NORGES BANK

1|19
MARCH

MONETARY POLICY REPORT
WITH FINANCIAL STABILITY ASSESSMENT

Key figures

INFLATION TARGET

2%

Norges Bank's objective is to ensure low and stable inflation around the target of 2%, while contributing to high and stable output and employment and to countering the build-up of financial imbalances

POLICY RATE

1%

Norges Bank's policy rate is raised to 1% with effect from 22 March 2019. The policy rate forecast indicates a further rise ahead

POLICY RATE FORECAST

COUNTERCYCLICAL CAPITAL BUFFER

2%

The countercyclical capital buffer rate is 2%. With effect from 31 December 2019, the rate will be raised to 2.5%

Monetary Policy Report with financial stability assessment 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.

Editor: Øystein Olsen

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This *Monetary Policy Report* is based on information in the period to 15 March 2019 and was published on 21 March 2019, the day after the Executive Board's monetary policy meeting.
The *Report* is available at www.norges-bank.no.

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 countering 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.* In the *Report,* the Board's assessment of the economic outlook and monetary policy is presented in "Executive Board's assessment".

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 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 advice is 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 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, but in special circumstances may be set higher.

DECISION PROCESS FOR *MONETARY POLICY REPORT* 1/19

At its meeting on 13 March 2019, the Executive Boards discussed the economic outlook, the monetary policy stance and the need for a countercyclical capital buffer for banks. On the basis of this discussion and a recommendation from Norges Bank's management, the Executive Board made its decision on the policy rate at its meeting on 20 March 2019. The Executive Board also approved Norges Bank's advice to the Ministry of Finance on the level of the countercyclical capital buffer.

Executive Board's assessment

Norges Bank's Executive Board has decided to raise the policy rate by 0.25 percentage point to 1.0%. The Executive Board's current assessment of the outlook and balance of risks suggests that the policy rate will most likely be increased further in the course of the next half-year.

Economic growth among Norway's trading partners has slowed after a broad upswing over several years. Growth was weaker than expected in 2018 Q4, and the current growth projections are lower than in the December 2018 *Monetary Policy Report*. There are still prospects for higher price and wage inflation, but the projections have been revised down. Following a period of large movements in financial markets, global equity prices are now higher than in December. Forward rates indicate that policy rate expectations have fallen since December. Oil prices have risen since December, but futures prices are little changed.

Growth in the Norwegian economy has been solid since autumn 2016. Employment has risen, and unemployment has declined. The global upturn, higher oil prices and low interest rates have contributed to pushing up growth. The upturn in the Norwegian economy is expected to continue, partly fuelled by strong pick-up in investment on the Norwegian shelf in 2019. Further out, lower growth abroad and a decline in petroleum investment will weigh on growth.

Growth in the mainland economy was higher than expected in 2018 Q4. Norges Bank's Regional Network contacts expect output growth to remain firm ahead. Petroleum investment appears to be higher in 2019 and 2020 than projected in December, but somewhat lower further out. Since the December *Report*, employment has risen more than projected, and unemployment has continued to drift down.

Consumer price inflation has risen over the past year, fuelled in part by higher electricity prices. Underlying inflation has also moved higher, partly reflecting higher wage growth. Tighter labour market conditions suggest that wage growth will increase further.

Inflation has been higher than projected in the December *Report*. In February, the 12-month rise in the consumer price index (CPI) was 3.0%. Adjusted for tax changes and excluding energy products (CPI-ATE), inflation was 2.6%. The krone exchange rate is weaker than expected. At the same time, profitability in some sectors, especially oil services, appears to be weaker than envisaged earlier. This may dampen the rise in wage growth 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. House prices have risen recently, after showing little change through autumn 2018.

In its discussion of the risk outlook, the Executive Board focused in particular on global economic developments. Over the past year, rising protectionism and political uncertainty have weighed on global growth. Euro-area growth slowed markedly towards the end of 2018. The UK's relations with the EU have yet to be clarified. If trade tensions deepen, growth among trading partners may be lower than projected. At the same time, the krone may remain weak, if global uncertainty persists. The Executive Board

also noted that the upturn in the Norwegian economy may prove to be more pronounced than envisaged. Price and wage inflation may then turn out higher than projected.

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 countering the build-up of financial imbalances.

In its assessment, the Executive Board notes that the monetary stance is accommodative. The Norwegian economy is expanding at a solid pace, and capacity utilisation now appears to be slightly above a normal level. Underlying inflation is a little higher than the inflation target. The uncertainty surrounding global developments and the effects of monetary policy suggests a cautious approach to interest rate setting. Overall, the outlook and the balance of risks imply a gradual interest rate increase ahead.

The upturn in the Norwegian economy appears to be stronger than anticipated earlier. On the other hand, there are prospects for weaker growth and lower interest rates abroad. The policy rate forecast indicates a slightly faster rate rise in 2019 and a somewhat lower policy rate further out than projected in the December *Report*. With this path for the policy rate, inflation is projected to be close to target in the years ahead, 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 raise the policy rate by 0.25 percentage point to 1.0%. The Executive Board's current assessment of the outlook and balance of risks suggests that the policy rate will most likely be increased further in the course of the next half-year. The decision was unanimous.

Øystein Olsen
20 March 2019

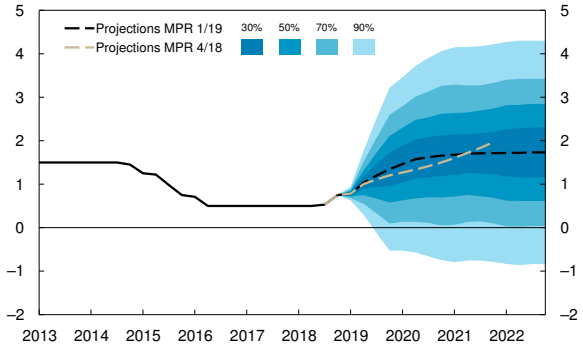
1 Overall picture

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

The policy rate has been raised from 0.75% to 1%. In the forecast, the policy rate increases further in the course of the next half-year, reaching 1.75% at the end of 2022. The policy rate forecast is slightly higher in the next few years than in the December 2018 *Monetary Policy Report*, and slightly lower further out. The upward revision of the policy rate forecast at the start of the projection period partly reflects stronger domestic demand and a weaker krone. The downward revision further out reflects prospects for lower growth and a more gradual interest rate rise among trading partners.

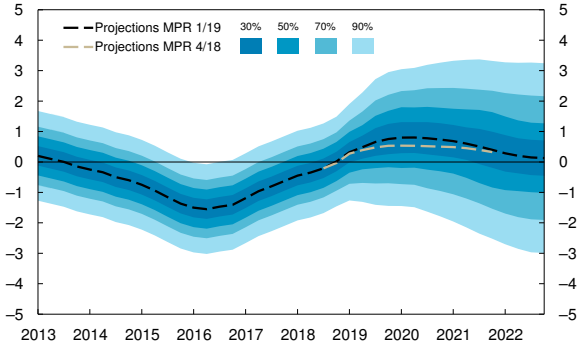
With a policy rate in line with the forecast, inflation is projected to be close to target, at the same time as unemployment remains low.

Chart 1.1a Policy rate with fan chart[1].
Percent. 2013 Q1 – 2022 Q4 [2]



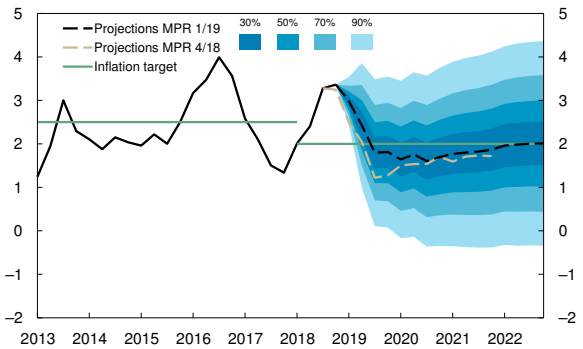
1) The fan chart is based on historical experience and stochastic simulations in Norges Bank's main macroeconomic model, NEMO. It does not take into account that a lower bound for the interest rate exists.
2) Projections for 2019 Q1 – 2022 Q4.
Source: Norges Bank

Chart 1.1b Estimated output gap[1] with fan chart[2].
Percent. 2013 Q1 – 2022 Q4



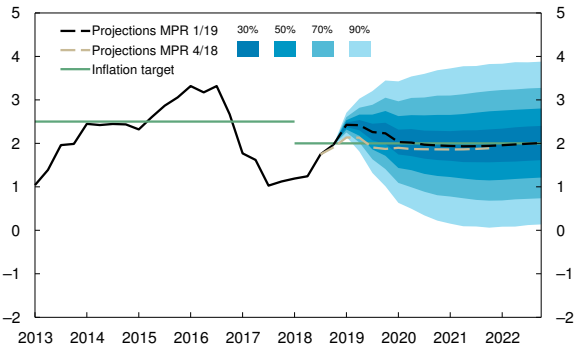
1) The output gap measures the percentage deviation between mainland GDP and estimated potential mainland GDP.
2) The fan chart is based on historical experience and stochastic simulations in Norges Bank's main macroeconomic model, NEMO.
Source: Norges Bank

Chart 1.1c Consumer price index (CPI) with fan chart[1].
Four-quarter change. Percent. 2013 Q1 – 2022 Q4[2]



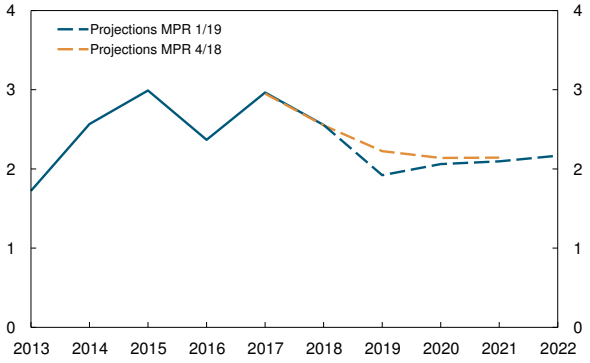
1) The fan chart is based on historical experience and stochastic simulations in Norges Bank's main macroeconomic model, NEMO.
2) Projections for 2019 Q1 – 2022 Q4.
Sources: Statistics Norway and Norges Bank

Chart 1.1d CPI-ATE[1] with fan chart[2].
Four-quarter change. Percent. 2013 Q1 – 2022 Q4[3]



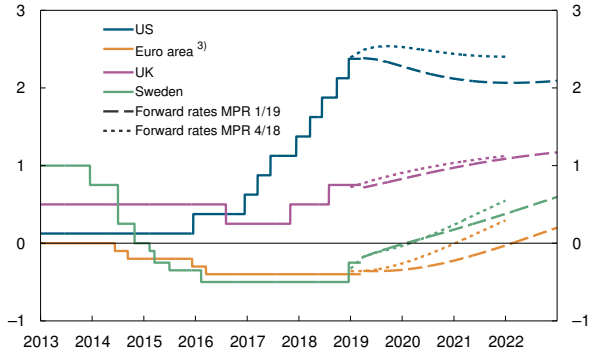
1) CPI adjusted for tax changes and excluding energy products.
2) The fan chart is based on historical experience and stochastic simulations in Norges Bank's main macroeconomic model, NEMO.
3) Projections for 2019 Q1 – 2022 Q4.
Sources: Statistics Norway and Norges Bank

Chart 1.2 GDP for Norway's trading partners.[1)]
Annual change. Percent. 2013 – 2022[2)]



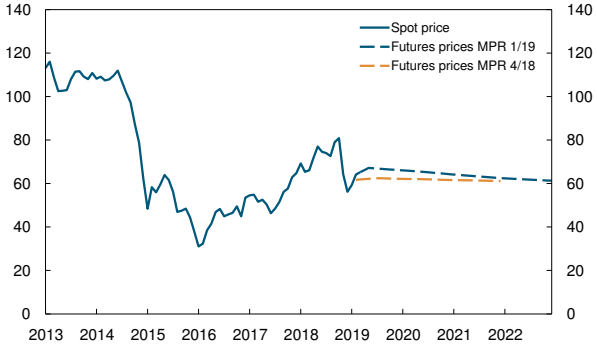
1) Export weights. Twenty-five main trading partners.
2) Projections for 2019 – 2022.
Sources: Thomson Reuters and Norges Bank

Chart 1.3 Policy rates and estimated forward rates[1)] in selected countries.
Percent. 1 January 2013 – 31 December 2022[2)]



1) Forward rates at 7 December 2018 for MPR 4/18 and 15 March 2019 for MPR 1/19. Forward rates are estimated based on Overnight Index Swap (OIS) rates.
2) Daily data through 15 March 2019. Quarterly data from 2019 Q2.
3) ECB deposit facility rate. Eonia from 2019 Q2.
Sources: Bloomberg, Thomson Reuters and Norges Bank

Chart 1.4 Oil price.[1)] USD/barrel. January 2013 – December 2022[2)]



1) Brent Blend.
2) Futures prices on 7 December 2018 for MPR 4/18 and on 15 March 2019 for MPR 1/19.
Sources: Thomson Reuters and Norges Bank

1.1 GLOBAL DEVELOPMENTS AND OUTLOOK

Weaker global growth

After the recent years' broad upswing, GDP growth has slowed in a number of trading partner countries (Chart 1.2), and has been a little lower than projected in *Monetary Policy Report* (MPR) 4/18, published on 13 December. Growth has softened over the past year on the back of tighter financial conditions, increased uncertainty associated with trade tensions and the UK's exit from the EU. GDP growth among trading partners is expected to rebound slightly ahead. The projections for GDP growth and import growth among trading partners are nevertheless lower than in the December *Report*.

Lower inflation

Underlying inflation among Norway's trading partners has been stable at somewhat below 1.5% since the beginning of 2017. Recently, inflation has been lower than expected, while wage growth has picked up broadly as projected. Both wage growth and underlying inflation are projected to move up in the next few years owing to higher capacity utilisation, but the projections are lower than in the December *Report*.

Central bank policy rates have been raised in a number of countries (Chart 1.3). At the same time, the global interest rate level remains low, and forward rates among Norway's main trading partners indicate a very gradual rate rise ahead. Interest rate expectations have fallen since December.

Oil spot prices are now around USD 65 per barrel, somewhat higher than in December (Chart 1.4). Futures prices are little changed and indicate a slight decline in oil prices in the period to 2022.

1.2 THE ECONOMIC SITUATION IN NORWAY

Solid growth in the Norwegian economy

The global upturn, higher oil prices and low interest rates have contributed to solid growth in the Norwegian economy over the past few years. After falling sharply for several years, investment on the Norwegian shelf and oil service exports expanded in 2018.

Growth in mainland GDP picked up in 2018 Q4 and was higher than projected in the December *Report*. Growth in the mainland economy is projected to be firm over the next two quarters (Chart 1.5). The projections are

in line with the expectations of enterprises in Norges Bank's Regional Network and the projections from Norges Bank's System for Averaging short-term Models (SAM). The projections for the first half-year have been revised up slightly compared with the December *Report*.

Employment growth is solid (Chart 1.6), and unemployment has fallen further. Labour market developments in recent months have been better than projected and may suggest that capacity utilisation is a little higher than assumed in the December *Report*.

Household debt growth has slowed through 2018. House prices have risen slightly more than expected in recent months, after having shown little change through autumn 2018.

Higher-than-expected inflation

Consumer price inflation has picked up over the past year. Inflation has been higher than projected in the December *Report*. In February, the 12-month rise in the consumer price index (CPI) was 3.0% (Chart 1.7). CPI inflation adjusted for tax changes and excluding energy products (CPI-ATE) was 2.6%.

Annual wage growth in 2018 was 2.8%, in line with the wage settlement norm and a little higher than projected in December. Wage growth is expected to increase further in 2019.

The krone has appreciated so far in 2019, after weakening towards the end of 2018, but the krone has been weaker than projected in December.

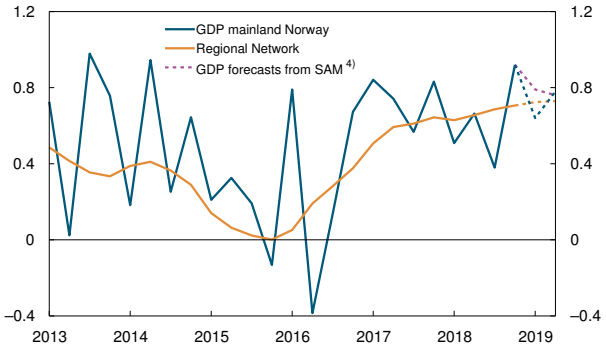
1.3 MONETARY POLICY AND PROJECTIONS

Prospects for higher interest rates

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 countering the build-up of financial imbalances.

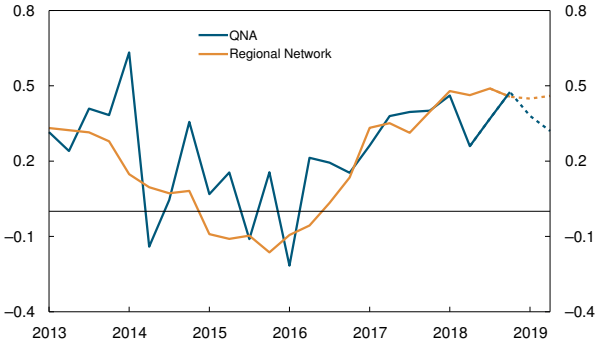
Monetary policy is expansionary. The outlook for the Norwegian economy suggests that the policy rate should be raised ahead. A policy rate that is too low over time may increase pressures in the economy, triggering acceleration in price and wage inflation. Raising the policy rate too rapidly may stifle the

Chart 1.5 GDP for mainland Norway[1] and the Regional Network's indicator of output growth [2]. Quarterly change. Percent. 2013 Q1 – 2019 Q2[3]



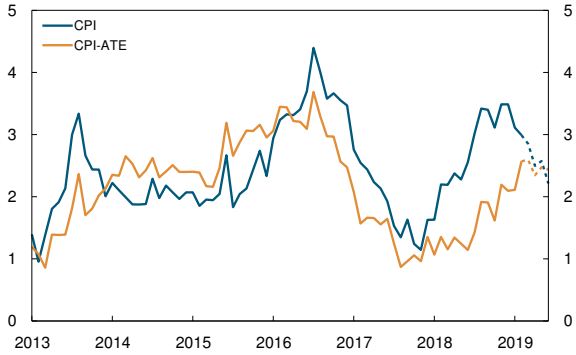
1) Seasonally adjusted.
2) Reported output growth past three months converted to quarterly figures. Quarterly figures are calculated by weighting together three-month figures on the basis of survey timing. For 2019 Q1, expected output growth is estimated by reported growth over the past three months and expected growth in the next six months as reported in February. 2019 Q2 is expected growth in the next six months as reported in February.
3) Projections for 2019 Q1 – 2019 Q2 (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. 2013 Q1 – 2019 Q2[3]



1) Seasonally adjusted.
2) Reported employment growth for the past three months converted to quarterly figures. Quarterly figures are calculated by weighting together three-month figures based on survey timing. For 2019 Q1, 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 February. 2019 Q2 is expected growth in the next three months as reported in February.
3) Projections for 2019 Q1 – 2019 Q2 (broken lines).
Sources: Statistics Norway and Norges Bank

Chart 1.7 CPI and CPI-ATE[1].
Twelve–month change. Percent. January 2013 – June 2019 [2]



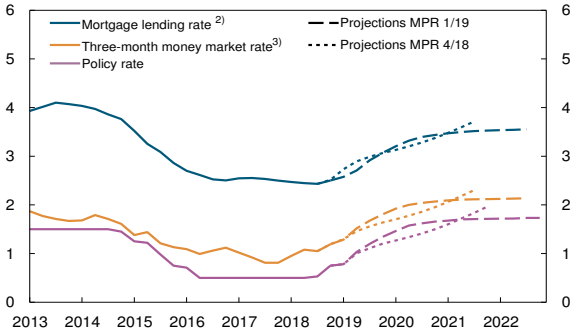
1) CPI adjusted for tax changes and excluding energy products.
2) Projections for March 2019 – June 2019 (broken lines).
Sources: Statistics Norway and Norges Bank

MONETARY POLICY SINCE DECEMBER

At the monetary policy meeting on 12 December, the policy rate was kept unchanged at 0.75%. The analyses in the December 2018 *Monetary Policy Report* indicated a further rate hike in March, followed by a gradual rise to 2% at the end of 2021. With this path for the policy rate, inflation was projected to be close to target and unemployment to remain low.

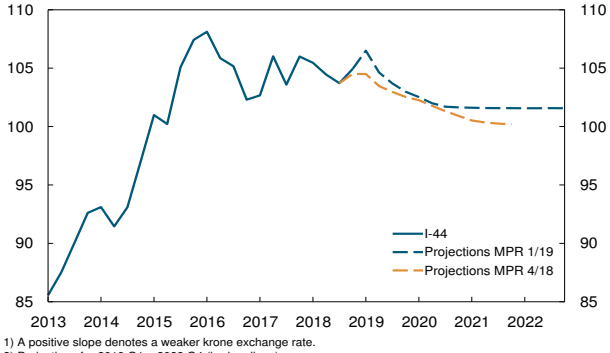
At the monetary policy meeting on 23 January, new information was assessed in relation to the projections in the December *Report*. Global growth had been a little weaker than projected. At the same time, inflation in Norway had been a little higher than expected, while economic growth and labour market developments appeared to be broadly as projected. The Executive Board's assessment in January was that the outlook and balance of risks had not changed substantially since December. The Executive Board decided to keep the policy rate unchanged at 0.75%.

Chart 1.8 Interest rates. Percent. 2013 Q1 – 2022 Q4 [1)]



1) Policy rate projections for 2019 Q1 – 2022 Q4. For mortgage lending rate and three-month money market rate, projections for 2019 Q1 – 2022 Q3.
2) Average interest rate on outstanding housing 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)]. 2013 Q1 – 2022 Q4 [2)]



1) A positive slope denotes a weaker krone exchange rate.
2) Projections for 2019 Q1 – 2022 Q4 (broken lines).
Sources: Thomson Reuters and Norges Bank

upturn, resulting in higher unemployment and below-target inflation. The uncertainty surrounding global developments and the effects of monetary policy suggests a cautious approach to interest rate setting.

The policy rate has been raised from 0.75% to 1%, effective from 22 March 2019. In the forecast, the policy rate increases further in the course of the next half-year, reaching 1.75% at the end of 2022. With a policy rate in line with the forecast, inflation is projected to be close to target, at the same time as unemployment remains low.

The rate path is slightly higher than in the December *Report* in the next few years and slightly lower further out (Chart 1.1a). The upward revision of the policy rate path at the start of the projection period reflects stronger domestic demand and a weaker krone. The downward revision further out reflects prospects for lower growth and a more gradual rate rise among trading partners.

The policy rate forecast implies an increase in residential mortgage rates from 2.6% to around 3.5% in the course of the projection period (Chart 1.8).

The projections are uncertain, and uncertainty increases through the projection period. The forecast shows the policy rate outlook given economic developments in line with the current projections. If developments take a different course, the rate path will be adjusted.

Higher capacity utilisation and inflation close to target

With the policy rate in line with the forecast, capacity utilisation is likely to continue to rise and remain above a normal level throughout the projection period (Chart 1.1b). Capacity utilisation is projected to peak in the first half of 2020, gradually declining thereafter. Compared with the December *Report*, the projections for capacity utilisation have been revised up slightly. The krone is expected to appreciate ahead, but will remain weaker than projected in the December *Report* throughout the projection period (Chart 1.9).

Rising capacity utilisation will likely push up inflation, while a stronger krone will restrain the rise. Inflation is projected to be at around 2% at the end of 2022 (Charts 1.1c-d). Compared with the December *Report*,

the inflation projections are higher throughout the projection period.

Growth in mainland GDP is projected at 2.7% in 2019 (Chart 1.10). In the years ahead, growth will decelerate on the back of higher interest rates, a gradual appreciation of the krone and lower petroleum investment. The deceleration also reflects expectations that growth abroad will be lower than in recent years. Compared with the December *Report*, growth is projected to be higher in 2019 and 2020, but a little lower in 2021.

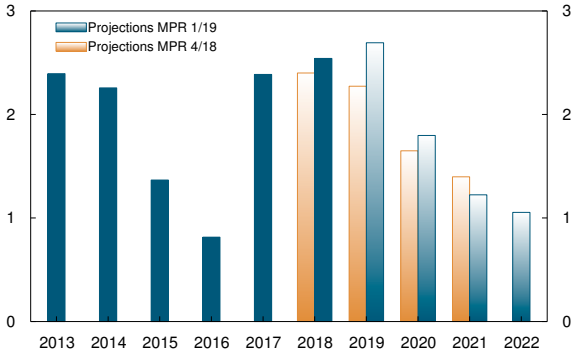
Household consumption growth is expected to be moderate. Despite higher interest rates, household real disposable income is set to be higher in the years ahead, owing to prospects for real wage growth and continued employment growth. Business investment is expected to rise further in pace with higher capacity utilisation. Mainland exports are also expected to increase in the years ahead, driven in part by higher global oil investment. Investment on the Norwegian shelf is expected to rise considerably in 2019 and edge slightly higher in 2020, before falling further out in the projection period (Chart 1.11). Growth in public demand is expected to slow ahead.

Wage growth on the rise

Employment is expected to rise through the projection period, in pace with the upturn in the mainland economy. The projections are a little higher than in December. The labour force is also expected to expand, but less than employment, so that unemployment will show a small decline in the coming year (Chart 1.12).

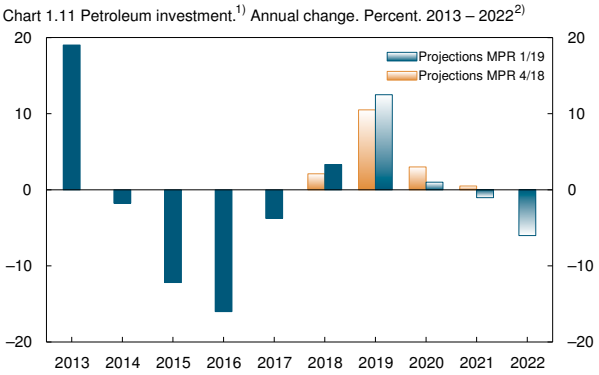
Tighter labour market conditions are expected to push up wage growth further (Chart 1.13).

Chart 1.10 GDP for mainland Norway.[1] Annual change. Percent. 2013 – 2022[2]



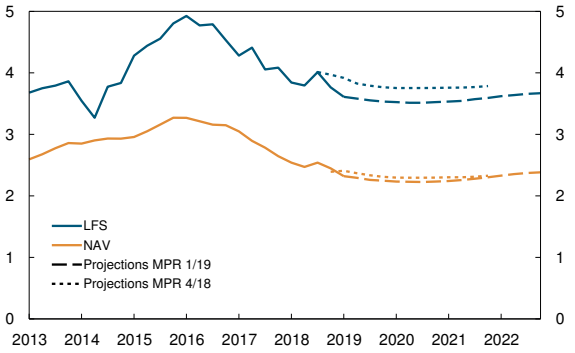
1) Working-day adjusted.
2) Projections for 2019 – 2022.
Sources: Statistics Norway and Norges Bank

Chart 1.11 Petroleum investment.[1] Annual change. Percent. 2013 – 2022[2]



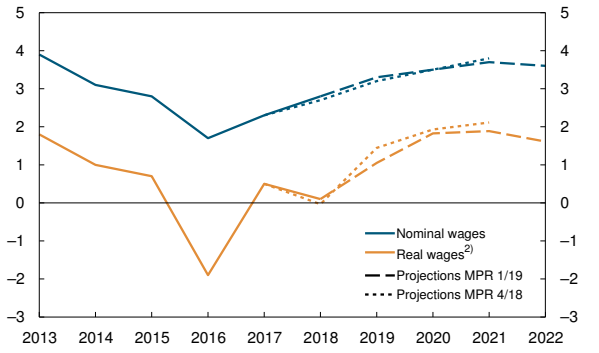
1) Working-day adjusted.
2) Projections for 2019 – 2022.
Sources: Statistics Norway and Norges Bank

Chart 1.12 Unemployment according to LFS [1] and NAV [2].
Share of the labour force. Seasonally adjusted. Percent. 2013 Q1 – 2022 Q4[3]



1) Labour Force Survey.
2) Registered unemployment. According to NAV, changes in NAV's routines entail, in isolation, about 0.1 percentage points higher registered unemployment as from November 2018, which is accounted for in our projections for NAV unemployment.
3) Projections for 2019 Q1 – 2022 Q4.
Sources: Norwegian Labour and Welfare Administration (NAV), Statistics Norway and Norges Bank

Chart 1.13 Wages. Annual change. Percent. 2013 – 2022[1]

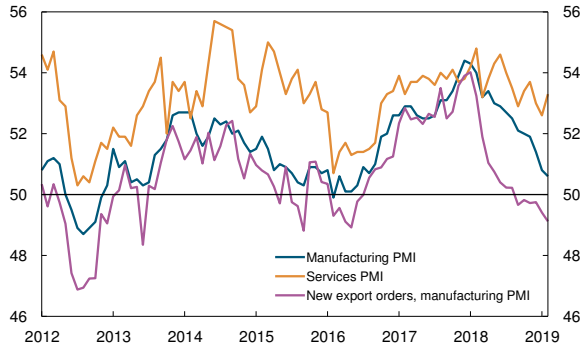


1) Projections for 2019 – 2022.
2) Nominal wage growth deflated by the CPI.
Sources: Statistics Norway and Norges Bank

2 The global economy

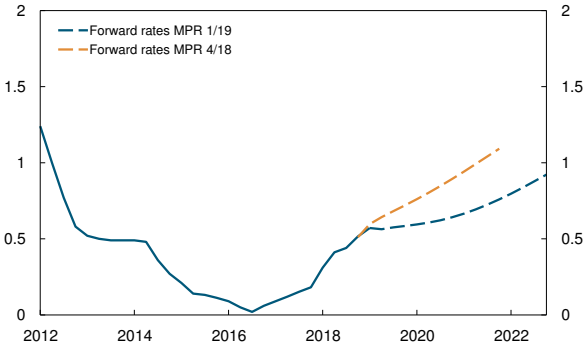
After the recent years' broad upswing, GDP growth among Norway's trading partners has now slowed. Growth slowed through 2018 on the back of tighter financial conditions and growing uncertainty about economic and political developments. The projections for GDP growth among trading partners are lower than in the December 2018 *Monetary Policy Report*. The projections for wage growth and underlying inflation abroad are also lower than in the December *Report*. Oil spot prices have increased since December, while futures prices show little change. Expected money market rates and long-term rates among trading partners have declined.

Chart 2.1 Global PMI.[1)]
Seasonally adjusted. Index.[2)] January 2012 – February 2019



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)]
Percent. 2012 Q1 – 2022 Q4[2)]



1) Based on money market rates and interest rate swaps. See Norges Bank (2015) "Calculation of the aggregate for trading partner interest rates". *Norges Bank Papers* 2/2015.
2) Forward rates at 7 December 2018 for MPR 4/18 and 15 March 2019 for MPR 1/19.
Sources: Thomson Reuters and Norges Bank

2.1 GROWTH, PRICES AND INTEREST RATES

Slightly weaker growth prospects

GDP growth in many of Norway's trading partners has slowed, for example in Europe, the US and some emerging economies. Growth has slowed slightly more than projected in December, particularly in the euro area. Activity indicators for manufacturing and services are lower than in December (Chart 2.1).

Uncertainty surrounding the economic outlook has contributed to large movements in financial markets since the December *Report*. The Federal Reserve has signalled that it intends to wait and see before changing rates further. Expected money market rates among main trading partners indicate a very gradual rate rise, and interest rate expectations have declined since the December *Report* (Chart 2.2). Long-term interest rates have also fallen since December (Chart 2.3). After declining in December, global equity prices are now higher than at the time of the December *Report* (Chart 2.4). Overall financial conditions among main trading partners are slightly looser than in December.

Tighter financial conditions and mounting uncertainty linked to trade tensions and the UK's exit from the EU led to a gradual deterioration in growth prospects through 2018. This uncertainty is expected to continue to weigh on growth in 2019, particularly as a result of reduced businesses investment willingness. At the same time, expansionary monetary and fiscal policies and the oil price decline in autumn 2018 are

underpinning growth, and GDP growth among trading partners is expected to edge up a little ahead. Capacity utilisation among trading partners is projected to be close to a normal level in the coming years. GDP growth and import growth are projected to be lower than in the December *Report* (Chart 2.5 and Annex Table 1).

Lower price inflation

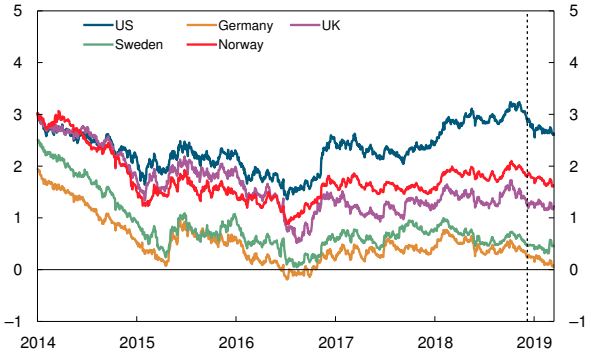
Overall price inflation for Norway's main trading partners has fallen more than expected, primarily reflecting lower energy price inflation after the oil price decline in autumn 2018. Underlying inflation has remained stable somewhat below 1.5% since the beginning of 2017 (Chart 2.6), but has been slightly lower than expected recently. The inflation projections for 2019 have been revised down since the December *Report*. Wage growth among trading partners was low for a long time despite a marked fall in unemployment. Since spring 2018, wage growth has picked up. Wage growth and underlying price inflation are both projected to show a small increase in the next few years as a result of the rise in capacity utilisation (Chart 2.7 and Annex Table 2). The projections are lower than in December. Oil spot prices are now around USD 65 per barrel, somewhat higher than in December. Futures prices up to 2022 are little changed (Chart 1.4). 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 projected in December, particularly for audio-visual equipment and clothing and footwear. The projections for import price inflation in 2019 have been revised up (Chart 2.8). The shift in Norwegian imports towards low-cost countries such as China and other emerging economies is expected to diminish in the years ahead, but to continue to dampen imported consumer goods inflation.

Global outlook remains highly uncertain

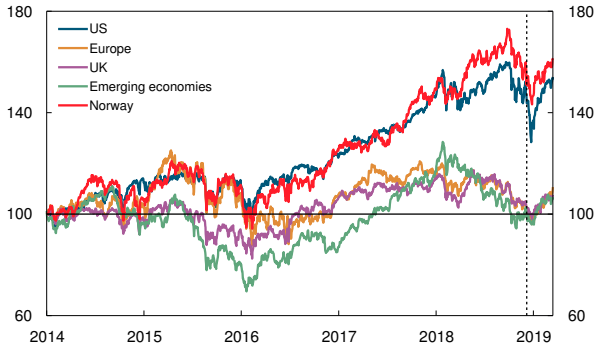
There is considerable uncertainty surrounding global economic developments. If trade tensions deepen, growth may prove lower than projected. The UK's relations with the EU have yet to be clarified, and continued uncertainty about the outcome may result in lower growth in Europe than expected. On the other

Chart 2.3 Yields on ten-year government bonds in selected countries.
Percent. 2 January 2014 – 15 March 2019 [1)]



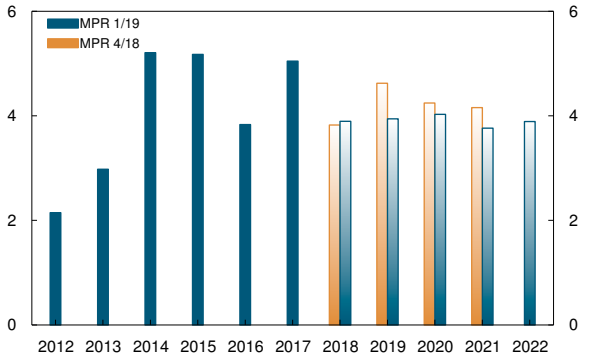
1) MPR 4/18 was based on information in the period up to 7 December 2018, indicated by the vertical line.
Source: Bloomberg

Chart 2.4 Equity price indexes in selected countries.[1)]
Index. 2 January 2014 = 100. 2 January 2014 – 15 March 2019 [2)]



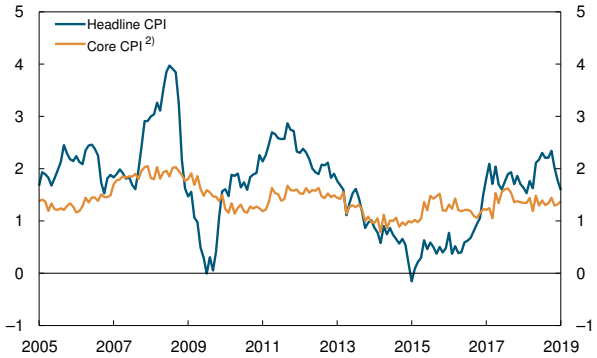
1) Standard and Poor's 500 Index (US). Euro Stoxx 50 Index (Europe).
Financial Times Stock Exchange 100 Index (UK). MSCI Emerging Markets Index (emerging economies).
Oslo Børs Benchmark Index (Norway).
2) MPR 4/18 was based on information in the period up to 7 December 2018, indicated by the vertical line.
Source: Bloomberg

Chart 2.5 Imports for Norway's trading partners.[1)]
Annual change. Percent. 2012 – 2022[2)]



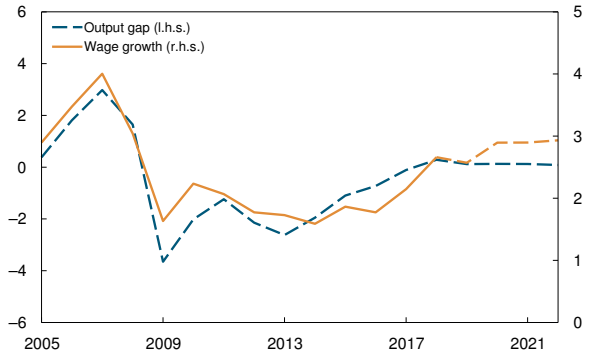
1) Export weights. 25 main trading partners.
2) Projections for 2018 – 2022 (shaded bars).
Sources: Thomson Reuters and Norges Bank

Chart 2.6 Headline and core inflation in selected countries.[1)]
Twelve-month change. Percent. January 2005 – January 2019



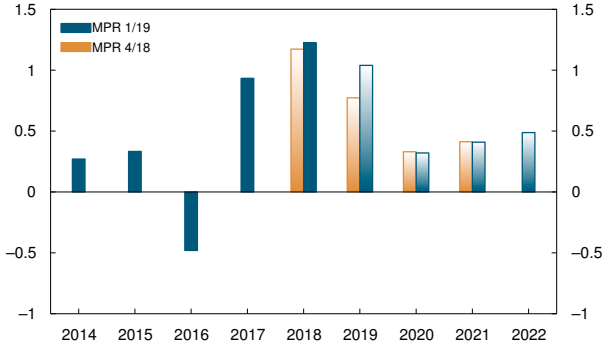
1) Import weights. US, euro area, UK and Sweden.
2) US: excluding food and energy. UK and euro area: excluding food, tobacco, alcohol and energy. Sweden: excluding energy.
Sources: Thomson Reuters and Norges Bank

Chart 2.7 Wage growth[1)] and estimated output gap[2)] in selected countries.[3)]
Percent. 2005 – 2022 [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 – 2022 (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 – 2022[1)]



1) Projections for 2019 – 2022 (shaded bars).
Sources: Statistics Norway, Thomson Reuters and Norges Bank

hand, economic growth may prove stronger than projected if, for example, the US and China sign a trade agreement or the political processes in Europe rapidly lead to sound solutions.

2.2 COUNTRIES AND REGIONS

Slowdown in US growth

The US economy expanded at a fast pace through much of 2018, primarily driven by an expansionary fiscal stance. In the past few months, growth has slowed somewhat and been slightly weaker than projected in the December *Report*. This partly reflects the five-week government shutdown owing to the disagreement over the 2019 budget. Employment growth has been high, and wage growth has accelerated to a little more than 3%.

The Federal Reserve raised its policy rate in December to a target range of 2.25–2.50%, and signalled at its January meeting that it would wait and see before changing rates further owing to increased uncertainty. Forward rates do not indicate further rate hikes ahead. Policy rate expectations in 2022 are 0.3 percentage point lower than in December. The monetary policy signals have contributed to a somewhat weaker USD effective exchange rate.

Capacity utilisation is estimated to be well above a normal level, and rising capacity constraints are expected to push down growth ahead. In addition, investment growth is expected to lose some momentum as a result of a likely fading of the effects of previous corporate tax cuts and the uncertainty associated with trade tensions. GDP growth is now projected to slow gradually from 2.9% in 2018 to 1.7% in 2022. The projections are slightly lower than in the December *Report*. Consumer price inflation has been lower than expected as a result of stronger effects of the oil price decline towards the end of 2018 than envisaged earlier. The projections for both price and wage inflation have been revised down a little as lower GDP growth is expected to contribute less to labour market pressures than previously assumed.

Lower growth in the euro area

Euro-area GDP growth appears to be slowing further in 2019, after having gradually tapered off in 2018. Uncertainty about the UK's exit from the EU and trade

tensions have contributed to dampening growth. Temporary factors affecting German manufacturing also pushed down on growth in the latter half of 2018. Household confidence indicators and business activity indicators have edged down since December. On the other hand, unemployment has continued to decline, and wage growth is moving up (Chart 2.9). Capacity utilisation is estimated to be close to a normal level.

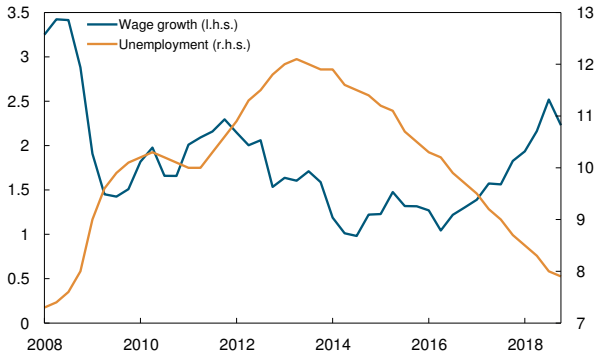
The European Central Bank (ECB) terminated its net asset purchases in December 2018. Against the background of weaker economic developments, the ECB has signalled a rate rise in 2020 at the earliest. Policy rate expectations have also edged down since December. Forward rates indicate that the first rate rise is expected in summer 2020.

GDP growth is projected to increase from 1.1% in 2019 to 1.5% in 2021. Growth is mainly driven by the increase in consumer purchasing power, while uncertainty associated with trade tensions will likely continue to restrain business investment willingness ahead. Compared with the December *Report*, the growth projections have been revised down. Underlying inflation is expected to rise gradually in the coming years as a result of higher capacity utilisation and rising wage growth. Owing to the slowing of GDP growth, the projections for price and wage inflation have been revised down. Overall annual price inflation is expected to remain below 2% to the end of the projection period.

Substantial uncertainty in the UK

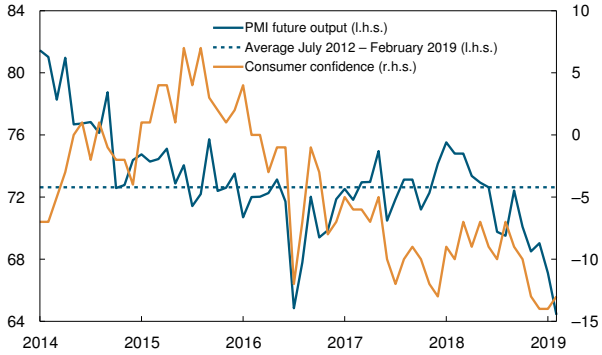
UK growth slowed markedly towards the end of 2018. The slowdown likely reflects heightened uncertainty about the UK's future relations with the EU. The UK Parliament has not approved the Withdrawal Agreement with the EU, and the UK's relations with the EU have yet to be clarified. Business investment has fallen in recent quarters, and business and household prospects have weakened considerably (Chart 2.10). At the same time, labour market conditions are still tight. Unemployment is now at its lowest level since 1975, and wage growth has accelerated to close to 3.5%. The Bank of England continues to signal that a gradual tightening of monetary policy is necessary to stabilise inflation around target. Forward prices

Chart 2.9 Unemployment[1] and wage growth [2] in the euro area.
Seasonally adjusted. Percent. 2008 Q1 – 2018 Q4



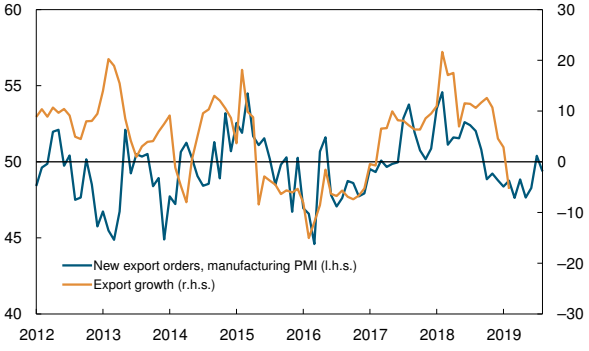
1) Unemployed as a share of the labour force.
2) Compensation per employee. Four-quarter change.
Sources: Thomson Reuters and Norges Bank

Chart 2.10 Outlook for UK manufacturers[1] and households[2].
January 2014 – February 2019



1) Future manufacturing output. Diffusion index centered around 50.
2) Macroeconomic expectations next twelve months. Diffusion index centered around 0.
Source: Thomson Reuters and Norges Bank

Chart 2.11 New export orders, manufacturing PMI[1] and change in exports[2] in China.
January 2012 – August 2019 [3]



1) Caixin PMI. The data are lagged forward six months. Survey of purchasing managers. Diffusion index centered around 50. Seasonally adjusted.
2) Twelve-month change. Three-month moving average of growth has been used in order to avoid effects from the Chinese New Year.
3) Latest observation is February 2019.
Sources: Thomson Reuters and Norges Bank

indicate little change in policy rate expectations since December.

This *Report* applies the assumption that the UK's exit from the EU will be orderly. Investment is expected to rebound as uncertainty recedes and future trade relations are clarified. A more expansionary fiscal policy and prospects for higher real wage growth will also underpin growth. GDP growth is expected to pick up from 1.1% in 2019 to 1.5% in 2021, while capacity utilisation remains close to a normal level. Price inflation has been a little lower than envisaged in the December *Report*, and the projection has been revised down for 2019. Annual inflation is projected, as previously, at around 2% in the period ahead.

Lower growth in Sweden

Swedish GDP growth picked up in 2018 Q4 following negative growth in Q3. Confidence and activity indicators have fallen, but most indicators remain at high levels. Capacity utilisation remains higher than normal. Inflation, as measured by the consumer price index with a fixed interest rate (CPIF), is close to the inflation target of 2%. The Riksbank raised its policy rate in December. At its meeting in February, the Riksbank signalled one rate hike in 2019 and two further rate hikes in 2020. Policy rate expectations have fallen somewhat since December and forward rates indicate a rate hike towards the end of 2019.

GDP growth in 2018 Q4 was higher than projected in the December *Report*, but weaker growth in housing investment and more moderate growth among Sweden's trading partners will likely curb growth in the coming years. Later in the projection period, stronger wage growth pushes up consumption and growth. GDP growth is projected to rise gradually from 1.6% in 2019 to 2% towards the end of the projection period. The projections are lower than in the December *Report*. Inflation is projected to remain close to target in the coming years.

Trade tensions drag down Chinese growth

Chinese GDP growth continued to slow in 2018 Q4. Growth in both exports and imports slowed towards the end of the year, and manufacturing activity declined (Chart 2.11). GDP growth was nevertheless somewhat stronger than envisaged in December.

Trade tensions between China and the US have likely contributed to the slowdown in Chinese growth and to heightened uncertainty surrounding the outlook. However, the Chinese government has increased infrastructure investment and taken measures to boost household consumption with a view to stimulating the economy. A more expansionary monetary and fiscal stance is expected to mitigate the negative effects of the trade conflict. As in the December *Report*, growth is projected to drift down to 6% in 2019 and hover just below 6% to the end of the projection period.

The effects of lower activity in China and trade tensions have spilled over into other emerging economies. The effects vary widely across countries and are not negative for all emerging economies. For example, Brazil and India have increased their market share for various goods as a result of the new trade restrictions between China and the US. The fall in oil prices in autumn 2018 has contributed to curbing price inflation and provided additional room for monetary policy stimulus in a number of countries. A less tight monetary policy outlook in the US has also helped ease financial conditions. Overall, the growth projections for emerging economies excluding China are slightly lower than in the December *Report*.

DEVELOPMENTS IN OIL AND NATURAL GAS PRICES

Oil spot prices are now USD 66 per barrel, USD 5 higher than at the time of the December *Monetary Policy Report*. Prices fell to just above USD 50 in December, in an environment of weaker global developments and financial market turbulence. In addition, OECD oil inventories increased towards the end of 2018 (Chart 2.12), following record-high oil production in countries such as Saudi Arabia, Russia and the US through autumn.

Since the turn of the year, oil prices have risen again, as global equity prices rebounded and financial market uncertainty subsided. However, the rise is also related to supply-side conditions. OPEC+ has again cut production substantially.[1] Production has also declined further in Iran and Venezuela. Combined, this has more than offset the continued rise in US oil production. At the same time, global oil consumption has continued to grow at a steady pace, despite slowing global growth and uncertainty about the outlook. Growth in oil consumption is particularly high in countries such as China, India and the US.

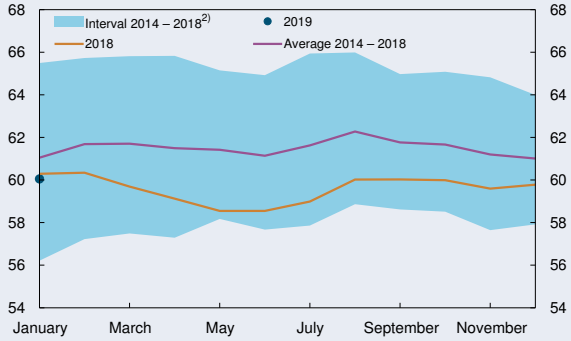
Oil prices are assumed to move in line with futures prices (Chart 1.4). Futures prices at end-2022 are a little higher than USD 60, about the same as in December.

Oil prices may turn out to be higher or lower than currently envisaged. 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 in Venezuela could depress global oil supply even further. OECD oil inventories could then fall again. On the other hand, prices could fall if US oil production increases at a faster pace than expected. In addition, global oil consumption growth may decline if growth in the world economy proves to be lower than expected, especially if growth in emerging economies, such as China and India, slows more than anticipated. Over time, demand may also shrink as a result of energy efficiency measures and a shift towards new energy sources in order to meet long-term climate goals.

European natural gas prices have declined further since the December *Report* (Chart 2.13), reflecting lower natural gas prices in Asia, ample access to liquefied natural gas in Europe and generally weaker economic developments in the euro area and in the UK. In addition, coal prices have also edged lower. Natural gas prices are assumed to move in line with futures prices, which are lower in the coming years than envisaged in December.

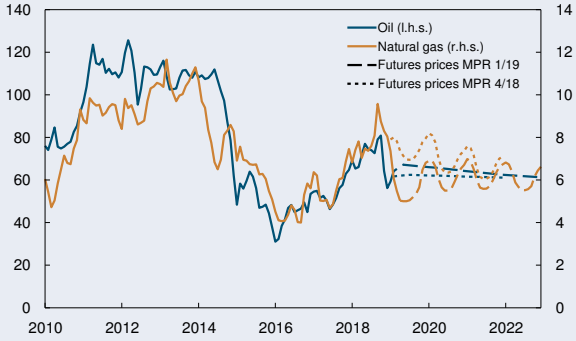
1 Twelve OPEC countries and 10 non-OPEC countries agreed to cut back production at meetings in December 2018 (see press release). The OPEC member country Saudi Arabia and Russia (as representative of non-OPEC countries) are particularly important parties to the agreement.

Chart 2.12 Total OECD oil inventories.
In days of consumption.[1] January 2018 – January 2019



1) Days of consumption is calculated using the average expected demand over the next three months.
2) Interval between the highest and lowest level for a given month in the period 2014 – 2018.
Sources: International Energy Agency and Norges Bank

Chart 2.13 Oil and natural gas prices[1].
Oil. USD/barrel. Natural gas. USD/MMBtu. January 2010 – December 2022[2]



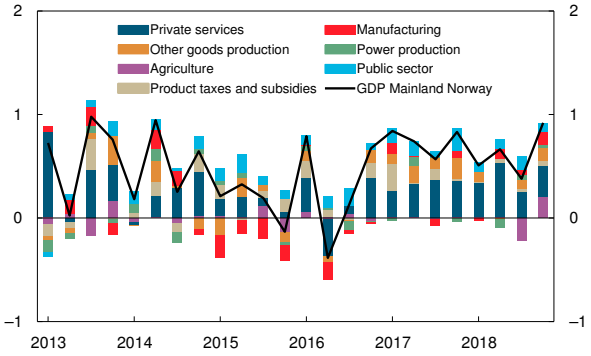
1) Average of prices on natural gas in the Netherlands and the UK.
2) Futures prices on 7 December 2018 for MPR 4/18 and on 15 March 2019 for MPR 1/19.
Sources: Norwegian Petroleum, Thomson Reuters and Norges Bank

3 The Norwegian economy

Growth in the Norwegian economy is solid, and employment is rising. Unemployment has declined, and capacity utilisation appears to be slightly above a normal level. Inflation has risen over the past year. Underlying inflation is slightly above the inflation target of 2%.

Mainland GDP rose by 2.5% in 2018 and is projected to rise by 2.7% in 2019. This is higher than the economy's estimated growth potential, and growth is expected to slow further out in the projection period. Higher interest rates, a gradual appreciation of the krone and a decline in oil investment will restrain growth. Capacity utilisation is projected to rise in the period to the first half of 2020 before edging down gradually. Unemployment is expected to remain low and wage growth to pick up. Inflation is projected at 2% at the end of 2022.

Chart 3.1 GDP for mainland Norway. Market value. Contribution to four-quarter growth. Seasonally adjusted. Percentage points. 2013 Q1 – 2018 Q4



Sources: Statistics Norway and Norges Bank

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

Solid growth in the Norwegian economy

Growth in the mainland economy has been solid since autumn 2016. The global upturn, higher oil prices and low interest rates have contributed to driving growth. After falling sharply for several years, investment on the Norwegian shelf and oil service exports expanded in 2018.

Mainland GDP growth was 0.9% in 2018 Q4, higher than projected in the December *Report*. Agricultural production pulled up mainland GDP by 0.2% after a corresponding negative contribution in 2018 Q3 owing to the dry summer (Chart 3.1). Monthly national accounts indicate that growth was a little lower in January than through 2018 Q4.

In February, Norges Bank's Regional Network contacts reported that growth in the past three months was at approximately the same level as in the preceding three months (Chart 3.2). While oil service contacts reported that growth had picked up markedly, contacts in the construction industry and distributive trade reported slower growth. Overall, contacts expected that growth would remain at approximately the same level over the next half-year.

Growth in the mainland economy is projected to be solid in the coming two quarters, (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). Compared with the December *Report*, the projections for the first half of 2019 have been revised up a little.

Annual growth in mainland GDP is projected to rise from 2.5% in 2018 to 2.7% in 2019 (Chart 1.10). The figures have been adjusted for the variation in the number of working days per year. In 2019, exports, oil investment and business investment will make a substantial contribution to growth in the mainland economy.

Further out in the projection period, growth is expected to decelerate on the back of higher interest rates, a gradual appreciation of the krone and lower oil investment (see boxes on page 31 and 35). The deceleration also reflects expectations that growth abroad will be lower than in recent years. Fiscal policy ahead is assumed to be less expansionary than in recent years (see box on page 34).

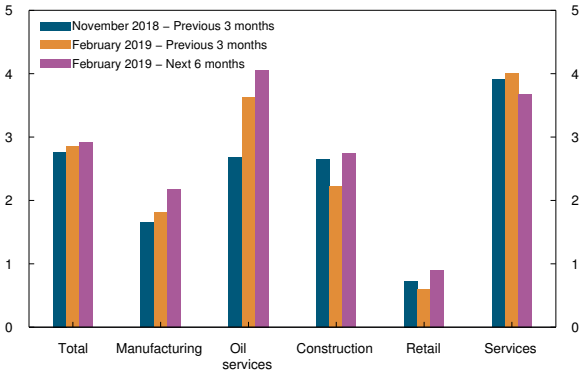
Compared with the December *Report*, the growth projections have been revised up somewhat for the projection period as a whole, reflecting a weaker projection for the krone than in December and a somewhat higher oil price. Growth among Norway's trading partners has been revised down and pulls in the opposite direction.

Prospects for further growth in household consumption

Consumption growth slowed slightly in 2018. After falling in 2018 Q3, consumption rebounded in Q4. Developments were broadly as projected in the December *Report*. Consumption growth is expected to pick up further in the coming period. Consumer confidence indicators have declined a little since December, but are close to their historical average (Chart 3.3).

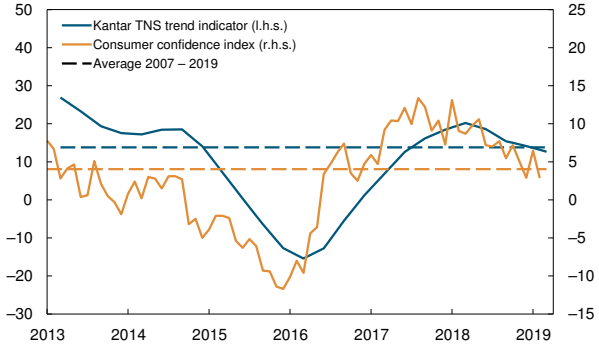
Real income growth rose on the back of solid employment growth in 2018. Lower-than-expected tax payments contributed to appreciably higher real disposable income than assumed in the December *Report*. Higher wage growth lifts income growth ahead. Higher interest rates curb the rise in disposable income. Owing to high household debt ratios, the impact will be stronger than during previous periods of interest rate rises.

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



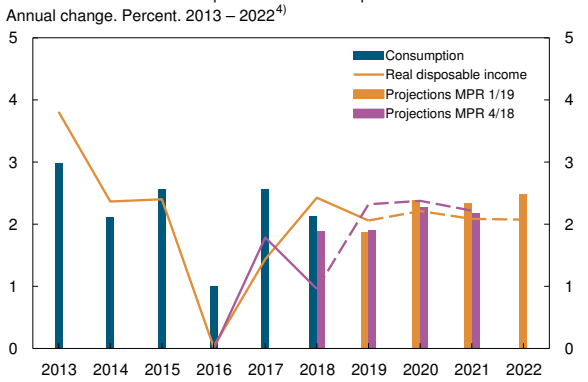
Source: Norges Bank

Chart 3.3 Consumer confidence. Net values. Kantar TNS trend indicator for households. 2013 Q1 – 2019 Q1. Opinion consumer confidence index (CCI). January 2013 – February 2019



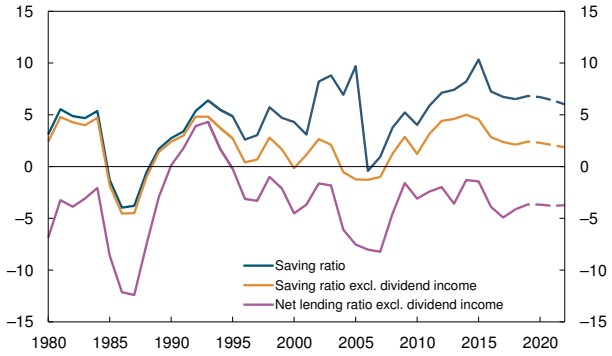
Sources: ForbrukerMeteret™ from Opinion, Kantar TNS and Norges Bank

Chart 3.4 Household consumption[1) 2)] and real disposable income[3)]. Annual change. Percent. 2013 – 2022[4)]



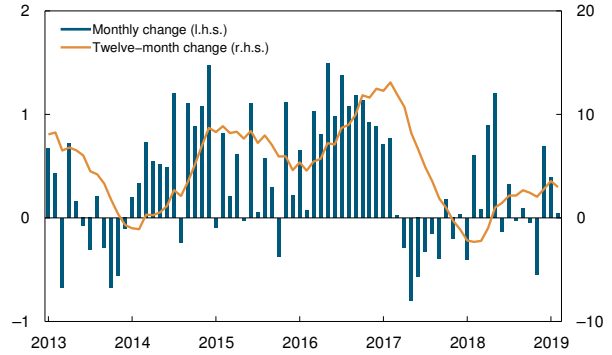
1) Includes consumption for non-profit organisations.
2) Working-day adjusted.
3) Excluding dividend income. Including income for non-profit organisastions.
4) Projections for 2019 – 2022 (broken lines).
Sources: Statistics Norway and Norges Bank

Chart 3.5 Household saving and net lending.
Share of disposable income. Percent. 1980 – 2022 [1)]



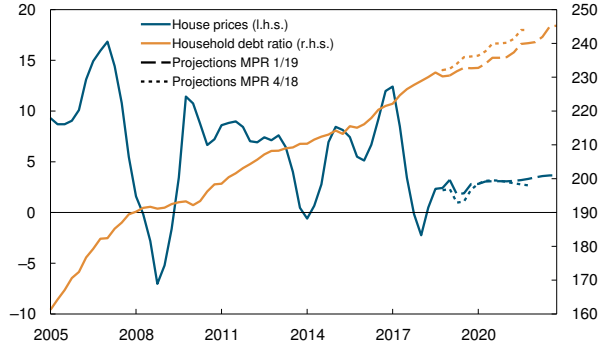
1) Projections for 2019 – 2022 (broken lines).
Sources: Statistics Norway and Norges Bank

Chart 3.6 House prices. Twelve-month change and seasonally adjusted monthly change. Percent. January 2013 – February 2019



Sources: Eiendomsverdi, Finn.no and Real Estate Norway

Chart 3.7 House prices. Four-quarter change. Percent. Household debt [1)]. Percent. 2005 Q1 – 2022 Q4 [2)]



1) Loan debt as a percentage of disposable income.
2) Projections for 2019 Q1 – 2022 Q4.
Sources: Eiendomsverdi, Finn.no, Real Estate Norway, Statistics Norway and Norges Bank

Prospects for rising real wage growth and continued employment growth imply higher consumption growth in the coming years (Chart 3.4). Consumption growth is projected to increase somewhat in 2020 and then remain broadly unchanged. Compared with the December *Report,* the projections are slightly higher for 2020 and 2021, reflecting higher real income than assumed in December.

Saving is projected to remain fairly stable through the projection period (Chart 3.5).

Moderate house price inflation

House price inflation has picked up slightly through winter. In February, the twelve-month rise was 3.0% (Chart 3.6), slightly higher than projected in the December *Report*.

Recently, activity in the market for existing homes has been high. The stock of unsold homes is declining, but is still at a high level. At the same time, new housing completions have picked up, and there are prospects of a large number of housing completions in the course of 2019, which will likely pull down on house price inflation.

Prospects for increased employment and higher wage growth ahead suggest in isolation rising house price inflation, while higher interest rates will dampen the rise. Overall, house price inflation is projected to be moderate through the projection period (Chart 3.7). Compared with the December *Report,* the projections for house price inflation are slightly higher in 2019 and little changed further out in the projection period. The housing market is discussed in Section 5.3.

Increased housing investment

Housing investment fell markedly from autumn 2017 until summer 2018, but has shown little change since then. Housing investment in 2018 was higher than projected in December.

Prospects for growth in real house prices suggest a slight increase in housing investment through the projection period (Chart 3.8). New home sales have been fairly stable over the past two years, but clearly lower than in 2016 when housing investment rose markedly. Centralisation has accelerated in recent years, which may increase demand for dwellings sur-

rounding urban areas. On the other hand, slower population growth and prospects for higher residential mortgage rates will likely dampen housing investment growth. Compared with the December *Report*, the investment projections have been revised up.

Higher business investment ahead

Following strong growth in 2016 and 2017, business investment increased moderately in 2018. The increase was somewhat stronger than projected in the December *Report*. Investment growth was considerable in the power, manufacturing and mining sectors (Chart 3.9). At the same time, services investment fell after having grown markedly in 2016 and 2017.

Growth in business investment is expected to pick up in 2019, and the projection has been revised up somewhat in the light of the Statistics Norway's investment intentions survey. The survey indicates strong growth in manufacturing and mining. Investment in the power sector is projected to fall, but increasing investments in wind power development will dampen the decline. Contacts in Norges Bank's Regional Network reported in February that investment growth was expected over the next twelve months.

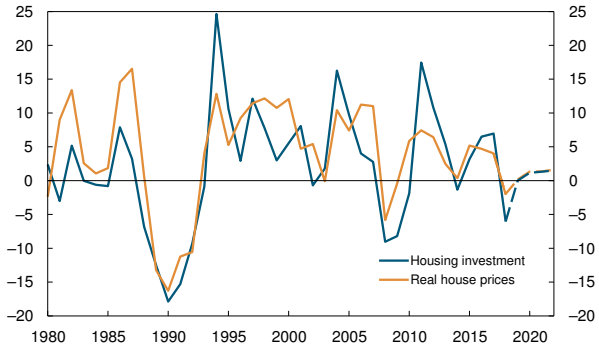
A continued upturn in the Norwegian economy points to higher business investment in the years ahead (Chart 3.10). Higher interest rates pull down on growth. Substantial business investment in recent years may also dampen the need for investment in the period ahead. The projections have been revised up somewhat since December, partly reflecting higher-than-expected capacity utilisation.

Prospects for higher exports

Norwegian exports have been sluggish in recent years despite a substantial improvement in cost competitiveness since 2013 (Chart 3.11). Mainland exports declined in 2016 and 2017, largely reflecting the fall in oil service exports owing to the decline in global petroleum investment. In addition, some raw material exports declined owing to supply-side disturbances.

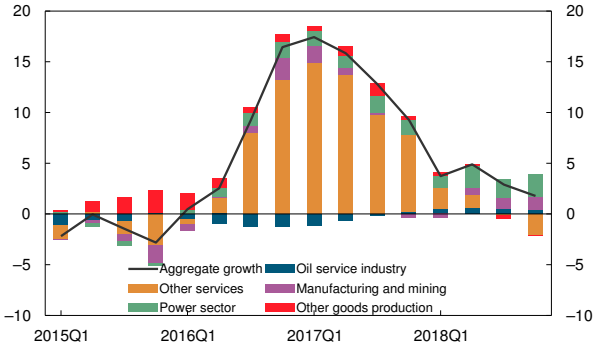
In 2018, oil service exports picked up, albeit somewhat less than projected in the December *Report*. Non-oil mainland exports also increased slightly less than

Chart 3.8 Housing investment [1] and real house prices[2]. Annual change. Percent. 1980 – 2022[3]



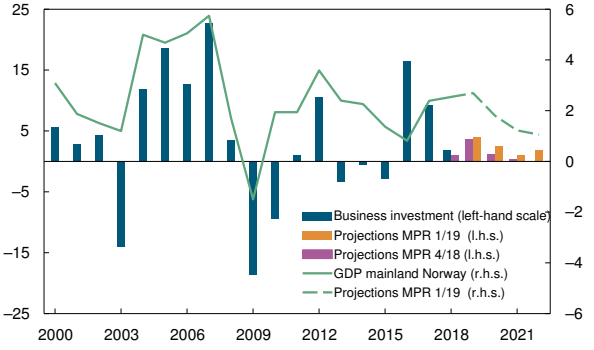
1) Working-day adjusted.
2) Prices for existing homes deflated by the CPI.
3) Projections for 2019 – 2022 (broken lines).
Sources: Eiendomsverdi, Finn.no, Norwegian Association of Real Estate Agents (NEF), Real Estate Norway, Statistics Norway and Norges Bank

Chart 3.9 Mainland business investment by sector. Contribution to four-quarter change. Percentage points. 2015 Q1 – 2018 Q4



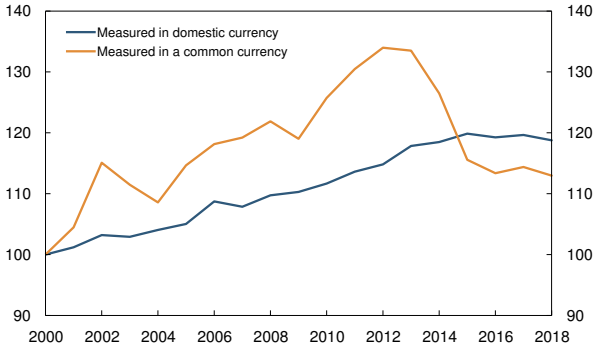
Sources: Statistics Norway og Norges Bank

Chart 3.10 Business investment for mainland Norway and GDP for mainland Norway.[1] Annual change. Percent. 2000 – 2022[2]



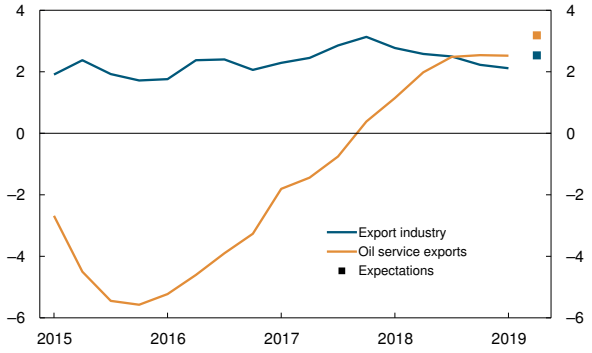
1) Working-day adjusted.
2) Projections for 2019 – 2022.
Sources: Statistics Norway and Norges Bank

Chart 3.11 Labour costs in Norway relative to trading partners.[1)]
Index. 2000 = 100. 2000 – 2018



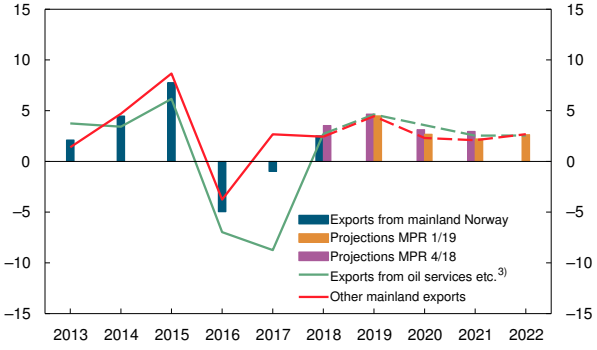
1) Hourly labour costs in manufacturing.
Sources: Norwegian Technical Calculation Committee for Wage Settlements (TBU), Statistics Norway and Norges Bank

Chart 3.12 Export-oriented output according to the Regional Network. [1)]
Quarterly change. Annualised. Percent. 2015 Q1 – 2019 Q2 [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 Q2, expected growth in the next six months is as measured in February.
Source: Norges Bank

Chart 3.13 Exports from mainland Norway.[1)] Annual change. Percent. 2013 – 2022[2)]



1) Working-day adjusted.
2) Projections for 2019 – 2022 (broken lines).
3) 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

anticipated. Regional Network contacts expected that growth in both oil service exports and other export industries would pick up in the near term (Chart 3.12).

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 grow, particularly in the manufacturing segments that invest in added production capacity. Growth in overall mainland exports is projected to rise in 2019 (Chart 3.13), slowing thereafter owing to a gradual appreciation of the krone.

The projections for export growth are somewhat lower than in the December *Report*, mainly reflecting a downward revision in growth projections for Norway's trading partners. At the same time, the krone exchange rate is projected to be weaker than envisaged in December, which in isolation pushes up the export projections.

Import growth has been low in recent years, reflecting the decline in petroleum investment. Oil and non-oil business investment tends to have a high import content. An expected strong rise in business investment in 2019 therefore points to higher import growth in 2019. Import growth is expected to remain firm after 2019. Lower growth in the Norwegian economy points to declining import growth, but the expected appreciation of the krone points to a shift in demand towards imports. The projections for import growth are little changed since December.

The projections are uncertain

The Norwegian economy may grow faster than projected. Historical experience suggests that business investment can increase substantially in upturns. A high level of activity and higher oil company profitability may have spillover effects into the mainland economy that are more pronounced than assumed. On the other hand, rising global protectionism and uncertainty about the UK's exit from the EU 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.

3.2 LABOUR MARKET AND OUTPUT GAP

Tighter labour market

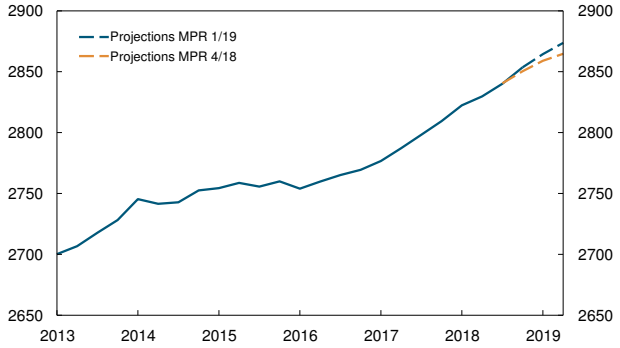
Employment growth is solid (Chart 3.14). According to the quarterly national accounts (QNA), the number of employed has increased by around 100 000 persons since the start of the upturn in 2016. Over the past year, employment has risen in most sectors of the Norwegian economy, including oil-related industries. One exception is distributive trade where employment has remained unchanged over the past year. Since the December *Report*, overall employment has risen more than projected.

Employment growth is projected to continue in the coming period although growth is expected to slow slightly. In February, Regional Network contacts expected employment growth to remain firm in the coming three months (Chart 3.15). Norges Bank's expectations survey indicates that employment growth will drift down ahead. The number of vacancies edged down between 2018 Q3 and 2018 Q4, after rising substantially through 2017 and in the first three quarters of 2019.

The rise in employment has been followed by a decline in unemployment. From the beginning of 2016 to summer 2018, registered unemployment decreased (Chart 3.16). Changes in the routines of the Norwegian Labour and Welfare Administration (NAV) contributed to a slight rise in registered unemployment in July 2018. Since then, seasonally adjusted unemployment has slowed slightly, corrected for a new change in NAV's routines in November 2018. Registered unemployment was 2.3% in February. Unemployment was projected to remain unchanged at 2.4% in the December *Report*. In addition, the number of persons participating in labour market programmes has declined in recent months.

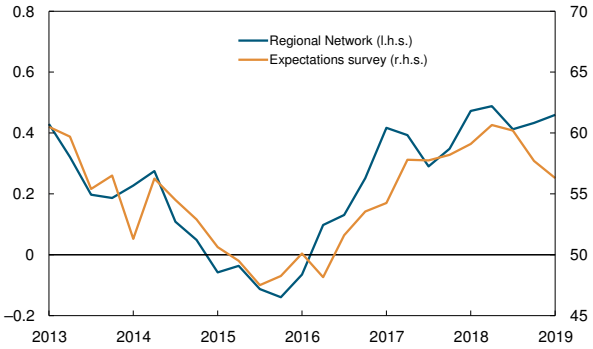
The number of unemployment benefit recipients as a share of the labour force has also declined further in recent months and confirms the impression of a continued improvement in the labour market (Chart 3.17). The share of unemployment benefit recipients is at its lowest level since 2009. The number of redundancies also appears to be declining. Downsizing notified to NAV is now at the same level as in the period leading up to the oil price fall in 2014. Regis-

Chart 3.14 Employment. Seasonally adjusted. In thousands. 2013 Q1 – 2019 Q2 [1)]



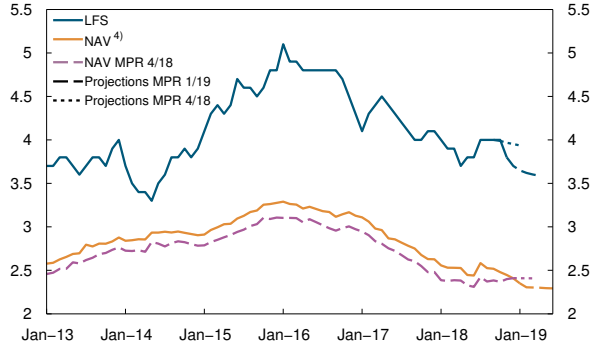
1) Projections for 2019 Q1 – 2019 Q2.
Sources: Statistics Norway and Norges Bank

Chart 3.15 Expected employment. Regional Network.[1)] Quarterly change. Percent. Norges Bank's expectations survey. Diffusion index.[2)] 2013 Q1 – 2019 Q1



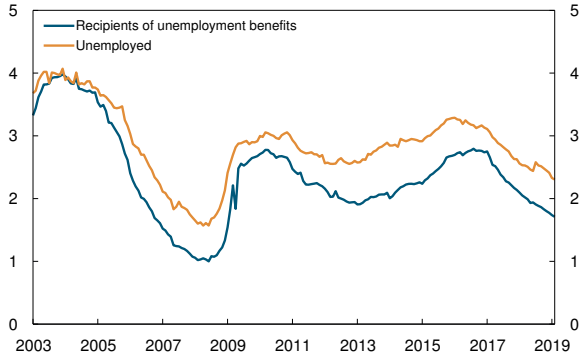
1) Expected change in employment next three months.
2) Share of business leaders expecting "more employees" in their own firm in the following 12 months + 1/2 * share expecting "unchanged number of employees".
Sources: Epinion and Norges Bank

Chart 3.16 Unemployment according to LFS [1)] and NAV [2)]. Share of the labour force. Seasonally adjusted. Percent. January 2013 – June 2019 [3)]



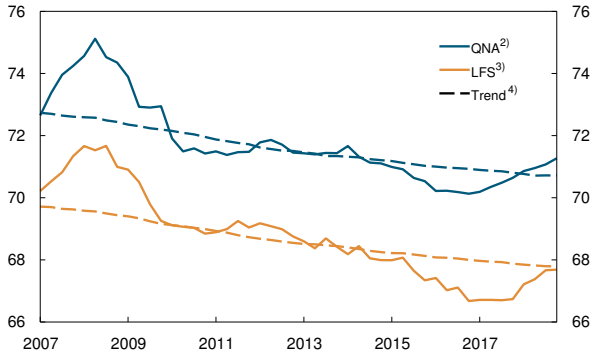
1) Labour Force Survey.
2) Registered unemployment.
3) Projections for March 2019 – June 2019 (NAV) and January 2019 – April 2019 (LFS).
4) Changes in NAV's routines have contributed, in isolation, to a rise in unemployment of about 0.1 percentage points as of November 2018. NAV has retrospectively revised the statistics to ensure comparability before and after the break in the series.
Sources: Norwegian Labour and Welfare Administration (NAV), Statistics Norway and Norges Bank

Chart 3.17 Registered unemployment and unemployment benefit recipients[1]. Share of labour force. Seasonally adjusted. Percent. January 2003 – February 2019



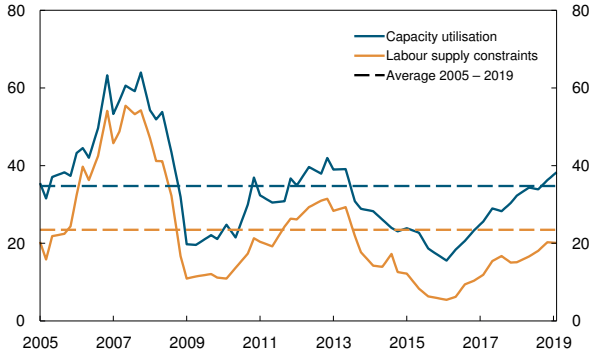
1) Approximately half of those unemployed receive unemployment benefits. Some partly unemployed persons and labour market programme participants are also eligible for unemployment benefits.
Sources: Norwegian Labour and Welfare Administration (NAV) and Norges Bank

Chart 3.18 Employment share[1]. Percent. 2007 Q1 – 2018 Q4



1) Employment as a share of the population (aged 15-74). The difference between LFS and QNA employment partly relfects the inclusion of temporary residents in the QNA, while the LFS only counts permanent residents.
2) Quarterly National Accounts.
3) Labour Force Survey.
4) Employment share if the share for each five-year age cohort had been unchanged at 2013 levels. The curve slopes downward because the population is ageing. 2013 was selected because capacity utilisation in that year was close to a normal level.
Sources: Statistics Norway and Norges Bank

Chart 3.19 Capacity utilisation[1] and labour supply constraints[2] as reported by the Regional Network. Percent. January 2005 – February 2019



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

tered unemployment is projected to show little change in the coming months (Annex Table 3b).

According to the Labour Force Survey (LFS), unemployment has also declined since the December *Report*. In December, LFS unemployment was 3.7%, which is lower than projected. The decline reflects fewer people entering the labour market. Developments must be viewed in the light of substantial uncertainty associated with LFS, which is a sample survey. Normally the number of job-seekers rises when job prospects improve, and in the December *Report* the labour force was therefore projected to grow. LFS unemployment is expected to move in line with registered unemployment in the coming months (Annex Table 3c).

Prospects for further employment growth

With prospects for a further upturn in the mainland economy, solid growth in employment is expected in 2019, followed by a gradual decline in employment growth owing to slowing mainland GDP growth. The employment growth projections are slightly higher than in the December *Report* through 2019 and are little changed thereafter. The number of employed is projected to rise by about 60 000 persons between the end of 2018 and the end of 2022.

In the years ahead, higher labour demand is expected to contribute to higher labour force growth, with a markedly smaller decline in unemployment than implied by employment growth in isolation. Unemployment is expected to edge down in the coming year, followed by a small increase (Chart 1.12). The projections for unemployment are slightly lower than in the December *Report*.

Positive output gap

In the years since the oil price fall in 2014, capacity utilisation has been below a normal level. In the Bank's estimation, the cyclical trough was reached in summer 2016 and capacity utilisation has since been on the rise (Chart 1.1b). In December, the assessment was that the output gap was closing.

A number of signs indicate that capacity utilisation has continued to rise in recent months and that the output gap is now closed. Owing to solid employment growth, the number of employed persons as a share

of the working-age population has increased (Chart 3.18). The employment rate is now close to its estimated long-term trend. Unemployment has drifted down further, and registered unemployment appears to be slightly lower than the level projected to be consistent with normal capacity utilisation. Owing to changes in NAV's routines, there is more uncertainty than previously about developments in unemployment. LFS unemployment has fallen, but continues to indicate that capacity utilisation is slightly lower than normal. In February, feedback from the Regional Network survey showed an increase in the share of enterprises reporting capacity constraints (Chart 3.19). This share is higher than its historical average. The share reporting labour shortages, on the other hand, has been unchanged since November and remains lower than its historical average. Model estimates, which include a number of labour market indicators, imply that capacity utilisation rose between 2018 Q3 and 2018 Q4 (Chart 3.20) and is now close to a normal level.

Overall, the output gap is estimated to have closed at the end of 2018, and capacity utilisation has continued to increase into 2019. The employment rate is assessed to be close to the highest level consistent with price stability over time. Capacity utilisation is expected to continue to rise over the coming quarters, with the output gap gradually becoming more positive. The projections are slightly higher than in the December *Report*.

Declining population growth

Potential output is projected to grow by about 1.5% annually through the projection period. The projection is based on trend productivity growth of 1% and average trend growth in the labour force of 0.5% for the years 2020–2022.

The projection for trend productivity is based on developments in actual productivity. Early in an upturn, actual productivity normally grows faster than trend. Compared with previous upturns, productivity growth has been low in recent years (Chart 3.21). This indicates that trend productivity growth is also slightly lower than in earlier periods. The projection for growth in trend productivity is in line with average productivity growth over the past decade and unchanged since the December *Report*.

OUTPUT GAP

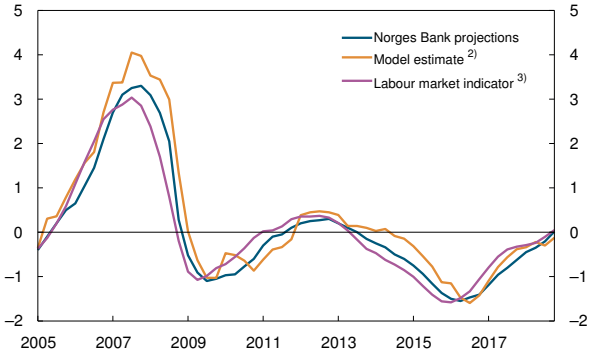
The output gap, also referred to as capacity utilisation, captures resource utilisation in the economy. The output gap is defined as the difference between actual output (GDP) and potential output. Potential output is the highest possible level of output that is consistent with stable price and wage 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.

If we attempt to keep output and employment 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 related to Norges Bank's objective of low and stable inflation.

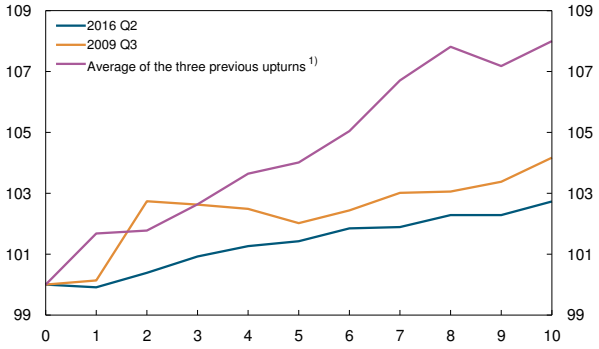
Potential output and the output gap cannot be observed and must be estimated. Norges Bank's current output gap estimates are the result of an overall assessment of a number of indicators and models. In this assessment, particular weight is given to labour market developments.

Chart 3.20 Estimated output gap[1]. Percent. 2005 Q1 – 2018 Q4



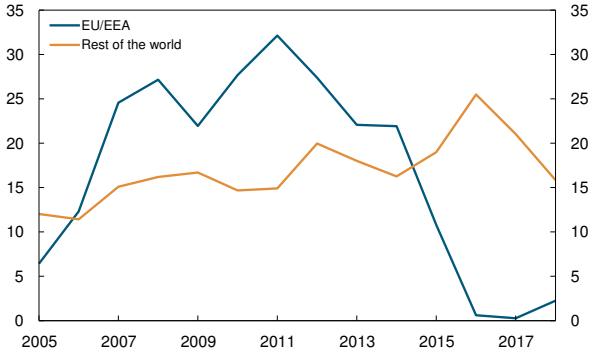
1) The output gap measures the percentage difference between mainland GDP and estimated potential mainland GDP.
2) See box on page 34 in *Monetary Policy Report* 4/17 for a review of the model estimate.
3) Indicator of the output gap based on the labour market. See Hagelund, K., F. Hansen and Ø. Robstad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

Chart 3.21 Productivity growth in upturns.
Quarters since cyclical trough. Index = 100 in business cycle trough.



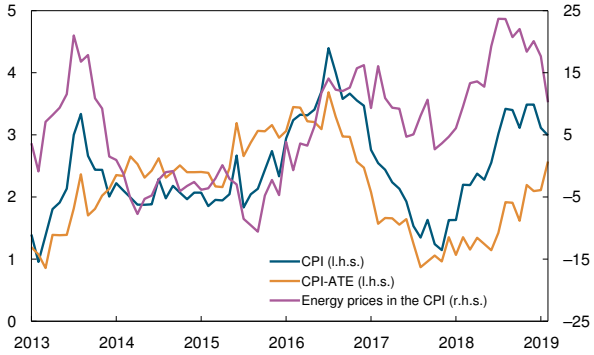
1) The three previous upturns with troughs in 1983 Q1, 1991 Q4 and 2003 Q2.
Sources: Statistics Norway and Norges Bank

Chart 3.22 Net immigration by country of origin. In thousands. 2005 – 2018



Source: Statistics Norway

Chart 3.23 CPI, CPI-ATE[1)] and energy prices in the CPI[2)].
Twelve-month change. Percent. January 2013 – February 2019



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

Trend growth in the labour force is estimated based on demographic projections. Owing to lower labour immigration from Europe in recent years (Chart 3.22), trend growth in the labour force has fallen. An ageing population has also pulled down trend growth owing to a higher number of persons in age groups with lower labour force participation rates. The figures are based on Statistics Norway's population projections that suggest declining population growth ahead. In the projection, labour immigration picks up slightly, but is considerably lower than at peak around 2010 when much of Europe was in recession.

Capacity utilisation is projected to peak in the first half of 2020 (Chart 1.1b). Mainland GDP growth is expected to be lower than trend growth further ahead and the output gap will be gradually less positive. The projections for capacity utilisation are higher than in December throughout the projection period.

Uncertainty about potential output

Labour force developments are uncertain. The labour force participation rate has decreased over time among young people and men aged between 25 and 54. 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. On the other hand, increased trade barriers and protectionism could push down productivity growth.

3.3 COSTS AND PRICES

Underlying inflation has risen

Inflation rose through autumn 2017 and in the period to end-2018 (Chart 3.23). Underlying inflation picked up, partly reflecting higher wage growth. Higher electricity prices also pushed up overall inflation.

Since the December *Report*, the 12-month rise in the consumer price index adjusted for tax changes and excluding energy products (CPI-ATE) has increased further. In February, 12-month CPI-ATE inflation was 2.6%. Other underlying inflation indicators ranged between 1.8% and 2.9% (see box on page 30). The 12-month rise in the consumer price index (CPI) has moderated since the December report, reflecting a slower rise in electricity prices. Although long-term

inflation expectations have declined slightly over the past quarter, they are still slightly above 2% (see box on page 30).

Inflation higher than expected

Twelve-month CPI and CPI-ATE inflation was higher in February than projected in the December *Report*. In the CPI-ATE, prices both for imported goods and for domestically produced goods and services rose more than projected (Chart 3.24).

The 12-month rise in imported and domestic inflation is projected to remain higher in the near term than projected in December (Annex Table 3d). The upward revision of imported inflation reflects a weaker krone than projected in December (see box on page 31). The upward revision of domestic inflation reflects higher-than-expected wage growth. The CPI-ATE projections are closely in line with the SAM-based projections for the coming two quarters (Chart 3.25).

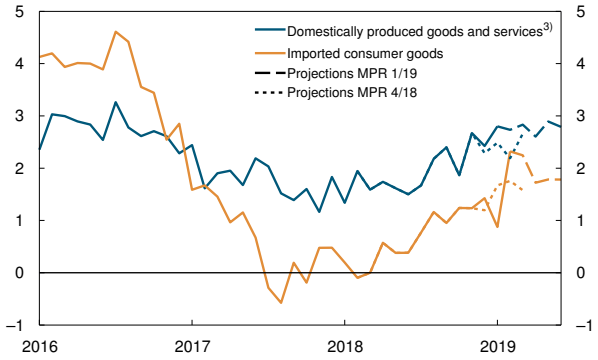
Futures prices for electricity and fuel indicate little change in energy price levels in 2019 (Chart 3.26). Thus, the 12-month rise in the CPI is projected to decline further in the near term. Annual CPI inflation is projected at 2.3% in 2019.

Wage growth picks up

After slowing over several years, wage growth rose in 2017 and 2018. Lower unemployment probably contributed to the rise. Annual wage growth was 2.8% in 2018, in line with the wage settlement norm and slightly higher than projected in the December *Report* (Chart 3.27). With annual CPI inflation of 2.7%, real wage growth was 0.1% in 2018.

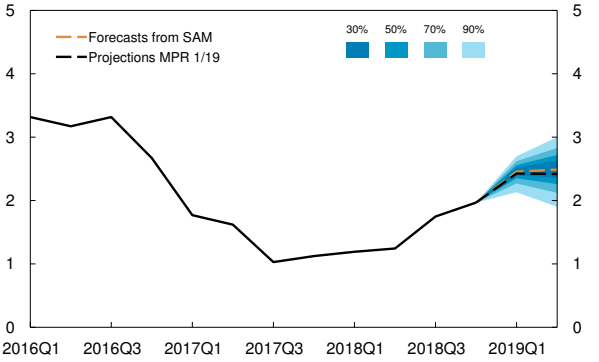
In 2019, wage growth is expected to increase further to 3.3%. The projection is somewhat higher than the social partners' expectations according to Norges Bank's expectations survey and higher than expected by Norges Bank's Regional Network contacts. These surveys tend to slightly underestimate wage growth during upturns. The wage growth projection for 2019 has been revised up since December, reflecting the upward revision of the inflation projection. The projection for real wage growth in 2019 is lower than in the December *Report*.

Chart 3.24 CPI-ATE[1] by supplier sector.
Twelve-month change. Percent. January 2016 – June 2019[2]



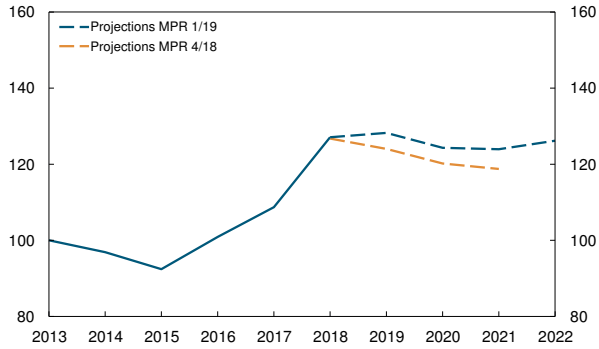
1) CPI adjusted for tax changes and excluding energy products.
2) Projections for March 2019 – June 2019.
3) Norges Bank's estimates.
Sources: Statistics Norway and Norges Bank

Chart 3.25 CPI-ATE[1] with fan chart from SAM[2].
Four-quarter change. Percent. 2016 Q1 – 2019 Q2[3]



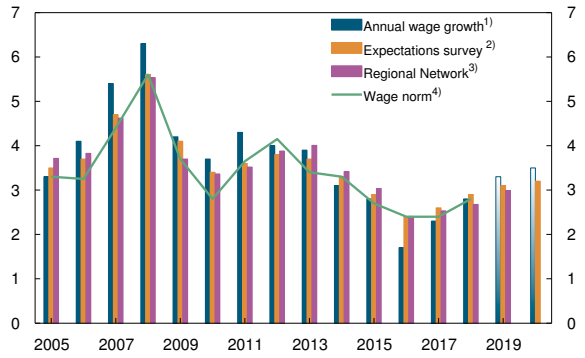
1) CPI adjusted for tax changes and excluding energy products.
2) System for Averaging short-term Models.
3) Projections for 2019 Q1 – 2019 Q2.
Sources: Statistics Norway and Norges Bank

Chart 3.26 Energy prices in the CPI.[1] Index. 2013 = 100. 2013 – 2022[2]



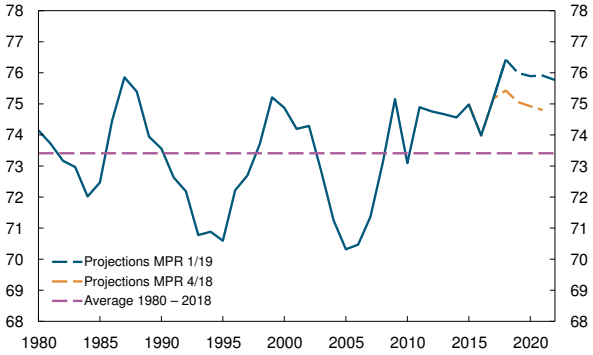
1) Weighted average of prices for *transport fuels and lubricants* and of *electricity and other fuels* in CPI. The projections are based on futures prices for electricity, petrol and fuel.
2) Projections for 2019 – 2022 (broken lines).
Sources: Nord Pool, Norwegian Water Resources and Energy Directorate, Statistics Norway, Thomson Reuters and Norges Bank

Chart 3.27 Wage, wage norm and wage expectations.
Annual change. Percent. 2005 – 2020



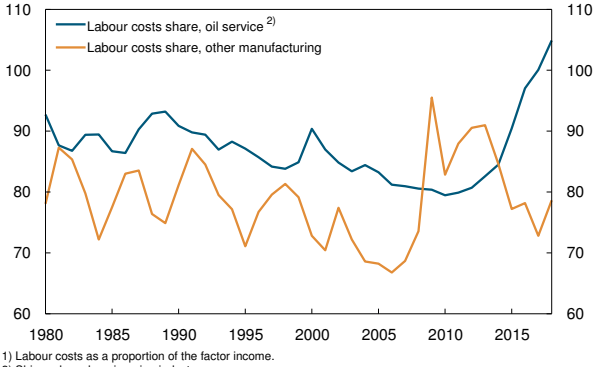
1) Actual annual wage growth from Statistics Norway. Norges Bank's projections for 2019 and 2020 (shaded bars).
2) Social partners' wage growth expectations for the current year as measured by Norges Bank's expectations survey in Q1 each year and expected annual wage growth for 2020 measured in 2019 Q1.
3) Expected wage growth for the current year as reported by the Regional Network in Q1 each year.
4) Before 2014: 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 cost share for mainland Norway.[1] Percent. 1980 – 2022[2]



1) Labour costs as a proportion of the factor income.
2) Projections for 2019 – 2022.
Sources: Statistics Norway and Norges Bank

Chart 3.29 Labour cost share in manufacturing. Percent. 1980 – 2018



1) Labour costs as a proportion of the factor income.
2) Shipyards and engineering industry.
Sources: Statistics Norway and Norges Bank

Lower-than-expected profitability

Higher capacity utilisation and continued low unemployment are expected to contribute to a further pick-up in wage growth in the next two years. At the same time, the labour income share of mainland GDP is higher than expected (Chart 3.28). A higher labour income share reduces corporate profitability correspondingly and implies in isolation lower wage growth.

Profitability has been lower than anticipated in recent years, despite consistently lower wage growth than projected. So far, the rise in oil prices since 2016 does not appear to have improved profitability in the mainland economy. Weak profitability is particularly pronounced for oil services, reflecting reduced margins in this sector owing to cost reductions by oil companies. This has fuelled a marked rise in the labour income share in oil services (Chart 3.29). The labour income share in other industries fell when the krone exchange rate fell in tandem with oil prices in 2014 and 2015, but remains higher than in the pre-crisis period.

Lower profitability in some business sectors may restrain the rise in wage growth ahead. The wage growth projections are therefore little changed, even though the upturn seems to be more pronounced and oil prices are higher than anticipated in December.

Prospects for inflation close to target

A gradually stronger krone and weaker external price impulses are expected to push down the rise in prices for imported goods ahead. Higher capacity utilisation and increasing wage growth pull in the opposite direction (Chart 3.30). Overall, annual CPI-ATE inflation is projected to be close to 2% in the coming years (Chart 3.31).

The CPI-ATE projections are slightly higher than in the December *Report* throughout the projection period. This is because the krone is now projected to be slightly weaker and external price impulses to be slightly stronger (Chart 2.8) than assumed in December.

Energy prices in the CPI in the years ahead are expected to move in line with futures prices for electricity and petrol. These futures prices show a decline

in the next two years before rising slightly in 2022. The projections for energy prices are somewhat higher than in the December *Report*.

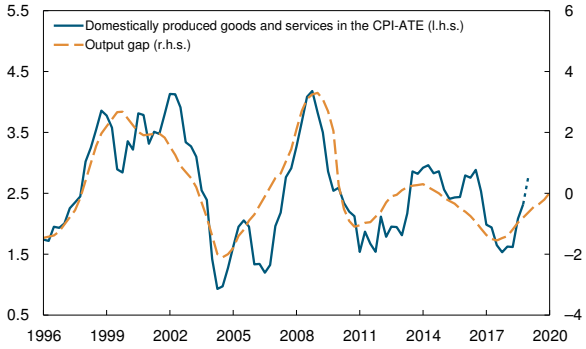
Overall, the projections for CPI-ATE inflation and energy prices imply a decline in four-quarter CPI inflation in the coming year, followed by a slight rebound further out. At the end of 2022, the projection for four-quarter CPI inflation is 2%. The projections are a little higher than in the December *Report* throughout the projection period.

With the projections for CPI inflation and annual wage growth, real wage growth rises in 2019 and the next two years, followed by a slight decline in 2022(Chart 1.13). The projections for real wage growth are somewhat lower than in December.

The projections are uncertain

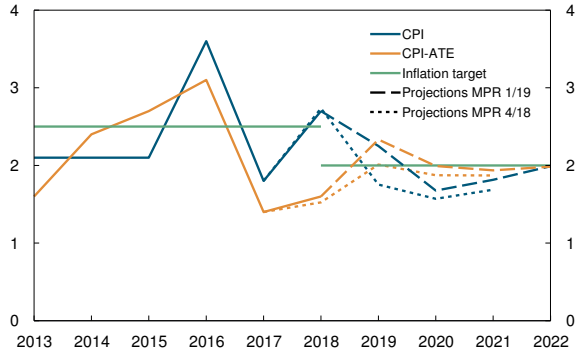
The projections are based on the assumption that lower-than-expected profitability will dampen the rise in wage growth, but it is uncertain to what extent. Lower profitability in some business sectors may pull down wage growth more than projected. At the same time, there is considerable uncertainty associated with future profitability. We have assumed that profitability for mainland enterprises declined in 2018, in line with preliminary QNA figures. Experience shows that these figures are subject to substantial revision. The enterprises in the expectations survey and in Norges Bank's Regional Network report some strengthening of profitability in recent years. A tighter labour market could also exert greater pressure on wages than expected.

Chart 3.30 Domestically produced goods and services in the CPI-ATE [1]. Four-quarter change. Percent. Lagged output gap[2]. Percent. 1996 Q1 – 2020 Q1



1) CPI adjusted for tax changes and excluding energy products. Norges Bank's estimates. 1996 Q1 – 2018 Q4. Projections for 2019 Q1.
2) The output gap is measured as the percentage difference between mainland GDP and estimated potential mainland GDP. The gap is lagged by five quarters and shows data for 1994 Q3 – 2018 Q4.
Sources: Statistics Norway and Norges Bank

Chart 3.31 CPI and CPI-ATE[1]. Annual change. Percent. 2013 – 2022



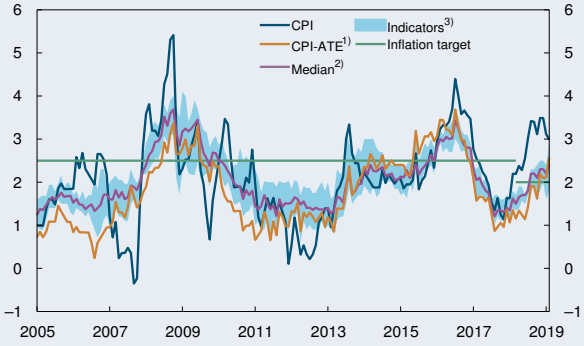
1) CPI adjusted for tax changes and excluding energy products.
Sources: Statistics Norway and Norges Bank

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 can 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 ranged between 1.8% and 2.9% in February (Chart 3.32). The 12-month average rise in these indicators was 2.4%, up from 1.6% in February 2018.

Chart 3.32 CPI and indicators of underlying inflation.
Twelve-month change. Percent. January 2005 – February 2019



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

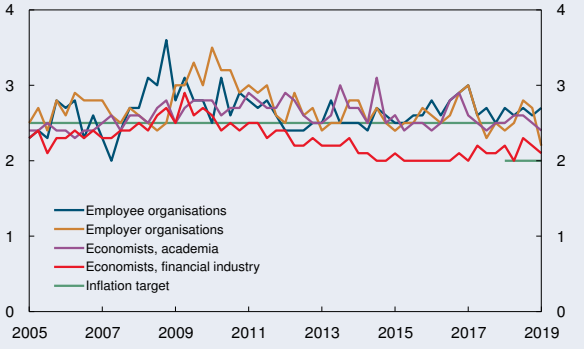
1 See Husabø, E. (2017) "Indicators of underlying inflation in Norway". *Staff Memo* 13/2017, Norges Bank, for a more detailed review of various indicators.

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 3.33).[1] The inflation target for monetary policy was lowered from 2.5% to 2.0% in March 2018.

The expectations survey for 2019 Q1[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 Q1 survey responses.

Chart 3.33 Expected twelve-month change in consumer prices five years ahead.
Percent. 2005 Q1 – 2019 Q1



Sources: Epinion, Kantar TNS and Opinion

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 28 January–15 February 2019.

FINANCIAL CONDITIONS

The money market premium has declined somewhat

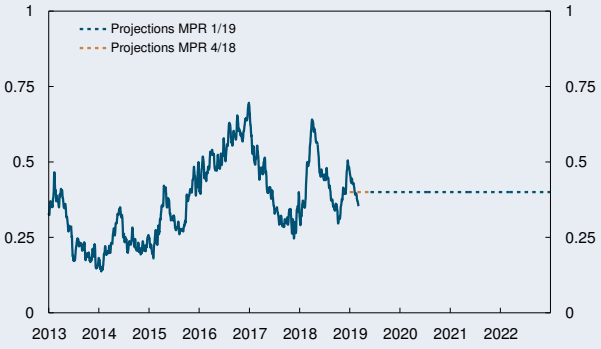
The money market rate Nibor is important for interest rates faced by households and enterprises as interest rates on a large share of banks' funding are based on Nibor. At the same time, corporate lending rates are often directly linked to Nibor.

Three-month Nibor is determined by the average policy rate expected by the market over the next three months and by a risk premium, which is generally referred to as the money market premium. Since the December *Report,* the money market premium has declined somewhat, at the same time as three-month policy rate expectations have risen. Overall, three-month Nibor has therefore been fairly stable. The premium, as calculated by Norges Bank, is now just below 0.40 percentage point (Chart 3.34). Looking ahead, the money market premium is expected to remain close to the average of recent months, 0.40 percentage point. The three-month Nibor is projected to rise in tandem with the policy rate ahead.

Somewhat lower market rates

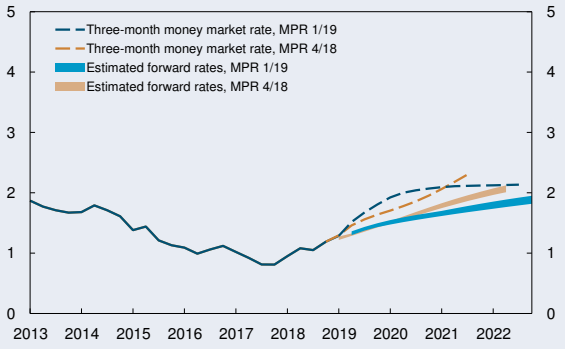
Forward rates have fallen a little since the December *Report* and indicate a more gradual rate rise than in our projection (Chart 3.35). Fixed rates in the market for interest rate swaps (swap rates) reflect expected average money market rates and influence the fixed interest rates offered to households and firms. In line with lower money market rate expectations further out, swap rates have also fallen somewhat (Chart 3.36).

Chart 3.34 Norwegian three-month money market premium.[1] Five-day moving average. Percentage points. 1 January 2013 – 31 December 2022 [2]



1) Norges Bank estimates of the difference between the three-month money market rate and the expected policy rate.
2) Projections for 2019 Q2 – 2022 Q4.
Sources: Thomson Reuters and Norges Bank

Chart 3.35 Three-month money market rate [1] and estimated forward rates [2]. Percent. 2013 Q1 – 2022 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 26 November – 7 December in 2018 for MPR 4/18 and in the period 4 March – 15 March in 2019 for MPR 1/19, respectively.
3) Money market projections for 2019 Q1 – 2022 Q3. Forward rate projections for 2019 Q2 – 2022 Q4.
Sources: Thomson Reuters and Norges Bank

Gradual rise in lending rates

Following the increase in the policy rate in September, banks' corporate lending rates have been broadly in line with expectations. Bank and bond interest rates facing enterprises have risen somewhat over the past half-year. Banks in Norges Bank's lending survey in 2018 Q4 expected a further rise in these rates in 2019 Q1. Risk premiums in the market for high-yield enterprises have risen slightly since December.

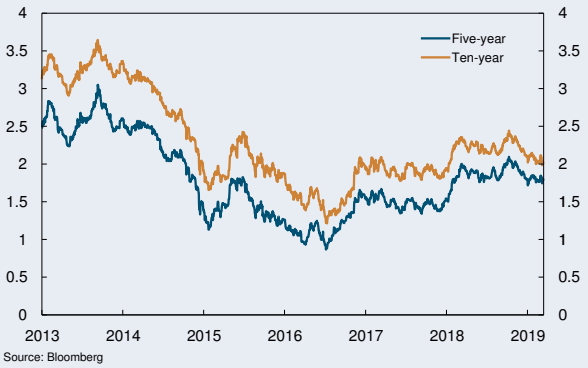
The interest rate on housing loans to households rose in 2018 Q4. The interest rate on new loans fell a little between November and December, and was a little lower than envisaged in the previous *Report*. The margin between the rate on housing loans and Nibor appears to be a little narrower in the near term than anticipated in December (Chart 3.37). It is still assumed that the policy rate hike will affect the interest rate on housing loans with a short lag. The average rate rises from 2.6% currently to around 3.5% in the course of the projection period.

Weaker krone

The krone, as measured by the import-weighted exchange rate index (I-44)[1], has been weaker than projected in December (Chart 3.38). Lower oil prices and heightened uncertainty in financial markets may have contributed to the depreciation of the krone towards the end of 2018. So far in 2019, the krone has appreciated and the depreciation in December has reversed. This may reflect a wider interest rate differential against trading partners and the increase in oil prices.

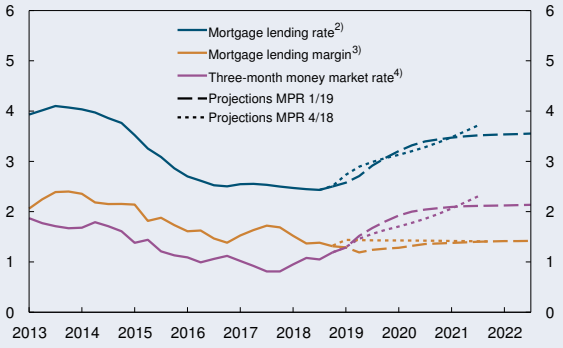
1 The I-44 index comprises the currencies of 44 of Norway's trading partners and is calculated as a geometric weighted average. The weight of each currency reflects the share of imports to Norway.

Chart 3.36 Five- and ten-year swap rates. Percent. 2 January 2013 – 15 March 2019



Source: Bloomberg

Chart 3.37 Interest rates. Percent. 2013 Q1 – 2022 Q3 [1)]



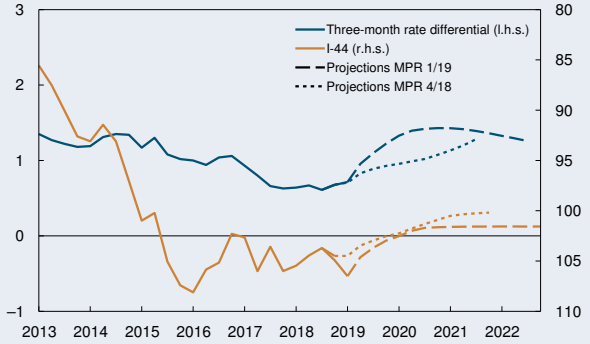
1) Projections for 2019 Q1 – 2022 Q3.
2) Average interest rate on outstanding mortgage loans to households from the sample of banks included in Statistics Norway's monthly interest rate statistics.
3) Difference between the mortgage lending rate and the three-month money market rate.
4) Projections are 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

Prospects for a widening of the interest rate differential against Norway's trading partners over the next few years point to a stronger krone. The fact that the krone is weaker than implied by a historical relationship between the krone and the interest rate differential and between the krone and oil prices pulls in the same direction. On the other hand, compared with model results, the depreciation has been more pronounced and the krone has remained weaker than envisaged (Chart 3.39). Against this background, the krone is projected to appreciate slightly less than in December (see discussion in box on page 42). The krone remains weaker than projected in the December *Report* through the entire projection period.

A weaker krone than previously assumed will strengthen the cost competitiveness of Norwegian export firms and points towards higher net exports. A weaker krone also pushes up inflation through higher prices for imported goods and services.

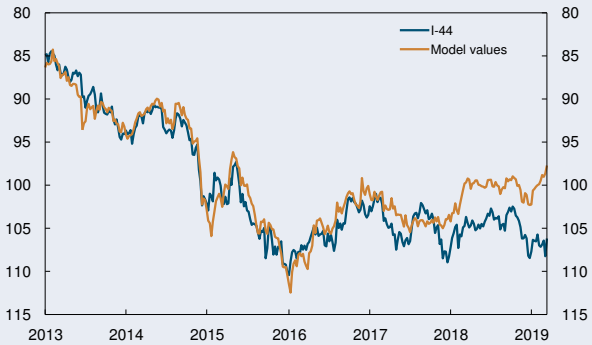
There is uncertainty surrounding developments in the krone exchange rate. A rising interest rate level relative to Norway's trading partners could lead to a stronger appreciation of the krone than envisaged. If global uncertainty recedes, the krone may also appreciate faster than projected. On the other hand, it is also possible that the krone will remain weaker than projected in this *Report*.

Chart 3.38 Three-month money market rate differential between Norway[1] and trading partners[2]. Percentage points. Import-weighted exchange rate index (I-44) [3]. 2013 Q1 – 2022 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 7 December for MPR 4/18 and 15 March 2019 for MPR 1/19. 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 money market rate 2019 Q1 – 2022 Q3. Projections for I-44 2019 Q1 – 2022 Q4.
Sources: Thomson Reuters and Norges Bank

Chart 3.39 Empirical model for import-weighted krone exchange rate (I-44).[1] [2] Week 1 2013 – week 11 2019



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 the last week of 2016 and the model-predicted values from the first week of January 2017 to week 11 of 2019.
2) A rising value in the chart denotes a stronger krone.
Sources: Bloomberg, Thomson Reuters and Norges Bank

ASSUMPTIONS CONCERNING FISCAL POLICY

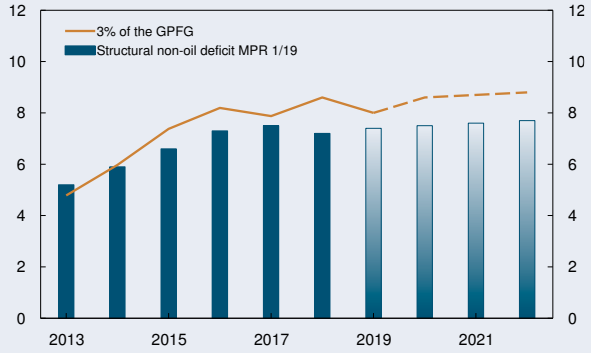
The fiscal policy assumptions in this *Report* are based on the approved central government budget for 2019 and other available information. Petroleum revenue spending, as measured by the structural non-oil deficit, is estimated at 7.4% of trend mainland GDP in 2019 (Chart 3.40), up 0.2 percentage point from 2018, but 0.1 percentage point below the level in 2017. The estimates are unchanged from the December *Report*. By comparison, the deficit increased on average by 0.5 percentage point annually between 2012 and 2017.

As in the December *Report*, the technical assumption is applied that the annual fiscal impulse will be 0.1 percentage point from 2020, ie the structural deficit will increase by 0.1 percentage point annually as a share of trend GDP.

There are prospects that petroleum revenue spending in 2019 will be equivalent to 2.8% of the value of the Government Pension Fund Global (GPFG) at the beginning of the year. Since there has been some increase in value of the GPFG since the beginning of January, the structural deficit may account for a smaller portion of the value of the GPFG through the remainder of the projection period.

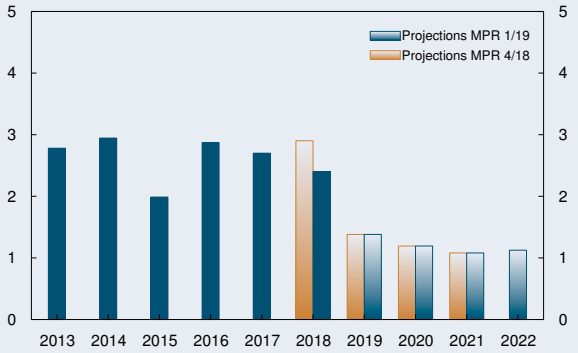
Since 2013, public demand has increased by 2%-3% annually (Chart 3.41). In line with the projections in the National Budget 2019, lower growth in public demand is projected for 2019, with growth edging down further in the period ahead. The projections for public demand are unchanged from the December *Report*.

Chart 3.40 Structural non-oil deficit and 3% of the GPFG[1].
Share of trend GDP for mainland Norway. Percent. 2013 – 2022 [2]



1) Government Pension Fund Global.
2) Projections for 2019 – 2022 (broken line and shaded bars).
Sources: Ministry of Finance and Norges Bank

Chart 3.41 Public sector demand [1]. Annual change. Percent. 2013 – 2022[2]



1) Working-day adjusted.
2) Projections for 2019 – 2022.
Sources: Statistics Norway and Norges Bank

PROJECTIONS FOR PETROLEUM INVESTMENT

After falling for several years, petroleum investment rose by 3% in 2018 (Chart 3.42). Investment is expected to increase appreciably in 2019. The upswing reflects the substantial cost-cutting measures by oil companies in recent years and the pronounced rise in oil and gas prices since the beginning of 2016. As a result of the cost cuts, break-even prices for new development projects are now USD 10–35 per barrel of oil, 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 2016. If oil and gas price developments are approximately as projected in this *Report*, oil companies are expected to launch a further 20–30 development projects during the projection period (see box on page 17).

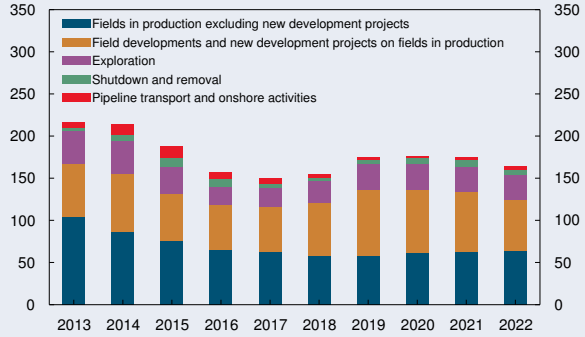
Investment in ongoing development projects increased by NOK 10bn in 2018. Investment is projected to increase by a further NOK 12bn in 2019, falling in the period to 2022 as the development projects are completed. This decrease will to some extent be offset by new development projects scheduled to start ahead (Chart 3.43). However, most of these new projects are small compared with ongoing projects[1] as there have been few large discoveries in recent years. Investment in development projects is therefore projected to fall between 2019 and 2022, particularly towards the end of the period. Well and operating investment in fields in production is expected to increase gradually ahead as a result of improved profitability in the petroleum industry in recent years.

Spending on exploration rose by NOK 4bn in 2018, after decreasing by almost half between 2013 and 2017. Exploration investment is projected to increase by a further NOK 4bn in 2019 and then remain stable until 2022. The increase between 2017 and 2019 has largely been driven by lower drilling costs since 2013 and the prospects for oil and gas prices.

Overall petroleum investment is projected to increase by 12.5% in 2019 and by 1% in 2020. Investment is thereafter expected to fall by 1% in 2021 and by 6% in 2022. The investment projections for 2019 and 2020 are somewhat higher than in the December 2018 *Report,* while the projection for 2021 is a little lower. The projections for 2019 and 2020 have been revised up in the light of the latest investment intentions survey and new information about developments costs for Duva, Grand and Luno 2.[2] Other new information could indicate that investment in development projects may be slightly lower after 2020 than expected earlier.

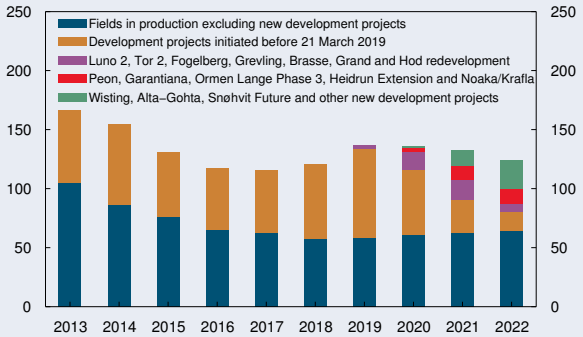
1 Development of the Wisting and Alta-Gohta discoveries may result in investment totalling NOK 80bn-NOK 100bn over five to six years. These developments are expected to commence towards the end of the projection period.
2 The development plan for Duva (previously Cara) was submitted directly after the publication of the first-quarter investment intentions survey. Development of Luno 2 will commence in the near future.

Chart 3.42 Petroleum investment.
Constant 2019 prices. In billions of NOK. 2013 – 2022 [1)]



1) Projections for 2019 – 2022. Figures for 2013 – 2018 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 rise by 2% per year in 2019 and 2020.
Sources: Statistics Norway and Norges Bank

Chart 3.43 Investment in field development and fields in production.
Constant 2019 prices. In billions of NOK. 2013 – 2022 [1)]



1) Projections for 2019 – 2022. Figures for 2013 – 2018 are from Statistics Norway's investment intentions survey and deflated by the price index for petroleum investment in the national accounts. The projections are based on reports to the Storting, impact analyses, forecasts from the Norwegian Petroleum Directorate, Statistics Norway's investment intentions survey and current information about development projects.
Sources: Statistics Norway and Norges Bank

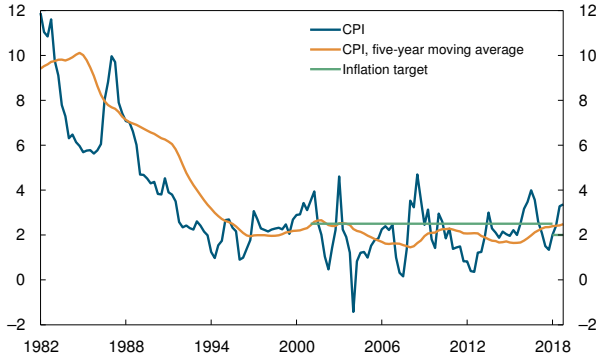
4 Monetary policy analysis

The policy rate has been raised from 0.75% to 1%. In the forecast, the policy rate increases further in the course of the next half-year, reaching 1.75% at the end of 2022.

The policy rate forecast is slightly higher in the next few years, than in the December 2018 *Monetary Policy Report* and slightly lower further out. The upward revision of the forecast at the start of the projection period partly reflects stronger domestic demand and a weaker krone. The downward revision further out reflects prospects for lower growth and a more gradual rate rise among trading partners.

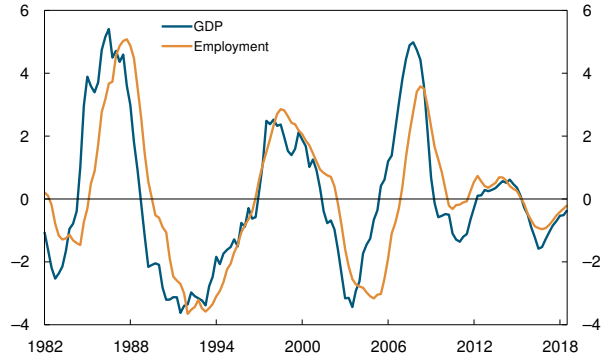
The projections are uncertain, and uncertainty increases through the projection period. If the outlook or the Bank's assessment of economic relationships changes, the policy rate forecast will be adjusted.

Chart 4.1 Consumer price index (CPI).
Four-quarter change. Percent. 1982 Q1 – 2018 Q4



Sources: Statistics Norway and Norges Bank

Chart 4.2 GDP for mainland Norway and employment.
Deviation from trend.[1] Percent. 1982 Q1 – 2018 Q3



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 Q4. The deviation from trend is a three-quarter centered 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 2.5%. 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 countering 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 in a box on page 41.

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, measured as the three-month money market rate less inflation, is estimated to lie in the range of

0%-1%.[1] The neutral real interest rate cannot be observed and the estimate is highly uncertain.

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

4.2 NEW INFORMATION AND ASSESSMENTS

Further rate rise

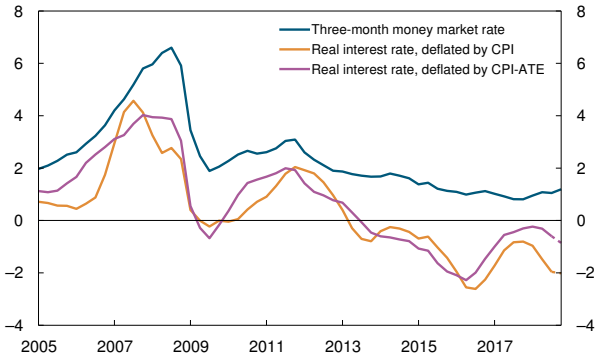
Monetary policy is expansionary. At the same time, growth in the Norwegian economy is solid. Spare capacity has gradually diminished, and capacity utilisation now appears to be a little above a normal level. Wage growth has risen, and the decline in unemployment suggests a further rise. Underlying inflation is a little higher than the inflation target.

The risk outlook is dominated in particular by global developments. Over the past year, rising protectionism and political uncertainty have weighed on growth. Euro-area growth slowed markedly towards the end of 2018. The UK's relations with the EU have yet to be clarified. If trade tensions deepen, growth among trading partners may be lower than projected. At the same time, the krone may remain weaker than assumed, if global uncertainty persists. It is also possible that the upturn in Norway will prove to be more pronounced than envisaged. Price and wage inflation may then turn out higher than projected. There is also uncertainty surrounding the effects of monetary policy. Over time, the krone has been weaker than implied by its historical relationship with the oil price and the interest rate differential against other countries. A wider interest rate differential ahead is expected to result in a stronger krone, but the extent of an appreciation is uncertain. Owing to 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, added to the uncertainty surrounding the effects of higher interest rates.

The outlook for the Norwegian economy suggests that the policy rate should be raised ahead. A rate that is too low over time may increase pressures in

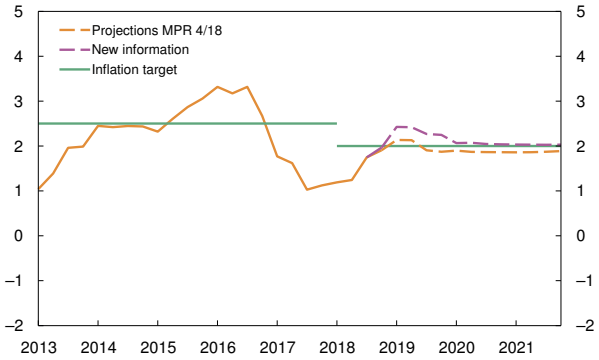
1 See Special Feature "Estimates of the neutral real interest rate" in *Monetary Policy Report* 2/18 for a detailed discussion.

Chart 4.3 Three-month money market rate and real interest rates [1]. Percent. 2005 Q1 – 2018 Q4 [2]



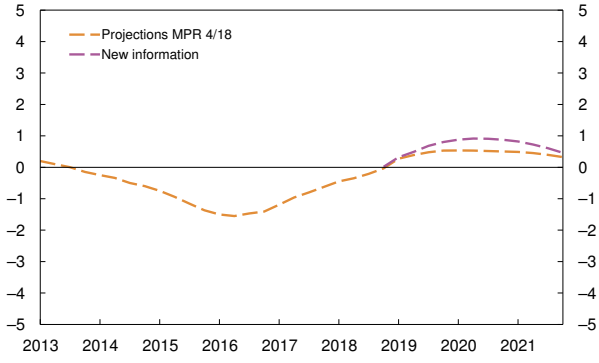
1) Three-month money market rate deflated by a three-quarter centered moving average of inflation, measured by four-quarter CPI inflation and CPI inflation adjusted for tax changes and excluding energy prices (CPI-ATE).
2) Projections for 2018 Q4 (broken lines).
Sources: Statistics Norway and Norges Bank

Chart 4.4a CPI-ATE.[1] Projection conditional on new information and policy rate forecast in MPR 4/18. Four-quarter change. Percent. 2013 Q1 – 2021 Q4[2]



1) CPI adjusted for tax changes and excluding energy products.
2) Projections for 2019 Q1 – 2021 Q4.
Sources: Statistics Norway and Norges Bank

Chart 4.4b Estimated output gap[1]. Projection conditional on new information and policy rate forecast in MPR 4/18. Percent. 2013 Q1 – 2021 Q4



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

the economy, triggering an acceleration in price and wage inflation. Persistently high debt growth has increased household vulnerability. Household debt growth has abated in recent years, but remains higher than growth in disposable income. House prices have risen recently, after showing little change through autumn 2018. 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, raising the policy rate too rapidly may stifle the upturn, resulting in higher unemployment and below-target inflation. The uncertainty surrounding global developments and the effects of monetary policy suggests a cautious approach to interest rate setting.

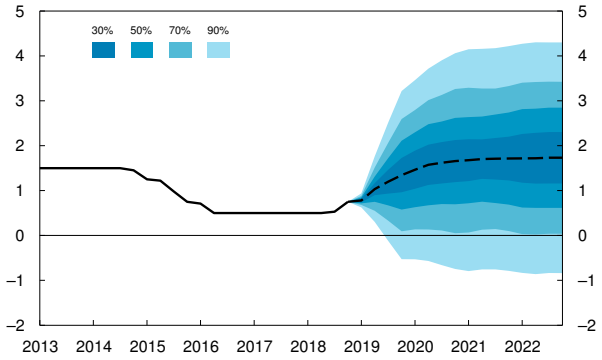
Overall, the outlook and the balance of risks imply a gradual rate rise ahead.

Faster rise in capacity utilisation

In analysing 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

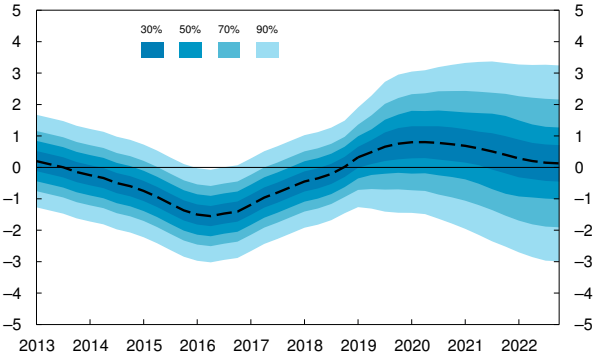
2 NEMO is described in Kravik, E.M. and Y. Mimir (2019) "Navigating with NEMO". *Staff Memo* 5/2019. Norges Bank.

Chart 4.5a Policy rate with fan chart[1].
Percent. 2013 Q1 – 2022 Q4[2]



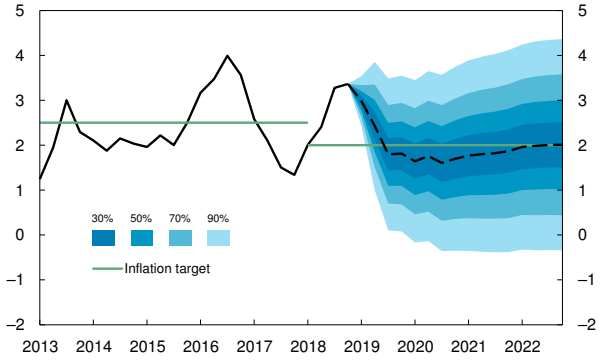
1) The fan chart is based on historical experience and stochastic simulations in Norges Bank's main macroeconomic model, NEMO. It does not take into account that a lower bound for the interest rate exists.
2) Projections for 2019 Q1 – 2022 Q4 (broken line).
Source: Norges Bank

Chart 4.5b Estimated output gap[1] with fan chart[2].
Percent. 2013 Q1 – 2022 Q4



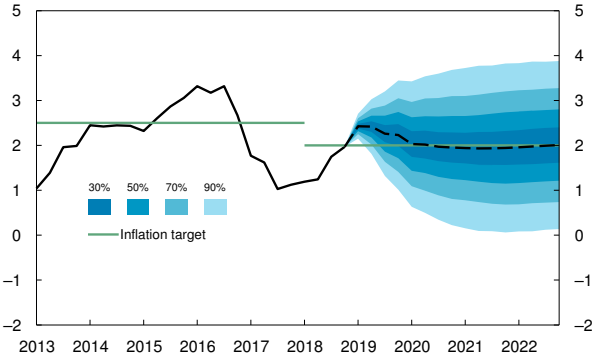
1) The output gap measures the percentage deviation between mainland GDP and estimated potential mainland GDP.
2) The fan chart is based on historical experience and stochastic simulations in Norges Bank's main macroeconomic model, NEMO.
Source: Norges Bank

Chart 4.5c CPI with fan chart[1].
Four-quarter change. Percent. 2013 Q1 – 2022 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 2019 Q1 – 2022 Q4 (broken line).
Sources: Statistics Norway and Norges Bank

Chart 4.5d CPI-ATE[1] with fan chart[2].
Four-quarter change. Percent. 2013 Q1 – 2022 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 2019 Q1 – 2022 Q4 (broken line).
Sources: Statistics Norway and Norges Bank

updated projections for the current and following quarter are applied. Some variables are estimated outside the model for the entire projection period. These include import growth, inflation and interest rates among trading partners, and the oil price, the money market premium, public demand and domestic oil investment. Estimates are shown for the years up to and including 2021, since this was the projection period in the December *Report*.

The model-based analysis suggests that with a policy rate forecast unchanged since December, CPI-ATE inflation will be a little higher than projected in December throughout the projection period (Chart 4.4a). This reflects, among other factors, a weaker-than-expected krone and the assumption that the conditions contributing to a weak krone are of a more permanent character than envisaged earlier. In isolation, lower-than-expected profitability in some industries pulls down wage inflation in the model-based analysis. Lower wage growth contributes to lower price inflation.

In the projection, capacity utilisation rises a little faster and reaches a higher level than projected in December (Chart 4.4b). This is primarily because GDP growth in the coming period is expected to remain higher than projected earlier, owing in part to an upward revision of the projection for petroleum investment. In addition, a lower real interest rate contributes to higher demand and higher capacity utilisation.

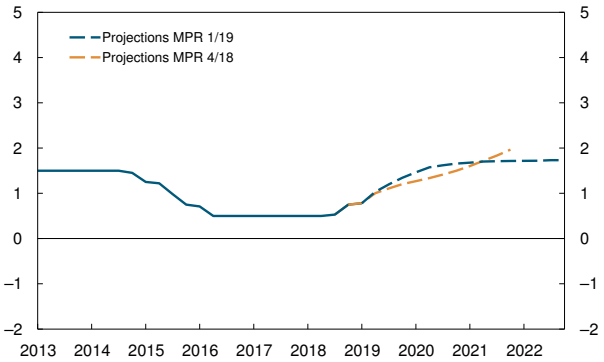
Slightly higher inflation and higher capacity utilisation suggest a slightly faster rate rise than indicated by the policy rate forecast in the December *Report*.

The policy rate has been raised

The policy rate has been raised from 0.75% to 1%, effective from 22 March 2019. In the forecast, the policy rate increases further in the course of the next half-year, reaching 1.75% at the end of 2022 (Chart 4.5a).

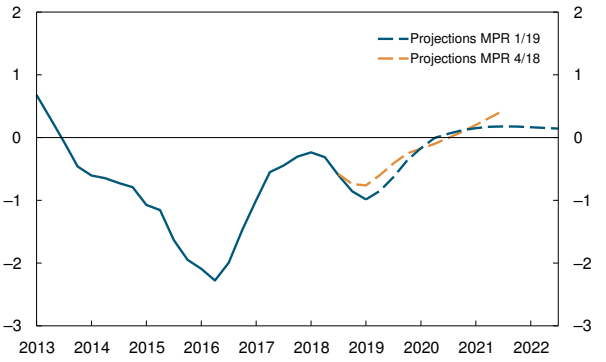
The upturn in the Norwegian economy appears to be stronger than anticipated earlier. On the other hand, there are prospects for weaker growth and lower interest rates abroad. The policy rate forecast indicates a slightly faster rate rise in 2019 and a somewhat

Chart 4.6 Policy rate. Percent. 2013 Q1 – 2022 Q4 [1)]



1) Projections for 2019 Q1 – 2022 Q4.
Source: Norges Bank

Chart 4.7 Real interest rate. [1)] Percent. 2013 Q1 – 2022 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 Q4 – 2022 Q3.
Sources: Statistics Norway and Norges Bank

lower policy rate further out than in the December *Report* (Chart 4.6).

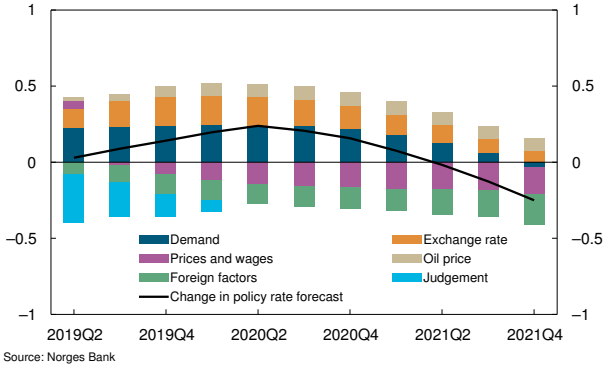
In the analysis, the money market rate is assumed to rise in tandem with the rise in the policy rate (Chart 1.8). In the projection, the real interest rate rises in the next few years, and show little change thereafter (Chart 4.7). Compared with the December *Report*, the real interest rate is projected to be a little lower through most of the projection period.

With the policy rate in line with the forecast, the output gap is projected to be positive throughout the projection period. Capacity utilisation is projected to peak in the first half of 2020, gradually declining thereafter (Chart 4.5b). Compared with the December *Report*, the projections for capacity utilisation have been revised up somewhat.

Inflation is projected to be at around 2% at the end of 2022 (Charts 4.5c-d). Compared with the December *Report*, the projections for both the CPI and the CPI-ATE are a little higher.

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 uncertain and uncertainty increases through the projection period. 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.

Chart 4.8 Factors behind changes in policy rate forecast since MPR 4/18. Cumulative contribution. Percentage points. 2019 Q2 – 2021 Q4



Source: Norges Bank

Factors behind changes in the 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. The black line shows the overall change in the policy rate forecast. The macroeconomic 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 December *Report* and the effect on the new rate path.

The global growth outlook appears to be somewhat weaker than projected in the December *Report*. At the same time, forward rates abroad are lower than anticipated in December. Both factors pull down the rate path (green bars).

Oil prices are a little higher than projected in December, resulting in higher oil investment and stronger growth in oil-related exports. On balance, higher oil prices pull up the rate path (beige bars).

Despite higher oil prices and a wider interest rate differential against other countries, the krone has been weaker than projected in December, and the conditions that have contributed to a weak krone are assumed to be of a more permanent character than envisaged earlier (see box on page 42). A weaker krone in isolation pulls up the interest rate path (orange bars).

Growth in domestic demand has been higher than projected, with prospects for continued higher-than-projected growth in the first half of 2019, and higher than can be explained by oil price and krone movements. This primarily reflects prospects for higher private investment in 2019, but also for slightly lower lending margins and higher house price inflation than previously assumed. Higher demand suggests a higher interest rate path (dark blue bars).

Inflation has been higher than projected, which in isolation suggests a slightly higher rate path. On the other hand, profitability in some industries has been lower than anticipated, which pulls down on the rise in wage growth and leads to a slower rise in wage growth than implied by the rise in inflation and improved labour market conditions. Lower wage growth pushes down on inflation and pulls in the direction of a lower rate path. On balance, new price and wage data point to a

slightly higher policy rate path in the near term and a slightly lower path further out (purple bars).

Since the December *Report*, new information suggests an upward adjustment of the rate path in the near term, and a slight downward adjustment further out. The uncertainty surrounding global developments and the effects of monetary policy suggests a cautious approach to interest rate setting. That judgement implies a somewhat smaller upward adjustment of the interest rate path than new information in isolation would indicate, as expressed by the light blue bars.

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 countering 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.

THE LONG-TERM REAL EXCHANGE RATE LEVEL

The long-term level of the real exchange rate, defined as the ratio of foreign consumer prices to domestic consumer prices measured in a common currency, is an important premise underlying the conduct of monetary policy. The real exchange rate level that is consistent with both internal and external balance over time is often referred to as the equilibrium exchange rate. The equilibrium exchange rate is closely related to a country's cost competitiveness and reflects structural differences between countries in respect of productivity, terms of trade, preferences and industry structure. These are structural factors that are largely independent of monetary policy. The equilibrium exchange rate is a key variable in our analysis system. It is not an observable variable and must therefore be estimated.

In Norway, the equilibrium exchange rate will likely be influenced by the oil price among other factors. A persistently lower oil price reduces Norway's petroleum revenues and wealth, which in isolation may require an improvement in competitiveness. It is commonly assumed that a persistent deterioration in the terms of trade normally leads to a weaker equilibrium exchange rate and an adjustment in real wages.[1] The adjustment to a new equilibrium exchange rate must occur via a weaker nominal exchange rate or a period of lower domestic price and cost inflation than among trading partners. This strengthens competitiveness, which curbs the negative effects of an oil price decline.

Long-term oil futures prices indicate that a large share of the oil price fall since 2014 is of a more permanent character. Since the oil price fall, the nominal exchange rate has depreciated markedly, and wage growth has been low. A possible interpretation is that the equilibrium exchange rate is weaker. Quantifying the depreciation of the equilibrium exchange rate attributable to the oil price fall is demanding, and associated with considerable uncertainty, particularly in real time. It is therefore natural to adjust the estimates in the light of new economic data. In the model-based analysis, we now apply the assumption that the depreciation of the equilibrium exchange rate after the oil price fall was slightly more pronounced than assumed earlier (Chart 4.9).

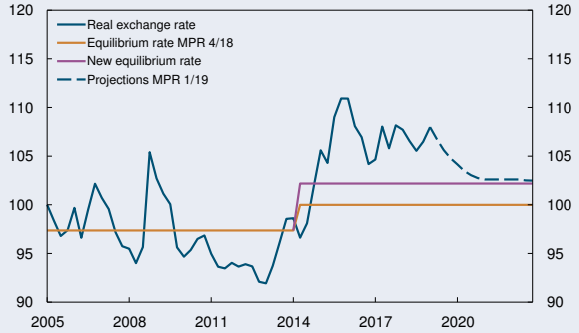
In order to illustrate the monetary policy implications of assuming a weaker equilibrium exchange rate, we have used simulations from our macroeconomic model NEMO. Chart 4.10 shows the isolated effects of assuming a 2% weaker equilibrium exchange rate some years back in time. A new retrospective assessment

1 This follows, inter alia, from the Balassa-Samuelson model. Economic theory does not, however, provide an unambiguous answer as to how the terms of trade influence the real exchange rate in the long run. In a model where both labour and capital are input factors the relationship between the equilibrium exchange rate and terms of trade may, for example, depend on the scale properties of the production function.

of the equilibrium exchange rate will to some extent also change our perception of the underlying factors that are currently driving economic developments. A weaker equilibrium exchange rate will reduce the extent of the recent krone depreciation attributed to temporary factors. Likewise, the low growth in wages observed in recent years will to a larger extent be a natural part of the adjustment to lower oil prices and will to a lesser extent be attributed to exogenous disturbances. An adjustment to a weaker equilibrium exchange rate in the model results in a weaker nominal exchange rate, which in isolation results in higher inflation and hence a higher interest rate. At the same time, a weaker equilibrium exchange rate occurs in tandem with lower wage growth, which pulls in the opposite direction.

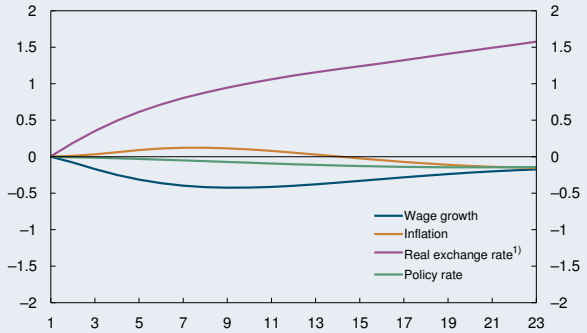
While the nominal exchange rate adjusts fairly quickly, it takes longer for the wage level to reach the new equilibrium. Wage growth may thus remain low for a long period. Overall, a weaker equilibrium exchange rate pushes up inflation in the near term, while lower wage growth pulls down inflation somewhat further out. The shift has little influence on the interest rate outlook in the model.

Chart 4.9 Real exchange rate.[1] Index. 2005 Q1 = 100. 2005 Q1 – 2022 Q4



1) Import-weighted krone exchange rate (I-44) adjusted for relative consumer prices between Norway and trading partners. CPI-ATE for Norway. For trading partners, core CPI with import weights for the euro area, Sweden, UK and US is used (see chart 2.6).
Source: Norges Bank

Chart 4.10 Changes in variables in NEMO following a 2 percent lower equilibrium exchange rate four years back. Percentage points. Quarters from today



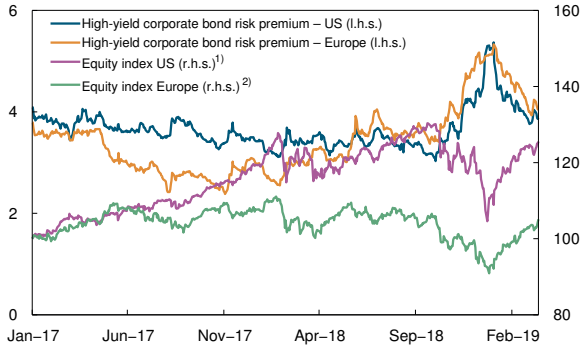
1) Percent.
Source: Norges Bank

5 Financial stability assessment
– decision basis for the countercyclical capital buffer

Financial imbalances have built up over a long period. Household debt is high and is still growing faster than income, although the pace of growth has slowed somewhat. Corporate credit growth remains elevated and is higher than the rate of growth in the economy. Property prices are at historically high levels. House price inflation is now moderate, and following several years of rapidly rising commercial real estate (CRE) prices, the rise in estimated selling prices for prime office space in Oslo has edged down. Bank profitability is solid and losses are low, and banks have ample access to wholesale funding.

Norges Bank's assessment of financial imbalances has not changed substantially since 2018 Q4. In the period ahead, gradually rising interest rates and moderate house price inflation are expected to dampen household debt growth. There are signs that the rapid rise in CRE prices may continue to slow.

Chart 5.1 Global equity and bond indexes.
Percent. Index. 1 January 2017 = 100. 1 January 2017 – 15 March 2019



1) Standard and Poor's 500 Index (US).
2) Stoxx Europe 600 Index (Europe).
Source: Bloomberg

5.1 GLOBAL FINANCIAL STABILITY

With high debt levels in many countries, abrupt increases in interest rates and risk premiums are still among the main risks to global financial stability. Turbulence in international financial markets may lead to shocks to the Norwegian financial system. Global turbulence has had little impact on Norwegian banks since the December 2018 *Monetary Policy Report*.

High risk-taking in financial markets

Since the December *Report*, there have been large movements in risk pricing in global financial markets. After rising sharply in December, bond risk premiums have fallen (Chart 5.1). The decline in equity prices that started in autumn 2018 has largely reversed.

In the US, strong economic growth and tax cuts have contributed to solid corporate earnings. At the same time, corporate debt is increasing. Growth in leveraged loans has been strong. These loans are often poorly collateralised, with weak debt protection, but the losses on loans that have been issued recently have so far been low. Growth in such loans was also very high prior to the 2008 financial crisis. Corporate debt as a share of GDP is higher now than at that time.

Global growth prospects have weakened. There is persistent uncertainty surrounding economic and

political developments, relating in particular to trade tensions and the UK's exit from the EU (see Section 2). Nevertheless, with signs of high risk-taking among investors, vulnerabilities may increase, particularly since debt levels are already high.

New EU banking sector measures

The profitability of European banks as a whole is still fairly low and developments in bank share prices have long been weaker than the rest of the market (Chart 5.2). Against the background of a weak real economic outlook for the EU, the European Central Bank (ECB) has announced that it will launch new longer-term refinancing operations for banks (TLTRO-III), with the aim, among other things, of strengthening banks' funding situation and hence their lending capacity ahead. The loans will be issued on a quarterly basis starting in September 2019 and ending in March 2021, each with a maturity of two years.

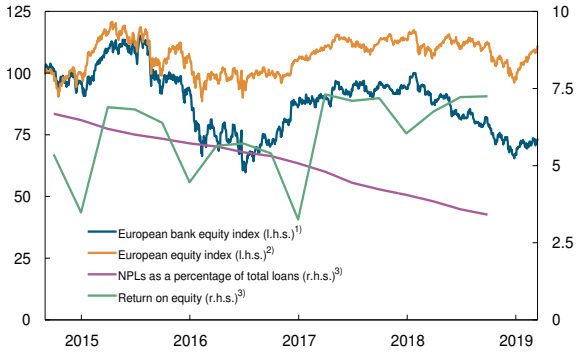
European banks continue to reduce their stock of non-performing loans (Chart 5.2), freeing up capital and improving banks' capacity to extend new loans. The share of non-performing loans was 3.2% in 2018 Q3, a halving since 2014. There are considerable differences between banks, both within and across countries. There has also been a decline in non-performing loans in the US and Japan, albeit from lower levels.

Global financial developments signal low risk in the heatmap at end-2018 Q4 (Chart 5.23). Substantial financial market volatility and a sharp increase in risk premiums towards the end of 2018 indicated reduced risk appetite and therefore signalled a reduction in the build-up of risk, although developments have reversed since end-2018.

5.2 CREDIT MARKET

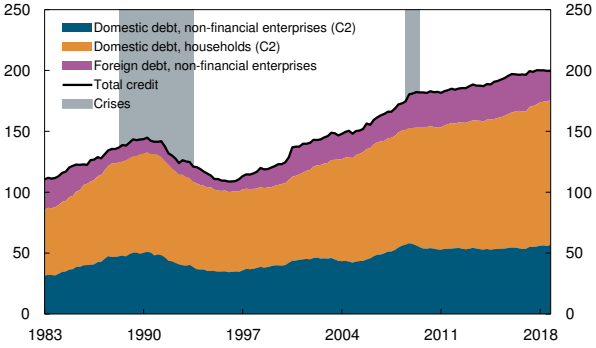
In Norway, credit has long risen faster than mainland GDP (see credit indicator in Chart 5.3). This has contributed to the build-up of financial imbalances. Over the past year, the indicator has flattened. The credit gap, which shows the difference between the indicator and an estimated trend, has narrowed for three consecutive quarters, but remained approximately unchanged between 2018 Q3 and 2018 Q4 (Chart 5.4).

Chart 5.2 European equity indexes, non-performing loans (NPLs) and European bank profitability. Percent. Index. 1 September 2014 = 100.
1 September 2014 – 15 March 2019



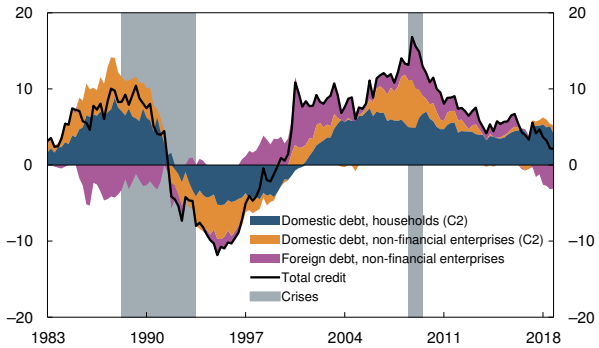
1) Stoxx Europe 600 Banks Index.
2) Stoxx Europe 600 Index.
3) Weighted average of large European banks, using quarterly data from 2014 Q3 to 2018 Q3.
Sources: Bloomberg, European Banking Authority (EBA) and Thomson Reuters Datastream

Chart 5.3 Credit mainland Norway as a share of mainland GDP.
Percent. 1983 Q1 – 2018 Q4



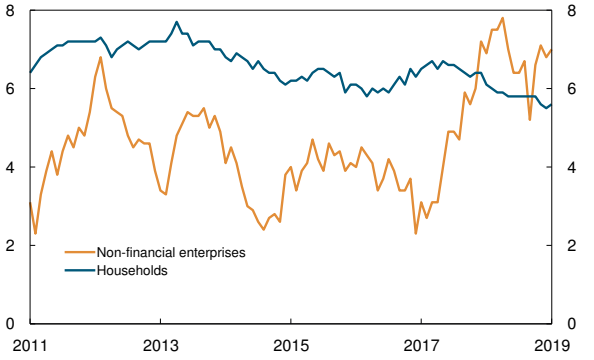
Sources: IMF, Statistics Norway and Norges Bank

Chart 5.4 Decomposed credit gap.[1] Credit mainland Norway as a share of mainland GDP. Percentage points. 1983 Q1 – 2018 Q4



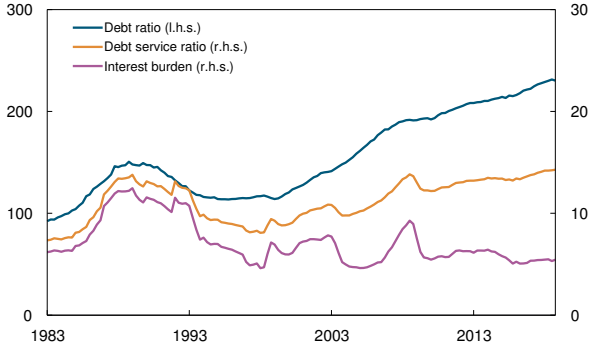
1) Calculated as deviation from trend. The trend is estimated using a one-sided HP filter with lambda = 400 000. The HP filter is estimated on data augmented with a simple projection.
Sources: IMF, Statistics Norway and Norges Bank

Chart 5.5 Domestic credit to households and non-financial enterprises in mainland Norway. Twelve-month change. Percent. January 2011 – January 2019



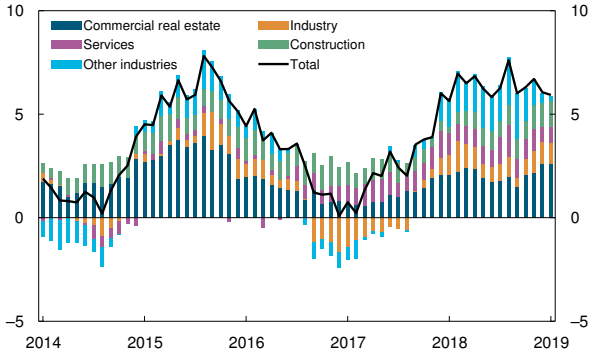
Sources: Statistics Norway and Norges Bank

Chart 5.6 Household debt ratio[1], debt service ratio[2] and interest burden[3]. Percent. 1983 Q1 – 2018 Q4



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. From 2015 Q1, growth in disposable income excluding dividends is used.
2) Debt service ratio is the ratio of interest payments and estimated principal payments on an 18-year mortgage to the sum of disposable income and interest payments.
3) Interest burden is interest expenses as a percentage of disposable income plus interest expenses.
Sources: Statistics Norway and Norges Bank

Chart 5.7 Bank and mortgage company lending to Norwegian non-financial enterprises by industry. Contribution to twelve-month change in stock. Percent. January 2014 – January 2019



Sources: Statistics Norway and Norges Bank

Slowing growth in credit to households

Growth in credit to households has slowed in recent years (Chart 5.5). Credit growth is now at its lowest level since 1997, but is still higher than growth in disposable income.

Household debt-to-income ratios are high and have risen substantially over a long period (Chart 5.6). This has contributed to the build-up of financial imbalances. Looking ahead, debt ratios are expected to increase further, but at a somewhat slower pace than projected in the December *Report* (Chart 3.7). Household debt ratios signal high risk in the heatmap (Chart 5.23).

The interest burden, ie the ratio of interest payments to income, has likely increased following the policy rate rise in September 2018. Nevertheless, from a historical perspective, the interest burden is low (Chart 5.6). Most households have ample capacity to service debt at somewhat higher interest rates. The debt service ratio, ie the ratio of interest and normal principal payments to income, is high and at the same level as during the financial crisis in 2008 and the banking crisis at the beginning of the 1990s (Chart 5.6).

New requirements for banks offering consumer credit[1] will be introduced in 2019 and entail a tightening of lending standards. Since consumer debt accounts for approximately 3% of total household debt, the new requirements will likely have little impact on growth in total household debt. Nevertheless, the regulation may restrain the build-up of household sector vulnerabilities (see *Financial Stability Report* 2018).

The banks included in Norges Bank's lending survey still expect unchanged residential mortgage demand and unchanged credit standards for households.

In the period ahead, household credit growth is expected to remain at approximately today's level (Annex Table 4).

1 See "Forskrift om krav til finansforetakenes utlånspraksis for forbrukslån" [Regulation on requirements for financial institutions' consumer credit standards] (In Norwegian only).

Sustained corporate credit growth

Enterprises have ample access to credit. Growth in corporate credit from domestic sources increased through 2017 and has been between 6% and 7% in recent months (Chart 5.5). Developments in corporate debt signal low risk in the heatmap (Chart 5.23).

Banks and mortgage companies are the main contributors to growth in domestic credit, and growth in credit from these funding sources is broad-based across industries (Chart 5.7). CRE loans, which account for over 40% of banks' and mortgage companies' overall lending, has provided the largest contribution to growth for a long period.

Growth in bond and short-term paper debt declined through 2018 (Chart 5.8). Corporate bond redemptions are higher in 2019 than in 2018, which may boost issue activity ahead. There was a marked rise in risk premiums towards the end of 2018. Risk premiums in the low-yield segment have since stabilised and are now somewhat lower than in December 2018, while premiums in the high-yield segment have risen by approximately 25 basis points.

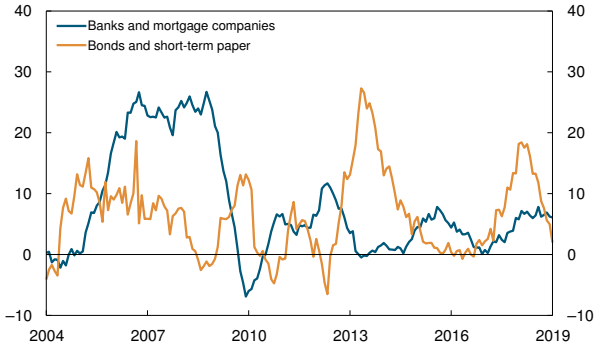
According to Norges Bank's lending survey for 2018 Q4, banks expect unchanged credit demand from non-financial enterprises and credit standards for enterprises. Banks reported somewhat higher funding costs for lending to non-financial enterprises, in line with the increase in the policy rate in September. For 2019 Q1, banks expect both lending rates and funding costs to increase further. In the period ahead, credit growth for non-financial enterprises is assumed to remain at approximately the current level.

Estimated credit risk linked to total bank debt of non-financial enterprises is low, but is expected to increase somewhat in 2019 and 2020 in most industries (Chart 5.9). Commercial real estate accounts for the largest contribution to growth in total credit risk owing to banks' high exposure to the sector. All corporate indicators signal low risk in the heatmap (Chart 5.23).

5.3 HOUSING MARKET

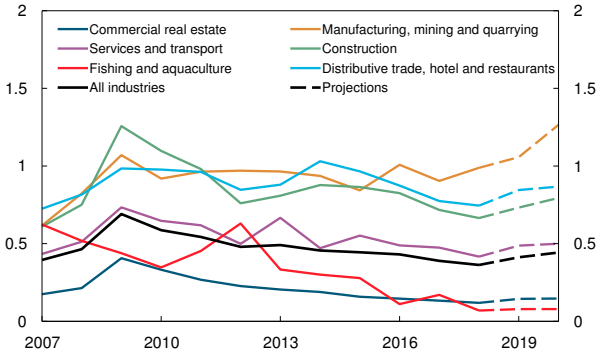
House prices have risen sharply over a long period. Since 2017 Q1, house prices have risen somewhat less than disposable income (Chart 5.10). In the heatmap, housing market developments have signalled low risk

Chart 5.8 Credit from selected funding sources to non-financial enterprises. Twelve-month change in stock.[1] January 2004 – January 2019



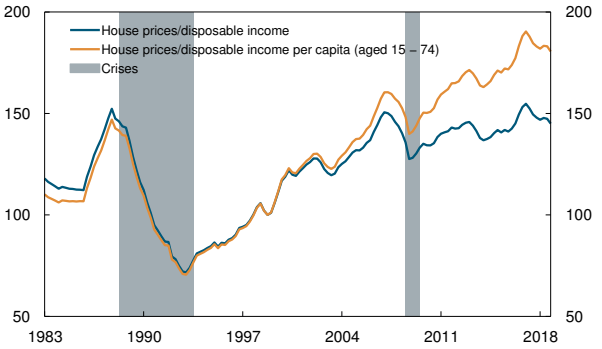
1) The series are break-adjusted.
Sources: Statistics Norway and Norges Bank

Chart 5.9 Estimated credit risk[1] by industry. Percent. 2007 – 2020[2]



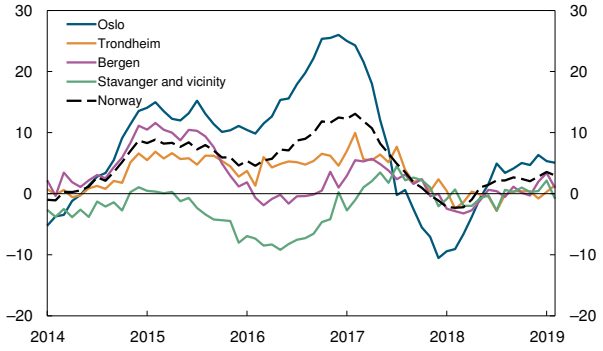
1) Estimated bankruptcy-exposed bank debt as a share of total bank debt in each industry.
2) Projections for 2019 – 2020.
Source: Norges Bank

Chart 5.10 House prices relative to disposable income[1]. Index. 1998 Q4 = 100. 1983 Q1 – 2018 Q4



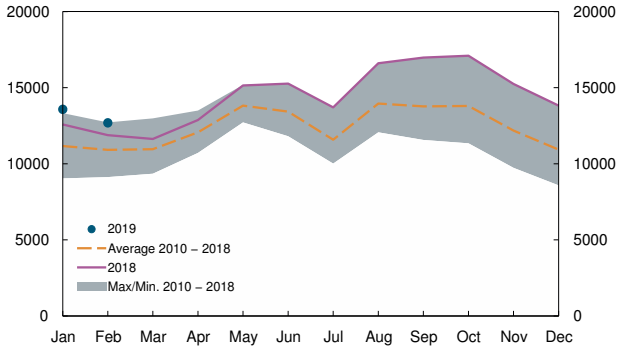
1) Disposable income adjusted for estimated reinvested dividend income for 2000 Q1 – 2005 Q4 and reduction of equity capital for 2006 Q1 – 2012 Q3. Change in disposable income excluding dividend income is used from 2015 Q1.
Sources: Eiendomsverdi, Finn.no, Norwegian Association of Real Estate Agents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

Chart 5.11 House prices.
Twelve-month change. Percent. January 2014 – February 2019



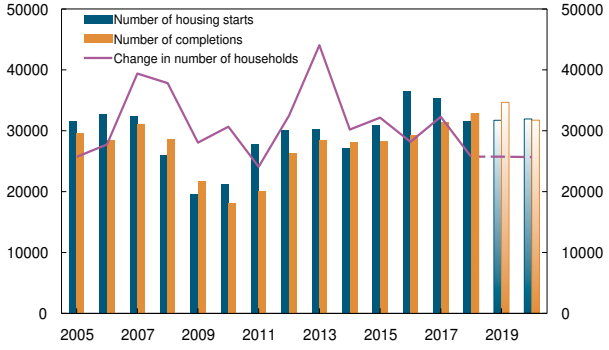
Sources: Eiendomsverdi, Finn.no and Real Estate Norway

Chart 5.12 Number of unsold existing homes. January 2010 – February 2019



Sources: Eiendomsverdi, Finn.no and Real Estate Norway

Chart 5.13 Housing starts, completions and annual change in number of households. 2005 – 2020[1)]



1) Projections for 2019 and 2020 (broken lines and shaded bars). Projections for household formation 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

since 2017 Q4 (Chart 5.23). At the same time, the high level of house prices entails vulnerability for the Norwegian financial system (see *Financial Stability Report* 2018).

House price inflation has been particularly high relative to per capita disposable income (Chart 5.10), which may reflect reduced housing affordability. However, analyses conducted by Norges Bank show that for large groups of households in Norway, housing affordability, measured as the share of homes sold that a household is able to debt-finance based on its income, remains virtually unchanged (see box on page 54). This is consistent with the impression provided by earlier model-based analyses, based on variables including unemployment, income growth and interest rates, which find that house prices are in line with that implied by historical relationships.[2] The results may indicate that the risk of a fall in housing demand, and hence of a fall in house prices, may be lower than implied by the ratio of average house prices to disposable income per capita.

Moderate house price inflation

House prices have risen slightly more than expected in recent months, after having shown little change through autumn 2018. The 12-month rise was 3.0% in February. In Oslo, the seasonally-adjusted rise in prices in recent months has been more stable than in the other large Norwegian cities (Chart 5.11). The 12-month rise is still highest in the capital, but regional differences have narrowed.

Activity in the market for existing homes has recently been high. A large number of dwellings are listed for sale, but turnover remains elevated. The number of unsold homes is declining, but still high. The unadjusted stock of unsold homes has been at its highest monthly level since the financial crisis each month since June 2018 (Chart 5.12). In the market for new homes, few homes have been listed for sale, while turnover has remained stable.

There is uncertainty regarding future house prices. Residential construction is at a high level and the number of building permits issued for housing starts has increased over the past half-year. In the Bank's projection, the number of housing starts will level off

2 See box on page 42 in *Monetary Policy Report* 4/17.

at a high level and many homes will be completed in 2019 (Chart 5.13). As many of the buyers of new homes are likely to sell their existing homes, the number of existing homes listed for sale is expected to remain elevated ahead. This may have a dampening effect on house price inflation. For a long period, residential construction has been outpaced by household formation in the main urban areas. This backlog in residential construction reduces the likelihood that the high completion rate will cause a substantial fall in house prices.[3] Household debt ratios are high, which adds to the uncertainty concerning the effects of increased interest rates on house prices. In the coming years, house prices are expected to rise by between 2% and 4% (Annex Table 4). See Section 3.1 for a further discussion of the projections for house price inflation.

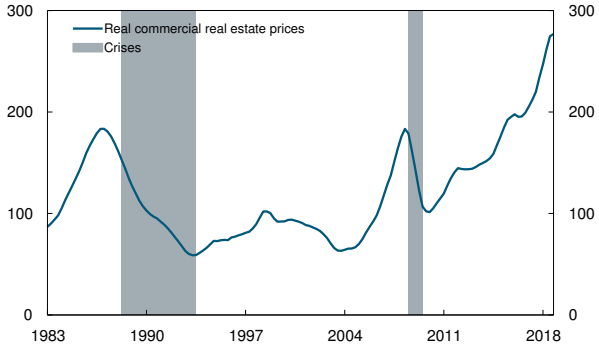
5.4 COMMERCIAL REAL ESTATE MARKET

There has been a marked rise in CRE prices over a long period. Prices are at historically high levels, which has contributed to the build-up of financial imbalances. Experience shows that CRE prices have risen sharply ahead of financial crises. The high level also implies a risk. Developments in CRE prices are important for banks owing to their substantial CRE exposures. The CRE market indicator signals high risk in the heatmap (Chart 5.23).

Slowing commercial property price inflation

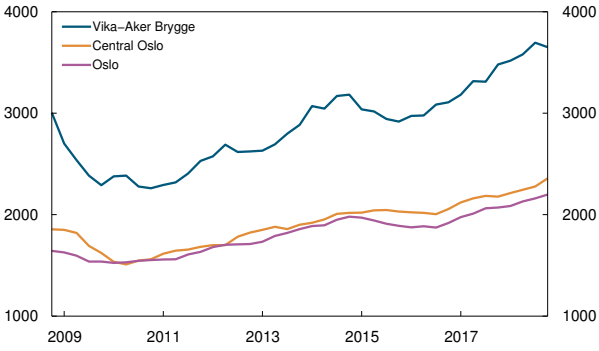
Estimated selling prices for prime real estate have risen sharply in recent years, but the rate of increase abated between 2018 Q3 and 2018 Q4 (Chart 5.14). Selling prices are estimated as the ratio of market rents to yields[4]. Rents rose markedly in Oslo in 2017 and 2018 (Chart 5.15). Market participants cited low construction activity, conversions of existing buildings to other uses and increased demand as contributory factors. According to the real estate company Entra's 2018 Q4 Consensus Report, a fairly sharp rise in rents in central Oslo is also expected in 2019, while the rise in other areas in Oslo is expected to be more moderate.

Chart 5.14 Real commercial real estate prices.[1)]
Index. 1998 = 100. 1983 Q1 – 2018 Q4



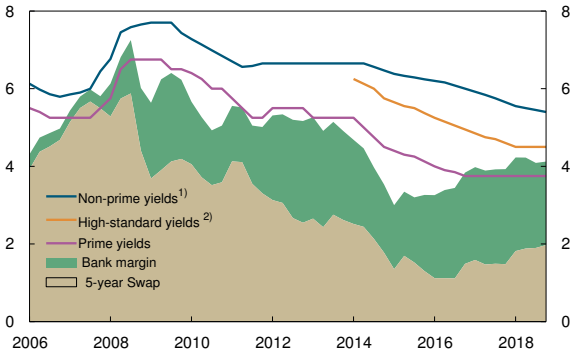
1) Estimated real selling prices per square metre for prime office space in Oslo. Deflated by GDP deflator for mainland Norway. Average selling price for the previous four quarters.
Sources: CBRE, Dagens Næringsliv, OPAK, Statistics Norway and Norges Bank

Chart 5.15 Rents in Oslo.[1)]
NOK per square metre. Four-quarter moving average. 2008 Q4 – 2018 Q4



Source: Arealstatistikk

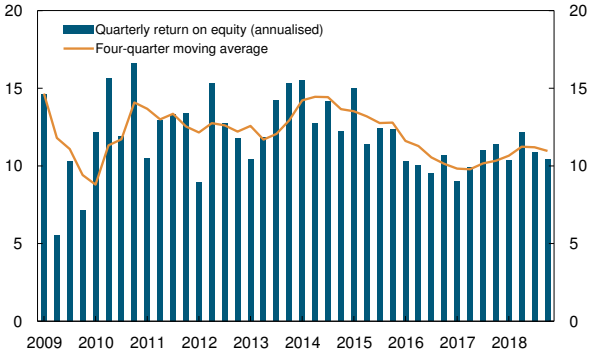
Chart 5.16 Yields on office space in Oslo.
Percent. 2006 Q1 – 2018 Q4



1) Property along Ring 3. Five-year lease.
2) Property with good location, along Ring 3. 10-year lease.
Sources: DNB Næringsmegling, Thomson Reuters Datastream and Union Næringsmegling

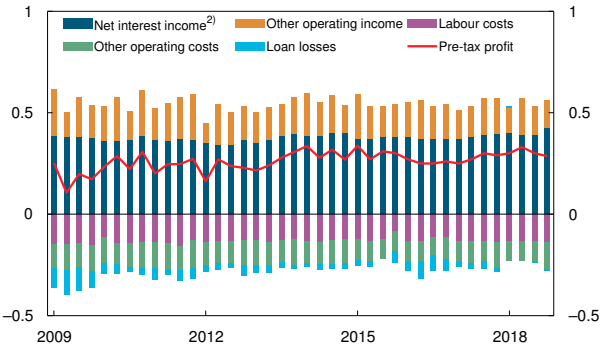
3 See Mæhlum, S., P. M. Pettersen and H. Xu (2018) "Residential construction and household formation". *Staff Memo* 12/2018. Norges Bank, for a further discussion.
4 Yields depend on a number of different factors, including the risk-free rate, the risk premium and expected future rents.

Chart 5.17 Return on equity for large Norwegian banks[1].
Percent. 2009 Q1 – 2018 Q4



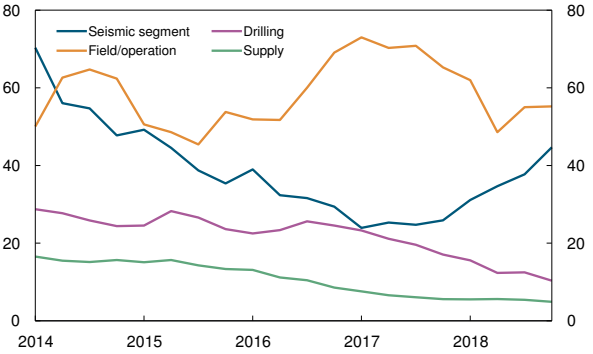
1) DNB Bank, Nordea Bank Norge (up to and including 2016 Q4), Sparebanken Vest, SpareBank 1 Nord-Norge, SpareBank 1 SMN, SpareBank 1 SR-Bank, Sparebanken Sør (from 2014 Q1) and SpareBank 1 Østlandet (from 2016 Q3).
Sources: Banks' quarterly reports and Norges Bank

Chart 5.18 Decomposed change in the profits of large Norwegian banks[1].
Percentage of average total assets. 2009 Q1 – 2018 Q4



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

Chart 5.19 Debt-servicing capacity[1] of oil service companies[2].
Percent. 2014 Q1 – 2018 Q4



1) Earnings before interest, taxes, depreciation and amortisation (EBITDA) for the previous four quarters as a percentage of net interest-bearing debt.
2) See Economic Commentaries 5/2016 for a further description of the different segments of oil service companies, and the sample of companies included in this analysis.
Sources: Bloomberg and Norges Bank

Yields on prime real estate in Oslo fell over several years, but held steady through 2018. Yields have also declined in other office segments in Oslo (Chart 5.16). Other large Norwegian cities experienced similar developments. Financing costs have risen in pace with the rise in long-term interest rates (Chart 5.16) and market participants expect that yields on office space in Oslo will rise somewhat in the coming years.[5] This suggests that the rise in prices may slow further ahead.

5.5 BANKS

Stricter capital and liquidity requirements following the financial crisis have strengthened the resilience of banks against losses and market stress. New deposit guarantee rules and bank recovery and resolution rules entered into force in Norway on 1 January 2019,[6] aimed at further strengthening the framework for managing troubled banks. A majority of the banking indicators in the heatmap signals low risk, but a larger share of real estate lending and increased exposure to other Norwegian financial institutions in recent years have, in isolation, increased banks' risk related to concentration and interconnectedness (Chart 5.23).

Banks are profitable and meet capital requirements

Norwegian banks' profitability is solid, even though large Norwegian banks' return on equity has declined somewhat over the past quarter (Chart 5.17). An increase in net interest income is making a positive contribution to earnings. In response to the policy rate hike in September, banks raised interest rates on existing loans, with effect from November (see box on page 32 in Section 3). Along with increased operating costs, other income items pulled profitability down somewhat (Chart 5.18).

Low losses are making a positive contribution to profitability. The low losses reflect solid developments in the Norwegian economy, but developments in parts of oil-related industries may still pose a risk of losses for banks. Debt-servicing capacity fell further for drilling and supply in 2018 (Chart 5.19), and many of the

5 See Entra's Consensus Report for February 2019 and DNB Næringsmegling.
6 See Act on the Norwegian Banks' Guarantee Fund and Act to amend the Financial Institutions Act (deposit guarantee and bank recovery and resolution) (in Norwegian only).

enterprises have recognised new impairment losses on vessels.[7]

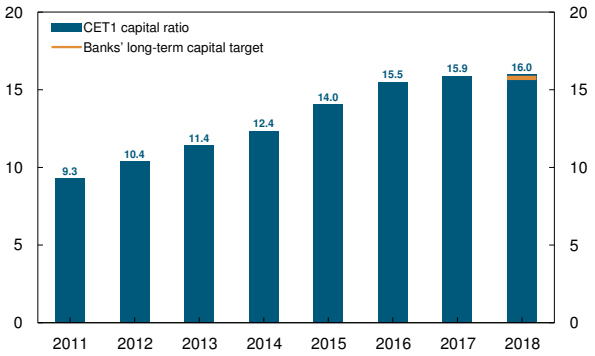
Banks are well positioned to comply with changes to capital requirements, including the December 2018 decision to increase the countercyclical capital buffer to 2.5% from end-2019. Banks' capital ratios are broadly in line with regulatory requirements and banks' long-term Common Equity Tier 1 (CET1) targets (Chart 5.20). The forthcoming transposition of EU regulations into Norwegian law will reduce the capital required to achieve the same risk-weighted capital ratio. Regulatory changes are expected for systemically important financial institutions, which will likely increase capital requirements for certain large savings banks.[8]

Norwegian banks' lending capacity is solid

Norwegian banks' market capitalisation fell considerably during the stock market decline in 2018 Q4, but has since recovered (Chart 5.21). Banks have ample access to wholesale funding, in both NOK and foreign currency. The risk premiums Norwegian banks pay over three-month Nibor for senior bonds and covered bonds have fallen somewhat since the December *Report*. In the liquidity survey, banks reported somewhat improved access to funding.

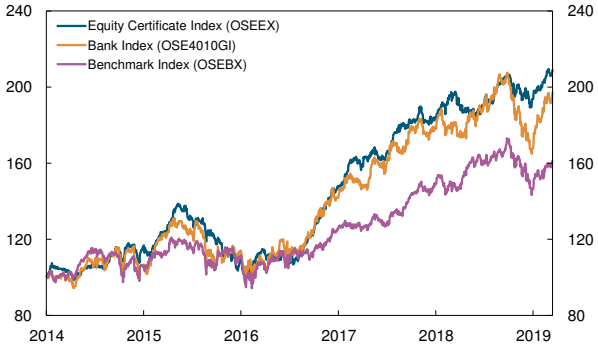
Banks will likely have sufficient capacity to meet credit demand. Twelve-month growth in bank lending to Norwegian enterprises increased in 2017, stabilising at just over 6% in 2018 (Chart 5.22). Relative to lending from branches of foreign banks in Norway, Norwegian banks' share of corporate lending growth has increased in 2018. According to banks' quarterly reports for 2018 Q4, total lending growth ahead is expected to range between 5% and 6%.

Chart 5.20 Large Norwegian banks' Common Equity Tier 1 capital ratios[1]. Percent. 2011 – 2018



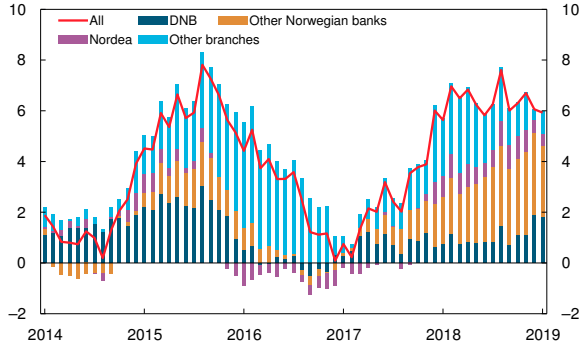
1) DNB Bank, Sparebanken Vest, SpareBank 1 Nord-Norge, SpareBank 1 SMN, SpareBank 1 SR-Bank, Sparebanken Sør (from 2014) and SpareBank 1 Østlandet (from 2016).
Sources: Banks' quarterly reports and Norges Bank

Chart 5.21 Equity price indexes in the banking sector. Index. 2 January 2014 = 100. 2 January 2014 – 15 March 2019



Source: Thomson Reuters Datastream

Chart 5.22 Credit to Norwegian enterprises from different banking groups. Different banking groups' contribution to twelve-month change. Percent. January 2014 – January 2019



Source: Norges Bank

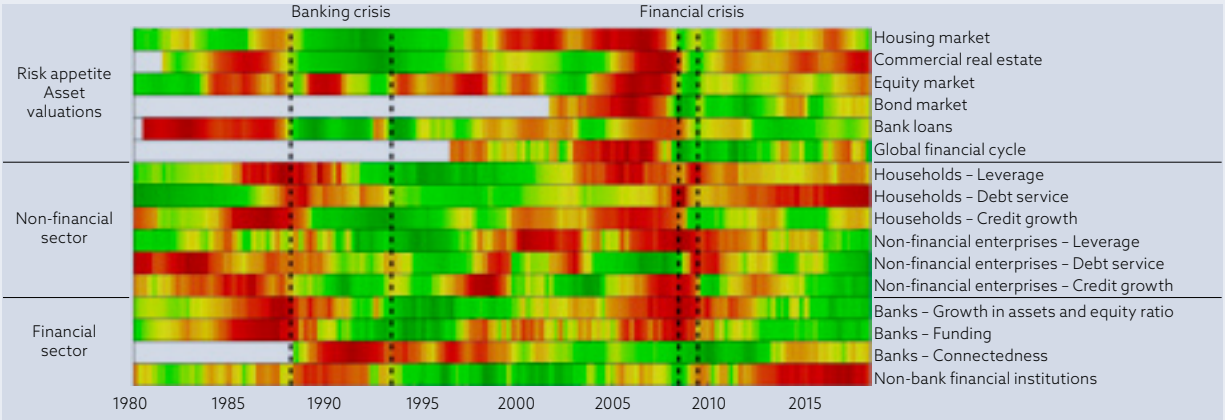
7 See Hjelseth, I.N., L.-T. Turtveit and H. Winje (2016) "Banks' credit risk associated with the oil service industry". *Economic Commentaries* 5/2016. Norges Bank, for a further discussion of the different segments of the oil service industry and of the sample of the companies included in this analysis.
8 See the Ministry of Finance's website (in Norwegian only) for more information.

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.

Chart 5.23 Composite Indicators in the heatmap 1980 Q1 – 2018 Q4[2]



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

1 See Arbatli, E.C. and R.M. Johansen (2017) "A Heatmap for Monitoring Systemic Risk in Norway", *Staff Memo* 10/2017. Norges Bank, for a detailed description of the heatmap and the individual indicators. See also box on page 54 of *Monetary Policy Report* 4/17.
2 The equity market indicator is revised in order to only reflect developments in equity prices relative to trend. This indicator has previously also reflected developments in the price/earnings ratio (PE ratio).

AN IMPROVED COMPOSITE INDICATOR OF SYSTEMIC STRESS (CISS) FOR NORWAY

Norges Bank's advice on the countercyclical capital buffer is based on a broad set of qualitative and quantitative information. The European Systemic Risk Board (ESRB) emphasises that developments in a general indicator for systemic stress in the financial system should be a part of this decision basis.[1]

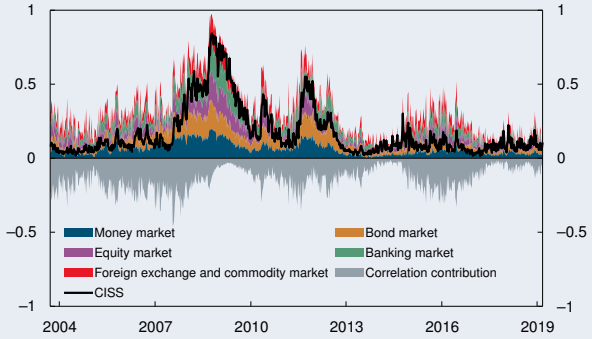
The composite indicator of systemic stress (CISS), introduced by Holló (2012), provides an overall measure of the stress level in the financial system.[2] It has proved to be a good indicator for signaling systemic banking crises in real time or in the near future.[3] The indicator is based on five submarkets that comprise the core of the financial system: The money, bond, equity, banking, and commodity and foreign exchange markets. In constructing the indicator, consideration is given to the greater challenge to the financial system posed by simultaneous stresses in these market segments than periods without such correlation. Norges Bank has revised the CISS for Norway, which is now more comparable with other countries' stress indicators.[4]

The revised version of CISS has reached high levels during crises (Chart 5.24). The chart shows developments in stress levels for the five submarkets comprising the indicator (above zero), and the correlation between the market segments (below zero). The indicator reached its highest point so far during the financial crisis in the autumn of 2008. The level of stress was then high in all five of the submarkets simultaneously. During the euro area sovereign debt crisis, the CISS also increased markedly, but was considerably lower than during the financial crisis. This reflects the lower stress level in each of the submarkets at the time and the relatively weaker correlation.

Historically, the Norwegian version of CISS has largely been correlated with euro area countries (Chart 5.25). This reflects the normally rapid spread of global financial turbulence to small, open economies like Norway. See Hagen and Pettersen (2019) for a more detailed review of CISS for Norway.[5]

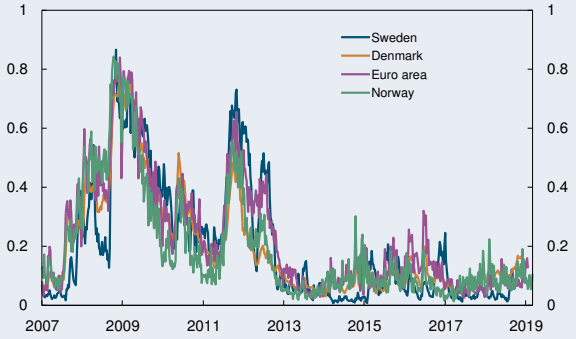
1 See European Systemic Risk Board (2014), "Recommendation of the European Systemic Risk Board of 18 June 2014 on guidance for setting countercyclical buffer rates".
2 See Holló, D., M. Kremer, and M. L. Duca. (2012), "CISS – A composite indicator of systemic stress in the financial system". *Working Paper Series* No 1426. European Central Bank.
3 See Deiken, C. et al (2014), "Operationalising the countercyclical capital buffer: indicator selection, threshold identification and calibration options". *ESRB Paper Series 05*.
4 In 2015, a CISS was constructed for Norway (see Wen, Y. (2015), "A composite indicator of systemic stress (CISS) for Norway". The revised indicator is based on the indicator presented by Wen (2015), but more closely follows the framework presented by Holló et al (2012), like the CISS used by the ECB and several other European central banks.
5 Hagen, M. and P. M. Pettersen (2019) "En revidert sammensatt systemisk stressindikator (CISS) for Norge" [An improved composite indicator of systemic stress (CISS) for Norway]. (Forthcoming in English) *Staff Memo* 3/19. Norges Bank.

Chart 5.24 CISS for Norway.[1] Weekly data. Week 38 2003 – week 10 2019



1) CISS, measured by the black line, is higher the more stress there is in the different market segments (the coloured areas above zero increases) and the more correlation there is between segments (the grey area below zero decreases).
Sources: Bloomberg, DNB Markets, Thomson Reuters Datastream and Norges Bank

Chart 5.25 CISS for Norway, Sweden, Denmark and the euro area.[1] Weekly data. Week 1 2007 – week 10 2019



1) There are some differences in methodology between indicators. It is therefore not appropriate to examine small deviations between the countries. The end date also varies between the countries.
Sources: Bloomberg, DNB Markets, ECB, European Systemic Risk Board (ESRB), Finansinspektionen, Thomson Reuters Datastream and Norges Bank

HOUSING AFFORDABILITY

House prices have long risen faster than household income (Chart 5.10). This may indicate weakened housing affordability. To shed light on affordability, prices for all housing transactions are compiled with microdata for households' capacity to debt-finance a dwelling based on income. The analysis finds that owing to lower interest rates and income growth and slow growth in ordinary consumption expenditure, housing affordability for the median household is sustained despite higher house prices.

A faster rise in house prices than in income may increase the risk of a fall in housing demand. On the other hand, falling residential mortgage rates and slow growth in ordinary consumption expenditure may increase housing affordability and allow house prices to rise faster than income.

This analysis examines the effects of developments in house prices, income, mortgage rates and consumption expenditure on housing affordability and compares developments across household categories and housing markets. Household wealth is not included in the analysis.

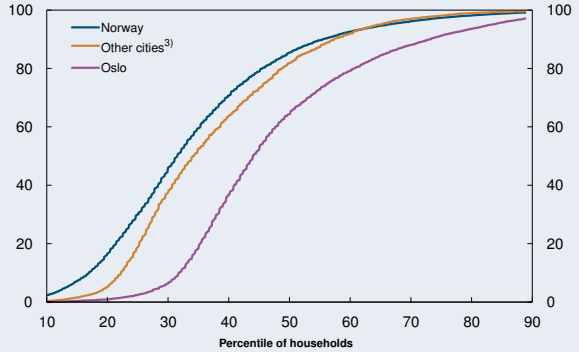
A measure of housing affordability is estimated using households' capacity to debt-finance a dwelling based on income. The estimation consists of three steps[1]:

- First, *debt-servicing income*, ie the amount of income available to households for servicing debt, is calculated by subtracting ordinary consumption expenditure from post-tax income.
- *The price of the most expensive dwelling the household is able to debt-finance* is then estimated, assuming a 30-year amortising mortgage loan and a requirement to be able to service debt in the event of a 5 percentage point interest rate increase.[2]
- Finally, *housing affordability* is estimated by comparing the distribution of households sorted by the price of the most expensive dwelling the household is able to debt-finance with the distribution of prices for dwellings sold. Housing affordability is defined as the share of dwellings sold where a household can debt-finance a home purchase.

1 See Lindquist, K.-G. and B.H. Vatne (2019) "Utviklingen i husholdningenes kjøpekraft i boligmarkedet" [Developments in housing affordability] (forthcoming in English). *Staff Memo* 4/19, Norges Bank, for a detailed description of the method, relevant literature and results.

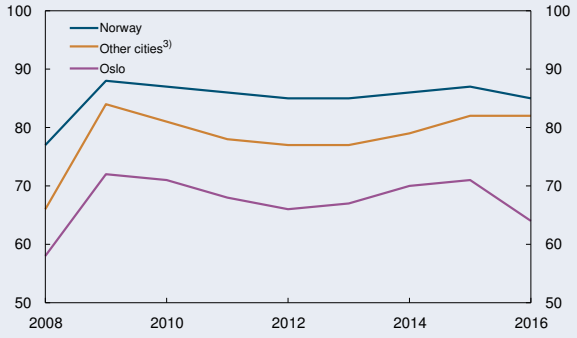
2 A general challenge in housing affordability analyses is scaling the share of household income that can actually be devoted to debt servicing or housing expenses when a dwelling is purchased. Different analyses use different methodologies. This analysis focuses on the ability to service mortgage debt, ie interest expenses and principal payments. Therefore, for the scaling, the authorities' debt servicing requirements are applied in the event of a 5 percentage point interest rate rise (see Lovdata (2018) Forskrift om krav til nye utlån med pant i bolig [Regulation on requirements for new residential mortgage loans] (Norwegian only)).

Chart 5.26 Housing affordability[1] by geographic region.
Percent of dwellings sold. Households aged 30 – 60.[2] 2016



1) Dwellings are sorted by sale price in ascending order (vertical axis). Households are sorted by increasing abilitiy to debt-finance a dwelling (horizontal axis).
2) Age refers to age of main income earner.
3) Other cities include Bergen, Trondheim and Stavanger with Sandnes.
Sources: Ambita, SIFO, Statistics Norway and Norges Bank

Chart 5.27 Housing affordability[1] by geographic region. Median household.
Percent of dwellings sold. Households aged 30 – 60.[2] 2008 – 2016



1) Dwellings sorted by sale price in ascending order.
2) Age refers to age of main income earner.
3) Other cities include Bergen, Trondheim and Stavanger with Sandnes.
Sources: Ambita, SIFO, Statistics Norway and Norges Bank

DATA

The analysis uses household income and wealth statistics compiled by Statistics Norway (based on tax assessment data from the Norwegian Tax Administration) and information from Ambita on home purchases from the Norwegian Mapping Authority's Land Registry. Households are defined as persons living in the same unit. The analysis is limited to households aged between 30 and 60.[1] The age of a household is determined by the age of the main income earner. Self-employed persons are excluded, as are households without positive post-tax income. The dataset comprises 1.2m-1.3m households per year and up to 100 000 housing transactions per year. The year 2008 is chosen as the starting year for the analysis owing to the break in Land Registry data in 2008, and the last year of the dataset and for the analysis is 2016.

Ordinary consumption expenditure is obtained from the National Institute for Consumer Research (SIFO) Reference Budget for Consumer Expenditure. The budget represents a moderate level of consumption and is the basis for banks' calculations of borrowers' debt servicing capacity under the residential mortgage regulation. The budget varies according to household size and composition. We use the average interest rate on existing housing loans based on Statistics Norway's interest rate statistics.

1 Limiting by age excludes young households with low income that is situation-dependent, such as students, which can expect strong income growth. Among older households, many are pensioners with relatively low income. The exclusion of many low-income households means that estimated housing affordability will be higher than if these households were not excluded.

Estimated housing affordability depends on the sample of households and housing markets examined. The analysis shows that the median household in Norway, sorted by the price of the most expensive dwelling it is able to debt-finance, was able to afford 85% of the dwellings sold in 2016 (Chart 5.26). Households in the 25th percentile in Norway are found to be able to debt-finance one of the 30% least expensive dwellings sold. Median affordability in Oslo was 64%. The distribution of housing affordability in Oslo is more skewed than in other cities and the country as a whole.

Housing affordability for the median household in Norway was fairly weak in 2008, owing to high interest rates and high house prices following a sharp price rise ahead of the financial crisis (Chart 5.27). In 2009, lower interest rates, lower house prices and continued solid income growth contributed to a rebound in housing affordability. Thereafter, housing affordability remained relatively stable up until 2016, when it fell back somewhat, reflecting weak income growth.

Estimations of affordability over time show that it is persistently high for households at the top end of the distribution, while developments at the lower end have been weaker. For the analysis period as a whole, housing affordability for households in the 25th percentile has increased, but weakened considerably between 2009 and 2016.

Towards the end of the period examined, for the median household in Oslo, developments in housing affordability have been weak compared with the median households for the country overall and for other cities (Chart 5.27).

The analysis shows that when taking account of declining mortgage rates and the weak growth in the standard budget for ordinary consumption, housing affordability for large groups of households in Norway has remained virtually unchanged since 2008. The results indicate that the risk of a fall in housing demand, and hence a fall in house prices, may be lower than implied by the ratio of average house prices to disposable income per capita. At the same time, a cautious approach is warranted in interpreting the results. The analysis is based on borrowing limits given a household's debt servicing capacity and disregards the household's wealth and capital requirements when borrowing.

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
19 June 2019		
8 May 2019		
20 March 2019	**1.00**	**0.25**
23 January 2019	0.75	0
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

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* 4/18 in brackets	Share of world GDP[1]		Trading partners[4]	Percentage change from previous year				
	PPP	Market exchange rates		2018	2019	2020	2021	2022
US	16	25	9	2.9 (0)	2.2 (-0.2)	1.8 (0)	1.7 (-0.1)	1.7
Euro area	12	16	33	1.8 (-0.1)	1.1 (-0.5)	1.4 (-0.1)	1.5 (0)	1.5
UK	2	4	10	1.4 (0.1)	1.1 (-0.3)	1.4 (-0.1)	1.5 (0)	1.5
Sweden	0.4	0.7	12	2.4 (0)	1.6 (-0.2)	1.7 (-0.2)	1.8 (-0.1)	2.0
Other advanced economies[2]	7	10	18	1.9 (0)	1.7 (-0.2)	1.7 (-0.1)	1.9 (0)	1.9
China	16	15	6	6.6 (0.1)	6 (0)	5.8 (0)	5.8 (0)	5.8
Other emerging economies[3]	19	11	12	3.6 (-0.1)	3.3 (-0.3)	3.8 (-0.1)	3.9 (-0.1)	4.0
Trading partners[4]	72	79	100	2.6 (0)	1.9 (-0.3)	2.1 (0)	2.1 (0)	2.2
World (PPP)[5]	100			3.6 (-0.1)	3.2 (-0.3)	3.5 (-0.1)	3.6 (0)	3.7
World (market exchange rates)[5]		100		3.1 (0)	2.6 (-0.4)	2.8 (0)	2.9 (0)	2.9

1 Country's share of global output measured in a common currency. Average 2015–2017.
2 Other advanced economies in the trading partner aggregate: Denmark, Japan, Korea, Singapore and Switzerland. Export weights.
3 Emerging economies in the trading partner aggregate excluding China: Brazil, India, Indonesia, Poland, Russia, Thailand and Turkey. 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.

Sources: IMF, Thomson Reuters and Norges Bank

Table 2 Projections for consumer prices in other countries

Change from projections in *Monetary Policy Report* 4/18 in brackets	Trading partners[4]	Percentage change from previous year				
		2018	2019	2020	2021	2022
US	8	2.4 (-0.1)	1.8 (-0.5)	2.3 (-0.1)	2.3 (0)	2.3
Euro area	33	1.8 (0)	1.2 (-0.3)	1.5 (-0.1)	1.6 (-0.1)	1.7
UK	6	2.3 (0)	1.9 (-0.1)	2.1 (0)	2 (0)	1.9
Sweden[1]	13	2.1 (-0.1)	1.9 (0)	2 (0)	2 (0)	2.0
Other advanced economies[2]	17	1.1 (-0.2)	1.4 (-0.1)	1.6 (-0.1)	1.7 (0)	1.6
China	12	2.1 (-0.2)	2.2 (-0.2)	2.4 (-0.3)	2.7 (0)	2.6
Other emerging economies[3]	10	4.7 (-0.1)	5.2 (-0.3)	4.8 (0.4)	4.5 (0.1)	4.3
Trading partners[4]	100	2.1 (-0.1)	2 (-0.2)	2.1 (-0.1)	2.2 (0)	2.1
Underlying inflation[5]		1.4 (0)	1.5 (-0.3)	1.7 (-0.2)	1.9 (0)	1.9
Wage growth[6]		2.7 (0)	2.6 (0)	2.9 (-0.1)	2.9 (-0.2)	2.9

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

Sources: IMF, Thomson Reuters and Norges Bank

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

	2018		2019	
	Q3	Q4	Q1	Q2
Actual	0.4	0.9		
Projections in PPR 4/18		0.7	0.7	
Projections in PPR 1/19			0.6	0.8

Sources: Statistics Norway and Norges Bank

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

	2018	2019					
	Dec	Jan	Feb	Mar	Apr	May	Jun
Actual	2.4	2.4	2.3				
Projections in PPR 4/18	2.4	2.4	2.4	2.4			
Projections in PPR 1/19				2.3	2.3	2.3	2.3

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

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

	2018			2019			
	Oct	Nov	Dec	Jan	Feb	Mar	Apr
Actual	4.0	3.8	3.7				
Projections in PPR 4/18	4.0	4.0	4.0	3.9			
Projections in PPR 1/19				3.6	3.6	3.6	3.6

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

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

	2018	2019					
	Dec	Jan	Feb	Mar	Apr	May	Jun
Consumer price index (CPI)							
Actual	3.5	3.1	3.0				
Projections in PPR 4/18	3.1	2.8	2.3	2.4			
Projections in PPR 1/19				2.9	2.5	2.6	2.2
CPI-ATE[1]							
Actual	2.1	2.1	2.6				
Projections in PPR 4/18	1.9	2.2	2.0	2.2			
Projections in PPR 1/19				2.6	2.3	2.5	2.4
Imported consumer goods in the CPI-ATE							
Actual	1.4	0.9	2.3				
Projections in PPR 4/18	1.2	1.7	1.8	1.6			
Projections in PPR 1/19				2.2	1.7	1.8	1.8
Domestically produced goods and services in the CPI-ATE[2]							
Actual	2.4	2.8	2.7				
Projections in PPR 4/18	2.3	2.5	2.2	2.7			
Projections in PPR 1/19				2.8	2.6	2.9	2.8

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* 4/18 in brackets	In billions of NOK 2018	Percentage change from previous year (unless otherwise stated) Projections				
		2018	2019	2020	2021	2022
Prices and wages						
Consumer price index (CPI)		2.7 (0)	2.3 (0.5)	1.7 (0.1)	1.8 (0.1)	2.0
CPI-ATE[1]		1.6 (0.1)	2.3 (0.3)	2.0 (0.1)	1.9 (0)	2.0
Annual wages		2.8 (0.1)	3.3 (0.1)	3.5 (0)	3.7 (-0.1)	3.6
Real economy[2]						
Gross domestic product (GDP)	3537	1.7 (0)	2.4 (0.4)	2.0 (0.2)	1.7 (-0.2)	1.5
GDP, mainland Norway	2908	2.5 (0.1)	2.7 (0.4)	1.8 (0.2)	1.2 (-0.2)	1.1
Output gap, mainland Norway (level)[3]		-0.2 (0.1)	0.6 (0.2)	0.8 (0.3)	0.5 (0.1)	0.2
Employment, persons, QNA		1.6 (0.1)	1.4 (0.3)	0.8 (0.1)	0.3 (0)	0.1
Labour force, LFS[4]		1.5 (0)	1.3 (0.1)	0.7 (0.1)	0.4 (0)	0.2
LFS unemployment (rate, level)		3.8 (-0.1)	3.6 (-0.2)	3.5 (-0.3)	3.6 (-0.2)	3.6
Registered unemployment (rate, level)		2.4 (0)	2.3 (-0.1)	2.2 (-0.1)	2.3 (0)	2.4
Demand[2]						
Mainland demand[5]	3063	1.6 (0.2)	1.8 (0.1)	1.9 (0.1)	1.7 (0.1)	1.9
- Household consumption[6]	1539	2.1 (0.2)	1.9 (0)	2.4 (0.1)	2.3 (0.1)	2.5
- Business investment	309	1.8 (0.8)	4.1 (0.4)	2.5 (1.3)	1.0 (0.7)	1.8
- Housing investment	192	-6.0 (3.7)	0.0 (1.4)	1.2 (-0.4)	1.3 (-0.4)	1.5
- Public demand[7]	1023	2.4 (-0.5)	1.4 (0)	1.2 (0)	1.1 (0)	1.1
Petroleum investment[8]	154	3.3 (1.2)	12.5 (2.0)	1.0 (-2.0)	-1.0 (-1.5)	-6.0
Mainland exports[9]	651	2.5 (-1.0)	4.5 (-0.2)	2.7 (-0.4)	2.2 (-0.8)	2.6
Imports	1154	0.9 (-0.8)	2.7 (-0.4)	3.3 (0.3)	3.3 (0.1)	3.1
House prices and debt						
House prices		0.7 (0)	2.4 (0.8)	3.0 (-0.1)	3.2 (0.4)	3.6
Credit to households (C2)[10]		5.5 (-0.2)	5.4 (-0.4)	5.2 (-0.3)	5.4 (0.2)	5.7
Interest rate and exchange rate (level)						
Policy rate[11]		0.6 (0)	1.1 (0.1)	1.6 (0.2)	1.7 (-0.1)	1.7
Import-weighted exchange rate (I-44)[12]		104.6 (0.1)	104.4 (1.0)	102.0 (0.4)	101.6 (1.3)	101.6
Money market rates, trading partners[13]		0.4 (0)	0.6 (-0.1)	0.6 (-0.2)	0.7 (-0.3)	0.9
Oil price						
Oil price, Brent Blend. USD per barrel[14]		71 (0)	66 (4)	65 (3)	63 (2)	62

1 CPI adjusted for tax changes and excluding energy products.
2 All figures are working day-adjusted.
3 The output gap measures the percentage deviation between mainland GDP and projected potential mainland GDP.
4 Labour Force Survey.
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 2018. The price for 2019 is calculated as the average spot price so far in 2019 and futures prices for the remainder of the year. Futures prices for 2020–2022. Futures prices at 15 March 2019.

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

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