NORGES BANK

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SEPTEMBER

MONETARY POLICY REPORT

WITH FINANCIAL STABILITY ASSESSMENT

Norges Bank
Oslo 2018

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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 and global economy.

At its meeting on 12 September 2018, the Executive Board discussed the economic outlook, the monetary policy stance and the need for a countercyclical capital buffer for banks. On the basis of that discussion and the advice of Norges Bank's executive management, the Executive Board made its decision on the key policy rate at its meeting on 19 September 2018. 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 "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.

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This *Monetary Policy Report* is based on information in the period to 14 September 2018.

MONETARY POLICY IN NORWAY

OBJECTIVE

Monetary policy shall maintain monetary stability by keeping inflation low and stable. The operational target of monetary policy shall be annual consumer price inflation of close to 2% over time. Inflation targeting shall be forward-looking and flexible so that it can contribute to high and stable output and employment and to counteracting the build-up of financial imbalances.

IMPLEMENTATION

Norges Bank will set the interest rate with the aim of stabilising inflation around the target in the medium term. The horizon will depend on the disturbances to which the economy is exposed and the effects on the outlook for inflation and the real economy. In its conduct of monetary policy, Norges Bank will take into account indicators of underlying consumer price inflation.

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 meetings. The Executive Board holds eight monetary policy meetings per year.

The *Monetary Policy Report* is published four times a year in connection with four of the monetary policy meetings. At a meeting one to two weeks before the publication of the *Report*, the background for the monetary policy assessment is presented to and discussed by the Executive Board. 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 places emphasis on transparency in its monetary policy communication. The Bank reports on the conduct of monetary policy in its *Annual Report*. The assessments on which interest rate setting is based will be published regularly in the *Monetary Policy Report* and elsewhere.

COUNTERCYCLICAL CAPITAL BUFFER

The objective of the countercyclical capital buffer is to bolster banks' resilience and to lessen the amplifying effects of bank lending during downturns.

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.

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.

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

Executive Board's assessment

Norges Bank's Executive Board has decided to raise the key policy rate by 0.25 percentage point to 0.75%. The Executive Board's current assessment of the outlook and balance of risks suggests that the key policy rate will most likely be increased further in 2019 Q1.

The economic upturn among Norway's trading partners continues. Unemployment has fallen further in many countries. Uncertainty, owing in part to global trade conflicts, is dampening the upturn. In the years ahead, capacity constraints will likely cause growth to slow. The growth projections are slightly lower than in the June 2018 *Monetary Policy Report*. Underlying inflation for a number of trading partners remains below target. Accelerating wage growth will likely push up inflation. Global policy rates are on the rise and are expected to increase further in the coming years. Forward rates are little changed since June.

Growth in the Norwegian economy has been solid since autumn 2016, and the labour market has been improving. The global upturn, higher oil prices and low interest rates have contributed to lifting growth. There are prospects for continued solid growth in the Norwegian economy. Higher employment and higher wage growth will likely sustain growth in household consumption. Higher global oil investment is expected to push up export growth. Investment on the Norwegian shelf is also likely to increase substantially in the coming years.

Growth in the mainland economy so far in 2018 has been a little lower than projected in the June *Report*. Labour market developments have also been somewhat weaker than expected. House price inflation has moderated since spring. Since June, oil prices have risen a little, and futures prices are somewhat higher than assumed in the June *Report*.

Inflation has risen markedly in 2018. In August, the 12-month rise in the consumer price index (CPI) was 3.4%. The increase reflects both higher electricity prices and a rise in underlying inflation. The 12-month rise in the CPI adjusted for tax changes and excluding energy products (CPI-ATE) was 1.9% in August, higher than projected in the June *Report*. Wage growth picked up in 2017. Tighter labour market conditions suggest that wage growth will increase further, but probably slightly less than projected earlier. The krone exchange rate has recently appreciated, but is still weaker than assumed in June.

In its discussion of the risks to the outlook, the Executive Board focused in particular on the consequences for the Norwegian economy of rising global protectionism and turbulence in some emerging economies. Higher trade barriers and persistent uncertainty may weigh on import growth among Norway's trading partners, but may also lead to the krone remaining weaker than assumed. The extent to which the rise in oil prices and increased oil sector activity will push up wage growth is uncertain. A long period of low interest rates and mounting household debt burdens has led to greater uncertainty surrounding the effects of higher interest rates.

In its assessment of monetary policy, the Executive Board gives weight to the continued upturn in the Norwegian economy. Spare capacity is gradually diminishing, and capacity utilisation now appears to be close to a normal level. Underlying inflation is close to the 2% inflation target.

Overall, the outlook and the balance of risks imply a gradual interest rate increase in the years ahead. If the key policy rate is kept at the current level for too long, price and wage inflation may accelerate and financial imbalances build up further. That would increase the risk of a sharp economic downturn further out. Uncertainty surrounding the effects of higher interest rates suggests a cautious approach to interest rate setting.

The interest rate path is little changed from the June *Report*. With a gradual interest rate increase, inflation is projected to be close to the target some years ahead, at the same time as unemployment remains low.

The Executive Board decided to raise the key policy rate by 0.25 percentage point to 0.75%. The Executive Board's current assessment of the outlook and balance of risks suggests that the key policy rate will most likely be increased further in 2019 Q1. The decision was unanimous.

Øystein Olsen
19 September 2018

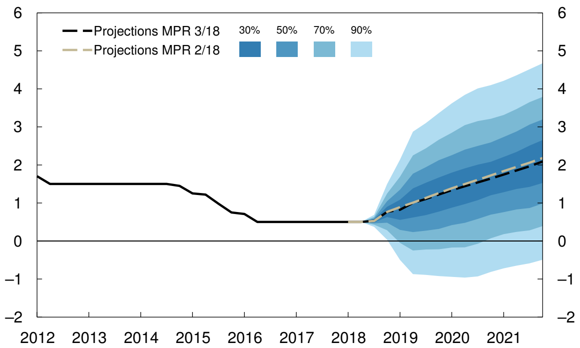
1 Overall picture

Growth in the Norwegian economy is solid and employment is rising. Capacity utilisation continues to rise and is likely close to a normal level. Inflation has moved up, and underlying inflation is close to the 2% inflation target.

The key policy rate was raised by 0.25 percentage point to 0.75% at the monetary policy meeting. According to the forecast in this *Report*, the key policy rate will be increased further in 2019 Q1, followed by a gradual increase to around 2% at the end of 2021. The interest rate path is little changed from the June 2018 *Monetary Policy Report*. With interest rate developments in line with the forecast, inflation is projected to be close to the target some years ahead, at the same time as unemployment remains low. If the key policy rate is kept at the current level for too long, price and wage inflation may accelerate and financial imbalances build up further. That would increase the risk of a sharp economic downturn further out.

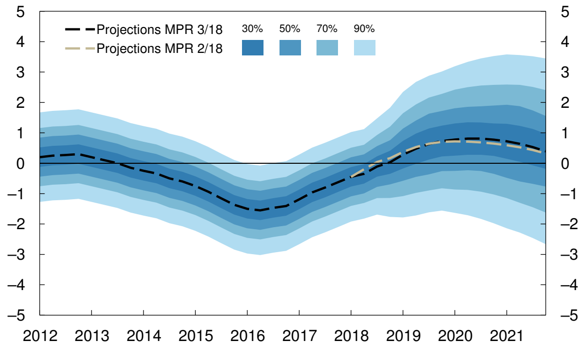
Solid growth in mainland GDP is expected in the coming year, before growth gradually decelerates. Employment is projected to move up in pace with the upturn in the mainland economy, and wage growth is expected to rise in the coming years.

Chart 1.1a Key policy rate with fan chart[1].
Percent. 2012 Q1 – 2021 Q4 [2]



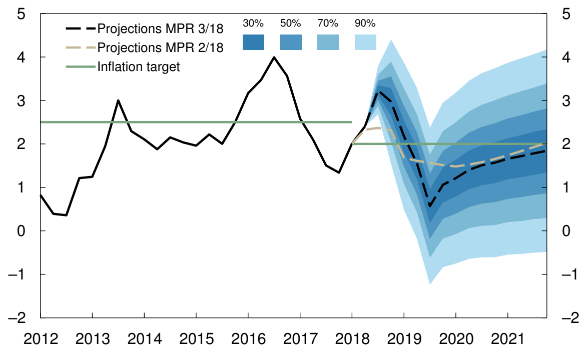
1) The fan chart is based on historical experience and stochastic simulations in Norges Bank's main macroeconomic model, NEMO. It does not take into account that a lower bound for the interest rate exists.
2) Projections for 2018 Q3 – 2021 Q4.
Source: Norges Bank

Chart 1.1b Estimated output gap[1] with fan chart[2].
Percent. 2012 Q1 – 2021 Q4



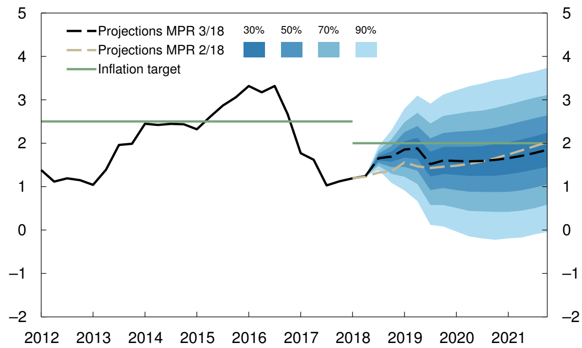
1) The output gap measures the percentage deviation between mainland GDP and estimated potential mainland GDP.
2) The fan chart is based on historical experience and stochastic simulations in Norges Bank's main macroeconomic model, NEMO.
Source: Norges Bank

Chart 1.1c Consumer price index (CPI) with fan chart[1].
Four-quarter change. Percent. 2012 Q1 – 2021 Q4[2]



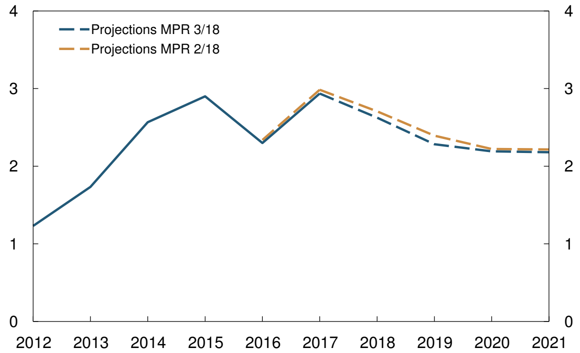
1) The fan chart is based on historical experience and stochastic simulations in Norges Bank's main macroeconomic model, NEMO.
2) Projections for 2018 Q3 – 2021 Q4.
Sources: Statistics Norway and Norges Bank

Chart 1.1d CPI-ATE[1] with fan chart[2].
Four-quarter change. Percent. 2012 Q1 – 2021 Q4[3]



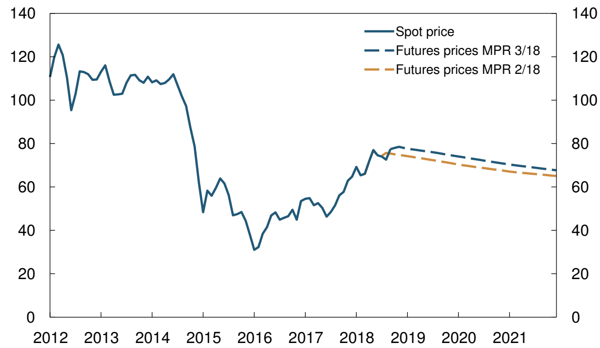
1) CPI adjusted for tax changes and excluding energy products.
2) The fan chart is based on historical experience and stochastic simulations in Norges Bank's main macroeconomic model, NEMO.
3) Projections for 2018 Q3 – 2021 Q4.
Sources: Statistics Norway and Norges Bank

Chart 1.2 GDP for Norway's trading partners.[1] Annual change. Percent. 2012 – 2021[2]



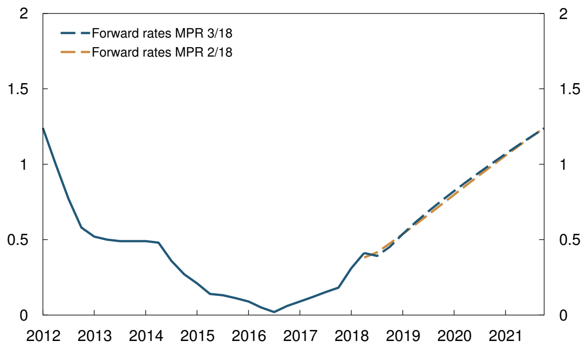
1) Export weights. 25 main trading partners.
2) Projections for 2018 – 2021.
Sources: Thomson Reuters and Norges Bank

Chart 1.3 Oil price.[1] USD/barrel. January 2012 – December 2021[2]



1) Brent Blend.
2) Futures prices are the average of futures prices for the period 11 June – 15 June 2018 for MPR 2/18 and the period 10 September – 14 September 2018 for MPR 3/18.
Sources: Thomson Reuters and Norges Bank

Chart 1.4 Three-month money market rates for Norway's trading partners.[1] Percent. 2012 Q1 – 2021 Q4[2]



1) Based on money market rates and interest rate swaps. See Norges Bank (2015) "Calculation of the aggregate for trading partner interest rates". *Norges Bank Papers* 2/2015.
2) Forward rates at 15 June 2018 for MPR 2/18 and 14 September 2018 for MPR 3/18.
Sources: Thomson Reuters and Norges Bank

1.1 GLOBAL DEVELOPMENTS AND OUTLOOK

Lower growth among trading partners

The economic upturn among Norway's trading partners is continuing. So far in 2018, GDP growth has been broadly as projected in *Monetary Policy Report* (MPR) 2/18, published on 21 June. Unemployment has continued to decline, and in many countries it is now lower than the average since 1990.

Uncertainty, owing in part to global trade conflicts, is dampening the upturn, and GDP growth is expected to be somewhat lower in 2018 than in 2017 (Chart 1.2). Capacity constraints and monetary policy tightening will contribute to a further moderate slowdown in growth ahead. Trading partner GDP growth is projected to be slightly lower than in the June *Report*.

Oil prices rose through autumn 2017 and in the first half of 2018 (Chart 1.3) and are now just below USD 80 per barrel. Prices for future delivery indicate an oil price of just below USD 70 per barrel in 2021. Both spot and futures prices are somewhat higher than in June.

Global rise in wage growth

The rise in oil prices has fuelled consumer price inflation. Underlying inflation is little changed and remains lower than the inflation targets for many trading partners. Wage growth has picked up broadly as projected in the June *Report*. Both wage and underlying price inflation abroad are expected to rise in the coming years in pace with higher capacity utilisation. The projections are little changed since the June *Report*.

The global interest rate level remains low, but central bank policy rates have been raised in many countries. Forward rates among Norway's main trading partners are little changed since June and indicate expectations of a further rise in interest rates (Chart 1.4).

1.2 THE ECONOMIC SITUATION IN NORWAY

Continued upturn in the Norwegian economy

Growth in the mainland economy has been solid since autumn 2016. The global upturn, higher oil prices and low interest rates have contributed to lifting growth. Fiscal policy has also provided considerable economic stimulus. The mainland economy has continued to expand in 2018. After falling sharply for several years, oil service exports have now begun to recover and investment on the Norwegian shelf is on the rise.

Growth in mainland GDP so far in 2018 has been a little lower than projected in June. Growth is expected to pick up slightly through autumn (Chart 1.5). The projections are in line with the expectations of enterprises in Norges Bank's Regional Network.

Employment growth was solid in 2018 Q2, following a strong rise in Q1 (Chart 1.6). Unemployment has shown little change in recent months. Nevertheless, labour market developments have been a little weaker than expected in June and suggest that capacity utilisation is slightly lower than projected in the June *Report*.

Household debt growth has abated somewhat this year. In recent months, house price inflation has been low and somewhat lower than projected in June.

Higher inflation

Consumer price inflation has risen markedly in 2018. In August, the 12-month rise in the consumer price index (CPI) was 3.4%, about 2 percentage points higher than in autumn 2017. The increase reflects both higher electricity prices and a rise in underlying inflation. The 12-month rise in the CPI adjusted for tax changes and excluding energy products (CPI-ATE) was 1.9% in August. Inflation has been higher than projected in the June *Report*. Wage growth picked up in 2017 and is expected to rise further in 2018, albeit at a slightly slower pace than projected in June.

The krone has recently appreciated and is slightly stronger than in June, but is still weaker than projected in the June *Report* (Chart 1.7).

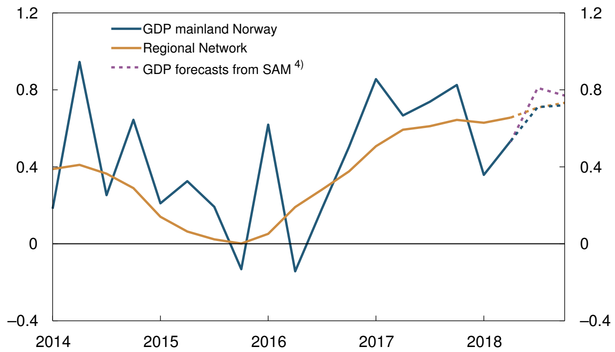
1.3 MONETARY POLICY AND PROJECTIONS

Further rate rise next year

The operational target of monetary policy is annual consumer price inflation of close to 2% over time. Inflation targeting shall be forward-looking and flexible so that it can contribute to high and stable output and employment and to counteracting the build-up of financial imbalances.

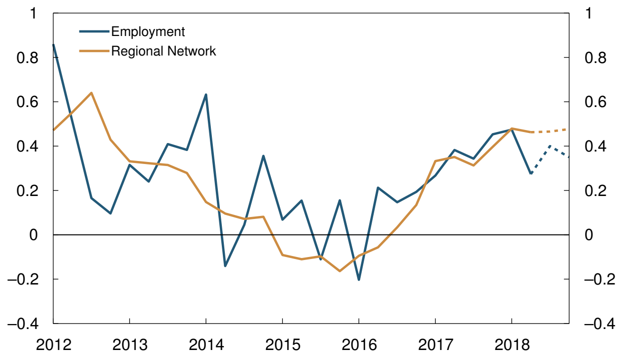
If the key policy rate is kept at the current level for too long, price and wage inflation may accelerate and financial imbalances build up further. That would

Chart 1.5 GDP for mainland Norway[1)] and the Regional Network's indicator of output growth [2)]. Quarterly change. Percent. 2014 Q1 – 2018 Q4 [3)]



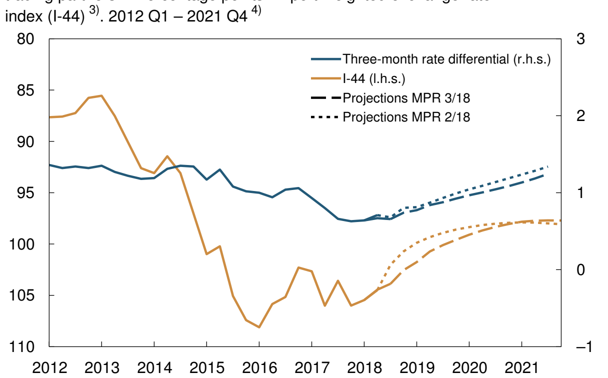
1) Seasonally adjusted.
2) Reported output growth past three months converted to quarterly figures. Quarterly figures are calculated by weighting together three-month figures on the basis of survey timing. For 2018 Q3, expected output growth is estimated by weighting together reported growth over the past three months and expected growth in the next six months as reported in August. 2018 Q4 is expected growth in the next six months as reported in August.
3) Projections for 2018 Q3 – 2018 Q4 (broken lines).
4) System for Averaging short-term Models.
Sources: Statistics Norway and Norges Bank

Chart 1.6 Employment growth according to the quarterly national accounts and Regional Network[1)]. Quarterly change. Percent. 2012 Q1 – 2018 Q4[2)]



1) Reported employment growth for the past three months. Quarterly figures are calculated by weighting together three-month figures based on survey timing. For 2018 Q3, expected employment growth is estimated by weighting together reported growth over the past three months and expected growth in the next three months as reported in August. 2018 Q4 is expected growth in the next three months as reported in August.
2) Projections for 2018 Q3 – 2018 Q4 (broken lines).
Sources: Statistics Norway and Norges Bank

Chart 1.7 Three-month money market rate differential between Norway[1)] and trading partners[2)]. Percentage points. Import-weighted exchange rate index (I-44) [3)]. 2012 Q1 – 2021 Q4 [4)]



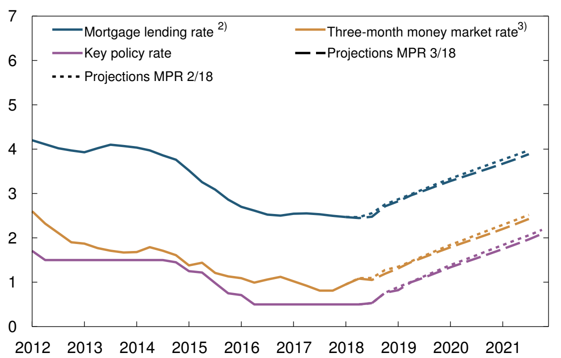
1) Projections for the money market rate are calculated as an average of the key policy rate in the current and subsequent quarter plus an estimate of the money market premium.
2) Forward rates for trading partners at 15 June 2018 for MPR 2/18 and 14 September 2018 for MPR 3/18. See Norges Bank (2015) "Calculation of the aggregate for trading partner interest rates". *Norges Bank Papers* 2/2015.
3) A positive slope denotes a stronger krone exchange rate.
4) Projections for 2018 Q3 – 2021 Q4.
Sources: Thomson Reuters and Norges Bank

MONETARY POLICY SINCE JUNE

The analyses in the June 2018 *Monetary Policy Report* indicated that the key policy rate would be raised in 2018 Q1, followed by a gradual increase to somewhat above 2% at the end of 2021. With this path for the key policy rate, underlying inflation was projected to rise to approximately 2% in 2021. Capacity utilisation was projected to rise and reach a normal level in the second half of 2018.

At the monetary policy meeting on 15 August, new information was assessed in relation to the projections in the June *Report*. Economic developments among Norway's trading partners had been broadly as projected in June. Policy rates among many of Norway's trading partners had been raised. Forward rates were little changed. In Norway, goods consumption had fallen and was somewhat lower than projected. House prices had edged higher, as expected. Manufacturing output had risen. Oil prices were little changed. Unemployment had moved broadly in line with expectations. Employment appeared to have risen slightly less than projected. Inflation had been higher than expected. The 12-month rise in the consumer price index adjusted for tax changes and excluding energy products (CPI-ATE) was 1.4% in July. The krone was somewhat weaker than assumed. The Executive Board's assessment in August was that the overall outlook and balance of risks had not changed substantially since the June *Report*. The Executive Board decided to keep the key policy rate unchanged at 0.5%.

Chart 1.8 Interest rates. Percent. 2012 Q1 – 2021 Q4 1)



1) For key policy rate projections for 2018 Q3 – 2021 Q4. For mortgage lending rate and three-month money market rate projections for 2018 Q3 – 2021 Q3.
2) The mortgage lending rate is the average interest rate on outstanding mortgage loans to households, for the sample of banks and mortgage companies included in Statistics Norway's monthly interest rate statistics.
3) Projections for the money market rate are calculated as an average of the key policy rate in the current and subsequent quarter plus an estimate of the money market premium.
Sources: Statistics Norway, Thomson Reuters and Norges Bank

increase the risk of a sharp economic downturn further out. On the other hand, raising the key policy rate too rapidly in the period ahead may stifle the upturn, resulting in higher unemployment and below-target inflation.

The key policy rate was raised from 0.5% to 0.75% at the monetary policy meeting. According to the forecast in this *Report*, the key policy rate will be raised further in 2019 Q1, followed by a gradual increase to around 2% at the end of 2021. With this interest rate forecast, inflation is projected to be close to the target some years ahead, at the same time as unemployment remains low. The Bank's assessment is that the interest rate level that is neither expansionary nor contractionary has fallen over time. The key policy rate is thus expected not to be as high as in earlier upturns.

The interest rate path is little changed from the June *Report* (Chart 1.1a). Lower-than-expected capacity utilisation, lower growth abroad and lower projected wage growth suggest in isolation a lower interest rate path than in June, while a weaker krone and higher oil prices suggest a higher path.

The interest rate forecast implies an increase in residential mortgage rates from around 2.5% today to just below 4% in 2021 (Chart 1.8).

Positive output gap and inflation close to target

With interest rate developments in line with the forecast, capacity utilisation is likely to rise further and remain somewhat above a normal level throughout the projection period (Chart 1.1b). The output gap is projected to turn positive and widen in the coming two years before narrowing slightly towards the end of the projection period. Capacity utilisation is slightly lower over the next year and slightly higher further out. The krone is projected to appreciate gradually ahead.

In the projection, rising capacity utilisation pushes up inflation, while a stronger krone pulls down inflation. Inflation is slightly below 2% at the end of 2021 (Charts 1.1c-d). Inflation is somewhat higher over the next couple of years and slightly lower in 2021 compared with the June *Report*.

Growth in mainland GDP is projected at 2.5% in 2018 and 2019 (Chart 1.9). This is higher than the Bank's estimate of the economy's underlying growth potential, and growth is expected to slow gradually ahead. For the projection period as a whole, growth is slightly higher than in the June *Report*, partly reflecting higher oil prices than envisaged in June.

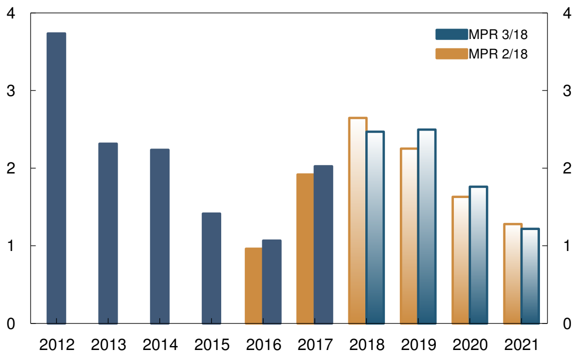
Solid growth in consumption is expected ahead. Despite the rate hike, disposable income is likely to be higher for most households in the years ahead, primarily owing to the expected rise in wage growth. Business investment is also projected to rise further, but less than in 2016 and 2017. Solid growth is expected in mainland exports, following weak growth over the past two years. Higher global oil investment pushes up export growth. After falling for several years, investment on the Norwegian shelf is expected to pick up (Chart 1.10). Housing investment is likely to fall in 2018 and 2019, after rising for several years. While fiscal policy has made a considerable contribution to growth in the Norwegian economy in recent years, the growth contribution ahead is assumed to be modest.

Accelerating wage growth

Employment continues to rise through the projection period, in pace with the upturn in the mainland economy. Owing to the upward revision of mainland GDP growth, employment growth is also higher in the coming years. The labour force continues to expand, but unemployment is still expected to drift down further (Chart 1.11). Because unemployment has been a little higher than expected, unemployment is also a little higher ahead than projected in the June *Report*, but is broadly unchanged at the end of the projection period.

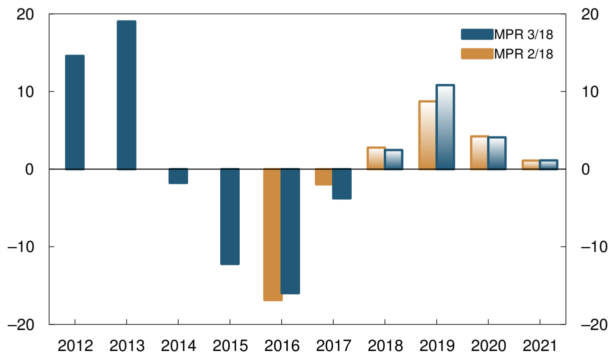
A gradually tightening labour market is expected to push up wage growth further (Chart 1.12). The projections for wage growth are nonetheless slightly lower than in the June *Report*.

Chart 1.9 GDP for mainland Norway. Annual change. Percent. 2012 – 2021[1)]



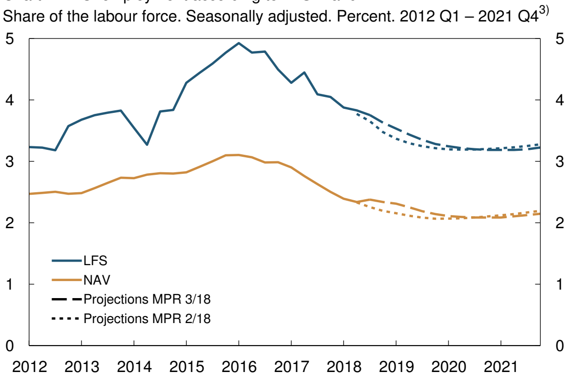
1) Projections for 2018 – 2021 (shaded bars).
Sources: Statistics Norway and Norges Bank

Chart 1.10 Petroleum investment. Annual change. Percent. 2012 – 2021[1)]



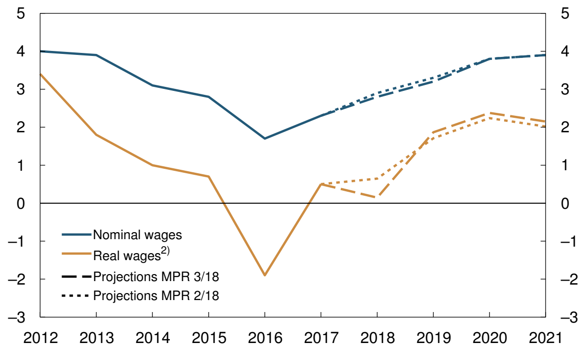
1) Projections for 2018 – 2021 (shaded bars).
Sources: Statistics Norway and Norges Bank

Chart 1.11 Unemployment according to LFS [1)] and NAV [2)]. Share of the labour force. Seasonally adjusted. Percent. 2012 Q1 – 2021 Q4[3)]



1) Labour Force Survey.
2) Registered unemployment.
3) Projections for 2018 Q3 – 2021 Q4.
Sources: Norwegian Labour and Welfare Administration (NAV), Statistics Norway and Norges Bank

Chart 1.12 Wages. Annual change. Percent. 2012 – 2021[1)]

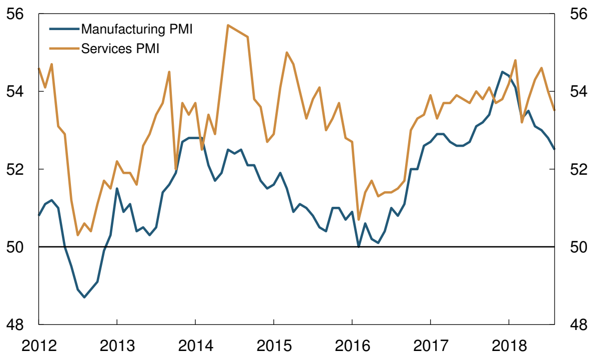


1) Projections for 2018 – 2021.
2) Nominal wage growth deflated by the CPI.
Sources: Statistics Norway and Norges Bank

2 The global economy

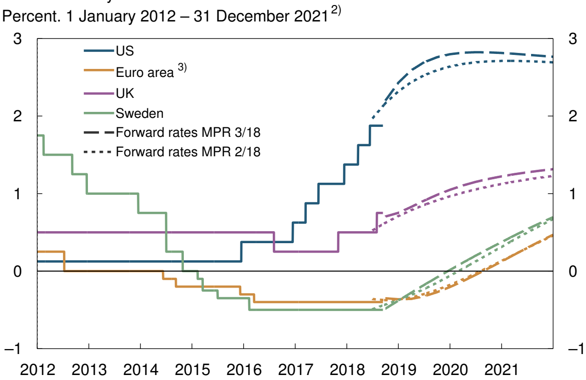
Economic growth among Norway's trading partners remains solid, but is expected to taper off gradually in the coming years. The growth projections are slightly lower than in the June *Report* owing to prevailing trade conflicts. As expected, wage growth among trading partners has moved up. Price inflation among trading partners is now projected to be a little higher than in the June *Report*. Oil spot and futures prices have risen. Expected money market rates and long-term rates among trading partners have shown little change.

Chart 2.1 Global PMI.[1] Seasonally adjusted. Index.[2] January 2012 – August 2018



1) The weights are based on contribution to global production of goods and services.
2) Survey of purchasing managers. Diffusion index centered around 50.
Source: Thomson Reuters

Chart 2.2 Policy rates and estimated forward rates[1] in selected countries. Percent. 1 January 2012 – 31 December 2021[2]



1) Forward rates at 15 June 2018 for MPR 2/18 and 14 September 2018 for MPR 3/18. Forward rates are estimated based on Overnight Index Swap (OIS) rates.
2) Daily data through 14 September 2018. Quarterly data from 2018 Q4.
3) ECB deposit facility rate. Eonia from 2018 Q4.
Sources: Bloomberg, Thomson Reuters and Norges Bank

2.1 GROWTH, PRICES AND INTEREST RATES

Prospects for slightly slower growth

There has been a broad-based upswing in growth among trading partners in recent years. So far in 2018, GDP growth has been broadly as envisaged in the June *Report*, but growth is expected to taper off in autumn. Unemployment has continued to fall and is below the long-term average since 1990 in many countries. Household confidence indicators are still at high levels. In the business sector, manufacturing activity indicators have edged down so far this year, while service sector indicators have remained fairly robust (Chart 2.1).

Since the June *Report*, the trade conflict between the US and China has worsened with the announcement of US tariffs on imports from China amounting to an additional USD 200bn and retaliatory measures. The trade conflict between the US and Europe has eased. See box on trade conflicts on page 18. US trade policy and monetary policy tightening has had ripple effects on several emerging economies, and has led to mounting currency pressures particularly in Turkey and Argentina. Contagion to other countries has so far been moderate.

The Bank of England has raised its policy rate since the June *Report*, but market participants' policy rate expectations for Norway's main trading partners have shown little change (Chart 2.2). Long-term interest rates have also remained broadly unchanged (Chart 2.3). Trade conflicts and turbulence in many emerging economies have led to a decline in equity prices in those countries, while equity price developments in advanced economies have been mixed (Chart 2.4). On the whole, global financial conditions are a little tighter than around the time of the June *Report*.

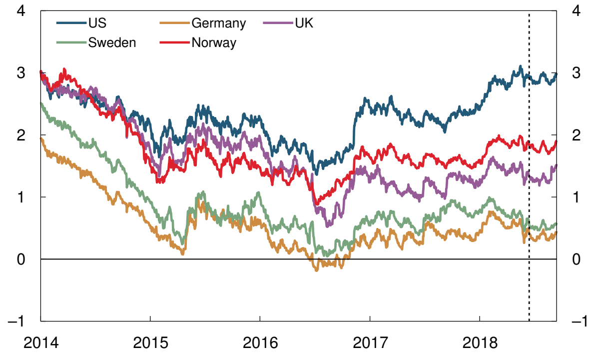
Capacity utilisation among Norway's trading partners is estimated to be above a normal level from 2018. The rise in oil prices since summer 2017 and ongoing trade conflicts are dampening growth. Capacity constraints and monetary policy tightening will contribute to a gradual slowdown in growth in advanced economies in the years ahead. The projections for GDP growth and import growth among trading partners are a little lower than in the June *Report* (Chart 2.5 and Annex Table 1).

Wage growth rises as expected

Since the beginning of the year, price inflation has increased in many countries, and is now close to the inflation targets of our main trading partners. The increase primarily reflects higher energy prices owing to the upswing in oil prices since summer 2017. Underlying inflation has been relatively stable for a long time (Chart 2.6). Wage growth among trading partners has increased broadly as expected in the June *Report*. Both wage growth and underlying inflation are expected to increase in the coming years in pace with rising capacity utilisation (Chart 2.7 and Annex Table 2). The projections are approximately the same as in the June *Report*. Oil prices have increased, and oil spot prices are now just below USD 80 per barrel. Futures prices up to 2021 are also somewhat higher than in the June *Report* (Chart 1.3). Oil prices are discussed further in a box on page 17. Higher electricity prices abroad owing to the weather conditions prevailing through summer are expected to contribute to a temporary increase in price inflation.

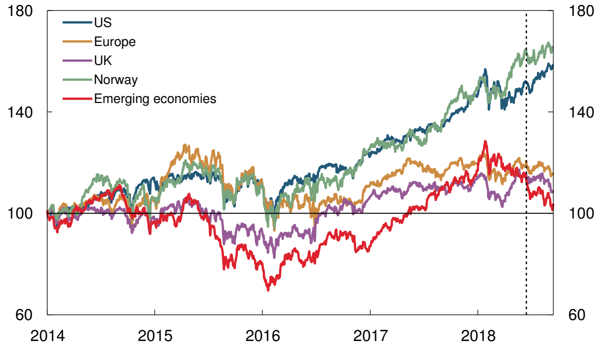
The rise in prices for Norwegian imported consumer goods in foreign currency terms has been higher than expected in the June *Report*, partly reflecting higher textile and metal prices. In addition, import prices for audio-visual equipment from several countries are now on the rise. The projections for 2018 and 2019 have been revised up (Chart 2.8). The shift in Norwegian imports to low-cost countries such as China and other emerging economies is expected to continue to dampen external inflationary pressures to the Norwegian economy in the coming years.

Chart 2.3 Yields on ten-year government bonds in selected countries. Percent. 2 January 2014 – 14 September 2018[1)]



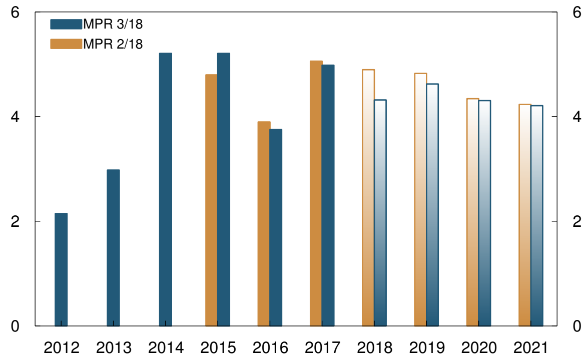
1) MPR 2/18 was based on information in the period up to 15 June 2018 indicated by the vertical line.
Source: Bloomberg

Chart 2.4 Equity price indexes in selected countries.[1)] Index. 2 January 2014 = 100. 2 January 2014 – 14 September 2018[2)]



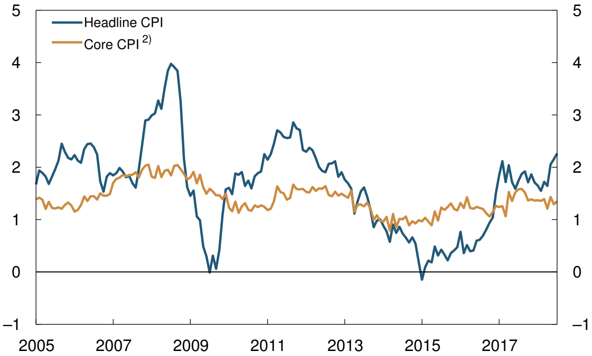
1) Standard and Poor's 500 Index (US). Stoxx Europe 600 Index (Europe). Financial Times Stock Exchange 100 Index (UK). Oslo Børs Benchmark Index (Norway). MSCI Emerging Markets Index (emerging economies).
2) MPR 2/18 was based on information in the period up to 15 June 2018 indicated by the vertical line.
Source: Bloomberg

Chart 2.5 Imports for Norway's trading partners.[1)] Annual change. Percent. 2012 – 2021[2)]



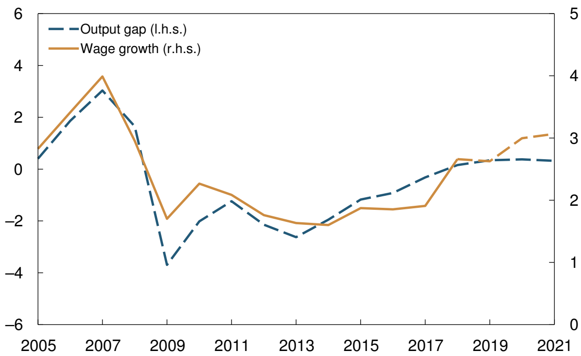
1) Export weights. 25 main trading partners.
2) Projections for 2018 – 2021 (shaded bars).
Sources: Thomson Reuters and Norges Bank

Chart 2.6 Headline and core inflation in selected countries.[1]
Twelve-month change. Percent. January 2005 – July 2018



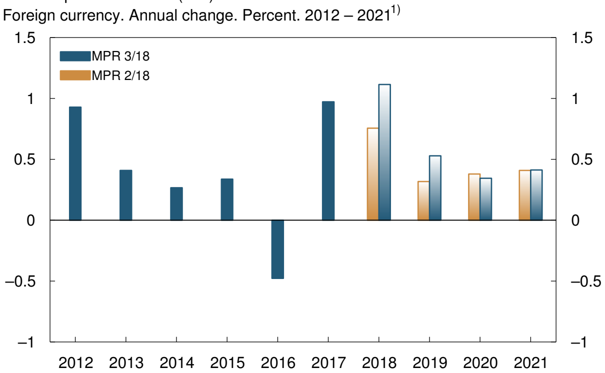
1) Import weights. US, euro area, UK and Sweden.
2) US: excluding food and energy. UK and euro area: excluding food, energy, tobacco and alcohol. Sweden: excluding energy.
Sources: Thomson Reuters and Norges Bank

Chart 2.7 Wage growth[1] and estimated output gap[2] in selected countries.[3]
Percent. 2005 – 2021[4]



1) Annual percentage change. Compensation per employee in the total economy.
2) The output gap measures the percentage deviation between GDP and estimated potential GDP. IMF estimates for 2005 – 2015. Norges Bank projections for the rest of the period.
3) Export weights. US, euro area, UK and Sweden.
4) Projections for wage growth 2018 – 2021 (broken yellow line).
Sources: Thomson Reuters and Norges Bank

Chart 2.8 Indicator of international inflationary impulses to imported consumer goods with compositional effect (IPC).
Foreign currency. Annual change. Percent. 2012 – 2021[1]



1) Projections for 2018 – 2021 (shaded bars).
Sources: Statistics Norway, Thomson Reuters and Norges Bank

Trade conflicts create uncertainty

The global economic outlook is uncertain. An escalation in trade conflicts is likely to lead to slower global growth than projected in this *Report*, both directly as a result of higher tariff barriers and indirectly via global value chains and heightened uncertainty (see box on page 18). Financial conditions may also tighten to a further extent than currently envisaged if risk premiums in the bond market increase abruptly or equity prices show a steep decline. On the other hand, economic growth may remain high for longer than projected if there is more spare capacity than assumed. As a result, wage and price inflation may remain lower for longer than envisaged.

2.2 COUNTRIES AND REGIONS

Strong growth in the US

The long upturn in the US continues. After a temporary dip at the beginning of the year, GDP increased by more than 1% between Q1 and Q2. The labour market continues to strengthen, and unemployment is now below 4% (Chart 2.9). Wage growth and underlying inflation have edged up so far in 2018. Since the end of 2015, the Federal Reserve has raised its policy rate seven times. The latest increase took place in June. Forward rates indicate two additional rate hikes during the remainder of 2018. The US dollar has appreciated since April.

The projection for GDP growth is revised up to nearly 3%. Strong consumer confidence points to continued solid growth in private consumption, driven by tax cuts and employment growth. New statistics show that the household saving ratio is considerably higher than previously assumed, providing households with more room to increase consumption ahead than assumed earlier. Investment growth is also expected to edge up on the back of lower corporate taxes and increased public spending limits, which were adopted earlier this year. Towards the end of the projection period, growth slows to a touch below 2% annually as a result of rising capacity constraints and monetary and fiscal tightening. Increased uncertainty and somewhat lower demand owing to trade measures are also expected to weigh down a little on growth. Falling oil prices in line with futures prices contributes to slightly lower price inflation in the coming years, while underlying inflation is expected to increase somewhat in line with higher wage growth. The projections for both wage and price inflation are a little higher than in the June *Report*.

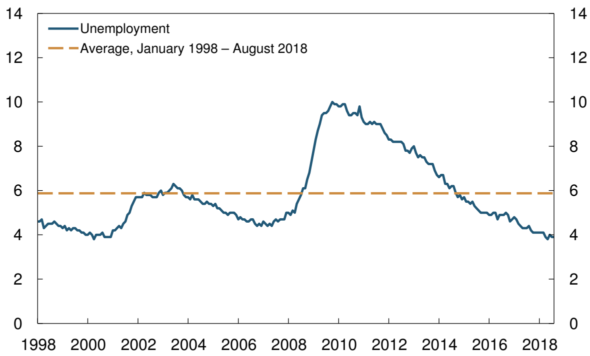
Lower growth in the euro area

After reaching its highest level in 10 years in 2017, euro-area GDP growth slowed in the first half of 2018, reflecting a cold winter, high oil prices and the ongoing trade conflict with the US. The slowdown has been slightly more pronounced than expected in the June *Report*. Unemployment continues to drift down (Chart 2.10) and wage growth is on the rise. Household confidence indicators remain solid, and it appears that the decline in business activity indicators has flattened to some extent. Capacity utilisation is nearing a normal level, and GDP growth is likely higher than potential growth.

The European Central Bank (ECB) has not changed its monetary stance since the June *Report*. The ECB has announced that it will reduce asset purchases from 2018 Q4, and end the asset purchase programme if inflation moves in line with expectations. The ECB has indicated that its key policy rates will be kept on hold until after summer 2019. Forward rates are consistent with this. Long-term interest rates in Germany show little change, while long-term rates in Italy have edged up as a result of the uncertainty surrounding the government budget outcome.

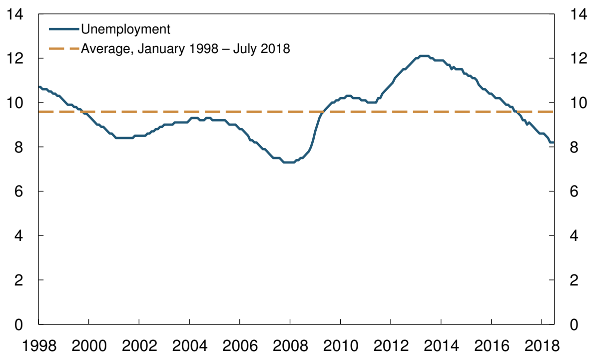
GDP growth is projected at 2% in 2018, edging down thereafter. Compared with the June *Report*, the projections are slightly lower for 2018 and 2019. The uncertainty associated with the trade conflict between the US and the EU appears to have diminished, but may very well continue to restrain companies' willingness to invest. At the same time, rising electricity prices may hamper growth in both consumption and goods production. Increased uncertainty surrounding the UK's exit from the EU is also likely to curb growth. Further ahead, lower growth in the labour force and monetary and fiscal tightening are likely to push down growth gradually to 1.5% in 2021. Price inflation is expected to remain a touch below 2% annually to the end of the projection period. The projections for 2018 and 2019 are revised up a little on the back of rising electricity prices and slightly higher wage growth. Underlying inflation is projected to rise gradually in the coming years as a result of rising capacity utilisation and higher wage growth.

Chart 2.9 Unemployment[1] in the US.
Seasonally adjusted. Percent. January 1998 – August 2018



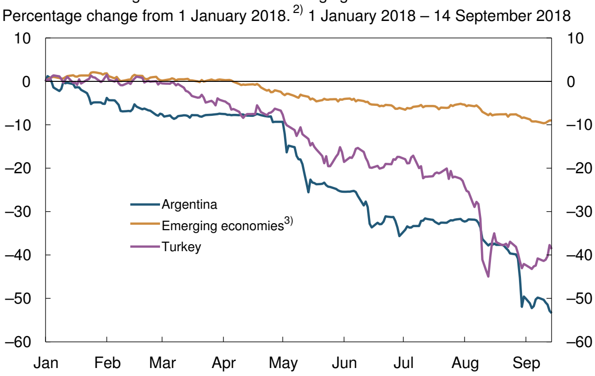
1) Unemployed as a share of the labour force.
Sources: Thomson Reuters and Norges Bank

Chart 2.10 Unemployment[1] in the euro area.
Seasonally adjusted. Percent. January 1998 – July 2018



1) Unemployed as a share of the labour force.
Sources: Thomson Reuters and Norges Bank

Chart 2.11 Exchange rates[1] in selected emerging economies.
Percentage change from 1 January 2018.[2] 1 January 2018 – 14 September 2018



1) Relative to USD.
2) A positive slope denotes a stronger exchange rate.
3) PPP-adjusted GDP weights. Brazil, Chile, Colombia, Czech Republic, Egypt, Hungary, India, Indonesia, Malaysia, Mexico, Pakistan, Peru, Philippines, Poland, Russia, South Africa, South Korea, Taiwan, Thailand, Uruguay and Vietnam.
Sources: Thomson Reuters and Norges Bank

Weak growth in the UK

UK GDP growth picked up somewhat between Q1 and Q2, but was still weaker than expected in the June *Report*. Growth has weakened in recent years, and in 2018 is likely to reach its lowest level since 2009. Demand is nevertheless strong enough for the labour market to tighten further and wage growth to rise gradually. The Bank of England raised its policy rate in August.

GDP growth is projected to pick up gradually to 1.5% in 2021, but the projection has been revised down a little for 2018 and 2019. Higher real wage growth and stronger consumer confidence will help boost growth ahead. On the other hand, indicators of export-oriented manufacturing are weak, and growth in lending to businesses has edged down since mid-2016. In addition, the share of businesses that report greater uncertainty about the outcome of the EU exit negotiations has increased through summer. Price inflation has been slightly lower than anticipated in the June *Report*, and the projection has been revised down for 2018 and 2019. Further ahead, price inflation is expected to hover slightly above 2% annually.

Strong growth in Sweden

The Swedish economy continues to grow at a brisk pace. Capacity utilisation is higher than normal. Inflation, as measured by the consumer price index with a fixed interest rate (CPIF), is close to the inflation target of 2%, but wage growth has been low for a long time and underlying inflation is falling. Monetary policy remains expansionary, and the Riksbank kept its policy rate unchanged in September. Forward rates indicate that the policy rate will be raised gradually from the beginning of 2019.

GDP growth has been broadly in line with that expected in the June *Report*, and the projection for 2018 remains unchanged at 2.7%. Further out in the projection period, capacity constraints are expected to curb growth. Inflation is projected to be near the target in the coming years.

Strong but moderating growth in China

Chinese growth remains strong, but has lost some momentum in recent years. Growth has slowed slightly this year too. This partly reflects Chinese government measures to reduce financial imbalances and pollution from manufacturing with a view to improving growth sustainability. In addition, the ongoing trade conflict with the US is having an impact. The Chinese equity market and currency have weakened. In the near term, the negative effects will be attenuated by monetary and fiscal easing. On the other hand, looser policies may again spur corporate leveraging and increase the risk of a hard landing further out. Overall growth is expected to drift down to a little below 6% annually through the projection period, against the backdrop of further economic rebalancing and the trade conflict with the US. The projections are slightly lower than in the June *Report*.

Growth has been solid in other emerging economies so far in 2018. US trade measures and monetary tightening have, however, had ripple effects on several countries, in particular in currency markets (Chart 2.11). The Turkish lira has come under strong pressure following several years of large current account deficits and the associated build-up of debt, of which a large share is in foreign currency. Argentina's foreign currency debt is also substantial, and the Argentine peso has depreciated markedly. Contagion to financial conditions in other countries has so far been moderate. The growth projections for emerging economies excluding China are lower than in the June *Report*.

DEVELOPMENTS IN OIL AND GAS PRICES

Oil spot prices rose from USD 30 per barrel in January 2016 to between USD 75 and 80 in September 2018. The price rise reflects both strong growth in global oil consumption and production cuts in OPEC and a number of other countries (OPEC+)[1]. OECD oil inventories declined markedly through 2017 and thus far in 2018 (Chart 2.12). Global political tensions have also contributed to the price rise.

Oil prices are somewhat higher than around the June *Report*. Prices edged down after OPEC+ decided to increase production at a meeting at the end of June. The fall in prices probably also reflected fears of potentially lower oil demand on the back of weaker global economic developments. Prices have recently risen again, primarily owing to production declines in a number of important oil-producing countries. Saudi Arabia, OPEC's leading producer, appears to be aiming for a price range around today's level, and will likely seek to adjust production so that OECD oil inventories support that range.

Oil prices are assumed to move in line with futures prices (Chart 1.3). Futures prices indicate that prices will decline to just below USD 70 in 2021, which is somewhat higher than envisaged in the June *Report*.

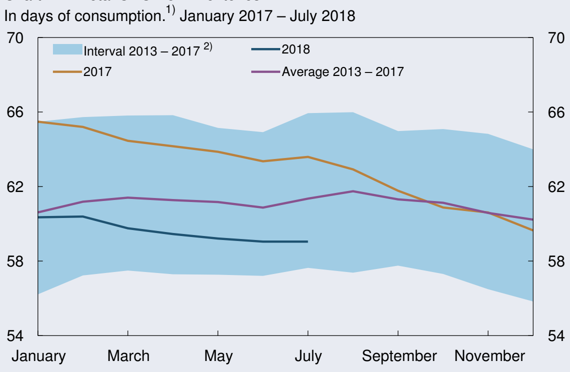
Lower oil supply may underpin oil prices ahead. Towards the end of 2018, oil production is expected to fall in Iran in particular. In addition, Venezuelan production may fall further as a result of the economic and political problems facing that country. The rapid growth in US production in recent years may also be hampered by limited pipeline capacity, which makes it difficult to transport the oil from the most productive areas in Texas. Generally, it will be difficult to offset a fall in production when OECD oil inventories are low and OPEC spare capacity is limited (Chart 2.13).

A number of conditions can influence oil demand. On the one hand, consumption of oil grades such as Brent may increase in order to meet new environmental regulations relating to shipping from 2020. On the other hand, lower growth in the global economy may dampen global oil consumption, particularly in the event of a sharp depreciation of emerging economy currencies. In addition, the marked rise in oil prices since 2016 may reduce growth in oil demand. Over time, this effect may be amplified by other factors such as gains in energy efficiency and a shift towards renewables with a view to achieving the long-term climate objectives.

European gas prices have continued to rise through summer, reflecting higher Asian gas prices and higher coal and oil prices. Moreover, European gas consumption may have increased because warm and dry weather has also reduced electricity production from other energy sources at the same time as electricity consumption has increased. The price of carbon emissions has also jumped up, which makes gas more attractive than coal. Gas prices are considerably higher than in the same period one year earlier.

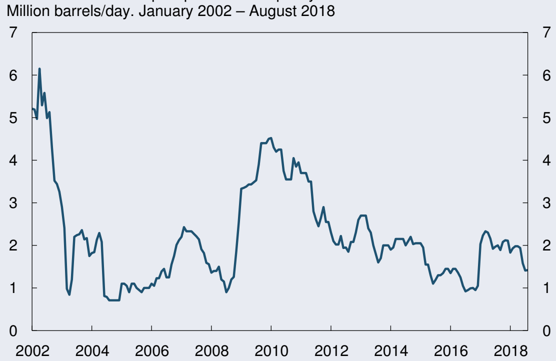
1 Twelve OPEC countries and 10 non-OPEC countries agreed to cut back production at meetings at the end of December 2016. The OPEC member country Saudi Arabia and Russia (as representative of non-OPEC countries) are the main parties to the agreement.

Chart 2.12 Total OECD oil inventories.
In days of consumption.[1)] January 2017 – July 2018



1) Days of consumption is calculated using average expected demand over the next three months.
2) Interval between the highest and lowest level for a given month in the period 2013 – 2017.
Sources: International Energy Agency and Norges Bank

Chart 2.13 OPEC surplus production capacity.
Million barrels/day. January 2002 – August 2018



Source: Energy Information Administration

TRADE CONFLICTS CREATE UNCERTAINTY

So far in 2018, the US has introduced a series of protectionist measures aimed at reducing the sizeable US current account deficit. The main measures include:

- Up to 50% tariffs on imported washing machines and solar panels from all countries, amounting to USD 10bn.
- Tariffs of 25% and 10% on imported steel and aluminium, respectively, from most countries, amounting to USD 50bn.
- Tariffs of 25% on imports from China, primarily capital goods and intermediate goods, amounting to USD 50bn.
- Many countries have responded to the measures by increasing tariffs on imports of selected US goods, with China imposing the largest punitive tariffs on US imports, amounting to USD 50bn.

In addition, the US government has announced a 10% tariff on Chinese imports amounting to a further USD 200bn, followed by new retaliatory measures by China. Overall, the measures cover just below 15% of US imported goods. Moreover, a US study is underway to determine whether imported cars and car parts can be considered a threat to national security and should thus be subject to punitive tariffs.

Trade conflicts can affect economic developments through different channels:

- The direct effect of a rise in tariffs will depend on whether exporters react by increasing prices or by reducing margins. Lower margins will reduce profitability, while higher prices will raise costs for companies and consumers in the importing country and depress demand. In both cases, investment growth is likely to slow.
- Domestic production in the importing country may become more profitable in relative terms, depending on developments in exchange rates, intermediate goods prices and any punitive measures.
- Threats of protectionist measures can lead to increased uncertainty and expectations of lower demand, which may in turn result in lower investment and unfavourable developments in financial and commodity markets.
- The effects may spread via domestic and global value chains, adversely affecting sectors and countries that are not directly impacted by higher tariff rates.
- In the longer term, increased protectionism and lower growth in global trade can also hamper productivity growth as a result of weaker competition and reduced international technology diffusion and specialisation.

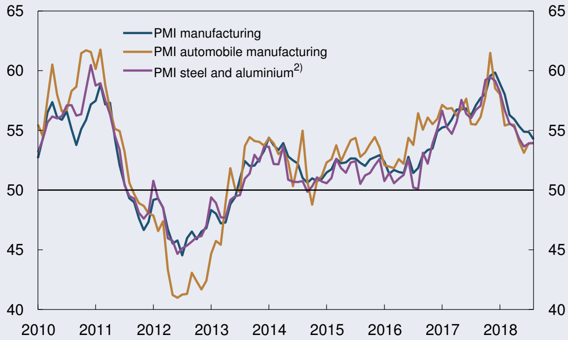
So far, the measures cover a minor share of both US imports and total exports of the countries affected. The direct impact on overall demand is therefore expected to be limited, without any noticeable effects on productivity growth during the projection period. The main effects in the short term are likely to stem from heightened uncertainty. Confidence indicators for manufacturing have fallen, particularly in countries and sectors that have been involved in trade conflicts (Charts 2.14 and 2.15). Equity markets have also been affected, with a sharp decline in the Chinese equity market and equity prices for a number of global car manufacturers. Confidence in other sectors has remained solid so far. Annual growth for Norway's trading partners is revised down by 0.1% in 2018 and 2019 owing to the trade conflicts.

Worsening trade conflicts could dampen global growth to a further extent than currently envisaged, particularly if uncertainty heightens and spreads to other sectors of the economy. According to IMF estimates, global GDP could be 0.5% lower in the next two years if punitive tariffs are imposed on cars in addition to increased tariffs on imports from China.[1]

Worsening trade conflicts will also influence economic prospects for Norway through both lower demand for Norwegian exports and a likely fall in oil prices. A substantial share of Norwegian exports, including oil and other raw materials, are used as intermediate goods in production in other countries. As a result, Norwegian companies could be indirectly impacted by trade measures. The potential impact on price inflation in Norway is uncertain. Historically, the Norwegian krone has shown a weak trend during periods of high global uncertainty.

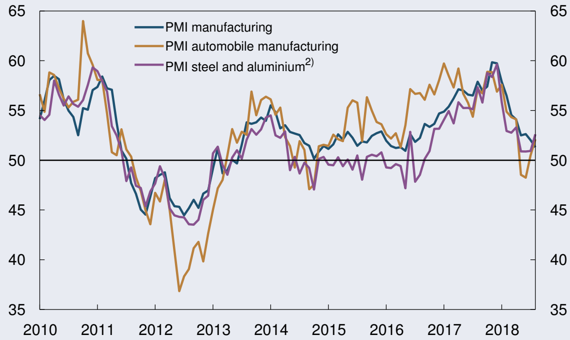
1 See IMF (2018) "G-20 Surveillance Note".

Chart 2.14 PMI for the EU.
Seasonally adjusted. Index.[1)] January 2010 – August 2018



1) Survey of purchasing managers. Diffusion index centered around 50.
2) PMI steel and aluminium is the average of PMI steel and PMI aluminium.
Source: IHS Markit

Chart 2.15 PMI for new export orders for the EU.
Seasonally adjusted. Index.[1)] January 2010 – August 2018



1) Survey of purchasing managers. Diffusion index centered around 50.
2) PMI steel and aluminium is the average of PMI steel and PMI aluminium.
Source: IHS Markit

3 The Norwegian economy

Growth in the mainland economy has been solid since autumn 2016 and employment has risen. The global upturn, higher oil prices and low interest rates have contributed to lifting growth. Fiscal policy has also provided considerable economic stimulus. Unemployment is low and capacity utilisation is close to a normal level. Inflation has risen markedly in 2018, mainly reflecting the rapid increase in electricity prices. Underlying inflation has also risen somewhat.

Mainland GDP is projected to rise by 2.5% in 2018 and 2019. This is higher than the economy's estimated underlying growth potential, and growth is expected to slow gradually ahead. Capacity utilisation is expected to rise in the coming two years before falling back slightly. Unemployment is expected to edge down and wage growth to show a gradual rise. Inflation is projected at slightly below 2% at the end of 2021.

MONEY MARKET RATES AND RISK PREMIUMS

Changes in the key policy rate usually feed through to other Norwegian interest rates, although there is not necessarily a one-to-one relationship.

A large share of banks' funding is priced on the basis of three-month Nibor, which is the three-month money market rate. This rate is determined partly by the average policy rate expected by the market over the next three months and partly a risk premium, which is generally referred to as the money market premium. The money market premium depends on banks' supply and demand for NOK liquidity. International conditions, such as a changed premium in USD rates, can also influence the money market premium as Nibor reflects the prices in foreign money markets where Nibor panel banks can borrow and invest. Nibor panel banks start with a USD interest rate and adjust it for the price of converting USD into NOK on the foreign exchange swap market.

For longer-term wholesale funding, banks normally rely on the bond market, where they have to pay a risk premium on top of the money market premium. Bond premiums vary with banks' creditworthiness and with the bond's maturity. Large non-financial corporations can also raise capital in the bond market.

3.1 FINANCIAL CONDITIONS

Lower money market premium

The money market rate, as measured by three-month Nibor, has been fairly stable at just over 1% in recent months. This must be seen in the light of the decrease in the money market premium at the same time as market key policy rate expectations for the next three-month period have risen. The premium is now at about the same level as at the beginning of the year (Chart 3.1), while the money market rate has risen by about 0.25 percentage point in the same period (Chart 1.8).

The money market premium is expected to be close to 0.4 percentage point ahead, ie the average for the past months. Compared with the June *Report*, the projections are somewhat lower for 2018 Q4, but unchanged for the years ahead. The projections imply that the money market rate will rise in line with the increase in the key policy rate ahead.

Higher lending rates ahead

Risk premiums on bank bonds are little changed, but the rise in the money market rate in 2018 has pushed up prices for banks' new bonds.

Banks' corporate lending rates are closely linked to the money market rate and have therefore risen in 2018. Banks in Norges Bank's lending survey for Q2 reported unchanged corporate lending margins. Risk premiums on corporate bonds are approximately unchanged so far in 2018. Growth in domestic credit to non-financial enterprises has slowed in recent months, after a marked increase in 2017. Enterprises still appear to have ample access to funding (see also Section 5).

Residential mortgage rates averaged just above 2.5% in 2017. Owing to a change in statistics compilation, ordinary interest rate statistics have not been published for 2018, but available information suggests that residential mortgage rates remain largely unchanged in 2018. The rise in the money market rate in 2018 has probably pushed down banks' lending margins on residential mortgages. Household and corporate lending rates are expected to move in line with the money market rate ahead. According to the projection, the average residential mortgage rate rises to just below 4% in 2021. The projections for lending rates are little changed from the June *Report* (Chart 1.8).

Estimated forward rates in the Norwegian money market have risen since the June *Report*. As in June, forward rates are lower than the Bank's projection for the money market rate (Chart 3.2). The yield on Norwegian ten-year government bonds has increased slightly in recent months and is now about 1.9% (Chart 2.3).

Somewhat weaker krone than projected

The krone, as measured by the import-weighted exchange rate index I-44, has recently appreciated and is now slightly stronger than in June. Nevertheless, the krone is weaker than projected in the June *Report*. Uncertainty in international financial markets has likely contributed to reducing demand for NOK.

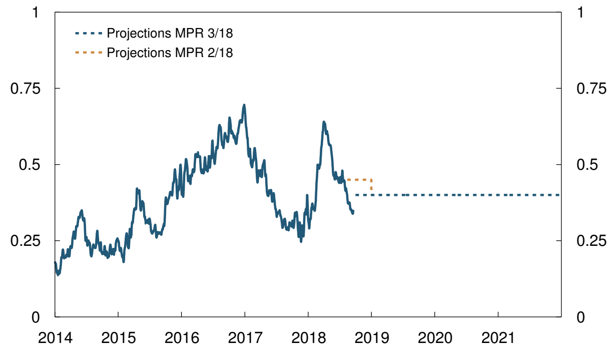
The krone is projected to appreciate somewhat in the years ahead (Chart 1.7). This must be seen in the light of prospects for a gradual widening of the interest rate differential against trading partners and a weaker krone than indicated by the historical relationship between the interest rate differential and the oil price (Chart 3.3). The projections nevertheless imply a somewhat weaker krone in the period to the end of 2020 than projected in June. This is primarily because the krone has been weaker than expected for some time. The exchange rate is assumed to be broadly the same at the end of the projection period as in the June *Report*.

3.2 OUTPUT AND DEMAND

Continued upturn in the Norwegian economy

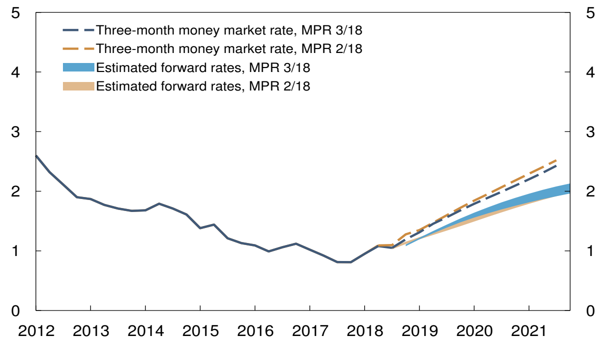
Growth in the mainland economy has been solid since autumn 2016. The global upturn, higher oil prices and

Chart 3.1 Norwegian three-month money market premium.[1] Five-day moving average. Percentage points. 1 January 2014 – 31 December 2021[2]



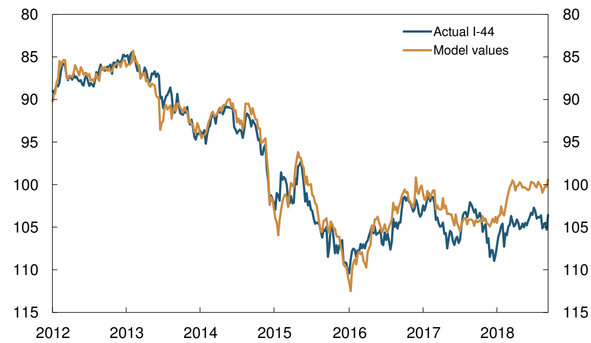
1) Norges Bank estimates of the difference between the three-month money market rate and the expected key policy rate.
2) Projections for 2018 Q4 – 2021 Q4.
Sources: Thomson Reuters and Norges Bank

Chart 3.2 Three-month money market rate [1] and estimated forward rates[2]. Percent. 2012 Q1 – 2021 Q4 [3]



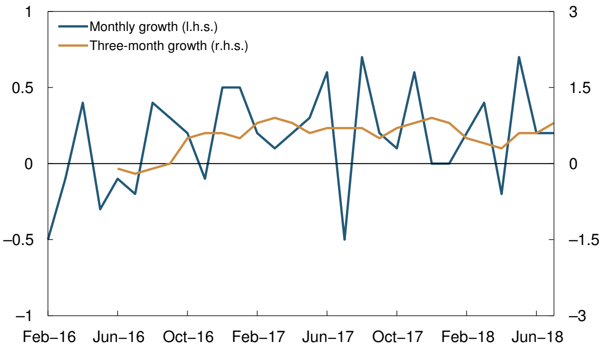
1) Projections for the money market rate are calculated as an average of the key policy rate in the current and subsequent quarter plus an estimate of the money market premium.
2) Forward rates are based on money market rates and interest rate swaps. The orange and blue bands show the highest and lowest rates in the period 4 June – 15 June in 2018 for MPR 2/18 and in the period 3 September – 14 September in 2018 for MPR 3/18, respectively.
3) Projections for 2018 Q3 – 2021 Q4.
Sources: Thomson Reuters and Norges Bank

Chart 3.3 Empirical model for import-weighted krone exchange rate (I-44).[1] [2] Week 1 2012 – week 37 2018



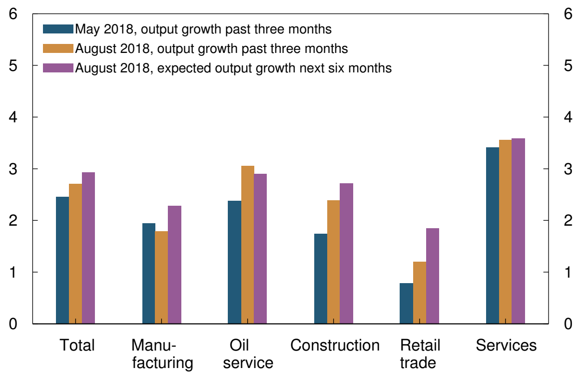
1) Oil price and one-year and 10-year interest rate differential against trading partners are incorporated as explanatory variables. The model is estimated using data from the first week of January 2009 to the last week of December 2016. The chart shows the fitted values for this period and the model-predicted values from the first week of January 2017 to the last week of September 2018.
2) Rising value in the chart denotes a stronger krone.
Sources: Bloomberg, Thomson Reuters and Norges Bank

Chart 3.4 GDP for mainland Norway. Seasonally adjusted. Monthly growth and three-month growth[1)]. Percent. February 2016 – July 2018



1) Latest three months against past three months.
Source: Monthly national accounts from Statistics Norway

Chart 3.5 Output growth by sector as reported by the Regional Network. Annualised. Percent



Source: Norges Bank

low interest rates have contributed to lifting growth. Fiscal policy has also provided considerable economic stimulus.

Revised quarterly national accounts figures (QNA) show that mainland GDP growth was somewhat higher in 2017 than projected in the June *Report*. Growth dipped in the first half of 2018. In 2018 Q2, growth was dampened by weather conditions that resulted in reduced electricity production. So far in 2018, GDP growth has been somewhat lower than projected in the June *Report*, but the revised figures indicate that the level of output in Q2 was nevertheless approximately in line with the projection. Monthly national accounts (MNA) suggest a pick-up in growth through spring and summer (Chart 3.4)

In August, Norges Bank's Regional Network contacts reported slightly higher output growth in the past three months than in the preceding three months (Chart 3.5). The increase was broad-based across sectors and oil services also reported solid growth following several years of decline. Overall, contacts expected the pace of growth to pick up further over the coming six months.

Mainland GDP growth is projected to be somewhat higher in the latter half of 2018 than in the first half of the year (Annex Table 3a). The growth projections for the coming quarters are slightly higher than in the June *Report*, even though the dry summer may continue to restrain electricity production somewhat in

MONTHLY NATIONAL ACCOUNTS

Statistics Norway has started to publish monthly national accounts. Monthly national accounts (MNA) include data for output and demand. Employment and wage statistics are only published quarterly and annually. In September 2018, Statistics Norway published MNA for the period between January 2016 and July 2018. Henceforth, MNA will be published approximately 40 days after month-end. In connection with the publication of new monthly figures, MNA will be revised retrospectively, but the revisions will not be incorporated into the quarterly and annual national accounts each time. Monthly figures published in September 2018 indicate mainland GDP growth of 0.6% in 2018 Q2, ie 0.1 percentage point higher than the quarterly national accounts (QNA) published in August.

Norges Bank's macroeconomic models are based on the most recently published QNA data. At present, MNA cover a short time period. Broader use of the statistics in the Bank's analytical models will be considered as experience is gained.

the coming quarters. The projections are in line with Regional Network expectations and slightly lower than the projections from Norges Bank's System for Averaging short-term Models (SAM) (Chart 1.5).

Annual mainland GDP growth is projected at 2.5% in 2018 and 2019. Growth is expected to slow gradually in the years ahead, after capacity utilisation has exceeded a normal level. In the projection, declining global growth, gradually higher interest rates and a stronger krone exchange rate dampen growth.

Compared with the June *Report*, the growth projections have been revised up slightly for the projection period as a whole. Slightly higher oil prices, a somewhat weaker krone and somewhat lower real interest rates have contributed to the upward adjustment.

Fiscal policy is assumed to make a modest contribution to economic growth in the coming years (see box on page 34), while oil investment is expected to increase substantially in the period to 2021 (see box on page 35).

Higher electricity prices curb consumption growth

Household consumption rose markedly in 2017, but remained unchanged in 2018 Q1. Consumption rose again in Q2, broadly as projected.

Consumption fell in July, and consumer confidence has declined slightly since the June *Report* (Chart 3.6). Higher electricity prices have restrained the rise in household real disposable income and may curb consumption growth.

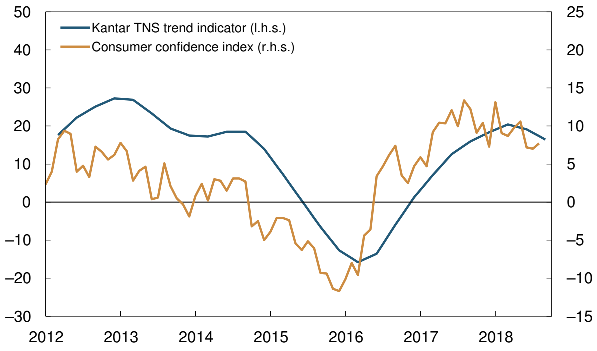
Consumption is expected to continue to grow in the years ahead, driven by higher employment and rising wage growth (Chart 3.7), while higher interest rates will restrain growth. Owing to high household debt ratios, it is assumed that an interest rate increase now will dampen consumption more than previously. Despite the rate hike, disposable income is likely to be higher for most households in the years ahead, primarily owing to the expected rise in wage growth. Consumption growth is projected to remain at the same level in 2018 as in 2017, slowing a little thereafter. Compared with the June *Report*, the projections for consumption growth are slightly lower in 2018 and 2019 and slightly higher further ahead.

REGIONAL NETWORK

Norges Bank has regular contact with a regional network of business leaders. The purpose is to gather information about economic developments in their businesses and industries. The network consists of around 1 500 enterprises, each of which is contacted about once a year. A round of interviews is conducted each quarter, and more than 300 network contacts participate in each round.

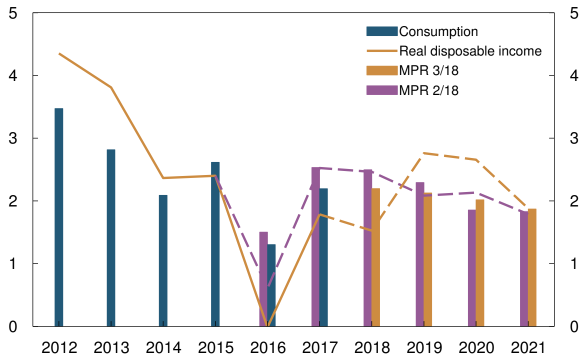
The contacts represent enterprises in the Norwegian business sector and the local government and hospital sector that reflect the production side of the economy both sector-wise and geographically.

Chart 3.6 Consumer confidence. Net values. Kantar TNS trend indicator for households. 2012 Q1 – 2018 Q3. Opinion consumer confidence index (CCI). January 2012 – August 2018



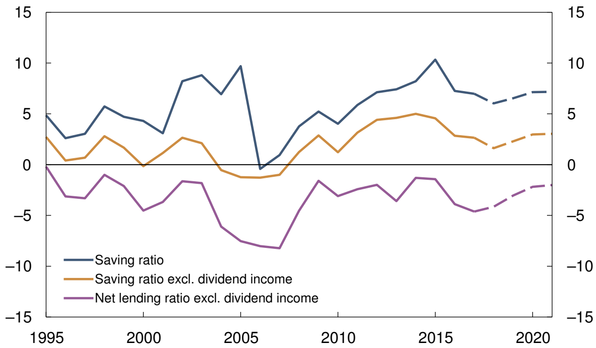
Sources: ForbrukerMeteret™ from Opinion and Kantar TNS

Chart 3.7 Household consumption[1] and real disposable income[2]. Annual change. Percent. 2012 – 2021[3]



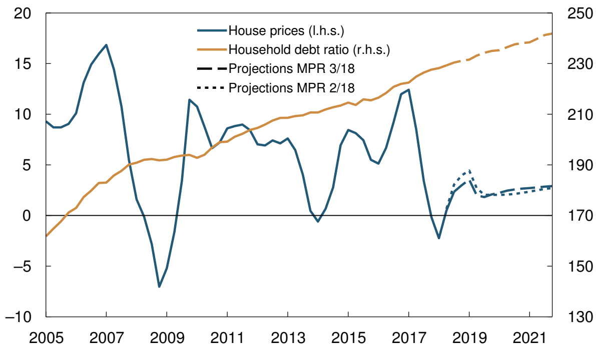
1) Includes consumption for non-profit organisations.
2) Excluding dividend income. Including income for non-profit organisations.
3) Projections for 2018 – 2021 (broken lines).
Sources: Statistics Norway and Norges Bank

Chart 3.8 Household saving and net lending. Share of disposable income. Percent. 1995 – 2021[1)]



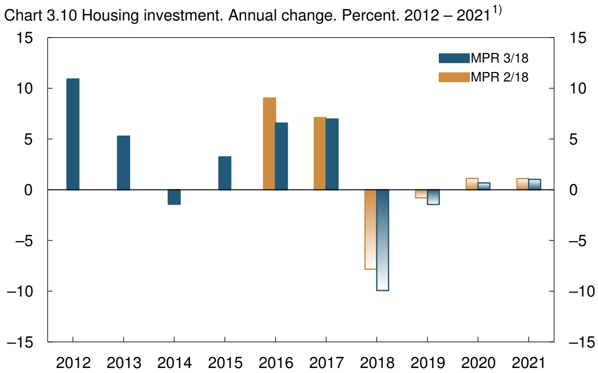
1) Projections for 2018 – 2021 (broken lines).
Sources: Statistics Norway and Norges Bank

Chart 3.9 House prices. Four-quarter change. Household debt ratio [1)]. Percent. 2005 Q1 – 2021 Q4 [2)]



1) Loan debt as a percentage of disposable income.
2) Projections for 2018 Q3 – 2021 Q4.
Sources: Eiendomsverdi, Finn.no, Real Estate Norway, Statistics Norway and Norges Bank

Chart 3.10 Housing investment. Annual change. Percent. 2012 – 2021[1)]



1) Projections for 2018 – 2021 (shaded bars).
Sources: Statistics Norway and Norges Bank

In the projections, household saving as a share of disposable income rises slightly through the projection period (Chart 3.8). The higher saving ratio reflects prospects for higher interest rates.

Low house price inflation

After falling through much of 2017, house prices have risen in 2018. In August, house prices were 2.2% higher than one year earlier. In recent months, house price inflation has been low and somewhat lower than projected in the June *Report*.

In recent months, many existing homes have been listed for sale, and the stock of unsold homes has increased. At the same time, a large number of dwellings are under construction, with many nearing completion. This will likely curb house price inflation in the coming months.

In the years ahead, an improving labour market and higher wage growth are expected to pull up house price inflation. Higher interest rates and a large number of completed dwellings relative to population growth dampen house price inflation. House prices are projected to rise moderately ahead (Chart 3.9). The projections are little changed through the projection period compared with the June *Report*. House price developments are also discussed in Section 5.

Fall in housing investment

Housing investment increased sharply in 2016 and into 2017. As measured in the quarterly national accounts (QNA), housing investment declined markedly towards the end of 2017. The decline has continued in 2018 and has been more pronounced than projected in the June *Report*.

The decline in housing investment reflects a fall in housing starts, probably owing to the steep drop in new home sales through 2017. New home sales have remained stable in recent months and are higher than in the same period in 2017. Combined with higher house prices, this will likely curb the decline in housing starts in the coming months. In August, Regional Network contacts reported prospects of an increase in housing starts in the months ahead.

Higher employment and higher wage growth will contribute to higher housing investment in the years ahead. Low population growth and higher interest rates pull in the opposite direction.

Housing investment is projected to fall in 2018 and 2019 (Chart 3.10), followed by a moderate rise. The projections for housing investment are revised down slightly from the June *Report*.

Higher business investment

Revised national accounts figures show that mainland business investment has been substantially higher in recent years than previously assumed (Chart 3.11), increasing sharply in 2016 and 2017.

While the investment level is markedly higher, growth so far in 2018 has been somewhat lower than projected in the June *Report*. In August, Regional Network contacts reported that further investment growth was expected over the next 12 months (Chart 3.12). In most sectors, investment growth expectations were nevertheless somewhat lower than in May.

Growth in domestic and global demand points to a further rise in business investment. Higher interest rates will restrain growth. Substantial business investment over the past few years may imply that the need for investment in the period ahead is lower than previously assumed.

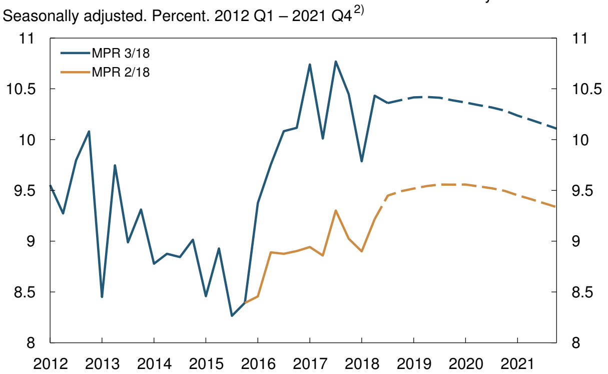
Business investment is projected to increase further in 2019, showing little change thereafter. The growth projections are somewhat lower than in the June *Report*.

Exports pick up

Mainland exports have been sluggish in recent years despite a substantial improvement in cost competitiveness. The weakness in exports largely reflects the marked fall in global petroleum investment, which has led to a decline in Norwegian oil service exports (Chart 3.13). In addition, seafood and industrial commodity exports have been limited by domestic production capacity constraints.

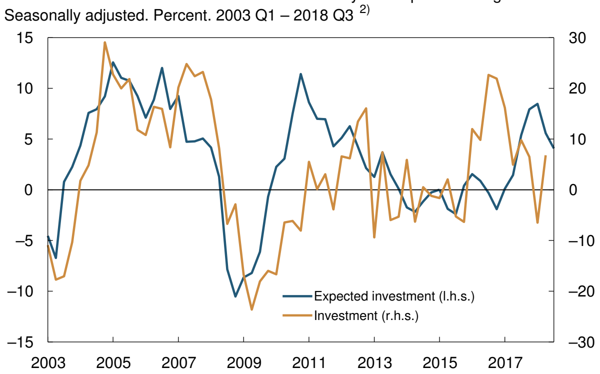
Total mainland exports picked up in the first half of 2018, partly because oil service exports have started to increase. Regional Network reports suggest that these exports will continue to increase over the coming months.

Chart 3.11 Business investment as share of GDP for mainland Norway.[1]
Seasonally adjusted. Percent. 2012 Q1 – 2021 Q4[2]



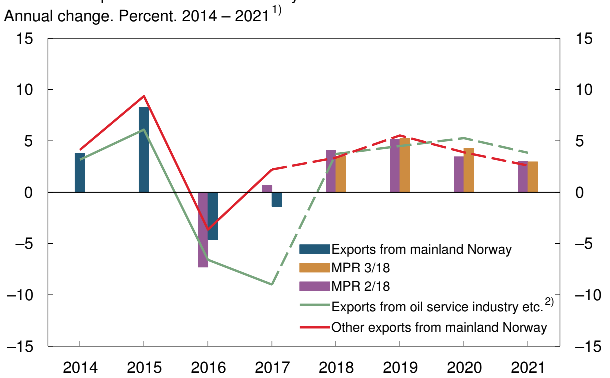
1) According to Statistics Norway, business investment in 2016 will be revised down somewhat in the next quarterly national accounts.
2) Projections for 2018 Q3 – 2021 Q4 (broken lines).
Sources: Statistics Norway and Norges Bank

Chart 3.12 Expected change in business investment over the next 12 months.[1]
Percent. Business investment for mainland Norway. Four-quarter change.
Seasonally adjusted. Percent. 2003 Q1 – 2018 Q3 [2]



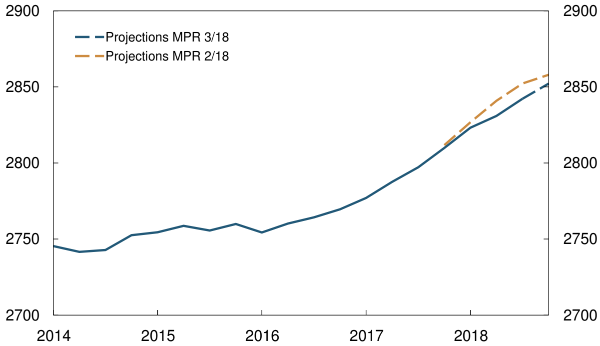
1) Regional Network. Weighted average of manufacturing, oil services, retail trade and services.
2) Latest observation for investment is 2018 Q2.
Sources: Statistics Norway and Norges Bank

Chart 3.13 Exports from mainland Norway.
Annual change. Percent. 2014 – 2021[1]



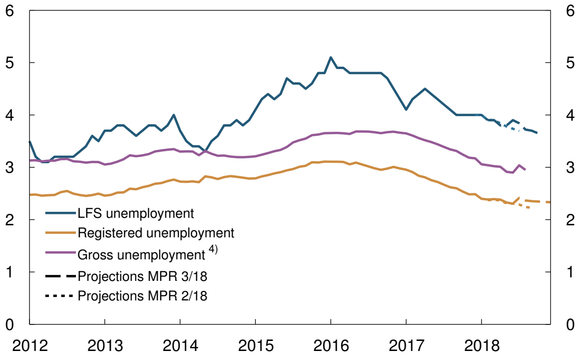
1) Projections for 2018 – 2021 (broken lines).
2) Groups of goods and services in the national accounts where the oil service industry accounts for a considerable share of exports.
Sources: Statistics Norway, Thomson Reuters and Norges Bank

Chart 3.14 Employment. Seasonally adjusted. In thousands. 2014 Q1 – 2018 Q4[1)]



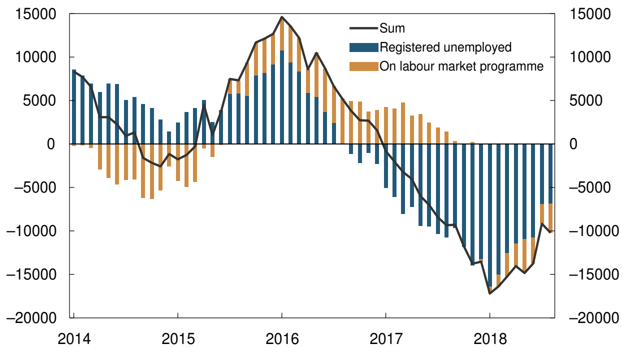
1) Projections for 2018 Q3 – 2018 Q4.
Sources: Statistics Norway and Norges Bank

Chart 3.15 Unemployment according to LFS[1)] and NAV[2)]. Share of the labour force. Seasonally adjusted. Percent. January 2012 – December 2018[3)]



1) Labour Force Survey.
2) Registered unemployment.
3) Projections for September 2018 – December 2018 (NAV) and July 2018 – October 2018 (LFS).
4) Registered unemployed and ordinary labour market programme participants.
Sources: Norwegian Labour and Welfare Administration (NAV), Statistics Norway and Norges Bank

Chart 3.16 Gross unemployment.[1)]
Twelve-month change. Number of unemployed. January 2014 – August 2018



1) Sum of registered unemployed and ordinary labour market programme participants.
Source: Norwegian Labour and Welfare Administration (NAV)

The rise in oil service exports is expected to continue in the years ahead, driven by an upswing in global offshore investment. Non-oil mainland exports are also expected to increase. There are prospects for solid export growth, particularly in some segments of commodity-based manufacturing, following investment in added production capacity. Overall export growth is projected to be markedly higher in 2018 than in 2017 and to pick up further in 2019, slowing somewhat thereafter owing to weaker competitiveness and ebbing growth among Norway's trading partners. Projected export growth is little changed for the projection period as a whole compared with the June *Report*.

The upturn in the Norwegian economy points to rising imports. Investment tends to have a high import content. An expected faster rise in petroleum investment than in other demand components indicates that import growth will be higher than mainland GDP growth. Import growth is projected to pick up in 2018 and 2019, slowing thereafter.

The projections are uncertain

The Norwegian economy may grow faster than projected. A high level of activity and solid profitability in the oil sector may have spillover effects into the mainland economy that are more pronounced than assumed. On the other hand, rising global protectionism may dampen export growth more than envisaged. Higher tariffs on Norwegian goods may result in lower exports. Furthermore, reduced global trade may curb global growth and push down oil prices. It is also uncertain how households will respond to higher interest rates. After a long period of low interest rates and rising household debt ratios, the effect of interest rate increases on consumption will likely be stronger than that of earlier increases.

3.3 LABOUR MARKET AND THE OUTPUT GAP

Weaker employment growth

Employment grew markedly through 2017 and into 2018 (Chart 3.14). The number of employed increased by 44 000 in the period between 2017 Q2 and 2018 Q2. Employment growth nevertheless slackened between 2018 Q1 and Q2, and was somewhat lower than projected in the June *Report*.

In August, Regional Network contacts reported solid employment growth over the previous three months, and expected growth to remain solid over the next three months (Chart 1.6). Norges Bank's expectations survey also indicates that employment growth will remain high. In line with this, employment growth is projected to pick up slightly in the near term.

Unemployment declined in 2017. So far in 2018, registered unemployment has shown little change (Chart 3.15). In August, seasonally adjusted unemployment was 2.4%. In summer 2018, the Norwegian Labour and Welfare Administration (NAV) introduced a system whereby unemployed persons receive a reminder to renew their registration. This has likely entailed a higher number of registrants, resulting in a small increase in registered unemployment.

In the year to August 2018, the sum of fully unemployed and job seekers participating in labour market programmes (gross unemployment) declined by 10 000 (Chart 3.16). The supply of new job-seekers has shown a pronounced decline (Chart 3.17), with the number of persons registering with NAV now at a post-crisis low.

According to the Labour Force Survey (LFS), seasonally adjusted unemployment was 3.9% in June. Unemployment has been somewhat higher than projected in the June *Report*, and the unemployment projections for the near term have been revised up (Annex Tables 3b and 3c).

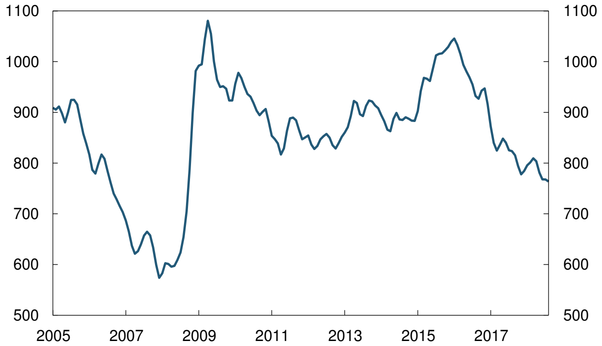
Labour demand is rising and the number of job vacancies has picked up (Chart 3.18). Over the past year, there has been a marked increase within oil production and the number of job vacancies in this sector is now at its highest level since before the fall in oil prices in 2014. The stock of job vacancies is also increasing in oil services.

According to the LFS, the labour force, which is the sum of unemployed and employed persons, has gradually grown since the end of 2017, reflecting rising labour demand. Normally, more people enter the labour market when job prospects improve.

Further employment growth ahead

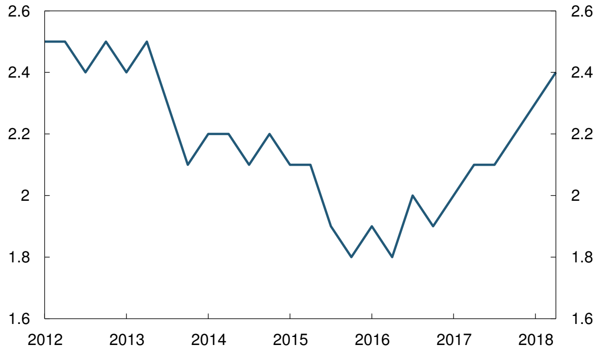
Solid growth in the Norwegian economy will continue to support employment growth ahead. Growth is projected to gradually slow through the projection period

Chart 3.17 New job seekers per business day.
Number of persons. Seasonally adjusted. January 2005 – August 2018



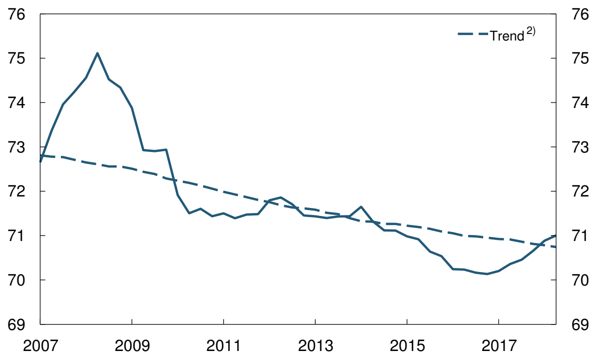
Source: Norwegian Labour and Welfare Administration (NAV)

Chart 3.18 Job vacancies. Share of the total number of jobs. Seasonally adjusted.
Percent. 2012 Q1 – 2018 Q2



Source: Statistics Norway

Chart 3.19 Employment rate[1]. Percent. 2007 Q1 – 2018 Q2



1) Employment in quarterly national accounts as a share of the population (aged 15-74).
2) Employment rate if the rate for each five-year age cohort had been unchanged at 2013 levels. The curve slopes downward because the population is ageing. 2013 was selected because capacity utilisation in that year was close to a normal level.
Sources: Statistics Norway and Norges Bank

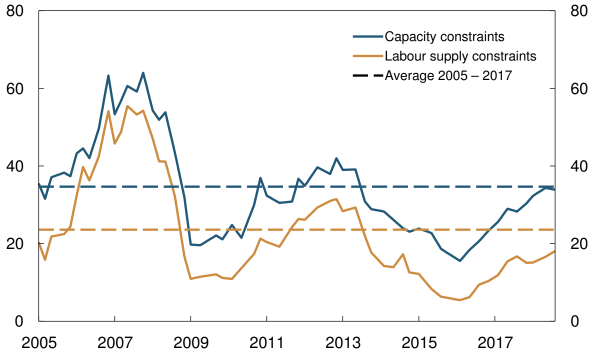
OUTPUT GAP

The output gap, also referred to as capacity utilisation, captures the overall utilisation of resources in the economy. The output gap is defined as the difference between actual output (GDP) and potential output in the economy. Potential output is the highest possible level of output that is consistent with stable developments in prices and wages over time. Over time potential output growth is determined by population growth and trend productivity growth.

The output gap is a key monetary policy variable. In interest rate setting, weight is given to smoothing fluctuations in output and employment. To achieve this, the aim is to keep the output gap close to zero. This is referred to as normal capacity utilisation. The output gap is also an important indicator of future inflation and is thus related to Norges Bank's objective of low and stable inflation.

Potential output and the output gap cannot be observed and must be estimated. Norges Bank's output gap estimates are the result of an overall assessment of a number of indicators and models. In this assessment, particular weight is given to labour market developments.

Chart 3.20 Capacity[1)] and labour supply[2)] constraints as reported by the Regional Network. Percent. January 2005 – August 2018



1) Share of contacts that will have some or considerable problems accommodating an increase in demand.
2) Share of contacts reporting that output is being constrained by labour supply.
Source: Norges Bank

as activity growth declines. The employment growth projections are little changed from the June *Report*.

Growth in the labour force is expected to be solid ahead as a result of higher labour demand, but unemployment is nevertheless set to edge lower ahead. Compared with the June *Report*, unemployment is projected to be slightly higher in the coming year and little changed towards the end of the projection period (Chart 1.11).

Capacity utilisation close to a normal level

In recent years, the degree of slack in the economy has been higher than normal, and goods and services output has been lower than potential output. The gap between actual and potential output has continued to narrow over the past few years, and the output gap is closing. Slightly weaker-than-expected labour market developments nevertheless suggest that capacity utilisation is slightly lower than projected in the June *Report*.

Registered unemployment implies that capacity utilisation is close to a normal level.

The employment rate, ie the number of employed persons as a share of the population, has increased (Chart 3.19). At the same time, as the age composition of the population is changing, a rising number of persons fall into age groups where participation rates are normally low, resulting in a downward trend in the employment rate. The employment rate that is consistent with normal capacity utilisation is therefore likely lower than previously. The current employment rate suggests that capacity utilisation has increased and is now close to a normal level.

The August Regional Network survey suggests little change in capacity utilisation in recent months (Chart 3.20). The share of enterprises reporting problems accommodating a rise in demand was unchanged and close to its historical average. At the same time, there was an increase in the share of enterprises citing labour supply as a constraint on output. This share is still somewhat lower than its historical average.

Estimates based on a broad set of models and indicators suggest that capacity utilisation is little changed between Q1 and Q2 and is close to, but slightly below a normal level (Chart 3.21).

In the Bank's assessment, the output gap will close in the latter half of 2018.

Moderate increase in potential output

Potential output is projected to grow by about 1.5% annually ahead. The projection is unchanged from the June *Report* and is consistent with trend productivity growth of 1% and trend growth in the labour force of 0.5% on average for the period.

The projection for growth in trend productivity is slightly higher than average productivity growth over the past decade. Both the QNA and the Regional Network indicate that actual productivity growth has shown little change in the recent period (Chart 3.22), which also suggests little movement in trend productivity growth.

Trend growth in the labour supply has diminished in recent years (Chart 3.23), owing to population ageing and declining immigration. It is assumed that trend growth will continue to drift down in the period ahead in line with Statistics Norway's population projections. This implies that labour immigration will be appreciably lower in the years ahead than at the beginning of this decade when much of Europe was in recession.

As GDP growth is expected to be higher than potential output growth over the next two years, capacity utilisation will increase in 2018 and 2019, falling back thereafter. Compared with the June *Report*, the output gap is projected to be slightly higher from the end of 2019.

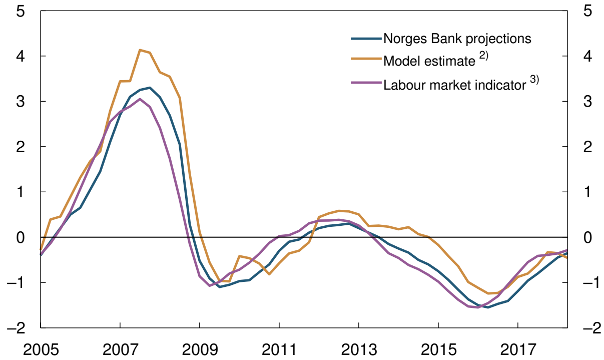
There is uncertainty surrounding the potential output of the economy. According to the LFS, the labour market participation rate for the core group, ie aged 25-54, has declined over time. This may reflect a structural downward trend in employment unrelated to demographic changes, resulting in lower-than-projected growth. On the other hand, the high share of the core group outside the labour market may suggest that there is a higher degree of slack in the economy than projected.

3.4 COSTS AND PRICES

Higher inflation

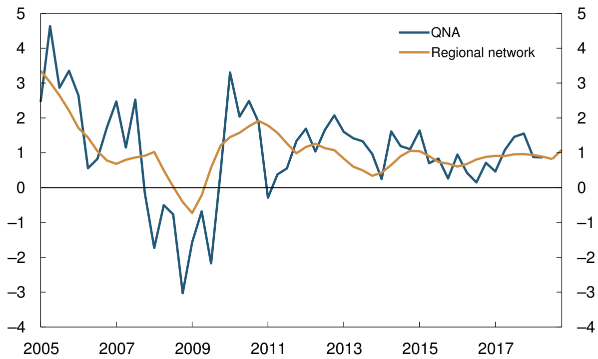
Inflation has risen markedly in 2018. The 12-month rise in the consumer price index (CPI) was 3.4% in August, about 2 percentage points higher than in autumn 2017 (Chart 3.24). The rise largely reflects the sharp increase in electricity prices. Underlying inflation

Chart 3.21 Estimated output gap[1]. Percent. 2005 Q1 – 2018 Q2



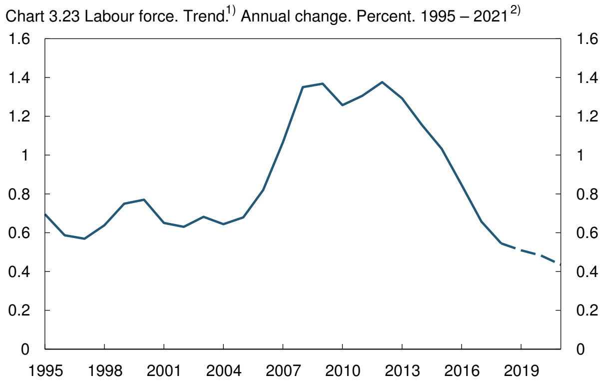
1) The output gap measures the percentage difference between mainland GDP and estimated potential mainland GDP.
2) See box on page 34 in *Monetary Policy Report* 4/17 for a review of the model estimate.
3) Indicator of the output gap based on the labour market. See Hagelund, K., F. Hansen and Ø. Robstad (2018) "Model estimates of the output gap". *Staff Memo* 4/2018. Norges Bank, for a further discussion.
Source: Norges Bank

Chart 3.22 Productivity. GDP for mainland Norway per employee according to the QNA[1]. Four-quarter change. Production per employee according to Regional network[2]. Percent. 2005 Q1 – 2018 Q4 [3]



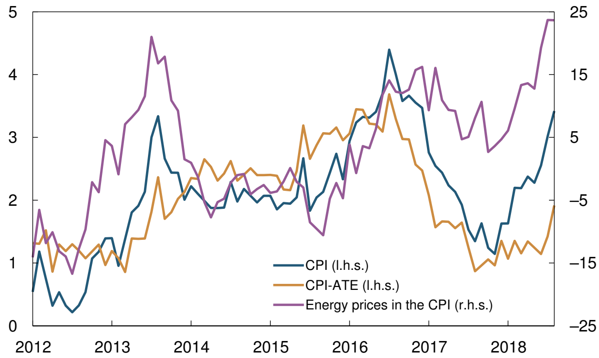
1) Quarterly national accounts.
2) Difference between four quarters' production and employment growth.
3) Latest observation for quarterly national accounts is 2018 Q2.
Sources: Statistics Norway and Norges Bank

Chart 3.23 Labour force. Trend.[1] Annual change. Percent. 1995 – 2021[2]



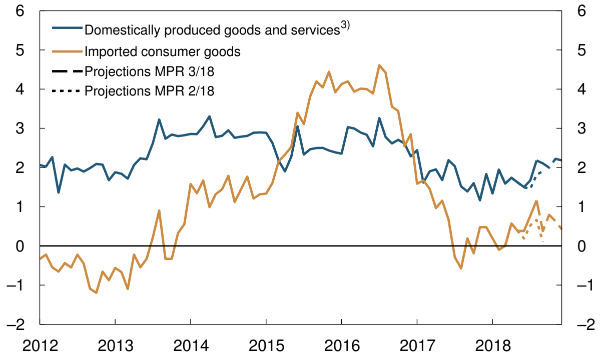
1) Growth due to changes in population aged 15-74, with labour supply held constant at 2013 level for each five-year age group.
2) Projections for 2018 – 2021 (broken line).
Sources: Statistics Norway and Norges Bank

Chart 3.24 CPI, CPI-ATE[1] and energy prices in the CPI[2].
Twelve-month change. Percent. January 2012 – August 2018



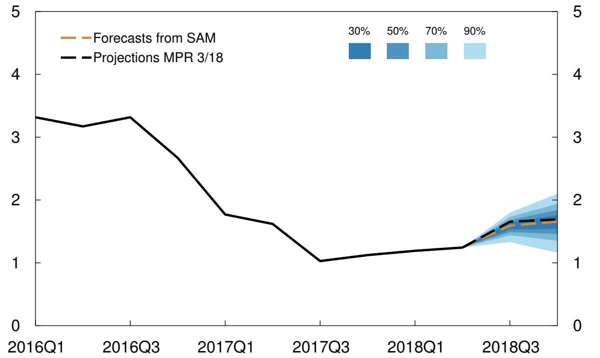
1) CPI adjusted for tax changes and excluding energy products.
2) Estimated by the groups Transport fuels and lubricants and Electricity and other fuels.
Sources: Statistics Norway and Norges Bank

Chart 3.25 CPI-ATE[1] by supplier sector.
Twelve-month change. Percent. January 2012 – December 2018 [2]



1) CPI adjusted for tax changes and excluding energy products.
2) Projections for September 2018 – December 2018.
3) Norges Bank's estimates.
Sources: Statistics Norway and Norges Bank

Chart 3.26 CPI-ATE[1] with fan chart from SAM [2].
Four-quarter change. Percent. 2016 Q1 – 2018 Q4[3]



1) CPI adjusted for tax changes and excluding energy products.
2) System for Averaging short-term Models.
3) Projections for 2018 Q3 – 2018 Q4.
Sources: Statistics Norway and Norges Bank

has also risen over the past year, but less than CPI inflation. The 12-month rise in the CPI adjusted for tax changes and excluding energy products (CPI-ATE) was 1.9% in August, while the 12-month rise in other indicators of underlying inflation was between 1.8% and 2.3% (see box on page 33).

Inflation has been higher than expected

The rise in prices for both domestically produced goods and services and imported consumer goods has been higher than projected in the June *Report* (Chart 3.25). For domestically produced goods and services, the 12-month rise was 2.2% in August, and is projected to remain at about this level in the coming months. The rise in prices for imported consumer goods moved up through the summer. In August, the rise was mainly pushed up by higher clothing and footwear prices. Some of the rise in these prices is assumed to be temporary, and the rise in prices for imported consumer goods is projected to fall back somewhat during autumn 2018.

The projections imply a somewhat lower 12-month rise in the CPI-ATE over the coming months than in August (Annex Table 3d). The CPI-ATE projections are closely in line with the SAM-based projections for Q3 and Q4 (Chart 3.26), and are revised up somewhat from the June *Report*. The projections imply annual CPI-ATE inflation of 1.4% in 2018.

CPI inflation has risen more than projected in the June *Report*. The rise in prices for energy products in particular has been higher than envisaged. Energy prices are assumed to remain at a high level in the coming months, and together with the projections for CPI-ATE inflation, this implies a slight decline in CPI inflation through autumn 2018. Annual CPI inflation is now projected to rise by 2.7% in 2018.

Higher wage growth

Wage growth rose in 2017 after having fallen in the preceding years. Wage growth is projected to increase further in 2018, to 2.8%. The projection is consistent with the wage norm for the spring wage settlement, feedback from the Regional Network and Norges Bank's expectations survey for Q3 (Chart 3.27).

Compared with the June *Report*, the projections for nominal wage growth are a little lower for 2018 and 2019, and unchanged for 2020 and 2021 (Chart 1.12).

Both wage expectations and wage developments so far in 2018 suggest slightly lower wage growth in 2018 than projected in June. In addition, according to revised national accounts figures, corporate profitability has been somewhat lower than indicated by earlier figures. As corporate profitability has been lower than assumed, wage earners' share of GDP, the labour share, is now higher (Chart 3.28).

In isolation, lower profitability indicates lower wage growth in the years ahead. Nevertheless, rising capacity utilisation and a tighter labour market are expected to push up wage growth further in the coming years. The oil price rise in recent years and higher activity and profitability in the oil sector will also likely push up wage growth. The labour share is projected to fall somewhat ahead.

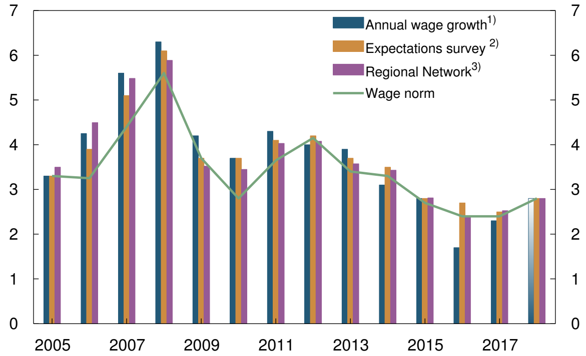
Wage growth in Norway is expected to be somewhat higher than among Norway's main trading partners in the years ahead (Chart 3.29), reflecting the improvement in Norway's terms of trade over the past few years. The wage projections are nevertheless moderate compared with previous upturns, partly reflecting prospects for continued low productivity growth.

Prospects for inflation somewhat below 2%

Higher capacity utilisation and rising wage growth ahead are expected to push up the rise in prices, especially for domestically produced goods and services (Chart 3.30). Stronger external inflationary impulses in 2017 and 2018 (Chart 2.8) push up the rise in prices for imported goods. Imported consumer goods inflation is nevertheless expected to fall in the years ahead on the back of a stronger krone. Overall, four-quarter CPI-ATE inflation is projected to be close to, but somewhat below, 2% in the coming years.

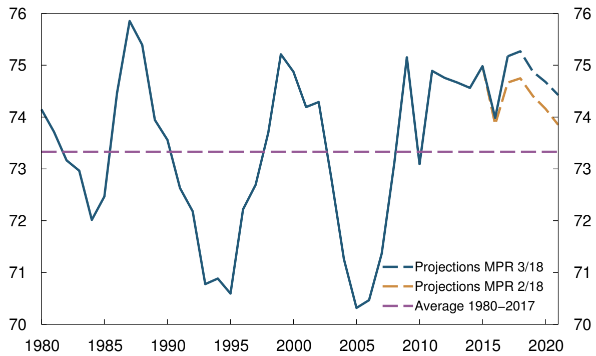
Compared with the June *Report*, the projections for CPI-ATE inflation have been revised up somewhat in the period to the end of 2020, but are slightly lower in 2021 (Chart 3.31). The upward revision partly reflects higher-than-expected actual inflation. A somewhat weaker krone exchange rate over the next few years than assumed in the June *Report* and somewhat higher-than-projected external inflationary impulses for 2018 and 2019 pull in the same direction. On the other hand, the downward revision of the wage growth projections implies somewhat lower price inflation.

Chart 3.27 Wage growth, wage norm and wage expectations. Annual change. Percent. 2005 – 2018



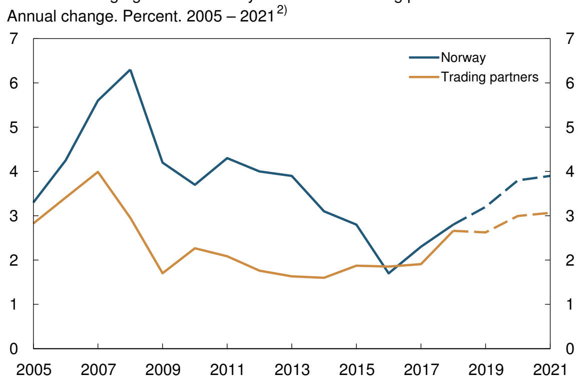
1) Actual annual wage growth from Statistics Norway. Norges Bank's projections for 2018 (shaded bar).
2) Social partners' wage growth expectations for the current year as measured by Norges Bank's expectations survey in Q3 each year.
3) Expected wage growth for the current year as reported by the Regional Network in Q3 each year.
Sources: Epinion, Kantar TNS, Opinion, Statistics Norway and Norges Bank.

Chart 3.28 Labour share for mainland Norway.[1] Percent. 1980 – 2021 [2]



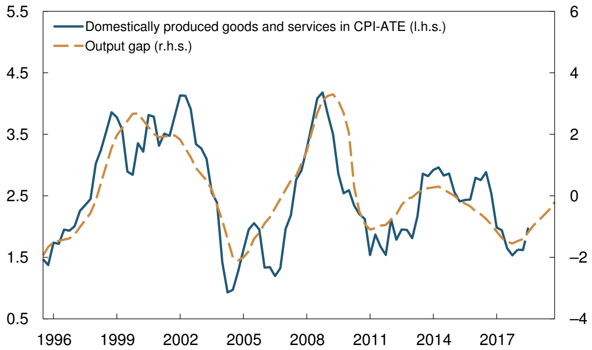
1) Labour costs as a share of the sum of labour costs and operating profit.
2) Projections for 2018 – 2021.
Sources: Statistics Norway and Norges Bank

Chart 3.29 Wage growth in Norway and for main trading partners[1]. Annual change. Percent. 2005 – 2021 [2]



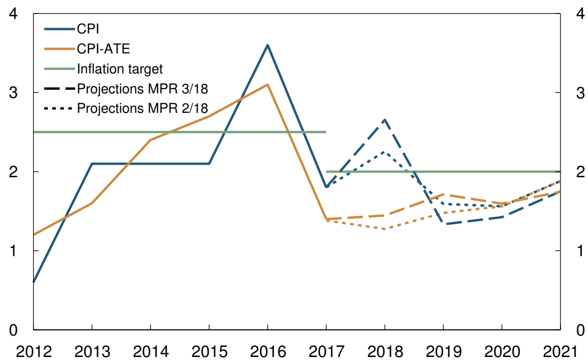
1) Aggregate for wage growth for trading partners is based on labour cost growth in the euro area, Sweden, UK and US.
2) Projections for 2018 – 2021 (broken lines).
Sources: Statistics Norway, Thomson Reuters and Norges Bank

Chart 3.30 Domestically produced goods and services in CPI-ATE [1]. Four-quarter change. Percent. Lagged output gap [2]. Percent. 1995 Q3 – 2019 Q4



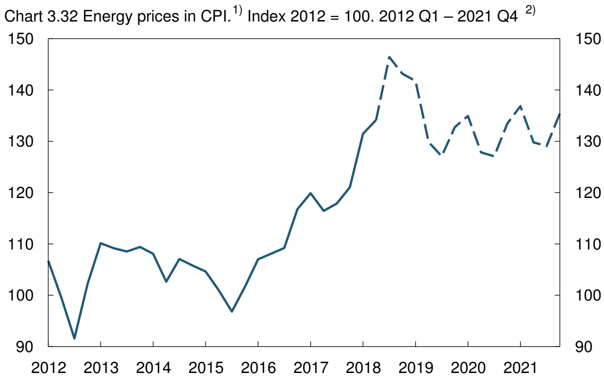
1) CPI adjusted for tax changes and excluding energy products. Norges Bank's estimates. 1995 Q3 – 2018 Q3. Projections for 2018 Q3.
2) The output gap is measured by the percentage difference between mainland GDP and estimated potential mainland GDP. The gap is lagged by six quarters and shows data for 1994 Q1 – 2018 Q2.
Sources: Statistics Norway and Norges Bank

Chart 3.31 CPI and CPI-ATE[1]. Annual change. Percent. 2012 – 2021



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

Chart 3.32 Energy prices in CPI.[1] Index 2012 = 100. 2012 Q1 – 2021 Q4 [2]



1) Weighted average of prices for transport fuels and lubricants, and of electricity and other fuels in the CPI. The estimate is based on futures prices for electricity, petrol and fuel. Not seasonally adjusted.
2) Projections for 2018 Q3 – 2021 Q4 (broken line).
Sources: Norwegian Water Resources and Energy Directorate, Thomson Reuters and Norges Bank

The assumption that the krone will appreciate somewhat later than projected in the June *Report* curbs inflation towards the end of the projection period.

The energy prices in the CPI are assumed to move in line with futures prices for electricity and petrol ahead, implying that energy prices stay elevated until spring 2019 before gradually falling (Chart 3.32). Compared with the June *Report*, the rise in energy prices is revised up at the beginning of the projection period and revised down somewhat from next summer. The projections for energy prices further out have been revised as these prices are now based on futures prices for the entire projection period. Previously, it was assumed that energy prices tracked futures prices over the next four quarters and then rose in line with CPI-ATE inflation.

Overall, the projections for CPI-ATE inflation and energy prices imply a decline in four-quarter CPI inflation over the next year, followed by a renewed rise. At the end of 2021, CPI inflation is slightly below 2%. Compared with the June *Report*, the projections for CPI inflation are higher in the coming quarters and somewhat lower thereafter.

The projections for wage growth and CPI inflation imply real wage growth of 0.1% in 2018, rising to 1.9% in 2019. In 2020 and 2021, real wage growth is projected at 2.4% and 2.1%, respectively. Compared with the June *Report*, the projections for real wage growth are lower for 2018 and somewhat higher for the next three years.

The projections are uncertain

There is uncertainty surrounding the projections for price and wage inflation. Higher oil prices and solid profitability in oil-related industries have previously pushed up overall wage inflation. These factors are expected to pull up wage inflation in the years ahead. However, increased focus on costs and prospects of lower activity in the somewhat longer term may curb wage growth in these industries to a further extent than envisaged. On the other hand, increased activity and labour market tightening may lead to higher-than-projected wage and price inflation further out. Moreover, there is uncertainty associated with the effects of the change in the inflation target in March 2018 on economic agents' inflation expectations ahead (see box on inflation expectations on page 33).

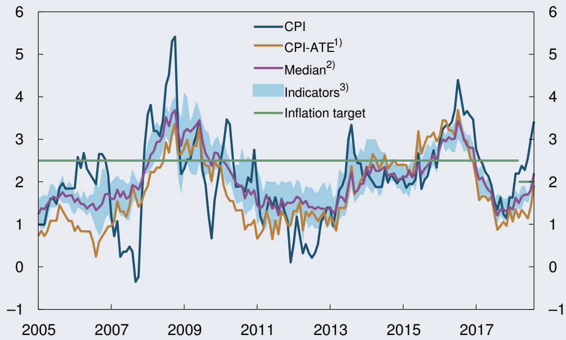
INDICATORS OF UNDERLYING INFLATION

Inflation targeting should be forward-looking and flexible. Norges Bank sets the interest rate with a view to stabilising annual consumer price inflation (CPI) in the medium term. Temporary conditions may lead to substantial short-term fluctuations in CPI inflation. Indicators of underlying inflation can be useful in order to see through such fluctuations.[1]

The most important indicator of underlying inflation in Norges Bank's analyses is the CPI adjusted for tax changes and excluding energy products (CPI-ATE). In the past two years, CPI-ATE inflation has been lower than CPI inflation, primarily reflecting high energy price inflation, but also indirect tax increases. Other underlying inflation indicators have shown somewhat higher inflation than the CPI-ATE for a period, but the gap has narrowed in recent months (Chart 3.33). In August 2018, the median of the 12-month rise in these indicators was 2.2%, up from 1.2% in August 2017.

1 See Husabø, E. (2017) "Indicators of underlying inflation in Norway". *Staff Memo* 13/2017, Norges Bank, for a more detailed review of various indicators.

Chart 3.33 CPI and indicators of underlying inflation. Twelve-month change. Percent. January 2005 – August 2018



1) CPI adjusted for tax changes and excluding energy products.
2) Median of CPIM, CPIXE, 20% trimmed mean, weighted median, CPI-XV and CPI common. See Husabø, E. (2017) "Indicators of underlying inflation in Norway". *Staff Memo* 13/2017. Norges Bank, for a review of the indicators.
3) The band shows the highest and lowest values for CPIM, CPIXE, 20% trimmed mean, weighted median, CPI-XV and CPI common.
Sources: Statistics Norway and Norges Bank

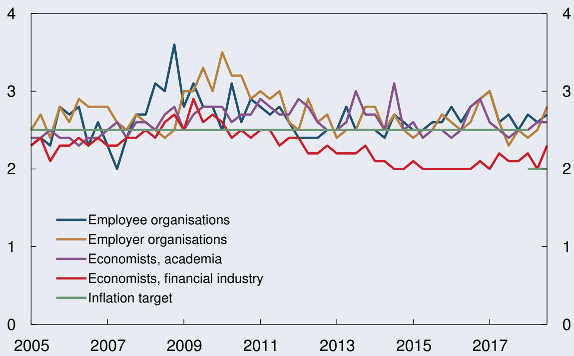
INFLATION EXPECTATIONS

Expectations with regard to future inflation are an important factor in many economic decisions, such as price and wage setting. Anchored inflation expectations can make it easier for monetary policy to achieve the objective of price stability and contribute to smoothing fluctuations in output and employment. Inflation expectations are often referred to as anchored when medium- and long-term inflation expectations show little reaction to new information, remaining stable and close to the target. In recent years, longer-term inflation expectations, as measured in Norges Bank's expectations survey, have generally remained close to 2.5% (Chart 3.34).[1] The inflation target for monetary policy was lowered from 2.5% to 2% in March 2018.

The expectations survey for 2018 Q3[2] showed a slight rise in five-year ahead inflation expectations of financial industry economists and the social partners from Q2. The long-term expectations of economists in academia were unchanged in the same period. In the monetary policy reports published after the changed inflation target, it is assumed that it would take some time for inflation expectations to adjust to the new target. These assumptions have not been changed in the light of the responses given in the expectations survey for Q3.

1 See Erlandsen, S. K. and P. B. Ulvedal (2017) "Are inflation expectations anchored in Norway?". *Staff Memo* 12/2017. Norges Bank, for a more detailed review.
2 The expectations survey was conducted in the period 1–20 August 2018.

Chart 3.34 Expected 12-month change in consumer prices five years ahead. Percent. 2005 Q1 – 2018 Q3



Sources: Epinion, Kantar TNS and Opinion

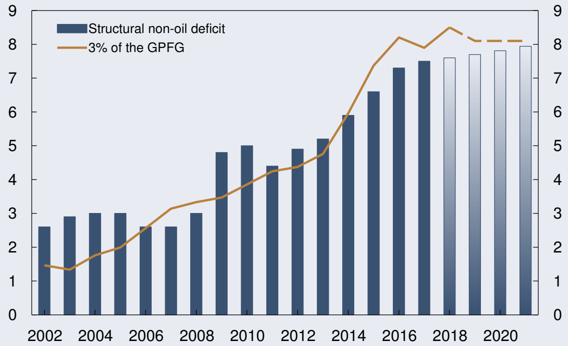
ASSUMPTIONS CONCERNING FISCAL POLICY

The fiscal policy assumptions in this *Report* are based on the revised budget for 2018. Petroleum revenue spending, as measured by the structural non-oil deficit, is estimated at NOK 226bn in 2018, or 7.6% of trend mainland GDP, an increase of 0.1 percentage point from 2017.

The deficit is estimated at 2.7% of the value of the Government Pension Fund Global (GPFG) in 2018. Petroleum revenue spending is assumed to rise somewhat faster than the value of the GPFG in the coming years. This implies that petroleum revenue spending will also grow as a share of the economy. As in the June *Report*, the structural non-oil deficit is assumed to rise by 0.1 percentage point as a share of GDP each year to the end of the projection period. In that case, fiscal impulses to growth in the coming years will be broadly in line with the estimates for 2018. At the same time, there are prospects that the deficit will be somewhat below the 3% path also at the end of the projection period (Chart 3.35).

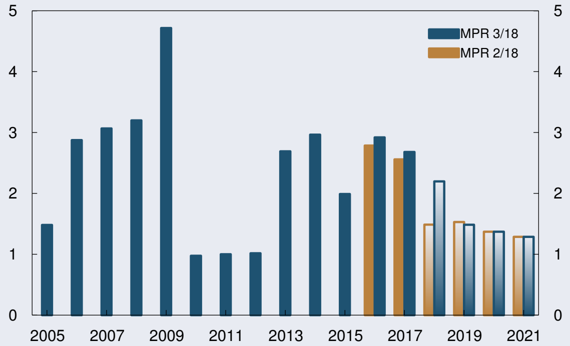
Public demand has expanded rapidly in recent years, at an annual average of 2.7% over the past five years. Prospects for smaller increases in petroleum revenue spending ahead imply that growth in public demand will be considerably lower in the years ahead (Chart 3.36). Growth in public demand is projected at 2.2% in 2018, appreciably higher than projected in the June *Report*. The reason for the upward adjustment is that national accounts figures to the end of 2018 Q2 indicated that growth had been stronger than assumed. The growth projections for the years ahead are unchanged from the June *Report*.

Chart 3.35 Structural non-oil deficit and 3% of the GPFG[1].
Share of trend GDP for mainland Norway. Percent. 2002 – 2021[2]



1) Government Pension Fund Global.
2) Projections for 2018 – 2021 (broken line and shaded bars).
Sources: Ministry of Finance and Norges Bank

Chart 3.36 Public sector demand. Annual change. Percent. 2005 – 2021[1]



1) Projections for 2018 – 2021 (shaded bars).
Sources: Statistics Norway and Norges Bank

PROJECTIONS FOR PETROLEUM INVESTMENT

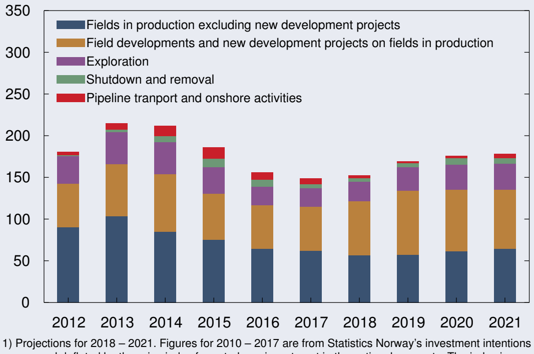
Investment on the Norwegian continental shelf appears set to expand ahead, after having fallen over several years (Chart 3.37). The expected increase reflects the marked rise in oil prices since the beginning of 2016 and the substantial cost-cutting measures oil companies have implemented in recent years. Owing to the rise in oil prices and cost cuts, break-even prices for new development projects are now far below oil spot and futures prices. Oil companies are therefore expected to launch a number of development projects ahead.

The most recent investment intentions survey indicates that investment will increase somewhat less in 2018 than projected in the June *Report*. Petroleum investment is now projected to increase by 2.5% between 2017 and 2018 and by more than 15% between 2018 and 2020, followed by weak growth in 2021. Compared with the projections in the June *Report*, investment is a little higher in the coming years. The upward revision must be seen in the light of the Q3 investment intentions survey and the oil price rise since June.

Investment in *field development* and *fields in production* fell by nearly a third between 2013 and 2017. The decline was cushioned by the Johan Sverdrup project, which involved considerable investment over the last two years of the period. Since 2017, oil companies have launched a number of development projects in new and existing fields. Overall investment in these development projects and other ongoing projects will increase appreciably between 2017 and 2019, falling markedly thereafter up to 2021 (Chart 3.38). This decline is expected to be partly offset by between 20 and 25 new development projects to be started by oil companies between 2019 and 2021. As most of these projects will be relatively small compared with many of the projects commenced in recent years, investment in field development will fall towards the end of the projection period. Investment in fields in production excluding new development projects will continue to fall in 2018, in line with the investment intentions survey, and rise gradually thereafter in the period to 2021 as a result of improved profitability in the petroleum industry.

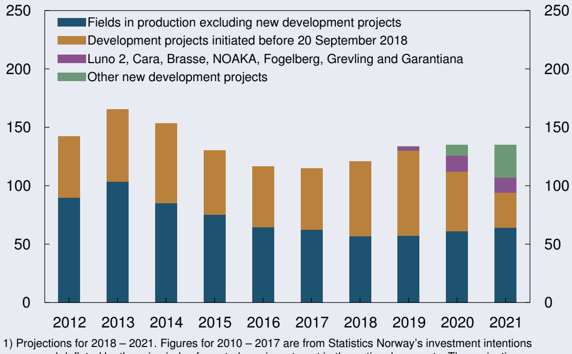
Exploration expenditure also fell markedly between 2013 and 2017. Investment in exploration is projected to show a solid rebound between 2017 and 2021, driven by the decline in drilling costs in recent years and prospects for an oil price of between USD 60 and USD 80 ahead.

Chart 3.37 Petroleum investment.
Constant 2018 prices. In billions of NOK. 2012 – 2021[1)]



1) Projections for 2018 – 2021. Figures for 2010 – 2017 are from Statistics Norway's investment intentions survey and deflated by the price index for petroleum investment in the national accounts. The index is projected to remain unchanged between 2017 and 2019.
Sources: Statistics Norway and Norges Bank

Chart 3.38 Investment in field development and fields in production.
Constant 2018 prices. In billions of NOK. 2012 – 2021 [1)]



1) Projections for 2018 – 2021. Figures for 2010 – 2017 are from Statistics Norway's investment intentions survey and deflated by the price index for petroleum investment in the national accounts. The projections are based on reports to the Storting, impact analyses, forecasts from the Norwegian Petroleum Directorate, Statistics Norway's investment intentions survey and current information about development projects.
Sources: Statistics Norway and Norges Bank

4 Monetary policy analysis

The key policy rate was raised to 0.75% at the monetary policy meeting. According to the forecast in this *Report,* the key policy rate will be raised further in 2019 Q1, followed by a gradual increase through the projection period to around 2% at the end of 2021.

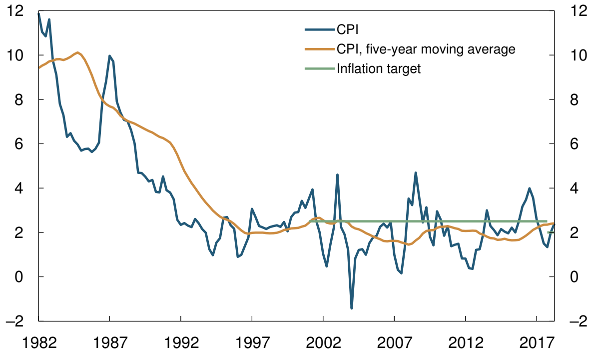
The interest rate forecast is little changed from the June *Report.* Lower domestic demand and lower wage growth than projected in the June *Report* suggest in isolation a lower interest rate path. Weaker growth prospects abroad pull in the same direction. On the other hand, a weaker krone and higher oil prices than assumed earlier pull in the direction of a higher interest rate path.

4.1 OBJECTIVES AND RECENT DEVELOPMENTS

Low and stable inflation

The primary objective of monetary policy is low and stable inflation. From 2001, the operational target of monetary policy was annual consumer price inflation of close to 2.5% over time. In March 2018, the target was changed to 2%. Average annual consumer price inflation has been around 2% since 2001 (Chart 4.1).

Chart 4.1 Consumer price index (CPI).
Four-quarter change. Percent. 1982 Q1 – 2018 Q2



Sources: Statistics Norway and Norges Bank

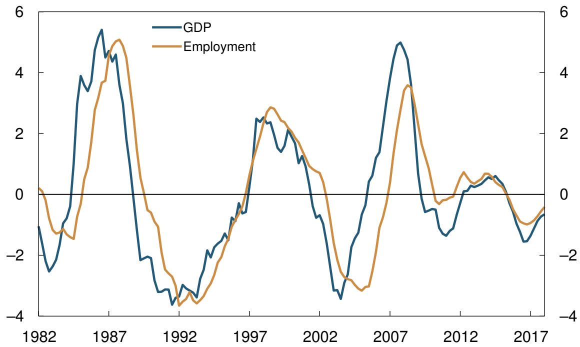
Inflation targeting shall be forward-looking and flexible so that it can contribute to high and stable output and employment and to counteracting the build-up of financial imbalances. Over the past decade, output and employment volatility has been relatively limited despite large shocks to the Norwegian economy (Chart 4.2). A flexible inflation targeting regime has helped to dampen the impact on the real economy. Monetary policy objectives and trade-offs are described further on page 41.

Continued expansionary monetary policy

The interest rate level in recent years has been very low, both globally and in Norway. This is because there has been a need for an expansionary monetary policy and because the level of the neutral real interest rate has declined over time. The neutral real interest rate is the rate that is neither expansionary nor contractionary.

The neutral real interest rate in Norway, measured as the three-month money market rate less inflation, is estimated to lie in the range of 0%–1%.[1] The neutral interest rate cannot be observed and the estimate is

Chart 4.2 GDP for mainland Norway and employment.
Deviation from trend.[1)] Percent. 1982 Q1 – 2018 Q1



1) The trend for both series is calculated using an HP filter with lambda = 40 000. Calculations are based on data from 1978 Q1 – 2018 Q2. The deviation from trend is three-quarter moving average.
Sources: Statistics Norway and Norges Bank

1 See Special Feature "Estimates of the neutral real interest rate" in *Monetary Policy Report* 2/18 for a detailed discussion.

shrouded in uncertainty. The real interest rate has edged up over the past few years (Chart 4.3), but remains lower than the Bank's estimate of the neutral real interest rate.

4.2 NEW INFORMATION AND ASSESSMENTS

Slightly lower inflation further out

In assessing the effects of new information and new assessments on the outlook for inflation and the output gap, a model-based exercise is performed where the key policy rate forecast from the previous *Report* is held constant. Norges Bank's macroeconomic model NEMO[2] is used in this exercise, where updated projections for the current and following quarters are applied. For variables that are not determined by the model, updated projections for the entire projection period are used.

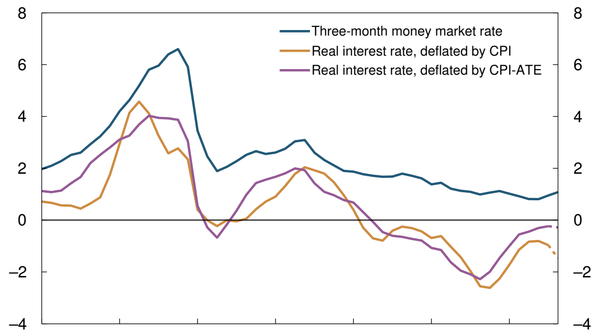
Compared with the projections in the June *Report*, the model-based analysis suggests that CPI-ATE inflation will be somewhat higher in 2018 and 2019, but somewhat lower towards the end of the projection period (Chart 4.4a). Owing to higher actual inflation and a weaker krone than assumed in June, inflation remains higher at the beginning of the projection period. Lower wage growth projections restrain inflation. In addition, the appreciation of the krone is now expected to take place more gradually and somewhat later than assumed in the June *Report*, which will have a dampening effect on inflation further out in the projection period.

Capacity utilisation will remain a little lower over the coming year and at around the same level as in the June *Report* thereafter (Chart 4.4b).

At the end of the projection period, inflation is close to but somewhat below target, while capacity utilisation is a little above a normal level. Overall, the model-based analysis points to minor changes in the outlook for inflation and the output gap with an unchanged interest rate path. This may suggest that the interest rate path should remain little changed.

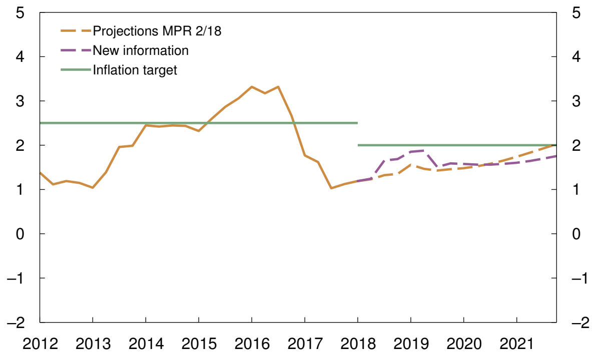
2 NEMO is described in Gerdrup, K.R., E.M. Kravik, K.S. Paulsen and Ø. Robstad (2017) "Documentation of NEMO – Norges Bank's core model for monetary policy analysis and forecasting". *Staff Memo* 8/2017. Norges Bank.

Chart 4.3 Three-month money market rate and real interest rates 1). Percent. 2005 Q1 – 2018 Q2 2)



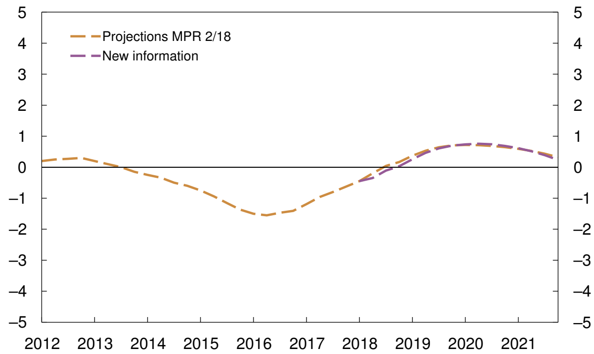
1) Three-month money market rate deflated by a three-quarter centered moving average of inflation, measured by four-quarter CPI inflation and CPI inflation adjusted for tax changes and excluding energy prices (CPI-ATE).
2) Projections for 2018 Q2 (broken lines).
Sources: Statistics Norway and Norges Bank

Chart 4.4a CPI-ATE.1) Projection conditional on new information and key policy rate forecast in MPR 2/18. Four-quarter change. Percent. 2012 Q1 – 2021 Q4 2)



1) CPI adjusted for tax changes and excluding energy products.
2) Projections for 2018 2018 Q3 – 2021 Q4.
Sources: Statistics Norway and Norges Bank

Chart 4.4b Estimated output gap1). Projection conditional on new information and key policy rate forecast in MPR 2/18. Percent. 2012 Q1 – 2021 Q4



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

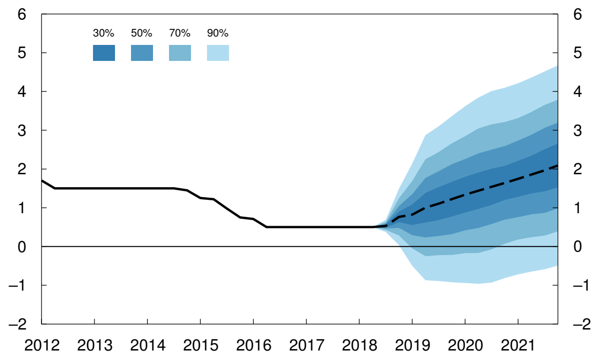
Gradual interest rate rise

The upturn in the Norwegian economy continues. Spare capacity is gradually diminishing, and capacity utilisation now appears to be close to a normal level. Wage growth has risen and growing pressures in the economy suggest a continued rise. Underlying inflation has also picked up and, in August, the 12-month rise in the CPI-ATE was close to the inflation target.

The risk outlook is clouded in particular by rising global protectionism and turbulence in some emerging economies. Higher trade barriers and persistent uncertainty may weigh more on import growth among trading partners than projected, but may also contribute to the krone remaining weaker than assumed. Tighter labour market conditions are expected to pull up wage growth in the coming years. The rise in oil prices and increased oil sector activity are also likely to push up wage growth, but the extent is uncertain. Owing to high household debt burdens, it is assumed that an interest rate increase now will dampen consumption more than previously. The long period of low interest rates and mounting debt burdens has, however, led to greater uncertainty surrounding the effects of higher interest rates.

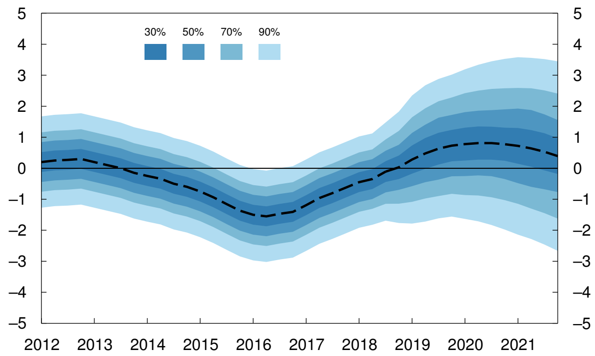
The outlook for the Norwegian economy suggests that the key policy rate should be raised in the years ahead. If the key policy rate is kept at the current level for too long, pressures in the economy may build,

Chart 4.5a Key policy rate with fan chart[1]. Percent. 2012 Q1 – 2021 Q4[2]



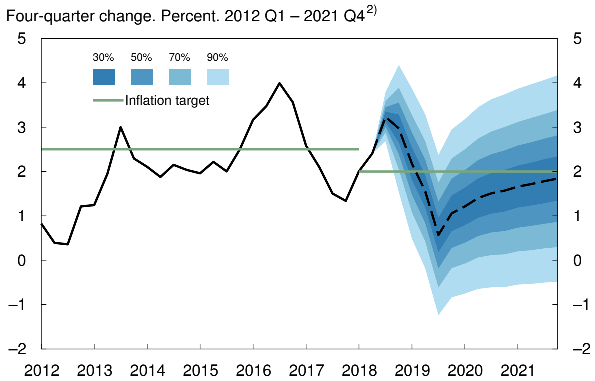
1) The fan chart is based on historical experience and stochastic simulations in Norges Bank's main macroeconomic model, NEMO. It does not take into account that a lower bound for the interest rate exists.
2) Projections for 2018 Q3 – 2021 Q4 (broken line).
Source: Norges Bank

Chart 4.5b Estimated output gap[1] with fan chart[2]. Percent. 2012 Q1 – 2021 Q4



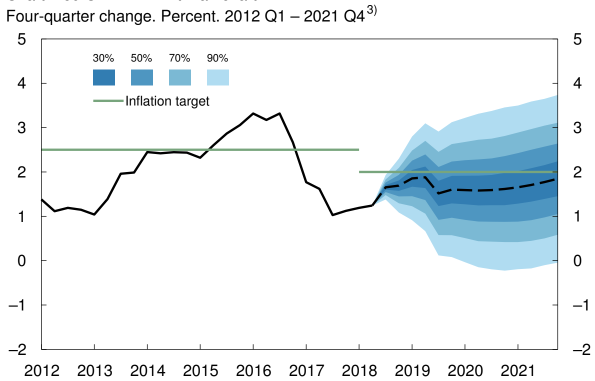
1) The output gap measures the percentage deviation between mainland GDP and estimated potential mainland GDP.
2) The fan chart is based on historical experience and stochastic simulations in Norges Bank's main macroeconomic model, NEMO.
Source: Norges Bank

Chart 4.5c CPI with fan chart[1]. Four-quarter change. Percent. 2012 Q1 – 2021 Q4[2]



1) The fan chart is based on historical experience and stochastic simulations in Norges Bank's main macroeconomic model, NEMO.
2) Projections for 2018 Q3 – 2021 Q4 (broken line).
Sources: Statistics Norway and Norges Bank

Chart 4.5d CPI-ATE[1] with fan chart[2]. Four-quarter change. Percent. 2012 Q1 – 2021 Q4[3]



1) CPI adjusted for tax changes and excluding energy products.
2) The fan chart is based on historical experience and stochastic simulations in Norges Bank's main macroeconomic model, NEMO.
3) Projections for 2018 Q3 – 2021 Q4 (broken line).
Sources: Statistics Norway and Norges Bank

triggering an acceleration in price and wage inflation. Persistently high debt growth has increased household vulnerability. Household debt growth has abated somewhat this year, and in recent months house price inflation has been low. Keeping the key policy rate low for too long would amplify the risk of a renewed rapid rise in property prices and debt. High price and wage inflation and a further build-up of financial imbalances would increase the risk of a sharp economic downturn further out.

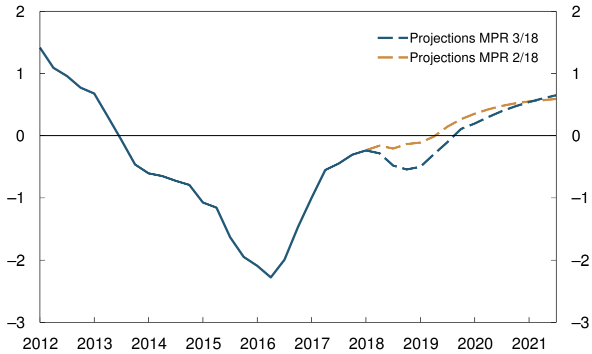
On the other hand, there are several reasons that the Bank should proceed gradually and cautiously in raising the key policy rate. Raising the key policy rate too rapidly ahead may stifle the upturn, resulting in higher unemployment and inflation that is too low. Financial stability considerations also warrant a gradual approach. Furthermore, uncertainty surrounding the effects of higher interest rates suggests a cautious approach to interest rate setting. The decline in the neutral real interest rate over time implies that the key policy rate will probably not be as high as in earlier upturns.

The key policy rate was raised by 0.25 percentage point to 0.75% at the monetary policy meeting. The key policy rate forecast indicates a further rise in 2019 Q1, followed by a gradual increase to around 2% at the end of 2021 (Chart 4.5a).

In the analysis, the money market rate is assumed to rise in tandem with the rise in the key policy rate (Chart 1.8). Banks' lending margins are expected to remain close to today's level throughout the projection period. Residential mortgage rates are projected to rise by around 1.5 percentage points in the period to the end of 2021.

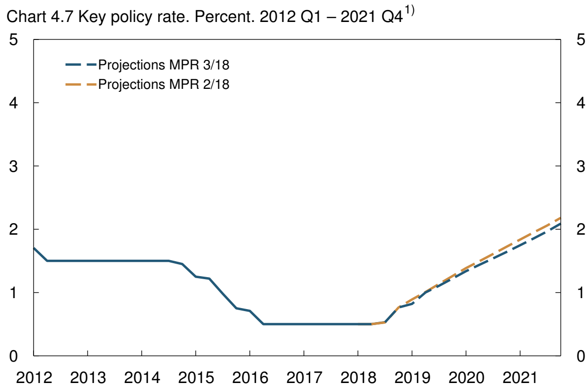
The projections in this *Report* imply a modest fall in the real interest rate, measured as the three-month money market rate less CPI-ATE inflation, in the coming period, rising gradually thereafter (Chart 4.6). The decline at the beginning of the projection period reflects a somewhat faster rise in inflation than in the key policy rate. The key policy rate forecast is little changed from the June *Report*, but is slightly lower later in the projection period (Chart 4.7). The real interest rate is projected to be lower than in the June *Report* in the period to the beginning of 2021, and about the same as in the June *Report* thereafter.

Chart 4.6 Real interest rate.[1] Percent. 2012 Q1 – 2021 Q3[2]



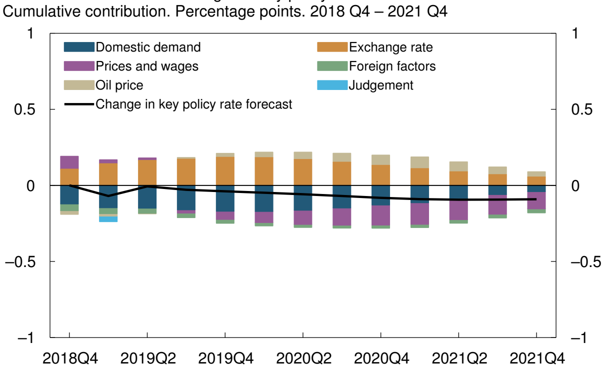
1) Three-month money market rate deflated by a three-quarter centered moving average of inflation, measured by four-quarter CPI inflation adjusted for tax changes and excluding energy prices (CPI-ATE).
2) Projections for 2018 Q2 – 2021 Q3.
Source: Statistics Norway and Norges Bank

Chart 4.7 Key policy rate. Percent. 2012 Q1 – 2021 Q4[1]



1) Projections for 2018 Q3 – 2021 Q4.
Source: Norges Bank

Chart 4.8 Factors behind changes in key policy rate forecast since MPR 2/18. Cumulative contribution. Percentage points. 2018 Q4 – 2021 Q4



Source: Norges Bank

Interest rate path little changed
The main factors behind the changes in the interest rate path are illustrated in Chart 4.8. The bars show the various factors' contributions, while the black line shows the overall change in the interest rate forecast. The macro model NEMO is used as a tool for interpreting the driving forces in the economy, but there is no mechanical relationship between news that deviates from the Bank's forecasts in the June *Report* and the effect on the new interest rate path.

Growth in domestic demand has been slightly lower than projected in the June *Report*, and house prices have risen somewhat less than expected. This pulls down the interest rate path (dark blue bars).

New information suggests that wage growth in 2018 will be a little lower than projected in June. Business profitability has been somewhat lower than assumed, which is expected to dampen wage inflation ahead. Lower wage inflation dampens price inflation, and in isolation pulls down the interest rate path. On the other hand, price inflation has been higher than projected in June, and the projections for CPI-ATE inflation have been revised up somewhat for the coming period. The projections for external price impulses for 2018 and 2019 have also been revised up. In isolation, this suggests a slightly higher interest rate path. The purple bars in the chart show the overall effects on the interest rate path of new information and the revised outlook for price and wage inflation.

The krone has been weaker than assumed in the June *Report* despite the rise in oil prices, and is expected to remain somewhat weaker in the coming period than projected earlier. A weaker krone contributes to increased domestic activity through improved competitiveness and to higher imported inflation. In isolation, this pulls up the interest rate path (orange bars).

The global growth outlook appears to be somewhat weaker than in June, and the projections for import growth among trading partners have been revised down. This reduces demand for Norwegian exports. The changes in the global outlook suggest a lower interest rate path (green bars).

Oil futures prices have risen somewhat since June. Higher oil prices improve oil industry profitability and may lift oil-related exports and oil investment. On the other hand, a higher oil price in isolation suggests a stronger krone, which may dampen imported inflation. Higher oil prices are also assumed to weigh on growth among trading partners, thereby reducing demand for exports. On balance, higher oil prices pull up the interest rate path (beige bars).

Uncertainty surrounding the effects of higher interest rates suggests a cautious approach to interest rate setting. The light blue bar in Chart 4.8 reflects the Executive Board's assessment that the next interest rate increase will most likely take place in 2019 Q1. The downward revision of the interest rate path in 2019 Q1 implies a somewhat lower probability of a further rate rise before year-end than in the June *Report*.

On balance, the interest rate path is little changed from the June *Report*, but slightly lower further out in the projection period (black line).

Positive output gap and inflation close to target
With a key policy rate consistent with the interest rate forecast in this *Report*, inflation is projected to be close to target some years ahead, at the same time as unemployment remains low.

Capacity utilisation is projected to rise further and remain somewhat above a normal level in the coming years. Capacity utilisation is projected to peak in 2020, gradually declining thereafter (Chart 4.5b). Compared with the June *Report*, the projections for capacity utilisation are a little lower over the next year and a little higher through the remainder of the projection period. Inflation, as measured by both the CPI and CPI-ATE, is projected at just below 2% at the end of 2021 (Charts 4.5 c-d). The projections for CPI-ATE inflation are a little higher than the projections in the June *Report* for the next couple of years, but a little lower for 2021. CPI inflation is projected to be higher than in June over the next couple of quarters, and somewhat lower through the remainder of the projection period.

MONETARY POLICY OBJECTIVES AND TRADE-OFFS

The operational target of monetary policy is annual consumer price inflation of close to 2% over time. Inflation targeting shall be forward-looking and flexible so that it can contribute to high and stable output and employment and to counteracting the build-up of financial imbalances. The various considerations are weighed against each other.

The key policy rate is set with a view to stabilising inflation at the target in the medium term. The horizon will depend on the disturbances to which the economy is exposed and the effects on the outlook for inflation and for output and employment.

Monetary policy can contribute to stabilising output and employment at around the highest possible level consistent with price stability over time. This level is determined by structural conditions such as the tax and social security system, the system of wage formation and the composition of the labour force.

When shocks occur, a short-term trade-off may arise between reaching the inflation target and supporting high and stable output and employment. Monetary policy should achieve a reasonable trade-off between these considerations.

A flexible inflation targeting regime, in which sufficient weight is given to the real economy, can prevent downturns from becoming deep and protracted. This can reduce the risk of unemployment becoming entrenched at a high level following an economic downturn.

If there are signs that financial imbalances are building up, the consideration of high and stable output and employment may in some situations suggest keeping the key policy rate somewhat higher than would otherwise be the case. To some extent, this can contribute to reducing the risk of sharp economic downturns further ahead. The regulation and supervision of financial institutions are the primary means of addressing shocks to the financial system.

The conduct of monetary policy takes account of uncertainty regarding the functioning of the economy. Uncertainty surrounding the effects of monetary policy normally suggests a cautious approach to interest rate setting. This may reduce the risk that monetary policy will have unintended consequences. The key policy rate will normally be changed gradually so that the effects of interest rate changes and other new information about economic developments can be assessed.

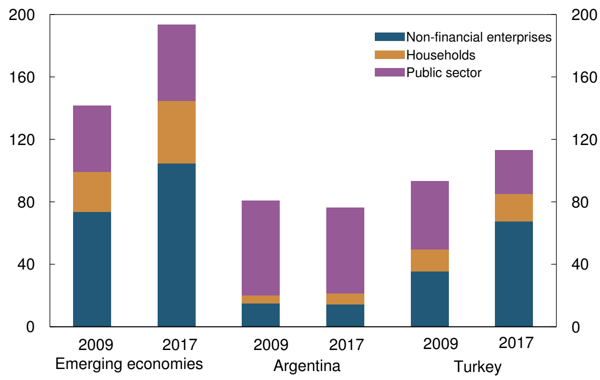
In situations where the risk of particularly adverse outcomes is pronounced, or if there is no longer confidence that inflation will remain low and stable, it may in some cases be appropriate to react more strongly in interest rate setting than normal.

5 Financial stability assessment

– decision basis for the countercyclical capital buffer

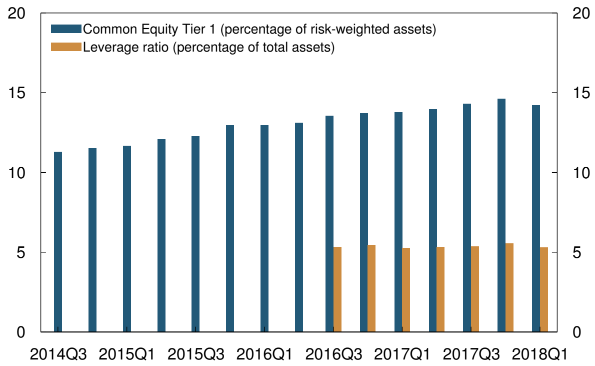
Norges Bank's overall assessment of financial imbalances is little changed since the June *Report*. Household debt ratios are high, and debt has long risen faster than income. Debt ratios continue to rise, but household debt growth has slowed somewhat over the past year. House price inflation has been low in recent months, following the recovery from a fall in prices last year. Looking ahead, gradually rising interest rates, housing completions and low population growth are expected to restrain house price inflation. The sharp rise in commercial property prices in recent years has increased the risk of a marked decline in prices further out. Growth in corporate credit has slowed somewhat in recent months, but enterprises continue to have ample access to credit. For the largest Norwegian banks, profitability is solid, losses are low and capital requirements are met.

Chart 5.1 Debt as a share of GDP in emerging economies[1). Percent. 2009 Q4 and 2017 Q4



1) Emerging economies comprise Argentina, Brazil, Chile, China, Colombia, the Czech Republic, Hong Kong, Hungary, India, Indonesia, Israel, Korea, Malaysia, Mexico, Poland, Russia, Saudi Arabia, Singapore, South Africa, Thailand and Turkey.
Source: BIS

Chart 5.2 Capital ratios in European banks. Percent. 2014 Q3 – 2018 Q1



Source: EBA

5.1 INTERNATIONAL DEVELOPMENTS

There are still signs that risk appetite among many investors is high. In advanced economies, equity prices have risen further (Chart 2.4), while risk premiums in the bond market have shown little change since the June *Report*. In emerging economies, however, equity prices have recently declined.

Debt in emerging economies has risen faster than GDP since the financial crisis in 2008 (Chart 5.1). A considerable share of borrowing has been in foreign currency, particularly in USD. Owing to the increase in the US policy rate and the appreciation of the US dollar, debt service burdens are higher. This has had an impact on Argentina and Turkey, where the currency has depreciated sharply. These countries have lower levels of debt than many other emerging economies, but they have a large share of USD-denominated debt and considerable funding requirements owing to substantial current account deficits. Contagion to other countries has so far been moderate (see Section 2).

European banks' solvency and liquidity have strengthened considerably since the financial crisis, but solvency weakened slightly in 2018 Q1 (Chart 5.2). The default rate fell to 4% of total lending in 2018 Q1, a decline of approximately 1 percentage point since 2017 Q1. European bank share prices have nevertheless fallen over the past year.

The largest Norwegian banks have a high wholesale funding ratio and are influenced by international developments. If risk premiums abroad were to rise, banks' funding costs could increase. The heatmap signals medium risk with regard to developments in global financial conditions (see box on page 48).

5.2 CREDIT

Credit has risen faster than mainland GDP for more than two decades (see credit indicator in Chart 5.3), primarily reflecting strong growth in household debt. The credit indicator continued to rise in 2018 Q2, while the credit gap, which shows the difference between the credit indicator and an estimated trend, narrowed somewhat (Chart 5.4).

Household debt growth has slowed somewhat in recent years, but has been fairly stable in recent months (Chart 5.5). Household debt has long risen

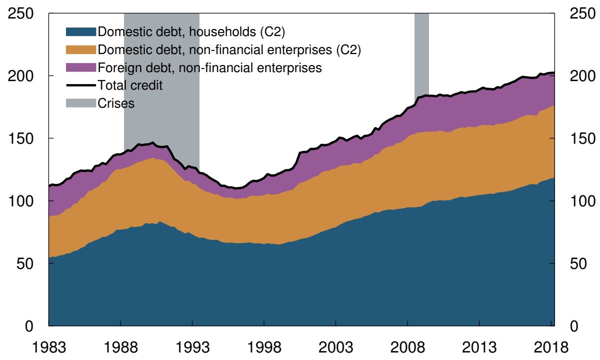
COUNTERCYCLICAL CAPITAL BUFFER

The countercyclical capital buffer is an additional capital requirement for banks. The objective of the buffer is to bolster banks' resilience and to lessen the amplifying effects of bank lending during downturns.

Banks should build and hold a countercyclical capital buffer when financial imbalances are building up or have built up. 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.

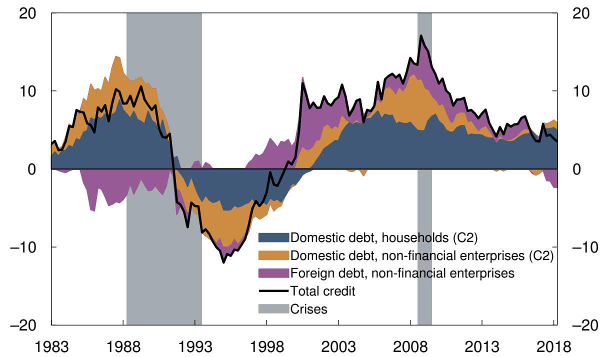
The Ministry of Finance sets the level of the buffer four times a year. Norges Bank draws up a decision basis and provides advice to the Ministry regarding the level of the buffer. The assessment of financial imbalances forms the basis for Norges Bank's advice on the level of the countercyclical capital buffer (see box on page 50 and submission to the Ministry of Finance on the Norges Bank website). Norges Bank's assessment of financial imbalances is based on developments in credit, property prices and bank funding. The buffer rate is set at 2.0%, effective from 31 December 2017.

Chart 5.3 Credit mainland Norway as a share of mainland GDP. Percent. 1983 Q1 – 2018 Q2



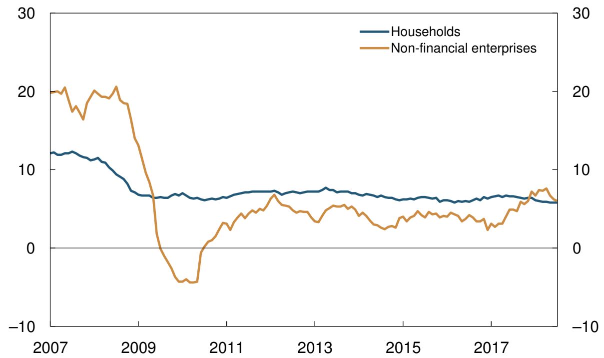
Sources: IMF, Statistics Norway and Norges Bank

Chart 5.4 Decomposed credit gap.[1)] Credit mainland Norway as a share of mainland GDP. Percentage points. 1983 Q1 – 2018 Q2



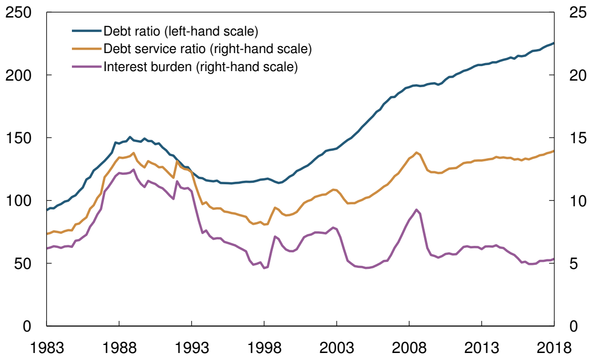
1) Calculated as deviation from trend. The trend is estimated using a one-sided HP filter with lambda = 400 000. The HP filter is estimated on data augmented with a simple projection.
Sources: IMF, Statistics Norway and Norges Bank

Chart 5.5 Domestic credit to households and non-financial enterprises in mainland Norway. Twelve-month change. Percent. January 2007 – July 2018



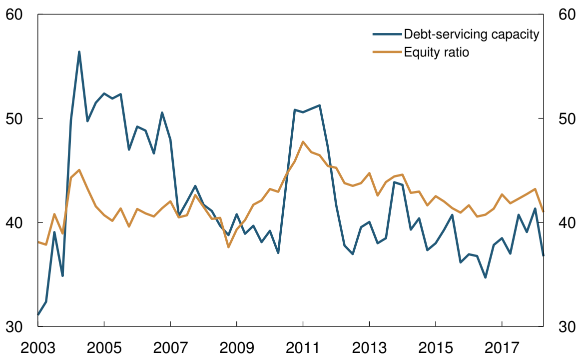
Sources: Statistics Norway and Norges Bank

Chart 5.6 Household debt ratio[1], debt service ratio[2] and interest burden[3]. Percent. 1983 Q1 – 2018 Q1



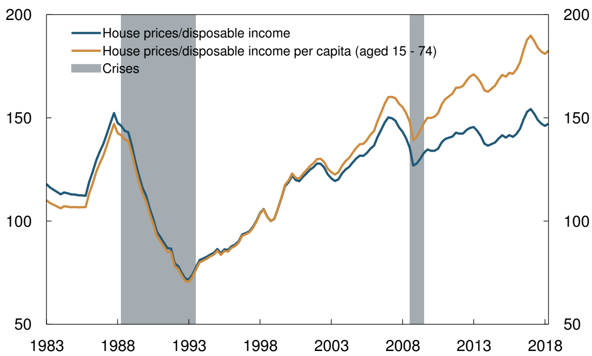
1) Debt ratio is loan debt as a percentage of disposable income. Disposable income is adjusted for estimated reinvested dividend income for 2000 Q1 – 2005 Q4 and reduction of equity capital for 2006 Q1 – 2012 Q3. For 2015 Q1 – 2018 Q1, growth in disposable income excluding dividends is used.
2) Debt service ratio is interest expenses and estimated principal payments on an 18-year mortgage as a percentage of disposable income plus interest expenses.
3) Interest burden is interest expenses as a percentage of disposable income plus interest expenses.
Sources: Statistics Norway and Norges Bank

Chart 5.7 Debt-servicing capacity[1] and equity ratio of listed companies[2]. Percent. 2003 Q1 – 2018 Q2



1) Earnings before interest, tax, depreciation and amortisation (EBITDA) for the previous four quarters as a percentage of net interest-bearing debt.
2) Norwegian non-financial enterprises listed on Oslo Børs, excluding oil and gas extraction. Norsk Hydro is excluded to end-2007 Q3.
Sources: Bloomberg and Norges Bank

Chart 5.8 House prices relative to disposable income[1]. Index. 1998 Q4 = 100. 1983 Q1 – 2018 Q2



1) Disposable income adjusted for estimated reinvested dividend income for 2000 Q1 – 2005 Q4 and reduction of equity capital for 2006 Q1 – 2012 Q3. Change in disposable income excluding dividend income is used for 2015 Q1 – 2018 Q2.
Sources: Eiendomsverdi, Finn.no, Norwegian Association of Real Estate Agents (NEF), Real Estate Norway, Statistics Norway and Norges Bank

faster than income (Chart 5.6), and the persistent rise in debt ratios has contributed to the build-up of financial imbalances. Even though interest burdens are fairly low, the debt service ratio, ie the ratio of interest and normal principal payments to income, is at the same level as during the banking crisis at the end of the 1980s and the financial crisis ten years ago. Most households have ample capacity to service debt at somewhat higher interest rates, but an increase in interest rates will, in isolation, reduce the room for consumption. Households with high debt ratios are among the most vulnerable. The share of households with debt of more than five times their income continued to increase in 2016 (see Special Feature on page 47). Household debt signals high risk in the heatmap (see box on page 48).

According to the banks in Norges Bank's lending survey, household credit demand increased in 2018 Q2, while credit standards were unchanged. Credit growth is expected to remain stable ahead, supported by high levels of housing completions and continued low interest rates. At the same time, a gradual rise in interest rates is expected to dampen credit growth over time.

Enterprises have ample access to credit. Growth in corporate credit from domestic sources has edged down in recent months, after having risen through 2017 (Chart 5.5), slowing in both the banking sector and the bond market. Growth in bank lending is broadly even across industries, but lower growth in lending to commercial real estate in particular is pushing down on lending growth. The banks in Norges Bank's lending survey reported unchanged credit demand and unchanged credit standards for enterprises in Q2.

In the heatmap, all the corporate indicators show low risk (see box on page 48). The debt-servicing capacity of listed companies has picked up gradually over the past few years (Chart 5.7), primarily driven by higher earnings. In 2018 Q2, debt-servicing capacity fell as a result of higher debt, with a corresponding reduction in equity ratios.

5.3 PROPERTY PRICES

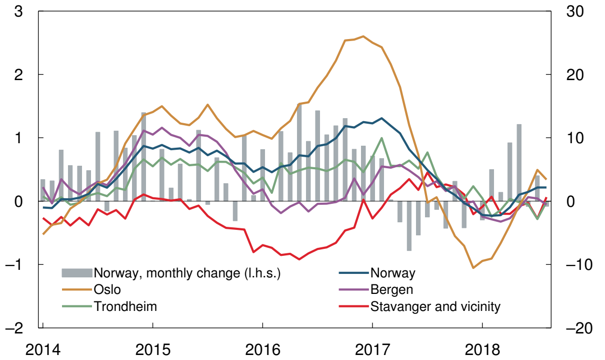
Both residential and commercial property prices have risen rapidly over a number of years. House prices have long risen faster than per capita income (Chart 5.8), fuelling household debt accumulation. Developments in the commercial real estate market are important for banks as bank lending to this sector is substantial. Experience shows that commercial property prices have often risen sharply ahead of financial crises. In the heatmap, the housing market signals low to medium risk and the commercial real estate market signals high risk (see box on page 48).

House price inflation has been low in recent months following a recovery from the fall in prices in 2017 (Chart 5.9). Since the turn of the year, house prices have picked up most in Oslo, where the price decline was steepest following the sharp rise in 2016, while house price inflation is weak in the other cities. Countrywide, prices are now at approximately the same level as the peak in spring 2017, while prices in Oslo are about 4% lower. Even though turnover in the market for existing homes has been somewhat higher than normal, there has been a larger increase in the number of homes listed for sale, which has resulted in an increase in the stock of unsold existing homes in recent months.

Low interest rates and a lower level of residential construction than implied by population growth have fuelled house price inflation for many years. In recent years, however, residential construction has increased and population growth has slowed (Chart 5.10). With prospects for a gradual increase in the interest rate level, this suggests moderate house price inflation ahead. House prices are expected to rise by between 2% and 3% annually in the years ahead (Chart 3.9). If activity in the Norwegian economy and wage growth are higher than expected, house price inflation could rise again.

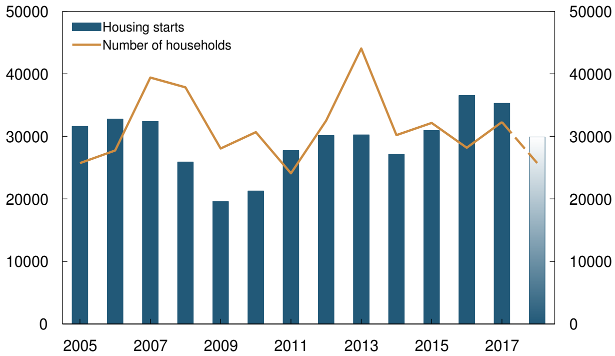
Estimated selling prices for prime office space in Oslo rose sharply through 2017 (see commercial property prices indicator in Chart 5.11). The indicator, which depends on net rental income and yields, has risen further in 2018. In recent years, the rise in selling prices has primarily been driven by lower yields on prime office space in Oslo. So far in 2018, estimated

Chart 5.9 House prices. Twelve-month change[1)] and seasonally adjusted monthly change. Percent. January 2014 – August 2018



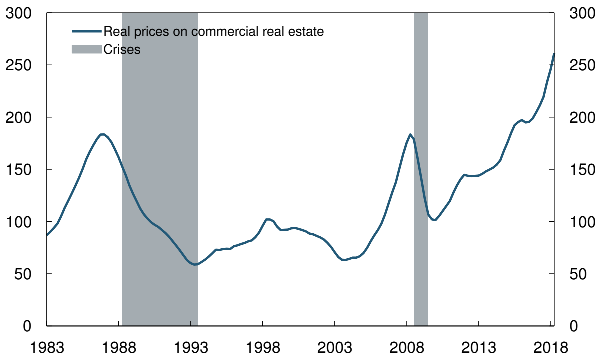
1) Twelve-month change in urban areas and in Norway is shown on right-hand scale.
Sources: Eiendomsverdi, Finn.no and Real Estate Norway

Chart 5.10 Housing starts and households in Norway. Number of dwellings and change in number of households. 2005 – 2018 [1)]



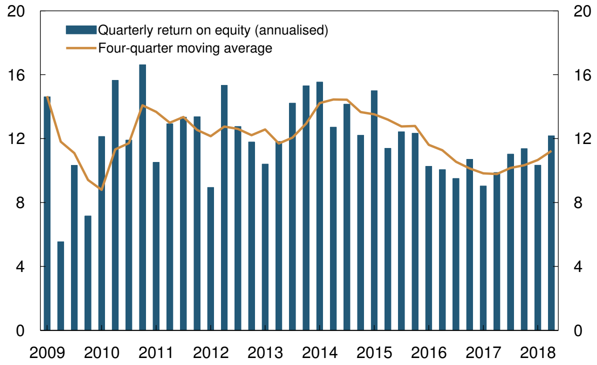
1) Projections for housing starts and change in number of households for 2018.
Sources: Statistics Norway and Norges Bank

Chart 5.11 Real commercial property prices.[1)] Index. 1998 = 100. 1983 Q1 – 2018 Q2



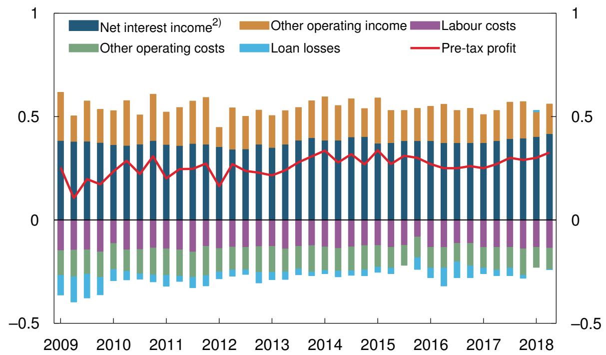
1) Estimated real selling prices per square metre for prime office space in Oslo. Deflated by GDP deflator for mainland Norway. Average selling price for the previous four quarters.
Sources: CBRE, Dagens Næringsliv, OPAK, Statistics Norway and Norges Bank

Chart 5.12 Return on equity for large Norwegian banks[1]. Percent. 2009 Q1 – 2018 Q2



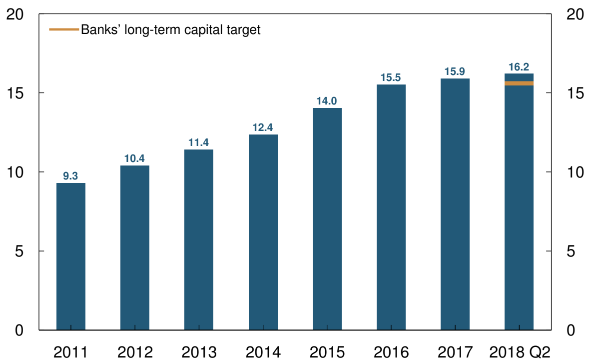
1) DNB Bank, Nordea Bank Norge (up to and including 2016 Q4), Sparebanken Vest, SpareBank 1 Nord-Norge, SpareBank 1 SMN, SpareBank 1 SR-Bank, Sparebanken Sør (from 2014 Q1) and SpareBank 1 Østlandet (from 2016 Q3).
Sources: Banks' quarterly reports and Norges Bank

Chart 5.13 Decomposed change in the profits of large Norwegian banks[1]. Percentage of average total assets. 2009 Q1 – 2018 Q2



1) DNB Bank, Nordea Bank Norge (up to and including 2016 Q4), Sparebanken Vest, SpareBank 1 Nord-Norge, SpareBank 1 SMN, SpareBank 1 SR-Bank, Sparebanken Sør (from 2014 Q1) and SpareBank 1 Østlandet (from 2016 Q3).
2) Commission income from part-owned mortgage companies in the Sparebank 1-alliance has been reclassified from other operating income to net interest income.
Sources: Banks' quarterly reports and Norges Bank

Chart 5.14 Large Norwegian banks' Common Equity Tier 1 capital ratios[1]. Percent. 2011 – 2018[2]



1) DNB Bank, Sparebanken Vest, SpareBank 1 Nord-Norge, SpareBank 1 SMN, SpareBank 1 SR-Bank, Sparebanken Sør (from 2014) and SpareBank 1 Østlandet (from 2016).
2) Includes the entire profit for 2018 Q1 and 2018 Q2.
Sources: Banks' quarterly reports and Norges Bank

yields have remained stable, while rents have risen markedly. Market participants expect rents in Oslo to continue to rise as a result of stronger demand for office buildings and an undersupply of new buildings. At the same time, market participants expect construction activity to increase somewhat in the coming years, which will restrain the rise in rents over time.

Rising rents strengthen the debt-servicing capacity of commercial real estate enterprises. On the other hand, high commercial property price inflation in Oslo in recent years and increased construction activity may push up growth in credit to real estate companies. The sharp rise in prices also increases the risk of a marked decline in value further out.

5.4 BANKS

The return on equity for the largest Norwegian banks increased between 2018 Q1 and Q2 and was higher than one year earlier (Chart 5.12). Several factors contributed to the improved results, including higher net interest income, very low losses and effective cost control (Chart 5.13). The improvement partly reflects extraordinary revenues related to the merger between BankAxept, BankID and Vipps.

Banks' capital ratios at the end of 2018 Q2 were in line with their own capital targets and broadly unchanged from Q1 (Chart 5.14). Growth in bank lending to both households and enterprises was approximately 6.5% at end-Q2, down from approximately 7% at end-Q1. Norwegian banks' share of the growth in lending increased at the expense of foreign branches.

Banks have ample access to wholesale funding, in both NOK and foreign currency. Risk premiums on senior bonds and covered bonds are approximately unchanged since the June *Report*. So far in 2018, banks have raised more funding through covered bonds in foreign currency than in the same period in 2017, while volumes are broadly unchanged for other bonds. At the same time, banks' wholesale funding ratio edged down in 2018 Q2.

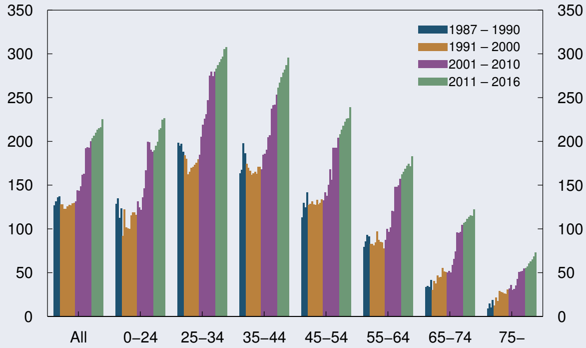
HIGHER HOUSEHOLD DEBT IN 2016[1]

Household debt is the most important source of vulnerability in the Norwegian financial system. Household debt ratios are high and there is considerable variation across groups. Figures for the income year 2016 were recently made available for analyses by Norges Bank and show that household debt continued to grow more rapidly than income across all age groups in 2016 (Chart 5.15).

The share of households with debt over five times income has increased for a longer period, particularly between 2015 and 2016 (Chart 5.16). The increase was especially pronounced in the age groups that are most active in the housing market. High house prices and weak income growth between 2015 and 2016 contributed to the increase. The rise in the share of households with high debt is in line with Finanstilsynet's (Financial Supervisory Authority of Norway) residential mortgage lending survey for 2016. From 1 January 2017, the residential mortgage loan regulation was also tightened with a requirement limiting a borrower's debt to five times gross income. According to Finanstilsynet's survey for 2017, the share of new loans exceeding five times gross income fell markedly, from 8% in 2016 to 2% in 2017.[2] The Bank's preliminary analyses show lower growth in debt in 2017 for municipalities with a relatively high share of homebuyers with a debt ratio above 5.[3] This suggests weaker growth in the share of highly indebted households for 2017.

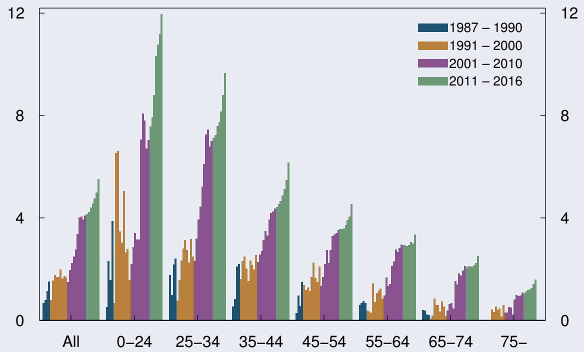
High debt increases household vulnerability. For households in their late 30s and early 40s, a 1.5 percentage point increase in lending and deposit rates is estimated to result in a rise in net interest expenses as a share of post-tax income of about 3 percentage points (Chart 5.17).[4] However, in the period ahead, there are prospects of higher wage growth, which most likely will lead to higher disposable income for most households despite an interest rate increase (see discussion in Section 3).

Chart 5.15 Debt as a share of after-tax income. By age of main income earner. Percent. 1987 – 2016



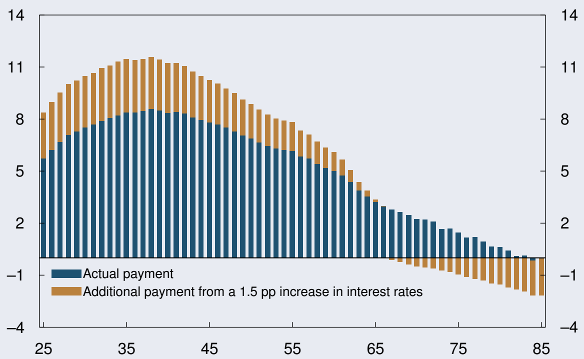
Sources: Statistics Norway and Norges Bank

Chart 5.16 Share of households with debt exceeding five times gross income. By age of main income earner. Percent. 1987 – 2016



Sources: Statistics Norway and Norges Bank

Chart 5.17 Net interest payments as a share of after-tax income by age of main income earner. Percent. 2016



Sources: Statistics Norway and Norges Bank

1 The analysis is based on income statistics from Statistics Norway with the latest available figures from the income year 2016.
2 See Finanstilsynet (2017) "Boliglånsundersøkelsen 2017" [Residential mortgage lending survey 2017] (in Norwegian only).
3 See H. Borchgrevink and K. N. Torstensen (2018) "Analyses of effects of the residential mortgage loan regulation". *Economic Commentaries* 1/2018, Norges Bank.
4 See Special Feature in *Monetary Policy Report* 1/2018 and Torstensen, K. N. and K. Gerdrup (2018) "The effect of higher interest rates on household income and consumption – a static analysis of the cash-flow channel". *Staff Memo* 3/18, Norges Bank.

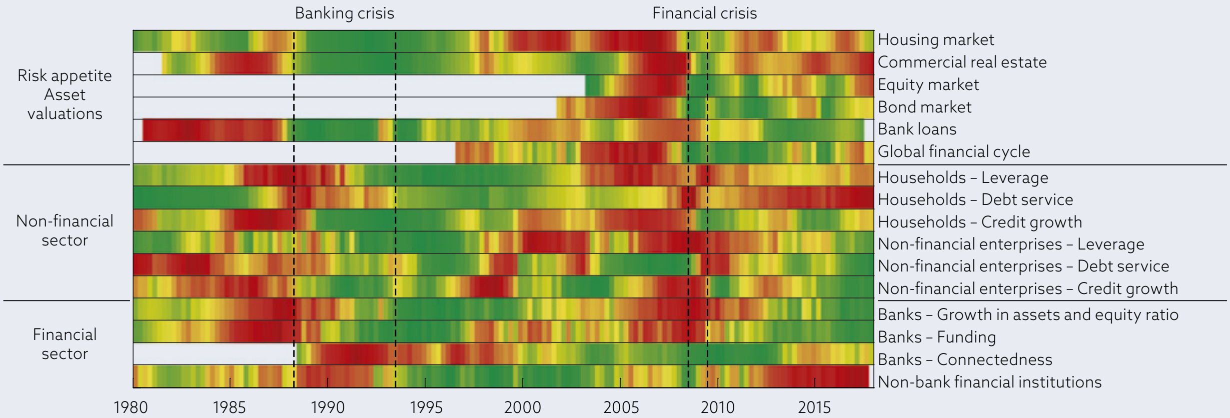
A HEATMAP FOR MONITORING SYSTEMIC RISK

Norges Bank's ribbon heatmap is a tool for assessing systemic risk in the Norwegian financial system. The heatmap tracks developments in a broad range of indicators for three main areas: risk appetite and asset valuations, non-financial sector vulnerabilities (household and corporate) and financial sector vulnerabilities.[1]

Developments in each individual indicator are mapped into a common colour coding scheme, where green (red) reflects low (high) levels of vulnerability. The heatmap thus provides a visual summary of current vulnerabilities in the Norwegian financial system compared with historical episodes. The composite indicators are constructed by averaging individual indicators.

1 For a detailed description of the heatmap and the individual indicators, see Arbatli, E.C. and R.M. Johansen (2017) "A Heatmap for Monitoring Systemic Risk in Norway". *Staff Memo* 10/2017. Norges Bank. See also box on page 54 of *Monetary Policy Report* 4/17.

Chart 5.18 Composite indicators in the heatmap. 1980 Q1–2018 Q2



Sources: BIS, Bloomberg, CBRE, Dagens Næringsliv, DNB Markets, Eiendomsverdi, Finn.no, Norwegian Association of Real Estate Agents (NEF), OECD, OPAK, Real Estate Norway, Statistics Norway, Thomson Reuters and Norges Bank

COUNTERCYCLICAL CAPITAL BUFFERS IN OTHER COUNTRIES

The objective of the countercyclical capital buffer is to mitigate systemic risk, and the buffer is set on the basis of national conditions. EU capital adequacy legislation (CRD IV/CRR) provides for international reciprocity, ie that buffer rates must be recognised across borders.[1] This means that banks operating in several countries must comply with buffer rates that are applicable in the borrower's home country.

The Norwegian regulation on recognition of countercyclical capital buffers entered into force on 1 October 2016. For exposures in EU countries, the buffer rate in the relevant country must be recognised.[2] In principle, countercyclical capital buffer rates in non-EU countries must also be recognised. For exposures in countries that have not set their own rate, the Norwegian buffer rate applies. The Ministry of Finance may set different rates for exposures in non-EU countries, and Norges Bank is to provide advice on these rates.

The total countercyclical buffer requirement applicable to Norwegian banks will depend on the countries in which they have exposures. A number of EU countries have announced that the countercyclical capital buffer will be set above 0%.[3] In most countries where Norwegian banks have fairly large exposures, the applicable rate is 0% (Table 1).

TABLE 1 Countercyclical capital buffers in other countries

Country	Current buffer rate	Norwegian banks' exposure[1]
Sweden	2%	8.4%
US	0%	3.9%
Denmark	0%	3.1%
UK	0.5%	2.4%
Finland	0%	2.1%
Lithuania	0%	1.8%
Poland	0%	1.7%
Latvia	0%	1.1%
Germany	0%	1.0%
Singapore	0%	0.8%

1 Share of risk-weighted assets (cf Article 3 of ESRB 2015/3). Average for the period 2016 Q3 to 2018 Q2. Includes banks that have submitted Templates C09.01 and C09.02 as part of their CRD IV reporting, with the exception of Nordea, which is no longer a Norwegian bank as from 1 January 2017.

Sources: Bank for International Settlements (BIS), the European Systemic Risk Board (ESRB), Finanstilsynet (Financial Supervisory Authority of Norway) and Norges Bank

1 Buffer rates of up to 2.5% must be automatically recognised between EU countries. The limit is lower than 2.5% during a phasing-in period between 2016 and 2019. The European Systemic Risk Board (ESRB) recommends in general that higher rates should also be recognised (see ESRB (2014) *Recommendation on guidance for setting countercyclical buffer rates*). ESRB, July 18.

2 An overview of the countercyclical capital buffer rates currently applicable in EU countries is provided on the ESRB website: *National policy – countercyclical capital buffer*. A similar overview for Basel Committee jurisdictions is available on the BIS website: *Countercyclical capital buffer*.

3 In the Czech Republic, the rate will be raised from 1% to 1.25% with effect from 1 January 2019, and further to 1.5% with effect from 1 July 2019. Denmark will set its rate at 0.5% with effect from 31 March 2019. In France, the rate will be set at 0.25% with effect from 1 July 2019. In Lithuania, the rate will be set at 0.5% with effect from 31 December 2018, and raised further to 1.0% with effect from 30 June 2019. In Slovakia, the rate will be raised from 1.25% to 1.5% with effect from 1 August 2019. In Sweden, Finansinspektionen has circulated for comment a proposal to increase the buffer rate from 2.0% to 2.5% with effect from 19 September 2019. In the UK, the rate will be raised from 0.5% to 1.0% with effect from 28 November 2018. In addition, Iceland will increase its rate from 1.25% to 1.75% with effect from 29 June 2019.

CRITERIA FOR AN APPROPRIATE COUNTERCYCLICAL CAPITAL BUFFER[1]

The countercyclical capital buffer 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 bolster banks' resilience and lessen the amplifying effects of bank lending during downturns. 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. In periods of rising real estate prices, debt growth tends to accelerate. When banks grow rapidly and raise funding for new loans directly from financial markets, systemic risk may increase.

Norges Bank's advice to increase the countercyclical capital buffer will as a main rule 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) real commercial property prices and iv) wholesale funding ratios for Norwegian credit institutions. The four indicators have historically risen ahead of periods of financial instability. As part of the basis for its advice on the countercyclical capital buffer, Norges Bank will analyse developments in the key indicators and compare the current situation with historical trends.[2]

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 are required to calculate a reference 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 the recommendations from the ESRB[3] 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 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 have been 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, substantial loan loss prospects for the banking sector and significant credit supply tightening, will then be more relevant.

1 See also "Criteria for an appropriate countercyclical capital buffer". *Norges Bank Papers* 1/2013.
2 See Norges Bank's website "Indicators of financial imbalances". As experience and insight are gained, the set of indicators can be developed further.
3 See European Systemic Risk Board (2014), "Recommendation on guidance for setting countercyclical buffer rates".

Annex

Monetary policy meetings in Norges Bank

Tables and detailed projections

Monetary policy meetings in Norges Bank

Date[1]	Key policy rate[2]	Change
12 December 2018		
24 October 2018		
19 September 2018	**0.75**	**0.25**
15 August 2018	0.50	0
20 June 2018	0.50	0
2 May 2018	0.50	0
14 March 2018	0.50	0
24 January 2018	0.50	0
13 December 2017	0.50	0
25 October 2017	0.50	0
20 September 2017	0.50	0
21 June 2017	0.50	0
3 May 2017	0.50	0
14 March 2017	0.50	0
14 December 2016	0.50	0
26 October 2016	0.50	0
21 September 2016	0.50	0
22 June 2016	0.50	0
11 May 2016	0.50	0
16 March 2016	0.50	-0.25
16 December 2015	0.75	0
4 November 2015	0.75	0
23 September 2015	0.75	-0.25
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

1 The interest rate decision has been published on the day following the monetary policy meeting as from the monetary policy meeting on 13 March 2013. The interest rate decision at the monetary policy meeting on 14 March 2017 was published two days after the meeting.
2 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 Projections for GDP growth in other countries

Change from projections in *Monetary Policy Report* 2/18 in brackets	Share of world GDP[1] PPP	Share of world GDP[1] Market exchange rates	Trading partners[4]	Percentage change from previous year 2017	2018	2019	2020	2021
US	15	24	9	2.2 (-0.1)	2.9 (0.1)	2.5 (0)	1.9 (-0.1)	1.8 (-0.1)
Euro area	12	16	32	2.5 (0)	2 (-0.2)	1.7 (-0.1)	1.6 (0)	1.5 (0)
UK	2	4	10	1.7 (-0.1)	1.3 (-0.1)	1.4 (-0.1)	1.5 (0)	1.5 (0)
Sweden	0.4	0.7	11	2.4 (-0.1)	2.7 (0)	2 (0)	2 (0)	2.1 (0)
Other advanced economies[2]	7	10	19	2.5 (0)	2 (-0.2)	1.9 (-0.2)	1.8 (-0.1)	1.9 (-0.1)
China	18	14	7	6.9 (0)	6.3 (-0.1)	5.8 (-0.2)	5.8 (0)	5.8 (0)
Other emerging economies[3]	19	11	12	3.8 (0)	3.7 (-0.1)	3.7 (-0.2)	3.9 (0)	4 (0)
Trading partners[4]	73	79	100	2.9 (-0.1)	2.6 (-0.1)	2.3 (-0.1)	2.2 (0)	2.2 (0)
World (PPP)[5]	100	100		3.8 (0)	3.8 (0)	3.7 (-0.1)	3.6 (-0.1)	3.7 (0)
World (market exchange rates)[5]	100	100		3.2 (0)	3.2 (-0.1)	3.1 (0)	2.9 (0)	2.9 (-0.1)

1 Country's share of global output measured in a common currency. Average 2014–2016.
2 Other advanced economies in the trading partner aggregate: Denmark, Switzerland, Japan, Korea and Singapore. Export weights.
3 Emerging economies in the trading partner aggregate excluding China: Brazil, India, Indonesia, Russia, Turkey, Poland and Thailand. GDP weights (market exchange rates) are used to reflect the countries' contribution to global growth.
4 Export weights, 25 main trading partners.
5 GDP weights, three-year moving average. Norges Bank's growth projections for 25 trading partners; other projections from the IMF.

Sources: IMF, Thomson Reuters and Norges Bank

Table 2 Projections for consumer prices in other countries

Change from projections in *Monetary Policy Report* 2/18 in brackets	Trading partners[4]	Trading partners in the interest rate aggregate[5]	Percentage change from previous year 2017	2018	2019	2020	2021
US	7	20	2.1 (0)	2.5 (0.1)	2.5 (0.1)	2.4 (0.1)	2.3 (0)
Euro area	34	54	1.5 (0)	1.8 (0.1)	1.7 (0.1)	1.6 (0)	1.7 (0)
UK	7	5	2.6 (0)	2.2 (-0.2)	2.2 (-0.1)	2.1 (0)	2 (0)
Sweden[1]	14	12	2 (0)	2.2 (0.3)	2.1 (0.1)	2 (0)	2 (0)
Other advanced economies[2]	15		1.1 (0)	1.3 (0)	1.7 (0)	1.7 (0)	1.7 (0)
China	12		1.6 (0)	2.5 (0)	2.5 (0)	2.7 (0)	2.7 (0)
Other emerging economies[3]	10		4 (0)	4.4 (0)	4.6 (0)	4.4 (0)	4.4 (0)
Trading partners[4]	100		1.9 (0)	2.1 (0)	2.2 (0.1)	2.2 (0.1)	2.2 (0)
Trading partners in the interest rate aggregate[5]			1.7 (0)	2 (0.1)	2 (0.1)	1.9 (0.1)	1.9 (0)
Underlying inflation[6]			1.4 (0)	1.5 (0)	1.9 (0.1)	1.9 (0)	1.9 (0)
Wage growth [7]			1.9 (0)	2.7 (0.1)	2.6 (0)	3 (0)	3.1 (0)

1 Consumer price index with a fixed interest rate (CPIF).
2 Other advanced economies in the trading partner aggregate: Denmark, Switzerland, Japan, Korea and Singapore. Import weights.
3 Emerging economies in the trading partner aggregate excluding China: Brazil, India, Indonesia, Russia, Turkey, Poland and Thailand. GDP weights (market exchange rates).
4 Import weights, 25 main trading partners.
5 Norges Bank's aggregate for trading partner interest rates includes the euro area, Sweden, UK, US, Canada, Poland and Japan. Import weights. See "Calculation of the aggregate for trading partner interest rates", *Norges Bank Papers* 2/2015, for more information.
6 The aggregate for underlying inflation includes: the euro area, UK, Sweden and US. Import weights.
7 Projections for compensation per employee in the total economy. The aggregate includes: the euro area, UK, Sweden and US. Export weights.

Sources: IMF, Thomson Reuters and Norges Bank

Table 3a GDP for mainland Norway. Quarterly change. Seasonally adjusted. Percent

	2018 Q1	Q2	Q3	Q4
Actual	0.4	0.5		
Projections in MPR 2/18		0.7	0.7	
Projections in MPR 3/18			0.7	0.7

Sources: Statistics Norway and Norges Bank

Table 3b Registered unemployment (rate). Percent of labour force. Seasonally adjusted

	Jun	Jul	Aug	2018 Sep	Oct	Nov	Dec
Actual	2.3	2.4	2.4				
Projections in MPR 2/18	2.3	2.3	2.2	2.2			
Projections in MPR 3/18				2.4	2.3	2.3	2.3

Sources: Norwegian Labour and Welfare Administration (NAV) and Norges Bank

Table 3c LFS unemployment (rate).[1] Percent of labour force. Seasonally adjusted

	Apr	May	Jun	2018 Jul	Aug	Sep	Oct
Actual	3.8	3.8	3.9				
Projections in MPR 2/18	3.8	3.8	3.7	3.7			
Projections in MPR 3/18				3.8	3.7	3.7	3.7

1 Labour Force Survey.
Sources: Statistics Norway and Norges Bank

Table 3d Consumer prices. Twelve-month change. Percent

	Jun	Jul	Aug	2018 Sep	Oct	Nov	Dec
Consumer price index (CPI)							
Actual	2.6	3.0	3.4				
Projections in MPR 2/18	2.3	2.3	2.5	2.3			
Projections in MPR 3/18				3.3	3.2	2.9	2.8
CPI-ATE[1]							
Actual	1.1	1.4	1.9				
Projections in MPR 2/18	1.1	1.2	1.5	1.3			
Projections in MPR 3/18				1.6	1.6	1.8	1.7
Imported goods in the CPI-ATE							
Actual	0.4	0.8	1.2				
Projections in MPR 2/18	0.2	0.5	0.7	0.1			
Projections in MPR 3/18				0.4	0.8	0.6	0.4
Domestically produced goods and services in the CPI-ATE[2]							
Actual	1.5	1.7	2.2				
Projections in MPR 2/18	1.5	1.5	1.8	1.9			
Projections in MPR 3/18				2.1	2.0	2.2	2.2

1 CPI adjusted for tax changes and excluding energy products.
2 The aggregate "domestically produced goods and services in the CPI-ATE" is calculated by Norges Bank.
Sources: Statistics Norway and Norges Bank

Table 4 Projections for main economic aggregates

Change from projections in *Monetary Policy Report* 2/18 in brackets	In billions of NOK 2017	Percentage change from previous year (unless otherwise stated)	Projections			
		2017	2018	2019	2020	2021
Prices and wages						
Consumer price index (CPI)		1.8 (0)	2.7 (0.4)	1.3 (-0.3)	1.4 (-0.2)	1.8 (-0.1)
CPI-ATE[1]		1.4 (0)	1.4 (0.1)	1.7 (0.2)	1.6 (0)	1.7 (-0.2)
Annual wages		2.3 (0)	2.8 (-0.1)	3.2 (-0.1)	3.8 (0)	3.9 (0)
Real economy						
Gross domestic product (GDP)	3304	2.0 (0.1)	1.8 (-0.2)	2.2 (0.6)	2.2 (0)	1.6 (-0.2)
GDP, mainland Norway	2798	2.0 (0.1)	2.5 (-0.1)	2.5 (0.2)	1.8 (0.2)	1.2 (-0.1)
Output gap, mainland Norway (level)[2]		-0.9 (0)	-0.2 (-0.1)	0.5 (-0.1)	0.8 (0.1)	0.6 (0.1)
Employment, persons, QNA		1.1 (0)	1.6 (-0.2)	1.2 (0.2)	0.8 (0.3)	0.3 (0)
Labour force, LFS[3,4]		-0.2 (0)	1.4 (0)	1.2 (0)	0.8 (0)	0.5 (0)
LFS unemployment (rate, level)		4.2 (0)	3.8 (0.1)	3.4 (0.1)	3.2 (0)	3.2 (0)
Registered unemployment (rate, level)		2.7 (0)	2.4 (0.1)	2.2 (0.1)	2.1 (0)	2.1 (-0.1)
Demand						
Mainland demand[5]	2939	3.3 (0.2)	1.2 (-0.5)	1.9 (-0.2)	1.6 (0)	1.4 (0)
- Household consumption[6]	1472	2.2 (-0.3)	2.2 (-0.3)	2.1 (-0.2)	2.0 (0.1)	1.9 (0.1)
- Business investment	296	9.3 (4.4)	0.0 (-5.3)	4.2 (-1.1)	1.0 (-0.5)	-0.3 (-0.2)
- Housing investment	199	7.0 (-0.1)	-9.9 (-2.1)	-1.5 (-0.7)	0.7 (-0.4)	1.0 (-0.1)
- Public demand[7]	972	2.7 (0.1)	2.2 (0.7)	1.5 (0)	1.4 (0)	1.3 (0)
Petroleum investment[8]	151	-3.8 (-1.8)	2.5 (-0.3)	10.8 (2.1)	4.1 (-0.1)	1.1 (0)
Mainland exports[9]	613	-1.4 (-2.0)	3.5 (-0.6)	5.2 (0.1)	4.3 (0.8)	3.0 (0)
Imports	1093	1.6 (-1.2)	2.9 (-0.7)	3.9 (0.6)	2.9 (-0.1)	2.8 (0.1)
House prices and debt						
House prices		5.9 (0)	0.9 (-0.4)	2.4 (-0.4)	2.5 (0.4)	2.8 (0.3)
Credit to households (C2)[10]		6.4 (0)	5.8 (-0.1)	5.7 (-0.1)	5.5 (-0.3)	5.3 (-0.4)
Interest rate and exchange rate (level)						
Key policy rate[11]		0.5 (0)	0.6 (0)	1.0 (-0.1)	1.5 (-0.1)	1.9 (-0.1)
Import-weighted exchange rate (I-44)[12]		104.5 (0)	104.1 (0.9)	100.5 (1.3)	98.5 (0.4)	97.7 (-0.3)
Money market rates, trading partners[13]		0.1 (0)	0.4 (0)	0.6 (0)	0.9 (0)	1.2 (0.1)
Oil price						
Oil price, Brent Blend. USD per barrel[14]		54 (0)	74 (1)	76 (4)	72 (3)	69 (3)

1 CPI adjusted for tax changes and excluding energy products.
2 The output gap measures the percentage deviation between mainland GDP and projected potential mainland GDP.
3 Labour Force Survey.
4 The projections reflect the assumption of stronger growth in LFS employment than in QNA employment.
5 Household consumption and private mainland gross fixed investment and public demand.
6 Includes consumption for non-profit organisations.
7 General government gross fixed investment and consumption.
8 Extraction and pipeline transport.
9 Traditional goods, travel, petroleum services and exports of other services from mainland Norway.
10 Credit growth is calculated as the four-quarter change at year-end.
11 The key policy rate is the interest rate on banks' deposits in Norges Bank.
12 The weights are estimated on the basis of imports from 44 countries, which comprise 97% of total imports. A higher value denotes a weaker krone exchange rate.
13 Based on three-month money market rates and interest rate swaps.
14 Spot price 2017. The spot price for 2018 is calculated as the average spot price so far in 2017 and futures prices for the remainder of the year. Futures prices for 2019–2021. Futures prices are calculated as the average for the period 10–14 September 2018.

Sources: Eiendomsverdi, Finn.no, Norwegian Labour and Welfare Administration (NAV), Real Estate Norway, Statistics Norway, Thomson Reuters and Norges Bank

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