capital buffer, Norges Bank will analyse developments in the key indicators and compare the current situation with historical trends (see box on page 36). Norges Bank's advice will also build on recommendations from the European Systemic Risk Board (ESRB). Under the EU Capital Requirements Directive (CRD IV), national authorities shall calculate a reference rate (a buffer guide) for the countercyclical buffer on a quarterly basis.

There will not be a mechanical relationship between the indicators, the gaps or recommendations from the ESRB<sup>3</sup> and Norges Bank's advice on the countercyclical capital buffer. The advice will be based on the Bank's professional judgement, which will also take other factors into account. Other requirements applying to banks will be a part of the assessment, particularly when new requirements are introduced.

The countercyclical capital buffer is not an instrument for fine-tuning the economy. The buffer rate should not be reduced automatically even if there are signs that financial imbalances are receding. In long periods of low loan losses, rising asset prices and credit growth, banks should normally hold a countercyclical buffer.

The buffer rate can be reduced in the event of an economic downturn and large bank losses. If the buffer functions as intended, banks will tighten lending to a lesser extent in a downturn than would otherwise be the case. This may mitigate the procyclical effects of tighter bank lending. The buffer rate will not be reduced to alleviate isolated problems in individual banks.

The key indicators are not well suited to signalling when the buffer rate should be reduced. Other information, such as market turbulence and loss prospects for the banking sector, will then be more relevant.

1 See also "Criteria for an appropriate countercyclical capital buffer", *Norges Bank Papers* 1/2013.

2 As experience and insights are gained, the set of indicators can be developed further.

3 ESRB Recommendation on guidance for setting countercyclical buffer rates was published on 30 June 2014.

# BOXES

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International economy – developments in different regions and countries  
The relationship between fluctuations in economic activity and unemployment

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# INTERNATIONAL ECONOMY – DEVELOPMENTS IN DIFFERENT REGIONS AND COUNTRIES

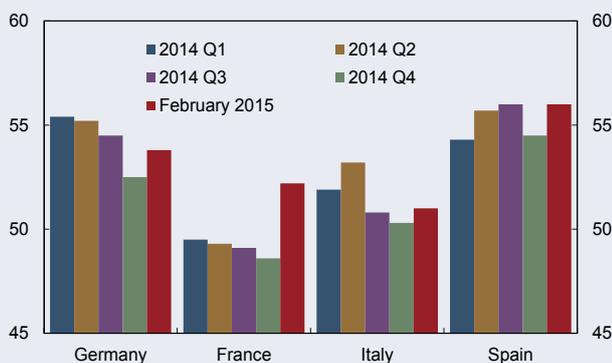
The moderate recovery in the euro area economy is continuing. The growth rate in 2014 Q4 was somewhat higher than envisaged in the December 2014 *Monetary Policy Report*. GDP has increased over seven successive quarters and annual growth was positive in 2014 for the first time since 2011. Several factors are still weighing on growth, such as the uncertainty surrounding the conflict in Ukraine and the extension of the loan programme for Greece. So far, there seems to have been limited direct negative economic consequences of reduced trade with Russia and Ukraine. Higher funding costs for Greece have had only marginal spillover effects on other vulnerable euro area economies.

On the whole, new information since the December *Report* suggests some improvement in the growth outlook. Growth is projected at 1¼% in 2015, which is ¼% higher than projected in the December *Report*. Household consumption is again expected to provide the largest contribution to growth. Consumer confidence is above its historical average, and household purchasing power is expected to continue to rise as a result of improved employment performance and higher real wage growth. A less contractionary fiscal policy will also contribute to supporting euro area demand growth. In addition, the European Central Bank's (ECB) purchases of government bonds will provide additional easing of credit conditions for firms, households and the public sector. Growth in business investment is also expected to pick up. Business

sector sentiment has improved since summer 2014, bank credit standards have eased somewhat and credit demand has increased. At the same time, lower oil prices and a weaker exchange rate have boosted corporate profit margins and strengthened firms' international competitiveness. On the other hand, low capacity utilisation and high leverage ratios will have a dampening impact on growth in business investment. Overall investment growth will also be restrained by continued weak growth in housing investment. Net exports are expected to provide a small positive contribution to growth in 2015.

All euro area countries are benefiting from lower oil prices and a weaker euro exchange rate, and growth rates for the four largest economies are expected to rise between 2014 and 2015 (see Chart 1). Unexpected high growth in Germany and Spain towards the end of 2014 was the main factor behind the upswing in the euro area as a whole. The activity level in France and Italy remained broadly unchanged between Q3 and Q4, with growth projected to remain lower in those countries than in the euro area as a whole. Growth in Germany and Spain is projected to continue to be higher. Energy expenditure accounts for a relatively large share of consumer spending in Spain and the prospects for consumption and investment in Spain have improved further since the December *Report*. The German economy appears to be avoiding the weaker path that many observers feared six months ago.

Chart 1 PMI in large euro area countries. Diffusion index centred around 50. 2014 Q1 – 2014 Q4 and February 2015



Source: Thomson Reuters

Chart 2 Retail trade. Three-month moving average. Twelve-month change. Percent. January 2005 – January 2015



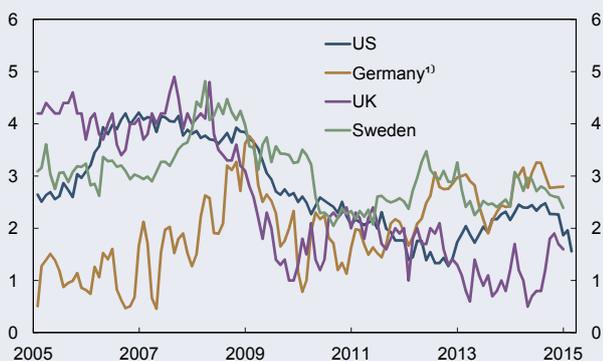
1) Korea, Singapore, Taiwan and Hong Kong. GDP weights.  
Sources: Thomson Reuters and CEIC

Growth in the US moved up to 2.4% in 2014, but the rate of growth slackened somewhat towards the end of the year. Public consumption fell as a result of defence spending cuts and business investment grew at a slower pace. On the other hand, household demand gained momentum, with solid growth in both private consumption and housing investment (see Chart 2). Household consumption will continue to be supported by the fall in oil prices and a further improvement in labour market conditions, with growth in employment and reduced unemployment. Housing starts have increased somewhat and the share of foreclosures is declining, but home sales are fluctuating and housing supply is low. High growth in consumption and favourable funding conditions will also provide impetus to growth in business investment. Investment growth is, however, revised down somewhat from December as a result of lower activity in the oil and gas sector and the strengthening of the US dollar. After falling over four consecutive years, public spending is now expected to grow during the projection period. Monetary policy is expected to be gradually tightened over the next years in line with the signals from the Federal Reserve, although there is considerable uncertainty as to the impact of a tighter stance on financial markets and household behaviour. GDP growth is expected to move up to 3¼% in 2015, before slowing somewhat towards the end of the projection period (see Annex Table 3).

The UK economy expanded by 2.6% in 2014, which is the highest growth rate recorded since the financial crisis. Growth slowed somewhat in 2014 Q4. Private consumption and investment have moved on a favourable path, but weak euro area growth and a strong exchange rate resulted in the slowest growth in exports in five years. Activity has been highest in the service sector, which is also reflected in positive employment performance. Wage growth remains low, but there are signs of rising growth in wages (see Chart 3). In the coming years, GDP growth is expected to remain at approximately the same level as in 2014. High employment, an expansionary monetary stance and falling energy prices are providing a boost to household purchasing power. Business investment is being supported by high growth in private consumption and favourable funding conditions. On the other hand, further fiscal retrenchment in 2015 and continued moderate growth in the euro area will have a dampening impact on activity.

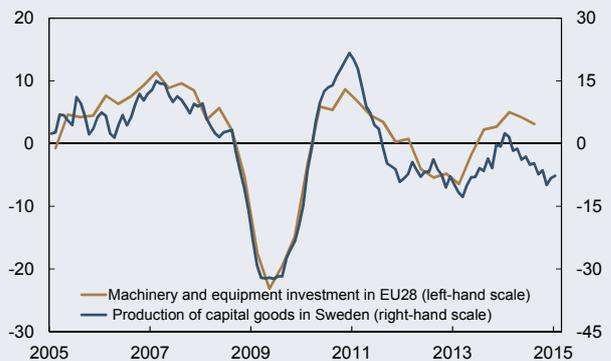
GDP growth in Sweden was somewhat higher than expected in Q4. The rate of growth moved up from 1.3% in 2013 to 2.2% in 2014 and is expected to rise further in 2015. Despite improved growth performance, the central bank lowered its policy rate to below zero and announced purchases of government bonds with a view to pushing up inflation and inflation expectations. The growth outlook remains broadly unchanged since the December *Report*, with annual

Chart 3 Wage growth. Twelve-month change. Percent. January 2005 – February 2015



1) Three-month moving average. Source: Thomson Reuters

Chart 4 Production of capital goods in Sweden. Twelve-month change. Three-month average. Machinery and equipment investment in the EU. Four-quarter change. Percent. January 2005 – January 2015



Source: Thomson Reuters

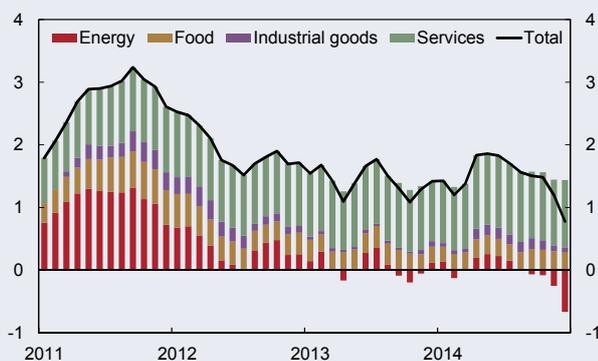
growth projected at around 3% in the coming years. In 2014, private consumption and housing investment accounted for the largest share of growth in Sweden, supported by an expansionary fiscal and monetary policy. On the other hand, persistently low growth among Sweden's main trading partners is weighing on exports. Investment goods account for a large share of Swedish exports and several years of sluggish investment growth among trading partners has led to a fall in industrial production in Sweden (see Chart 4). Moreover, the Swedish export industry has lost market share. Export growth is expected to pick up in the coming years, in pace with rising GDP growth among trading partners, leading to an upswing in business investment in Sweden. Net exports are nevertheless expected to make a small negative contribution to growth in both 2015 and 2016. The main contribution to growth will continue to come from household demand, fuelled by the fall in oil prices, low interest rates, rising wages and employment growth. Growth in housing investment is likely to be somewhat lower than in 2014, but will continue to be underpinned by a combination of low interest rates, population growth and a shortage of housing supply.

The fall in oil prices has had a greater impact on consumer price inflation than anticipated in the December Report (see Chart 5). The projections for annual consumer price inflation in 2015 have been revised

down substantially, and inflation is now projected at close to zero in the US, the euro area, the UK and Sweden (see Annex Table 4). Euro area core inflation has varied between ½% and 1% over the past year. Core inflation is also low, but rising, in Sweden. US and UK core inflation is close to the historical average. As from the beginning of 2016, energy prices are expected to push up annual consumer price inflation. In the US, the appreciation of the US dollar will weigh on inflation ahead, while a weaker exchange rate will in isolation result in higher prices for imported goods and services in the euro area and Sweden. Consumer price inflation for Norway's trading partners as a whole is expected to move up from 1% in 2015 to 2¼% towards the end of the projection period.

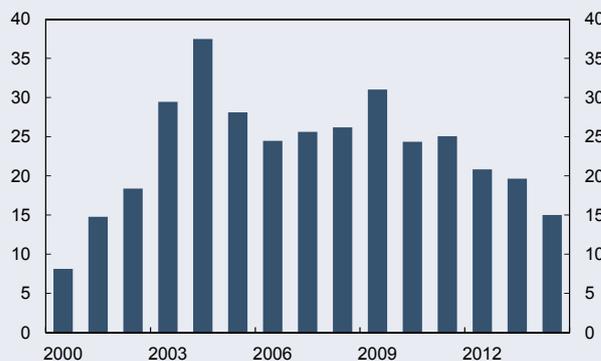
In China, growth was 7.4% in 2014, the lowest rate recorded since 1990. Lower growth in investment, particularly in the property sector, was the main factor pulling down growth (see Chart 6). The correction in the housing market has continued into 2015. A further fall in housing starts will have spillover effects on sectors such as steel and cement production, where surplus capacity is already high. Consumption growth is expected to fall slightly in 2015 as a result of falling house prices and the government's anticorruption campaign. Lower oil prices will, however, improve the purchasing power of consumers and make a positive contribution to consumption growth. Growth is expected to remain around 7% in 2015, supported by

Chart 5 Contributions to twelve-month change in consumer prices in 18 advanced countries. Percentage points. January 2011 – December 2014



Sources: Thomson Reuters and Norges Bank

Chart 6 China. Investment. Annual growth, value. Percent. 2000 – 2014



Source: CEIC

lower oil prices, increased exports, monetary policy easing and stronger growth in infrastructure investment. Further ahead, growth is expected to slow gradually towards 6¼% in 2018, reflecting a further decline in investment growth and lower growth in the urban labour force.

The projections for emerging economies excluding China have been revised down, primarily reflecting a worsening of growth prospects for large commodity exporters such as Russia and Brazil (see Chart 7). Russia is feeling the adverse effects of falling oil prices, US and EU sanctions and the country's import restrictions on food products. Inflation is rising rapidly as a result of a currency depreciation of around 40% since June. This has led to falling real wages and weaker household purchasing power. Consumption is expected to fall in 2015. Private investment is also likely to fall owing to lower oil prices, higher interest rates, heightened uncertainty and sanctions. Russian firms are largely barred from European and US credit markets. The longer-term growth outlook has also weakened. Lower oil prices and export sanctions on advanced oil extraction technology and products are likely to lead to a decline in Russian oil production towards the end of the decade. Growth in the Brazilian economy declined to close to zero in 2014. Short-term statistics from recent months indicate a fall in activity into 2015. Sentiment indicators show growing consumer and business pessimism. The terms of trade

have weakened since 2011 as a result of lower commodity prices, and expansionary monetary and fiscal measures have sought to support growth. Low productivity and high wage growth have led to weaker competitiveness and higher inflation, which have resulted in several interest rate hikes over the past two years. In addition, a prolonged drought has had negative spillover effects on the agricultural industry and the export sector is feeling the negative effects of lower demand in China.

Although the growth outlook for oil-importing emerging economies has improved somewhat, weak import growth in China is adversely affecting several Asian countries (see Chart 8). The oil price decline is expected to improve the purchasing power of consumers. However, some countries such as India and Indonesia have used the opportunity to reduce costly fuel subsidies. Increased fiscal space and the implementation of structural reforms are expected to fuel investment growth and GDP growth is expected to pick up over the coming years. In advanced Asian economies such as Singapore and Korea, growth in domestic demand is slowing following several years of rapid credit growth. GDP growth is expected to remain broadly unchanged ahead in spite of terms-of-trade gains owing to the oil price decline. Falling house prices or capital outflows as a result of a tightening of US monetary policy may lead to unrest in financial markets and further worsen the growth outlook.

Chart 7 Emerging economies. GDP. Four-quarter change. Percent. 2005 Q1 – 2014 Q4



Source: Thomson Reuters

Chart 8 China. Imports. Volume. Twelve-month change. Three-month moving average. Percent. March 2012 – February 2015



Source: CEIC

# THE RELATIONSHIP BETWEEN FLUCTUATIONS IN ECONOMIC ACTIVITY AND UNEMPLOYMENT

The relationship between fluctuations in economic activity and unemployment depends on the flexibility of the labour supply and on how firms adjust employment to changes in output. Historically, fluctuations in unemployment in Norway have been relatively small compared with variations in output and employment (see Chart 1). This box examines more closely the relationship between these variables, with the main emphasis on labour supply and immigration.

One way to illustrate the relationship between fluctuations in unemployment and economic activity is to estimate Okun's law<sup>1</sup>, which states the relationship between GDP and unemployment directly. A version of Okun's law is shown in equation (1)<sup>2</sup>:

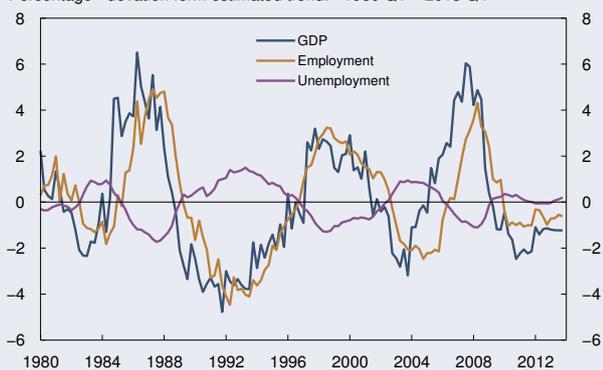
$$(1) U_t - U_t^* = \beta(Y_{t-2} - Y_{t-2}^*) + \varepsilon_t$$

- 1 Arthur Okun documented this relationship for the US in 1962.
- 2 GDP with a time lag of two quarters has been used because this results in the best correlation between GDP and unemployment. Various assumptions concerning time lag have been tested without essentially changing the results.

where  $U$  and  $Y$  are registered unemployment rate and mainland GDP<sup>3</sup>, respectively, and where  $*$  indicates trend values.<sup>4</sup> The parameter  $\beta$ , which is often called the Okun coefficient, is a measure of the magnitude of the increase in unemployment associated with a given decline in GDP. The coefficient is expected to be negative and will, in isolation, be lower the more flexible the supply of labour is. Estimates of the Okun coefficient based on Norwegian unemployment and GDP data since 1980 indicate that a decline in GDP relative to trend of 1% results in an increase in unemployment relative to trend of approximately ¼ percentage point (see Table 1). Compared with other countries, such as e.g. Sweden and the US, the increase in unemployment is relatively small.<sup>5</sup> In addition to the degree of flexibility in the labour supply,

- 3 In the estimations, the logarithm of mainland GDP per capita for the age group 16–74 is used.
- 4  $\varepsilon_t$  is a residual term.
- 5 In estimates from the IMF, the Okun coefficient  $\beta$  is nearly twice as high for Sweden and the US as for Norway. Ball, Leigh og Loungani (2012), *Okun's Law: Fit at 50?*, IMF.

Chart 1 GDP mainland Norway<sup>1)</sup>, employment and registered unemployment rate. Percentage<sup>2)</sup> deviation from estimated trend.<sup>3)</sup> 1980 Q1 – 2013 Q4



- 1) GDP and employment per capita for the age group 16 – 74
  - 2) For the unemployment rate, percentage point deviation from estimated trend
  - 3) Trend is estimated using a two-sided Hodrick–Prescott filter (lambda = 40 000)
- Sources: Statistics Norway, Norwegian Labour and Welfare Administration and Norges Bank

Chart 2 GDP mainland Norway<sup>1)</sup> and labour participation rate.<sup>2)</sup> Percentage deviation from estimated trend.<sup>3)</sup> 1988 Q2 – 2013 Q4



- 1) GDP per capita for the age group 16 – 74.
  - 2) Seasonally adjusted labour force (Labour Force Survey) as a percentage of the population aged 15–74.
  - 3) Trend estimated using a two-sided Hodrick–Prescott filter (lambda = 40 000).
- Sources: Statistics Norway and Norges Bank

the Okun coefficient will be affected by how firms adjust employment over the business cycle. If the costs associated with reducing or increasing the workforce are perceived as high, firms may choose to retain labour through the business cycle and, if necessary, vary the hours per worker. This will, in isolation, result in a lower Okun coefficient. In Norway, however, it appears that an elastic labour supply is the primary contributor to a low Okun coefficient.

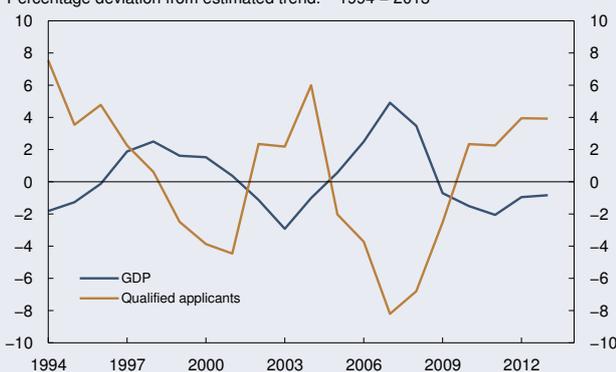
In Norway, the demand for labour has historically had a considerable impact on changes in the labour supply. Chart 2 indicates a clear correlation between mainland GDP and labour force participation, both measured as deviations from an estimated trend. An important reason for the flexibility of the labour supply has been that younger age cohorts have chosen to pursue education rather than seek work in periods of low demand for labour, and that the number of university and college places has increased during downturns. The number of university and

college applicants has declined markedly in periods of high GDP levels (see Chart 3). Transitions to more permanent welfare schemes and labour market programmes have also contributed to the elasticity of the labour supply in Norway.

With EU enlargement in 2004, Norway became part of a considerably larger labour market, leading to an increase in labour immigration to Norway and possibly to an even more cyclically sensitive labour supply than before. Net migration increased during the upturn in 2006 and 2007 (see Chart 4). In the wake of the financial crisis, immigration declined, while picking up again as the economic situation in Norway improved. Over the past few years, growth in the Norwegian economy has slowed, and the inflow from abroad has declined somewhat.<sup>6</sup> At the end of 2013, as many as 90 000

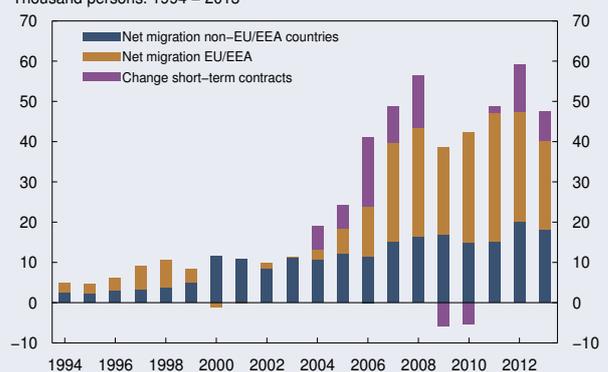
6 For empirical investigations of how cyclically dependent immigration is, see e.g. Grangård and Nordbø (2012), *Høy innvandring til Norge: Hvem kommer, og hvorfor kommer de?* [Considerable migration flows into Norway: Who and why?] Norges Bank Staff Memo 25/2012

Chart 3 GDP mainland Norway<sup>1)</sup> and qualified university and college applicants. Percentage deviation from estimated trend.<sup>2)</sup> 1994 – 2013



1) GDP and qualified university and college applicants per capita for the age group 16 – 74.  
2) Trend estimated using a two-sided Hodrick-Prescot filter with  $\lambda = 100$  on annual data.  
Sources: Norwegian Universities and Colleges Admission Service, Statistics Norway and Norges Bank

Chart 4 Net migration by origin and non-resident employees on short-term contracts. Thousand persons. 1994 – 2013<sup>1)</sup>



1) Series for change in non-resident employees on short-term contracts is from 2004 to 2013.  
Sources: Statistics Norway and Norges Bank

non-residents were employed on short-term contracts.<sup>7</sup> Since such persons expect to stay in Norway for less than six months, and hence may be relatively loosely linked to the Norwegian labour market, lower activity in the Norwegian economy may prompt them to return home. Chart 4 shows that there are relatively substantial movements in this group.

Thus, there are signs that labour immigration is also cyclically sensitive. The degree to which labour immigration increases the overall flexibility of the Norwegian labour supply will also depend on how labour immigrants who are already in Norway will react to lower demand for labour. Many labour immigrants are probably less inclined to seek higher education than Norwegians, partly because many work in industries where the gains from additional education are limited.

7 Non-resident employees on short-term contracts are not registered as part of the population or labour force in Statistics Norway's statistics. However, they will be registered as employed in the quarterly national accounts and will acquire entitlements to unemployment benefit from the Norwegian Labour and Welfare Administration (NAV). Hence, fluctuations in the number of persons on short-term contracts may affect unemployment figures without being reflected in the labour force.

During the financial crisis, a relatively substantial increase in unemployment among immigrants was observed.

If the labour supply has become more elastic after 2004, the Okun coefficient will show a decline. The estimates indicate a slightly lower coefficient after 2004 and may, in isolation, suggest a somewhat more flexible supply (see Table 1). However, this is a relatively short time period and the uncertainty in the estimates is considerable.

In this *Report*, a moderate increase in registered unemployment is projected, despite low growth in output and employment. This is in line with historical relationships between fluctuations in output and unemployment. The pronounced increase in net migration since 2004 has made it difficult to foresee the magnitude of the increase in unemployment that will ensue from the expected decline in output and employment growth.

**TABLE 1** Estimated Okun coefficient for Norway

Method of trend estimation	1980 Q1–2013 Q4	1980 Q1–2003 Q4	2004 Q1–2013 Q4
Hodrick-Prescott filter <sup>8</sup> Lambda 40 000	-0.25	-0.29	-0.16
Hodrick-Prescott filter <sup>8</sup> Lambda 1 600	-0.23	-0.24	-0.21
Bandpass-filter <sup>9</sup> 6-32	-0.25	-0.25	-0.23

8 Two-sided Hodrick-Prescott filter. The lambda value indicates the flexibility of the trend estimation. The higher the lambda, the less flexible the trend.

9 Period of oscillation between 6 and 32 quarters. See Christiano og Fitzgerald (1999), The bank pass filter for documentation.

# ANNEX

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Monetary policy meetings  
Tables and detailed projections

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## MONETARY POLICY MEETINGS WITH CHANGES IN THE KEY POLICY RATE

Date	Key policy rate <sup>1</sup>	Change
17 June 2015		
6 May 2015		
<b>18 March 2015</b>	<b>1.25</b>	<b>0</b>
10 December 2014	1.25	-0.25
22 October 2014	1.50	0
17 September 2014	1.50	0
18 June 2014	1.50	0
7 May 2014	1.50	0
26 March 2014	1.50	0
4 December 2013	1.50	0
23 October 2013	1.50	0
18 September 2013	1.50	0
19 June 2013	1.50	0
8 May 2013	1.50	0
13 March 2013	1.50	0
19 December 2012	1.50	0
31 October 2012	1.50	0
29 August 2012	1.50	0
20 June 2012	1.50	0
10 May 2012	1.50	0
14 March 2012	1.50	-0.25
14 December 2011	1.75	-0.50
19 October 2011	2.25	0
21 September 2011	2.25	0
10 August 2011	2.25	0
22 June 2011	2.25	0
12 May 2011	2.25	+0.25
16 March 2011	2.00	0
26 January 2011	2.00	0
15 December 2010	2.00	0
27 October 2010	2.00	0
22 September 2010	2.00	0
11 August 2010	2.00	0
23 June 2010	2.00	0
5 May 2010	2.00	+0.25
24 March 2010	1.75	0
3 February 2010	1.75	0
16 December 2009	1.75	+0.25

<sup>1</sup> 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, Norges 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 consumption	Public consumption	Mainland fixed investment	Petroleum investment <sup>1</sup>	Mainland exports <sup>2</sup>	Imports
2008	0.4	1.7	1.7	2.4	0.9	4.7	4.7	3.2
2009	-1.6	-1.6	0.0	4.1	-10.4	3.3	-7.8	-10.0
2010	0.6	1.8	3.8	2.2	-6.4	-8.9	7.9	8.3
2011	1.0	1.9	2.3	1.0	5.0	11.3	0.4	4.0
2012	2.7	3.8	3.5	1.6	7.4	15.1	1.1	3.1
2013	0.7	2.3	2.1	1.7	2.9	17.1	1.7	4.3
2014	2.2	2.3	2.1	2.5	1.8	0.0	2.8	1.6
2014 <sup>3</sup> Q4	0.5	0.4	1.0	0.2	1.8	-2.2	0.3	-0.3
Q1	1.1	1.2	0.7	0.8	1.2	0.6	3.0	1.0
Q2	0.5	0.1	0.1	0.6	-1.3	-2.5	-0.4	2.8
Q3	0.9	0.5	1.0	0.9	-2.9	-1.3	1.9	-3.7
2014 level. In billions of NOK	3 151	2 530	1 291	688	525	220	535	932

1 Extraction and pipeline transport.

2 Traditional goods, travel, petroleum services and exports of other services from mainland Norway.

3 Seasonally adjusted quarterly data.

Sources: Statistics Norway and Norges Bank

**TABLE 2 CONSUMER PRICES**

Annual change/twelve-month change. Per cent	CPI	CPI-ATE <sup>1</sup>	CPIXE <sup>2</sup>	CPI-AT <sup>3</sup>	CPI-AE <sup>4</sup>	HICP <sup>5</sup>
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	2.5	1.4	1.7	2.4	1.4	2.3
2011	1.2	0.9	1.1	1.1	1.1	1.2
2012	0.8	1.2	1.0	0.6	1.4	0.4
2013	2.1	1.6	1.4	2.1	1.6	2.0
2014	2.0	2.4	2.3	2.1	2.3	1.9
2015 Jan	2.0	2.4	2.4	2.0	2.4	1.9
Feb	1.9	2.4	2.3	1.9	2.3	1.8

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

2 CPIXE: CPI adjusted for tax changes and excluding traditional changes in energy prices. See Norges Bank Staff Memo 7/2008 and 3/2009 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 GDP GROWTH IN OTHER COUNTRIES**

Change from projections in <i>Monetary Policy Report 4/14</i> in brackets	Share of world GDP		Change from previous year. Percent.				
	PPP	Market exchange rates <sup>1</sup>	2014	2015	2016	2017	2018
US	16	22	2.4	3¼ (-¼)	3¼ (-¼)	2¾ (0)	2½
Euro area	12	18	0.9	1¼ (¼)	1½ (0)	1¾ (0)	1¾
UK	2	3	2.6	2¾ (0)	2¾ (0)	2½ (0)	2¼
Sweden	½	¾	2.2	3 (0)	3 (0)	2¾ (0)	2½
China	16	10	7.4	7 (0)	6¾ (0)	6½ (0)	6¼
Emerging economies <sup>2</sup>	19	12	2¾ (½)	2 (-¾)	3¼ (-½)	4 (0)	4
Trading partners <sup>3</sup>	72	78	2 (0)	2¼ (-¼)	2½ (0)	2½ (0)	2½
World (PPP) <sup>4</sup>	100	100	3½ (¼)	3¾ (0)	4 (0)	4 (0)	4
World (market exchange rates) <sup>4</sup>	100	100	2¾ (¼)	3 (-¼)	3½ (0)	3½ (0)	3¼

1 Country's share of global output measured in a common currency (market exchange rate). Average 2010–2012.

2 Emerging economies in the trading partner aggregate excluding China: Brazil, India, Indonesia, Russia, Turkey, Poland and Thailand. GDP weights.

3 Export weights, 25 main trading partners.

4 GDP weights. Norges Bank's estimates for 25 trading partners, other estimates from IMF.

Sources: IMF, Thomson Reuters and Norges Bank

**TABLE 4 PROJECTIONS FOR CONSUMER PRICES IN OTHER COUNTRIES**

Change from projections in <i>Monetary Policy Report 4/14</i> in brackets	Change from previous year. Percent.				
	2014	2015	2016	2017	2018
US	1.6	¼ (-1¼)	1¾ (0)	2 (-¼)	2¼
Euro area	0.4	0 (-½)	1 (-¼)	1¼ (-¼)	1½
UK	1.5	¼ (-1¼)	1¾ (0)	2 (0)	2
Sweden	-0.2	¼ (0)	1¾ (0)	3 (0)	2¾
China	2.0	1¾ (-¾)	2¼ (-½)	2¾ (-¼)	2¾
Emerging economies <sup>1</sup>	7.1	7¼ (1¼)	5½ (0)	5¼ (0)	5
Trading partners <sup>2</sup>	1.3	1 (-½)	1¾ (-¼)	2¼ (-¼)	2¼
Oil price, Brent Blend. USD per barrel <sup>3</sup>	99	59	66	69	72

1 Emerging economies in the trading partner aggregate excluding China: Brazil, India, Indonesia, Russia, Turkey, Poland and Thailand. GDP weights.

2 Import weights, 25 main trading partners.

3 Futures prices (average for the past five trading days). For 2015, the average of spot prices so far this year and futures prices for the rest of the year are used.

Sources: IMF, Thomson Reuters and Norges Bank

**TABLE 5 PROJECTIONS FOR MAIN ECONOMIC AGGREGATES**

	In billions of NOK	Percentage change from previous year (unless otherwise stated)				
		Projections				
	2014	2014	2015	2016	2017	2018
<b>Prices and wages</b>						
CPI		2.0	2¼	2¼	2¼	2
CPI-ATE <sup>1</sup>		2.4	2½	2¼	2¼	2
Annual wages <sup>2</sup>		3.1	3	3¼	3¾	4
<b>Real economy</b>						
GDP	3151	2.2	1¼	1½	2	2
GDP, mainland Norway	2530	2.3	1½	2	2½	2¾
Output gap, mainland Norway (level) <sup>3</sup>		-0.4	-1	-1	-¾	-¼
Employment, persons, QNA		1.2	½	½	1¼	1
Labour force, LFS		1.1	1	¾	1	1
LFS unemployment (rate, level)		3.5	4	4	4	3¾
Registered unemployment (rate, level)		2.8	3	3¼	3	3
<b>Demand</b>						
Mainland demand <sup>4</sup>	2504	2.1	1¾	3¼	3¼	2¾
- Private consumption	1291	2.1	1¾	2½	3	2¾
- Public consumption	688	2.5	2½	2¼	-	-
- Fixed investment, mainland Norway	525	1.8	1	6¼	-	-
Petroleum investment <sup>5</sup>	220	0.0	-15	-10	-5	5
Mainland exports <sup>6</sup>	535	2.8	5	2½	3¾	4¼
Imports	932	1.6	1½	2¾	-	-
<b>Interest rate and exchange rate</b>						
Key policy rate (level) <sup>7</sup>		1.5	1	1	1	1¼
Import-weighted exchange rate (I-44) <sup>8</sup>		93.7	99½	97	95¾	94¾

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

2 Annual wage growth is based on the Technical Reporting Committee on Income Settlements' definitions and calculations.

3 The output gap measures the percentage deviation between mainland GDP and projected potential mainland GDP.

4 Private and public consumption and mainland gross fixed investment.

5 Extraction and pipeline transport.

6 Traditional goods, travel, petroleum, services and exports of other services from mainland Norway.

7 The key policy rate is the interest rate on banks' deposits in Norges Bank.

8 Level. The weights are estimated on the basis of imports from 44 countries, which comprise 97% of total imports.

- Not available

Sources: Statistics Norway. Technical Reporting Committee on Income Settlements (TBU). Norwegian Labour and Welfare Administration (NAV) and Norges Bank

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