NORGES BANK

4|18

DECEMBER

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 5 December 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 policy rate at its meeting on 12 December 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.

Contents

This *Monetary Policy Report* is based on information in the period to 7 December 2018.
In addition, consumer price index data published on 10 December have been incorporated into the *Report*.

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 its policy 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 policy rate is set by Norges Bank's Executive Board. Policy rate decisions 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 policy rate decision 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 keep the policy rate unchanged at 0.75%. The Executive Board's current assessment of the outlook and balance of risks suggests that the policy rate will most likely be increased in March 2019.

The expansion among Norway's trading partners has been solid in recent years. Unemployment has fallen, and wage growth has begun to rise. Economic growth now appears to be slowing. Since the September 2018 *Monetary Policy Report*, activity indicators have moved down, and there has been a broad decline in global equity markets. The projections for growth ahead have been revised down somewhat. Forward rates indicate a very gradual global interest rate rise, and policy rate expectations have fallen since September.

Growth in the Norwegian economy has been solid since autumn 2016, and the labour market has improved. The global upturn, higher oil prices and low interest rates have contributed to driving growth. There are prospects that the upturn in the Norwegian economy will continue, but slower growth abroad and a flattening of petroleum investment later in the projection period will likely pull down growth further out.

Growth in the mainland economy slowed in 2018 Q3 and was lower than expected. Much of the decline reflects a fall in agricultural production after the dry summer. Since the September *Report*, labour market developments have been broadly as projected. There has been strong growth in both employment and the labour force. Oil prices have fallen in recent months, with futures prices also lower than assumed in September. Lower oil prices reduce oil industry profitability, but there are still prospects for solid growth in investment on the Norwegian shelf in the coming year.

Consumer price inflation has risen over the past year. A substantial increase in electricity prices has contributed to the rise. Underlying inflation has also moved higher, driven in part by a pick-up in wage growth. Tighter labour market conditions suggest that wage growth will increase further.

Inflation has risen and been higher than projected in the September *Report*. In November, the 12-month rise in the consumer price index (CPI) was 3.5%. Adjusted for tax changes and excluding energy products (CPI-ATE), inflation was 2.2%. The krone exchange rate has depreciated and is weaker than expected. This will contribute to underpinning inflation in the near term. On the other hand, wage growth in 2018 appears to have been slightly lower than assumed in the September *Report*. The fall in oil prices suggests that wage growth may also be lower than projected in the period ahead.

Persistently high debt growth has increased household vulnerability. Household debt growth has abated somewhat in recent years, but remains higher than growth in disposable income. In recent months, house prices have fallen a little.

In its discussion of the risk outlook, the Executive Board focused in particular on global economic prospects. Through 2018, rising protectionism and political uncertainty have weakened growth prospects. Persistent trade conflicts and turbulence surrounding political processes in Europe may dampen growth among trading partners more than projected. If the UK exits the EU without a withdrawal agreement, financial market turbulence may increase. At the same time, the krone may remain weaker than envisaged should global uncertainty persist.

The target for 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.

In its assessment of monetary policy, the Executive Board gives weight to evidence of a continuing upturn in the Norwegian economy. Spare capacity has gradually diminished, and capacity utilisation now seems to be close to a normal level. Underlying inflation is close to the inflation target.

If the policy rate is kept at the current level for a long time, price and wage inflation may accelerate and financial imbalances build up. That would increase the risk of a sharp economic downturn further out. Raising the policy rate rapidly ahead could stifle the upturn and lead to higher unemployment and inflation that is too low. Uncertainty surrounding the effects of higher interest rates suggests a cautious approach to interest rate setting.

Overall, the outlook and the balance of risks imply a gradual interest rate increase in the years ahead. The policy rate forecast is little changed, but the fall in oil prices and weaker global growth prospects imply a slightly slower rate rise than in the September *Report*. Inflation is projected to remain close to target in the coming years, at the same time as unemployment remains low. The policy rate path will be adjusted in response to changes in economic prospects.

The Executive Board decided to keep the policy rate unchanged at 0.75%. The Executive Board's current assessment of the outlook and balance of risks suggests that the policy rate will most likely be raised in March 2019. The decision was unanimous.

Øystein Olsen
12 December 2018

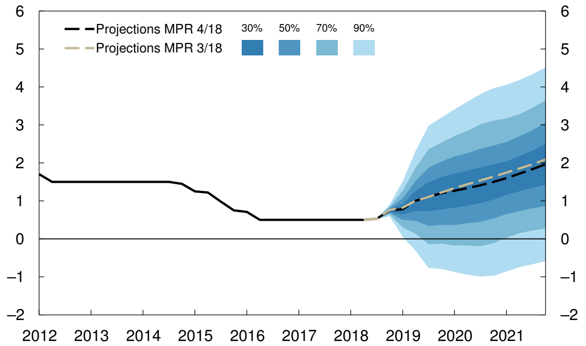
1 Overall picture

The upturn in the Norwegian economy continues. Employment is rising, and capacity utilisation appears to be close to a normal level. Inflation has risen over the past year, with underlying inflation close to the 2% target.

The policy rate was kept unchanged at the monetary policy meeting, after having been raised from 0.5% to 0.75% in September. The forecast for the policy rate indicates a rate rise to 1% in March 2019, followed by a gradual rise to 2% at the end of 2021. The rate path is little changed in 2019, and thereafter shows a slightly slower rise than in the September *Report*. The downward revision of the policy rate forecast reflects lower oil prices and slightly weaker growth prospects abroad.

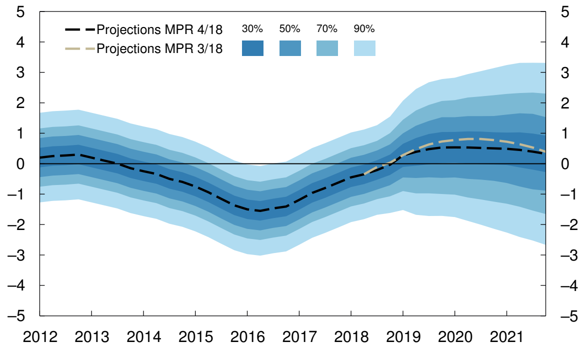
With a policy rate in line with the forecast, inflation is projected to remain close to target, at the same time as unemployment remains low. If the policy rate is kept at the current level for a long time, price and wage inflation may accelerate and financial imbalances build up. On the other hand, raising the policy rate rapidly ahead could stifle the upturn and lead to higher unemployment and inflation that is too low.

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



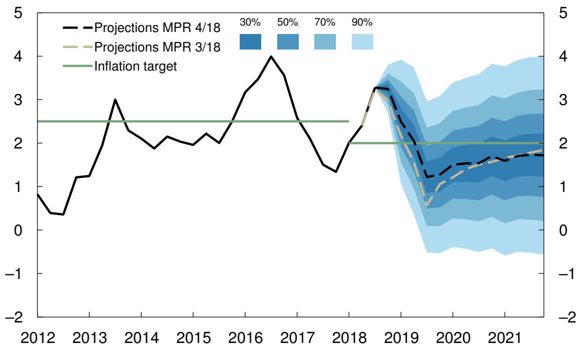
1) The fan chart is based on historical experience and stochastic simulations in Norges Bank's main macroeconomic model, NEMO. It does not take into account that a lower bound for the interest rate exists.
2) Projections for 2018 Q4 – 2021 Q4.
Source: Norges Bank

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



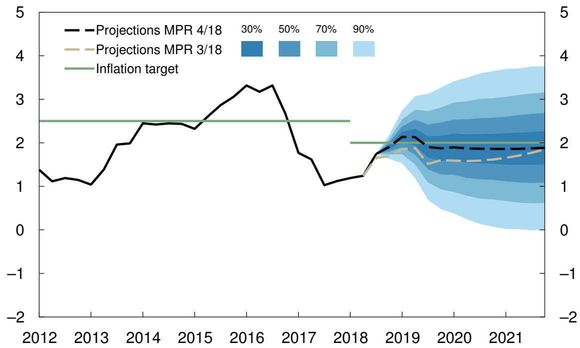
1) The output gap measures the percentage deviation between mainland GDP and estimated potential mainland GDP.
2) The fan chart is based on historical experience and stochastic simulations in Norges Bank's main macroeconomic model, NEMO.
Source: Norges Bank

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



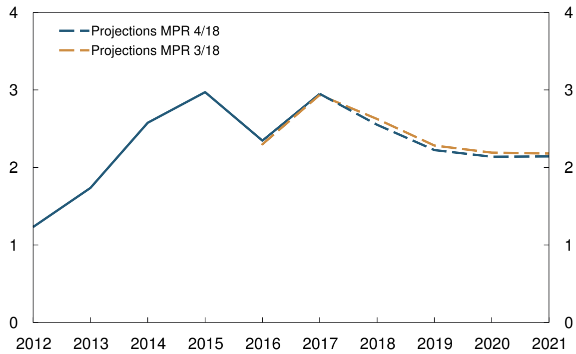
1) The fan chart is based on historical experience and stochastic simulations in Norges Bank's main macroeconomic model, NEMO.
2) Projections for 2018 Q4 – 2021 Q4.
Sources: Statistics Norway and Norges Bank

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



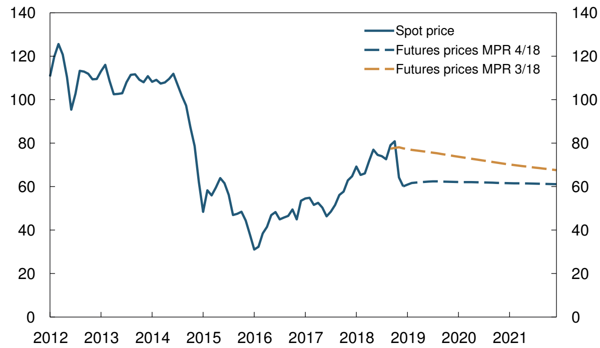
1) CPI adjusted for tax changes and excluding energy products.
2) The fan chart is based on historical experience and stochastic simulations in Norges Bank's main macroeconomic model, NEMO.
3) Projections for 2018 Q4 – 2021 Q4.
Sources: Statistics Norway and Norges Bank

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



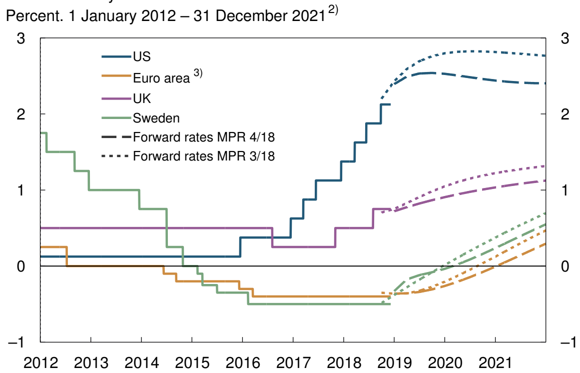
1) Export weights. Twenty-five main trading partners.
2) Projections for 2018 – 2021.
Sources: Thomson Reuters and Norges Bank

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



1) Brent Blend.
2) Futures prices on 14 September 2018 for MPR 3/18 and on 7 December 2018 for MPR 4/18.
Sources: Thomson Reuters and Norges Bank

Chart 1.4 Policy rates and estimated forward rates[1] in selected countries. Percent. 1 January 2012 – 31 December 2021[2]



1) Forward rates at 14 September 2018 for MPR 3/18 and 7 December 2018 for MPR 4/18. Forward rates are estimated based on Overnight Index Swap (OIS) rates.
2) Daily data through 7 December 2018. Quarterly data from 2019 Q1.
3) ECB deposit facility rate. Eonia from 2019 Q1.
Sources: Bloomberg, Thomson Reuters and Norges Bank

1.1 GLOBAL DEVELOPMENTS AND OUTLOOK

Weaker growth prospects abroad

The expansion among Norway's trading partners has been solid in recent years (Chart 1.2), but now appears to be softening. Growth among trading partners is projected to slow gradually, partly reflecting reduced monetary and fiscal policy stimulus. Trade conflicts and the UK's exit from the EU have contributed to heightened global uncertainty. Projections for GDP growth and import growth among trading partners are slightly lower than in *Monetary Policy Report* (MPR) 3/18, published on 20 September.

Oil prices rose through autumn 2017 and up to October 2018. In recent months, oil prices have fallen (Chart 1.3). Spot prices are now around USD 60 per barrel. Futures prices have also declined since September, but less than spot prices. Futures prices indicate little change in oil prices in the period to 2021.

Wage growth abroad continues to pick up

Underlying inflation among Norway's trading partners has remained below 1.5% since the beginning of 2017. Inflation has been lower than expected, and the projections for underlying inflation in 2018 and 2019 have been revised down. Wage growth among trading partners has picked up broadly as expected. Both wage growth and underlying inflation are projected to move up in the coming years on the back of higher capacity utilisation.

The global interest rate level remains low, but central bank policy rates have been raised in a number of countries (Chart 1.4). Forward rates among Norway's main trading partners indicate a very gradual rise in interest rates ahead. Policy rate expectations have fallen since September.

1.2 THE ECONOMIC SITUATION IN NORWAY

Continued upturn in the Norwegian economy

Global growth, higher oil prices and low interest rates have contributed to solid growth in the Norwegian economy over the past few years. The upturn has continued in 2018. After falling sharply for several years, investment on the Norwegian shelf has begun to recover, and oil service exports are on the rise.

Growth in mainland GDP slowed in 2018 Q3. Much of the slowing is attributable to a decline in agricultural production following the dry summer. Also when disregarding this decline, growth was slightly lower than expected.

Mainland GDP growth is projected to be higher in the coming two quarters than it has been so far in 2018 (Chart 1.5). The projections are in line with the expectations of enterprises in Norges Bank's Regional Network.

Employment growth has been solid in 2018 (Chart 1.6), but unemployment has shown little change since the turn of the year. In recent months, labour market developments have been in line with the September projection. Nevertheless, lower-than-expected mainland GDP growth and continued moderate wage growth suggest that capacity utilisation is slightly lower than assumed in the September *Report*.

Household debt growth has edged lower this year. In recent months, house prices have fallen a little and are somewhat lower than projected in September.

Inflation close to target

Consumer price inflation has risen over the past year. Both electricity prices and underlying inflation have contributed to the rise.

In November, the 12-month rise in the consumer price index (CPI) was 3.5% (Chart 1.7). CPI inflation adjusted for tax changes and excluding energy products (CPI-ATE) was 2.2%. Inflation has been higher than projected in the September *Report*.

Wage growth picked up in 2017 and has continued to rise in 2018. Nevertheless, wage growth appears to be slightly lower in 2018 than projected in September.

The krone has recently depreciated and is weaker than assumed in September.

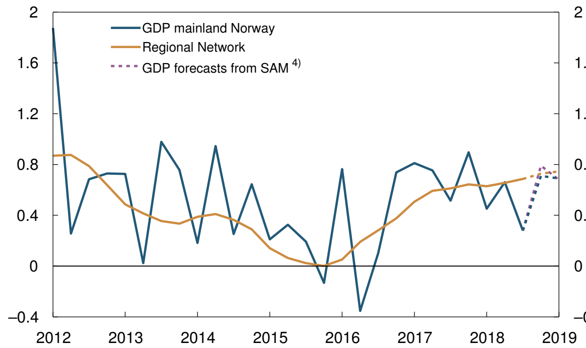
1.3 MONETARY POLICY AND PROJECTIONS

Prospects for a rate hike in March

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.

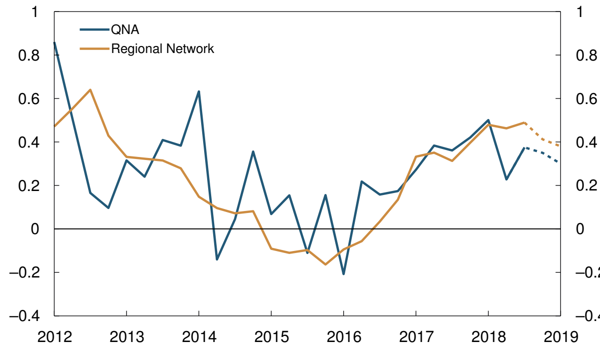
If the policy rate is kept at the current level for a long time, price and wage inflation may accelerate and financial imbalances build up. That would increase the risk of a sharp economic downturn further out.

Chart 1.5 GDP for mainland Norway[1] and the Regional Network's indicator of output growth[2]. Quarterly change. Percent. 2012 Q1 – 2019 Q1[3]



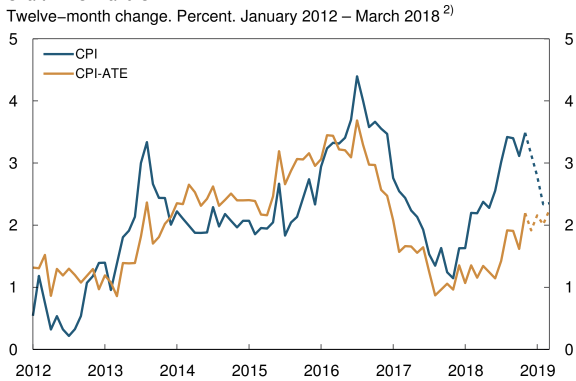
1) Seasonally adjusted.
2) Reported output growth past three months converted to quarterly figures. Quarterly figures are calculated by weighting together three-month figures on the basis of survey timing. For 2018 Q4, expected output growth is estimated by reported growth over the past three months and expected growth in the next six months as reported in November. 2019 Q1 is expected growth in the next six months as reported in November.
3) Projections for 2018 Q4 – 2019 Q1 (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[1] and Regional Network[2]. Quarterly change. Percent. 2012 Q1 – 2019 Q1[3]



1) Seasonally adjusted.
2) Reported employment growth for the past three months. Quarterly figures are calculated by weighting together three-month figures based on survey timing. For 2018 Q4, 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 November. 2019 Q1 is expected growth in the next three months as reported in November.
3) Projections for 2018 Q4 – 2019 Q1 (broken lines).
Sources: Statistics Norway and Norges Bank

Chart 1.7 CPI and CPI–ATE[1].
Twelve–month change. Percent. January 2012 – March 2018[2]



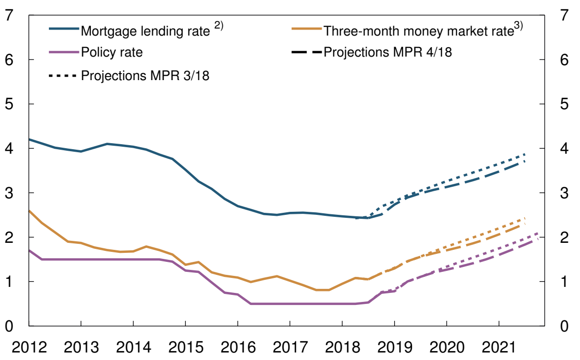
1) CPI adjusted for tax changes and excluding energy products.
2) Projections for December 2018 – March 2019 (broken lines).
Sources: Statistics Norway and Norges Bank

MONETARY POLICY SINCE SEPTEMBER

At the monetary policy meeting on 19 September, the policy rate was raised from 0.5% to 0.75%. The analyses in the September 2018 *Monetary Policy Report* indicated a rate hike in 2019 Q1, followed by a gradual increase to around 2% at the end of 2021. With this path for the policy rate, inflation was projected to be close to target some years ahead, at the same time as unemployment would remain low.

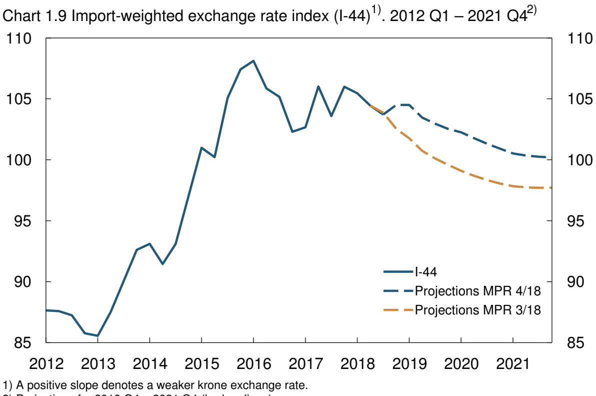
At the monetary policy meeting on 24 October, new information was assessed in relation to the projections in the September *Report*. Economic growth had been a little lower and inflation somewhat higher than projected, but the Executive Board's assessment in October was that the outlook and balance of risks had not changed substantially since the September *Report*. The Executive Board decided to keep the policy rate unchanged at 0.75%.

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



1) Policy rate projections for 2018 Q4 – 2021 Q4. For mortgage lending rate projections for 2018 Q4 – 2021 Q3. For three-month money market rate, projections for 2018 Q3 – 2021 Q3.
2) 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 are calculated as an average of the policy rate in the current and subsequent quarter plus an estimate of the money market premium.
Sources: Statistics Norway, Thomson Reuters and Norges Bank

Chart 1.9 Import-weighted exchange rate index (I-44)[1)]. 2012 Q1 – 2021 Q4[2)]



1) A positive slope denotes a weaker krone exchange rate.
2) Projections for 2018 Q4 – 2021 Q4 (broken lines).
Sources: Thomson Reuters and Norges Bank

On the other hand, raising the policy rate rapidly in the period ahead could stifle the upturn, resulting in higher unemployment and inflation that is too low.

The policy rate was kept unchanged at the monetary policy meeting, after having been raised from 0.5% to 0.75% in September. The policy rate forecast indicates a rate rise to 1% in March 2019, followed by a gradual rise to 2% at the end of 2021. With the policy rate in line with the forecast, inflation is projected to remain close to target, at the same time as unemployment remains low.

The rate path is little changed in 2019, and thereafter shows a slightly slower rise than in the September *Report* (Chart 1.1a). The downward revision reflects lower oil prices and slightly weaker global growth prospects. A weaker krone and prospects for continued solid growth in investment on the Norwegian shelf dampen the impact of lower oil prices and weaker global growth. This entails little change in the rate path.

The interest rate forecast implies an increase in residential mortgage rates from 2.7% today to 3.7% in 2021 (Chart 1.8).

The projections are uncertain. The interest rate forecast shows the outlook for the policy rate given economic developments in line with the current projections. If developments take a different course, the rate path will be adjusted.

Positive output gap and inflation close to target

With the policy rate in line with the forecast, capacity utilisation is likely to rise further and remain above a normal level from 2019 to the end of the projection period (Chart 1.1b). Capacity utilisation is projected to peak in early 2020, gradually declining thereafter. Compared with the September *Report*, the projections for capacity utilisation have been revised down somewhat. The krone is expected to appreciate ahead, but is likely to be weaker than projected in September throughout the projection period (Chart 1.9).

In the projection, rising capacity utilisation pushes up inflation, while a stronger krone pulls down inflation ahead. Inflation is projected to be slightly below 2% at the end of 2021 (Charts 1.1c-d). Compared with the September *Report*, the inflation projections are somewhat higher in 2019 and 2020. At the end of the projection period, the inflation projections are little changed.

Growth in mainland GDP is projected at 2.4% in 2018 and 2.3% in 2019 (Chart 1.10). This is higher than the Bank's estimate of the economy's underlying growth potential, and the pace of growth is expected to slow gradually. Higher interest rates, a gradual appreciation of the krone and lower growth abroad will have a dampening effect on growth. Compared with the September *Report*, growth is projected to be a little lower in 2018, 2019 and 2020 and a little higher in 2021.

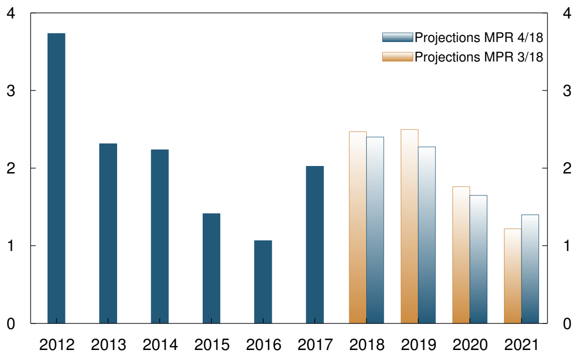
Solid growth in household consumption is expected ahead. Despite higher interest rates, household real disposable income is set to be higher in the years ahead, owing to prospects for continued employment growth and an increase in real wages. Business investment is also expected to rise further, but less than in the past few years. Solid growth is expected in mainland exports, driven in part by higher global oil investment. There are also prospects of a pick-up in investment on the Norwegian shelf (Chart 1.11). On the other hand, housing investment will fall markedly in 2018, and will probably show little change in the years ahead. Fiscal policy is assumed to make a moderate contribution to growth ahead.

Wage growth on the rise

Employment continues to rise through the projection period, in pace with the upturn in the mainland economy. The projections are a little lower than in September. Owing to solid employment growth, the labour force is also expected to expand. Unemployment is still expected to show a small decline (Chart 1.12).

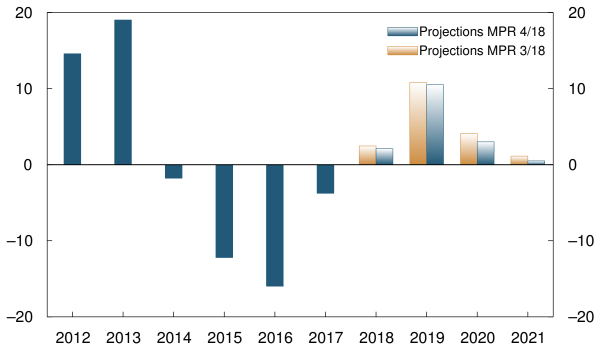
A tighter labour market is expected to push up wage growth further (Chart 1.13). Owing to lower oil prices, the wage growth projections were revised down compared with the September *Report*.

Chart 1.10 GDP for mainland Norway. Annual change. Percent. 2012 – 2021[1)]



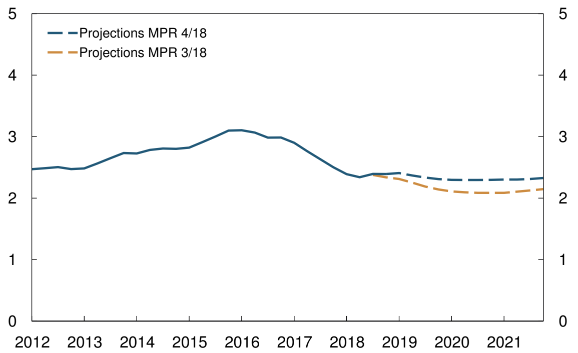
1) Projections for 2018 – 2021.
Sources: Statistics Norway and Norges Bank

Chart 1.11 Petroleum investment. Annual change. Percent. 2012 – 2021[1)]



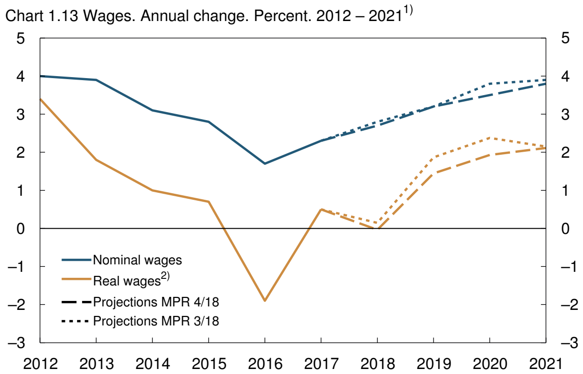
1) Projections for 2018 – 2021.
Sources: Statistics Norway and Norges Bank

Chart 1.12 Unemployment according to NAV [1)].
Share of the labour force. Seasonally adjusted. Percent. 2012 Q1 – 2021 Q4[2)]



1) Registered unemployment.
2) Projections for 2018 Q4 – 2021 Q4. According to NAV, changes in NAV's routines have contributed to a rise in unemployment of about 0.1 percentage point in November 2018. We have taken this into account for the NAV-unemployment.
Sources: Norwegian Labour and Welfare Administration (NAV), Statistics Norway and Norges Bank

Chart 1.13 Wages. Annual change. Percent. 2012 – 2021[1)]

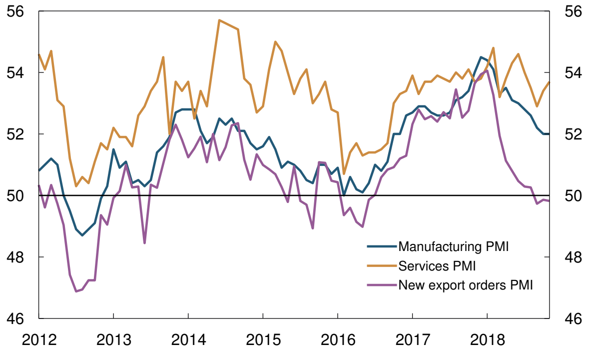


1) Projections for 2018 – 2021.
2) Nominal wage growth deflated by the CPI.
Sources: Statistics Norway and Norges Bank

2 The global economy

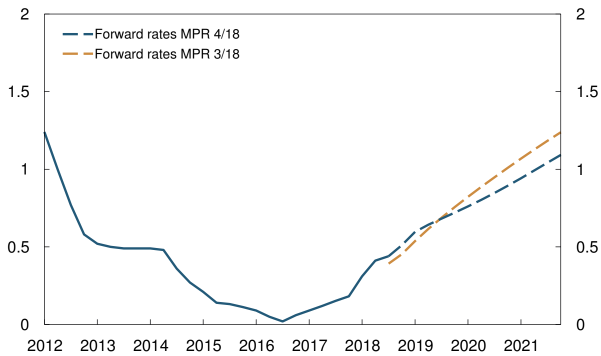
There has been a broad upswing in GDP growth among Norway's trading partners in recent years, but growth slowed in autumn. Escalating trade conflicts and mounting uncertainty relating to political processes in Europe have contributed to weakening global growth prospects through the year. The projections for GDP growth among trading partners are slightly lower than in the September 2018 *Monetary Policy Report*. Wage growth continues to rise, but the projections for underlying inflation are slightly lower than in the September *Report*. Oil spot and futures prices have declined. Money market rate expectations indicate a very gradual interest rate rise. Long-term rates among trading partners have edged lower.

Chart 2.1 Global PMI.[1)]
Seasonally adjusted. Index.[2)] January 2012 – November 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 Three-month money market rates for Norway's trading partners.[1) 2)]
Percent. 2012 Q1 – 2021 Q4[3)]



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) Slightly more weight is given to US rates compared with MPR 3/18 , while slightly less weight is given to European rates.
3) Forward rates at 14 September 2018 for MPR 3/18 and 7 December 2018 for MPR 4/18.
Sources: Thomson Reuters and Norges Bank

2.1 GROWTH, PRICES AND INTEREST RATES

Slightly weaker growth prospects

Growth among Norway's trading partners has been solid in recent years. However, there are now signs that GDP growth is tapering off, primarily reflecting slower growth in Europe and emerging economies, while growth remains vigorous in the US. In many countries, unemployment is now below the average from 1990. Household confidence indicators are still at high levels, while activity indicators for both manufacturing and services have weakened in 2018. Trade conflicts have probably contributed to a notable decline in the indicator for new export orders (Chart 2.1).

Expected money market rates for main trading partners indicate a very gradual interest rate rise, and policy rate expectations have fallen since September (Chart 2.2). The Federal Reserve raised its policy rate in September. The disagreement between the European Commission and Italy regarding Italy's government budget for 2019 has led to an increase in Italian long-term interest rates since spring. Long-term rates for other main trading partners have edged lower since mid-September (Chart 2.3). Global equity markets have declined since the September *Report* (Chart 2.4). The US market showed the largest decline. The ongoing trade conflicts and concerns about weaker global growth may have contributed to the fall. After depreciating markedly through spring, the currencies of vulnerable emerging economies such as Turkey and Argentina have stabilised. On the whole, financial conditions among main trading partners are now somewhat tighter than at the time of the September *Report*.

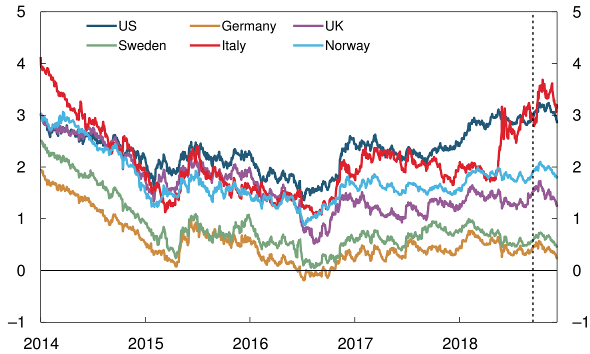
Growth prospects have weakened through 2018, partly reflecting the introduction of tariffs on goods traded with the US and heightened uncertainty relating to trade conflict developments. Uncertainty about the UK's exit from the EU, combined with the budget disagreement with Italy, will likely further dampen business investment willingness in Europe. Reduced monetary and fiscal stimulus will also contribute to a gradual slowdown in advanced economy growth ahead. On the other hand, lower oil prices will make a positive contribution to growth among most of Norway's trading partners. The projections for GDP growth and import growth among trading partners are slightly lower than in the September *Report* (Chart 2.5 and Annex Table 1).

Lower oil prices

Overall inflation is now higher than the inflation targets of main trading partners (Chart 2.6), while underlying inflation has remained below 1.5% since the beginning of 2017 and has recently been lower than expected. Underlying inflation projections for 2018 and 2019 have been revised down a little since the September *Report*. Wage growth among trading partners had remained low for a long time, despite a clear decline in unemployment, but has been on the rise since spring. The projections are unchanged from the September *Report*. Both wage growth and underlying inflation are projected to rise in in the next couple of years as a result of higher capacity utilisation (Chart 2.7 and Annex Table 2). The projections for overall inflation among main trading partners are revised down for 2019. Oil prices have declined, and oil spot prices are now around USD 60 per barrel. Futures prices up to 2021 are also lower than in the September *Report* (Chart 1.3). Oil prices are discussed in a box on page 17.

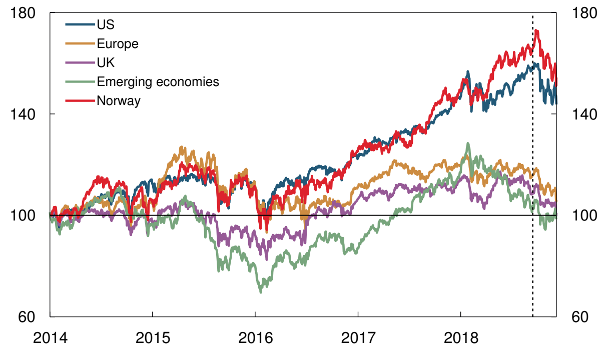
The rise in prices for Norwegian imported consumer goods in foreign currency terms has been higher than expected in the September *Report*, partly reflecting earlier increases in metal prices that have likely resulted in a faster rise in car prices. In addition, prices for audio-visual equipment are still on the rise. The projections for import price inflation in 2018 and 2019 have been revised up (Chart 2.8). The shift in Norwe-

Chart 2.3 Yields on ten-year government bonds in selected countries. Percent. 2 January 2014 – 7 December 2018[1)]



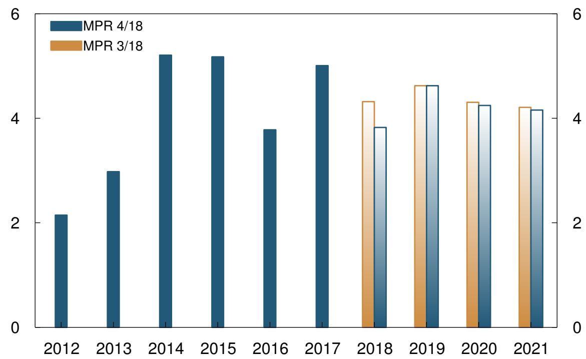
1) MPR 3/18 was based on information in the period up to 14 September 2018 indicated by the vertical line.
Source: Bloomberg

Chart 2.4 Equity price indexes in selected countries.[1)] Index. 2 January 2014 = 100. 2 January 2014 – 7 December 2018[2)]



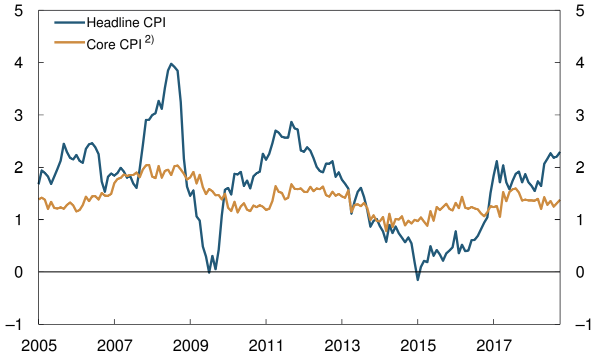
1) Standard and Poor's 500 Index (US). Stoxx Europe 600 Index (Europe). Financial Times Stock Exchange 100 Index (UK). Oslo Børs Benchmark Index (Norway). MSCI Emerging Markets Index (emerging economies).
2) MPR 3/18 was based on information in the period up to 14 September 2018 indicated by the vertical line.
Source: Bloomberg

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



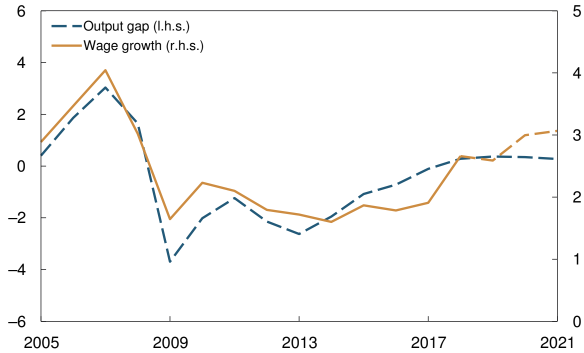
1) Export weights. 25 main trading partners.
2) Projections for 2018 – 2021 (shaded bars).
Sources: Thomson Reuters and Norges Bank

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



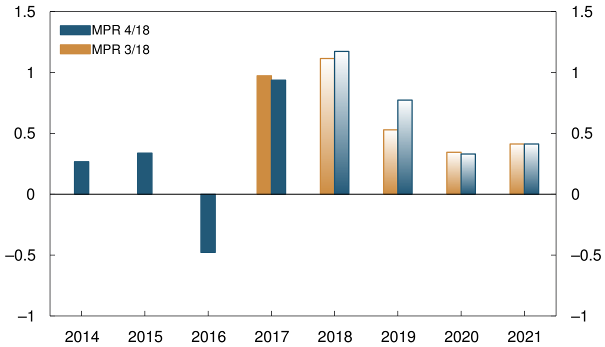
1) Import weights. US, euro area, UK and Sweden.
2) US: excluding food and energy. UK and euro area: excluding food, energy, tobacco and alcohol. Sweden: excluding energy.
Sources: Thomson Reuters and Norges Bank

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



1) Compensation per employee. Annual percentage change.
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. 2014 – 2021[1)]



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

gian imports to low-cost countries such as China and other emerging economies is expected to continue to dampen overall price inflation for imported consumer goods in the coming years.

Trade conflicts and political tensions

There is considerable uncertainty surrounding global economic developments. Persistent trade conflicts may dampen growth abroad more than projected in this *Report*. Given the high debt levels in many countries, a steep rise in interest rates and risk premiums could lead to turbulence and sharp movements in capital flows and exchange rates. The UK's exit from the EU is approaching (see box on page 18). The exit process could result in heightened turbulence and lower growth in Europe than assumed. In addition, the budget disagreement with Italy adds to the uncertainty surrounding developments in Europe. On the other hand, economic growth may turn out to be stronger than projected if, among other things, political processes in Europe rapidly resolve the issues, or there is more spare capacity than assumed.

2.2 COUNTRIES AND REGIONS

Strong growth in the US

The US economy continues to expand at a fast pace. A highly expansionary fiscal policy has contributed to GDP growth of around 1% per quarter over the past two quarters. Growth has been broadly as projected in the September *Report*. Labour market developments are positive, and wage growth has accelerated to a little more than 3%. The Federal Reserve raised its policy rate in September to a target range of 2.00%-2.25%, and has signalled one additional rate rise in 2018 and three in 2019. Forward rates indicate close to two rate hikes in the same period.

The GDP growth projection is unchanged at 2.9% for 2018, followed by a decline to 1.8% in 2020. The growth projections for the coming years are revised down slightly. Personal and corporate tax cuts have contributed to solid consumption and investment growth so far this year, but the contributory effects are likely to diminish ahead. At the same time, tighter financial conditions will probably have some dampening impact on both consumption and investment growth. Residential mortgage rates have increased markedly so far this year and are weighing on housing demand. Moreover, the uncertainty relating to trade conflicts is probably having a dampening effect on business investment willingness. Planned investment has diminished somewhat (Chart 2.9), despite the fact that businesses are reporting capacity constraints and solid earnings. Consumer price inflation is expected to decline slightly ahead owing to lower energy prices, while underlying inflation is expected to accelerate as a result of higher wage growth.

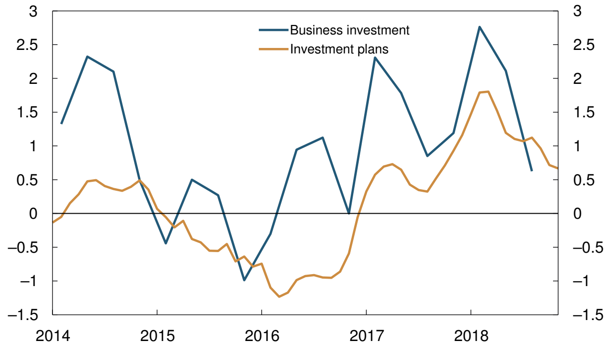
Lower growth in the euro area

After a year of high GDP growth in 2017, growth has tapered off in 2018. The decline has been more pronounced than projected in the September *Report*, partly reflecting a temporary fall in German automobile production. Household confidence indicators and business activity indicators have edged down. Unemployment has continued to decline, and wage growth is moving up (Chart 2.10). Capacity utilisation is close to a normal level, and GDP growth is likely to be higher than potential growth in 2018.

The European Central Bank (ECB) has not changed its monetary policy stance since the September *Report*. The ECB continues to signal that if inflation remains in line with expectations, the asset purchase programme will be terminated around year-end and its policy rate kept unchanged until after summer 2019. Forward rates indicate that the first rate rise will come in 2019 Q4.

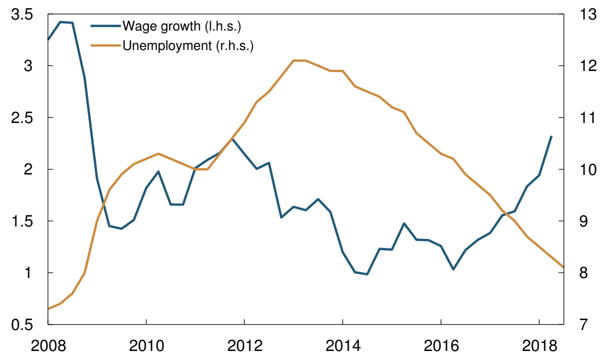
Euro-area GDP growth is projected at 1.9% in 2018, slowing somewhat thereafter. Compared with the September *Report*, the growth projections are slightly lower for the next few years. The uncertainty surrounding trade conflicts, the UK's exit from the EU and the budget disagreement with Italy are likely weighing on business investment willingness. Growth is projected to slow to 1.5% in 2021, on the back of lower labour force growth and fiscal and monetary tightening. Underlying inflation is expected to rise gradually in the coming years as a result of higher capacity utilisation and faster wage growth. Overall inflation is expected to remain below 2% annually to the end of the projection period. The projection for 2018 is unchanged, while the projection for 2019 is revised down a touch owing to lower oil prices.

Chart 2.9 Business investment [1] and investment plans [2] in the US.
January 2014 – November 2018



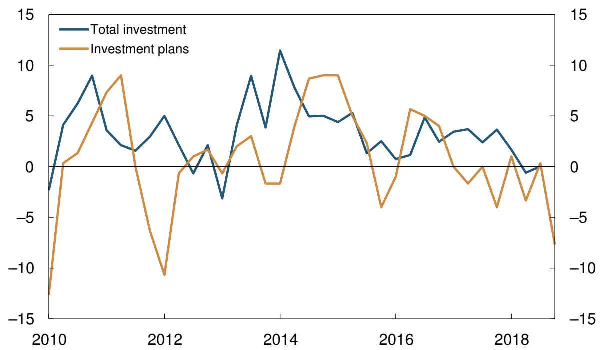
1) Quarterly change. Percent. 2014 Q1 – 2018 Q3.
2) Average of category planned investment in industry indicators from the Federal Reserve Dallas, Kansas, New York and Philadelphia. Three-month moving average. Diffusion index centered around zero.
Sources: Thomson Reuters and Norges Bank

Chart 2.10 Unemployment [1] and wage growth [2] in the euro area.
Seasonally adjusted. Percent. 2008 Q1 – 2018 Q3 [3]



1) Unemployed as a share of the labour force.
2) Compensation per employee. Four-quarter change.
3) Latest wage growth observation in 2018 Q2.
Sources: Thomson Reuters and Norges Bank

Chart 2.11 Total investment [1] and investment plans [2] in the UK.
2010 Q1 – 2018 Q4 [3]



1) Four-quarter change. Percent.
2) Confederation of British Industries survey. Three-quarter moving average. Net balance.
3) Latest total investment observation in 2018 Q3.
Sources: Thomson Reuters and Norges Bank

Low growth in the UK

UK growth was higher than expected in 2018 Q3, and seems to be broadly driven by temporary conditions such as an upswing in the construction industry after a drop in activity earlier this year due to cold weather. The labour market is tight, and unemployment is at its lowest level since 1975. Wage growth accelerated to more than 3% in September. The Bank of England continues to signal that a gradual tightening of monetary policy is necessary to bring inflation to target.

This *Report* applies the assumption that the UK's exit from the EU will be orderly, yet the uncertainty surrounding the future relationship to the EU will likely dampen investment and contribute to depressing GDP growth in the coming quarters (Chart 2.11). Growth is projected at 1.3% in 2018, the lowest level recorded since 2009. In the longer term, growth is projected to edge up on the back of a more expansionary fiscal policy, higher real wage growth and somewhat stronger investment willingness as new trade relations are clarified. Inflation has been a little higher than projected in the September *Report*, and the projection has been revised up for 2018. Looking ahead, annual inflation is projected at around 2%.

Lower growth in Sweden

After growing rapidly in the first half-year, Swedish GDP fell in 2018 Q3, primarily owing to temporary conditions, such as environmental taxes on cars. Capacity utilisation remains higher than normal. Inflation, as measured by the consumer price index with a fixed interest rate (CPIF), has increased and is above the inflation target of 2%. After having been low for a long time, both wage and underlying price inflation are now on the rise. The Riksbank has kept its policy rate unchanged at a negative -0.5%, but has signalled that its policy rate may be raised in December 2018 or in February 2019. Forward rates are in line with this.

Swedish GDP growth has been lower than expected in the September *Report* and is now projected at 2.4% in 2018. Further out in the projection period, capacity constraints and lower growth among Sweden's trading partners are expected to push down growth to somewhat below 2%. The projections are lower than in the September *Report*. Inflation is projected to stay near the target in the coming years.

Softening Chinese growth

Chinese GDP growth has slowed since 2010. In the past year, the main drag on growth has been lower growth in business credit and a decline in infrastructure investment. Growth also slowed somewhat in 2018 Q3, but was still stronger than expected in the September *Report*. The growth projection for 2018 has been revised up to 6.5%.

The trade conflict with the US remains a primary source of uncertainty about economic prospects, despite agreement between the US and China to temporarily halt the imposition of new tariffs at the G20 meeting in November. In the near term, government measures are expected to offset the effects of the trade conflict, but further out, GDP growth is likely to be dampened. Growth is expected to slow to below 6% in 2020, approximately as projected in the September *Report*. Should government measures trigger a renewed jump in credit growth, financial stability risks may increase again.

In other emerging economies, growth has been broadly in line with expectations, but there are wide differences across countries. In Turkey, domestic demand has declined in the wake of the turbulence earlier this year. Since the September *Report*, the currencies of highly indebted countries such as Argentina and Turkey have stabilised, however, and interest rates in those countries have fallen from high levels. In both Russia and Brazil, economic conditions have improved somewhat. The growth projections for emerging economies excluding China are broadly the same as in the September *Report*.

DEVELOPMENTS IN OIL AND GAS PRICES

Oil spot prices are now around USD 60 per barrel, down from USD 85 in early October. Since the September *Monetary Policy Report*, prices have declined by close to USD 20. The decline reflects record-high oil production in countries such as Saudi Arabia, Russia and the US, which combined account for 40% of global oil supply. OECD oil inventories have therefore increased (Chart 2.12). In addition, fears of a further decline in oil exports from Iran eased when the US unexpectedly exempted some countries from the sanctions on importing Iranian oil imposed at the beginning of November. Moreover, the International Energy Agency (IEA), the US Energy Information Administration and OPEC lowered their growth projections for global oil consumption on the back of weaker global economic prospects.

Distant oil futures prices have fallen less than spot prices (Chart 1.3). This may be attributable to various factors. There is still considerable production uncertainty among a number of important oil-producing countries due to political tensions, at the same time as OPEC spare production capacity is low (Chart 2.13). In addition, investment in new non-OPEC oil production has been low in recent years. This could lead to oil supply shortages in the 2020s, as the IEA again signalled in the *World Energy Outlook* 2018 published at the beginning of November.[1]

OPEC and ten other countries (OPEC+) decided in December to cut oil production again from the beginning of 2019. This will likely curb a further increase in OECD oil inventories in 2019.

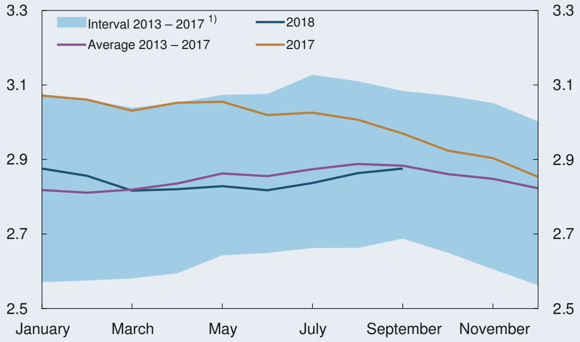
Oil prices are assumed to move in line with futures prices (Chart 1.3). Futures prices indicate that prices will be a good USD 60 in 2021, which is lower than envisaged in the September *Report*.

Oil prices may turn out to be higher or lower than anticipated. Lower oil supply could push up prices. In addition to production cuts by OPEC+, sanctions against Iranian oil exports may be increased. A further decline in oil production by, for example, Libya, Nigeria and Venezuela could depress global oil supply even further. Prices would then increase considerably as OPEC spare production capacity is already low. On the other hand, prices could fall if global growth turns out weaker than expected, especially for emerging market economies, as those countries have accounted for most of the increase in global oil consumption in recent years. Over time, demand growth may be restrained by increased energy efficiency gains and a shift towards renewables with a view to achieving the long-term climate objectives.

European gas prices have declined since the September *Report*, partly reflecting lower Asian gas prices, ample liquefied gas supply to Europe and increased gas inventories. Coal and carbon prices have also edged lower. In addition, Russian gas exports to Europe have increased.

1 IEA(2018) "Crunching the numbers: are we heading for an oil supply shock?" World Energy Outlook, International Energy Agency

Chart 2.12 Total OECD oil inventories.
Billion barrels. January 2017 – September 2018



1) 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 – October 2018

Source: Energy Information Administration

OPTIONS FOR UK WITHDRAWAL FROM THE EU

The governments of the UK and the 27 other EU countries have agreed on a withdrawal agreement and a political declaration on the future relationship between the UK and the EU. The withdrawal agreement must be approved by the EU and UK authorities before it enters into force.

The withdrawal agreement covers the following issues: the rights of UK citizens in the EU and of EU citizens in the UK, the UK's financial obligations to the EU, the border between Ireland and Northern Ireland, a transition period and provisions for a smooth winding down of current arrangements that will come into effect after the end of this period and a framework for the enforcement of the agreement.

For the EU, the agreement was endorsed by the European Council on 25 November 2018, and the European Parliament is set to vote at the beginning of 2019.

The UK Parliament has not yet voted on the draft agreement. The government has announced that a vote will be held by January 21. If the agreement is not approved in the first round, there are several possible outcomes, eg a general election or a second referendum. The withdrawal deadline could also be extended if all 28 countries agree. The European Court of Justice recently ruled that the UK has the right to unilaterally revoke its decision to withdraw from the EU.

If the draft withdrawal agreement is approved by the 29 March withdrawal deadline, there will be a transition period from the date of the UK's exit from the EU and through to the end of 2020.

- In this period, current EU law will apply to both parties, but the UK will lose its right to vote in EU fora. A new trade regime and agreements regulating other forms of collaboration will be negotiated during the transition period.

- The UK can request an extension of the transition period. An extension must be decided by 1 July 2020, and the period cannot be extended beyond the end of 2022.

- A particularly important point is the issue of the border between Ireland and Northern Ireland. Both parties agree that the terms of the 1998 Good Friday Agreement must be upheld, with no new border controls or other obstacles at the border. The withdrawal agreement includes a protocol on this issue. The protocol contains "backstop" arrangements, which will enter into force if no agreement has been reached on a solution that meets the requirements by the end of the transition period.

If a withdrawal agreement is not approved by the deadline, the situation becomes much less clear.

- If the UK leaves the EU without an agreement, the relationship between the EU and the UK will in principle be regulated by those agreements that were applicable before the UK became a member of the EU. These agreements cover far fewer areas than the current EU cooperation agreement. Trade between the two parties will be subject to World Trade Organization (WTO) trade rules, which eg require businesses trading goods to file customs declarations. Cross-border trading will also be subject to VAT, in the same way as between Norway and Sweden. Financial services firms and others will no longer be automatically entitled to sell their services from the UK to all the EEA countries. The economic consequences of such an outcome are highly uncertain.

- In the short term, there may be financial market turbulence. The relevant authorities have only provided limited information on the measures that would be implemented. Uncertainty as to the concrete consequences of a no-deal withdrawal for different markets and sectors may therefore persist after 29 March. Reports issued by the UK Parliament have concluded that up to November the government had not made sufficient preparations for a no-deal situation. The need for border controls could create considerable problems for businesses importing goods to or exporting goods from the UK owing to inadequate border infrastructure.

- The macroeconomic consequences will partly depend on how the situation is managed by the countries involved and how quickly the UK can establish new agreements with trading partners on trade and on cooperation in other areas.

- On 28 November, the Bank of England published an analysis of different scenarios for a no-deal withdrawal situation.[1] The results indicate an abrupt and marked fall in growth after 2019 Q1. Towards the end of the analysis period – in 2023 – GDP is estimated to be between 4% and 7% lower than projected by the Bank of England in its November 2018 *Inflation Report*.

Norway and Brexit
When the UK leaves the EU, it also leaves the EEA. The Norwegian authorities have made extensive preparations to protect Norwegian interests under the various outcomes.[2] The Government has presented draft legislation that "mirrors" the withdrawal agreement between the EU and the UK and that will apply *if the agreement is approved*.

- Under the legislation, the relationship between the UK and Norway in the transition period will in practice continue to be regulated by the provisions of the EEA agreement. These provisions will thereafter be replaced by new agreements negotiated by the UK and Norwegian authorities.

If the UK leaves the EU without an agreement, the impact on Norway will largely be the same as for EU countries:

- The free movement of goods, services, persons and capital will no longer be automatic. Instead, the relationship between Norway and the UK will be regulated by previously adopted agreements and international conventions until new agreements have been drawn up, bilaterally or through EFTA.

- In a no-deal situation, the Norwegian authorities will take steps to ensure stability and to protect the rights of Norwegian citizens in the UK and UK citizens in Norway. As regards financial markets, the EU has announced measures that will be implemented to avert problems related to the use of UK central counterparties in securities settlement. The Norwegian authorities will ensure that the same financial market measures decided on by the EU will be implemented simultaneously in Norway and for Norwegian market participants.

- Norges Bank is collaborating with the relevant authorities to ensure the continuation of the Bank's functions within its remit, including financial transactions between Norway and the UK and in the Norwegian settlement system.

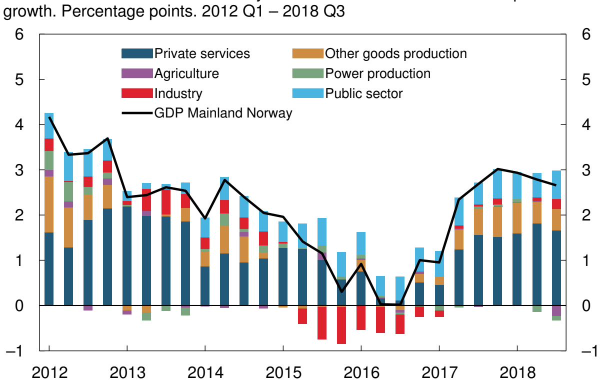
1 Bank of England, November 2018: EU withdrawal scenarios and monetary and financial stability. A response to the House of Commons Treasury Committee.
2 The Government's work to clarify Norway's relationship to the UK after Brexit is described on the Governments home page (in Norwegian only).

3 The Norwegian economy

Growth in the Norwegian economy is solid, and employment is rising. Unemployment is low, and capacity utilisation is close to a normal level. Inflation has risen over the past year. Both underlying inflation and electricity prices have contributed to the rise.

Mainland GDP is projected to rise by 2.4% in 2018. This is higher than the economy's estimated underlying growth potential, and growth is expected to slow gradually ahead. Higher interest rates, lower growth abroad, and a gradual appreciation of the krone in the years ahead will restrain growth. Capacity utilisation is projected to rise until the beginning of 2020 before edging down gradually. Unemployment is expected to edge down slightly and wage growth to rise. Inflation is projected at close to 2% at the end of 2021.

Chart 3.1 GDP for mainland Norway. Base value. Contribution to four-quarter growth. Percentage points. 2012 Q1 – 2018 Q3



Source: Statistics Norway

REGIONAL NETWORK

Norges Bank has regular contact with a network of business leaders. The purpose is to gather information on economic developments in their businesses and industries. The network consists of around 1 500 enterprises, and each enterprise 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.

3.1 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 low interest rates have boosted the economy.

Mainland GDP growth has slowed somewhat through 2018 and has been lower than projected. Much of the slowing in Q3 is attributable to a decline in agricultural production following the dry summer (Chart 3.1). Disregarding the decline, growth was also slightly lower than expected in the September *Report*.

In November, Norges Bank's Regional Network contacts reported that growth had remained robust since the September *Report* (Chart 3.2). Overall, contacts expected the pace of growth to increase slightly in the next six months.

Mainland GDP growth is projected to be somewhat higher for the coming quarters than so far in 2018 (Annex Table 3a). The projections are in line with Regional Network expectations and the projections from Norges Bank's System for Averaging short-term Models (SAM) (Chart 1.5), and are little changed from the September *Report*.

In 2019, mainland GDP growth is projected to decline from 2.4% in 2018 to 2.3%, with growth gradually slowing thereafter. Slowing global growth, higher interest rates and a gradual appreciation of the krone contribute to the decline.

Following Norges Bank's policy rate increase in September, banks' corporate lending rates have been broadly in line with expectations (see box on page 33). Household lending rates have risen, but slightly less than projected. The krone has remained weaker than expected in the September *Report*.

Fiscal policy is assumed to make a modest contribution to economic growth in the coming years (see box on page 36), while oil investment is expected to increase substantially, albeit somewhat less than projected in the September *Report* (see box on page 37).

Compared with the September *Report*, projections for mainland economic growth have been revised down slightly, reflecting the fall in oil prices and weaker-than-expected global growth prospects. A weaker krone and somewhat lower real interest rates than anticipated earlier pull in the opposite direction.

Prospects for continued growth in household consumption

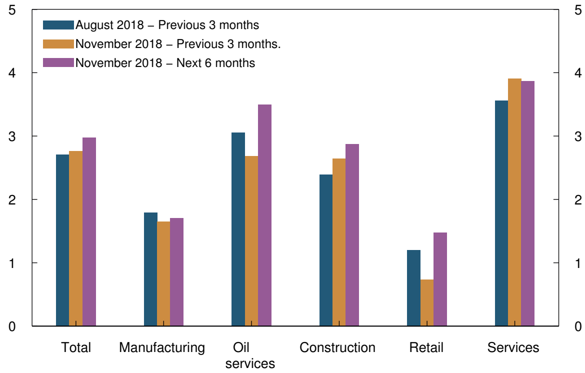
Household consumption growth has remained firm in recent years, despite low real income growth. The krone depreciation in the wake of the oil price decline in 2014 pushed up imported inflation and, together with low wage and employment growth, weighed on growth in household purchasing power (Chart 3.3). Higher growth in consumption than in real disposable income pushed down the saving ratio (Chart 3.4).

Consumption fell in 2018 Q3 and was lower than projected, primarily reflecting a fall in car purchases, while service consumption growth was solid. So far in Q4, new car registrations have increased. The wide variations in car purchases arise from supply bottlenecks affecting electric cars.

Consumption is projected to pick up in the near term, but slightly less than assumed in the September *Report*. Consumer confidence indicators have fallen since the start of 2018, but are close to their historical average. Goods consumption in October was slightly lower than expected. On the other hand, Regional Network contacts reported that growth in household-oriented industries had remained firm since September (Chart 3.5).

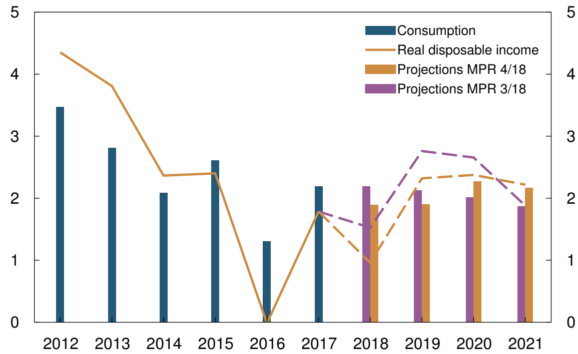
Real income growth is projected to be higher in the years ahead than in the past couple of years. Increased net interest expenses will in isolation dampen disposable income growth, and owing to high household debt burdens, the impact will be stronger than previously. Nevertheless, this impact will be more than offset by

Chart 3.2 Output growth by sector as reported by the Regional Network. Annualised. Percent



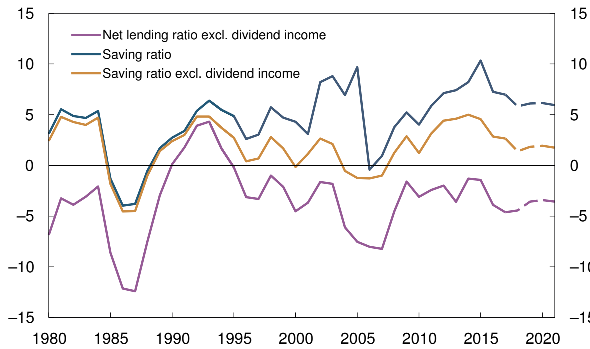
Source: Norges Bank

Chart 3.3 Household consumption[1)] and real disposable income[2)]. Annual change. Percent. 2012 – 2021[3)]



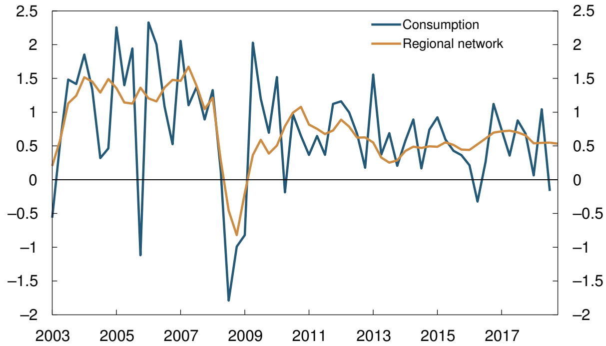
1) Includes consumption for non-profit organisations.
2) Excluding dividend income. Including income for non-profit organisations.
3) Projections for 2018 – 2021 (broken lines).
Sources: Statistics Norway and Norges Bank

Chart 3.4 Household saving and net lending. Share of disposable income. Percent. 1980 – 2021[1)]



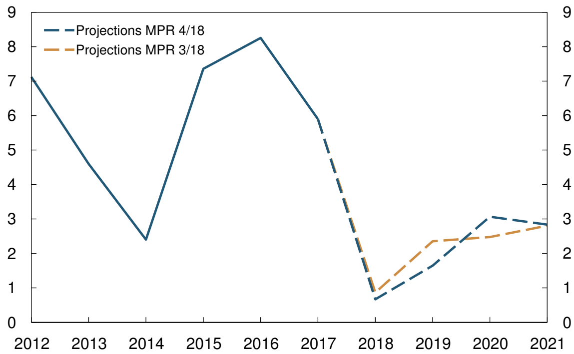
1) Projections for 2018 – 2021 (broken lines).
Sources: Statistics Norway and Norges Bank

Chart 3.5 Household consumption[1)] and Regional Network indicator for output growth[2)]. Quarterly change. Percent. 2003 Q1 – 2018 Q4



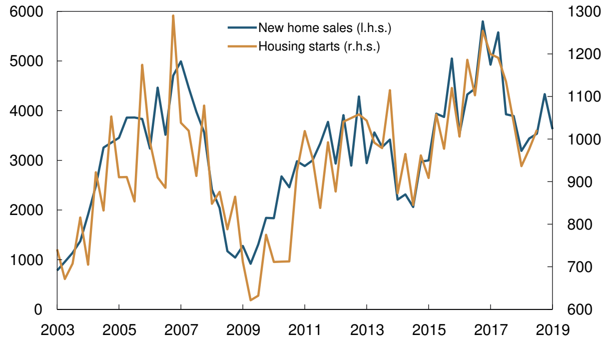
1) Includes consumption for non-profit organisations. Seasonally adjusted.
2) Weighted average of output growth in the previous three months for retail and household services. Quarterly values are calculated by weighting the three-month data, according to the timing of the interviews.
Sources: Statistics Norway and Norges Bank

Chart 3.6 House prices. Annual change. Percent. 2012 – 2021[1)]



1) Projections for 2018 – 2021.
Sources: Eiendomsverdi, Finn.no, Real Estate Norway and Norges Bank

Chart 3.7 New home sales.[1)] Number of dwellings. Housing starts. 1000s of sqm. 2003 Q1 – 2019 Q1



1) Lagged forward two quarters. Up to 2014 Q1, the series is based on new home sales in eastern Norway.
Sources: ECON, Economics Norway, Statistics Norway and Norges Bank

higher employment, rising wage growth and prospects for lower electricity prices.

Compared with the September *Report*, the projection for real income growth is somewhat lower in 2018 and 2019, but little changed further out. The downward adjustment reflects prospects for weaker wage and employment growth, and lower benefits spending than assumed earlier.

On the whole, growth in household consumption is projected to rise slightly over the coming years. Compared with the September *Report*, the projection is slightly lower for 2018 and 2019, but a little higher further out. The downward revision in the near term reflects lower real income growth. Further out, the saving ratio will increase less than projected in September, owing to prospects for a lower real interest rate than assumed earlier.

Household online purchases of goods and services are steadily increasing. See box on page 38 for how online shopping is captured in the statistics.

Low house price inflation

After a marked increase between 2014 and 2017, overall house price inflation has shown little change over the past year (Chart 3.6). In recent months, house prices have fallen slightly and been lower than projected in the September *Report*.

Turnover in the housing market has been high recently. The stock of unsold homes has likely fallen a little, but is still at a high level. At the same time, a large number of dwellings are under construction, many nearing completion. Increased completions will likely curb house price inflation in the near term.

Prospects for increased employment and higher wage growth ahead suggest in isolation rising house price inflation, while higher interest rates dampen the rise. House price inflation is projected to be slightly higher in the coming years. For the projection period as a whole, the projections are little changed since the September *Report*. The housing market is discussed in Section 5.

Housing investment stabilises

Housing investment, as measured in the national accounts, fell markedly between autumn 2017 and summer 2018, following a rise in previous years. From 2018 Q2 to

2018 Q3, housing investment was little changed, in line with the projections in the September *Report*.

Housing investment is now at the same level as at the end of 2015. The decline appears to have come to halt, and investment is projected to remain broadly unchanged in the near term. Regional Network contacts expect that residential construction will slow ahead, but less so than previously. On the other hand, housing starts and new home sales have risen slightly in 2018 (Chart 3.7).

Historically, there has been a relatively strong correlation between housing investment and real house prices (Chart 3.8). Accordingly, housing investment is expected to show weak growth in the years ahead. The projections are revised up a little from the September *Report,* reflecting prospects for a slower rise in mortgage rates than envisaged earlier.

High level of business investment

So far in 2018, business investment growth has been slightly higher than assumed in the September *Report*. Investment, as a percentage of mainland GDP, is now higher than its historical average (Chart 3.9).

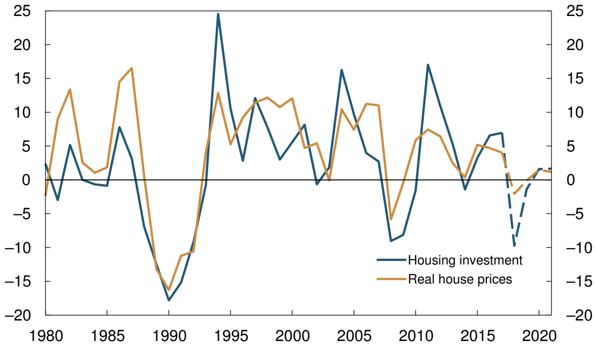
The investment share normally increases in upturns. Compared with previous upturns, the increase in business investment appears to have occurred early in this upturn. Higher investment in cars, software and data bases account for a large share of the increase (Chart 3.10). The rise in investment in cars may reflect the increasing number of private individuals now leasing instead of buying a car.

Business investment is projected to increase further in 2019, in pace with rising capacity utilisation. Higher interest rates may push down on investment growth further out. Substantial investment over the past few years may also reduce the need for investment in the period ahead. The level of investment is projected to remain broadly unchanged in 2020 and 2021. Compared with the September *Report,* the projections are slightly higher for the period as a whole, reflecting prospects for a lower real interest rate than assumed earlier.

Further pick-up in exports

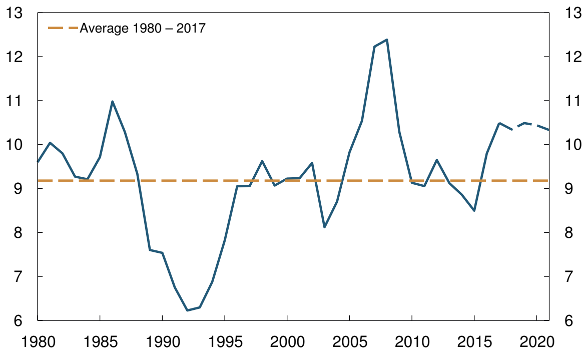
Growth in mainland exports has been slow in recent years despite a substantial improvement in cost competitiveness (Chart 3.11). The weakness in exports largely reflects the marked fall in Norwegian oil service

Chart 3.8 Housing investment and real house prices[1].
Annual change. Percent. 1980 – 2021[2]



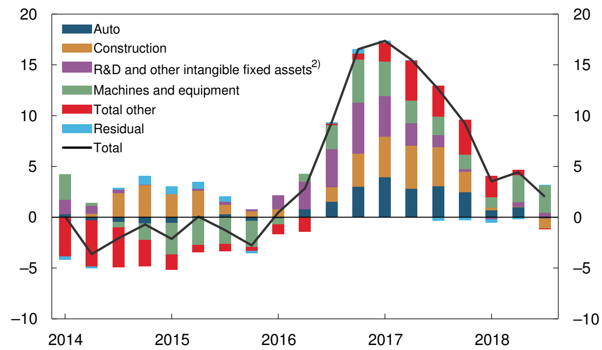
1) Prices for existing homes deflated by the CPI.
2) Projections for 2018 – 2021 (broken lines).
Sources: Statistics Norway and Norges Bank

Chart 3.9 Business investment.
Seasonally adjusted. Share of mainland GDP. Percent. 1980 – 2021[1]



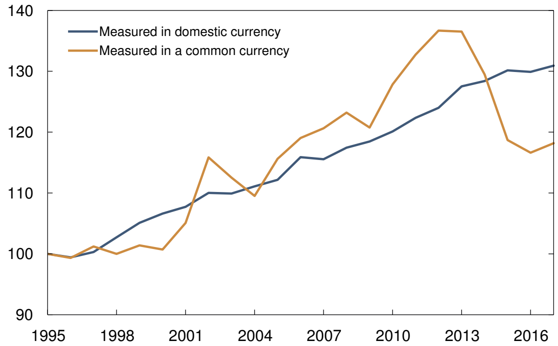
1) Projections for 2018 – 2021 (broken line).
Sources: Statistics Norway and Norges Bank

Chart 3.10 Mainland business investment by category.[1] Contribution to growth in the past four quarters compared with the four preceding quarters. Percentage points. 2014 Q1 – 2018 Q3



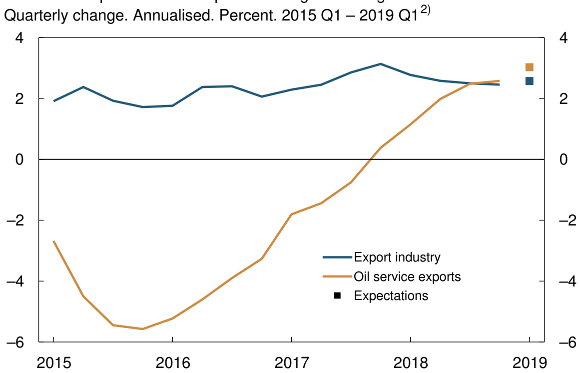
1) The distribution by investment type is based on Norges Bank's calculations.
2) Software and databases are included in intangible fixed assets.
Sources: Statistics Norway and Norges Bank

Chart 3.11 Labour costs in Norway relative to trading partners.[1] Index. 1995 = 100. 1995 – 2017



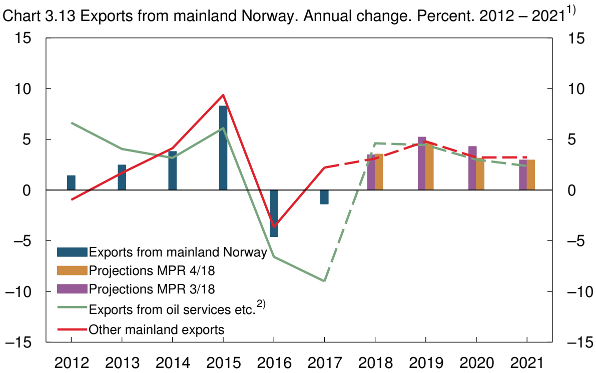
1) Hourly labour costs in manufacturing.
Sources: Norwegian Technical Calculation Committee for Wage Settlements (TBU), Statistics Norway and Norges Bank

Chart 3.12 Export-oriented output according to the Regional Network.[1] Quarterly change. Annualised. Percent. 2015 Q1 – 2019 Q1[2]



1) Reported growth for the past three months. Quarterly figures are calculated by weighting together three-month figures based on survey timing.
2) In 2019 Q1, expected growth in the next six months is as measured in November.
Source: Norges Bank

Chart 3.13 Exports from mainland Norway. Annual change. Percent. 2012 – 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 and Norges Bank

exports owing to the decline in global petroleum investment[1]. In addition, seafood and industrial commodity exports have been limited by capacity constraints.

Oil service exports have picked up since winter 2017 and more than projected in the September *Report*. Non-oil mainland exports have increased moderately, although slightly less than anticipated. Regional Network reports suggest that oil service export growth may pick up in the near term (Char 3.12), while other export industries expect stable growth ahead.

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 pick up, particularly in the commodity-based manufacturing segments that have invested in added production capacity. Growth in overall mainland exports is projected to rise from 2017 to 2018 and accelerate somewhat in 2019, slowing thereafter owing to a gradual appreciation of the krone and ebbing growth among Norway's trading partners.

Compared with the September *Report*, projected export growth is revised downwards (Chart 3.13). A weaker krone exchange rate makes, in isolation, a positive contribution to export growth in the years ahead. On the other hand, the decline in oil prices implies a lower increase in oil service exports than previously assumed. At the same time, capacity constraints in the seafood sector appear to be more prolonged than previously envisaged.

The upturn in the Norwegian economy also points to rising imports in the years ahead. Investment tends to have a high import content. An expected faster rise in petroleum investment than in other demand components indicates that imports will increase faster than mainland GDP growth in the years ahead. So far in 2018, import growth has been weaker than expected and is projected to pick up in 2019, and then remain broadly unchanged (Chart 3.14).

The projections are uncertain

The Norwegian economy may grow faster than projected. The investment share is already above its historical average, but historical experience suggests that investment can increase substantially in upturns. On

1 See post on the Bankplassen blog, Naug, B. and E. Nordbø "Hvor mye drahjelp har vi fått av kronesvekkelsen?" Part 1 and Part 2 [How much impetus has the krone depreciation provided] for a more detailed review (in Norwegian only).

the other hand, rising global protectionism and considerable uncertainty surrounding political processes in Europe may dampen global growth more than envisaged. This may lead to weaker demand for Norwegian exports and lower 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 historical experience would suggest.

3.2 LABOUR MARKET AND THE OUTPUT GAP

Continued improvement in the labour market

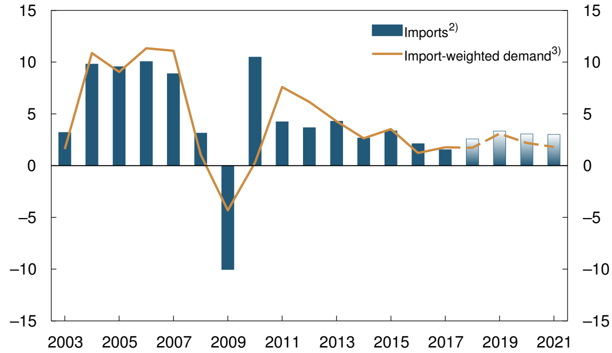
Employment growth is solid (Chart 3.15). According to the quarterly national accounts (QNA), since the start of the upturn in 2016, the number of employed has increased by around 80 000 persons. Between 2018 Q2 and Q3, employment moved up by 0.4%, as projected in the September *Report*.

There are a number of signs that employment growth will continue in the near term. Job vacancy trends indicate rising demand for labour (Chart 3.16). In November, Regional Network contacts reported solid employment growth in the preceding three months and they expected continued growth over the next three months (Chart 3.17). Norges Bank's expectations survey also indicates that employment will continue to increase over the next 12 months.

The rise in employment has largely been followed by a decline in unemployment. From the peak in 2016 to January 2018, registered unemployment decreased from 3.1% to 2.4% (Chart 3.8). So far in 2018, unemployment has shown little change. Unemployment was 2.4% in November. According to the Norwegian Labour and Welfare Administration (NAV), changes in NAV's routines have contributed to a rise in unemployment of about 0.1 percentage point in November. Registered unemployment, adjusted for these changes, has declined in line with the September projections. The effect of the rule changes is expected to be permanent, and unemployment is projected to show little change over the coming months (Annex Table 3b).

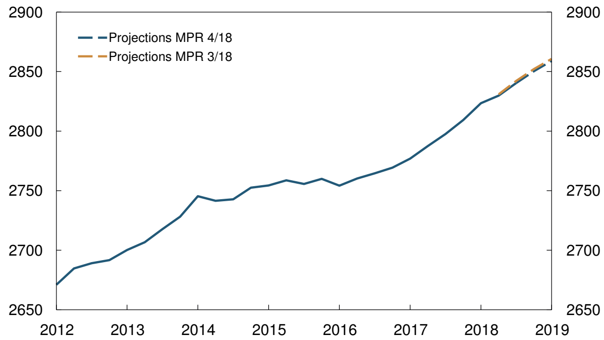
A number of factors may explain the halt in the decline in registered unemployment. In addition to changes in routines in November, NAV also changed rules and routines in July that are assumed to have contributed to higher registered unemployment. There is also

Chart 3.14 Imports. Annual growth. Percent. 2003 – 2021 [1]



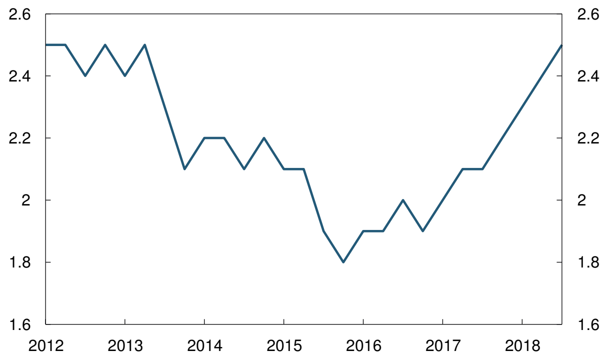
1) Projections for 2018 – 2021 (broken lines and shaded bars).
2) Imports except aircraft, ships, oil, gas, oil platforms, pipelines and shipping services.
3) Weighted sum of private consumption, public demand, business investment, housing investment, petroleum investment and exports from mainland Norway. The weights are provided by the import intensity in Statistics Norway's input/output tables.
Sources: Statistics Norway and Norges Bank

Chart 3.15 Employment. Seasonally adjusted. In thousands. 2012 Q1 – 2019 Q1 [1]



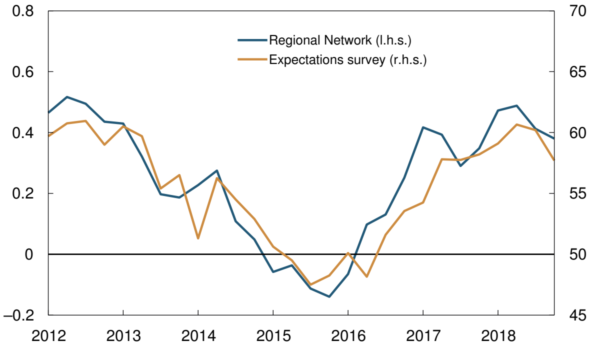
1) Projections for 2018 Q4 – 2019 Q1.
Sources: Statistics Norway and Norges Bank

Chart 3.16 Job vacancies. Share of the total number of jobs. Seasonally adjusted. Percent. 2012 Q1 – 2018 Q3



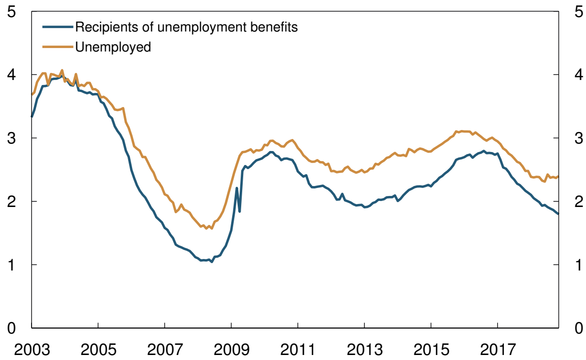
Source: Statistics Norway

Chart 3.17 Expected employment. Regional Network.[1] Quarterly change. Percent. Norges Bank's expectations survey. Diffusion index.[2] 2012 Q1 – 2018 Q4



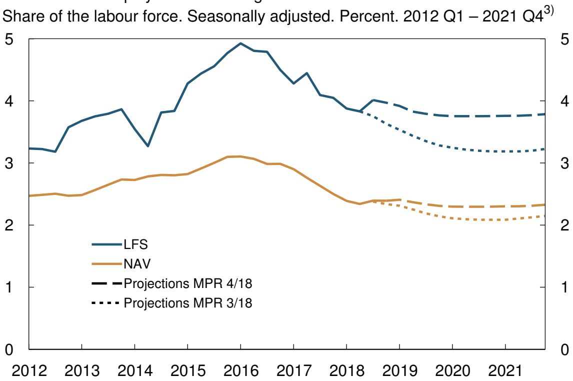
1) Expected change in employment next three months.
2) Share of business leaders expecting "more employees" in their own firm in the following 12 months + 1/2 * share expecting "unchanged number of employees".
Sources: Epinion and Norges Bank

Chart 3.18 Registered unemployment and unemployment benefit recipients[1]. Share of labour force. Seasonally adjusted. Percent. January 2003 – November 2018



1) Approximately half of those unemployed receive unemployment benefits. Some partly unemployed persons and labour market programme participants are also eligible for unemployment benefits.
Sources: Norwegian Labour and Welfare Administration (NAV) and Norges Bank

Chart 3.19 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 Q4 – 2021 Q4.
Sources: Norwegian Labour and Welfare Administration (NAV), Statistics Norway and Norges Bank

reason to believe that when job prospects improve more people register as unemployed.

Unemployment benefit recipients as a share of the labour force is another labour market indicator (Chart 3.18) and this measure is probably little affected by the recent changes. While registered unemployment has shown little change in 2018, the share of unemployment benefit recipients has continued to decline and is now lower than prior to the oil price fall in 2014. The number of redundancies reported to NAV has also declined in recent months.

The Labour Force Survey (LFS) has for a period indicated weaker labour market developments than suggested by registered employment and unemployment. In recent months, LFS employment has risen markedly to a level more consistent with registered employment. Despite the rise in employment, LFS unemployment has remained high, owing to recent substantial labour force growth, which has been somewhat stronger than projected in the September *Report*. The labour force normally expands when job prospects improve, but labour force growth is normally lower than employment growth, resulting in lower unemployment. In September, LFS unemployment was 4.0%, which is higher than projected in the September *Report*.

Continued employment growth ahead

With solid growth in the mainland economy in the near term, employment growth is expected to remain steady. Employment growth is projected to decline gradually further ahead as GDP growth slows. The employment projections are slightly lower than in the September *Report*.

The level of the labour force has long been lower than what Norges Bank considers to be normal. Growth in the labour force is expected to be solid ahead as a result of rising labour demand. Nevertheless, employment growth is expected to outpace labour force growth, with a slight further decline in unemployment as a result in the years ahead (Chart3.19). The projections for registered unemployment are slightly higher than in the September *Report*, partly owing to an upward adjustment resulting from the changes in NAV's routines, and partly owing to slightly weaker growth in the Norwegian economy ahead than projected in September.

In recent years, the gap between LFS and NAV unemployment has been clearly higher than earlier. In recent reports, LFS unemployment was assumed to fall faster than registered unemployment, narrowing the gap between the two unemployment measures. However, the gap has shown little change, which may be because the LFS now captures a larger number of job-seekers than earlier. This may mean that the difference between the two will remain wider than assumed earlier also in the period ahead. In this *Report*, it is therefore assumed that the level difference between the two will hold steady. As a result, the LFS unemployment projections have been revised up more than the NAV projections. The revised assumption has no bearing on our assessment of employment or capacity utilisation.

The output gap is closing

In recent years, goods and services output has been lower than potential. In the Bank's assessment, the gap between actual and potential output has continued to narrow since 2016 (Chart 1.1b).

The labour force participation rate, ie the labour force as a share of the working-age population, has risen markedly through 2018 (Chart 3.20). At the same time, as the age composition of the population is changing, the number of persons in age groups where participation rates are normally low has increased, resulting in a downward trend in the participation rate. The rate that is consistent with normal capacity utilisation is therefore likely lower than previously.

The Regional Network survey indicates that capacity utilisation increased between August and November (Chart 3.21). There seems to be a growing shortage of employees with higher education and employees with vocational skills (see box on page 40). The survey and labour market developments suggest that capacity utilisation has risen and is close to a normal level.

Mainland GDP growth has been slightly lower than expected. Wage growth has risen, but appears to be to be slightly lower than projected.

On balance, it is the Bank's assessment that capacity utilisation has increased in recent months, albeit slightly less than projected in September. This is in line with estimates based on a broad set of models and indicators (Chart 3.22). Capacity utilisation is close to a normal level, and employment is close to the highest

OUTPUT GAP

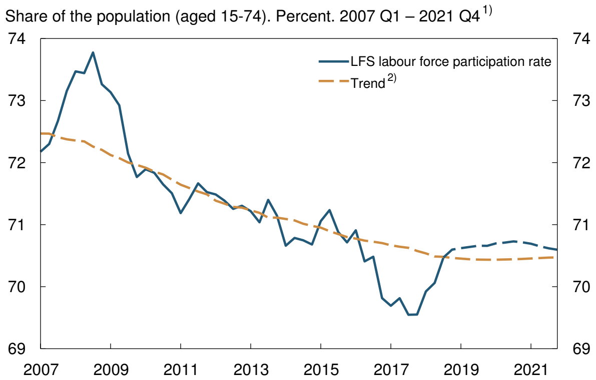
The output gap, also referred to as capacity utilisation, captures resource utilisation in the economy. The output gap is defined as the difference between actual output (GDP) and potential output. Potential output is the highest possible level of output that is consistent with stable price and wage inflation. Over time, potential output growth is determined by trend labour force growth and productivity.

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. An output gap close to zero implies that employment is close to the highest level that is consistent with price stability over time.

If we attempt to keep employment levels above that level, wage and price inflation could become too high. The output gap is therefore also an important indicator of future inflation and is thus related to Norges Bank's objective of low and stable inflation,

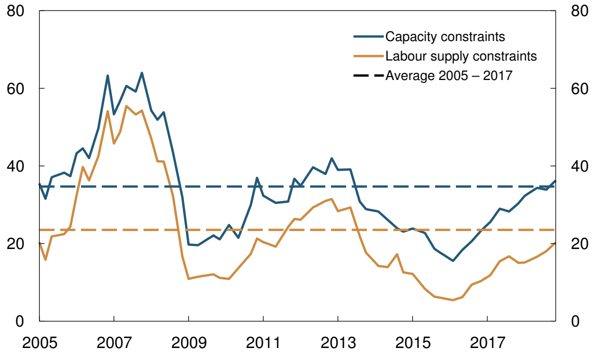
Potential output and the output gap cannot be observed and must be estimated. Norges Bank's current output gap estimates are the result of an overall assessment of a number of indicators and models. In this assessment, particular weight is given to labour market developments.

Chart 3.20 Labour force.
Share of the population (aged 15-74). Percent. 2007 Q1 – 2021 Q4[1)]



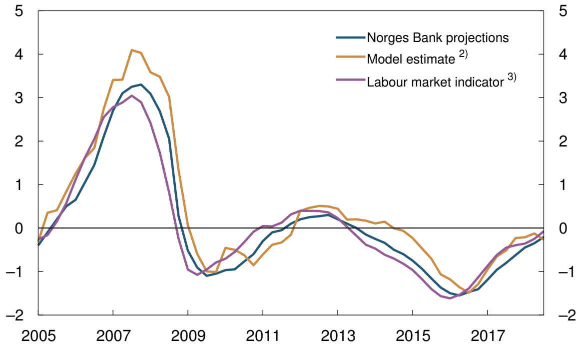
1) Projections for 2018 Q4 – 2021 Q4.
2) Change in the rate if the rate for each five-year age cohort had been unchanged at 2013-levels. 2013 was selected because the output gap in that year is considered to have been close to zero. The curve slopes downward because the population is ageing.
Sources: Statistics Norway and Norges Bank

Chart 3.21 Capacity[1)] and labour supply[2)] constraints as reported by the Regional Network. Percent. January 2005 – November 2018



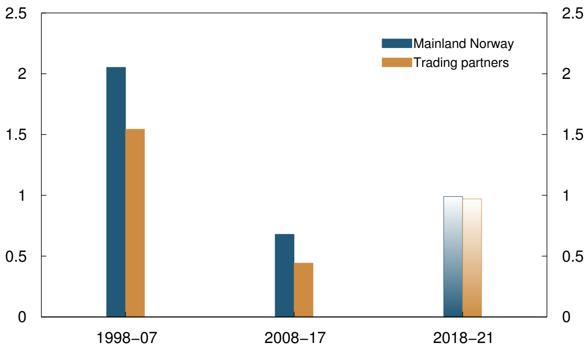
1) Share of contacts that will have some or considerable problems accommodating an increase in demand.
2) Share of contacts reporting that output is being constrained by labour supply.
Source: Norges Bank

Chart 3.22 Estimated output gap[1)]. Percent. 2005 Q1 – 2018 Q3



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 3.23 Productivity growth in Norway and for trading partners[1)]. Average annual growth. Percent



1) Aggregate for productivity growth for the euro area, UK, Sweden and the US.
Sources: OECD, Statistics Norway and Norges Bank

level that, in the Bank's assessment, is consistent with price stability over time.

Low population growth

Potential output is projected to grow by about 1.5% annually in the years ahead. The projection is based on trend productivity growth of 1% and average trend growth in the labour force of 0.5% for the years 2019–2021.

The projection for growth in trend productivity is slightly higher than average productivity growth over the past decade. While productivity growth in Norway in recent decades has been higher than among Norway's main trading partners, growth is now expected to be more in line with trading partners (Chart 3.23).

Trend growth in the labour supply has fallen in recent years, primarily reflecting slower population growth on the back of lower labour immigration. An ageing population has also pulled down trend labour force growth. Population growth is assumed to remain low ahead, in line with Statistics Norway's population projections. The projections imply labour immigration will pick up slightly, although considerably less than at the beginning of this decade when much of Europe was in recession. Feedback from the Regional Network survey (see box on page 40) supports the assumption that labour immigration will show a small increase.

In the Bank's projections, the output gap will increase to the beginning of 2020.The gap is expected to narrow slightly thereafter. The projections for capacity utilisation are somewhat lower than in the September *Report* throughout the projection period.

There is uncertainty surrounding labour force potential. The labour force participation rate has decreased over time among young people and men in the core group of the labour force. It is uncertain whether this trend will continue. Labour immigration may also differ from the Bank's projections. At the same time, there is uncertainty surrounding productivity growth. New technology and increasing digitalisation could boost productivity growth ahead, but it may take time before this feeds through to the figures. On the other hand, increased trade barriers and protectionism could push down productivity growth further ahead.

3.3 COSTS AND PRICES

Higher inflation over the past year

Inflation has risen over the past year (Chart 3.24). Both underlying inflation and electricity prices have contributed to the rise. The rise in underlying inflation partly reflects the upturn in wage growth.

Since the September *Report*, both 12-month CPI inflation and CPI-ATE inflation, ie inflation adjusted for tax changes and excluding energy products, have risen further. Lower electricity price inflation has in isolation contributed to curbing CPI inflation. In November, 12-month CPI-ATE inflation was 2.2%, while the 12-month rise in other indicators of underlying inflation ranged between 1.8% and 2.5%. Overall, other underlying inflation indicators have remained relatively stable lately (see box on page 32). Long-term inflation expectations seem to be a little higher, but close to 2% (see box on page 32).

Higher-than-expected inflation

Twelve-month CPI-ATE inflation was higher than expected in November both for domestically produced goods and services and imported consumer goods (Chart 3.25). The higher-than-projected rate of domestic inflation primarily reflects a faster-than-expected rise in food prices and airfares.

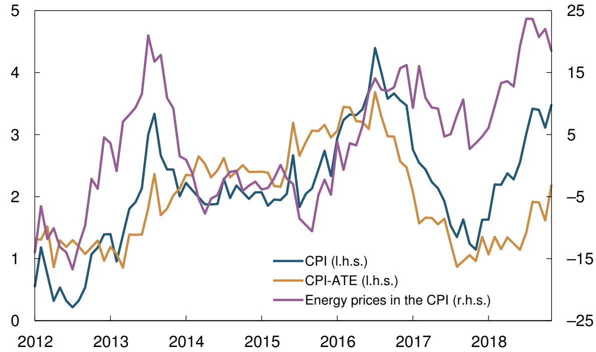
The 12-month rise in the CPI-ATE is expected to remain higher in the near term than previously projecte, owing to prospects of continued higher imported price inflation ahead. The upward adjustment reflects the fact that the krone has remained weaker than anticipated in the September *Report*. Domestic price inflation is also expected to remain slightly higher than projected earlier, even though the rise in airfares is assumed to be temporary. The CPI-ATE projections are closely in line with the SAM-based projections for 2018 Q4 and 2019 Q1 (Chart 3.26), and imply annual CPI-ATE inflation of 1.5% in 2018.

Futures prices for electricity and fuel point to a fall in energy price inflation ahead. Thus, the 12-month rise in the CPI is projected to slow in the near term. Annual CPI inflation is projected at 2.7% in 2018.

Wage growth has been lower than expected

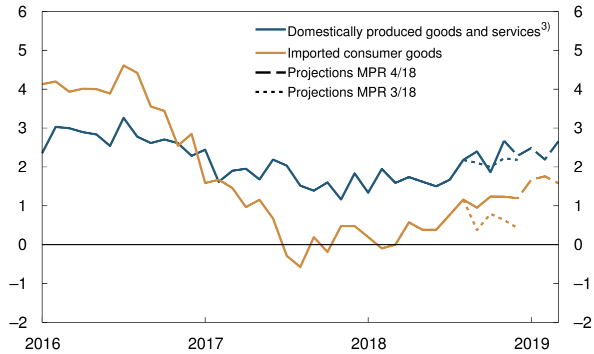
Wage growth rose in 2017 after having fallen in the preceding years. Wage growth is projected to increase further in 2018, to 2.7%. The projection has been revised down a little from the September *Report*, and is slightly lower than the wage norm for this year's wage settle-

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



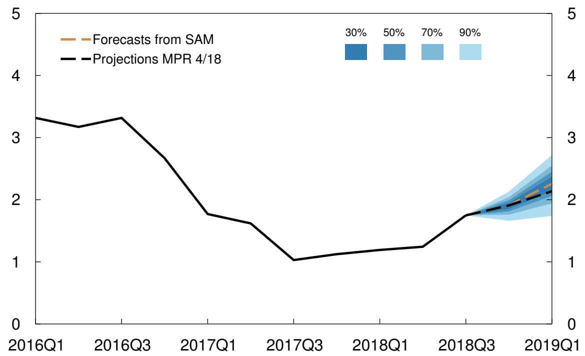
1) CPI adjusted for tax changes and excluding energy products.
2) Estimated by the groups Transport fuels and lubricants, and Electricity and other fuels.
Sources: Statistics Norway and Norges Bank

Chart 3.25 CPI-ATE[1] by supplier sector. Twelve-month change. Percent. January 2016 – March 2019 [2]



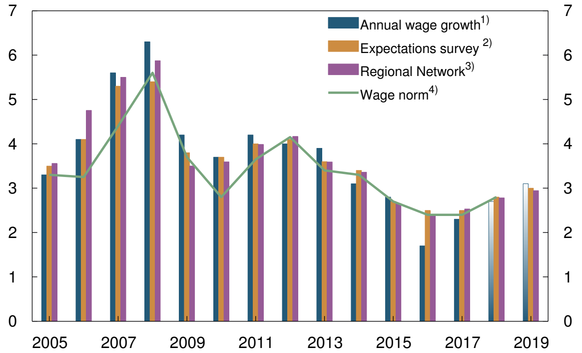
1) CPI adjusted for tax changes and excluding energy products.
2) Projections for December 2018 – March 2019.
3) Norges Bank's estimates.
Sources: Statistics Norway and Norges Bank

Chart 3.26 CPI-ATE[1] with fan chart from SAM [2]. Four-quarter change. Percent. 2016 Q1 – 2019 Q1 [3]



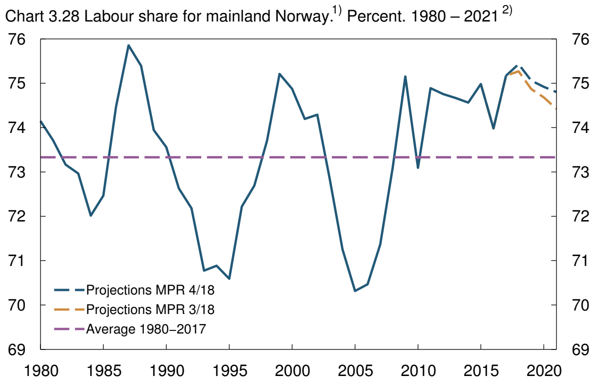
1) CPI adjusted for tax changes and excluding energy products.
2) System for Averaging short-term Models.
3) Projections for 2018 Q4 – 2019 Q1.
Sources: Statistics Norway and Norges Bank

Chart 3.27 Wage growth, wage norm and wage expectations. Annual change. Percent. 2005 – 2019



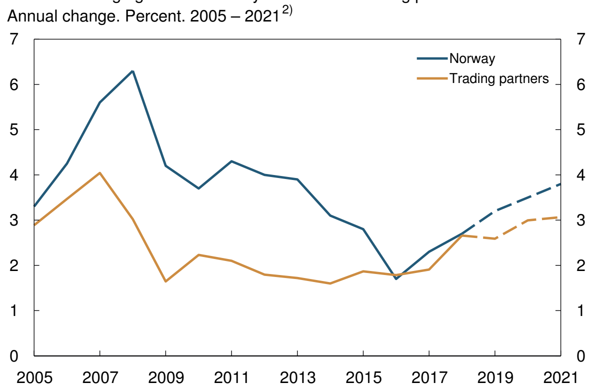
1) Actual annual wage growth from Statistics Norway. Norges Bank's projections for 2018 and 2019.
2) Social partners' wage growth expectations for the current year as measured by Norges Bank's expectations survey in Q4 each year and expected annual wage growth for 2019 measured in 2018 Q4.
3) Expected wage growth for the current year as reported by the Regional Network in Q4 each year, and expected wage growth for 2019 in November 2018.
4) Before 2013: for manufacturing as projected by the National Mediator or NHO. From 2014: for the overall industry, based on an analysis by NHO and LO.
Sources: Epinion, Kantar TNS, LO, NHO, 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 costs per employee in the euro area, Sweden, UK and US.
2) Projections for 2018 – 2021 (broken lines).
Sources: Statistics Norway, Thomson Reuters and Norges Bank

ment (Chart 3.27). Both basic monthly salary and wage per full-time equivalent person show somewhat lower wage growth so far this year than previously expected.

For the years ahead, a tighter labour market and the improvement in Norway's terms of trade in the past few years are expected to push up wage growth further.[2] The projection for wage growth in 2019 is somewhat higher than indicated by feedback from the Regional Network and Norges Bank's expectations survey. In previous years, survey respondents have tended to underestimate wage growth when capacity utilisation is above its normal level.

The wage growth projections are moderate compared with earlier upturns, and are consistent with corporate profitability gains in the years ahead (Chart 3.28). Wage growth is projected to be moderate ahead partly because productivity growth is also expected to remain low.

Compared with the September *Report*, the wage growth projections have been revised down slightly throughout the projection period. The downward revision reflects prospects for lower oil prices and slightly lower capacity utilisation in the years ahead than previously assumed. The fall in oil prices imply a weaker terms-of-trade trajectory.

Wage growth in Norway is projected to be somewhat higher than among Norway's main trading partners in the years ahead (Chart 3.29). In recent decades, productivity growth has been higher in Norway than among trading partners, which combined with terms-of-trade gains, has likely provided room for higher wage growth. In the years ahead, productivity growth in Norway is expected to be about the same as among trading partners (Chart 3.23). The improvement in Norway's terms of trade over the past few years suggests that wage growth in Norway will still be somewhat higher than among trading partners.

Prospects for inflation close to 2%

Further out in the projection period, higher capacity utilisation and rising wage growth are expected to push up price inflation, especially for domestically produced goods and services (Chart 3.30). Stronger external inflationary impulses in 2017 and 2018 (Chart 2.8) push up

2 For an estimated wage model, see Brubakk, L., K. Hagelund and E. Husabø (2018) "The Phillips curve and beyond – Why has wage growth been so low?". *Staff Memo 10*/2018. Norges Bank.

prices for imported consumer goods. Imported goods price inflation is expected to rise between 2018 and 2019, followed by a decline as the krone gradually appreciates. Overall, annual CPI-ATE inflation is projected to be close to 2% in the coming years (Chart 3.31).

Compared with the September *Report*, the CPI-ATE projections have been revised up in the coming years, while they are broadly unchanged at the end of 2021 (Chart 1.1d). This is because the krone is now projected to be somewhat weaker over the next few years than assumed in the September *Report*. Moreover, external inflationary impulses for 2018 and 2019 appear to be somewhat higher than previously expected. In isolation, prospects for lower wage growth than previously projected will dampen price inflation.

Energy prices in the CPI are assumed to decline in line with futures prices for electricity and petrol. Compared with the September *Report,* the projections for energy prices are a little higher over the next year, and a little lower at the end of the projection period, (Chart 3.32).

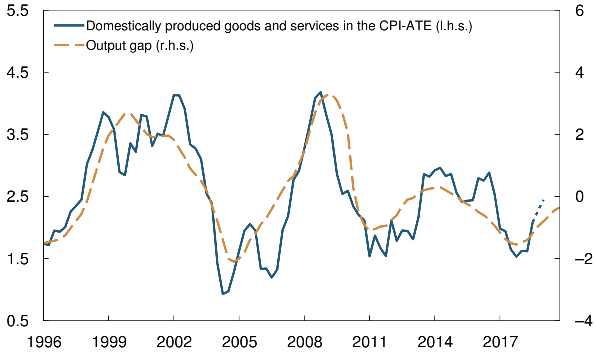
Overall, the projections for CPI-ATE inflation and energy prices imply a decline in four-quarter CPI inflation over the next year, followed by a renewed rise. At the end of 2021, four-quarter CPI inflation is slightly below 2%. The projections for 2019 and 2020 are somewhat higher than in the September *Report*, but are otherwise little changed.

In the projections for CPI inflation and annual wage growth, average real wages between 2017 and 2018 remain unchanged, followed by a rise further out in the projection period (Chart 1.13). Compared with the September *Report*, the projections for real wage growth are slightly lower throughout the projection period, reflecting the fall in oil prices and a somewhat smaller rise in capacity utilsation than previously projected.

The projections are uncertain

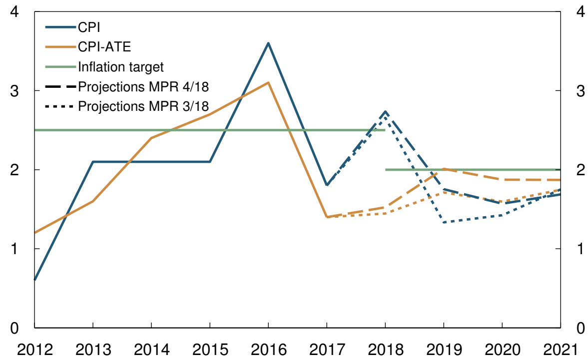
There is uncertainty surrounding the projections for price and wage inflation. The projections are based on the assumption that the terms-of-trade gains seen over the past years and a tighter labour market are lifting wage growth, although it is uncertain to what extent. Profitability in some oil-related industries is still low. On the other hand, increased activity and labour market tightening, or a persistently weak krone exchange rate, may push up wage and price inflation more than currently projected.

Chart 3.30 Domestically produced goods and services in the CPI-ATE [1]. Four-quarter change. Percent. Lagged output gap [2]. Percent. 1996 Q1 – 2019 Q4



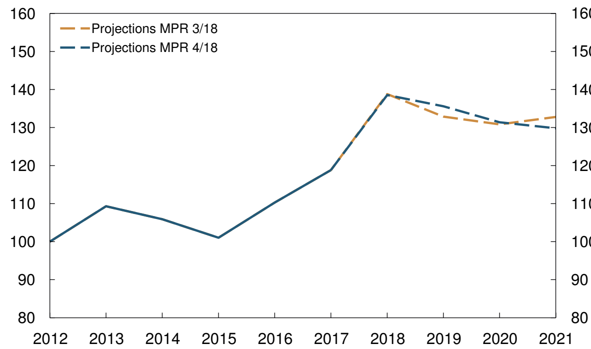
1) CPI adjusted for tax changes and excluding energy products. Norges Bank's estimates. 1996 Q1 – 2018 Q4. Projections for 2018 Q4.
2) The output gap is measured as the percentage difference between mainland GDP and estimated potential mainland GDP. The gap is lagged by six quarters and shows data for 1994 Q3 – 2018 Q3.
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 – 2021[2]



1) Weighted average of prices for transport fuels and lubricants, and of electricity and other fuels in CPI. The projections are based on futures prices for electricity, petrol and fuel.
2) Projections for 2018 – 2021 (broken lines).
Sources: Nord Pool, Norwegian Water Resources and Energy Directorate, Thomson Reuters and Norges Bank

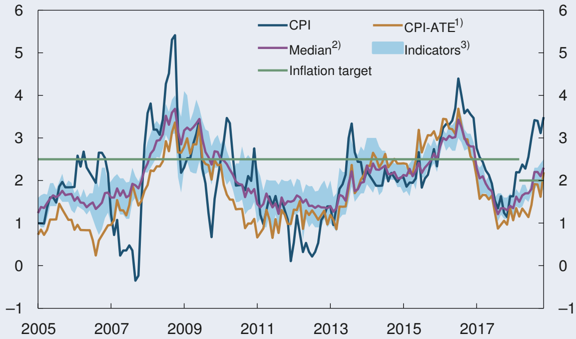
INDICATORS OF UNDERLYING INFLATION

Inflation targeting should be forward-looking and flexible. Norges Bank sets the policy 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 few 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 now show broadly the same rise in prices as the CPI-ATE (Chart 3.33). In November, the median of the 12-month rise in these indicators was 2.3%, up from 1.3% in November 2017. Underlying inflation has shown little change over the past four months.

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 – November 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.
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

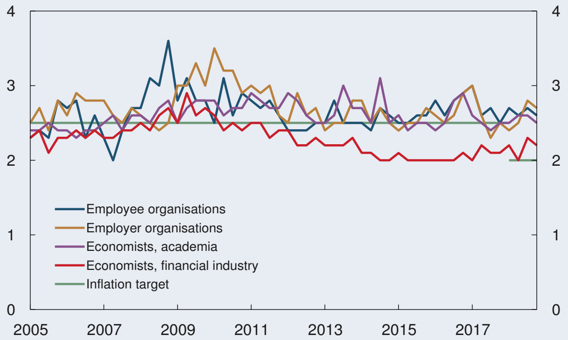
INFLATION EXPECTATIONS

Expectations of future inflation have a bearing on many economic decisions, such as price setting and wage formation. Well-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 well-anchored when medium- and long-term inflation expectations show little reaction to new information and remain stable and close to target. In recent years, longer-term inflation expectations, as measured in Norges Bank's expectations survey, have overall remained close to 2.5% (Chart 3.34).[1] The inflation target for monetary policy was lowered from 2.5% to 2.0% in March 2018.

The expectations survey for 2018 Q4[2] showed a slight decline in long-term inflation expectations. In the monetary policy reports published after the revision of the inflation target, it is assumed that it will take some time for inflation expectations to adjust to the new target. This assumption has not been changed in the light of the Q4 survey responses.

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 2–14 November 2018.

Chart 3.34 Expected 12-month change in consumer prices five years ahead. Percent. 2005 Q1 – 2018 Q4



Sources: Epinion, Kantar TNS and Opinion

FINANCIAL CONDITIONS

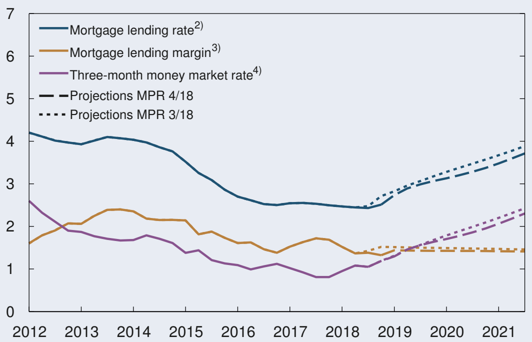
Slightly higher money market rate

Developments in the three-month *money market rate, Nibor,* are important for the interest rates faced by households and enterprises, as interest rates on a large share of banks' funding are based on Nibor. At the same time, corporate lending rates are often directly linked to Nibor. Three-month Nibor is determined partly by the average policy rate expected by the market over the next three months and partly by a risk premium, which is generally referred to as the money market premium.

The increase in the policy rate in September was in line with market expectations, resulting in small changes in Nibor. Nevertheless, since the September *Report*, three-month Nibor has risen by about 0.20 percentage point (Chart 3.35). The increase reflects higher money market premiums and a shorter distance to the next expected policy rate increase. The premium, as calculated by Norges Bank, is now around 0.45 percentage point (Chart 3.36). The money market premium is expected to hover around 0.40 percentage point ahead. The projections for the premium are unchanged from September and imply that the money market rate will rise in tandem with the policy rate ahead.

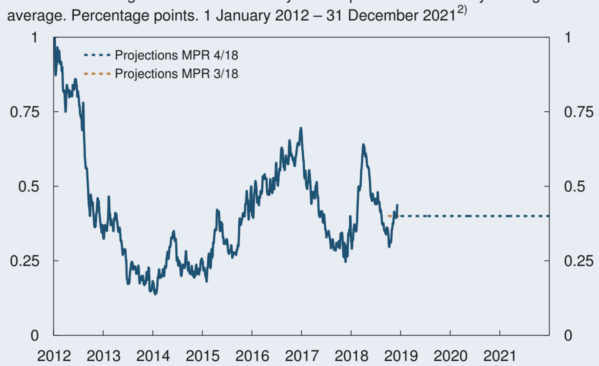
Banks' corporate lending rates are often quoted as Nibor plus a lending margin. On average, Nibor was approximately unchanged in 2018 Q3, and the average corporate lending rate also showed little change in Q3. The banks in Norges Bank's lending survey expected that corporate lending rates would be somewhat higher in Q4. Large corporations can also raise capital in the bond market. Somewhat higher *risk premiums on corporate bonds* have pushed up corporate bond yields since the September *Report*.

Chart 3.35 Interest rates. Percent. 2012 Q1 – 2021 Q3[1)]



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

Chart 3.36 Norwegian three-month money market premium.[1)] Five-day moving average. Percentage points. 1 January 2012 – 31 December 2021[2)]



1) Norges Bank estimates of the difference between the three-month money market rate and the expected policy rate.
2) Projections for 2019 Q1 – 2021 Q4.
Sources: Thomson Reuters and Norges Bank

Gradual rise in residential mortgage rates

Residential mortgage rates averaged just above 2.4% at the end of 2018 Q3, approximately unchanged from the previous quarter. Banks announced interest rate increases following the increase in the policy rate in September, which will push up residential mortgage rates in 2018 Q4. Banks appear to have raised their interest rates slightly less than assumed in the September *Report*. Lending margins on residential mortgages are now close to the average for the past 20 years and slightly lower than anticipated in September. Household and corporate lending rates are expected to increase in line with the money market rate ahead. In the projection, the average residential mortgage rate rises to 3.7% in 2021. The projections for lending rates are somewhat lower than in September.

Forward rates have edged down since the September *Report*, but still point towards a gradual interest rate increase (Chart 3.37). Market rates are lower than the Bank's money market rate projections. The difference is widest in the long term, while market rates in the coming year are closer to the Bank's projections.

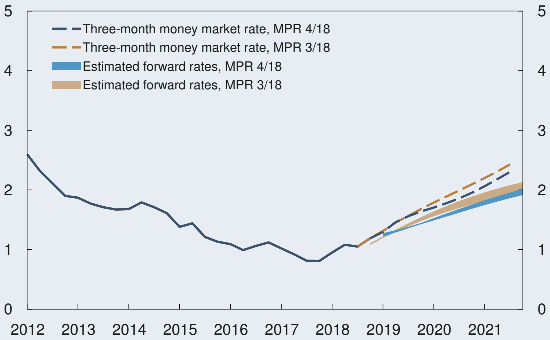
Fixed rates in the market for 5- and 10-year interest rate swaps (swap rates) are lower than at the time of the September *Report* (Chart 3.38). Swap rates influence the fixed rates quoted by banks.

Weaker krone than projected in September

The krone, as measured by the import-weighted exchange rate index (I-44)[1], has depreciated since the September *Report*. This may in part be attributable to lower oil prices. The krone is weaker than indicated

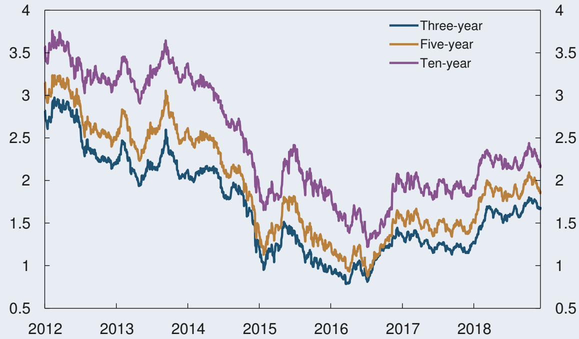
1 The I-44 index comprises the currencies of 44 of Norway's trading partners and is calculated as a geometric weighted average. The weights of each currency reflect the country's respective share of imports to Norway.

Chart 3.37 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 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 3 September – 14 September in 2018 for MPR 3/18 and in the period 26 November – 7 December in 2018 for MPR 4/18, respectively.
3) Projections for 2018 Q4 – 2021 Q3.
Sources: Thomson Reuters and Norges Bank

Chart 3.38 Three-, five- and ten-year swap rates. Percent. 1 January 2012 – 7 December 2018



Source: Bloomberg

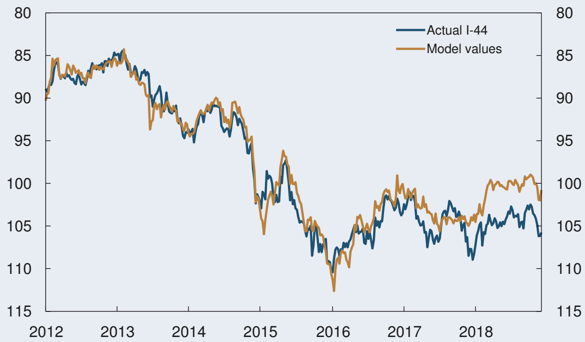
by the historical relationship between the krone and the interest rate differential and the oil price (Chart 3.39). This may be ascribed to global uncertainty. Experience shows that global uncertainty can push up risk premiums on small currencies. The krone is weaker than projected in the September *Report*.

The krone is projected to appreciate somewhat in the years ahead (Chart 3.40), reflecting prospects for a gradual widening of the interest rate differential against trading partners. The risk premium is assumed to decrease going forward, while global uncertainty is expected to persist for a period and contribute to keeping the krone weaker than would otherwise have been the case. Compared with the September *Report*, the krone is now projected to be weaker throughout the projection period.

A weaker krone than previously assumed will strengthen the cost competitiveness of Norwegian businesses and points towards higher exports and lower imports. At the same time, a weaker krone pushes up inflation through higher prices for imported goods and services.

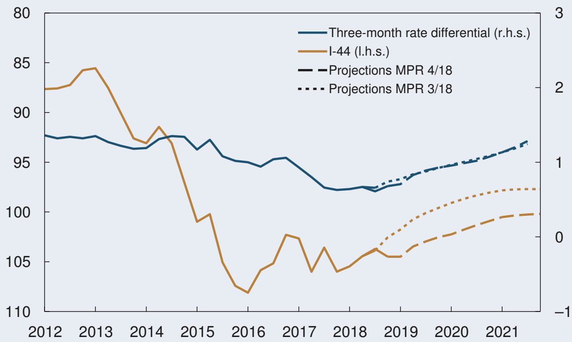
There is uncertainty surrounding developments in the krone exchange rate. Reduced uncertainty abroad could contribute to a faster appreciation of the krone than currently projected. On the other hand, it is also possible that the weaker level of the krone will persist, and that the krone will remain weaker than projected in this *Report* in the period ahead.

Chart 3.39 Empirical model for import-weighted krone exchange rate (I-44).[1) 2)]
Week 1 2012 – week 49 2018



1) Oil price and one-year and 10-year interest swap 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 first week of December 2018.
2) A rising value in the chart denotes a stronger krone.
Sources: Bloomberg, Thomson Reuters and Norges Bank

Chart 3.40 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 policy rate in the current and subsequent quarter plus an estimate of the money market premium.
2) Forward rates for trading partners at 14 September for MPR 3/18 and 7 December 2018 for MPR 4/18. 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 Q4 – 2021 Q4.
Sources: Thomson Reuters and Norges Bank

ASSUMPTIONS CONCERNING FISCAL POLICY

The fiscal policy assumptions in this *Report* are based on the approved central government budget for 2019 and updated budget figures for 2018. In the updated figures, presented in the final budget bill for 2018, petroleum revenue spending, as measured by the structural non-oil deficit, is estimated at NOK 214bn in 2018. The deficit has been revised down by NOK 17bn since the budget was presented in autumn 2017, partly because government dividend income from mainland enterprises have been higher than anticipated. At the same time, social security expenditure has increased less than assumed. This more than offsets growth in public consumption and investment, which appears to be higher than assumed.

The structural deficit is now is now estimated at 7.2% of trend mainland GDP, down 0.3 percentage point from 2017, and lower than assumed in the September *Report* (Chart 3.41). By comparison, the deficit increased by an average of 0.5 percentage point annually between 2012 and 2017.

In the National Budget 2019, petroleum revenue spending was estimated to account for 7.5% of trend GDP next year. In light of the downward adjustment of the 2018 deficit, we apply the assumption that the deficit will be 0.1 percentage point lower than that in 2019. Transfer payments may remain lower than previously assumed, but it is more uncertain whether higher dividend income will persist in 2019.

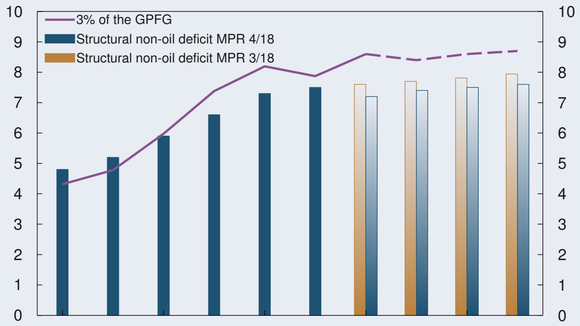
The technical assumption is applied that petroleum revenue spending rises by 0.1 percentage point as a share of GDP in both 2020 and 2021 (Chart 3.40). This implies that the fiscal impulse in those years will be the same as in the September *Report,* despite prospects of a somewhat lower level of petroleum revenue spending.

Structural petroleum revenue spending is estimated to be equivalent to 2.5% of the value of the Government Pension Fund Global (GPFG) in 2018. Petroleum revenue spending is set to increase as a share of the value of the GPFG in the coming years, but will likely remain below the 3% path throughout the projection period.

Since 2013, public sector demand has increased by 2%-3% annually (Chart 3.42). In line with the Ministry of Finance's projections, Norges Bank has previously projected a pronounced decline in demand growth in 2018, but national accounts figures for 2018 Q3 indicate that growth remains solid. The growth projection has therefore been revised up for 2018. The growth projection for 2019 is still based on the National Budget 2019. This implies that growth in public demand will be reduced by about half between 2018 and 2019.

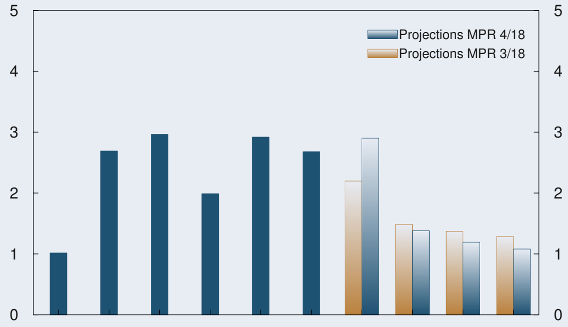
The petroleum revenue spending assumptions imply that growth in public sector demand will edge down further in the coming years. The projections are somewhat lower than in the September *Report* as the projections for government revenue from mainland Norway have also been lowered. Revenue from the sale of emission quotas is expected to fall from a particularly high level in 2019.

Chart 3.41 Structural non-oil deficit and 3% of the GPFG[1).]Share of trend GDP for mainland Norway. Percent. 2012 – 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 3.42 Public sector demand. Annual change. Percent. 2012 – 2021[1)]



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

PROJECTIONS FOR PETROLEUM INVESTMENT

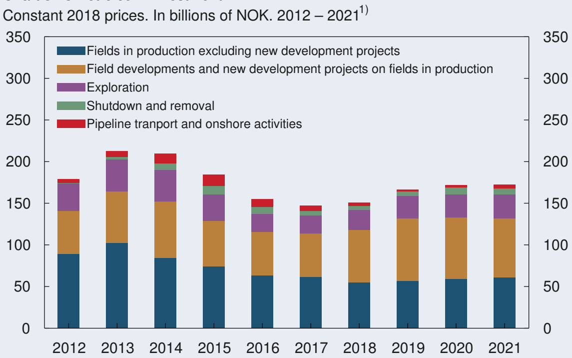
Investment in oil and gas is set to expand ahead, after having fallen over several years (Chart 3.43). The increase reflects the substantial cost-cutting measures oil companies have implemented in recent years and the pronounced rise in oil and gas prices since the beginning of 2016. Owing to the cost cuts, break-even prices for new development projects are now USD 10–35 per barrel, which is far lower than the long-term oil prices expected by oil companies. Oil companies have therefore started a number of development projects in new and existing fields since spring 2017. If oil and gas price developments are as projected, oil companies are expected to start a further 20 to 25 development projects during the projection period.

New development projects and those under way are expected to result in markedly higher activity on the Norwegian shelf in the years ahead. Investment is projected to increase by about 2% in 2018, by more than 10% in 2019 and by over 3% between 2019 and 2021. Development projects account for ¾ of the projected growth in petroleum investment.

The projections are based on the assumption that oil and gas prices move in line with futures prices and that oil companies expect broadly the same price movement. Futures prices indicate that oil prices will remain at around or just above USD 60 ahead. Prices for the next three years have fallen considerably since September (Chart 1.3), but the futures prices furthest out are broadly unchanged. This suggests that the expected profitability of new investment projects is little changed since September, but oil company cash flows will be lower in the coming years than assumed in the September *Report*. Experience shows that a sharp decline in cash flows will result in lower exploration activity and lower well and operating investment in *fields in production*. The projections for *exploration* and *fields in production* have therefore been revised down for the period 2019 to 2021, with the highest revision for 2021 and the smallest for 2019, since oil price movements will affect activity with a lag. Investment in new development projects may also fall owing to lower cash flows, but then primarily when cash flows are very low and the expected profitability of new development projects is in the medium area. Most oil companies' cash flows will probably be solid at an oil price of USD 60, and the price is still clearly higher than the break-even price of new development projects. The decline in oil prices since September is therefore expected to have little impact on investment in development projects. Some new information has come to light that in isolation may suggest that investment in development projects will be a little higher towards the end of the projection period that expected earlier. Overall petroleum investment is projected to be 2% lower in 2020 and 2021 than projected in the September *Report*.

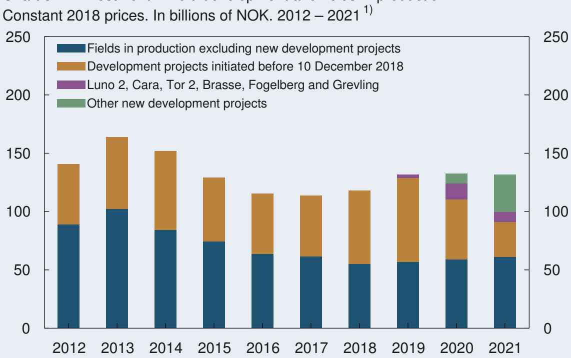
Total investment in the development projects under way will increase appreciably between 2017 and 2019, and fall markedly thereafter up to 2021 (Chart 3.44). This decline will be partly offset by the new development projects to be started in the period ahead. As most of these projects are small compared with the projects commenced in recent years, the projections imply that investment in field development will decline in 2020 and 2021. Exploration and drilling activity in fields in production will increase gradually in the period to 2021, driven by the decline in drilling costs since 2013 and the prospects for oil and gas prices.

Chart 3.43 Petroleum investment.
Constant 2018 prices. In billions of NOK. 2012 – 2021[1)]



1) Projections for 2018 – 2021. Figures for 2012 – 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 fall by 1 % in 2018 and to rise by 2.5 % between 2018 and 2019.
Sources: Statistics Norway and Norges Bank

Chart 3.44 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

INCREASE IN ONLINE SHOPPING

Developments in household spending have a substantial impact on economic activity in Norway. In 2017, purchases of goods and services totalled close to NOK 1 400bn according to the national accounts, almost exactly half of mainland GDP. As these purchases are increasingly made online and a substantial portion involves direct purchases from abroad, estimating total consumption is challenging. Purchases from Norwegian enterprises are generally captured in existing statistics, while Statistics Norway (SSB) uses a variety of sources to estimate households' direct imports.

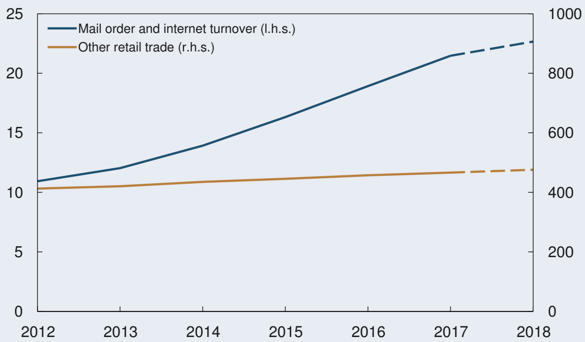
Online goods purchases from Norwegian-registered firms are included in SSB's retail sales index, which is an important source for estimating goods consumption in the national accounts. Turnover for firms that primarily sell their products online totalled NOK 21bn in 2017, about double the figure for 2012 (Chart 3.45). Turnover for other retailers increased by 15% in the same period.

The total volume of online sales is, however, considerably higher than indicated by these statistics. First, many of the other retailers also have an online shop. Second, online sales of services are increasing. These include not only services actually delivered online, such as TV streaming services, but also services where only the sale is net-based, such as overnight stays or bus and train tickets. Third, household purchases that are direct imports – ie purchases of goods and services from foreign firms – have recently risen sharply, and many of these sales are conducted online.

Household online services purchases from Norwegian firms are for example captured – as for corresponding goods purchases – in sectoral turnover data. The data distinguish between online purchases and other purchases to a limited extent. Other consumption of goods and services excluding purchases made abroad – households' direct imports – is based on other data sources.[1] Goods imports with a value of more than NOK 350 are based on figures from the Norwegian Customs Service. As VAT is levied on these goods, a comprehensive set of data should also be available here. Household imports of goods with a value below the VAT exemption limit, and all services imports, are estimated based on statistics for cross-border payments

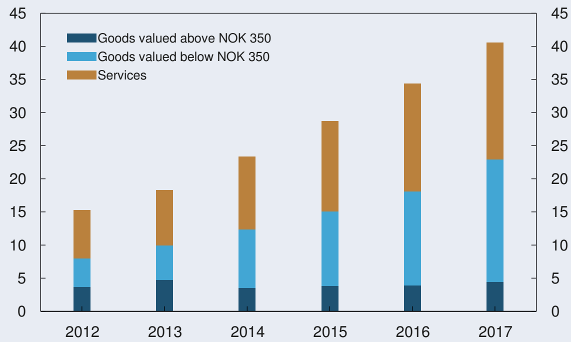
1 SSB Norway's estimates of households' direct imports from abroad are described in Halvorsen, T. (2018): Husholdningens netthandel [Online shopping], Notater 2018/39, Statistics Norway (in Norwegian only).

Chart 3.45 Retail sector turnover. In billions of NOK. 2012 – 2018 [1)]



1) Projections for 2018 (broken lines) are based on data available to 2018 Q3. 2018 Q4 is extrapolated using growth rates from 2017.
Source: Statistics Norway

Chart 3.46 Households' direct imports of goods and services. In billions of NOK. 2012 – 2017



Source: Statistics Norway

using payment cards. Payment card data were first used in connection with the main revision of the national accounts in 2014 and is updated quarterly. A disadvantage of these statistics is that information on the precise nature of the payment is not available.

Households' direct imports of goods were estimated at NOK 23bn in 2017. These imports have almost tripled since 2012, almost exclusively owing to the rise in goods with a value below the VAT exemption limit (Chart 3.46).[2] According to SSB's estimates, the value of direct services imports has more than doubled since 2012, totalling NOK 18bn in 2017. Direct imports of goods and services thus totalled NOK 41bn in 2017, equivalent to 3% of total household spending, about double the level in 2012.

The calculations of households' direct imports are uncertain, but compared with the uncertainty associated with other demand components in the national accounts, the error sources in the calculations of household consumption are relatively small. Consumption has also been subject to relatively limited revisions over time.

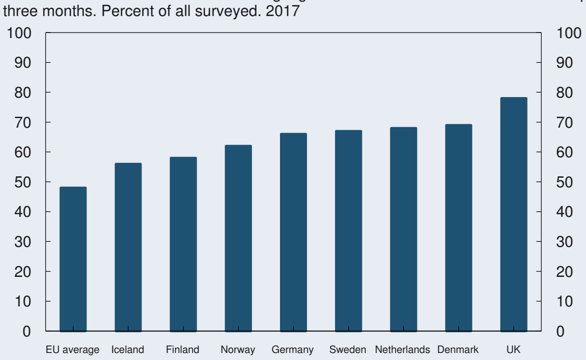
Online shopping even more popular in other countries

Even though online shopping has increased markedly in Norway in recent years, international comparisons indicate that it is even more popular in other countries. In 2017, 62% of Norwegian participants in an international survey responded that they had bought goods and services online over the past three months. The corresponding share for the UK was 78%. The share was also higher in Germany, Sweden, the Netherlands and Denmark than in Norway (Chart 3.47).

More detailed responses in the same survey indicate that a relatively large number of Norwegian households buy holidays, films and music and tickets to concerts, sporting events and the like online (Chart 3.48). The share buying groceries, furniture and other household goods, however, is close to the average for the EU.

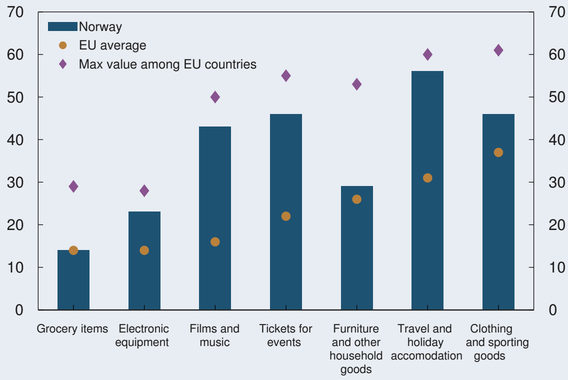
2 The VAT exemption limit was raised from NOK 200 to NOK 350 on 1 January 2015. The budget compromise for 2019 is based on the removal of the VAT exemption limit on 1 January 2020.

Chart 3.47 Internet users who have bought goods or services over the internet in the past three months. Percent of all surveyed. 2017



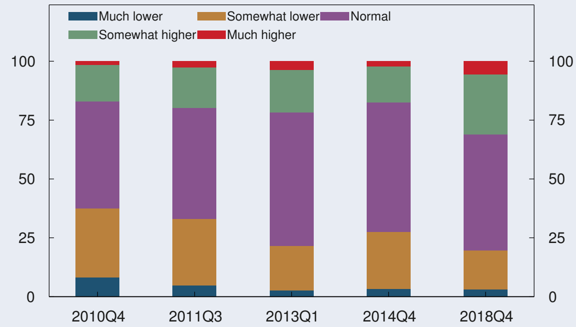
Source: Eurostat

Chart 3.48 Internet users who have bought goods and services over the internet. By goods and service categories. Percent of all surveyed. 2017



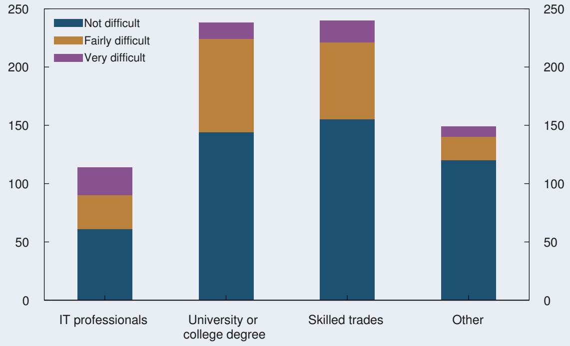
Source: Eurostat

Chart 3.49 How is capasity utilisation in your business compared with what you would consider normal? Responses given at different points in time. Percent of all contacts



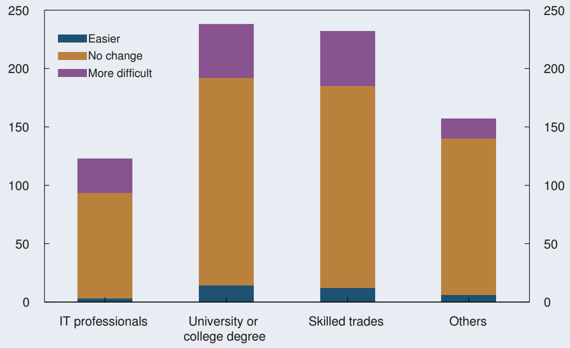
Source: Norges Bank

Chart 3.50 To what degree do you experience difficulties in recruiting or retaining different types of labour? Number of contacts[1)]



1) About 300 businesses were surveyed. The chart shows responses from contacts that perceived the question as relevant.
Source: Norges Bank

Chart 3.51 How has recruitment of different types of labour changed over the past 12 months? Number of contacts[1)]



1) Approcimately 300 businesses were asked. The graph shows answers from the contacts who perceived the question as relevant for them.
Source: Norges Bank

CAPACITY UTILISATION AND LABOUR SHORTAGES

Regional Network enterprises report rising capacity utilisation, and many are experiencing recruitment difficulties. There appears to be an increasing shortage of employees with higher education and employees with vocational skills.

Norges Bank's Regional Network contacts have reported increasing capacity utilisation and labour shortages over the past two years (Chart 3.21). In the November round of interviews, several of the questions dealt with contacts' perception of capacity utilisation and labour supply. Around 300 enterprises participated in the interview round.

Higher capacity utilisation than normal

Approximately one third of the Regional Network contacts report that capacity utilisation in their own businesses is higher than normal (Chart 3.49). When the same question was asked in previous interview rounds, this share was lower. This also applies to 2013, when, in the Bank's assessment, the output gap in the Norwegian economy was closed.

The share of contacts that assess capacity utilisation to be above a normal level is highest for oil service companies, where just over half report higher-than-normal capacity utilisation. Capacity utilisation is assessed as lowest in the local government and hospital sector and retail trade.

IT skills shortage

Responses to one of the standard questions in the Regional Network survey show that around 20% of contacts cite shortage of labour as a production constraint (Chart 3.21). Responses to supplementary questions included in this round show that many contacts are facing recruitment difficulties, but that this is not necessarily a production constraint. Overall, just over half of the Regional Network contacts report difficulties in recruiting at least one particular type of employee. IT skills shortages were most acute, particularly in technology firms. Among the enterprises responding that they would employ this type of labour, almost half report that recruitment is difficult (Chart 3.50). Among the enterprises reporting that they would recruit employees with other higher education qualifications, close to 40% report shortages. The share reporting difficulties in recruiting and retaining employees with vocational skills is somewhat lower. Only a small number of enterprises report difficulties in recruiting unskilled/other workers. Recruitment of all types of labour appears to have become more difficult over the past 12 months (Chart 3.51).

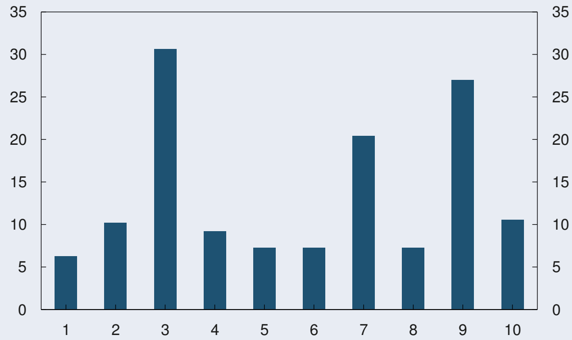
Responses to recruitment difficulties

Enterprises that experience labour shortages appear to tackle the situation in a variety of ways (Chart 3.52). About 30% of contacts choose to offer higher wages to some employee groups. Almost as many report that they hire contractors to provide services or outsource some of their operations. Some also increase the use of overtime. About 6% report that they respond to labour shortages by offering higher wages to all their employees.

Recruitment from abroad more difficult

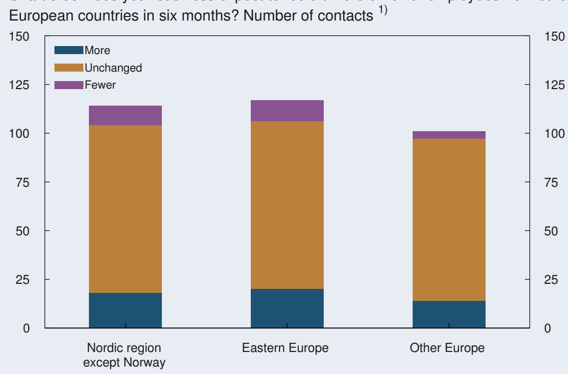
Norges Bank's projections are based on the assumption that immigration from EU/EEA countries will edge up in the years ahead. The feedback in the November survey supports this assumption. Around 10% of contacts plan to recruit from other European countries in the next half year, with about as many being recruited from Eastern Europe as from the Nordic region (Chart 3.53). One in five reports that recruiting from abroad has become more difficult over the past two years, particularly from Eastern European countries (Chart 3.54).

Chart 3.52 What does your business do when faced with a shortage of labour? More than one response was possible.[1] Percent of all contacts



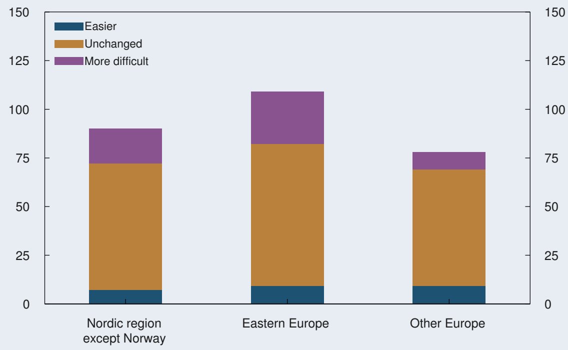
1) Response alternatives: (1) Offer higher wages to all, (2) Offer better non-wage terms to all, (3) Offer higher wages to some groups, (4) Offer better non-wage terms to some groups, (5) Produce less than demand would dictate, (6) Postpone projects/new ventures, (7) Increase use of overtime, (8) Lower skill requirements, (9) Outsource/hire external contractors, (10) Other.
Source: Norges Bank

Chart 3.53 Does your business expect to recruit more or fewer employees from other European countries in six months? Number of contacts [1]



1) Approximately 300 businesses were surveyed. The chart shows responses from contacts that perceived the question as relevant.
Source: Norges Bank

Chart 3.54 How has recruitment of labour from other European countries changed over the past two years? Number of contacts[1]



1) Approximately 300 businesses were surveyed. The chart shows responses from contacts that perceived the question as relevant.
Source: Norges Bank

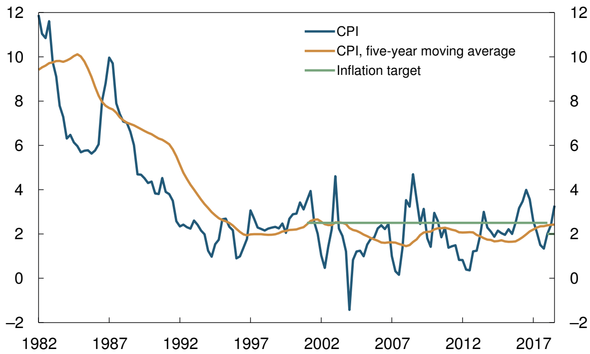
4 Monetary policy analysis

Norges Bank's policy rate was kept unchanged at the monetary policy meeting, after having been raised from 0.5% to 0.75% in September. The forecast for the policy rate indicates a rate rise to 1% in March 2019, followed by a gradual increase to 2% at the end of 2021.

The rate path is little changed in 2019, and thereafter shows a slightly slower rise than in the September *Report*. The downward adjustment reflects lower oil prices and slightly weaker growth prospects abroad. The weaker krone dampens the impact on the Norwegian economy. Along with higher inflation than projected earlier, this entails little change in the rate path.

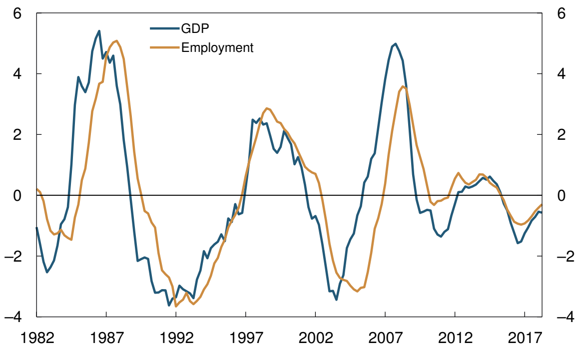
The projections are uncertain. If the outlook or the Bank's assessment of economic relationships changes, the policy rate forecast will be adjusted.

Chart 4.1 Consumer price index (CPI).
Four-quarter change. Percent. 1982 Q1 – 2018 Q3



Sources: Statistics Norway and Norges Bank

Chart 4.2 GDP for mainland Norway and employment.
Deviation from trend.[1] Percent. 1982 Q1 – 2018 Q2



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 Q3. The deviation from trend is three-quarter moving average.
Sources: Statistics Norway and Norges Bank

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).

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 47.

Continued expansionary monetary policy

The interest rate level in recent years has been historically 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 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

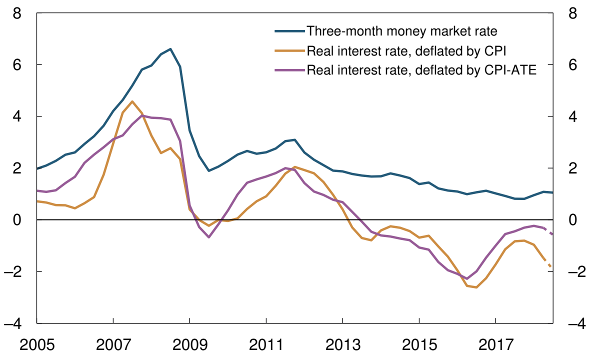
Slightly lower capacity utilisation further out

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 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 exogenous variables, updated projections for the entire projection period are used. For this *Report*, a re-estimated version of NEMO has been used (see Box on page 48). The re-estimation has had little impact on the projections.

Compared with the projections in the September *Report*, the model-based analysis suggests that CPI-ATE inflation will be somewhat higher in the coming years (Chart 4.4a). This is because inflation has been higher than projected and the krone has been weaker than anticipated. In the coming period, the krone is also expected to remain weaker than previously assumed. A more gradual rise in wage growth due to the fall in oil prices will eventually pull in the opposite direction. Towards the end of the projection period, the inflation projections are broadly unchanged since the September *Report*.

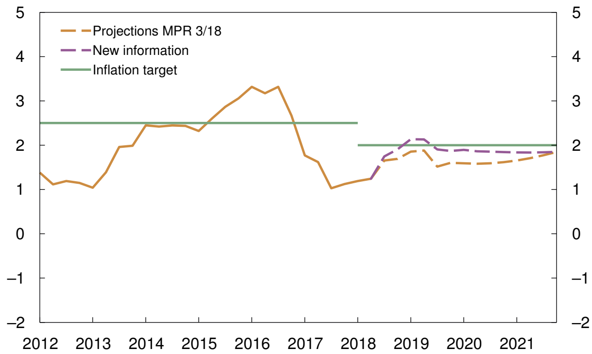
Capacity utilisation will be lower through the projection period (Chart 4.4b), primarily reflecting slower growth in oil-related exports and petroleum investment on the back of lower oil prices. A lower real interest rate than in the September *Report* contributes in isolation to pulling up domestic demand.

Chart 4.3 Three-month money market rate and real interest rates 1). Percent. 2005 Q1 – 2018 Q3 2)



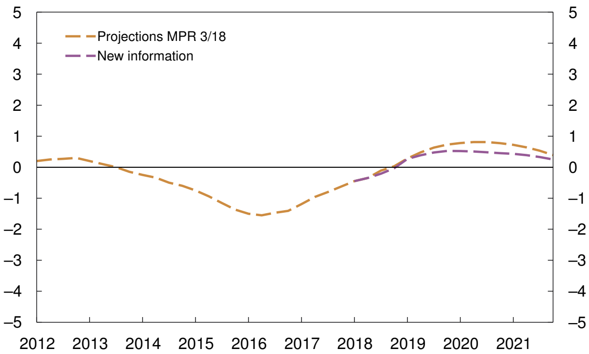
1) Three-month money market rate deflated by a three-quarter centered moving average of inflation, measured by four-quarter CPI inflation and CPI inflation adjusted for tax changes and excluding energy prices (CPI-ATE).
2) Projections for 2018 Q3 (broken lines).
Sources: Statistics Norway and Norges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

Chart 4.4a CPI-ATE.1) Projection conditional on new information and policy rate forecast in MPR 3/18. Four-quarter change. Percent. 2012 Q1 – 2021 Q4 2)



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

Chart 4.4b Estimated output gap1). Projection conditional on new information and policy rate forecast in MPR 3/18. Percent. 2012 Q1 – 2021 Q4



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

1 See Special Feature "Estimates of the neutral real interest rate" in *Monetary Policy Report* 2/18 for a detailed discussion.
2 NEMO is described in Gerdrup, K.R., E.M. Kravik, 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.

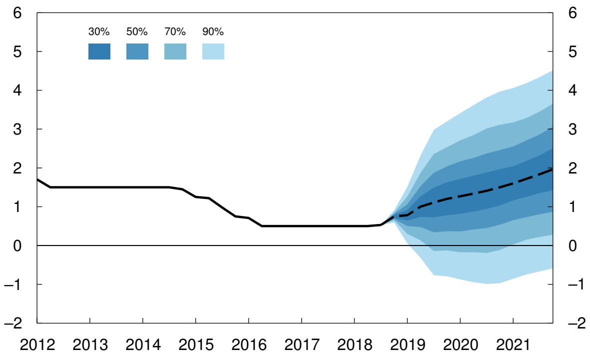
At the end of the projection period, inflation is close to but slightly below target, while capacity utilisation is a little above a normal level. Overall, the projections are little changed since September, but prospects for somewhat lower capacity utilisation through the projection period will help to restrain domestic price pressures further out. This may suggest a slightly slower interest rate rise than in the September *Report*.

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 the decline in unemployment suggests a further rise. Underlying inflation has also picked up and recently the 12-month rise in the CPI-ATE has been close to target.

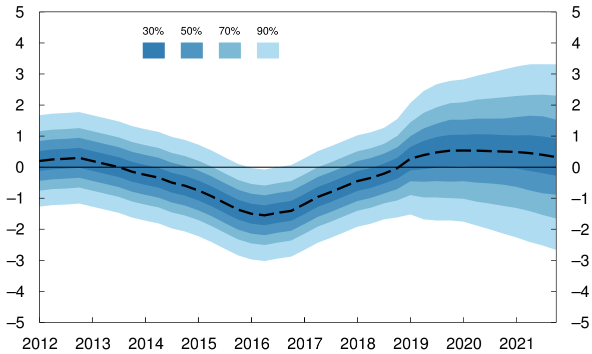
The risk outlook is dominated by rising protectionism and political uncertainty. Persistent trade conflicts and turbulence surrounding political processes in Europe may dampen growth among trading partners more than projected, but may also mean that the krone will remain weaker than expected. The terms-of-trade gains in recent years and tighter labour market conditions are expected to pull up wage growth, but the extent is uncertain. Profitability in some oil-related industries remains low. Owing to

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



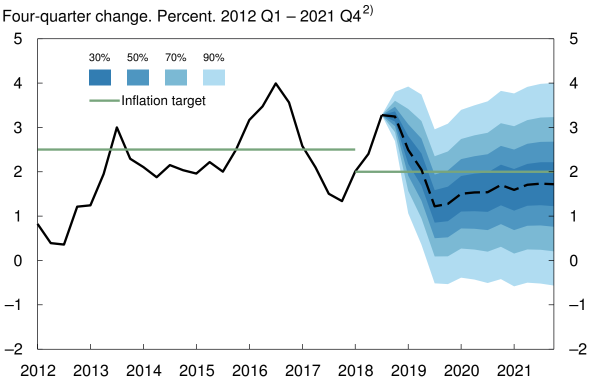
1) The fan chart is based on historical experience and stochastic simulations in Norges Bank's main macroeconomic model, NEMO. It does not take into account that a lower bound for the interest rate exists.
2) Projections for 2018 Q4 – 2021 Q4 (broken line).
Source: Norges Bank

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



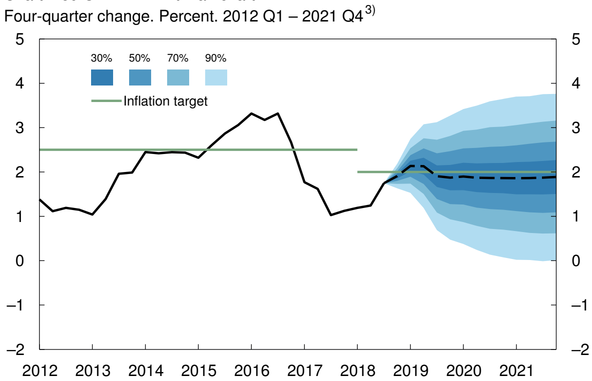
1) The output gap measures the percentage deviation between mainland GDP and estimated potential mainland GDP.
2) The fan chart is based on historical experience and stochastic simulations in Norges Bank's main macroeconomic model, NEMO.
Source: Norges Bank

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 Q4 – 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 Q4 – 2021 Q4 (broken line).
Sources: Statistics Norway and Norges Bank

high household debt burdens, an interest rate increase is now likely to dampen household demand to a greater extent than historical experience would indicate. The long period of low interest rates and mounting debt burdens have, however, increased uncertainty about the effects of higher interest rates.

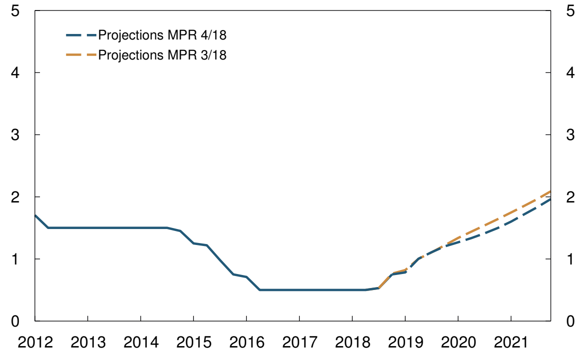
The outlook for the Norwegian economy suggests that the policy rate should be raised in the years ahead. If the policy rate is kept at the current level for a long time, pressures in the economy may build, triggering acceleration in price and wage inflation. Persistently high debt growth has increased household vulnerability. Household debt growth has eased this year and house price inflation has been low. Keeping the policy rate low for a long time amplifies the risk of a renewed acceleration in debt growth and house price inflation. High price and wage inflation and a further build-up of financial imbalances 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 policy rate. Raising the policy rate rapidly ahead may stifle the upturn, resulting in higher unemployment and below-target inflation. A rapid rate rise may also lead to a sudden correction in the property market. Uncertainty about 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 policy rate will probably not be as high as in earlier upturns.

The policy rate was kept unchanged at the monetary policy meeting, after having been raised from 0.5% to 0.75% in September. The forecast for the policy rate indicates a rate rise to 1% in March 2019, followed by a gradual increase to 2% at the end of 2021 (Chart 4.5a). The policy rate forecast is little changed since September, but implies a slightly slower rate rise (Chart 4.6).

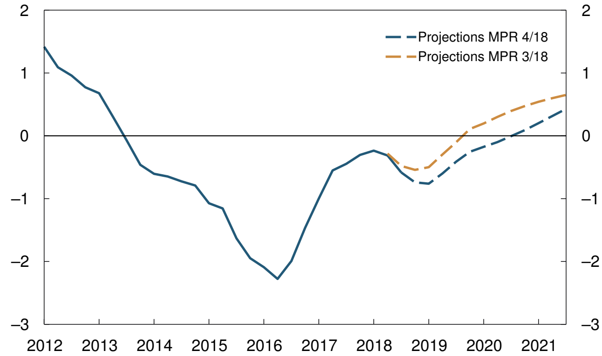
In the analysis, the money market rate is assumed to rise in tandem with the rise in the policy rate (Chart 1.8). Banks' lending margins are expected to remain close to today's level throughout the projection period. Residential mortgage rates are projected to rise to 3.7% towards the end of 2021.

Chart 4.6 Policy rate. Percent. 2012 Q1 – 2021 Q4[1)]



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

Chart 4.7 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 Q3 – 2021 Q3.
Sources: Statistics Norway and Norges Bank

The projections in this *Report* imply a gradual rise in the real interest rate (Chart 4.7). The real interest rate is projected to be lower than in the September *Report* throughout the projection period.

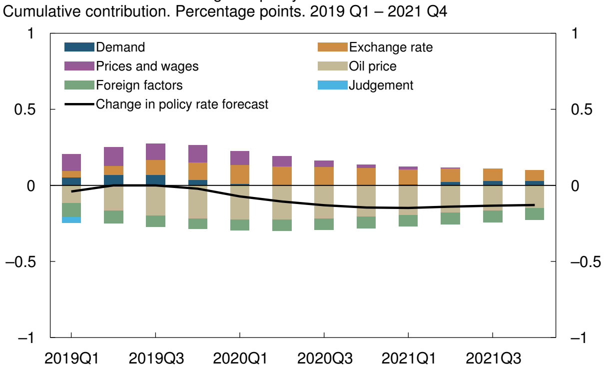
The projections in this *Report* are based on Norges Bank's assessment of the economic situation and the functioning of the economy and the effects of monetary policy. The projections are shrouded in considerable uncertainty. Economic developments may prove to be different from what is currently envisaged. When the economic outlook changes or if our understanding of the relationship between the interest rate level, inflation and the real economy changes, the policy rate forecast will be adjusted.

Slightly lower policy rate path

The main factors behind the changes in the 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 policy 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 September *Report* and the effect on the new rate path.

Oil prices have fallen since September, resulting in lower oil industry profitability and a likely dampening of wage growth, oil investment and oil-related exports. On the other hand, lower oil prices in isolation suggest stronger growth among trading partners and a weaker krone, which will both underpin mainland exports. On balance, lower oil prices pull down the rate path (beige bars).

Chart 4.8 Factors behind changes in policy rate forecast since MPR 3/18. Cumulative contribution. Percentage points. 2019 Q1 – 2021 Q4



Source: Norges Bank

Given the movement in oil prices, new information on overall demand pulls up the rate path somewhat (dark blue bars). The projections for oil investment have been revised down from September, but less than relationship between oil prices and oil investment in NEMO would imply. This is because oil companies have launched and planned a number of new development projects that will be profitable even at a lower oil price. Combined with prospects for somewhat higher-than-anticipated oil-related exports in the near term, this pulls up the rate path. Lower-than-expected consumption growth and house price inflation pull in the opposite direction.

The krone has been weaker than projected in the September *Report*. Developments cannot be fully explained by the fall in oil prices and movements in the interest rate differential against other countries. A weaker krone contributes to increased domestic activity and higher imported inflation. In isolation, this pushes up the rate path (orange bars).

Inflation has been higher than assumed, and the projections for external price impulses in 2017 and in 2018 have been revised up since September. This pulls up the rate path in the near term (purple bars).

The global growth outlook appears to be somewhat weaker than in September, and the projections for import growth among trading partners have been revised down. This reduces demand for Norwegian exports. Together with lower forward rates abroad than assumed in September, this suggests a lower rate path (green bars).

The policy rate path in the September *Report* indicated that the policy rate could be raised in December 2018. The light blue bar in 2019 Q1 reflects the Executive Board's decision to keep the policy rate unchanged at the rate-setting meeting.

On balance, the policy rate path is little changed, but slightly lower than in the September *Report* (black line).

Positive output gap and inflation close to target
With a policy rate in line with the rate forecast in this *Report*, capacity utilisation is projected to rise further and remain somewhat above a normal level in the coming years. Capacity utilisation is projected to peak at the beginning of 2020, gradually declining thereafter (Chart 4.5b). Compared with the September *Report*, the projections for capacity utilisation are revised down somewhat. Inflation, as measured by both the CPI and the CPI-ATE, is projected at slightly below 2% at the end of 2021 (Charts 4.5c-d). Compared with the September *Report*, the CPI and CPI-ATE projections are somewhat higher in 2019 and 2020, but little changed at the end 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 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 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 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.

RE-ESTIMATED VERSION OF NEMO

Norges Bank's main model for economic and monetary policy analysis, the Norwegian Economy MOdel (NEMO), has undergone continuous development since it was introduced in 2006.[1] The model is a dynamic, stochastic, general equilibrium (DSGE) model and shares similarities with macroeconomic models used by other central banks. A re-estimated version of NEMO is used in this *Monetary Policy Report* because, among other reasons, sufficient data are now available to estimate the model using data from the period of inflation targeting since 2001. The structure of the model is the same.

In models such as NEMO, developments in variables determined within the model (endogenous variables) will depend on variables determined outside the model (exogeneous variables). In the model, the endogenous variables will fluctuate around the assumed long-run equilibrium level determined by structural conditions in the economy.

The model has been re-estimated to achieve several objectives. The *first objective* is that the estimates of long-run relationships should be in line with the data for a relevant time period. For example, the level of household debt and housing wealth relative to mainland GDP has risen sharply over time. Exports and imports of traditional goods and services are also higher now relative to mainland GDP than was the case in the 1990s. Many other long-term relationships show only small changes. The estimate of the neutral real interest rate is unchanged in this *Report*.[2] The *second objective* is that the variation in the model's endogenous variables should be as similar as possible to the variation in the actual data. The *third objective* is that the effect of changes in key variables such as the policy rate and the oil price should be in line with estimated relationships from empirical models. The impact of changes in the policy rate is assessed against a group of SVAR (structural vector autoregressive) models, that are developed in Norges Bank. The effect of a change in the oil price is mainly based on Bergholt et al. (2017) and Bjørnland and Thorsrud (2016).[3] NEMO's forecasting performance, once these factors have been taken into account, should not be too subpar relative to empirical models.[4]

In the re-estimated version of NEMO, the overall impact of a change in the policy rate is largely unchanged. The values of parameters related to the costs involved in changing prices have increased somewhat. A consequence is that the Phillips curves are somewhat flatter, ie that a given increase in capacity utilisation has a somewhat smaller effect on wages and prices. This brings estimated relationships in NEMO closer to other models Norges Bank uses in its forecasting. In isolation, the higher level of household debt and housing wealth suggest that an interest rate change in the model would have a somewhat stronger impact. Owing to factors such as higher export and import shares, shocks from abroad have a somewhat greater impact.

NEMO is used in combination with a broad set of data, short-term models and judgement to make forecasts for key variables in the Norwegian economy. Re-estimation and continuous further development of NEMO are important for the model to continue to be a useful tool for monetary policy analysis. The work on re-estimating the model will be documented in a forthcoming Norges Bank *Staff Memo*.

1 See Gerdrup, K., 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, for a detailed description of the model.
2 See Special Feature "Estimates of the neutral real interest rate" in *Monetary Policy Report* 2/18. Norges Bank, for more details.
3 Bergholt, D., V.H. Larsen and M. Seneca (2017) "Business Cycles in an Oil Economy". *Journal of International Money and Finance*, July. Bjørnland, H.C. and L.A. Thorsrud (2016) "Boom or Gloom? Examining the Dutch Disease in Two-speed Economies", *The Economic Journal*, 126.
4 Like other DSGE models, NEMO is theoretically based and is therefore better suited to monetary policy analysis. However, this property may be at the expense of the model's ability to generate accurate forecasts of macroeconomic variables. See Lindé, J. (2018) "DSGE models: still useful in policy analysis?", *Oxford Review of Economic Policy*, Vol 34, Issue 1-2, 5, for a detailed discussion.

5 Financial stability assessment

– decision basis for the countercyclical capital buffer

Household debt ratios are high, and debt is still rising faster than income. Property prices have risen rapidly for many years and are at historically high levels. As a result, financial imbalances have built up. House price inflation has been low in recent months, but housing market activity has remained high. In the commercial real estate market, estimated selling prices for prime office space in Oslo continue to increase rapidly, contributing to the build-up of financial imbalances.

Growth in the Norwegian economy is solid. Growth in corporate credit has slowed in recent months, but enterprises still have ample access to credit. Banks meet their capital targets and their profitability is solid. EU regulations will be implemented in 2019, which will reduce the capital required to achieve the same risk-weighted capital ratio. Looking ahead, low house price inflation and gradually rising interest rates are expected to dampen debt growth.

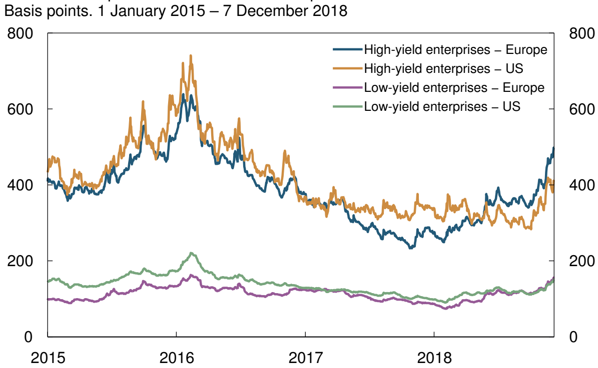
5.1 GLOBAL FINANCIAL STABILITY

Since the September *Report*, there have been signs of lower risk appetite among investors. Global equity prices have fallen (Chart 2.4). Bond market risk premiums have risen from very low levels. For high-yield US and European enterprises, risk premiums exceeding corresponding government bond yields have increased by over 1 percentage point (Chart 5.1).

Global growth prospects have weakened somewhat since the September *Report*. This partly reflects persistent uncertainty surrounding the outcome of trade conflicts, the UK's withdrawal agreement and the Italian budget situation (see Section 2).

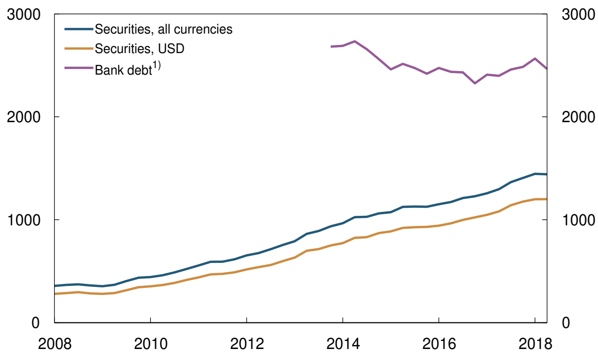
A large share of debt raised among emerging economies is in foreign currency, particularly in USD, which has made these countries vulnerable to increases in US interest rates and a strengthening of the US dollar. In particular, non-financial enterprises have increased their international bond debt in USD in recent years (Chart 5.2). On the other hand, corporate lending from international banks has fallen somewhat, partly because banks have put a damper on lending growth as a step in adjusting to higher capital requirements. Vulnerability has recently declined somewhat because exchange rates in many emerging economies have strengthened following sharp declines earlier in 2018.

Chart 5.1 Risk premiums non-financial enterprises. Basis points. 1 January 2015 – 7 December 2018



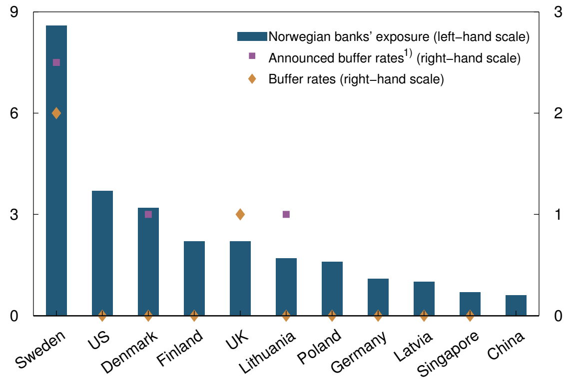
Source: Thomson Reuters

Chart 5.2 International bank and securities debt to non-financial enterprises in emerging economies. In billions of USD. 2008 Q1 – 2018 Q2



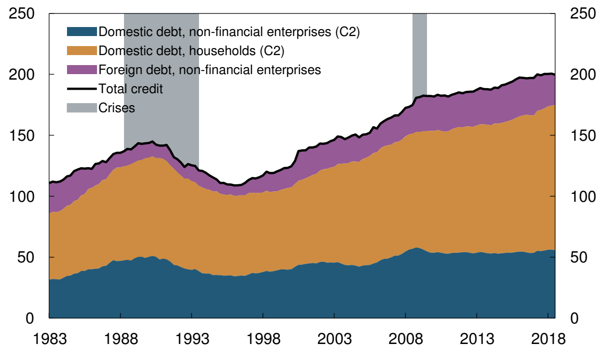
1) Data for household debt to international banks also included.
Source: BIS

Chart 5.3 Countercyclical capital buffer rates in selected countries and Norwegian banks' exposure in these countries. Percentage of risk-weighted assets. Average exposures from 2016 Q3 to 2018 Q3



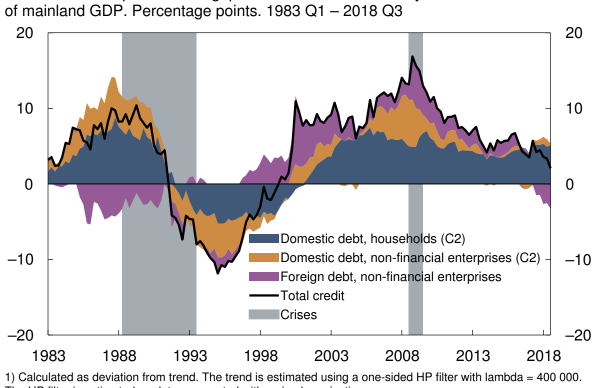
1) In Sweden, the buffer rate will increase from 19 September 2019, in Denmark, from 31 March 2019, and in Lithuania up to 0.5% on 31 December 2018 and then to 1% on 30 June 2019.
Sources: Bank for International Settlements (BIS), European Systemic Risk Board (ESRB), Finanstilsynet (Financial Supervisory Authority of Norway) and Norges Bank

Chart 5.4 Credit mainland Norway as a share of mainland GDP. Percent. 1983 Q1 – 2018 Q3



Sources: IMF, Statistics Norway and Norges Bank

Chart 5.5 Decomposed credit gap.[1)] Credit mainland Norway as a share of mainland GDP. Percentage points. 1983 Q1 – 2018 Q3



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

The overall resilience of European banks has strengthened in recent years through higher capital ratios. This was further confirmed in the European Banking Authority's (EBA) most recent stress test. For the aggregate of the 48 participating banks, the economic shock leads to an almost 4 percentage point reduction of the CET1 capital ratio, to almost 10% in 2020. The capital ratio will therefore remain well above the regulatory minimum requirement of 8%. These averages, however, conceal considerable differences between banks, both within and across countries. For example, CET1 capital ratios vary between 7.1% and 34% in 2020.

A number of countries have recently signalled increases in their countercyclical capital buffers (Chart 5.3), reflecting various conditions, such as persistently low risk premiums (Chart 5.1) and high debt levels in many of these countries. For Norwegian banks' exposures in EU countries, the buffer rate in the individual country must be recognised.[1]

Global financial developments signal medium risk in the heatmap (see box on page 60).

5.2 CREDIT

In Norway, credit has long risen faster than mainland GDP (see credit indicator in Chart 5.4). Over the past year, the indicator has been fairly stable. The credit gap, which shows the difference between the credit indicator and an estimated trend, narrowed for the third consecutive quarter (Chart 5.5), mainly driven by a reduction in corporate foreign debt (see box on page 56).

Household debt growth has slowed somewhat in recent years, but has been stable over the past half-year (Chart 5.6). Growth in household debt is still higher than growth in disposable income.

Household debt ratios have increased over a long period (Chart 5.7). The rise in debt ratios has contributed to the build-up of financial imbalances. Household debt ratios signal high risk in the heatmap (see box on page 60).

1 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.

Household interest burdens are at low levels (Chart 5.7), reflecting the low interest rate level. The high level of debt increases ordinary principal payments. The debt service ratio, ie the ratio of interest and normal principal payments to income, is at the same level as during the financial crisis in 2008 and the banking crisis at the beginning of the 1990s, despite low interest rates. Both interest burdens and debt service ratios are expected to increase somewhat ahead, in pace with increased lending rates. In Norges Bank's lending survey for 2018 Q3, banks reported increased demand for fixed-rate loans.

Finanstilsynet's (Financial Supervisory Authority of Norway) residential mortgage lending survey shows that the share of new mortgages breaching the requirements in the residential mortgage lending regulation in 2018 Q3 was approximately unchanged from the previous year.[2] Most breaches relate to the debt-to-income (DTI) and the loan-to-value (LTV) requirements (Chart 5.8). The share of loans that breach the DTI requirement is higher for residential mortgages in Oslo than in the rest of the country.

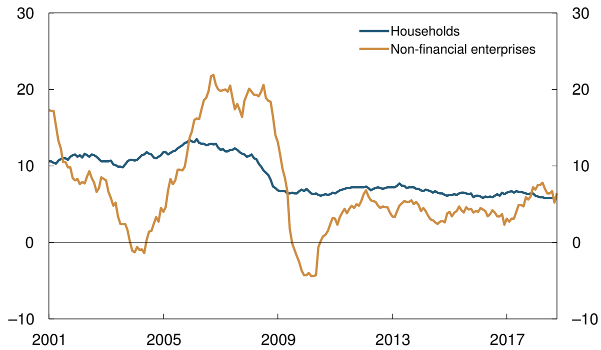
Residential construction is at a high level and is expected to remain elevated ahead. Lending rates are still at low levels. In the period ahead, household credit growth is therefore expected to remain high.

Growth in corporate credit from domestic sources increased through 2017 and the beginning of 2018. In recent months, growth has slowed somewhat (Chart 5.6). In Q3, corporate credit as a share of GDP fell, and the growth contribution from both banks and the bond market was lower (Chart 5.9). Enterprises nevertheless appear to have ample access to credit, and credit growth is still broadly even across industries. Risk premiums on corporate bond financing have increased somewhat since the September *Report*, owing to increased risk premiums and falling global equity prices.

In the light of Norges Bank's policy rate increase in September, the banks in Norges Bank's lending survey expected an increase in lending rates in Q4. The effect of higher lending rates on enterprises will partly depend on their debt ratios. Analyses conducted by Norges Bank show that an interest rate increase of 1

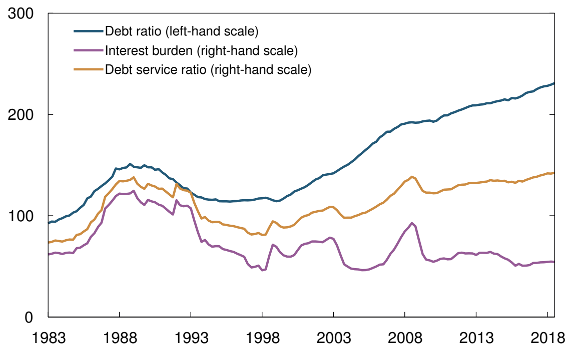
2 See Finanstilsynet's *Risk Outlook* – December 2018

Chart 5.6 Domestic credit to households and non-financial enterprises in mainland Norway. Twelve-month change. Percent. January 2001 – October 2018



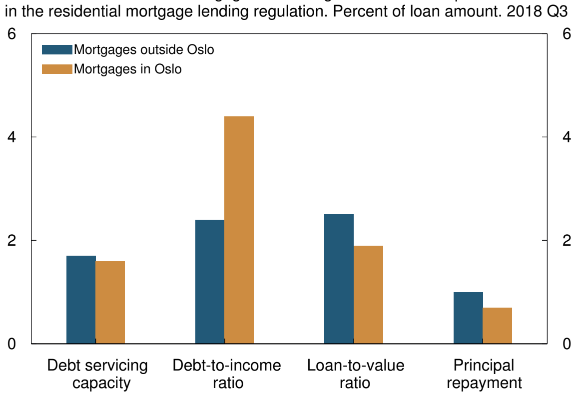
Sources: Statistics Norway and Norges Bank

Chart 5.7 Household debt ratio[1)], debt service ratio[2)] and interest burden[3)]. Percent. 1983 Q1 – 2018 Q3



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 Q3, 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 5.8 Share of new mortagages breaching the individual requirements in the residential mortgage lending regulation. Percent of loan amount. 2018 Q3



Source: Finanstilsynet's (Financial Supervisory Authority of Norway) residential mortgage lending survey percentage point will represent a higher share of operating revenue in real estate than in other sectors (Chart 5.10 and *Financial Stability Report* 2018). The effect of an interest rate increase will be most pronounced for enterprises in the commercial real estate sector, which have particularly high ratios of debt to operating revenue.

All of the corporate indicators signal low risk in the heatmap (see box on page 60).

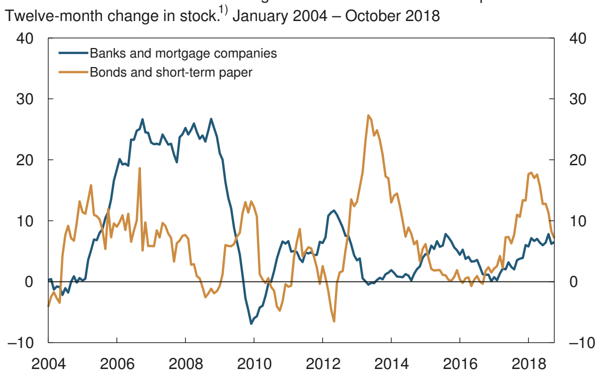
5.3 PROPERTY PRICES

House prices have risen sharply over a long period and have contributed to the build-up of financial imbalances (Chart 5.11). In recent quarters, house prices have risen in pace with disposable income. In commercial real estate, estimated selling prices for prime office space in Oslo have continued to rise markedly (Chart 5.12).

In the heatmap, housing market developments signal low risk (see box on page 60). The high level of house prices nevertheless implies a vulnerability (see *Financial Stability Report* 2018). In the heatmap, developments in the commercial real estate market signal high risk.

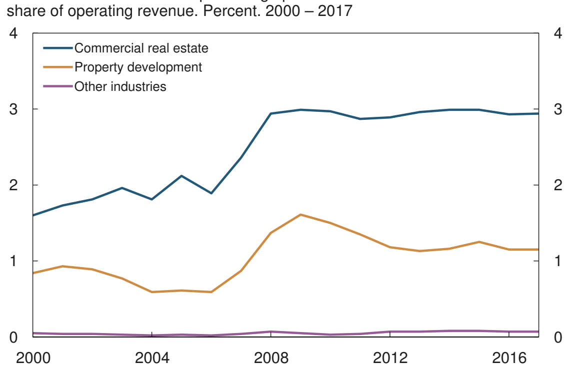
In recent months, seasonally adjusted house prices have fallen somewhat (Chart 5.13). The 12-month rise has been low, with Oslo again showing the fastest 12-month rise at 4.7% in November. However, regional differences are smaller than observed in recent years.

Chart 5.9 Credit from selected funding sources to non-financial enterprises. Twelve-month change in stock.[1)] January 2004 – October 2018



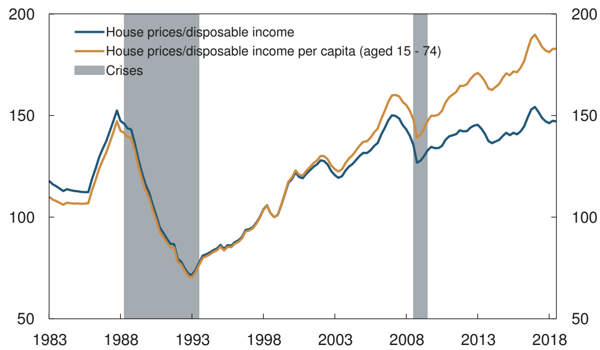
1) Stocks are not adjusted for exchange rate fluctuations and valuation changes. Statistics Norway has revised the method for calculating credit statistics from January 2018. The series for bonds and short-term paper is break-adjusted. The series for banks and mortgage companies is not adjusted for this change. Aditionally, the debt of road toll companies is excluded from January 2018, which is also reflected in the chart.
Sources: Statistics Norway and Norges Bank

Chart 5.10 Net effect of a 1 percentage point increase in interest rates as a share of operating revenue. Percent. 2000 – 2017



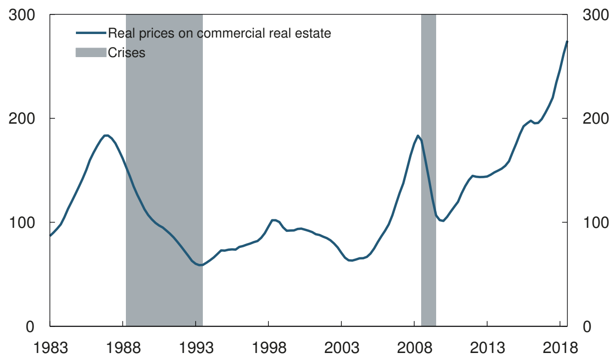
Source: Norges Bank

Chart 5.11 House prices relative to disposable income[1)]. Index. 1998 Q4 = 100. 1983 Q1 – 2018 Q3



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 Q3.
Sources: Eiendomsverdi, Finn.no, Norwegian Association of Real Estate Agents (NEF), Real Estate Norway, Statistics Norway and Norges Bank

Chart 5.12 Real commercial property prices.[1)] Index. 1998 = 100. 1983 Q1 – 2018 Q3



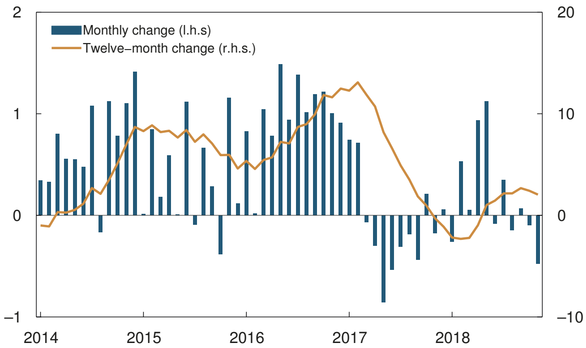
1) Estimated real selling prices per square metre for prime office space in Oslo. Deflated by GDP deflator for mainland Norway. Average selling price for the previous four quarters.
Sources: CBRE, Dagens Næringsliv, OPAK, Statistics Norway and Norges Bank

In the coming years, house prices are expected to rise by between 2% and 3% annually (see Chart 3.6 in Section 3).

Despite low house price inflation, turnover in the market for existing homes has been high (Chart 5.14). There has however been a rise in the stock of unsold homes, since more homes were listed for sale than were sold. The number of unsold existing homes is high, and is higher than just after the financial crisis (Chart 5.15). In the market for new homes, few new homes have been listed for sale, while sales have been relatively high. As a result, the total number of unsold homes has likely declined somewhat.

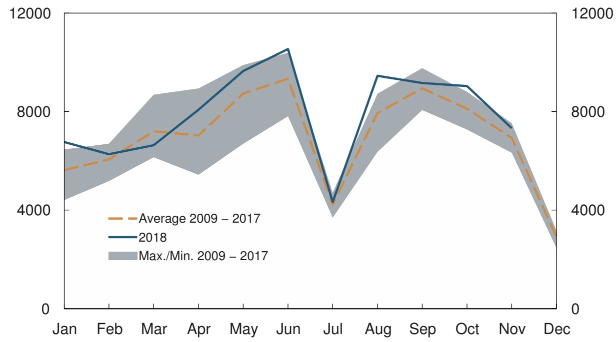
In the coming year, the number of housing completions will likely peak in 2018 and remain high through 2019 (Chart 5.16). Many of the buyers of new homes are likely to sell their existing homes, which may result in the number of existing homes listed for sale remaining elevated ahead. Analyses conducted by Norges Bank show that residential construction has not kept pace with the increase in the number of households in the main urban areas for many years (see box on page 58 and *Staff Memo* 12/2018, forthcoming in English). This lag in residential construction will likely contribute to sustaining high prices, and reduces the likelihood that the high completion rate will now cause a substantial fall in house prices. However, the rise in prices is expected to be dampened somewhat by a large supply of homes in the coming period.

Chart 5.13 House prices. Twelve-month change and seasonally adjusted monthly change. Percent. January 2014 – November 2018



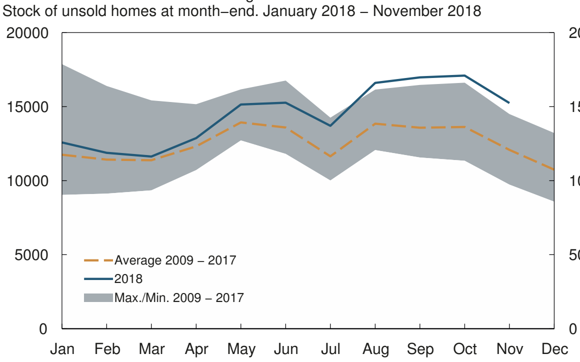
Sources: Eiendomsverdi, Finn.no and Real Estate Norway

Chart 5.14 Turnover of existing homes. Number of dwellings. January 2018 – November 2018



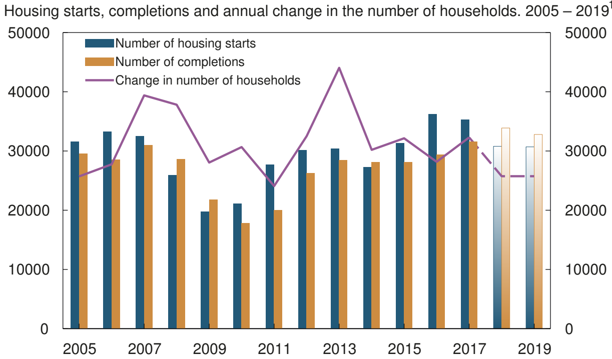
Sources: Eiendomsverdi, Finn.no and Real Estate Norway

Chart 5.15 Number of unsold existing homes. Stock of unsold homes at month–end. January 2018 – November 2018



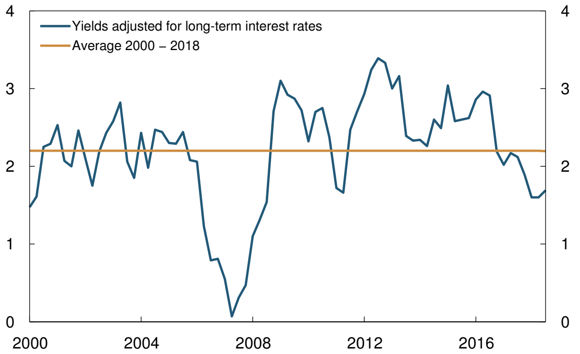
Sources: Eiendomsverdi, Finn.no and Real Estate Norway

Chart 5.16 Housing starts and household growth. Housing starts, completions and annual change in the number of households. 2005 – 2019[1)]



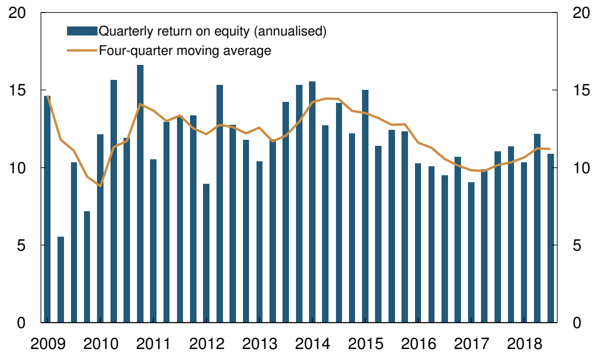
1) Projections for 2018 and 2019 (broken lines and shaded bars). Projections for household growth are based on population projections from Statistics Norway and the change in number of persons per household over the past three years.
Sources: Statistics Norway and Norges Bank

Chart 5.17 Yields for prime office space in Oslo adjusted for long–term interest rates[1]. Percent. 2000 Q1 – 2018 Q3



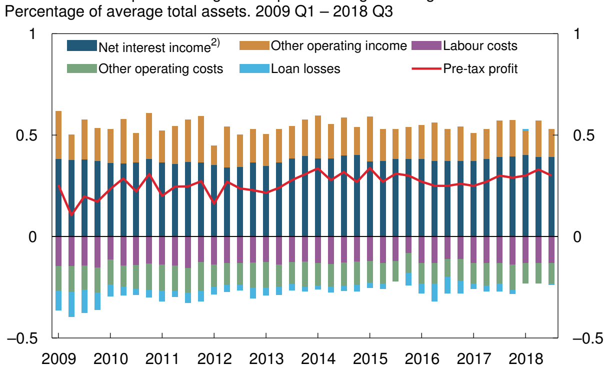
1) The 10-year government bond yield is used as the long-term interest rate.
Sources: CBRE, Thomson Reuters and Norges Bank

Chart 5.18 Return on equity for large Norwegian banks[1]. Percent. 2009 Q1 – 2018 Q3



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 5.19 Decomposed change in the profits of large Norwegian banks[1]. Percentage of average total assets. 2009 Q1 – 2018 Q3



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

Looking ahead, the number of housing starts is expected to stabilise at around 30 000. The price-dampening effect of the high completion figures is therefore unlikely to persist over time.

Estimated selling prices for prime office space in Oslo have risen sharply in recent quarters (Chart 5.12). Estimated selling prices are determined by developments in rental income and yields. Through 2018, yields have remained stable while rents have risen. Market participants have cited low construction activity, conversions of office space to other uses and increased demand as reasons for the rise in rents. According to the real estate company Entra's October 2018 Consensus Report, office vacancy rates are expected to continue to fall in Oslo and Bærum in 2018 and 2019. In Bergen, Trondheim and Stavanger, rents have been fairly stable over the past half-year.

The spread between yields on office space in Oslo and long-term interest rates is now below the historical average (Chart 5.17). The spread is also lower in Oslo than in large European cities (see *Financial Stability Report* 2018). This may indicate a relatively low risk premium in Oslo and market expectations of a pronounced rise in rents ahead. For a further description of various risk factors in commercial real estate, see *Staff Memo* 11/2018 (forthcoming in English).

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 may push up growth in credit to real estate companies. With low yields, commercial property prices will be particularly vulnerable to an interest rate increase or higher risk premiums. Banks have substantial exposures to the commercial real estate market and a marked decline in prices could lead to losses. The rapid increase in estimated selling prices (Chart 5.12) therefore contributes to the build-up of financial imbalances.

5.4 BANKS

The return on equity for the largest Norwegian banks declined in 2018 Q3, after having increased somewhat in Q2. Profitability was also slightly lower than one year earlier (Chart 5.18). The dip in earnings primarily reflects a decline in other income (Chart 5.19), which was particularly pronounced in Q2 owing to the proceeds from the merger of Vipps, BankID and BankAxept. The low losses reflect increased economic activity and lower-than-expected losses in oil-related industries owing to higher oil prices. However, new rounds of restructurings in the oil-related industries may still occur.[3]

The stress test in the 2018 *Financial Stability Report* shows that banks would have to draw down their entire countercyclical capital buffer and some of the other buffers in order to maintain lending in the event of a pronounced downturn in the Norwegian economy (Chart 5.20). This may suggest that a larger portion of the total buffer requirement should be time-varying.

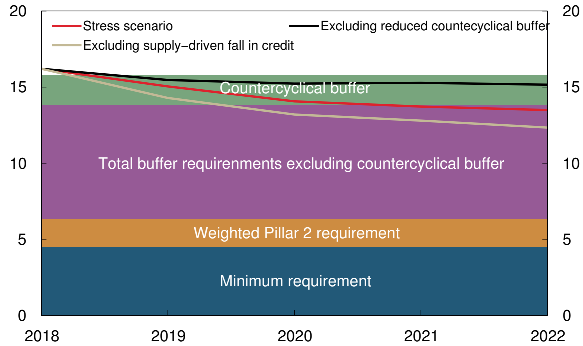
Banks' capital ratios were generally in line with their own capital targets at the end of 2018 Q3. In 2019, EU regulations will be implemented in Norwegian law that will reduce the capital required to achieve the same risk-weighted capital ratio. For banks using internal ratings-based models for calculating risk weights, the regulation will also no longer require the use of the Basel I floor when calculating capital ratios (Chart 5.21).

Twelve-month growth in bank lending to the corporate sector showed a rising trend in 2017. Growth maintained momentum in the first months of 2018, but fell somewhat in Q2. Since Q2, banks' corporate lending growth has increased again. Norwegian banks' share of the growth in lending has increased in recent months (Chart 5.22).

Norwegian banks have ample access to wholesale funding, in both NOK and foreign currency. The risk premiums banks pay over three-month Nibor for senior bonds and covered bonds have increased since the September *Report*. Developments in risk premiums are supported by banks' responses in the liquidity survey for October. On average, banks reported somewhat less favourable conditions for funding with long maturities, in both NOK and foreign currency. Banks' wholesale funding ratio remains stable.[4]

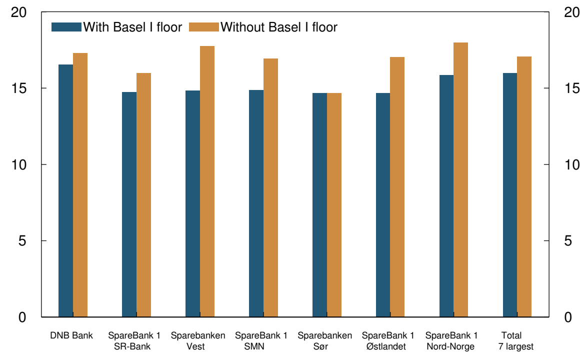
3 See also post on Bankplassen blog, "Er det fortsatt høy risiko for tap på utlån til oljeleverandørnæringen?" [Are loans to the oil industry still high-risk?] (in Norwegian only).
4 For more information on indicators of financial imbalances, see Norges Bank's website.

Chart 5.20 Common Equity Tier 1 (CET1) ratio and the CET1 requirement under Pillar 1 and Pillar 2[1)] under different assumptions about the macro bank's behaviour. Percent. 2018 – 2022



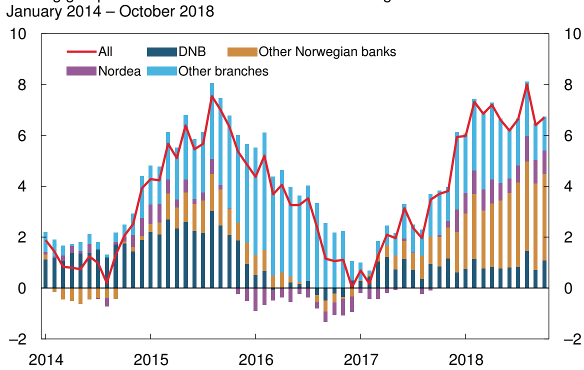
1) Pillar 2 requirements for the banks in the stress test are weighted by their risk–weighted assets.
Sources: Finanstilsynet (Financial Supervisory Authority of Norway), SNL/S&P MI and Norges Bank

Chart 5.21 Common Equity Tier 1 (CET1) capital ratio[1)] with and without transitional rule. Largest Norwegian-owned banking groups. Percent. 2018 Q3



1) Including 50% of earnings so far in 2018.
Sources: Banks' quarterly reports and Norges Bank

Chart 5.22 Credit to Norwegian enterprises from different banking groups. Different banking groups' contribution to the twelve-month change. Percent. January 2014 – October 2018



Source: Norges Bank

THE CREDIT INDICATOR AND FOREIGN DEBT

Norges Bank's advice on the countercyclical capital buffer is based on an assessment of financial imbalances, which in turn is based on a broad range of indicators, analyses and the Bank's professional judgement. The credit indicator, ie the ratio of total credit to GDP, is an important indicator. Total credit is the sum of domestic credit to households and non-financial enterprises in mainland Norway, and foreign debt for mainland Norway.

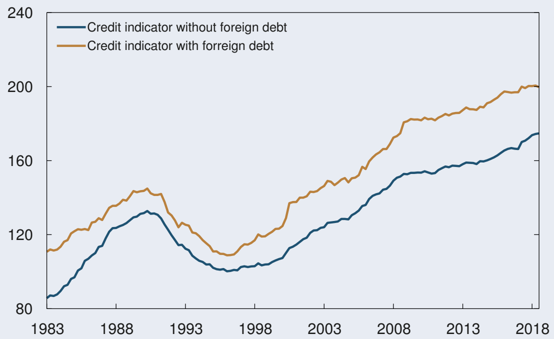
Total household and corporate debt has risen faster than mainland GDP since the middle of the 1990s (Chart 5.4). The gap between the credit-to-GDP ratio and an estimated trend, ie the credit gap, has narrowed since the financial crisis (Chart 5.5). Foreign debt has recently declined and contributed to a narrowing of the credit gap. This box takes a closer look at developments in the credit indicator, both with and without foreign debt.

Approximately half of foreign debt is in the form of intragroup lending where lenders are foreign companies and borrowers are Norwegian companies in the same corporate group.[1] Part of this debt is unlikely to reflect the Norwegian company's real need for credit, and likely to reflect the tax-motivated transactions of the corporate group. The tax expenses of multinational corporations can be reduced by transferring debt to countries where relatively large tax-deductions on interest payments are possible. Intragroup debt is often reallocated late in the financial year. This can cause volatility and revisions of credit statistics, which in turn can lead to levels and movements in the credit indicator that do not reflect the levels and changes of actual debt and financial imbalances.

There are small differences in the paths for the credit indicators with and without foreign debt (Chart 5.23). The same applies to the path for the gaps with and without foreign debt (Chart 5.24). Since foreign debt is more volatile than other debt, the credit gap has a somewhat smoother path without foreign debt. This also applies to the buffer guide, which is a reference rate for the buffer that is calculated in accordance with EU regulations and the recommendations of the Basel Committee (Chart 5.25). When foreign debt is excluded, the buffer guide provides the most stable signals for the build-up of financial imbalances in the period surrounding the banking crisis. Prior to the financial crisis, the buffer guide excluding foreign debt signals the slowest, but also the most consistent build-up of imbalances. In today's situation, the buffer guide excluding foreign debt signals a higher level of the countercyclical capital buffer.

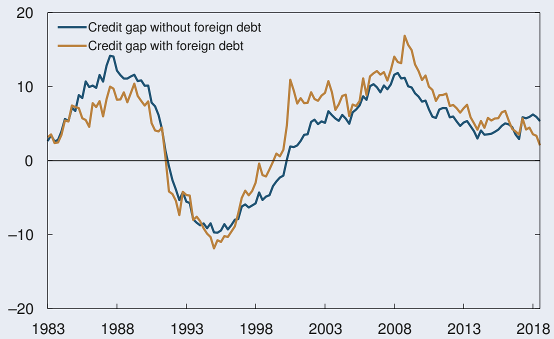
1 This is unlike credit from domestic sources, which is adjusted for intragroup lending so that they are eliminated from the credit indicator.

Chart 5.23 Credit indicator. 1983 Q1 – 2018 Q3



Sources: IMF, Statistics Norway and Norges Bank

Chart 5.24 Credit gap. Percentage points. 1983 Q1 – 2018 Q3



Sources: IMF, Statistics Norway and Norges Bank

The challenges linked to handling intragroup foreign debt in indicators for developments in total credit has also been an issue in the other Nordic countries and in the Baltics. Iceland and Sweden have chosen a credit indicator that excludes intragroup debt. Denmark and the Baltic countries use an indicator that is solely based on bank loans, in addition to an indicator that is based on a broad credit measure. Finland is in the process of exploring alternatives to a broad-based indicator on account of frequent revisions to the credit statistics.

The statistical basis has improved in recent years, and makes it possible to distinguish intragroup debt from foreign debt. When assessing financial imbalances, however, long time series for total credit are necessary. There are also other arguments for including intragroup foreign debt in the measure of total credit. Not all intragroup debt in multinational corporations is the result of tax-motivated transactions. A large corporation can achieve more favourable loan conditions in banks and markets by borrowing centrally and channelling loans to subsidiaries. Furthermore, there is reason to believe that the tax-motivated part of intragroup foreign debt in Norwegian companies has declined and may continue to decline ahead. In 2014, rules were introduced that limit the right to tax-deductions on interest payments when lender and borrower are part of the same corporate group. The interest deduction limitation rules are meant to counteract multinational corporations' practice of reducing tax expenses in Norway by transferring disproportionally large amounts of debt to Norwegian companies. The rules were tightened in 2017.[2] In the central government budget for 2019, the Government proposes further tightening.[3]

Foreign debt should be included in the credit measure that serves as the basis for the assessment of financial imbalances and advice on the countercyclical capital buffer. Norway is a small and open economy, and it is possible for Norwegian companies to quickly shift between domestic and foreign sources of credit. The European Systemic Risk Board (ESRB) and the Basel Committee on Banking Supervision recommend using a broad credit measure in assessing the countercyclical capital buffer. In assessing financial imbalances, it is also necessary to analyse developments in various credit components, for example distinguishing between credit to households and enterprises. Likewise, Norges Bank will also analyse developments in foreign debt and in intragroup foreign debt.

2 Today, the deduction is reduced if the borrower's net interest expenses exceed NOK 5m and 25% of the enterprise's earnings before interest, tax, depreciation, amortisation and impairment (EBITDA).
3 Under the tightened rules, the limitation on the deduction of interest will also apply to external debt (eg bank loans) if the equity ratio of the corporate group's Norwegian branch is lower than the equity ratio of the corporate group at the global level.

Chart 5.25 Buffer guide. Percentage points. 1975 Q4 – 2018 Q3

Sources: IMF, Statistics Norway and Norges Bank

RESIDENTIAL CONSTRUCTION AND HOUSEHOLD FORMATION

Residential construction measured in terms of housing starts has increased in recent years and reached its highest level since the beginning of the 1980s (Chart 5.26). At the same time, household growth has slowed. This box takes a closer look at the relationship between the increase in the number of dwellings and households at national and regional levels.[1]

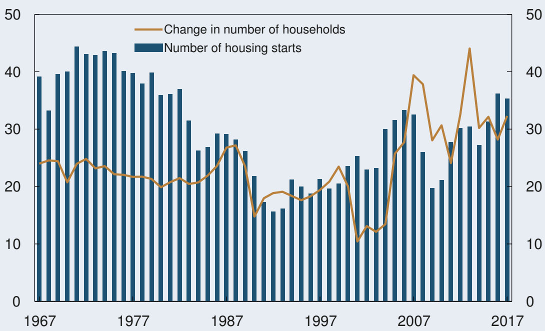
In the 1970s and 1980s, household formation was significantly outpaced by residential construction (Chart 5.26). This must be viewed in the context of the post-war housing shortage, and of the housing policy objective of building as many affordable dwellings as possible. From the mid-1980s to the turn of the millennium, these two variables were closely correlated, but have since diverged. In the period between end-2005 and end-2017, the increase in the number of households exceeded the number of housing starts by approximately 36 000.

Developments in the total number of dwellings, which also includes housing stock losses and properties that are converted into dwellings, show that at end-2005, there were approximately 10% more dwellings than households.[2] By end-2017, the difference had fallen to around 6%. In those years, the increase in the number of households was approximately 54 000 higher than the increase in the number of dwellings. This is somewhat higher than the findings in the previous paragraph, which likely reflects housing stock losses.

Over time, there has been considerable regional variation in both residential construction and household formation. Household formation rates have been highest in urbanised municipalities, reflecting a higher excess of births in these municipalities and a pattern of urbanisation (Chart 5.27). The increase in the number

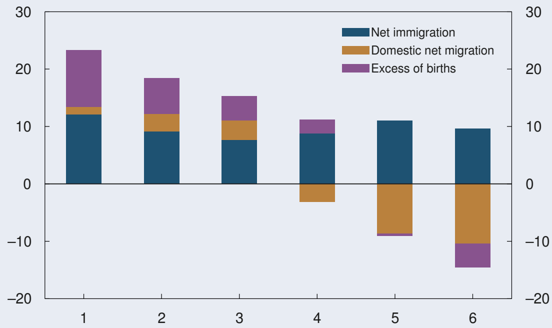
1 For a further discussion, see Mæhlum, S., P. M. Pettersen and H. Xu (2018) "Boligbygging og husholdningsvekst" [Residential construction and household growth]. *Staff Memo* 12/2018. Norges Bank (forthcoming in English).
2 Statistics Norway has published figures for the housing stock in Norway since 2005.

Chart 5.26 Number of housing starts and change in number of households. In thousands. 1967 – 2017



Sources: Statistics Norway and Norges Bank

Chart 5.27 Contribution to total population growth for the period 2005 – 2007 by municipalities' degree of urbanisation1). As a percentage of urbanisation categories' population by the end of 2005



1) Municipalities are classified according to Statistics Norway's centrality index, where the most urbanised municipalities are classified as category 1, and the least urbanised municipalities are classified as category 6.
Sources: Statistics Norway and Norges Bank

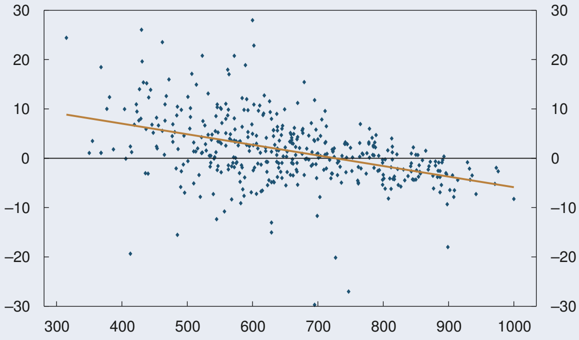
of dwellings has also been most pronounced in the most urbanised municipalities. Many urban areas have nevertheless experienced insufficient housing construction overall in the period between 2005 and 2017 as the increase in the number of households has been higher than the increase in the number of dwellings. There is a clear tendency for excess housing construction to decline with closer urban proximity (Chart 5.28).

Approximately 80% of the unoccupied dwellings in Norway are located in areas that fall under the three least urbanised categories (Chart 5.29). This skewed distribution may reflect some households' use of dwellings in less urbanised areas as holiday homes, but a pattern of urbanisation is likely the main reason. Since 2005, the number of unoccupied dwellings has fallen markedly in the two most urbanised categories, and risen in the two least urbanised categories. In the two most urbanised categories, figures now suggest that there are few unoccupied dwellings.[3]

Statistics Norway's population projections indicate that population growth will be highest in urban areas and that the populations of the least urbanised areas are expected to decline. This may contribute to an increase in the number of unoccupied dwellings in the least urbanised areas and to the need for more housing in urban areas. If the decline in household sizes continues, the need for housing may increase more than what population growth in isolation implies.

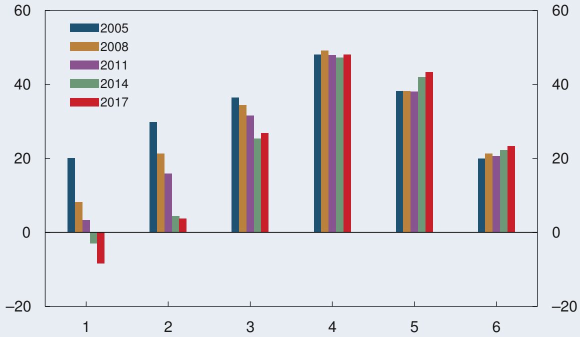
3 The two most urbanised categories include Bergen, Stavanger, Trondheim and the most urbanised municipalities in eastern Norway. Negative values are shown in Chart 5.29 for two of the years in group 1 of Statistics Norway's centrality index, which may in part be because not all dwellings are included in the statistics and because multiple households are registered at the same dwelling.

Chart 5.28 Construction surplus[1)] for the period 2005 – 2017 as a percentage of households at the end of 2005 (vertical axis). By municipalities' degree of urbanisation [2)] (horizontal axis)



1) Change in number of dwellings less change in number of households.
2) Statistics Norway's centrality index, where municipalities are ranked by the populations distance to workplaces and different types of goods and services, where higher numbers express greater urbanisation.
Sources: Statistics Norway and Norges Bank

Chart 5.29 Unoccupied dwellings[1)] by municipalities' degree of urbanisation[2)]. In thousands



1) Difference between number of dwellings and number of households.
2) Municipalities are classified according to Statistics Norway's centrality index where the most urbanised municipalities are classified as category 1, while the least urbanised municipalities are classified as category 6.
Sources: Statistics Norway and Norges Bank

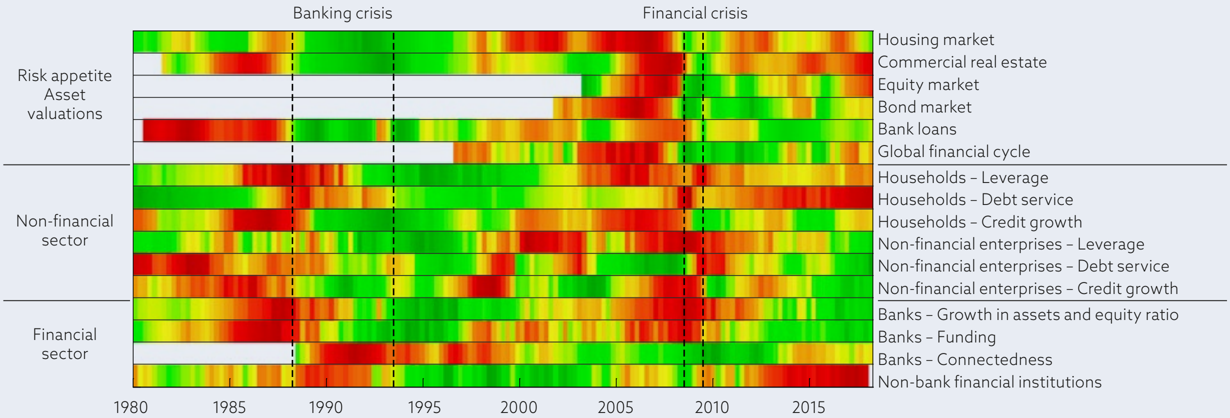
A HEATMAP FOR MONITORING SYSTEMIC RISK

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 5.30 Composite indicators in the heatmap. 1980 Q1–2018 Q3



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

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]	Policy rate[2]	Change
20 March 2019		
23 January 2019		
12 December 2018	**0.75**	**0**
24 October 2018	0.75	0
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

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 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 policy rate.

Table 1 Projections for GDP growth in other countries

Change from projections in *Monetary Policy Report* 3/18 in brackets	Share of world GDP[1] PPP	Share of world GDP[1] Market exchange rates	Trading partners[4]	2017	2018	2019	2020	2021
US	16	24	9	2.2 (0)	2.9 (0)	2.4 (-0.1)	1.8 (-0.1)	1.8 (0)
Euro area	12	16	32	2.5 (0)	1.9 (-0.1)	1.6 (-0.1)	1.5 (-0.1)	1.5 (0)
UK	2	4	10	1.7 (0)	1.3 (0)	1.4 (0)	1.5 (0)	1.5 (0)
Sweden	0.4	0.7	11	2.4 (0)	2.4 (-0.3)	1.8 (-0.2)	1.9 (-0.1)	1.9 (-0.2)
Other advanced economies[2]	7	10	19	2.6 (0.1)	1.9 (-0.1)	1.9 (0)	1.8 (0)	1.9 (0)
China	18	14	7	6.9 (0)	6.5 (0.2)	6 (0.2)	5.8 (0)	5.8 (0)
Other emerging economies[3]	19	11	12	3.8 (0)	3.7 (0)	3.6 (-0.1)	3.9 (0)	4 (0)
Trading partners[4]	73	79	100	3 (0.1)	2.6 (0)	2.2 (-0.1)	2.1 (-0.1)	2.1 (-0.1)
World (PPP)[5]	100	100		3.7 (-0.1)	3.7 (-0.1)	3.5 (-0.2)	3.6 (0)	3.6 (-0.1)
World (market exchange rates)[5]	100	100		3.2 (0)	3.1 (-0.1)	3 (-0.1)	2.8 (-0.1)	2.9 (0)

Percentage change from previous year: 2017–2021.

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* 3/18 in brackets	Trading partners[4]	Trading partners in the interest rate aggregate[5]	2017	2018	2019	2020	2021
US	7	22	2.1 (0)	2.5 (0)	2.3 (-0.2)	2.4 (0)	2.3 (0)
Euro area	34	53	1.5 (0)	1.8 (0)	1.5 (-0.2)	1.6 (0)	1.7 (0)
UK	7	5	2.6 (0)	2.3 (0.1)	2 (-0.2)	2.1 (0)	2 (0)
Sweden[1]	14	12	2 (0)	2.2 (0)	1.9 (-0.2)	2 (0)	2 (0)
Other advanced economies[2]	15		1.1 (0)	1.3 (0)	1.5 (-0.2)	1.7 (0)	1.7 (0)
China	12		1.6 (0)	2.3 (-0.2)	2.4 (-0.1)	2.7 (0)	2.7 (0)
Other emerging economies[3]	10		4 (0)	4.8 (0.4)	5.5 (0.9)	4.4 (0)	4.4 (0)
Trading partners[4]	100		1.9 (0)	2.2 (0.1)	2.2 (0)	2.2 (0)	2.2 (0)
Trading partners in the interest rate aggregate[5]			1.7 (0)	2 (0)	1.8 (-0.2)	1.9 (0)	1.9 (0)
Underlying inflation[6]			1.4 (0)	1.4 (-0.1)	1.8 (-0.1)	1.9 (0)	1.9 (0)
Wage growth [7]			1.9 (0)	2.7 (0)	2.6 (0)	3 (0)	3.1 (0)

Percentage change from previous year: 2017–2021.

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			2019
	Q2	Q3	Q3	Q1
Actual	0.7	0.3		
Projections in PPR 3/18		0.7	0.7	
Projections in PPR 4/18			0.7	0.7

Sources: Statistics Norway and Norges Bank

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

	2018				2019		
	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Actual	2.4	2.4	2.4				
Projections in PPR 3/18	2.4	2.3	2.3	2.3			
Projections in PPR 4/18				2.4	2.4	2.4	2.4

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

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

	2018						2019
	Jul	Aug	Sep	Oct	Nov	Dec	Jan
Actual	4.0	4.0	4.0				
Projections in PPR 3/18	3.8	3.7	3.7	3.7			
Projections in PPR 4/18				4.0	4.0	4.0	3.9

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

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

	2018				2019		
	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Consumer price index (CPI)							
Actual	3.4	3.1	3.5				
Projections in PPR 3/18	3.3	3.2	2.9	2.8			
Projections in PPR 4/18				3.1	2.8	2.3	2.4
CPI-ATE[1]							
Actual	1.9	1.6	2.2				
Projections in PPR 3/18	1.6	1.6	1.8	1.7			
Projections in PPR 4/18				1.9	2.2	2.0	2.2
Imported consumer goods in the CPI-ATE							
Actual	1.0	1.2	1.2				
Projections in PPR 3/18	0.4	0.8	0.6	0.4			
Projections in PPR 4/18				1.2	1.7	1.8	1.6
Domestically produced goods and services in the CPI-ATE[2]							
Actual	2.4	1.9	2.7				
Projections in PPR 3/18	2.1	2.0	2.2	2.2			
Projections in PPR 4/18				2.3	2.5	2.2	2.7

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* 3/18 in brackets	In billions of NOK 2017	Percentage change from previous year (unless otherwise stated) 2017	Projections 2018	2019	2020	2021
Prices and wages						
Consumer price index (CPI)		1.8 (0)	2.7 (0)	1.8 (0.5)	1.6 (0.2)	1.7 (-0.1)
CPI-ATE[1]		1.4 (0)	1.5 (0.1)	2.0 (0.3)	1.9 (0.3)	1.9 (0.2)
Annual wages		2.3 (0)	2.7 (-0.1)	3.2 (0)	3.5 (-0.3)	3.8 (-0.1)
Real economy						
Gross domestic product (GDP)	3304	2.0 (0)	1.7 (-0.1)	2.0 (-0.2)	1.8 (-0.4)	1.9 (0.3)
GDP, mainland Norway	2798	2.0 (0)	2.4 (-0.1)	2.3 (-0.2)	1.6 (-0.2)	1.4 (0.2)
Output gap, mainland Norway (level)[2]		-0.9 (0)	-0.3 (-0.1)	0.4 (-0.1)	0.5 (-0.3)	0.4 (-0.2)
Employment, persons, QNA		1.1 (0)	1.5 (-0.1)	1.1 (-0.1)	0.7 (-0.1)	0.3 (0)
Labour force, LFS[3]		-0.2 (0)	1.5 (0.1)	1.2 (0)	0.6 (-0.2)	0.4 (-0.1)
LFS unemployment (rate, level)[4]		4.2 (0)	3.9 (0.1)	3.8 (0.4)	3.8 (0.6)	3.8 (0.6)
Registered unemployment (rate, level)		2.7 (0)	2.4 (0)	2.4 (0.2)	2.3 (0.2)	2.3 (0.2)
Demand						
Mainland demand[5]	2939	3.3 (0)	1.4 (0.2)	1.7 (-0.2)	1.8 (0.2)	1.6 (0.2)
- Household consumption[6]	1472	2.2 (0)	1.9 (-0.3)	1.9 (-0.2)	2.3 (0.3)	2.2 (0.3)
- Business investment	296	9.3 (0)	1.0 (1.0)	3.7 (-0.5)	1.2 (0.2)	0.3 (0.6)
- Housing investment	199	7.0 (0)	-9.7 (0.2)	-1.4 (0.1)	1.6 (0.9)	1.7 (0.7)
- Public demand[7]	972	2.7 (0)	2.9 (0.7)	1.4 (-0.1)	1.2 (-0.2)	1.1 (-0.2)
Petroleum investment[8]	151	-3.8 (0)	2.1 (-0.4)	10.5 (-0.3)	3.0 (-1.1)	0.5 (-0.6)
Mainland exports[9]	613	-1.4 (0)	3.5 (0)	4.7 (-0.5)	3.1 (-1.2)	3.0 (0)
Imports	1093	1.6 (0)	1.7 (-1.2)	3.1 (-0.8)	3.0 (0.1)	3.2 (0.4)
House prices and debt						
House prices		5.9 (0)	0.7 (-0.2)	1.6 (-0.8)	3.1 (0.6)	2.8 (0)
Credit to households (C2)[10]		6.4 (0)	5.7 (-0.1)	5.8 (0.1)	5.5 (0)	5.2 (-0.1)
Interest rate and exchange rate (level)						
Policy rate[11]		0.5 (0)	0.6 (0)	1.0 (0)	1.4 (-0.1)	1.8 (-0.1)
Import-weighted exchange rate (I-44)[12]		104.5 (0)	104.5 (0.4)	103.4 (2.9)	101.6 (3.1)	100.3 (2.6)
Money market rates, trading partners[13]		0.1 (0)	0.4 (0)	0.7 (0.1)	0.8 (-0.1)	1.0 (-0.2)
Oil price						
Oil price, Brent Blend. USD per barrel[14]		54 (0)	71 (-3)	62 (-14)	62 (-10)	61 (-8)

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 LFS unemployment projections have been revised up more than the projections for registered unemployment owing to a revised assumption. The difference between the two measures is now assumed to hold steady ahead. In previous reports, LFS unemployment was assumed to fall faster than registered unemployment, narrowing the gap between these measures towards its historical average. The revised assumption has no bearing on our assessment of employment or capacity utilisation.
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 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 2018. Futures prices for 2019–2021. Futures prices at 7 December 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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