



NORGES BANK

3 | 15

SEPTEMBER

# MONETARY POLICY REPORT

WITH FINANCIAL  
STABILITY ASSESSMENT

# Norges Bank

Oslo 2015

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## 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 9 September 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 23 September 2015 a monetary policy strategy for the period. 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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# 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.

## DECISION PROCESS

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.

The *Monetary Policy Report* is published four times a year in connection with four of the monetary policy meetings. On the basis of the analysis and discussion, the Executive Board assesses the consequences for future interest rate developments. The final decision on the key policy rate is made on the day prior to the publication of the *Report*.

## 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 9 September and 23 September 2015, the Executive Board discussed the monetary policy stance. The starting point for the discussion was the analysis published in the June 2015 *Monetary Policy Report*. The Executive Board decided in June to reduce the key policy rate by 0.25 percentage point to 1%. The analysis in the *Report* implied a key policy rate of slightly higher than  $\frac{3}{4}\%$  in the coming year, followed by a gradual rise. With this path for the key policy rate, there were prospects that inflation would remain slightly below 2.5% in the beginning of the projection period and thereafter hover around 2 percent in the coming years. Capacity utilisation was projected to decline in the coming period, but to move up to a more normal level towards the end of the projection period.

Growth in the world economy remains moderate. There are prospects that growth among Norway's trading partners will gain some momentum ahead, but to a lesser extent than assumed earlier. The uncertainty surrounding developments in China and other emerging economies has heightened. Consumer price inflation is very low among most trading partners, but core inflation is higher. The broad decline in commodity prices through summer will contribute to keeping inflation low. Policy rates are still close to zero in many countries. Market expectations indicate that the expected rise in interest rates among trading partners will occur later and more gradually than expected earlier. Foreign long-term interest rates have also declined since June. In addition to keeping policy rates at a low level, a number of central banks are buying bonds with a view to stimulating economic growth and pushing up inflation.

Oil prices have fallen through summer and have recently hovered somewhat below USD 50 per barrel. The oil price decline reflects increased oil inventories and continued excess supply. At the same time, a further slowdown in emerging economies may push down growth in oil demand. Futures prices reflect expectations of some increase in oil prices, but to a lesser extent than implied by futures prices in June.

The krone has depreciated markedly since June and is weaker than projected in the June *Report*. The depreciation must be seen in connection with the oil price decline and a narrowing of the interest rate differential against other countries.

Growth in the Norwegian economy has so far been broadly in line with the projection in the June *Report*. In August, Norges Bank's regional network contacts reported continued weak output growth. The oil price decline through summer may contribute to a longer period of low growth in the Norwegian economy than projected earlier. Oil investment will likely fall to a further extent than projected in June and lower demand for goods and services in the petroleum industry will reduce activity in the oil service industry. This has spillover effects on the wider mainland economy and may contribute to keeping down wage growth in the years ahead. Lower wage growth may push down demand for goods and services, but will also improve the profitability and competitiveness of Norwegian enterprises. A weaker krone also boosts the profitability of export and import-competing firms.

As expected, unemployment has edged up. While registered unemployment has increased in line with the projections in the June *Report*, LFS unemployment has risen

to a further extent. Unemployment has increased in regions closely linked to the oil industry, while it has so far remained stable in other regions. The restructuring in the Norwegian economy brought on by the oil price decline will likely lead to somewhat higher unemployment ahead.

Consumer price inflation adjusted for tax changes and excluding energy products (CPI-ATE) is close to 3%. Prices for both domestically produced goods and services and imported consumer goods have risen at a faster pace than projected in June. The krone has depreciated substantially over a longer period and the exchange rate pass-through appears to be stronger than expected. The krone depreciation since the *June Report* will likely lift inflation further in the coming period.

House price inflation has varied through summer, with wide regional dispersion. Overall house price inflation has been somewhat higher than projected in June. Household debt is still rising somewhat faster than income. Since the reduction in the key policy rate in June, banks have reduced their lending rates slightly more than assumed in the *June Report*.

The Executive Board notes that the analyses in this *Report* show a weaker growth outlook for the Norwegian economy than in the *June Report*. Low wage growth is keeping down cost growth, and inflation is expected to edge down as the effects of the krone depreciation unwind. The analyses imply a reduction in the key policy rate to just above ½% in 2016. Towards the end of the projection period the key policy rate is projected to increase to close to 1%. With this path for the key policy rate, the analyses suggest that inflation will remain close to 3% in the near term, before drifting down to around 2% towards the end of the projection period. The krone exchange rate is projected to appreciate somewhat, but remain weaker throughout the projection period than previously projected. Capacity utilisation in the mainland economy is expected to continue to fall in the period to the end of 2016, followed by some increase partly owing to low interest rates and improved competitiveness.

In its discussion of monetary policy, the Executive Board gave weight to the fact that the oil price decline will curb growth in the Norwegian economy ahead. A weaker krone lifts inflation in the short term. Inflation prospects are lower further out. Combined with the aim of sustaining capacity utilisation, this implies a lower key policy rate. On the other hand, even lower interest rates may fuel property price inflation and debt growth. An overall assessment of the economic outlook and the balance of risks led the Executive Board to conclude that the key policy rate should now be reduced.

At its meeting on 23 September, the Executive Board decided to lower the key policy rate by 0.25 percentage point to 0.75%. The Executive Board's current assessment of the outlook for the Norwegian economy suggests that the key policy rate may be reduced further in the coming year.

Øystein Olsen  
23 September 2015

# 1 ECONOMIC SITUATION

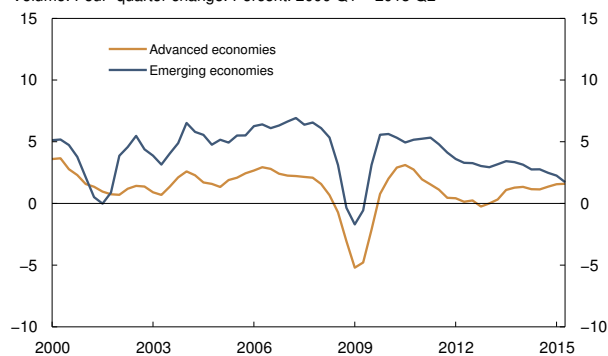
## Slightly weaker growth prospects among trading partners

Growth in the global economy remains moderate. GDP growth among Norway's trading partners has been slightly higher than expected since the June 2015 *Monetary Policy Report*, but growth among emerging economies has slowed (Chart 1.1). GDP among trading partners is projected to grow at 2¼% in 2015 and 2016 (Annex Table 3). The projection for 2016 is revised down in relation to the June *Report*. Deleveraging will continue to dampen growth in several countries, but low oil prices and accommodative monetary policies are expected to push growth up somewhat further ahead. Towards the end of the projection period, annual growth among trading partners is projected at 2½%. The global economy is expected to grow by 2½% in 2015. The projection is ¼ percentage point lower than in the June *Report* and lower than the average for the past 30 years.

Activity in the US picked up in 2015 Q2 after weak growth at the beginning of the year. Continued solid employment growth, higher wage growth and low inflation contribute to boosting household purchasing power and improvements in the housing market are strengthening household finances. Business investment is expected to pick up, while the appreciation of the US dollar will likely restrain export growth ahead.

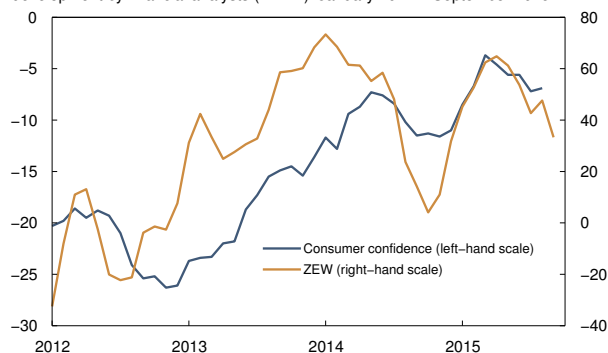
The tentative recovery in the euro area is continuing. GDP growth declined between 2015 Q1 and Q2, but current indicators suggest somewhat higher growth towards the end of the year. In the course of summer, there were growing tensions in Greece. There were considerable withdrawals from Greek banks, and capital controls and withdrawal limits were imposed. In July, Greece entered into a temporary agreement with other euro area countries on a new three-year financial assistance programme under the European Stability Mechanism (ESM). The turbulence through summer weakened confidence among consumers and financial analysts in the euro area (Chart 1.2). Looking ahead, increased purchasing power owing to the fall in commodity prices, easier funding conditions and the euro depreciation will contribute to fuelling growth in the euro area. Investment remains low, but is expected to rise in pace with increased demand.

Chart 1.1 GDP for trading partners. Volume. Four-quarter change. Percent. 2000 Q1 – 2015 Q2



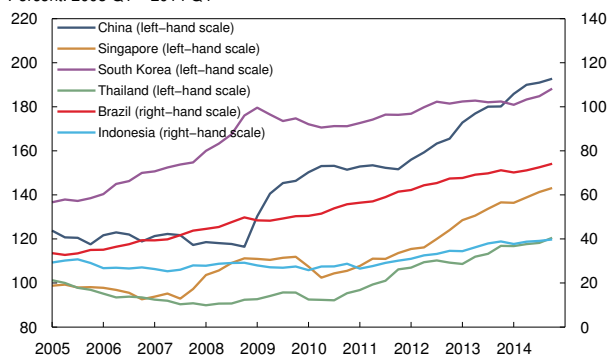
Sources: Thomson Reuters and Norges Bank

Chart 1.2 Euro area. Consumer confidence and expectations of economic development by financial analysts (ZEW<sup>1</sup>). January 2012 – September 2015<sup>2</sup>



1) Zentrum für Europäische Wirtschaftsforschung.  
2) To August 2015 for consumer confidence.  
Source: Thomson Reuters

Chart 1.3 Private sector credit as a share of GDP. Percent. 2005 Q1 – 2014 Q4



Sources: Thomson Reuters, BIS and Norges Bank

Chart 1.4 Consumer prices.  
Twelve-month change. Percent. January 2010 – August 2015

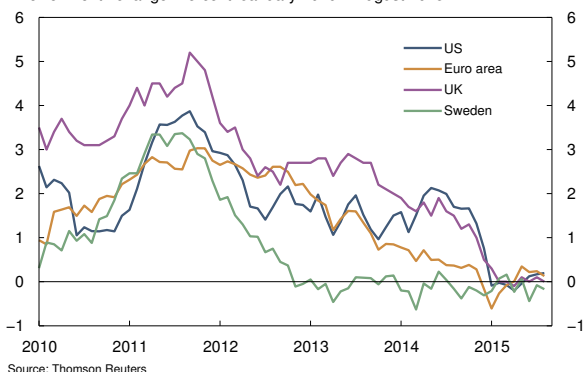
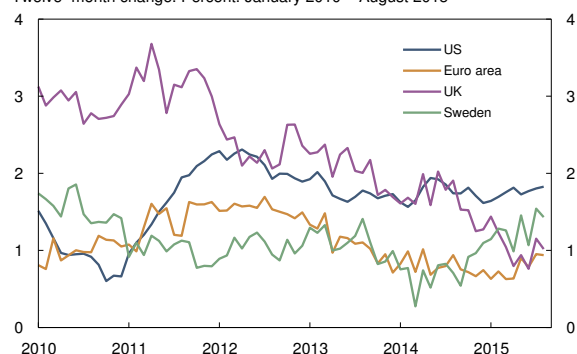
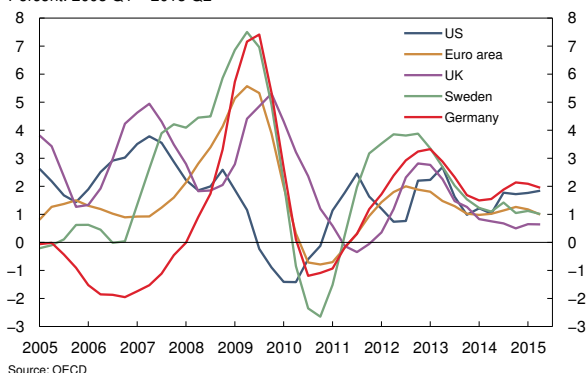


Chart 1.5 Consumer prices excluding food and energy.<sup>1)</sup>  
Twelve-month change. Percent. January 2010 – August 2015



<sup>1)</sup> Time series for Sweden show consumer prices excluding energy, at a constant mortgage interest rate.

Chart 1.6 Unit labour costs.  
Four-quarter change. Three-quarter moving average.  
Percent. 2005 Q1 – 2015 Q2



UK GDP growth accelerated in 2015 Q2. The labour market has continued to improve and employment is now at a historically high level. Wage growth has edged up to around 2¾%, the strongest growth rate recorded since 2008. Higher disposable income and a continued accommodative monetary stance will likely contribute to solid growth in private consumption and a rise in housing investment. In Sweden, higher net exports and increased investment were the main drivers behind the pick-up in growth in 2015 Q2. An expansionary monetary policy and increased global demand will likely contribute to sustaining the pace of growth over the next years.

A substantial fall in the Chinese stock market and the unexpected depreciation of the exchange rate has fuelled uncertainty about economic developments in China. Growth picked up between 2015 Q1 and Q2, but a number of current indicators suggest that growth will slow in Q3. Credit has expanded at a fast pace since the financial crisis and debt as a percentage of GDP is high (Chart 1.3). Deleveraging will likely dampen growth ahead. At the same time, the Chinese authorities still have economic policy space. It is assumed that China will avert an abrupt fall in the pace of growth, but a gradual deceleration is nevertheless expected, down to close to 6% at the end of the projection period (see Special Feature on page 46 for further details on developments in China).

In other emerging economies, growth in both exports and domestic demand have been lower than expected. Many countries are experiencing challenges associated with high credit growth and heavy debt burdens. As in the case of China, deleveraging will likely dampen growth over several years ahead. On the other hand, rising growth in advanced economies may fuel export growth. Lower prices for oil and non-oil commodities are contributing to continued sluggish growth among large commodity producers such as Brazil and Russia.

### Continued low inflation among trading partners

Consumer price inflation is very low among most of Norway's trading partners (Chart 1.4). The fall in energy prices since summer 2014 has pulled down inflation. Core inflation remains higher than headline inflation in most countries (Chart 1.5). Market-based measures of long-term inflation expectations in the



US, the euro area and the UK have fallen somewhat since mid-June. The further decline in prices for oil and non-oil commodities over summer will contribute to keeping inflation low also in periods ahead. At the same time, growth in labour costs among Norway's trading partners will contribute to a gradual rise in inflation through the projection period (Chart 1.6). Consumer price inflation among 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 (Annex Table 4) (see Special Feature on page 48 for further discussion on inflation prospects for Norway's main trading partners).

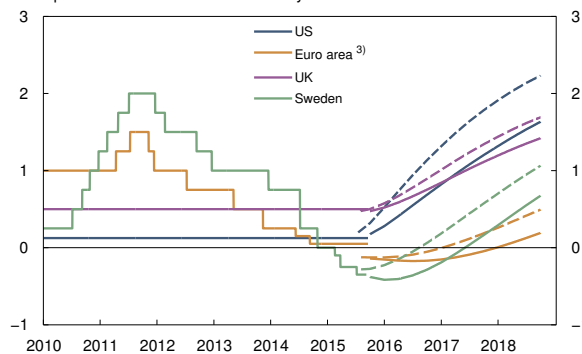
### Very low foreign interest rates

Policy rates are still close to zero in many countries (Chart 1.7). In addition to keeping policy rates very low, Sveriges Riksbank and the European Central Bank (ECB) continue to use unconventional monetary policy measures. The ECB's monthly bond purchases amount to EUR 60bn and the purchases are scheduled to continue to at least September 2016. Market interest rate expectations suggest that the ECB will keep its policy rate unchanged until the second half of 2017. In July, Sveriges Riksbank reduced its policy rate by 0.1 percentage point to -0.35%. In addition, overall purchases of government bonds increased by SEK 45bn to a total of SEK 135bn. The purchases are planned to be made before the end of 2015. The Riksbank has signalled that further monetary policy measures may be implemented. Market interest rate expectations indicate that the Riksbank will keep the policy rate unchanged until the second half of 2016.

In the US and the UK, policy rate hikes are expected in the first half of 2016. Falling commodity prices, increased market turbulence and the risk of weaker global growth have led to reduced expectations of US policy rate increases in the years ahead. In the UK, a normalisation of monetary policy is also expected to occur very gradually. For our trading partners as a whole, money market rate expectations have fallen since the June Report (Chart 1.8).

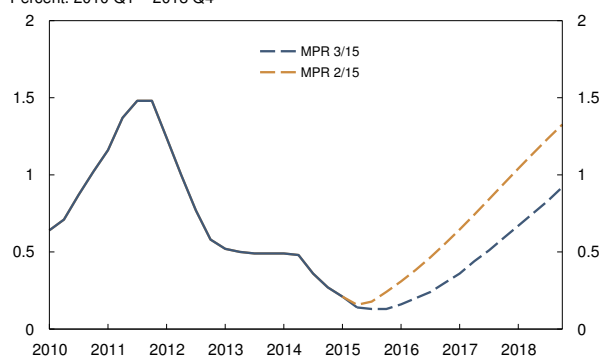
Falling commodity prices and increased concerns about weaker global growth have also contributed to long-term interest rates among Norway's main trading partners having fallen somewhat since the June Report (Chart 1.9). Government bond yields in

Chart 1.7 Policy rates and estimated forward rates at 12 June 2015 and 18 September 2015.<sup>1)</sup> Percent. 1 January 2010 – 31 December 2018<sup>2)</sup>



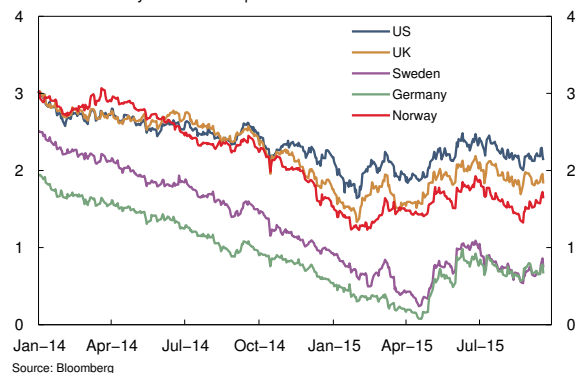
1) Broken lines show estimated forward rates at 12 June 2015. Solid lines show forward rates at 18 September 2015. Forward rates are based on Overnight Index Swap (OIS) rates.  
2) Daily data from 1 January 2010 and quarterly data from 2015 Q3.  
3) EONIA for the Euro area from 2015 Q3.  
Sources: Bloomberg, Thomson Reuters and Norges Bank

Chart 1.8 Money market rates for trading partners.<sup>1)</sup> Percent. 2010 Q1 – 2018 Q4<sup>2)</sup>



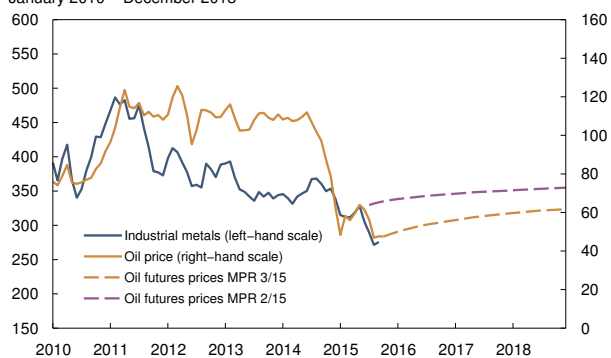
1) For information about the trading partner aggregate, see *Norges Bank Papers 2/2015*.  
2) Blue and orange broken lines show forward rates for 18 September 2015 and 12 June 2015, respectively.  
Sources: Thomson Reuters and Norges Bank

Chart 1.9 Yields on 10-year government bonds. Percent. 1 January 2014 – 18 September 2015



Source: Bloomberg

Chart 1.10 Crude oil and industrial metal prices.<sup>1)</sup>  
January 2010 – December 2018<sup>2) 3)</sup>



1) USD per barrel for oil and industrial metals index.  
2) For the spot price the latest observation used is 18 September 2015.  
3) Futures prices at different points in time (broken lines). Projections for MPR 3/15 are based on the average for last five trading days to 18 September 2015.  
Source: Thomson Reuters

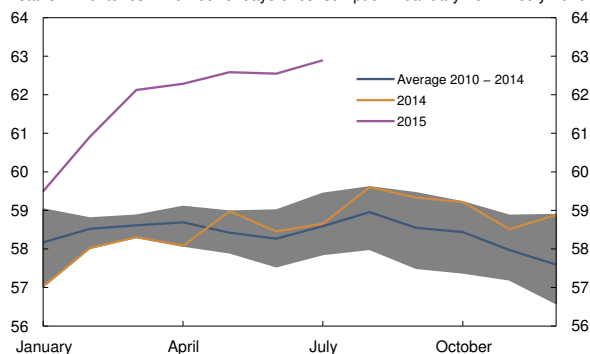
the most heavily indebted euro area countries have fallen somewhat more than comparable German government bond yields.

### Oil prices have fallen

Oil prices have fallen since June and have recently hovered just below USD 50 per barrel, close to USD 15 lower than the average for 2015 Q2. Futures prices have also fallen (Chart 1.10). The decline in oil prices is associated with continued excess supply as reflected in increased oil inventories (Chart 1.11). Global oil supply has increased sharply over the past year. OPEC, and especially Saudi Arabia, has increased oil production to reclaim market share. Global oil production is expected to be higher than consumption also for some time ahead. In the wake of the fall in oil prices, non-OPEC oil production costs have been reduced, especially in the US. A larger share of production can therefore be profitable at lower oil prices.

Chart 1.11 Oil inventories in OECD countries.

Total oil inventories in number of days of consumption.<sup>1)</sup> January 2014 – July 2015

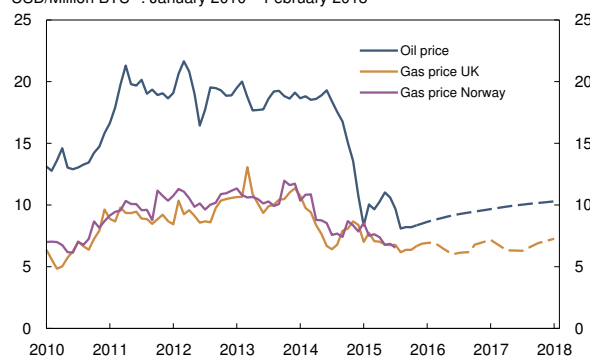


1) Number of days of consumption is calculated using average demand over next three months. The grey band shows the interval between the highest and lowest level in the period 2010 – 2014.  
Source: IEA

Global oil demand is growing, but at a considerably slower pace than supply growth preceding the end of 2015 Q2. A further slowing of growth in emerging economies may lead to weaker oil demand also in the period ahead. A simultaneous decline in both oil prices and prices for industrial metals may indicate increased uncertainty about global growth prospects.

Since the beginning of 2014 Norwegian gas export prices have fallen at a slower pace than oil prices (Chart 1.12). The decline in export prices for Norwegian gas largely reflects the fall in UK gas prices.

Chart 1.12 Prices of crude oil and natural gas.  
USD/Million BTU<sup>1)</sup>. January 2010 – February 2018<sup>2) 3)</sup>



1) British Thermal Unit.  
2) For September 2015 average of daily numbers are used including 18 September 2015 for oil price and British gas price.  
3) Future prices (broken lines) for oil and British gas is the average of future prices for the last five days including 18 September 2015.  
Sources: Thomson Reuters, Statistics Norway and Norges Bank

The projections in this *Report* are based on the assumption that oil prices move in line with futures prices. Even if these prices reflect expectations of some increase over the next few years, futures prices are lower than assumed in the *June Report*.

### Marked depreciation of the currencies of commodity-exporting countries

The US dollar and sterling appreciated over the summer owing to expectations that the central banks in the US and the UK would start to raise policy rates. Both currencies have depreciated somewhat thereafter as expected interest rate increases have been deferred further ahead. The euro depreciated in July due to the turbulence surrounding Greece, but appreciated again after an agreement was entered into for new loans

from the EU and the IMF. The Swedish krona depreciated after the Riksbank lowered its policy rate in July and increased its purchases of government bonds. A substantial fall in commodity prices has contributed to a marked depreciation of several commodity currencies (Chart 1.13). The renminbi has depreciated by a good 2% against the US dollar after China opted to give greater weight to the market rate when setting the official renminbi exchange rate as from 11 August. The recent Chinese reform has also contributed to wide swings in several currencies in Southeast Asia. At the same time, growing uncertainty concerning economic developments in China has led to turbulence in international financial markets. Recently increased risk aversion has contributed to the appreciation of the Japanese yen and the euro. Both currencies have probably been used in carry trade transactions.

The krone exchange rate measured by the I-44 has depreciated markedly since the June Report and has recently been close to the lowest levels recorded since August 1998. The depreciation should be seen in connection with the fall in oil prices since June. Like other currency markets, the NOK market has at times been marked by poor liquidity and sharp exchange rate movements. So far in Q3, the average krone exchange rate has been around 3% weaker than projected in the June Report (Chart 1.14).

### Slightly lower bank lending rates

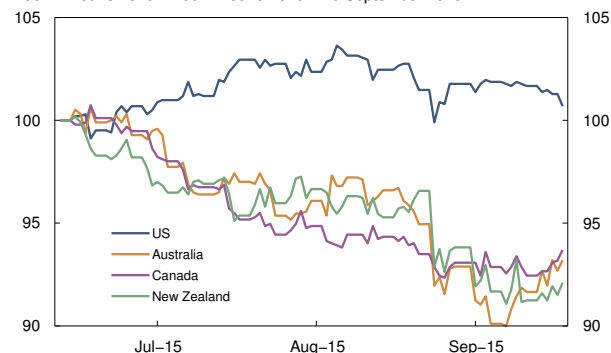
Since the key policy rate in Norway was lowered in June, many banks have reduced interest rates on housing loans with a floating rate (Chart 1.15) to a somewhat further extent than anticipated in the June Report.

The premium in Norwegian three-month money market rates is about 0.3 percentage point, and has shown little change since the June Report. As in June, the premium is projected to remain at around 0.3 percentage point in the coming period. The risk premiums on covered bonds and senior bonds issued by Norwegian banks have increased since the June Report. For most banks, the risk premiums are around the same level as the average premiums on banks' bonds outstanding.

### Low growth in the Norwegian economy

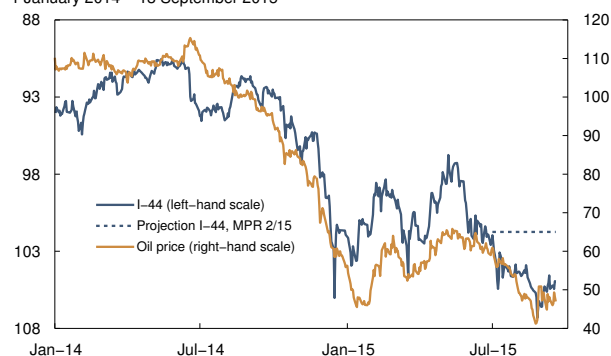
Developments in the Norwegian economy have been approximately in line with the projections in the June Report. Quarterly growth in mainland GDP was 0.2%

Chart 1.13 Effective exchange rates.  
Index: 12 June 2015 = 100. 12 June 2015 – 18 September 2015



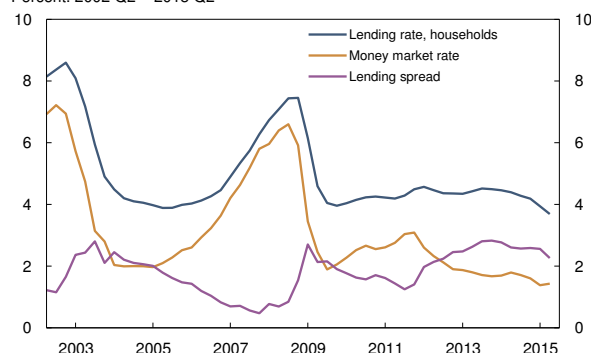
Sources: Bloomberg, Bank of England and Norges Bank

Chart 1.14 Oil price<sup>1)</sup> and import-weighted exchange rate index (I-44)<sup>2)</sup>.  
1 January 2014 – 18 September 2015



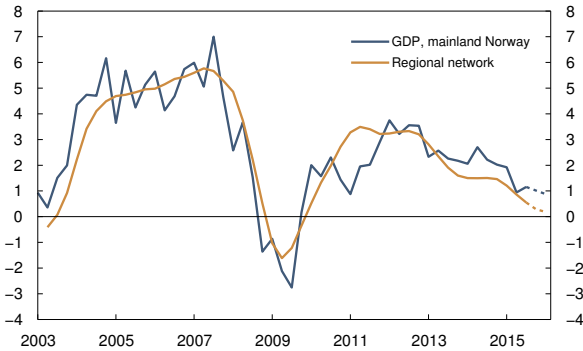
1) USD per barrel.  
2) A positive slope denotes a stronger krone exchange rate.  
Sources: Thomson Reuters and Norges Bank

Chart 1.15 Lending rate to households<sup>1)</sup>, money market rate and lending spread.<sup>2)</sup>  
Percent. 2002 Q2 – 2015 Q2



1) Average lending rate for banks and mortgage companies for all lending to households.  
2) The rates are calculated by taking the average of the quarter.  
Sources: Statistics Norway and Norges Bank

Chart 1.16 GDP for mainland Norway<sup>1)</sup> and Norges Bank's regional network's indicator of output growth<sup>2)</sup>. Four-quarter change. Percent. 2003 Q1 – 2016 Q1

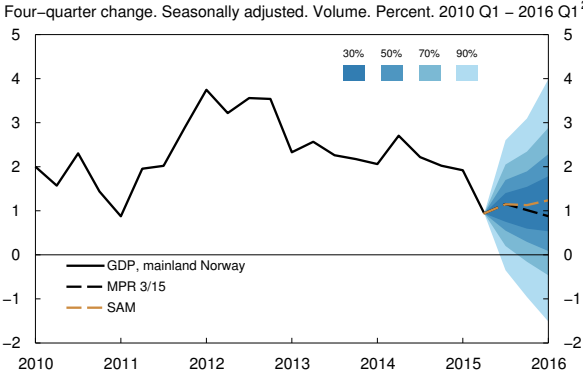


1) Projections for 2015 Q3 – 2016 Q1 (broken line).  
2) Four-quarter change in index based on output growth past three months (solid line) and expected output growth next six months (broken line).  
Sources: Statistics Norway and Norges Bank

in 2015 Q2, in line with the projection in the June Report. In August, Norges Bank's regional network contacts reported continued weak output growth (Chart 1.16). The decline has accelerated in the oil service industry. Output also fell for commercially-oriented services, while other industries reported growth.

The growth outlook for the Norwegian economy has weakened. Regional network contacts expect somewhat lower output growth ahead than expected in May. The mainland economy is projected to grow at a quarterly rate of about ¼% in the period ahead. The projections are slightly lower than those derived from Norges Bank's System for Averaging short-term Models (SAM) (Chart 1.17), but higher than the output growth expectations of the regional network.

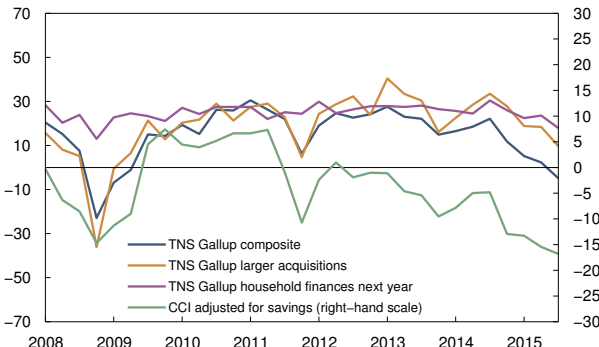
Chart 1.17 GDP for mainland Norway. Actual figures, baseline scenario and projections from SAM<sup>1)</sup> with fan chart. Four-quarter change. Seasonally adjusted. Volume. Percent. 2010 Q1 – 2016 Q1<sup>2)</sup>



1) System for Averaging short-term Models.  
2) Projections for 2015 Q3 – 2016 Q1 (broken lines).  
Sources: Statistics Norway and Norges Bank

Despite uncertainty concerning the outlook for the Norwegian economy, household consumption growth has remained solid and been somewhat higher than projected in the June Report. Low interest rates are supporting household consumption. In August, household-oriented enterprises in the regional network reported higher output growth than in the previous round. In the period ahead, contacts in these sectors expect unchanged or slightly lower output growth. Low oil prices may dampen consumption growth further out, partly reflecting higher unemployment and lower wage growth. Consumer confidence, which has remained low since autumn 2014, has fallen further in the course of summer (Chart 1.18). In particular, weaker confidence in the national economy is pulling down consumer confidence. Growth in household consumption is projected to be somewhat lower in the coming period than in the June Report. The projection for annual growth in 2015 has been revised up, however, owing to the revision of previous quarterly figures.

Chart 1.18 Consumer confidence. CCI adjusted for savings (Opinion)<sup>1)</sup> and Expectations barometer (TNS Gallup). Unadjusted net figures. 2008 Q1 – 2015 Q3<sup>2)</sup>



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 August 2015 for CCI.  
Sources: TNS Gallup, Opinion and Norges Bank

Housing investment continued to rise in 2015 Q2, but at a somewhat slower pace than projected in the June Report. Both sales and starts of new homes remain steady but the fall in oil prices since summer 2014 has curbed activity in some areas. In August, regional network contacts reported continued growth in residential construction. Growth in housing investment is expected to be moderate in the coming quarters.

Business investment continued to fall in 2015 Q2 following a decline in the two preceding quarters. Uncer-

tainty regarding developments in oil prices and a weaker growth outlook for the Norwegian economy will likely dampen business investment. Moderate growth in business investment is expected in the coming period.

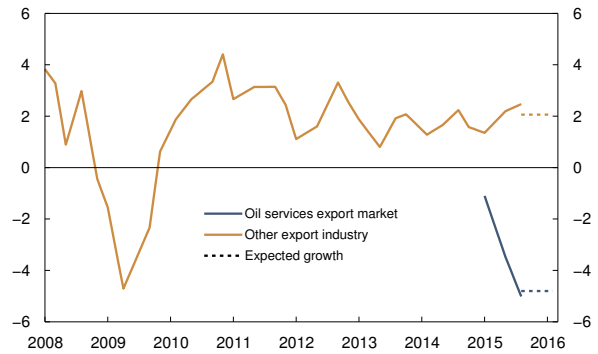
Petroleum investment is expected to fall more than projected in the *June Report*, primarily reflecting prospects for lower oil prices than anticipated in June. Investment is now projected to fall by more than one-fourth between 2014 and 2018. For 2015, the decline is expected to be somewhat smaller than previously projected, while investment is projected to fall to a further extent between 2016 and 2018 (see box on page 17 for more details on petroleum investment projections).

Traditional goods and services exports have so far in 2015 shown somewhat stronger growth than projected in the *June Report*. The weak krone is helping to improve cost competitiveness for Norwegian export companies. Oil service companies in the regional network expect a considerable fall in export production ahead (Chart 1.19). Overall, exports of traditional goods and services are expected to show moderate growth in the period ahead, broadly in line with the projection in the *June Report*. The projections imply higher-than-projected annual growth in 2015, owing to the upward revision of first-quarter export figures.

### Unemployment edges up and capacity utilisation declines

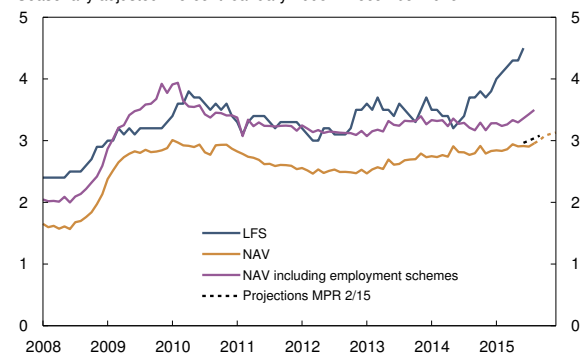
Unemployment drifted up somewhat through summer. Registered unemployment increased to 3.0% in August, broadly in line with the projection in the *June Report* (Chart 1.20). The number of job-seekers on employment schemes has increased. Unemployment is still rising in regions with close ties to the oil industry, while unemployment has been stable in other regions (Chart 1.21). According to the Labour Force Survey (LFS), unemployment rose to 4.5% in June. The difference between unemployment as measured by the Norwegian Labour and Welfare Administration (NAV) and LFS has continued to increase and is now at its widest by historical standards. Some of the increase in LFS unemployment is attributable to a rise in labour force participation rates and youth unemployment, which is not captured to the same extent in NAV statistics for registered unemployment (see Special Feature on page 51 for further details on unemployment developments). Labour

Chart 1.19 Norges Bank's regional network indicator of output growth past three months and expected output growth next six months.<sup>1)</sup> Annualised. Percent. January 2008 – February 2016<sup>2)</sup>



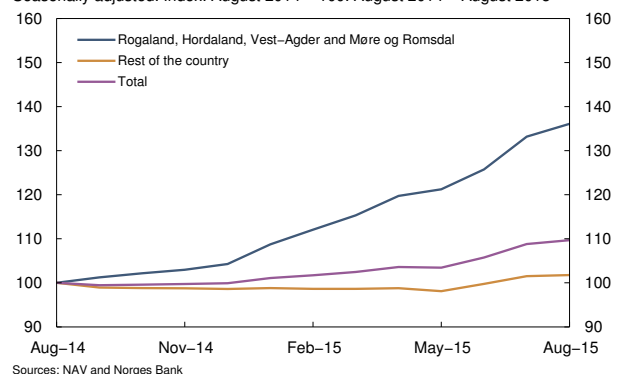
1) New sector classification results in a break in the series for export industry from 2015.  
2) Reported growth to August 2015. Expected growth for September 2015 – February 2016.  
Source: Norges Bank

Chart 1.20 Unemployment rate. LFS<sup>1)</sup> and NAV<sup>2)</sup>. Seasonally adjusted. Percent. January 2008 – December 2015<sup>3)</sup>



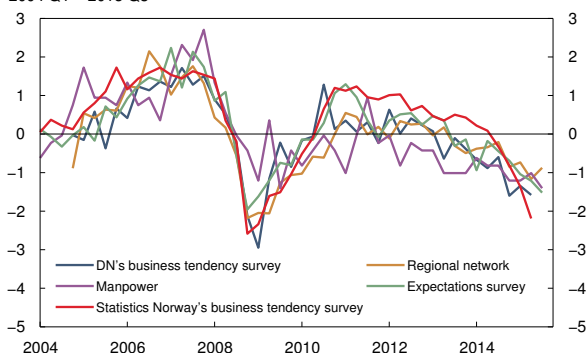
1) Labour Force Survey.  
2) Norwegian Labour and Welfare Administration.  
3) Projections for September 2015 – December 2015 (broken lines).  
Sources: Statistics Norway, NAV and Norges Bank

Chart 1.21 Registered unemployed and job-seekers on employment schemes by county. Seasonally adjusted. Index. August 2014 = 100. August 2014 – August 2015



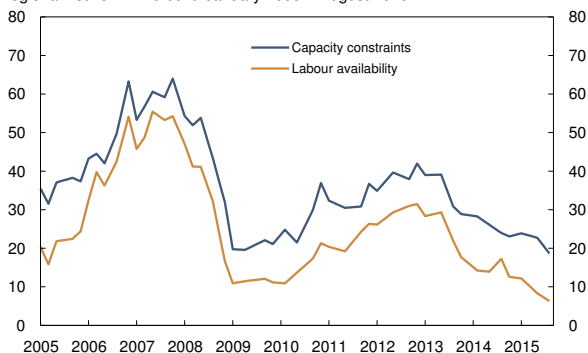
Sources: NAV and Norges Bank

Chart 1.22 Five indicators of expected employment.<sup>1)</sup>  
2004 Q1 – 2015 Q3



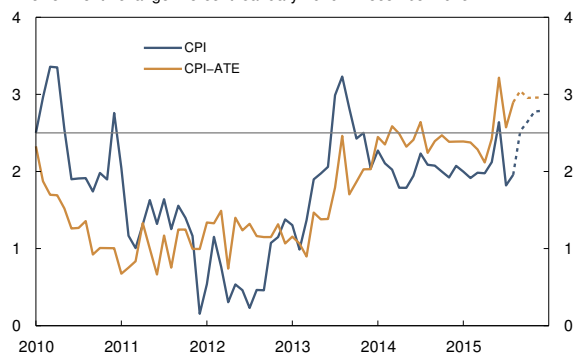
<sup>1)</sup> Number of standard deviations from the mean for each indicator.  
Sources: Statistics Norway, Manpower, Epinion, Dagens Næringsliv and Norges Bank

Chart 1.23 Capacity constraints and labour availability as reported by Norges Bank's regional network.<sup>1)</sup> Percent. January 2005 – August 2015



<sup>1)</sup> 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 1.24 CPI and CPI-ATE<sup>1)</sup>.  
Twelve-month change. Percent. January 2010 – December 2015<sup>2)</sup>



<sup>1)</sup> CPI adjusted for tax changes and excluding energy products.  
<sup>2)</sup> Projections for September 2015 – December 2015 (broken lines).  
Sources: Statistics Norway and Norges Bank

immigration has slackened, broadly in line with the projection in the *June Report*. Employment has been somewhat higher than projected in June. More than half of employment growth in Q2 was in the public sector. Employment growth is expected to slow ahead. A number of expectations indicators point towards a fall in employment (Chart 1.22). Unemployment is expected to edge up in the coming months.

Capacity utilisation has continued to decline and is assessed as being lower than a normal level. The number of regional network enterprises reporting capacity constraints has continued to fall since May and is now at its lowest since the survey was first launched in 2005 (Chart 1.23). The number of enterprises reporting labour availability as a limiting factor for production has also fallen further since May, also to a new low. Registered unemployment, a key variable in assessing capacity utilisation, has increased broadly in line with the projection in the *June Report* and is now somewhat higher than the average for the past 15 years. LFS unemployment has increased to a further extent and reached a clearly higher level than the average for the same period. In isolation, this may indicate that there is a higher degree of slack in the economy than projected in June. At the same time, some of the increase in LFS unemployment may be attributable to an increase in the number of young job-seekers. It is unusual for youth labour force participation to increase during a downturn and it is thus assumed that the participation rate particularly for young people will fall in the coming period. On the whole, it appears that capacity utilisation has declined broadly in line with the projection in the *June Report*.

### Moderate wage growth

Wage growth in 2015 is estimated at 2¾%, unchanged on the *June Report*. The estimate is in line with the expectations of regional network contacts and the average of expectations reported by the social partners in Epinion's expectations survey.

### Consumer price inflation has moved up

In recent months, consumer price inflation has been higher than projected in the *June Report*. The year-on-year rise in consumer prices (CPI) was 2.0% in August (Chart 1.24). Inflation adjusted for tax changes and excluding energy products (CPI-ATE) was 2.9% in August. For a number of CPI sub-groups, inflation

has varied widely, contributing to considerable volatility in headline inflation in recent months.

The rise in prices for domestically produced goods and services has been higher than expected (Chart 1.25). In August, the twelve-month rise was 2.6%. A persistently weak krone may help sustain the rise in prices for domestically produced goods and services for somewhat longer than previously projected, partly as a result of a faster rise in prices for imported intermediate goods. On the other hand, the rate of increase will be curbed further out by declining capacity utilisation in the Norwegian economy. In the coming period, prices for domestically produced goods and services are expected to rise somewhat faster than projected in the June Report.

Prices for imported consumer goods have also risen faster than projected. In August, the year-on-year rise was 3.4%. The krone has depreciated considerably over a longer period, and the pass-through from the exchange rate to prices for imported consumer goods has probably been stronger than previously assumed. The indicator of external price impulses to Norwegian consumer prices is projected to increase at around the same rate this year as in 2014 (Chart 1.26). The projection is somewhat lower than in June, primarily owing to lower commodity prices. Nonetheless, the depreciation of the krone since the June Report is projected to push up imported consumer price inflation somewhat more in the coming period than previously projected.

The year-on-year rise in consumer prices (CPI-ATE) is projected at around 3% in the period to end-2015, higher than in the June Report. The projections are somewhat higher than the projections from Norges Bank's System for Averaging short-term Models (SAM) (Chart 1.27).

### House price inflation and household debt growth somewhat higher than projected

House price inflation has varied through summer, and there are considerable regional differences in house price developments. Overall house price inflation has been somewhat higher than projected in June. Growth in household credit continues to be somewhat higher than income growth. Growth in credit to households has picked up slightly in recent months. Year-on-year growth was 6.5% in July (see Section 3 for more details on house prices and household debt).

Chart 1.25 CPI-ATE<sup>1)</sup> by supplier sector. Twelve-month change. Percent. January 2014 – December 2015<sup>2)</sup>

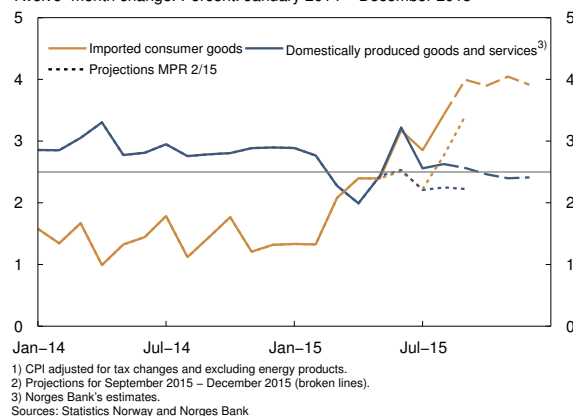


Chart 1.26 Indicator of external price impulses to imported consumer goods measured in foreign currency. Annual change. Percent. 2003 – 2015<sup>1)</sup>

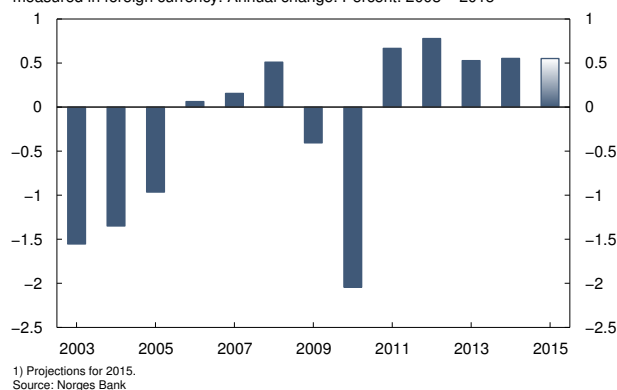
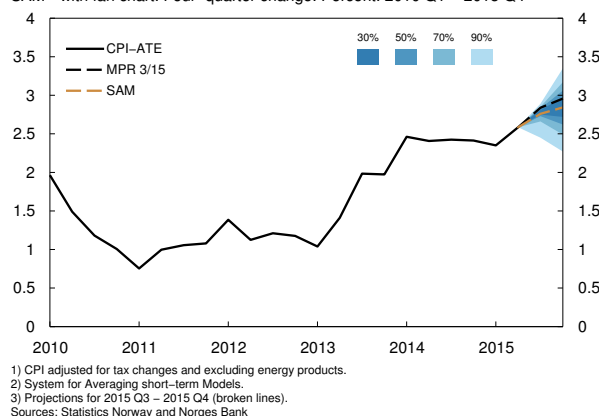


Chart 1.27 CPI-ATE<sup>1)</sup>. Actual figures, baseline scenario and projections from SAM<sup>2)</sup> with fan chart. Four-quarter change. Percent. 2010 Q1 – 2015 Q4<sup>3)</sup>



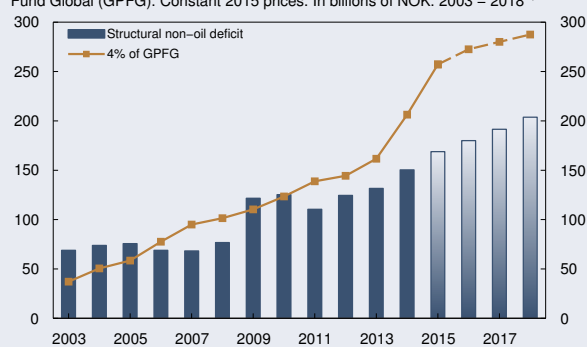
## ASSUMPTIONS CONCERNING FISCAL POLICY

The fiscal policy assumptions are based on the revised budget for 2015. The structural non-oil deficit is an indicator measuring underlying spending of petroleum revenues over the central government budget. For 2015, this deficit is estimated at NOK 169bn.

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 this 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 2.6% of the value of the Government Pension Fund Global (GPF) at the beginning of 2015.

The technical assumption is applied that petroleum revenue spending will increase in the years ahead at about the same pace as that recorded since the fiscal rule was introduced in 2001 (Chart 1.28). This corresponds to an annual increase in the non-oil structural deficit of about 0.3 percentage point of trend GDP for mainland Norway. This implies a somewhat faster projected rise in petroleum revenue spending than the value of the GPF. At the end of the projection period, petroleum revenue spending under these assumptions may be close to 3% of the value of the GPF.

Chart 1.28 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>



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



## PROJECTIONS FOR PETROLEUM INVESTMENT

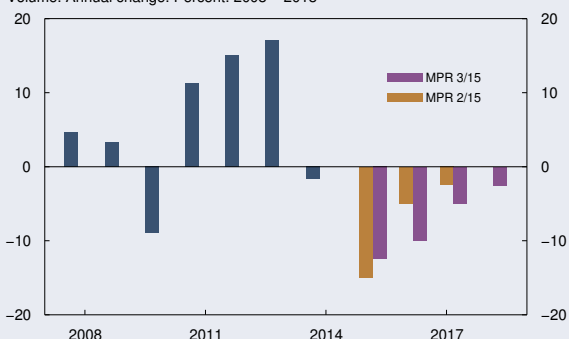
Investment on the Norwegian continental shelf expanded rapidly between 2002 and 2013, driven by a sharp rise in oil prices, several profitable discoveries and the need to upgrade older fields. The rapid growth in investment also led to a sharp rise in costs in the petroleum sector. The rise in costs and the fall in oil prices over the past year have considerably reduced oil company cash flows and the profitability of investments on the Norwegian continental shelf. Oil companies have therefore postponed or cancelled a number of projects and implemented a range of measures to reduce operating, maintenance and investment costs.

Oil spot prices have recently hovered just below USD 50 per barrel. The oil price is around USD 60 lower than the average for the first half of 2014 and a more than USD 15 lower than assumed in the *June Report*. The effects of the decline in oil prices will depend on the expected persistence of the decline. 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 good USD 60 in 2018 (Chart 1.10). Futures prices for 2018 have declined by almost USD 40 since summer 2014 and by more than USD 10 since the *June Report*.

The investment intentions survey for Q3 indicates that the decline in petroleum investment will be somewhat less pronounced in 2015 than projected in the *June Report*. At the same time, the survey indicates a more pronounced decline in investment in 2016 than previously projected. Petroleum investment is now projected to decline by 12½% in 2015 and by a further 10% in 2016 (Chart 1.29), followed by a decline of 5% in 2017 and 2½% in 2018. The projections imply a 3 percentage point fall in investment as a share of GDP for mainland Norway between 2013 and 2018 (Chart 1.30).

The investment projections for the period 2016–2018 as a whole have been revised down since the *June Report* in the light of the investment intentions survey for Q3 and the decline in spot and futures prices

Chart 1.29 Petroleum investment.  
Volume. Annual change. Percent. 2008 – 2018<sup>1)</sup>



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

Chart 1.30 Petroleum investment as a share of GDP for mainland Norway.  
Percent. 1994 – 2018<sup>1)</sup>



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

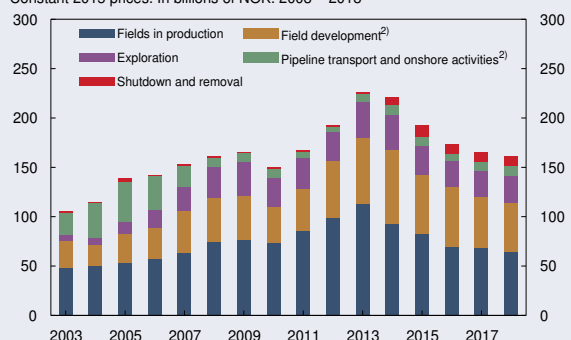
in recent months. The fall in oil prices is expected to result in lower exploration activity and lower investment in fields in production than projected in the June *Report*. It is also assumed that some development projects, which in the June *Report* were expected to commence during the projection period, will be postponed owing to the decline in oil prices.

Investment in fields in production is projected to fall by NOK 11bn in 2015 and by a further NOK 18bn between 2015 and 2018 (Chart 1.31). Upgrading of older fields has fuelled investment in recent years. Less upgrading will be needed ahead. Savings measures undertaken by oil companies also contribute to reducing investment spending on fields in production during the projection period.

Spending on field development has increased markedly in recent years and was higher than NOK 70bn in 2014. A number of larger projects contributed to the high level of investment in 2014. Several of these projects have now been completed. The other projects are expected to be completed in the period 2015-2018. Petroleum investment will therefore in isolation fall markedly as a result of lower investment in projects started before 2015 (Chart 1.32). The decline in field development activity is restrained by the development of the Johan Sverdrup and Maria fields in the coming years. The estimates are also based on the assumption that development of the Vette and Zidane fields will commence in the course of 2016 and that the Snorre 2040 project will start in the course of 2018. Overall spending on field development is projected to fall by NOK 15bn in 2015 and by a further NOK 10bn between 2015 and 2018.

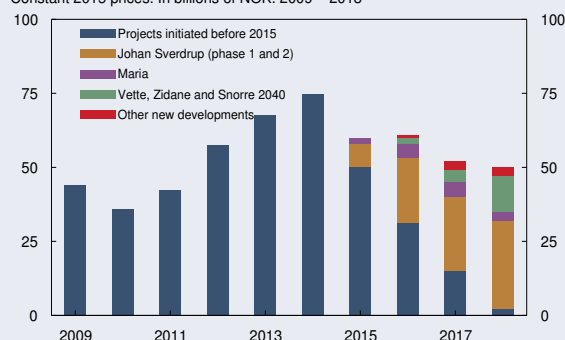
The decline in oil prices will weigh heavily on exploration activity between 2014 and 2016. Lower demand for drilling rigs has resulted in a substantial fall in rig rates. This will in turn lead to lower drilling costs, which may lead to some rebound in exploration activity towards the end of the projection period.

Chart 1.31 Petroleum investment.  
Constant 2015 prices. In billions of NOK. 2003 – 2018<sup>1)</sup>



1) Projections for 2015 – 2018. Value figures for 2003 – 2014 from the investment intentions survey by Statistics Norway are deflated by the price index for petroleum investment in the national accounts. The index is projected to increase by 3 percent from 2014 to 2015.  
2) Expenses for pipelines for the Johan Sverdrup development are included in the estimates for pipeline transport and onshore activities.  
Sources: Statistics Norway and Norges Bank

Chart 1.32 Field development.  
Constant 2015 prices. In billions of NOK. 2009 – 2018<sup>1)</sup>



1) Projections for 2015 – 2018. Value figures for 2009 – 2014 from the investment intentions survey by Statistics Norway are deflated by the price index for petroleum investment in the national accounts. The projections are based on the investment intentions survey for 2015 Q3, the projections in *The Shell 2014* from the Norwegian Petroleum Directorate, Reports to the Storting relating to projects commenced prior to 2015, impact assessments of new projects and current information on deferrals and assumed project commencements. Expenses for pipelines for the Johan Sverdrup development are included in the estimates for pipeline transport and onshore activities.  
Sources: Statistics Norway and Norges Bank

# 2 MONETARY POLICY OUTLOOK

## Monetary policy trade-offs

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 15 years, average inflation has been somewhat below, but close to, 2.5% (Chart 2.1). Inflation expectations, as implied by expectations surveys, also remain close to 2.5% (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. Among other things, monetary policy should therefore seek to mitigate the risk of a build-up of financial imbalances. In the event of major and abrupt changes in the balance of risks, the consideration of robustness may also imply a more active monetary policy than normal.

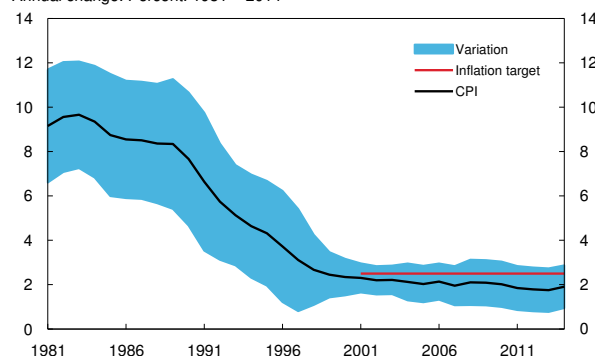
## The analysis in the June Report

In the June 2015 *Monetary Policy Report*, the key policy rate was projected to lie a little above 3/4% in the coming year, and to increase gradually thereafter. With this path for the key policy rate, there were prospects that inflation would remain just below 2.5% in the beginning of the projection period before falling gradually to around 2% in 2017. Further out, inflation was projected to move up somewhat. Capacity utilisation was expected to decline further, but rise to a normal level towards the end of the projection period.

## Lower oil prices bear down on growth prospects

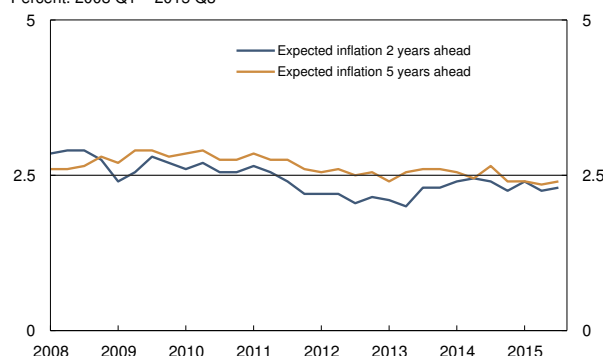
Growth in the Norwegian economy has been broadly in line with the projection in the *June Report*, but the growth outlook has weakened. Oil prices have declined since June and it appears that activity in the petroleum industry will turn out to be lower than expected earlier. Lower demand for goods and services in the petroleum industry both on the Norwegian continental shelf and internationally will weigh down further on activity and profitability in the oil service industry, with spillover effects on the wider mainland economy. In addition, heightened uncertainty sur-

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



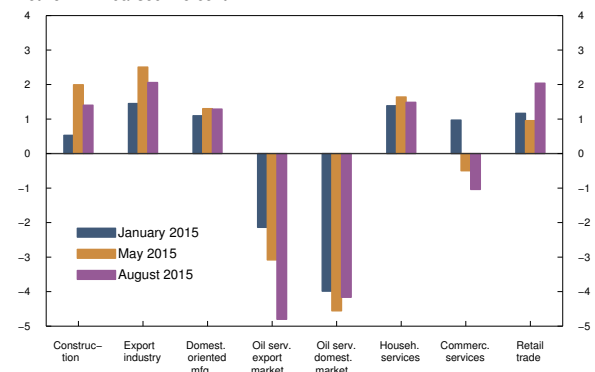
1) The moving average is calculated 10 years back.  
2) The band around the CPI is the variation in the CPI in the average period, measured by +/- one standard deviation.  
Sources: Statistics Norway and Norges Bank

Chart 2.2 Expected consumer price inflation 2 and 5 years ahead.<sup>1)</sup> Percent. 2008 Q1 – 2015 Q3



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

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



Source: Norges Bank

rounding economic developments may induce household and businesses to be more cautious in terms of their consumption and investment decisions. In August, Norges Bank's regional network contacts expected continued weak growth ahead and prospects were slightly weaker than in May. The commercial services sector and oil service industry expect a further fall in production (Chart 2.3). At the same time, the krone has depreciated substantially since June. A weaker krone strengthens the profitability of Norwegian export firms and Norwegian import-competing firms. On the whole, it nevertheless appears that growth in the Norwegian economy will be lower than projected earlier. Unemployment is now projected to remain slightly higher and capacity utilisation is expected to decline further over a period compared with the projections in June.

### **The krone depreciation underpins inflation, but domestic driving forces are weaker**

Inflation has been higher than projected in the June *Report*. The rise in consumer prices adjusted for tax changes and excluding energy products (CPI-ATE) is now close to 3%. The krone has depreciated substantially over a longer period and the exchange rate pass-through has likely been stronger than expected. The krone depreciation since the June *Report* is projected to push up inflation further in the coming period. On the other hand, the projection for wage growth in the years ahead has been revised down, partly reflecting reduced demand for labour. This may curb the rise in prices for domestically produced goods and services.

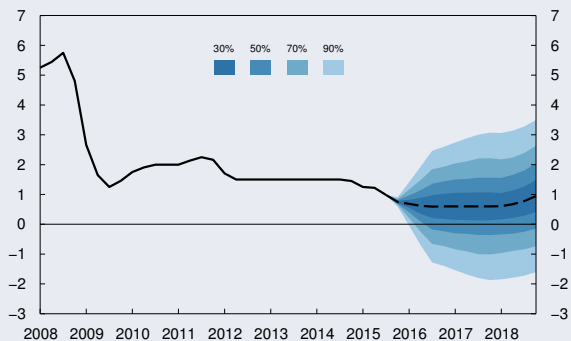
## **PROJECTIONS AND FAN CHARTS**

There is uncertainty regarding economic developments ahead. Moreover, the state of the economy and its functioning are not fully known. History also shows that events often occur that are difficult to foresee. The projections for the key policy rate, capacity utilisation and inflation are conditioned on economic developments being in line with current projections. Paths that are conditioned on a given economic outlook must generally be interpreted with caution, because economic developments are unlikely to turn out exactly as projected. Consequently, there is also considerable uncertainty regarding the future interest rate.

Fan charts show the probability of various paths for the interest rate, output gap and inflation and delineates the uncertainty assumed for the projection period. The fans are based on historical experience and the Bank's model apparatus. The fans reflect two sources of uncertainty. On the basis of a given quantification of the model and historical experience, probability distributions can be estimated for various types of shocks. If the model is subjected to the same shocks for the period ahead, a picture emerges of the uncertainty surrounding the different variables. There is also uncertainty regarding the impact on the economy of a given shock. The wider the fans, the more uncertain the projections are.

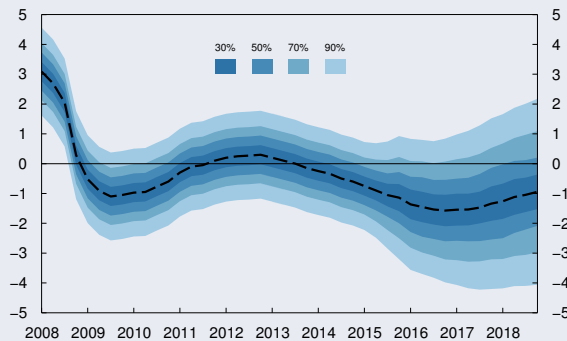
In this *Report*, the probability bands for the key policy rate, output gap and inflation have been updated on the basis of the Bank's main macroeconomic model NEMO. A change from previous practice is that the fan chart for the key policy rate now depicts values below zero. It has been observed that the zero bound is not absolute. For four of Norway's trading partners, the relevant policy rate is now negative. At the same time, the room below zero is limited. Exactly where the lower bound lies is uncertain and it most likely varies across countries and over time. The probability bands for the key policy rate do not take into account that a lower bound for the interest rate may exist. The portion of the fan below zero must therefore be interpreted with particular caution.

Chart 2.4a Projected key policy rate in the baseline scenario with fan chart.<sup>1)</sup> Percent. 2008 Q1 – 2018 Q4<sup>2)</sup>



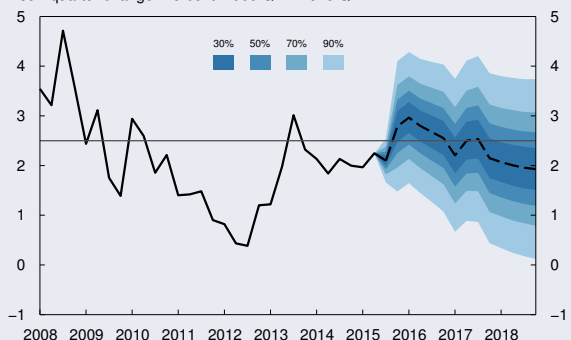
1) The fan charts are based on historical experiences and stochastic simulations in our main macroeconomic model, NEMO (see box on page 20). The fan chart for the key policy rate does not take into account that a lower bound for the interest rate may exist.  
2) Projections for 2015 Q3 – 2018 Q4 (broken 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



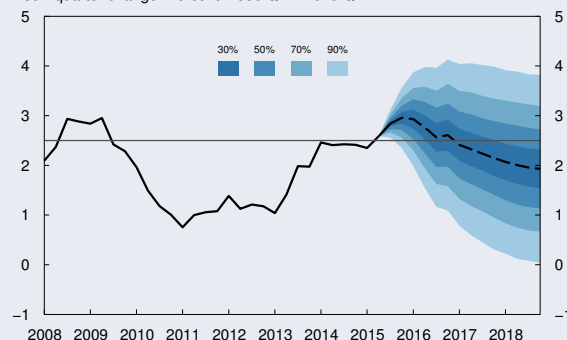
1) The output gap measures the percentage deviation between mainland GDP and projected potential mainland GDP.  
Source: Norges Bank

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 Q3 – 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>



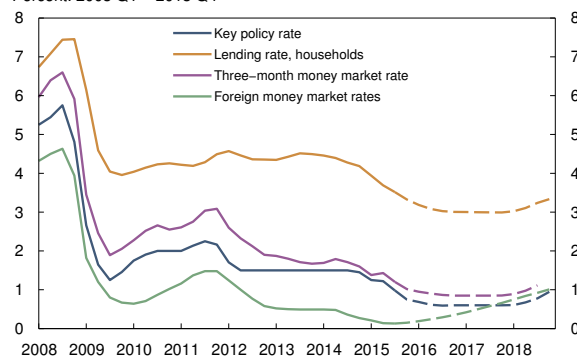
1) CPI adjusted for tax changes and excluding energy products.  
2) Projections for 2015 Q3 – 2018 Q4 (broken line).  
Sources: Statistics Norway and Norges Bank

## Lower key policy rate forecast

The projections in this *Report* imply a reduction in the key policy rate to just above ½% in 2016. Towards the end of the projection period, the key policy rate is projected to increase to close to 1% (Charts 2.4 a–d). The forecast for the key policy rate is lower than in the *June Report* throughout the projection period.

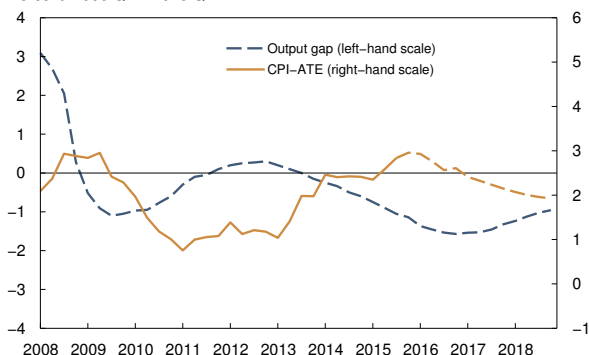
A weaker krone lifts inflation in the short term. Inflation prospects diminish further out. Combined with the aim of supporting capacity utilisation, this implies a lower key policy rate. On the other hand, even lower interest rates may fuel property price inflation and debt growth. The path for the key policy rate is somewhat higher than if weight had not been given to the robustness consideration (see box on monetary policy

Chart 2.5 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 covered bond companies.  
3) Projections for 2015 Q3 – 2018 Q4 (broken lines).  
Sources: Thomson Reuters, Statistics Norway and Norges Bank

Chart 2.6 Inflation<sup>1)</sup> 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 Q3 – 2018 Q4 (broken line). Sources: Statistics Norway and Norges Bank

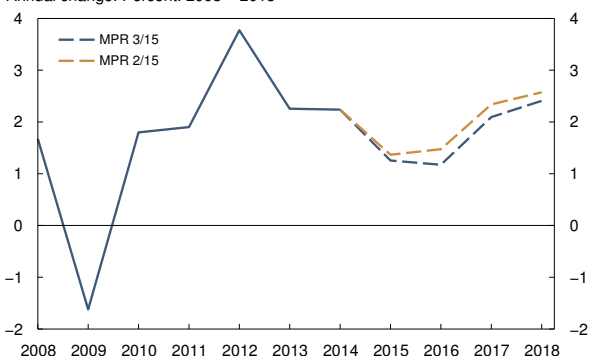
trade-offs and the criteria for an appropriate interest rate path on page 28). A further description of the factors behind the change in the key policy rate forecast is provided in the box on page 30. Bank lending rates are expected to follow developments in money market rates (Chart 2.5).

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 remain close to 3% in the short term before gradually declining to around 2% towards the end of the projection period (Chart 2.6). Capacity utilisation in the mainland economy is projected to continue to decline to the end of 2016. Capacity utilisation is expected to edge up thereafter.

### Growth picks up gradually from a low level

Growth in the Norwegian economy is projected at 1¼% in 2015 and 2016, rising to 2% in 2017 and 2½% in 2018 (Chart 2.7). Employment growth is also expected to be low as a result of low output growth. Labour immigration has been high in recent years, but has edged down over the past year. It is assumed that this tendency will continue. As job growth declines, labour force participation is also expected to edge down, a tendency that has also been observed in earlier downturns. This flexibility in the labour supply will curb the rise in unemployment. Registered unemployment is projected to increase from 3% in 2015 to 3¼% in 2016 (Chart 2.8), holding fairly steady in the following years, while declining somewhat towards the end of the projection period. Unemployment is expected to run higher than projected in the June *Report*.

Chart 2.7 GDP for mainland Norway. Annual change. Percent. 2008 – 2018<sup>1)</sup>

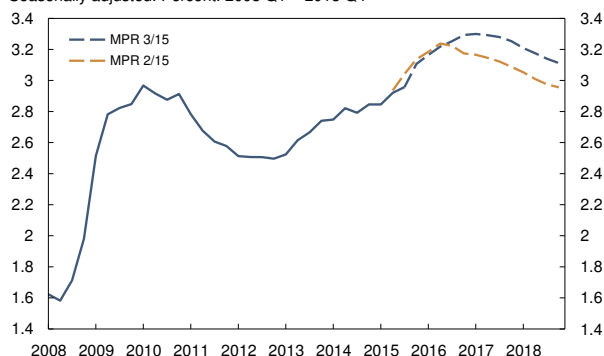


1) Projections for 2015 – 2018 (broken lines). Sources: Statistics Norway and Norges Bank

### Moderate wage growth

Norway's terms of trade have deteriorated markedly over the past year (Chart 2.9). Lower activity and profitability in the oil service industry are pushing down demand for labour and restraining wage growth both in that industry and in the wider economy. Unemployment has risen. Wage growth in 2015 appears to be at its lowest level in over 20 years (Chart 2.10). For 2016, wage growth is projected at 2¾%. The projections imply real wage growth of close to zero in both 2015 and 2016. Further out in the projection period, wage growth is expected to edge up as capacity utilisation increases somewhat, productivity growth

Chart 2.8 Unemployment in percent of labour force. NAV<sup>1)</sup> Seasonally adjusted. Percent. 2008 Q1 – 2018 Q4<sup>2)</sup>



1) Norwegian Labour and Welfare Administration. 2) Projections for 2015 Q3 – 2018 Q4 (broken lines). Sources: NAV, Statistics Norway and Norges Bank

moves up and oil prices pick up. Wage growth in 2018 is projected at 3¾%.

### Weaker krone than previously assumed

The krone has depreciated markedly since June and is weaker than assumed in the *June Report*. The depreciation has been weaker than developments in the interest rate differential against other countries alone would suggest. Besides weakening growth prospects, the oil price decline may have increased market participants' uncertainty regarding the outlook for the Norwegian economy and interest rate developments. This may have contributed to a somewhat higher risk premium for NOK than expected in June. Further out in the projection period, the krone is expected to strengthen somewhat against the background of a moderate rise in oil prices and reduced uncertainty surrounding future developments in the Norwegian economy. It is nevertheless assumed that the krone will remain weaker than envisaged in the *June Report* throughout the projection period (Chart 2.11) in the light of lower oil price prospects and a narrower interest rate differential against other countries than previously anticipated.

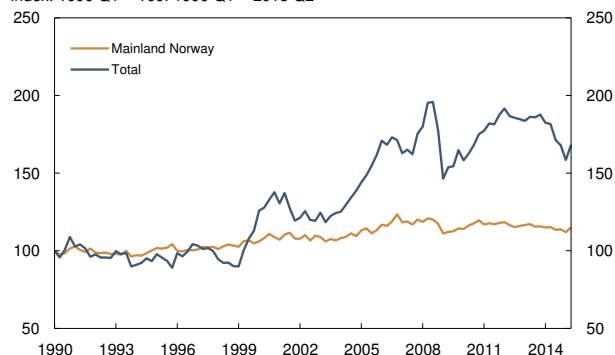
### Consumer price inflation edges down to around 2%

Consumer price inflation is projected to remain close to 3% at the beginning of the projection period. The increase in inflation is attributable to the krone depreciation over the past year. Moderate wage growth both in 2015 and 2016 will push down the rate of increase in prices for domestically produced goods and services in the coming years. Later in the projection period, the rate of increase will move up as wage growth increases somewhat. At the same time, the effects of a weaker krone will gradually unwind, curbing the rise in prices for imported consumer goods. Overall consumer price inflation is projected to drift down to around 2% towards the end of the projection period.

### Productivity growth edges up from a low level

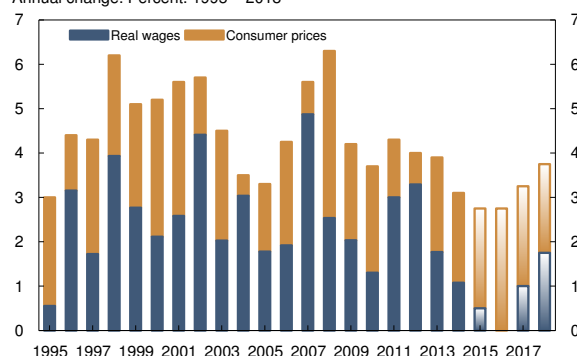
Over the past year, mainland productivity growth has moved down and productivity has been broadly unchanged over the past year. This may reflect labour hoarding by firms, even though output growth has slowed. Productivity growth is projected to increase

Chart 2.9 Terms of trade.  
Index. 1990 Q1 = 100. 1990 Q1 – 2015 Q2



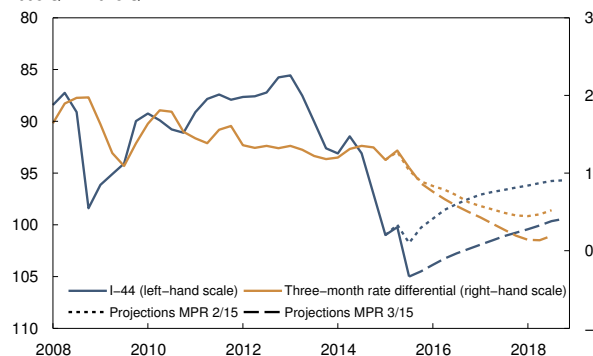
Sources: Statistics Norway and Norges Bank

Chart 2.10 Annual wages.  
Annual change. Percent. 1995 – 2018<sup>1)</sup>



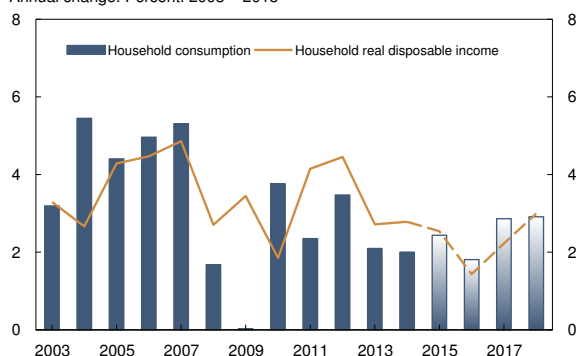
1) Projections for 2015 – 2018.  
Sources: TBU, Statistics Norway and Norges Bank

Chart 2.11 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>. 2008 Q1 – 2018 Q4<sup>4)</sup>



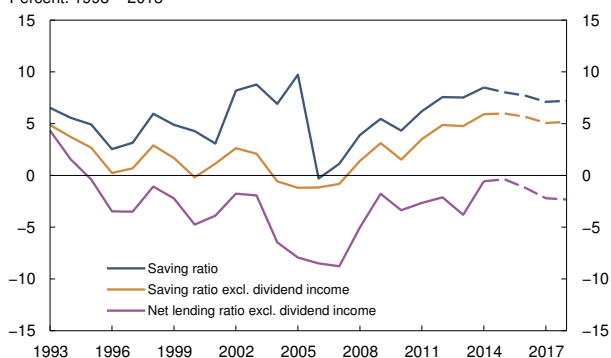
1) Key policy rate in the baseline scenario plus premiums in the Norwegian money market. The calculations are based on the assumption that announced interest rate changes are priced into the money market.  
2) Forward rates for trading partners from 18 September 2015.  
3) A positive slope denotes a stronger krone exchange rate.  
4) Projections in MPR 3/15 for 2015 Q3 – 2018 Q4 (broken lines).  
Sources: Thomson Reuters and Norges Bank

Chart 2.12 Household consumption<sup>1)</sup> and real disposable income<sup>2)</sup>. Annual change. Percent. 2003 – 2018<sup>3)</sup>



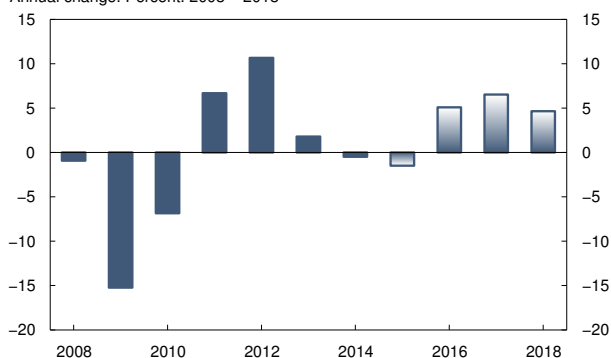
1) Includes consumption for non-profit organisations. Volume.  
 2) Excluding dividend income. Including income for non-profit organisations.  
 3) Projections for 2015 – 2018.  
 Sources: Statistics Norway and Norges Bank

Chart 2.13 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 2.14 Private investment.<sup>1)</sup> Annual change. Percent. 2008 – 2018<sup>2)</sup>



1) Housing and business investment.  
 2) Projections for 2015 – 2018.  
 Sources: Statistics Norway and Norges Bank

later in the projection period to around 1¼% as capacity utilisation picks up. The enterprises in Norges Bank's regional network report low utilisation of factors of production. Therefore, they have ample opportunity to increase productivity when production starts to pick 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 will likely curb immigration to some extent.

### Moderate growth in consumption and high saving

Consumption growth has held steady at a moderate pace over the past year, and consumption growth is also expected to be moderate ahead. Growth in private consumption is projected at 2½% in 2015, which is a little higher than projected in the June Report. Somewhat lower employment growth will dampen growth in household wage income. This is partly countered by a lower interest rate level. Overall, household nominal income is nevertheless projected to grow at a somewhat slower pace between 2015 and 2016. In addition, higher inflation is restraining growth in household purchasing power. Growth in private consumption is projected at 1¾% in 2016. Thereafter, growth is expected to pick up gradually in pace with rising income growth (Chart 2.12). Growth in household consumption is projected at 3% in 2017 and 2018. The saving ratio is expected to remain at a high level (Chart 2.13).

### Low investment growth

Growth in business investment is projected to slacken in 2015, partly reflecting the slowdown in growth in the Norwegian economy and weaker growth prospects (Chart 2.14). Uncertainty regarding economic developments pulls in the same direction. Further out in the projection period, low interest rates and higher demand are expected to push up growth in business investment somewhat. Growth in housing investment is also expected to pick up in the coming years, partly owing to continued population growth and house price inflation.

### Export growth remains firm, but petroleum-related exports fall

A weaker krone is improving cost competitiveness and boosting the profitability of Norwegian export



firms (Chart 2.15). In August, manufacturing export firms in the regional network reported increased output growth and improved profitability. Further out in the projection period, higher growth among trading partners may contribute to somewhat stronger export growth. On the other hand, petroleum-related exports, which account for nearly a quarter of mainland exports, are likely to shrink owing to the decline in global petroleum investment. In August, export-oriented oil service firms reported prospects of a decline in export production. Overall annual growth in mainland exports is projected between 3% and 4% in the coming years (Chart 2.16).

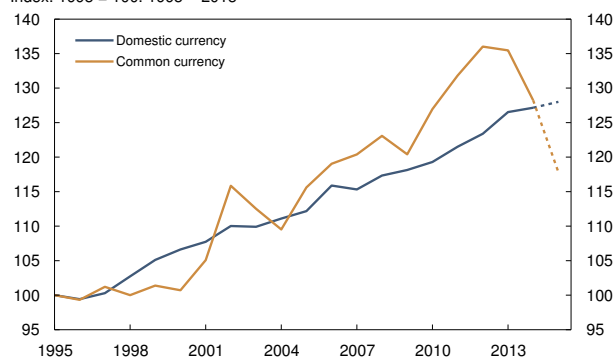
### House price inflation slows gradually

The low interest rate level will contribute to sustaining the rise in house prices and debt. On the other hand, new government requirements relating to banks' residential mortgage lending standards and lower growth in the Norwegian economy may restrain the rate of debt accumulation to some extent. House price inflation is projected to abate gradually through 2015 and 2016, but house prices will rise throughout the projection period (Chart 2.17). Growth in household debt is projected to edge up in the coming year, reflecting the projected rise in house prices, and to edge down thereafter. Household debt ratios are likely to increase ahead (Chart 2.18). The household interest burden remains low despite the high debt burden, reflecting an environment of low interest rates.

### The projections are uncertain

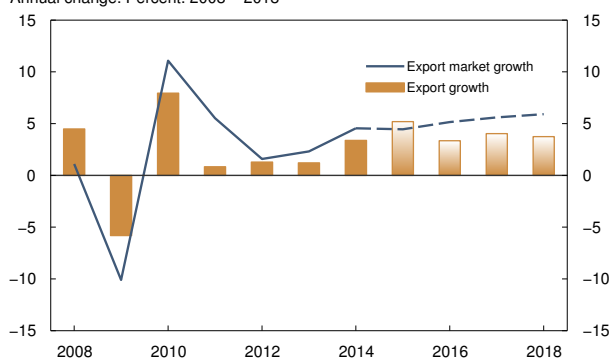
The projections for the key policy rate, inflation, capacity utilisation and other variables are based on Norges Bank's assessment of the economic situation and the functioning of the economy and monetary policy. The projections express Norges Bank's expectations concerning developments ahead, but they are uncertain. If economic developments are broadly in line with projections, economic agents can also expect the key policy rate path to be approximately as projected. Hence, the interest rate path is a conditional forecast. Monetary policy may respond to changes in the economic outlook, or if the relationships between the interest rate level, inflation and the real economy differ from those assumed. The uncertainty surrounding Norges Bank's projections is illustrated using fan charts (Charts 2.4 a-d) (see box on projections and fan charts on page 20).

Chart 2.15 Labour costs<sup>1)</sup> relative to trading partners. Index. 1995 = 100. 1995 – 2015<sup>2)</sup>



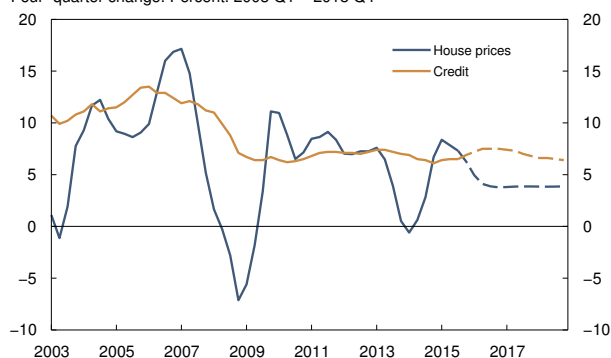
1) Hourly labour costs in manufacturing.  
2) Projections for 2015 (broken lines).  
Sources: TBU, Statistics Norway and Norges Bank

Chart 2.16 Export market growth<sup>1)</sup> and growth in Norwegian mainland exports. Annual change. Percent. 2008 – 2018<sup>2)</sup>



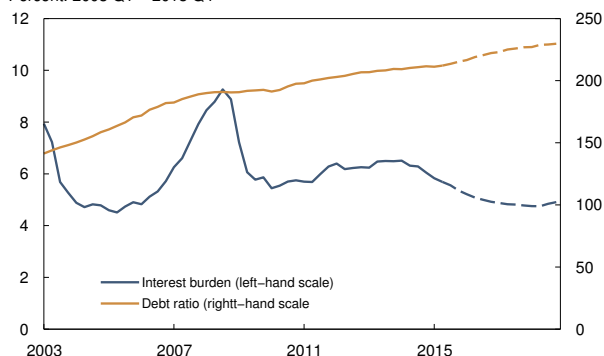
1) Export market growth is calculated as import growth among 25 trading partners.  
2) Projections for 2015 – 2018.  
Sources: Thomson Reuters and Norges Bank

Chart 2.17 Household debt<sup>1)</sup> and house prices. Four-quarter change. Percent. 2003 Q1 – 2018 Q4<sup>2)</sup>



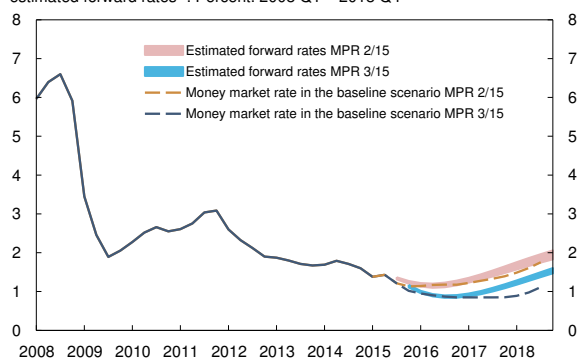
1) Domestic credit to households (C2).  
2) Projections for 2015 Q3 – 2018 Q4 (broken lines).  
Sources: Statistics Norway, Eiendom Norge, Eiendomsværdi, Finn.no and Norges Bank

Chart 2.18 Household debt ratio<sup>1)</sup> and interest burden<sup>2)</sup>. Percent. 2003 Q1 – 2018 Q4<sup>3)</sup>



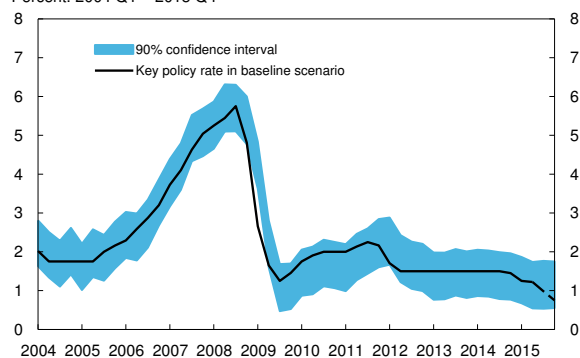
1) Loan debt as a percentage of disposable income adjusted for estimated reinvested dividend income for 2003 – 2005 and redemption/reduction of equity capital for 2006 Q1 – 2012 Q3.  
 2) Interest expenses as a percentage of disposable income adjusted for estimated reinvested dividend income for 2003 – 2005 and redemption/reduction of equity capital for 2006 Q1 – 2012 Q3 plus interest expenses.  
 3) Projections for 2015 Q2 – 2018 Q4 (broken lines).  
 Sources: Statistics Norway and Norges Bank

Chart 2.19 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 30 May – 12 June 2015 and 7 September – 18 September 2015.  
 Sources: Thomson Reuters and Norges Bank

Chart 2.20 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 Q4



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 – 2015 Q2. See *Norges Bank Staff Memo 3/2008* for further discussion.  
 Source: Norges Bank

Growth in the Norwegian economy may prove to be weaker than projected in this *Report*. Oil prices have dropped markedly over the past year and futures prices imply a lower price than assumed earlier. There is considerable uncertainty concerning the effects of the price decline since 2014 on activity in the petroleum industry and the scale of its impact on the mainland economy. Demand from the petroleum sector may decline to a further extent than projected in this *Report*, for example if oil prices stabilise at current levels or fall further. Should the decline in petroleum investment prove to be considerably more pronounced than currently projected, growth prospects for the Norwegian economy may weaken further and lead to a higher-than-projected rise in unemployment. If uncertainty increases among households and enterprises at the same time, it may have a dampening impact on growth. Reduced global oil investment may also pull down petroleum-related exports to a greater extent than envisaged. 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 oil prices increase faster and more than implied by futures prices, petroleum investment may be higher than projected. Diminished uncertainty concerning developments in the Norwegian economy may boost business and consumer confidence, contributing to a faster upswing in investment and private consumption than projected in this *Report*. Growth among many of Norway's trading partners is picking up, and the possibility of higher-than-projected growth cannot be ruled out. As a result, demand for goods and services from traditional export-oriented industries in Norway may increase more than currently projected. Moreover, the growth contribution from the krone depreciation may prove to be more pronounced than assumed in this *Report*.

The krone has depreciated markedly over a longer period, and the exchange rate pass-through to consumer prices has likely been stronger than assumed earlier. Should the krone depreciate further in the period ahead, inflation may turn out to be higher than currently projected. Should growth in the Norwegian economy prove to be stronger than currently projected or if inflation turns out to be higher than pro-

jected, the key policy rate may be raised more quickly than implied by the baseline scenario.

### **Cross-checks in line with 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 are close to Norges Bank's forecast for the money market rate in this *Report*. Towards the end of the projection period, estimated forward rates suggest that market participants expect somewhat higher money market rates than projected in this *Report* (Chart 2.19).

A simple rule based on Norges Bank's previous interest rate setting is also a cross-check for the baseline key policy rate. Chart 2.20 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 somewhat below the middle of this band.

# MONETARY POLICY TRADE-OFFS

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:

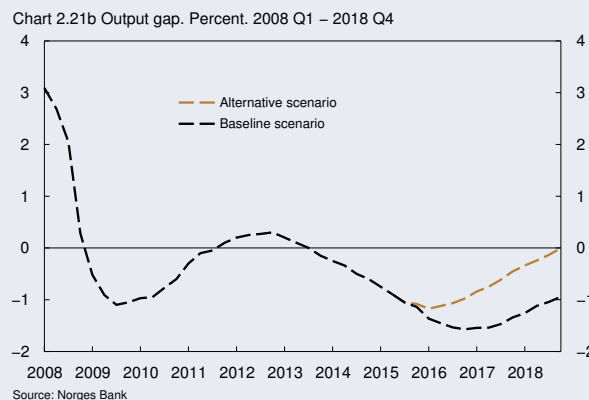
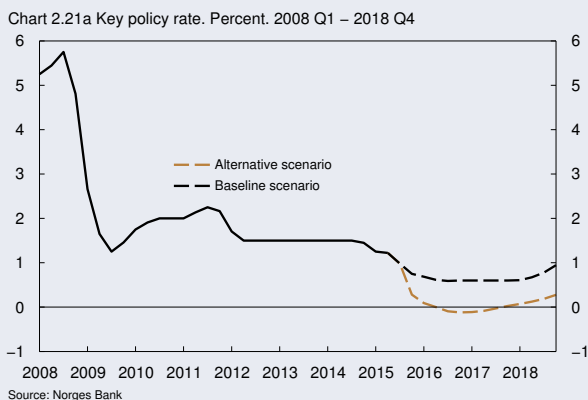
1. **The inflation target is achieved:**  
The interest rate path should stabilise inflation at target or bring inflation back to target after a deviation has occurred.
2. **The inflation targeting regime is flexible:**  
The interest rate path should provide a reasonable balance between the path for inflation and the path for 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:**  
Conditions that imply increased risk of particularly adverse economic outcomes should be taken into account when setting the key policy rate. Among other things, monetary policy should therefore seek to mitigate the risk of a build-up of financial imbalances. In the event of major and abrupt changes in the balance of risks, the consideration of robustness may also imply a more active monetary policy than normal.

The various considerations expressed in the criteria are weighed against each other. The consideration of robustness is not an objective in itself but is included because it may yield improved performance in terms of inflation, output and employment over time. The trade-off between the criteria is 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.

The projections in this Report imply a reduction in the key policy rate to just above ½% in 2016. Towards the



end of the projection period, the key policy rate is projected to rise to close to 1%. With this path for the key policy rate, the analyses suggest that inflation will remain close to 3% in the near term before gradually falling to around 2% towards the end of the projection period. Capacity utilisation is expected to continue to decline until the end of 2016. Capacity utilisation is expected to edge up thereafter.

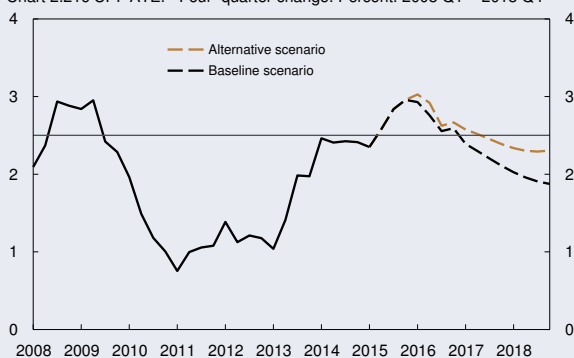
A possible path for the key policy rate where weight is given only to attaining the inflation target and closing the output gap over the next three years is illustrated with the aid of a technical model-based analysis (orange line in Charts 2.21 a-c). Here the key policy rate is quickly lowered and kept around zero over the coming years. According to the model-based analysis, this will help raise capacity utilisation in the mainland economy towards a normal level, with inflation approaching 2.5% towards the end of the projection period.

The alternative path for the key policy rate does not take into account that a lower bound for the key policy rate may exist or that the monetary policy transmis-

sion mechanism may change when interest rates become very low. The technical assumption is applied that the krone exchange rate will become weaker than in the baseline scenario owing to changes in the interest rate differential against other countries, in line with the theory of uncovered interest rate parity. It is conceivable that the foreign exchange market would have reacted more forcefully to such a path than implied by uncovered interest rate parity in isolation.

Such an alternative path for the key policy rate would increase the probability of further fuelling house price inflation and debt growth. This could have increased household vulnerability and contributed to triggering or amplifying an economic downturn further ahead. These relationships are not fully known or captured by the analytical framework, but are important in terms of the balance of risks and the monetary policy trade-offs. A somewhat less pronounced monetary policy response than implied by inflation and output considerations during the projection period may result in a more stable path for inflation and output over time.

Chart 2.21c CPI-ATE.<sup>1)</sup> Four-quarter change. Percent. 2008 Q1 – 2018 Q4



<sup>1)</sup> CPI adjusted for tax changes and excluding energy products.  
Sources: Statistics Norway and Norges Bank

# CHANGES IN THE PROJECTIONS SINCE MONETARY POLICY REPORT 2/15

The interest rate forecast in this *Monetary Policy Report* has been revised down since the June 2015 *Report* (Chart 2.22). The projections are based on the criteria for an appropriate interest rate path (see box on monetary policy trade-offs on page 28), an overall assessment of the situation in the Norwegian and global economy and Norges Bank's perception of the functioning of the economy.

Chart 2.23 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 June *Report* is shown by the black line.

Policy rates are still close to zero in many countries and have fallen somewhat further since June. In addition, market interest rate expectations suggest that

the expected rise in interest rates among trading partners will take place later and more gradually than previously assumed. Lower policy rates abroad suggest that the key policy rate will also remain low in Norway for a longer period (dark blue bars).

Oil prices have fallen since the June *Report* and the outlook for the Norwegian economy has weakened. Oil investment will likely fall to a further extent than projected in June and lower demand for goods and services in the petroleum industry will weigh down further on activity and profitability in the oil service industry. This will have spillover effects on the wider mainland economy and may contribute to holding down wage growth in the coming years. Weaker demand prospects, and hence the outlook for output, employment and wage growth, indicate overall a lower path for the key policy rate (green bars).

The krone has depreciated since the June *Report* and is now weaker than assumed. The krone has been weaker than developments in the interest rate dif-

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

Chart 2.22 Key policy rate in the baseline scenario in MPR 2/15 with fan chart and key policy rate in the baseline scenario in MPR 3/15 (orange line). Percent. 2008 Q1 – 2018 Q4

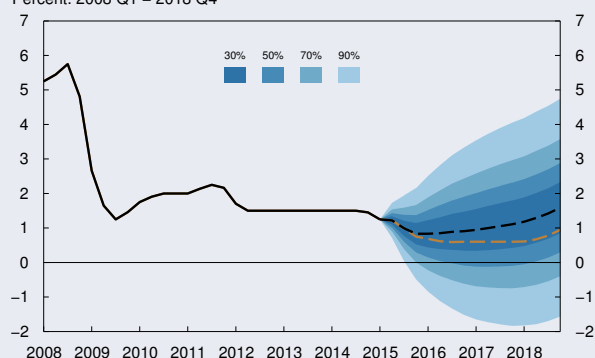
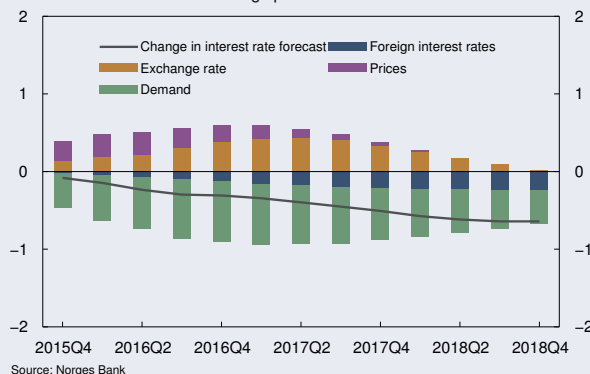


Chart 2.23 Factors behind changes in the interest rate forecast since MPR 2/15. Cumulative contribution. Percentage points. 2015 Q4 – 2018 Q4



ferential against other countries alone would suggest. Besides weakening growth prospects, the oil price decline may have increased market participants' uncertainty regarding the outlook for the Norwegian economy and interest rate developments. This may have contributed to a somewhat higher risk premium for NOK than expected in June. A weaker krone contributes, in isolation, to higher inflation and higher economic activity. This pushes up the path for the key policy rate (orange bars).

Consumer price inflation has been higher than projected. The pass-through to inflation from a weaker krone appears to have been stronger than previously assumed. Slightly higher inflation suggests a higher key policy rate in the coming period (purple 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 3/15*. Percentage change from previous year (unless otherwise stated). Change from projections in *Monetary Policy Report 2/15* in brackets

	2015	2016	2017	2018
CPI	2¼ (¼)	2¾ (½)	2¼ (¼)	2 (-¼)
CPI-ATE <sup>1</sup>	2¾ (½)	2¾ (½)	2¼ (¼)	2 (-¼)
Annual wages <sup>2</sup>	2¾ (0)	2¾ (-¼)	3¼ (-¼)	3¾ (-¼)
Mainland demand <sup>3</sup>	1½ (0)	2¼ (-¼)	3 (-¼)	3 (0)
GDP, mainland Norway	1¼ (0)	1¼ (-¼)	2 (-¼)	2½ (0)
Output gap, mainland Norway (level) <sup>4</sup>	-1 (0)	-1½ (-¼)	-1½ (-½)	-1 (-½)
Employment, persons, QNA	½ (¼)	¼ (0)	¾ (-¼)	1 (0)
Registered unemployment (rate, level)	3 (0)	3¼ (0)	3¼ (0)	3¼ (¼)
<b>Level</b>				
Key policy rate <sup>5</sup>	1 (0)	½ (-¼)	½ (-½)	¾ (-½)
Import-weighted exchange rate (I-44) <sup>6</sup>	102¾ (2)	103 (4¾)	101 (4¼)	99½ (3½)
Money market rates, trading partners <sup>7</sup>	¼ (0)	¼ (-¼)	½ (-¼)	¾ (-½)

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.

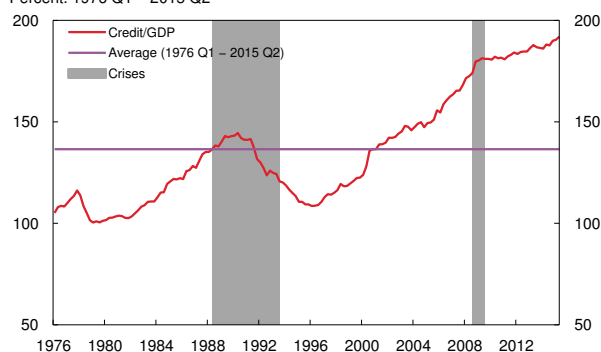
6 The weights are estimated on the basis of imports from 44 countries, which comprise 97% of total imports.

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

Source: Norges Bank

# 3 DECISION BASIS FOR THE COUNTERCYCLICAL CAPITAL BUFFER

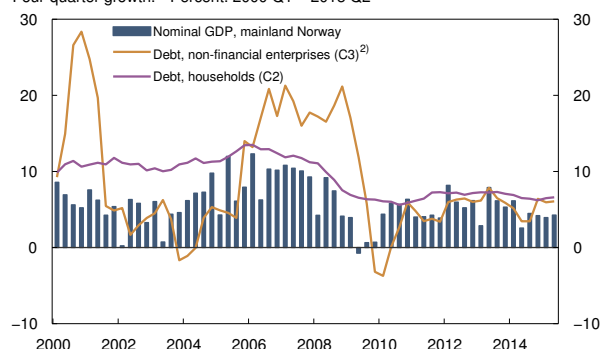
Chart 3.1 Total credit<sup>1)</sup> mainland Norway as a share of mainland GDP. Percent. 1976 Q1 – 2015 Q2



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

Norges Bank prepares a decision basis and provides advice to the Ministry of Finance regarding the level of the countercyclical capital buffer four times a year. In December 2013, the buffer rate was set at 1%, effective from 30 June 2015. In a letter to the Ministry of Finance of 17 June 2015, Norges Bank issued advice to raise the buffer rate to 1.5%, effective from 30 June 2016. The Ministry of Finance decided on 18 June to increase the buffer rate in line with Norges Bank's recommendation. National buffer requirements will eventually apply to Norwegian banks' exposures in other EU/EEA countries (see box on page 33).

Chart 3.2 Debt held by households and non-financial enterprises and mainland GDP. Four-quarter growth.<sup>1)</sup> Percent. 2000 Q1 – 2015 Q2

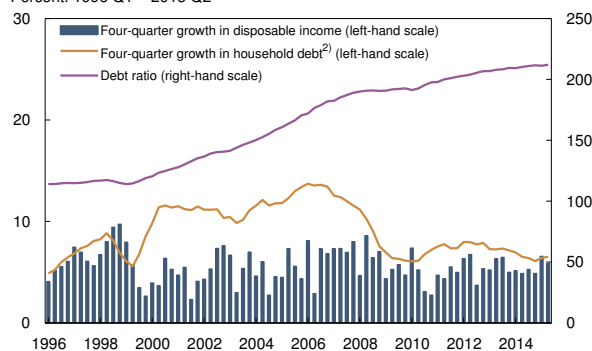


1) Estimated based on stock of debt at the end of the quarter.  
2) Sum of C2 non-financial enterprises and foreign debt for mainland Norway.  
Sources: Statistics Norway and Norges Bank

Norges Bank has formulated three criteria for an appropriate countercyclical capital buffer (see box on page 44). 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.

Norges Bank's assessment of financial imbalances is based on the credit-to-GDP ratio and the deviation of this ratio from its long-term trend. From the mid-1990s to 2008, total household and corporate debt in the mainland economy grew markedly faster than GDP (Chart 3.1). In the post-crisis years, credit growth has slowed, but debt has continued to rise faster than GDP (Chart 3.2). The credit indicator has increased further in recent quarters.

Chart 3.3 Ratio of household debt to disposable income.<sup>1)</sup> Percent. 1996 Q1 – 2015 Q2



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) Estimated based on stock of debt at the end of the quarter.  
Sources: Statistics Norway and Norges Bank

## Household debt growth remains elevated

Household debt growth has recently risen slightly. Household debt has long risen faster than household disposable income (Chart 3.3). Rapidly rising house prices and low lending rates have contributed to sustaining debt growth. High and rising debt ratios increase household vulnerability to a loss of income, interest rate increases and a fall in house prices.

Growth in bank lending to households has picked up over the past year (Chart 3.4). The new regulation on requirements for new loans secured on dwellings that entered into force on 1 July may in isolation restrain growth in bank lending ahead. In Norges Bank's



## COUNTERCYCLICAL CAPITAL BUFFERS IN OTHER COUNTRIES

The countercyclical capital buffer shall address systemic risk in the individual country and be set on the basis of national conditions. Banks operating in several countries are regulated by the authorities in the country where their head office is located. To ensure an identical buffer rate for different banks' exposures in the same country, EU capital adequacy legislation (CRD IV/CRR) provides for international reciprocity.

The Ministry of Finance is planning for countercyclical capital buffer requirements set in other EU/EEA countries to apply in principle to Norwegian banks' activities in the countries in question in parallel with the entry into force of the EU regulatory system. If foreign countercyclical capital buffer rates are lower than the Norwegian requirement, Norwegian banks with foreign exposures will be subject to a lower overall requirement.

Under CRD IV/CRR, buffer rates of up to 2.5% shall be automatically recognised between EU countries.<sup>1</sup> The buffer requirement in Norway has already been recognised by Denmark, Finland, Sweden and the UK. Banks with their head office in these countries will thus have to hold a countercyclical capital buffer in accordance with Norwegian requirements for that portion of their activities carried out in Norway.

Under CRD IV/CRR, all EU countries are to have set a countercyclical buffer rate by 2016. So far, ten EU/EEA countries have established an institutional framework and set a countercyclical buffer rate for banks (Table 1).<sup>2</sup>

**TABLE 1** Countercyclical capital buffers introduced in EU/EEA countries

Country	Buffer requirement first announced	Buffer rate	Rate applies from
Croatia	13 January 2015	0%	1 January 2016
Czech Republic	28 August 2014	0%	1 October 2015
Denmark	19 December 2014	0%	1 January 2016
Finland	16 March 2015	0%	16 March 2015
Latvia	23 January 2015	0%	1 February 2016
Lithuania	23 June 2015	0%	30 June 2015
Norway	12 December 2013	1.5%*	30 June 2016
Slovakia	7 October 2014	0%	1 November 2014
Sweden	10 September 2014	1.5%**	27 June 2016
UK	26 June 2014	0%	26 June 2014

\* A buffer rate of 1% applies from 30 June 2015.

\*\* A buffer rate of 1% applies from 13 September 2015.

Source: European Systemic Risk Board (ESRB), *Macro-prudential policy actions. Overview of measures*, as at 21 August 2015

<sup>1</sup> CRD IV/CRR permits recognition of rates in excess of 2.5%. The European Systemic Risk Board (ESRB) recommends in general that higher rates should also be recognised (see *Recommendation on guidance for setting countercyclical buffer rates*, European Systemic Risk Board (ESRB), 2014). The limit is lower than 2.5% during a phasing-in period between 2016 and 2019.

<sup>2</sup> Switzerland set the buffer rate at 1% already in February 2013 and then raised the rate to 2% effective from 30 June 2014. The buffer requirement applies only to banks' residential mortgages. Hong Kong has set the countercyclical capital buffer rate at 0.625% from 1 January 2016.

lending survey for Q2, several banks announced plans to tighten credit standards for households as a consequence of the new regulation (Chart 3.5). Banks indicate that credit conditions for maximum loan-to-value and loan-to-income ratios will be tightened.

### High house price inflation

House price inflation has been high over the past year (Chart 3.6). House prices have risen somewhat faster than household disposable income. The house price indicator remains lower than it was before house prices started to drift down in 2013 (Chart 3.7). Over the past year, house prices have fallen in Stavanger, while they have risen markedly in Oslo (Chart 3.8).

Sales of existing homes have been high over the past year (Chart 3.9). Selling times and the number of

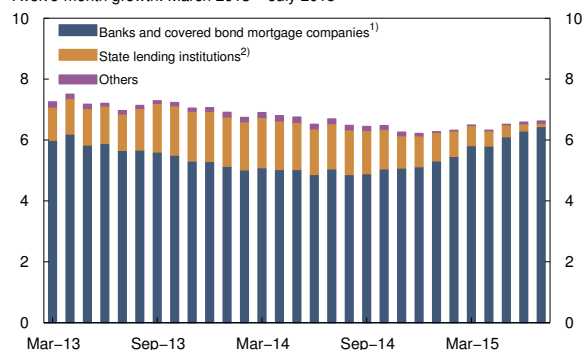
homes for sale on the Finn.no marketplace website have declined somewhat. House rents have risen at a moderate pace in recent years (Chart 3.10).

New home sales have risen sharply (Chart 3.11). There is particularly strong growth in new home sales in eastern Norway, while sales have fallen in Stavanger. In the pre-crisis years, fewer new homes were built than the increase in the number of households. In 2013 and 2014, housing construction and population growth were in better balance (Chart 3.12).

### Moderate debt growth for enterprises

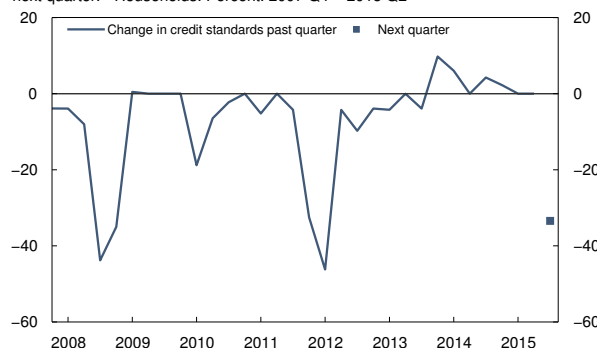
Debt growth for non-financial enterprises has been moderate since the financial crisis (Chart 3.2). Growth in bank lending, which is the primary credit source for enterprises, has picked up over the past year (Chart

Chart 3.4 Credit to households (C2) by source. Twelve-month growth. March 2013 – July 2015



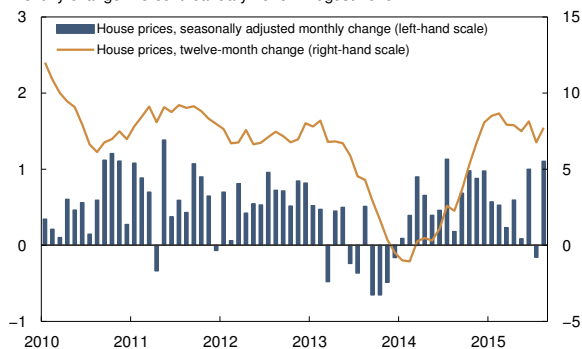
1) The series has been break-adjusted for the start of OBOS-banken AS in December 2013.  
2) Including the Norwegian Public Service Pension Fund.  
Source: Statistics Norway

Chart 3.5 Change in bank's credit standards past quarter and expected change next quarter. 1) Households. Percent. 2007 Q4 – 2015 Q2



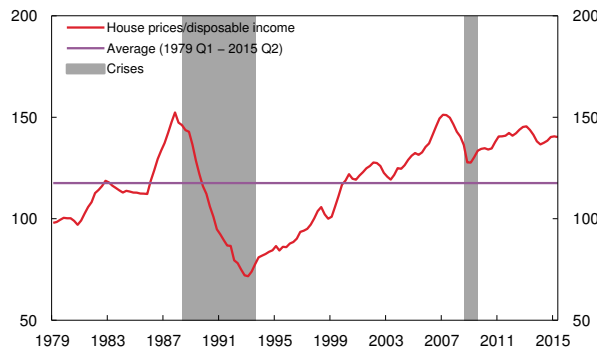
1) Negative values denote stricter credit standards.  
Source: Norges Bank

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



Sources: Eiendom Norge, Eiendomsverdi and Finn.no

Chart 3.7 House prices relative to disposable income. Indexed. 1998 Q4 = 100. 1979 Q1 – 2015 Q2



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

Chart 3.8 House prices in selected cities.  
Twelve-month change. January 2004 – August 2015

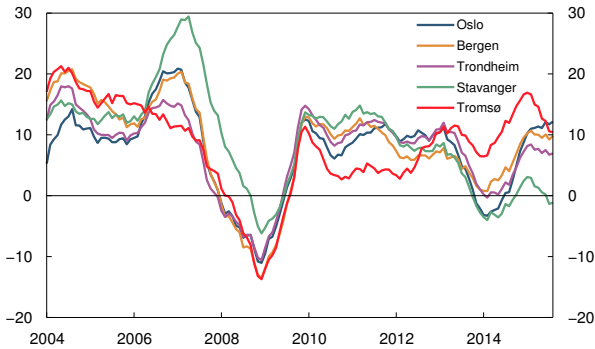


Chart 3.9 Sales of existing homes and homes for sale in thousands of dwellings.  
Selling times in days. April 2004 – August 2015

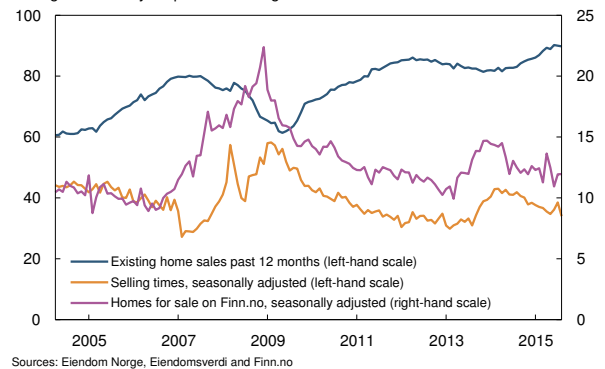


Chart 3.10 Developments in house prices and house rents.  
Four-quarter change. Percent. 2011 Q1 – 2015 Q1

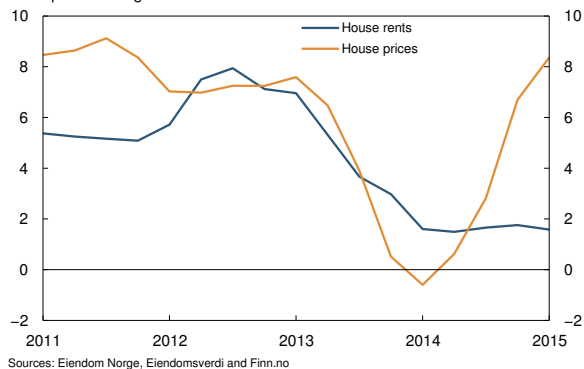


Chart 3.11 New home sales last twelve months and stock of unsold units.<sup>1)</sup>  
In thousands of housing units. December 2003 – August 2015<sup>2)</sup>

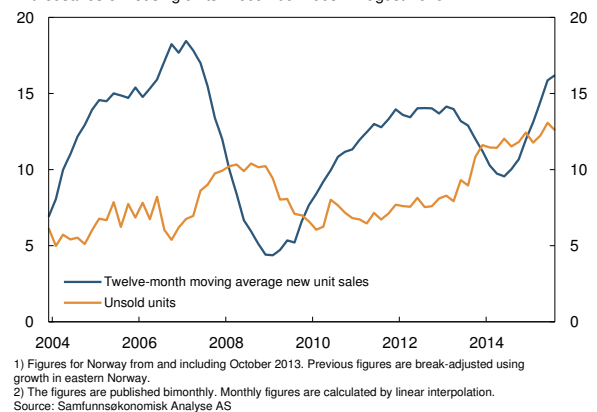


Chart 3.12 Difference between number of housing completions and increase in households<sup>1)</sup> and population growth. Numbers in thousands. 2003 – 2014

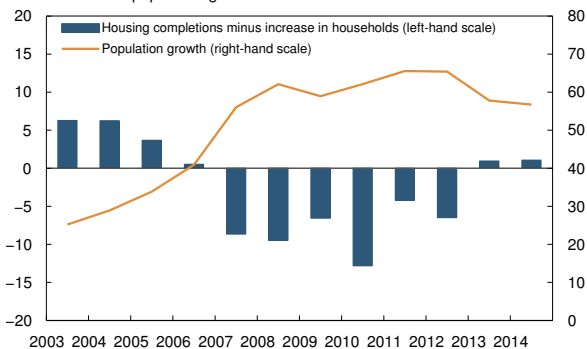
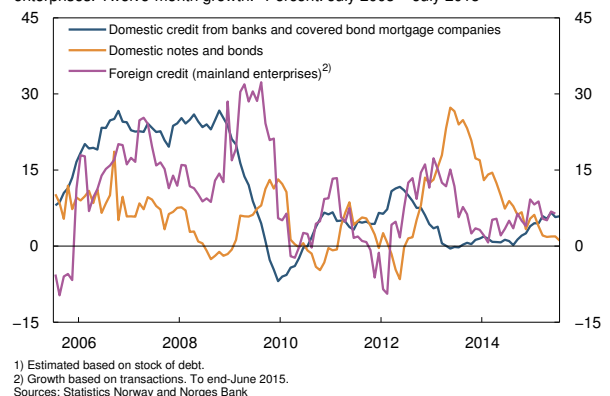


Chart 3.13 Credit from selected funding sources to Norwegian non-financial enterprises. Twelve-month growth.<sup>1)</sup> Percent. July 2005 – July 2015



3.13). Growth in bank lending to enterprises in the commercial property sector and the construction industry is strong (Chart 3.14). Some of the increase in bank lending is in the form of an increase in the stock of foreign currency loans, which probably reflects the depreciation of the krone (Chart 3.15).

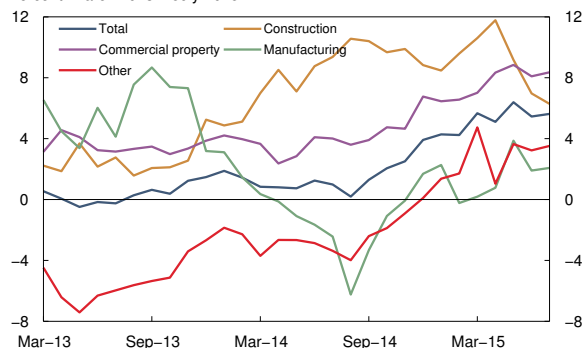
Growth in corporate bond financing was strong in 2012 and 2013. Over the past two years, growth in the volume of bond issues has decelerated markedly. The volume of issues from Norwegian non-financial enterprises was fairly low in the first half of 2015, compared with the two previous years, especially from enterprises with a low credit rating (Chart 3.16). In international financial markets, risk premiums have recently risen for several industries and markets. In the Norwegian market, too, risk premiums have

recently risen, with the highest increase for oil-related enterprises with a low-credit rating. In the period ahead, higher risk premiums may reduce domestic bond issuance activity among oil-related enterprises.

The banks in Norges Bank's lending survey expect somewhat lower corporate credit demand ahead, and have announced slightly tighter credit standards for commercial property enterprises (Chart 3.17).

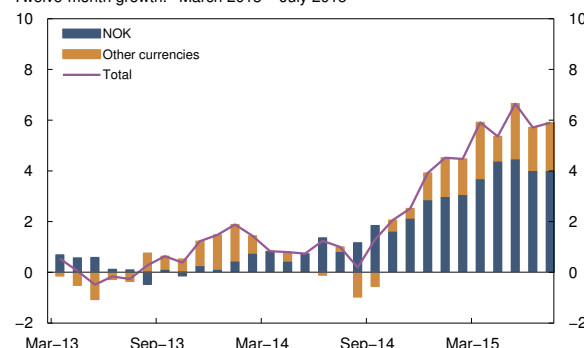
Enterprises' ability to withstand economic shocks partly depends on their debt-servicing capacity and proportion of equity financing. The debt-servicing capacity of listed companies was high pre-crisis, and has since been at a lower level (Chart 3.18). In recent years, equity ratios have been fairly stable.

Chart 3.14 Domestic credit to Norwegian non-financial enterprises in selected industries from banks and covered bond mortgage companies. Twelve-month growth.<sup>1)</sup> Percent. March 2013 – July 2015



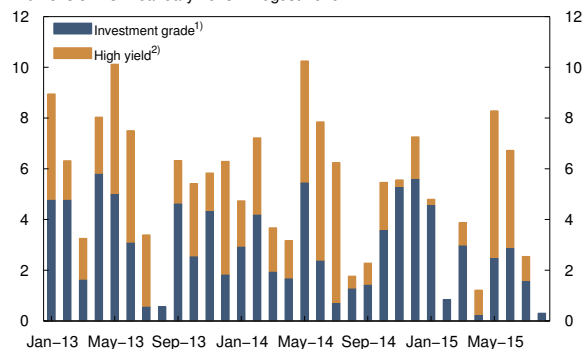
1) Estimated based on stock of debt.  
Sources: Statistics Norway and Norges Bank

Chart 3.15 Domestic credit to Norwegian non-financial enterprises from banks and covered bond mortgage companies in NOK and other currencies. Twelve-month growth.<sup>1)</sup> March 2013 – July 2015



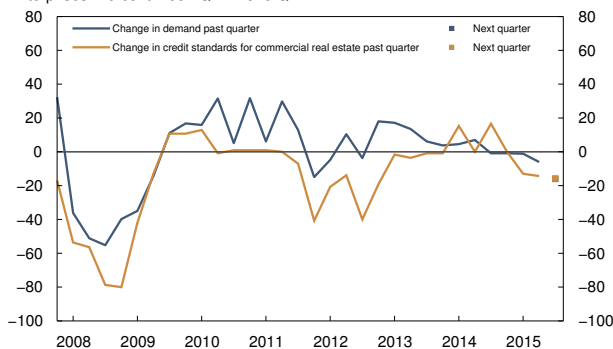
1) Estimated based on stock of debt.  
Source: Statistics Norway

Chart 3.16 Volume of bond issues from Norwegian registered non-financial enterprises in the Norwegian bond market. In billions of NOK. January 2013 – August 2015



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

Chart 3.17 Changes in non-financial corporate credit demand and banks' credit standards for commercial real estate past quarter, and expected<sup>1)</sup> change next quarter.<sup>2)</sup> Enterprises. Percent. 2007 Q4 – 2015 Q2



1) Expected change next quarter is approximately equal for the two series.  
2) Negative values denote lower demand or tighter credit standards.  
Source: Norges Bank

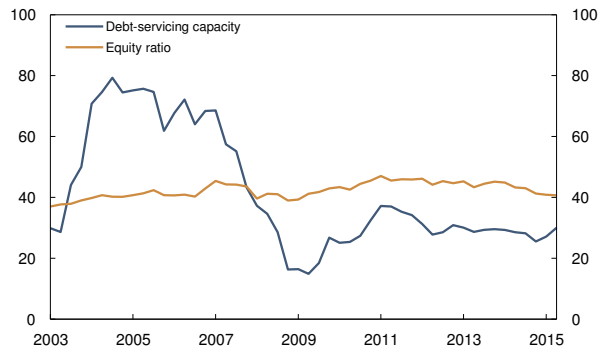
## Higher sales prices for commercial property

The commercial property price indicator is based on OPAK's estimated sales prices for centrally located high-standard office premises in Oslo. The estimated sales price rose considerably through 2014 and has continued to rise in the first half of 2015 (Chart 3.19). Sales prices are estimated on the basis of observed rental income and estimated required rates of return. Rental prices in this segment were fairly stable in 2014, but have fallen slightly in 2015. Rental prices have also fallen somewhat in a number of other segments in Oslo (Chart 3.20). The estimated required rate of return for the most attractive office premises in Oslo fell in 2014 and has continued to fall in 2015 (Chart 3.21). The decline in the required rate of return likely reflects the fall in financing costs.

Office rental prices and sales prices are influenced by vacancy rates. Several market participants forecast higher office vacancy rates in Oslo and Bærum in 2015 (Chart 3.22). Higher vacancy rates may lead to low growth or a further decline in rental prices. According to market participants, office vacancy rates in Stavanger and vicinity have risen considerably in recent years. Much of the vacant space in the region is located in the Forus industrial district, which is particularly exposed to the oil industry.

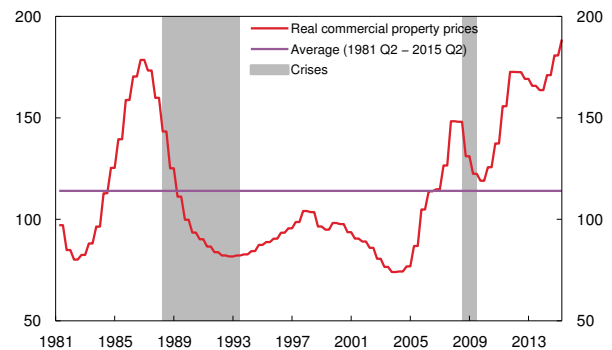
According to many market participants, the volume of commercial property transactions was high in the first half of 2015. Foreign investors accounted for a large share of purchases.

Chart 3.18 Debt-servicing capacity<sup>1)</sup> and equity ratio<sup>2)</sup> for listed companies. Percent. 2003 Q1 – 2015 Q2



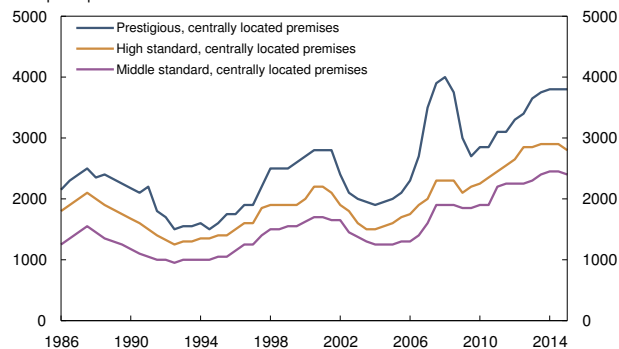
1) Pre-tax profit plus depreciation and amortisation for the previous four quarters as a percentage of interest-bearing debt for Norwegian non-financial companies listed on Oslo Børs (excluding Statoil). Figures for 2015 Q2 are preliminary.  
2) Equity as a percentage of assets for Norwegian non-financial companies listed on Oslo Børs (excluding Statoil).  
Sources: Bloomberg, Statistics Norway and Norges Bank

Chart 3.19 Real commercial property prices.<sup>1)</sup> Indexed. 1998 = 100. 1981 Q2 – 2015 Q2



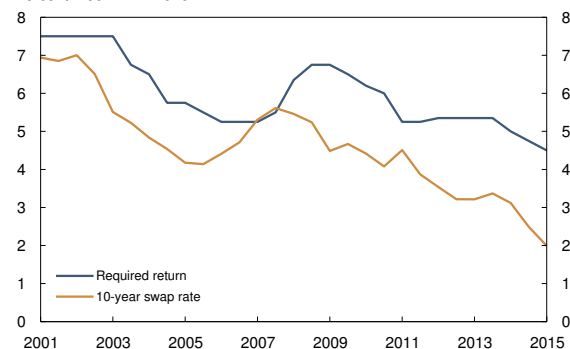
1) Estimated sales prices for centrally located high-standard office premises in Oslo deflated by the GDP deflator for mainland Norway.  
Sources: Dagens Næringsliv, OPAK, Statistics Norway and Norges Bank

Chart 3.20 Annual rental prices for office premises in Oslo. NOK per square meter. 1986 H1 – 2015 H1



Sources: OPAK and Dagens Næringsliv

Chart 3.21 Required return for prime office space in Oslo and 10-year swap rate.<sup>1)</sup> Percent. 2001 H1 – 2015 H1



1) The required return is based on assessments by Dagens Næringsliv's expert panel for commercial property.  
Sources: Dagens Næringsliv and Thomson Reuters

## Banks report good profitability and increased CET1 capital ratios

The largest Norwegian banks<sup>1</sup> reported good profitability in the first half of 2015, with a return on equity capital of 13.3%. The average return for the past 20 years has been approximately 13%<sup>2</sup> (Chart 3.23). Banks continue to report high net interest income and low losses.

A substantial portion of some Norwegian banks' commercial loans are to oil-related industries. Companies in the oil industry that have partly relied on bond market financing may experience refinancing problems,

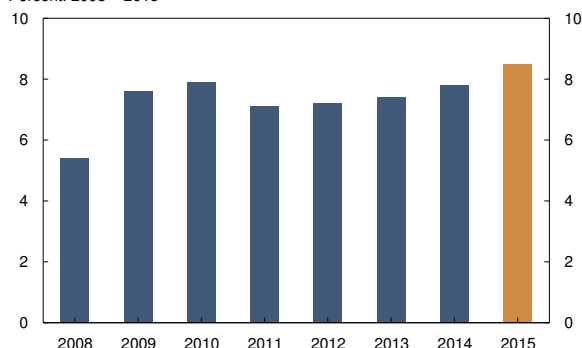
or the financing costs may rise to a level that substantially weakens profitability. Low oil prices and a weak outlook for economic activity may, combined with bond financing constraints, result in higher oil-related losses in the banking sector in 2016.

Banks have strengthened their capital ratios over the past year (Chart 3.24). The average Common Equity Tier 1 (CET1) ratio for the largest Norwegian banks came to 13.7% at the end of 2015 Q2 when adding the entire first half-year result to CET1 capital. New equity capital at Nordea Bank Norge contributed to a sharp increase in CET1 capital in Q2.

As from 30 June 2015, the CET1 capital requirement for Norwegian financial institutions was 11%. The requirement includes a countercyclical capital buffer of 1 percentage point. The countercyclical capital

- 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", Norges Bank Staff Memo 18/2014.

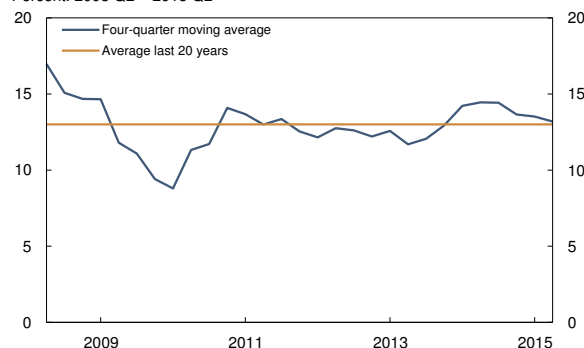
Chart 3.22 Office vacancy rates in Oslo and Bærum at year-end.<sup>1)</sup> Percent. 2008 – 2015<sup>2)</sup>



- 1) Calculated as average of different market specialists' estimates.
- 2) Preliminary figures for 2014. Forecasts for 2015.

Source: Entra's consensus report

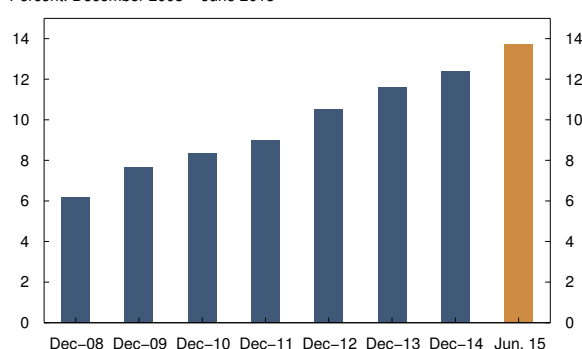
Chart 3.23 Return on equity for Norwegian banks<sup>1)</sup>. Percent. 2008 Q2 – 2015 Q2



- 1) Calculated as weighted average of the seven largest Norwegian banks (excluding Sparebank Sør to end-December 2013).

Sources: Banking groups' quarterly and annual reports and Norges Bank

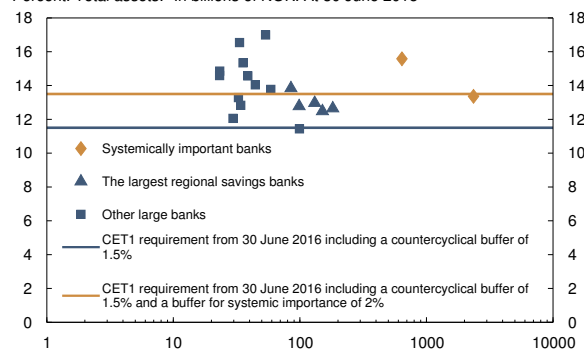
Chart 3.24 Common Equity Tier 1 (CET1) capital ratios in banks.<sup>1)</sup> Percent. December 2008 – June 2015



- 1) Calculated as weighted average of the seven largest banks in Norway (excluding Sparebank Sør to end-December 2013).

Sources: Banking groups' quarterly and annual reports and Norges Bank

Chart 3.25 Banking groups<sup>1)</sup> Common Equity Tier 1 (CET1) capital ratios. Percent. Total assets<sup>2)</sup> in billions of NOK. At 30 June 2015<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) Assuming that profits for 2015 H1 are added in full to CET1 capital.

Sources: Banking groups' quarterly reports and Norges Bank

buffer will be raised to 1.5% on 30 June 2016. The systemically important banks must hold an additional 1 percentage point CET1 capital and a further 1 percentage point from 30 June 2016. Most of the elements in the new capital adequacy regulation are now in place (see box on page 40). At the end of 2015 Q2, all large Norwegian banking groups satisfied the CET1 requirements by a good margin (Chart 3.25).

Banks' wholesale funding ratios rose markedly in pre-crisis years, when growth in bank lending was high (Chart 3.26). In recent years, wholesale funding ratios have been fairly stable. Bonds, primarily in the form of covered bonds, have accounted for a growing share of wholesale funding. Wholesale funding ratios have fallen slightly in 2015 Q2, owing to decreased foreign currency deposits from credit institutions (Chart 3.27).

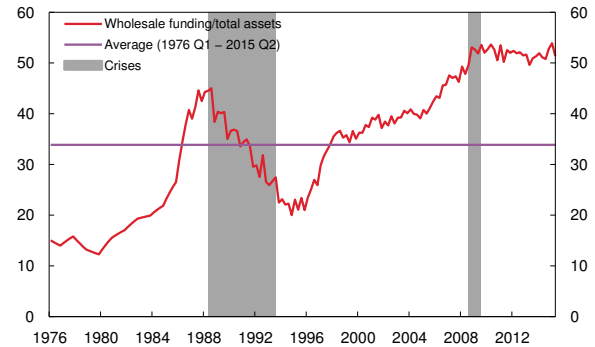
The risk premium on banks' long-term wholesale funding has fallen in recent years, but has risen somewhat in 2015 (Chart 3.28). Norges Bank's liquidity survey indicates that banks have ample access to wholesale funding.

### Financial imbalances little changed since June

The four indicators of developments in credit and property prices have risen to high levels (Charts 3.1, 3.7, 3.19 and 3.26). They are also higher than several of the estimated long-term trends (see box on page 42). The credit indicator and commercial property price indicator have risen somewhat more than the trends in recent quarters, so that the gaps have widened slightly.

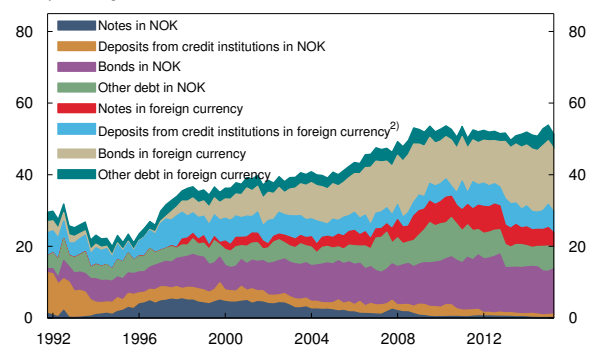
The persistent increase in household debt ratios and high property price inflation in recent years are signs that financial imbalances have built up. Norges Bank's assessment of financial imbalances is little changed since June. Increased capital buffers strengthen banks' resilience to future loan losses. In the period ahead, borrowing may be restrained by the new requirements for banks' residential mortgage lending and lower growth in the Norwegian economy. On the other hand, the decline in lending rates over the past year may entail a risk of further fuelling property price inflation and debt growth.

Chart 3.26 Banks<sup>1)</sup> wholesale funding as a share of total assets. Percent. 1976 Q1 – 2015 Q2



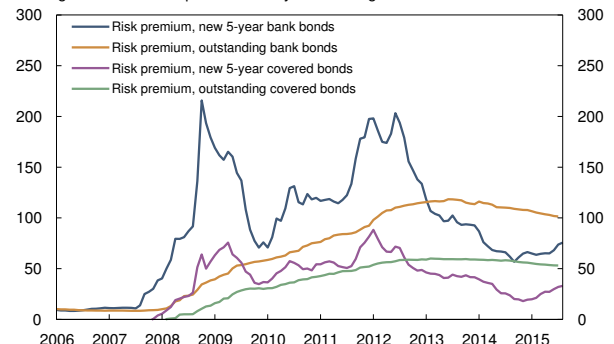
1) All banks and covered bond mortgage companies in Norway, excluding branches and subsidiaries of foreign banks.  
Source: Norges Bank

Chart 3.27 Decomposition of banks<sup>1)</sup> wholesale funding. As a percentage of total assets. 1991 Q4 – 2015 Q2



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

Chart 3.28 Average risk premiums<sup>1)</sup> on new and outstanding bond debt for Norwegian banks. Basis points. January 2006 – August 2015



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

## CHANGES TO NORWEGIAN CAPITAL ADEQUACY REGULATIONS

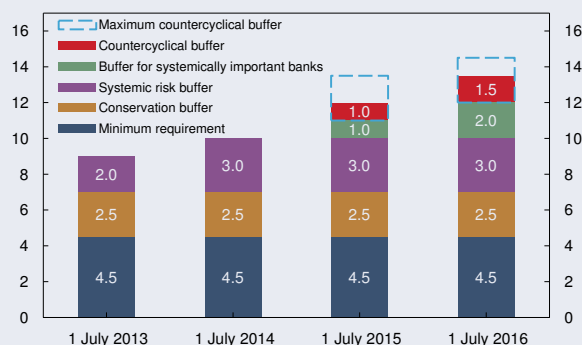
EU capital adequacy legislation (CRD IV/CRR) entered into force on 1 January 2014. The legislation will eventually apply in Norway through the EEA Agreement. The capital and buffer requirements in the legislation entered into force in Norway on 1 July 2013 (see the timetable for the phasing-in of the requirements in Chart 3.29). 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 are subject to an additional requirement, whereby the required Common Equity Tier 1 (CET1) ratio has been raised by 1 percentage point, and which will be increased further to 2 percentage points as from 1 July 2016.

The countercyclical capital buffer was activated on 30 June 2015. The buffer rate is 1%. On 18 June 2015, the Ministry of Finance decided to raise the buffer rate to 1.5%, effective from 30 June 2016.

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%. In 2015 Q1, new requirements for calculating probability of default (PD) for residential mortgages entered into force.<sup>2</sup> The tighter rules have resulted in an increase in residential mortgage risk weights for all Norwegian IRB banks. IRB banks report average residential mortgage weights from 20% to 30%, compared with risk weights of 10%-15% at end-2013. The impact on banks' capital ratios will depend on the extent to which they are bound by the transitional rule.<sup>3</sup> For IRB banks that are

Chart 3.29 Common Equity Tier 1 capital requirements in the new regulatory framework. Percent. 1 July 2013 – 1 July 2016



Sources: Ministry of Finance and Norges Bank

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

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

3 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.



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 on Banking Supervision has issued consultative documents on revisions to the standardised approach for credit risk, and on changes in capital floors for IRB-banks based on revised standardised approaches for credit, market and operational risk. The proposed revisions increase the risk sensitivity of the standardised approach and delink the capital floor from Basel I. Finanstilsynet and Norges Bank have submitted joint comments that broadly support the recommendations of the Basel Committee.

## **NEW REGULATION ON REQUIREMENTS FOR LOANS SECURED ON DWELLINGS**

At the beginning of March 2015, the Ministry of Finance tasked Finanstilsynet with assessing new measures to curb house price inflation and household sector credit growth. Finanstilsynet responded to this request on 16 March and the proposal was circulated for comment. On the basis of the proposal, the Ministry of Finance laid down on 15 June a new regulation on requirements for loans secured on dwellings. The regulation is based on Finanstilsynet's guidelines for prudent residential mortgage lending and is intended to contribute to more sustainable developments in the residential mortgage market.

The new regulation entered into force on 1 July and applies in the period to 31 December 2016. The regulation requires among other things that repayment loans do not exceed 85% of the dwelling's value, while home equity lines of credit shall not exceed 70% of the dwelling's value. These requirements can be satisfied by means of additional collateral in the form of security on other real property, unconditional guarantees or other guarantees. The borrower must also have the capacity to service debt in the event of a 5 percentage point increase in interest rates and annual principal repayments of 2.5% are required for loans granted with a loan-to-value ratio above 70%. Up to 10% of the value of loans granted each quarter can be loans that do not satisfy one or more of these conditions.

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

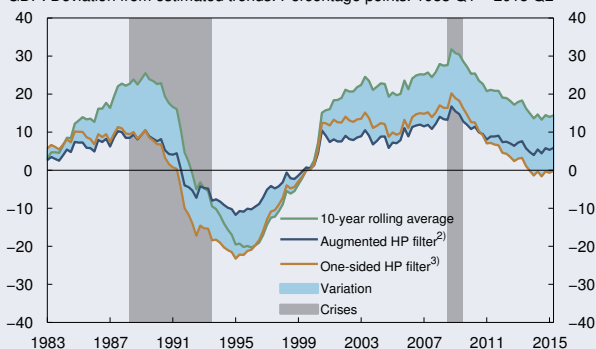
Norges Bank analyses developments in four key indicators and compares the current situation with long-term trends. There is considerable uncertainty related to trend calculations and hence to measures of financial imbalances. Given this uncertainty, different methods of calculating trends have been considered.

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 period. For

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

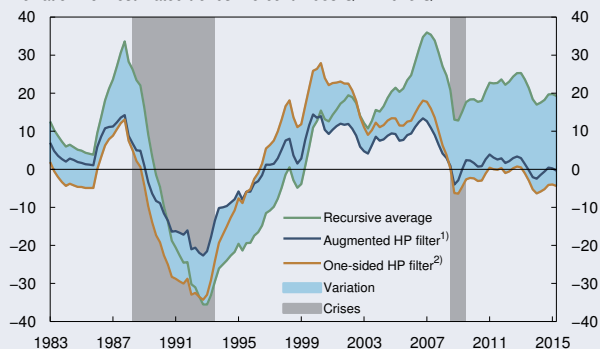
2 For further details, see box on measuring financial imbalances on page 30 in *Monetary Policy Report 2/13*.

Chart 3.30a Credit gap. Total credit<sup>1)</sup> mainland Norway as a share of mainland GDP. Deviation from estimated trends. Percentage points. 1983 Q1 – 2015 Q2



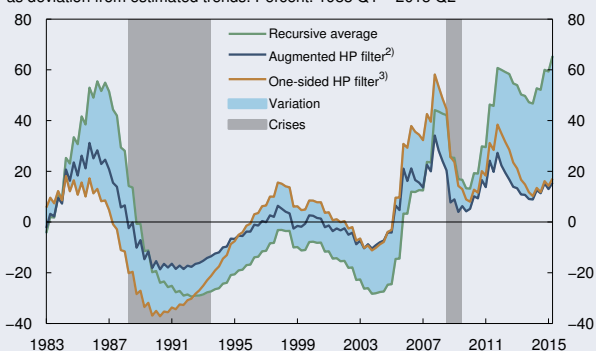
1) The sum of C2 households and C3 non-financial enterprises for mainland Norway (all non-financial enterprises pre-1995). C3 non-financial enterprises comprises C2 non-financial enterprises and foreign debt for mainland Norway.  
2) One-sided Hodrick- Prescott filter estimated on data augmented with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

Chart 3.30b House price gap. House prices relative to disposable income. Deviation from estimated trends. Percent. 1983 Q1 – 2015 Q2



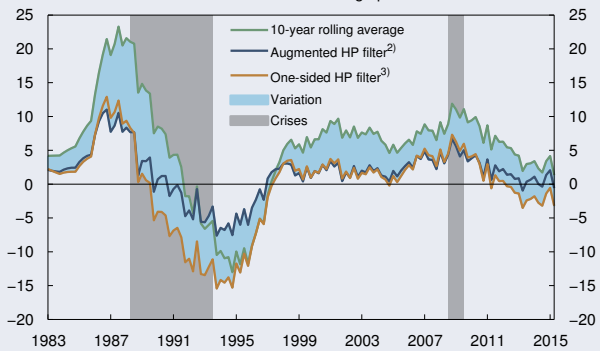
1) One-sided Hodrick- Prescott filter estimated on data augmented with a simple projection. Lambda = 400 000.  
2) One-sided Hodrick- Prescott filter. Lambda = 400 000.  
Sources: Statistics Norway, Eiendom Norge, Norwegian Association of Real Estate Agents (NEF), Finn.no, Eiendomsverdi and Norges Bank

Chart 3.30c Commercial property price gap. Real commercial property prices<sup>1)</sup> as deviation from estimated trends. Percent. 1983 Q1 – 2015 Q2



1) Estimated sales 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 3.30d Wholesale funding gap. Banks<sup>1)</sup> wholesale funding as a share of total assets. Deviation from estimated trends. Percentage points. 1983 Q1 – 2015 Q2



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

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

Chart 3.30 a shows the credit indicator as deviation from the estimated trends. The gap between the indicator and trends narrowed in the post-crisis years, but has been fairly stable or has widened slightly over the past quarters. The indicator is higher than two out of three trends. The credit indicator has continued to rise post-crisis, but not as quickly as in the pre-crisis years. The trend estimated using the one-sided HP filter has continued to rise rapidly, also post-crisis. 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 3.30 b-d show developments in the three other key indicators, measured as deviation from estimated trends. The commercial property price gap has recently widened. The house price gap and wholesale funding gap have remained broadly unchanged.

Norges Bank has developed early warning models for financial crises based on the indicators for develop-

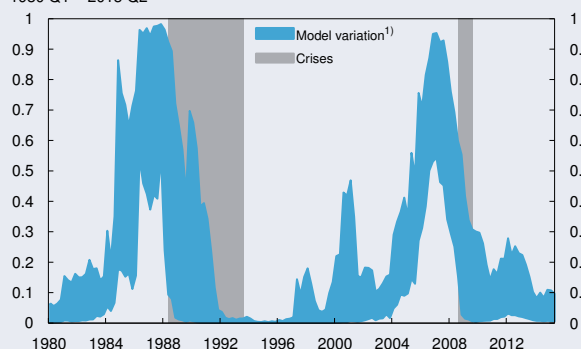
ments in credit and property prices.<sup>3</sup> The blue area in Chart 3.31 shows estimated crisis probabilities based on a large number of combinations of explanatory variables and trend estimation methods. The chart shows that estimated crisis probabilities have declined since the financial crisis, but that there is some spread between the predictions from the different models.

The Basel Committee has proposed a simple rule for calculating a benchmark 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 benchmark rate will vary linearly between 0% and 2.5%. When the credit gap is 10 percentage points or more, the benchmark rate will be 2.5%. The benchmark buffer rate is 0% in 2015 Q1 when the trend is calculated using a one-sided HP filter. When the trend calculation is based on an augmented HP filter, the benchmark rate is 1.25% (Chart 3.32).

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

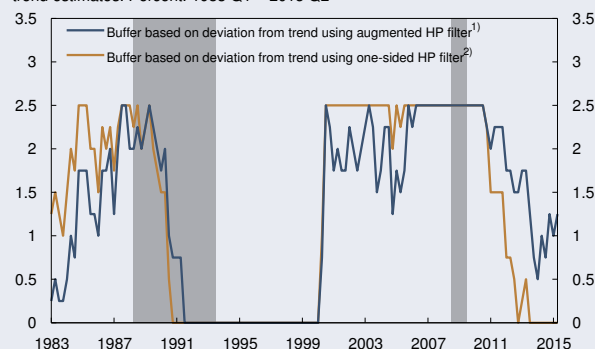
4 See *Guidance for national authorities operating the countercyclical capital buffer*, Basel Committee on Banking Supervision (2010), Bank for International Settlements.

Chart 3.31 Estimated crisis probabilities from various model specifications. 1980 Q1 – 2015 Q2



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

Chart 3.32 Benchmark rates for the countercyclical capital buffer under alternative trend estimates. Percent. 1983 Q1 – 2015 Q2



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.

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.

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 42). 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 benchmark buffer 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.

3 See *Recommendation on guidance for setting countercyclical buffer rates*, European Systemic Risk Board (ESRB), 2014.

# SPECIAL FEATURES

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Developments in China

Higher inflation prospects for Norway's main trading partners

How many are unemployed?

The reserve rate in Norway

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# DEVELOPMENTS IN CHINA

Since the June 2015 *Monetary Policy Report*, uncertainty surrounding economic developments in China has increased. A sharp fall in the stock market and a change in China's exchange rate system have led to turmoil in global markets, and some indicators suggest an abrupt slowdown in parts of the economy.

Stock markets in China have fallen by about 40% since mid-June (Chart 1). The authorities have taken a number of actions to stem the decline in stock prices, but volatility remains high. The stock market decline must be viewed in the context of the sharp advances through 2014. The Shanghai index gained around 150% in the 12 months to June 2015, reflecting expectations of continued monetary easing, lower returns on real estate investment and the deregulation of debt-financed equity investment. To dampen the sharp rise, the restrictions were reintroduced in January, accompanied by other measures.

The stock market fall so far will probably have limited direct effects on the Chinese economy. In 2013, equities accounted for close to 10% of household financial

wealth, while bank deposits accounted for about 60%. Real estate wealth comes in addition. There is little indication that consumption was particularly affected when stock market wealth increased in the period to summer. However, a high degree of debt financing of stock purchases increases the uncertainty regarding stock market developments, and if stock prices do not stabilise ahead, the consequences may be more serious than assumed.

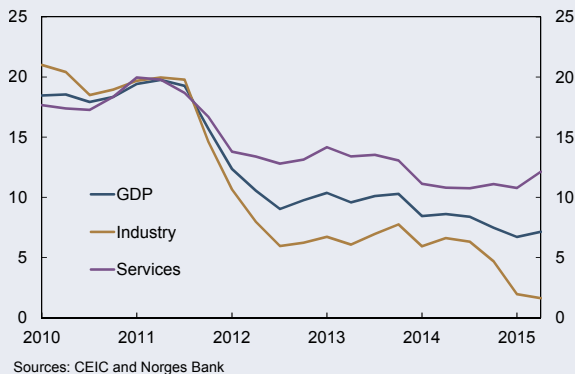
On 11 August, the Chinese authorities made a change to the exchange rate regime, which resulted in a depreciation of its currency. The exchange rate is now to a larger extent determined by market developments, which is in line with IMF recommendations and one of several measures aimed at meeting the criteria for including the Chinese currency in the SDR basket.<sup>1</sup> There has been some speculation however that the currency depreciation was intended to stimulate

<sup>1</sup> The IMF has issued Special Drawing Rights (SDRs) to member countries, which are included in a country's international reserves. The value of the SDR is based on a basket of currencies that are widely used in international transactions and widely traded in global markets. Since 2000 the basket has comprised USD, EUR, JPY and GBP. The composition of the SDR basket will be reviewed in autumn.

Chart 1 Stock market in China. Shanghai Stock Exchange. 2 June 2014 – 18 September 2015



Chart 2 GDP in China by sector. Four-quarter change. Percent. 2010 Q1 – 2015 Q2



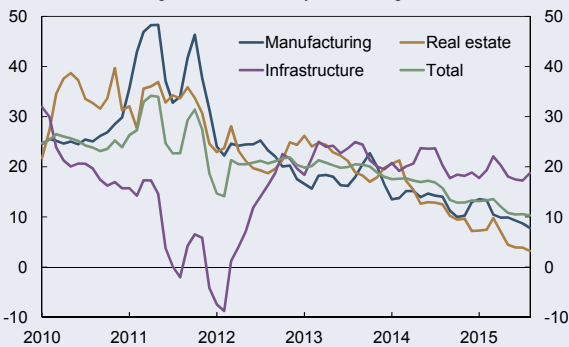
exports. Subsequent market intervention by the authorities to prevent an excessively weak currency indicates that boosting competitiveness was not the primary aim.

Even though growth picked up between 2015 Q1 and 2015 Q2, several current indicators suggest slower growth in manufacturing in Q3. Investment growth is slackening, with sagging electricity production and a weak PMI for manufacturing. On the other hand, the service sector is growing at a solid pace. The service sector now accounts for a larger share of GDP than manufacturing, and four-quarter growth picked up from 10% to 13% between 2015 Q1 and 2015 Q2 (Chart 2). The PMI for services indicates a further rise into Q3. Higher house sales and house prices may have contributed to somewhat higher consumption growth. Lower investment growth in real estate, manufacturing and infrastructure has led to decelerating demand for manufactured goods and commodities, and metal imports have declined over the past year (Charts 3 and 4). This has likely contributed

to the recent commodity price decline and the broad depreciation of commodity currencies.

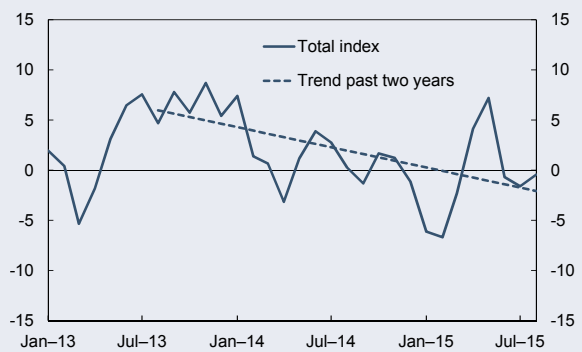
The turmoil surrounding Chinese financial market reforms this summer illustrates the challenges the Chinese authorities face in rebalancing and reforming the economy. This may indicate that the transition to a more open and market-based economy and more consumption-driven growth is more problematic than previously assumed. At the same time, the Chinese authorities still have economic policy leeway. Since the publication of the June 2015 *Monetary Policy Report*, the central bank has reduced the policy rate in two increments to 4.6% and cut banks' reserve requirement by 50 basis points to 18%. In this *Report*, it is assumed that China will avert a sharp decline in growth, but the uncertainty surrounding economic developments is considered to be higher than earlier. Against this background, the projections for 2015 and the coming years have been revised down somewhat. Growth is projected to slow gradually to 6% at the end of the projection period.

Chart 3 Investment in China. Value. Three-month average. Twelve-month change. Percent. January 2010 – August 2015



Sources: CEIC and Norges Bank

Chart 4 Chinese imports of metals. Iron, copper and aluminium. Three month-on-three month percentage change. January 2013 – August 2015



Sources: CEIC and Norges Bank

# HIGHER INFLATION PROSPECTS FOR NORWAY'S MAIN TRADING PARTNERS

Consumer price inflation among Norway's main trading partners has moved down to low levels in recent years, primarily reflecting lower food and energy prices although core inflation has also declined (Charts 1 and 2). Central banks abroad have kept policy rates low and repeatedly deferred expected rate hikes to a large extent as a result of persistently low inflation and falling inflation expectations. Low global inflation has also had a direct effect on Norwegian import prices.

Food and energy prices are largely dependent on global commodity prices and exchange rates, while core inflation is influenced to a further extent by intensity of use of domestic production resources. Domestic capacity utilisation is often measured by the output gap, which is an estimate of the difference between actual output and potential output. The output gap is difficult to measure, particularly in real time, but different measures of economic slack among our main trading partners indicate that capacity utilisation is now on the rise. This would imply higher inflation. If inflation has not started moving up yet, the reason may be that prices react with some

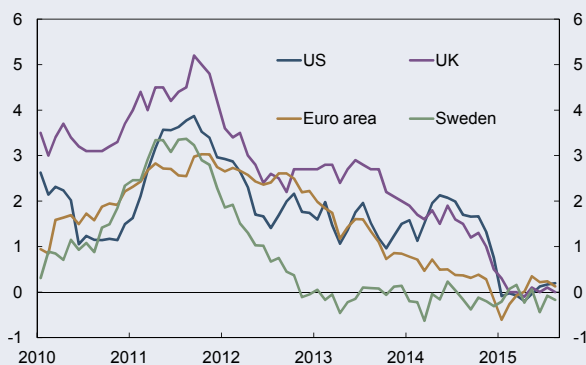
lag to changes in capacity utilisation in addition to the fact that many core prices are weakly correlated with the output gap.

In order to assess the relationship between core inflation and capacity utilisation, we have examined the correlation with the output gap<sup>1</sup> for the close to 50 price series included in core inflation in the euro area, the US, Sweden, the UK and Japan. On average, about half of the core prices correlate positively with the output gap with a lag of one year.<sup>2</sup> Prices for typical import items and necessities do not show co-movement with the output gap.

1 In the equation we use the gap for each price series computed as the deviation from an HP-filtered trend. The price series that correlate closely with the output gap vary according to the equations used for the Philips curve, the output gap and the time period. We use European Commission estimates for historical output gaps for all countries except Japan for which we use Cabinet Office historical figures and own estimates. The analysis is based on the method used by the European Central Bank (ECB) in «The responsiveness of HICP items to changes in economic slack», *Monthly Bulletin*, September 2014.

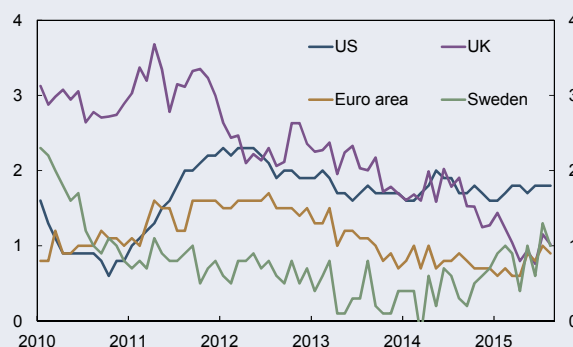
2 For Sweden, there is co-movement for most price series with a two-year lag on the output gap. For the UK, we find clearly weaker co-movement and a longer lag than in the other countries, which may reflect among other factors policy measures in the wake of the financial crisis, such as direct and indirect tax hikes, in addition to effects from exchange rate movements.

Chart 1 Consumer prices.  
Twelve-month change. Percent. January 2010 – August 2015



Source: Thomson Reuters

Chart 2 Consumer prices excluding food and energy.  
Twelve-month change. Percent. January 2010 – August 2015



Source: Thomson Reuters

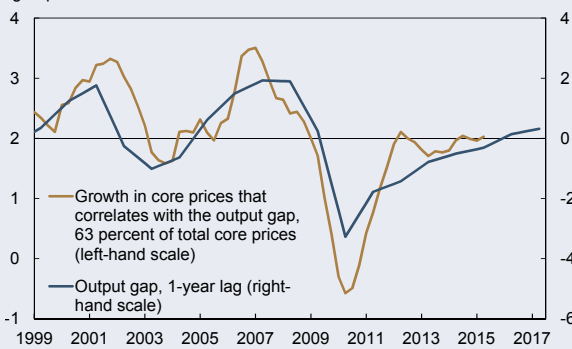


The cyclically sensitive product groups can provide information about turning points in core inflation as a result of changes in the output gap.<sup>3</sup> How fast prices react varies across cycles as a result of second-round effects from changes in commodity prices, indirect taxes and exchange rate fluctuations. In the euro area

and Sweden, capacity utilisation started to rise in 2013 and 2014 (Charts 4 and 5). Euro area inflation has been lower during the upturn than implied by the historical relationship. This may be due to the second-round effects of the oil price decline over the past year. In Sweden, on the other hand, the rise in prices for the cyclically sensitive product groups has moved up faster than in previous cyclical upturns, partly reflecting a substantial currency depreciation that has led to a

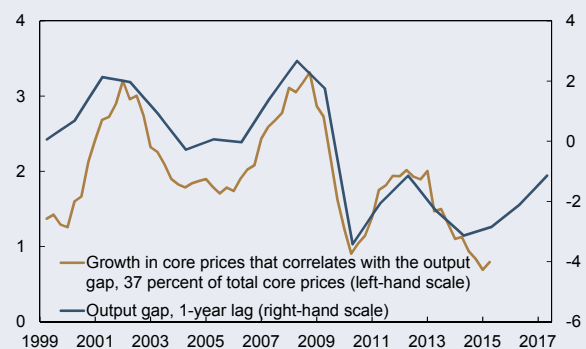
3 The indices based on the cyclically sensitive product groups have an average correlation with the output gap of 0.7, compared with 0.4 for total core inflation.

Chart 3 US. Output gap<sup>1)</sup> and price growth for cyclically sensitive product groups. 1999 Q1 – 2017 Q2



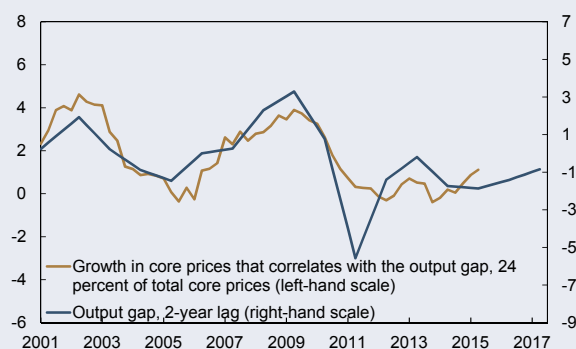
1) European Commission estimates.  
Sources: Thomson Reuters and Norges Bank

Chart 4 Euro area. Output gap<sup>1)</sup> and price growth for cyclically sensitive product groups. 1999 Q2 – 2017 Q2



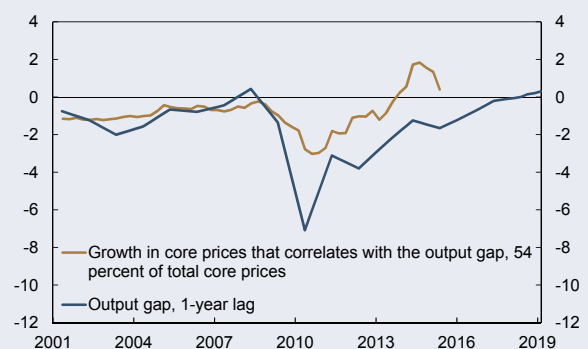
1) European Commission estimates.  
Sources: Thomson Reuters and Norges Bank

Chart 5 Sweden. Output gap<sup>1)</sup> and price growth for cyclically sensitive product groups. 2001 Q1 – 2017 Q2



1) European Commission estimates.  
Sources: Thomson Reuters and Norges Bank

Chart 6 Japan. Output gap<sup>1)</sup> and price growth for cyclically sensitive product groups. 2001 Q2 – 2019 Q1



1) Historical figures from Cabinet Office and estimates from Norges Bank.  
Sources: Thomson Reuters and Norges Bank

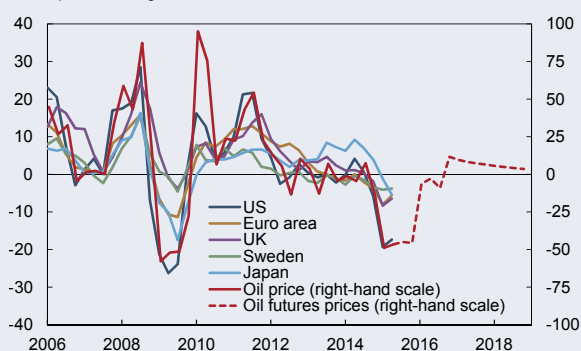
higher rate of price increase for imported factor inputs. Rising capacity utilisation in Sweden and the euro area suggests that inflation will now pick up in both countries. In the US and Japan, capacity utilisation has increased gradually since the trough in 2009 (Charts 3 and 6). Underlying inflation moved up quickly after the financial crisis, but in recent years prices have increased less than implied by capacity utilisation. Looking further ahead, capacity utilisation is expected to pick up further, and the output gap is projected to turn positive towards the end of the projection period. This will likely contribute to a higher rise in prices for the cyclically sensitive products groups in the CPI.

Given the output gap projections, there is reason to expect that inflation ahead will move up for about half of core prices, which account for a third of the overall CPI, in the various countries. In addition, commodity futures prices indicate that food and energy price inflation will also pick up. Oil prices have fallen by about 60% since summer 2014. In the short term, the price fall will contribute to pushing down energy

prices further, but at today's futures prices the annual rise in oil prices will start to move up at the end of 2015. This will have the direct effect of pushing up energy price inflation (Chart 7). Global food prices have also fallen considerably over the past year. Futures prices indicate that food price inflation reach bottom at the beginning of 2016 (Chart 8).

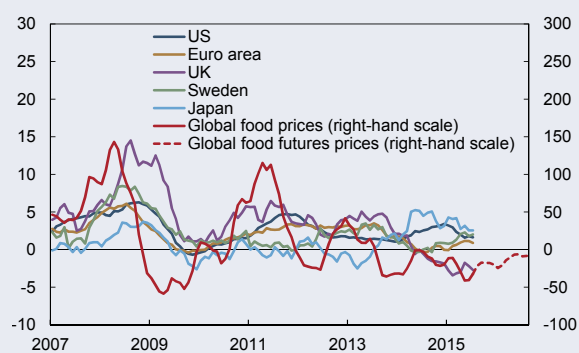
Inflation among Norway's main trading partners will likely be moderate for some time ahead and there is uncertainty surrounding price developments owing to volatile exchange rates and commodity prices. This simple framework nevertheless suggests that inflation will pick up for about two-thirds of consumer prices in the coming years, in line with the consumer price projections in this Report (Annex Table 4).

Chart 7 Oil price (USD) and energy prices in the CPI. Four-quarter change. Percent. 2006 Q1 – 2018 Q4



Sources: Thomson Reuters and Norges Bank

Chart 8 Global food prices (USD) and food prices in the CPI. Twelve-month change. Percent. January 2007 – August 2016



Sources: Thomson Reuters and Norges Bank

# HOW MANY ARE UNEMPLOYED?

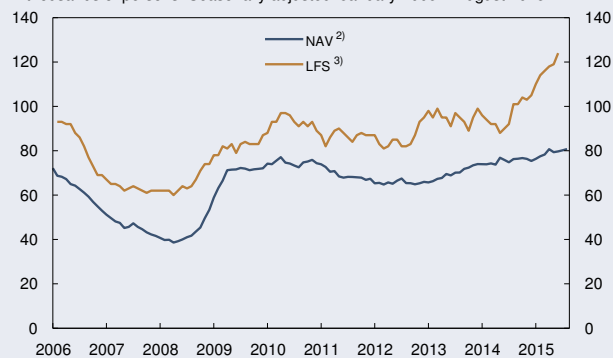
Differences between official unemployment statistics in Norway have been unusually large recently. According to Statistics Norway's labour force survey (LFS), the number of unemployed was 124 000 in June, or 4.5% of the labour force. In the same month, 80 000 were registered as fully unemployed in the Norwegian Labour and Welfare Administration (NAV), i.e. an unemployment rate of 2.9% (Chart 1). While LFS employment has not been that high since 2005, the registered unemployment rate is approximately on a par with the peak in connection with the financial crisis.

Over time LFS has shown a higher number of unemployed than NAV statistics, but the difference has never been as wide as recently. Since 2000 the average difference between the unemployment rates has been 0.7 percentage point. The systematic difference is essentially attributable to the fact that the LFS captures youth unemployment to a greater extent than NAV, partly because persons in education who are seeking part-time work or a holiday job are also

counted as unemployed in the LFS. If we look only at unemployment figures for those aged 25 or more, the two statistics have shown very similar developments over time, but in the past year LFS unemployment for that age group has shown a clearly more pronounced rise than NAV unemployment (Chart 2). As illustrated in the chart, the difference in the figures for youth unemployment has been even wider. According to NAV, the number of unemployed aged less than 25 has not risen in the past year, while the LFS shows an increase of 14 000 for that age group.

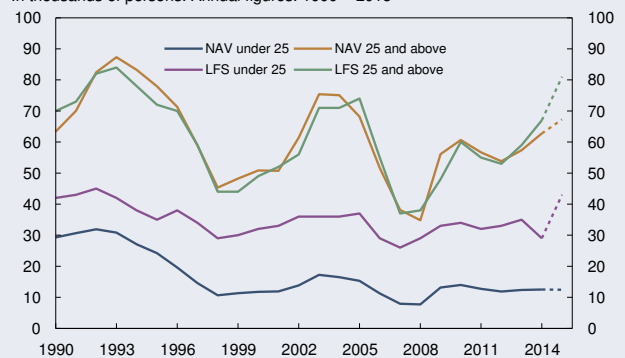
The appreciable rise in LFS unemployment reflects a rapidly expanding labour force. According to the LFS, the labour force increased by 55 000 in the year to June 2015, i.e. an increase of 2%. Those aged less than 25 accounted for half of that growth, but the sharp increase over the past year must be seen in the light of the low labour force participation rate for that group in summer 2014.

Chart 1 Number of unemployed  
In thousands of persons. Seasonally adjusted. January 2006 – August 2015<sup>1)</sup>



1) To June 2015 for LFS.  
2) Norwegian Labour and Welfare Administration.  
3) Labour Force Survey.  
Sources: NAV and Statistics Norway

Chart 2 Number of unemployed by age  
In thousands of persons. Annual figures. 1990 – 2015<sup>1)</sup>



1) Data for 2015, represented by broken lines, are seasonally adjusted figures for June 2015.  
Sources: NAV, Statistics Norway and Norges Bank

In earlier periods of weak cyclical conditions in Norway the labour force participation rate has declined, and the supply of youth labour has been the most cyclically sensitive (Chart 3).<sup>1</sup> The pronounced rise in the labour supply over the past year departs from this pattern, but there have also been short-term movements in labour force participation for the age group 15–24 in earlier periods, which bears little connection to the cyclical situation.

The variation in labour force participation for those aged less than 25 is also reflected in some short-term variation in LFS unemployment for that age group. LFS unemployment excluding that age group has been more stable, but in sum LFS unemployment has fluctuated more than NAV unemployment. This must be seen in the light of the fact that the LFS is a sample survey, while NAV includes all those who are registered as unemployed at NAV offices throughout Norway. In periods where the two unemployment measures differ, sample skewness in the LFS may be the explanation. On the other hand, it may also be that case that the LFS captures unemployment among groups that are less inclined to register as unemployed in NAV.<sup>2</sup> In addition to students who only want part-time work or a holiday job, this may also include those who are seeking full-time employment, but who are not entitled to unemployment benefits,

1 The labour force participation rate for those aged less than 25 fell in the wake of the banking crisis in Norway, but increased sharply as economic conditions improved later in the 1990s. Since 2000, a rising propensity to study has resulted in a trend decline in labour force participation. Many young people nevertheless decided to join the labour market during the boom years prior to the financial crisis, and then exited in the post-crisis years.

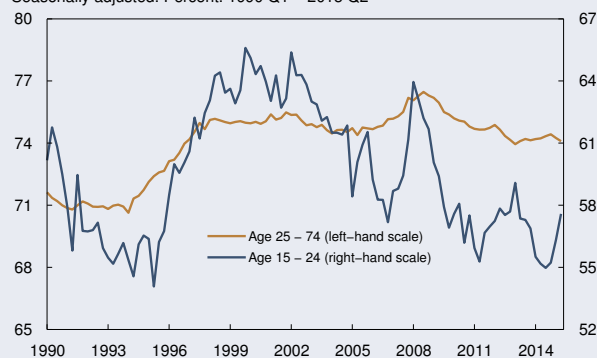
2 Some of those registered as unemployed in the LFS are registered in NAV, but are not included as fully unemployed. To be included as fully unemployed, registration must be renewed every 14th day. Moreover, some of those on NAV employment schemes answer LFS questions in a way that entails registration as unemployed in the LFS (see Bø and Næsheim (2015), *Hvorfor ulike arbeidsledighetstall* [Why different unemployment figures], Statistics Norway).

such as new graduates without sufficient entitlement time and job-seekers who have received severance packages from previous employers.<sup>3</sup>

This *Report* is based on the assumption that growth in the labour supply in the LFS will show a noticeable decline ahead, which is in line with the experience of earlier downturns. This will contribute to keeping LFS unemployment close to the current level in the coming year despite a projected decline in capacity utilisation. Registered unemployment is expected to continue to rise and move more closely in line with the expected path for capacity utilisation. The unemployment projections imply a narrowing of the difference between the two measures of unemployment.

3 Employment benefits are not paid during the period the severance package is intended to cover.

Chart 3 Labour force participation rate by age  
Seasonally adjusted. Percent. 1990 Q1 – 2015 Q2



Sources: Statistics Norway and Norges Bank

# THE RESERVE RATE IN NORWAY

The aim of liquidity policy is to keep the shortest money market rates close to the key policy rate. Norges Bank accomplishes this by setting the terms for banks' loans and deposits in the central bank and by adjusting the volume of central bank reserves in the banking system. Central bank reserves, or simply reserves, refer to banks' sight deposits in the central bank. Banks need reserves to settle interbank transactions.<sup>1</sup>

There are different systems for managing bank reserves and Norway uses a quota system. The interest rate on deposits up to a defined quota is equivalent to the key policy rate, which is the sight deposit rate. The interest rate on deposits in excess of the quota is lower than the key policy rate, i.e. the reserve rate.<sup>2</sup>

Banks are divided into three groups, where all banks in the same group are allocated the same quota for sight deposits, except for the settlement banks, which are allocated somewhat larger quotas. Group 1 comprises the 6 NIBOR banks, group 2 includes 15 banks (including the largest savings banks), and group 3 includes 107 smaller banks. The groups' share of total assets for the banks determines their share of the total quota. Within the groups, the quota is distributed equally among the banks. The sum of the banks' quotas is NOK 45bn.<sup>3</sup>

Norges Bank seeks to maintain the sum of the reserves in the banking system around NOK 35bn with a target range of NOK  $\pm 5$ bn, by means of F-loans and F-deposits.<sup>4</sup>

Interbank transactions take place throughout the day and influence individual banks' deposits in Norges Bank. At the end of the day some banks' deposits may exceed the quota, some may be below the quota and others may have a negative balance in the central bank.<sup>5</sup> Banks with deposits exceeding the quota at the end of the day normally lend reserves to banks with a negative balance in the central bank and to banks with deposits below the quota. The alternative for banks is to use the central bank's standing facilities: banks with deposits exceeding the quota receive an interest rate on the excess at the reserve rate, and banks with a negative balance draw on the overnight lending facility (D-loans).<sup>6</sup>

The difference between the D-loan rate and the reserve rate forms the interest rate corridor. Since the implementation of the current liquidity management system in 2011, the reserve rate has been one percentage point lower than the sight deposit rate, while the D-loan rate has been one percentage point higher than the sight deposit rate. The interest rate corridor incentivizes banks to trade reserves overnight in the interbank market instead of using the central bank's standing facilities. Banks usually trade reserves

1 For example, if a customer transfers money from bank A to bank B the transaction is settled by reducing A's deposit in the central bank, while B's deposit is increased by the same amount.

2 Comparable quota systems also exist in Denmark, Switzerland and New Zealand.

3 For more information on the calculation and distribution of quotas see Norges Bank (2015), "Quotas in the system for the management of bank reserves", *Circulars 3/2015*.

4 F-loans are loans against collateral in securities at a fixed interest rate and a given maturity and F-deposits are deposits at a fixed interest rate and given maturity. Government account transactions in particular lead to considerable movement in banks' deposits in the central bank. Outgoing government payments increase banks' deposits in the central bank, while they are reduced when payments are made to the government.

5 A negative balance implies that banks must borrow reserves intraday and interest free from the central bank against collateral. At the end of the day these intraday loans must be repaid to the central bank.

6 D-loans are loans against collateral pledged to Norges Bank.

overnight at a rate close to the sight deposit rate. A bank with deposits exceeding the quota will earn more by lending reserves to other banks at a rate close to the key policy rate than by holding them in Norges Bank at the reserve rate. Correspondingly, it is cheaper for banks with a negative balance in the central bank at the end of the day to borrow reserves from other banks overnight than to draw on the overnight lending facility (D-loans).

The overnight rate in Norway is called the NOWA rate.<sup>7</sup> Chart 1 shows the key policy rate, NOWA, the reserve rate and the D-loan rate since October 2011. The overnight rate has generally remained close to the key policy rate, which is in line with the objective of liquidity policy.

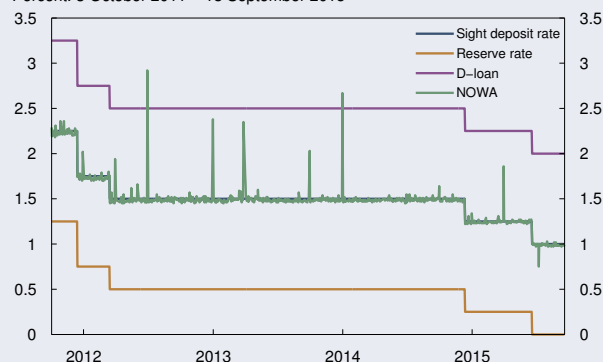
With the current quota system, banks should normally not need to hold deposits in Norges Bank that exceed the quota (reserve deposits) because Norges Bank keeps the sum of bank reserves lower than the sum of bank quotas. All banks with deposits exceeding the quota may then lend their reserve deposits to banks with deposits below the quota. Most banks are generally able to keep their deposits within the quota so that their deposits do not bear interest at the reserve rate.<sup>8</sup>

From 25 September 2015, the sight deposit rate is 0.75%, while the reserve rate is -0.25%, i.e. the reserve rate is negative. As long as Norges Bank keeps

the reserves in the banking system below the sum of bank quotas for sight deposits, the overnight rate will normally remain close to the key policy rate, even when the reserve rate is negative. The sole purpose of the reserve rate and the interest rate corridor is to provide an incentive for banks to trade reserves overnight instead of using the central bank's standing facilities.<sup>9</sup>

<sup>9</sup> This is discussed in further detail in Bernhardsen, T. and K. Lund (2015), "Negative interest rates: Central bank reserves and liquidity management", *Economic Commentaries* 2/2015.

Chart 1 Norges Bank and NOWA  
Percent. 3 October 2011 – 18 September 2015



<sup>7</sup> NOWA stands for Norwegian Overnight Weighted Average.

<sup>8</sup> At the end of each quarter NOWA is at times higher than the sight deposit rate. Deposits on which interest is paid at the reserve rate and NOWA at quarter-ends are discussed in detail in Norges Bank (2014), "Banks' assessment of Norges Bank's liquidity management system", *Norges Bank Papers* 4/2014.

# 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
16 December 2015		
4 November 2015		
<b>23 September 2015</b>	<b>0.75</b>	<b>-0.25</b>
17 June 2015	1.00	-0.25
6 May 2015	1.25	0
18 March 2015	1.25	0
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

<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	4.4	3.2
2009	-1.6	-1.6	0.0	4.1	-10.4	3.3	-5.4	-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	0.8	4.0
2012	2.7	3.8	3.5	1.6	7.4	15.1	1.3	3.1
2013 <sup>3</sup>	0.7	2.3	2.1	1.7	2.9	17.1	1.2	4.3
2014	2.2	2.2	2.0	2.7	1.7	-1.7	3.4	1.9
2014 <sup>4</sup> Q3	0.4	0.0	0.1	0.5	1.5	-3.1	3.1	5.4
Q4	0.9	0.4	0.9	0.8	-1.9	-7.0	2.6	-2.6
2015 Q1	0.1	0.3	1.0	0.1	-1.3	0.9	-0.2	2.7
Q2	-0.1	0.2	0.5	0.5	-0.3	-3.0	0.8	-1.3
2014 level. In billions of NOK	3 150	2 527	1 289	690	523	216	560	932

1 Extraction and pipeline transport.

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

3 To obtain a continuous time series, 2013 figures from the quarterly national accounts published on 20 August 2015 are used.

4 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
Mar	2.0	2.3	2.3	1.9	2.2	1.7
Apr	2.0	2.1	2.1	2.0	2.1	1.8
May	2.1	2.4	2.4	2.1	2.4	2.0
Jun	2.6	3.2	3.1	2.7	3.1	2.6
Jul	1.8	2.6	2.5	1.8	2.7	1.5
Aug	2.0	2.9	2.7	1.9	2.9	1.8

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

2 CPIXE: CPI adjusted for tax changes and excluding temporary changes in energy prices. See 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 2/15</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	2½ (¼)	2¾ (0)	2¾ (0)	2¼ (0)
Euro area	12	19	0.9	1½ (¼)	1½ (0)	1¾ (0)	1¾ (0)
UK	2	4	3.0	2½ (0)	2½ (0)	2½ (0)	2¼ (0)
Sweden	½	¾	2.4	3 (¼)	3 (-¼)	2¾ (0)	2¼ (0)
China	16	10	7.3	6¾ (0)	6½ (0)	6¼ (0)	6 (0)
Emerging economies <sup>2</sup>	19	12	2.7	1 (-¾)	2¼ (-1)	3¾ (0)	4 (0)
Trading partners <sup>3</sup>	72	78	2.1	2¼ (¼)	2¼ (-¼)	2½ (0)	2½ (0)
World (PPP) <sup>4</sup>	100	100	3.4	3¼ (0)	3¾ (0)	4 (0)	4 (0)
World (market exchange rates) <sup>4</sup>	100	100	2.6	2½ (-¼)	3 (-¼)	3¼ (0)	3¼ (0)

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 2/15</i> in brackets	Change from previous year. Percent				
	2014	2015	2016	2017	2018
US	1.6	¼ (0)	1½ (0)	2 (0)	2¼ (0)
Euro area	0.4	0 (0)	1 (0)	1¼ (0)	1½ (0)
UK	1.5	0 (-¼)	1½ (0)	2 (0)	2 (0)
Sweden	-0.2	0 (-¼)	1½ (-¼)	3 (0)	2¾ (0)
China	2.0	1½ (0)	1¾ (0)	2½ (0)	2¾ (0)
Emerging economies <sup>1</sup>	6.5	8¼ (1)	5¾ (¼)	5¼ (¼)	4¾ (0)
Trading partners <sup>2</sup>	1.3	1 (0)	1½ (-¼)	2¼ (0)	2¼ (0)
Oil price, Brent Blend. USD per barrel <sup>3</sup>	99	54	53	58	61

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	2¾	2¼	2
CPI-ATE <sup>1</sup>		2.4	2¾	2¾	2¼	2
Annual wages <sup>2</sup>		3.1	2¾	2¾	3¼	3¾
<b>Real economy</b>						
GDP	3150	2.2	1¼	1	1¾	2
GDP, mainland Norway	2527	2.2	1¼	1¼	2	2½
Output gap, mainland Norway (level) <sup>3</sup>		-0.4	-1	-1½	-1½	-1
Employment, persons, QNA		1.1	½	¼	¾	1
Labour force, LFS		1.1	1¼	¼	½	¾
LFS unemployment (rate, level)		3.5	4¼	4½	4¼	4
Registered unemployment (rate, level)		2.8	3	3¼	3¼	3¼
<b>Demand</b>						
Mainland demand <sup>4</sup>	2503	2.1	1½	2¼	3	3
- Private consumption	1289	2.0	2½	1¾	3	3
- Private investment <sup>5</sup>	380	-0.5	-2	3¾	5	4¾
- Public demand <sup>6</sup>	834	3.6	2	2½	2¼	2¼
Petroleum investment <sup>7</sup>	216	-1.7	-12½	-10	-5	-2½
Mainland exports <sup>8</sup>	560	3.4	5¼	3¼	4	3¾
Imports	932	1.9	3¾	1¼	3	3½
<b>Interest rate and exchange rate</b>						
Key policy rate (level) <sup>9</sup>		1.5	1	½	½	¾
Import-weighted exchange rate (I-44) <sup>10</sup>		93.7	102¾	103	101	99½

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 consumption and private mainland gross fixed investment and public demand.

5 Business and housing investment.

6 General government gross fixed investment and consumption.

7 Extraction and pipeline transport.

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

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

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

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

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