



NORGES BANK

4 | 19

DECEMBER

**MONETARY
POLICY REPORT**
WITH FINANCIAL STABILITY ASSESSMENT

Key figures

INFLATION TARGET

2%

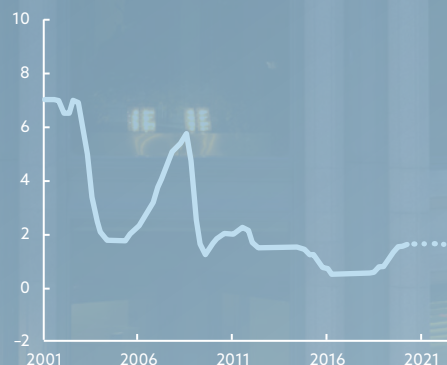
Norges Bank's objective is to ensure low and stable inflation around the target of 2%, while contributing to high and stable output and employment and to countering the build-up of financial imbalances.

POLICY RATE

1.50%

Norges Bank's policy rate has been 1.50% since 20 September 2019.

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%.

The *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.

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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 sets 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 takes 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 are published regularly in the *Monetary Policy Report* and elsewhere.

COUNTERCYCLICAL CAPITAL BUFFER

The objective of the countercyclical capital buffer is to increase 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.

Banks should build up and hold a countercyclical capital buffer when financial imbalances are building up or have built up. In the event of a severe downturn and clearly reduced access to credit, the buffer rate should be lowered to counteract tighter bank lending. The buffer rate shall as a rule be set at between 0% and 2.5% of banks' risk-weighted assets, but may be set higher in exceptional circumstances.

DECISION PROCESS FOR MONETARY POLICY REPORT 4/19

At its meeting on 11 December 2019, the Executive Board discussed the economic outlook, the monetary policy stance and the need for a countercyclical capital buffer for banks. On the basis of this discussion and a recommendation from Norges Bank's management, the Executive Board made its decision on the policy rate at its meeting on 18 December 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 keep the policy rate unchanged at 1.50%. The Executive Board's current assessment of the outlook and balance of risks suggests that the policy rate will most likely remain at this level in the coming period.

GDP growth among Norway's trading partners slowed through 2018 and has been moderate in 2019. Since the September 2019 *Monetary Policy Report*, trading partner growth has been a little higher than expected, but the outlook ahead is little changed. Unemployment is low in many countries, but employment growth has recently fallen somewhat. It now appears that the UK will leave the EU in the new year with a withdrawal agreement. The US and China have reached a limited trade agreement. Since the September *Report*, trading partner forward rates have edged up. Oil prices have also risen.

Since 2016, growth in the Norwegian economy has been solid. Employment has risen, and unemployment has fallen. The upswing in the mainland economy has continued in 2019. Looking ahead, there are prospects that large investment projects on the continental shelf will be completed. This will dampen growth in the Norwegian economy.

Growth in the mainland economy slowed in autumn and has been a little lower than expected. The enterprises in Norges Bank's Regional Network expect a further slight decline over the next half-year. Unemployment has been stable and in line with the projections in the September *Report*, but employment rose somewhat less than expected in Q3. Overall, labour market developments have been slightly weaker than projected, and capacity utilisation appears to be a little lower than previously assumed.

Consumer price inflation has moderated in 2019, after having picked up markedly through 2018. Lower electricity price inflation in particular has restrained the general rise in prices. Underlying inflation has also moderated and has been fairly stable at close to 2% since summer.

Since the September *Report*, inflation has been broadly in line with that projected. The 12-month rise in the consumer price index (CPI) was 1.6% in November. Adjusted for tax changes and excluding energy products (CPI-ATE), inflation was 2.0%. Tighter labour market conditions in recent years have pushed up wage growth. Social partners' wage expectations suggest that wage growth will be moderate ahead.

The krone has depreciated considerably and is weaker than projected in September. A weaker krone will lift imported goods inflation. The krone depreciation also improves Norwegian firms' cost-competitiveness and may pull up demand for Norwegian goods and services.

Financial imbalances are no longer building up, and there are now some signs that they are receding. Household debt growth has abated over the past few years, and house price inflation has been moderate. Since the September *Report*, house price inflation and household debt growth have been a little lower than expected.

In its discussion of the risk outlook, the Executive Board focused on trade tensions, which continue to be a source of uncertainty about global developments. Foreign interest rates are very low. The krone has depreciated considerably, and the impact of the

depreciation on price and wage inflation is uncertain. The Norwegian economy seems to be near a cyclical peak. The upswing may continue longer than assumed if investment growth remains elevated longer. On the other hand, growth may prove lower than projected if, for example, trade tensions deepen and oil prices fall.

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.

Since September 2018, the policy rate has been raised gradually. The monetary stance has become less expansionary. Inflation is close to the inflation target, and capacity utilisation is somewhat above a normal level. The krone depreciation will likely push up inflation somewhat, while it seems that wage growth will remain moderate ahead. Growth in the mainland economy is slowing. With a policy rate close to the current level, there are prospects that inflation will remain close to the inflation target, and that capacity utilisation will decline towards a normal level.

In the Executive Board's assessment, the overall outlook and balance of risks suggest a policy rate at close to the current level ahead. The policy rate forecast is broadly unchanged from the *September Report*. A weaker-than-projected krone implies in isolation a higher policy rate path. On the other hand, the upturn in the Norwegian economy appears to be a little more moderate than previously assumed. In isolation, this suggests a slightly lower rate path. Should the economic outlook or balance of risks change, interest rate developments may also differ from the forecast.

The Executive Board decided to keep the policy rate unchanged at 1.50%. The Executive Board's current assessment of the outlook and balance of risks suggests that the policy rate will most likely remain at this level in the coming period. The decision was unanimous.

Øystein Olsen
18 December 2019

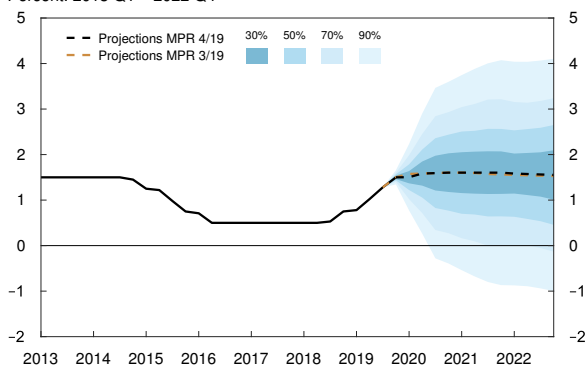
1 Overall picture

Growth in the Norwegian economy has been solid since 2016. Employment has risen, and unemployment has fallen. Inflation is close to the inflation target, and capacity utilisation appears to be somewhat above a normal level. Looking ahead, slightly lower growth is expected in the mainland economy.

The policy rate was kept unchanged at 1.50% at this monetary policy meeting, and the forecast indicates that the policy rate will remain close to that level ahead. The policy rate forecast is broadly unchanged from the September 2019 *Monetary Policy Report*. A weaker-than-projected krone suggests in isolation a higher policy rate path. A slightly more moderate upswing in the Norwegian economy than previously projected pulls in the opposite direction.

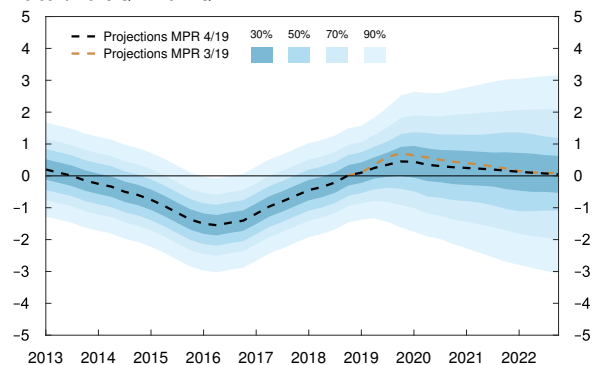
With a policy rate in line with the forecast, inflation is projected to remain close to the inflation target in the years ahead, at the same time as unemployment remains low.

Chart 1.1a Policy rate with fan chart¹⁾.
Percent. 2013 Q1 – 2022 Q4²⁾



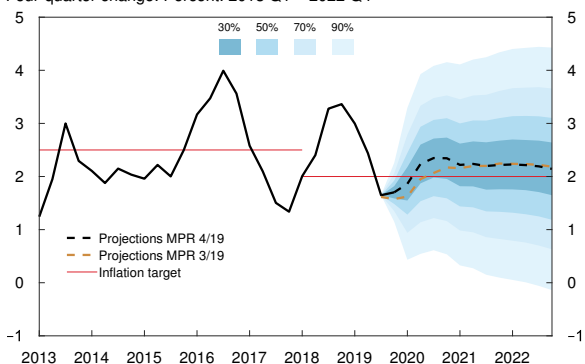
1) The fan chart is based on historical experience and stochastic simulations in Norges Bank's main macroeconomic model, NEMO. It does not take into account that a lower bound for the interest rate exists. 2) Projections for 2019 Q4 – 2022 Q4.
Source: Norges Bank

Chart 1.1b Estimated output gap¹⁾ with fan chart²⁾.
Percent. 2013 Q1 – 2022 Q4



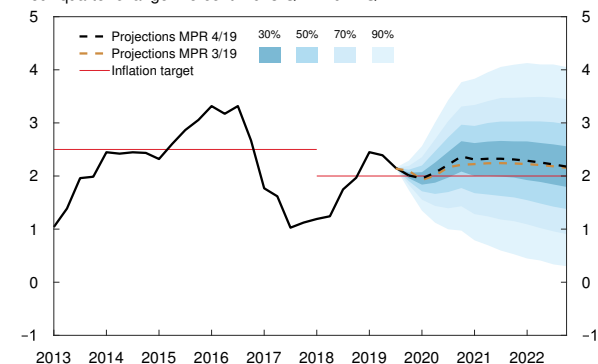
1) The output gap measures the percentage deviation between mainland GDP and estimated potential mainland GDP. 2) The fan chart is based on historical experience and stochastic simulations in Norges Bank's main macroeconomic model, NEMO.
Source: Norges Bank

Chart 1.1c Consumer price index (CPI) with fan chart¹⁾.
Four-quarter change. Percent. 2013 Q1 – 2022 Q4²⁾



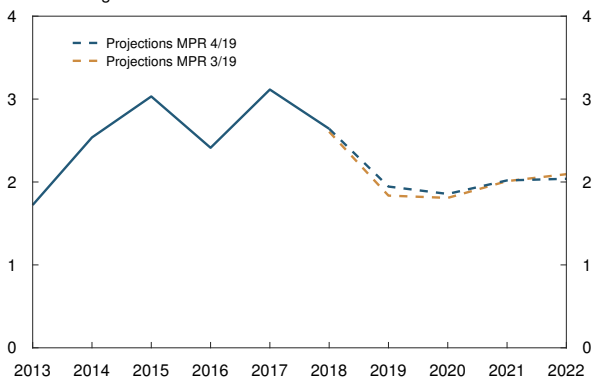
1) The fan chart is based on historical experience and stochastic simulations in Norges Bank's main macroeconomic model, NEMO. 2) Projections for 2019 Q4 – 2022 Q4.
Sources: Statistics Norway and Norges Bank

Chart 1.1d CPI-ATE¹⁾ with fan chart²⁾.
Four-quarter change. Percent. 2013 Q1 – 2022 Q4³⁾



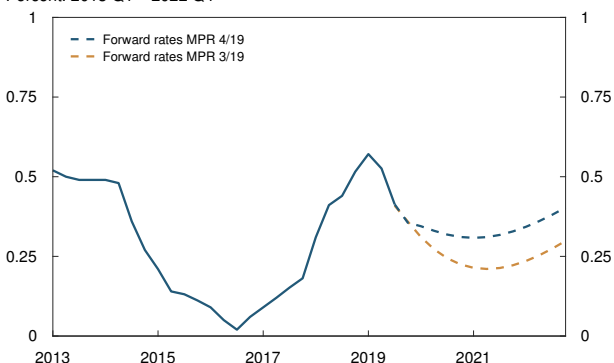
1) CPI adjusted for tax changes and excluding energy products. 2) The fan chart is based on historical experience and stochastic simulations in Norges Bank's main macroeconomic model, NEMO. 3) Projections for 2019 Q4 – 2022 Q4.
Sources: Statistics Norway and Norges Bank

Chart 1.2 GDP for Norway's trading partners¹⁾. Annual change. Percent. 2013 – 2022²⁾



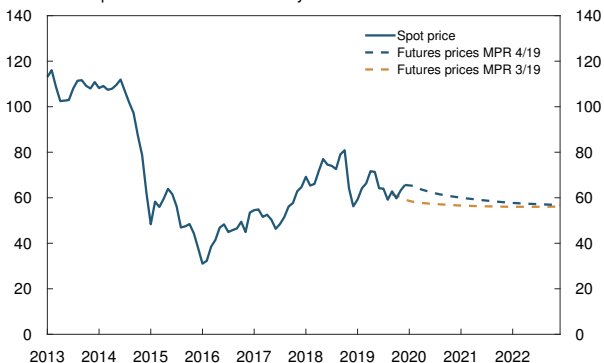
1) Export weights. Twenty-five main trading partners. 2) Projections for 2019 – 2022. Sources: Thomson Reuters and Norges Bank

Chart 1.3 Three-month money market rates for Norway's trading partners.¹⁾ Percent. 2013 Q1 – 2022 Q4²⁾



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 13 September 2019 for MPR 3/19 and 13 December 2019 for MPR 4/19. Sources: Thomson Reuters and Norges Bank

Chart 1.4 Oil price.¹⁾ USD/barrel. January 2013 – December 2022²⁾



1) Brent Blend. 2) Futures prices on 13 September 2019 for MPR 3/19 and on 13 December 2019 for MPR 4/19. Sources: Thomson Reuters and Norges Bank

1.1 GLOBAL DEVELOPMENTS AND OUTLOOK

Continued moderate growth

GDP growth among Norway's main trading partners slowed through 2018 and has been moderate so far in 2019. Developments have reflected among other things uncertainty surrounding increased trade restrictions and the UK's withdrawal from the EU. Since the time of *Monetary Policy Report 3/19*, published on 19 September, the US and China have reached a limited trade agreement, and it now appears that the UK will leave the EU in the new year with a withdrawal agreement. Nevertheless, uncertainty is expected to weigh on growth also in 2020 (Chart 1.2). Import growth among trading partners appears to be a little lower in 2019 and 2020 than projected in the *September Report*.

Wage growth among Norway's trading partners has picked up over the past few years, and there are signs of a slight rise in underlying inflation. Unemployment is low in many countries, and capacity utilisation is close to a normal level. At the same time, employment growth has recently fallen somewhat. In the period ahead, both price and wage inflation are expected to move up, but less than previously projected.

Since the *September Report*, the US Federal Reserve has lowered its policy rate twice. Trading partner forward rates have edged up (Chart 1.3). Market expectations indicate that interest rates will remain close to current levels throughout the projection period.

Oil spot prices are somewhat higher than at the time of the *September Report* (Chart 1.4). Futures prices towards the end of the projection period are little changed.

1.2 THE ECONOMIC SITUATION IN NORWAY

The Norwegian economy near a cyclical peak

Growth in the Norwegian economy has been solid since 2016. The global upturn, improved cost-competitiveness and higher oil prices have helped lift activity, as have low interest rates.

Mainland GDP growth was lower in 2019 Q3 than previously projected (Chart 1.5). Monthly national

accounts showed weak growth in October. According to Norges Bank's Regional Network, output growth has slowed in recent months. Contacts expect a continued slight decline in growth over the next half-year. Mainland GDP is projected to grow at 2.5% in 2019. Growth in the Norwegian economy is expected to slow in 2020.

Capacity utilisation has risen a little since the September Report, but less than expected. Unemployment has been stable and consistent with the September projections, while employment has risen somewhat less than projected. The Bank's Regional Network indicates that employment growth will continue to soften in the coming months (Chart 1.6). The economy now seems to be near a cyclical peak. Capacity utilisation is projected to increase further in Q4, declining thereafter.

Household debt growth has abated over the past few years, and house price inflation has been moderate.

Inflation close to target

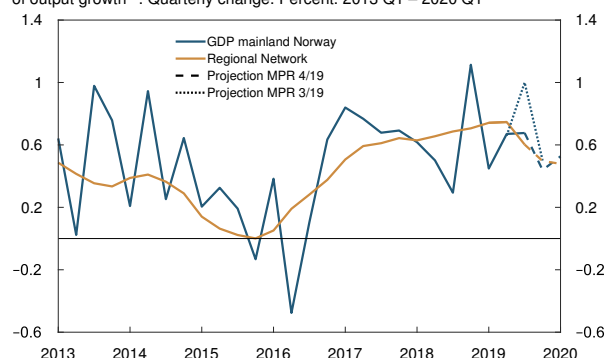
After rising markedly through 2018, consumer price inflation has moderated in 2019, reflecting in particular a slower rise in electricity prices.

The 12-month rise in the consumer price index (CPI) was 1.6% in November. Adjusted for tax changes and excluding energy products (CPI-ATE), inflation was 2.0%. Inflation has been broadly as projected in the September Report. Underlying inflation is expected to remain close to 2% in the coming period (Chart 1.7).

Tighter labour market conditions have pushed up wage growth over the past few years. Annual wage growth of 3.4% is projected for 2019. The social partners expect that wage growth will be just above 3% in the coming years.

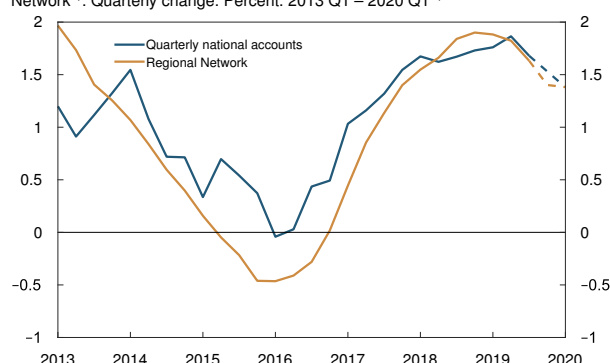
The krone has depreciated considerably and is weaker than projected in September, probably reflecting in part persistent uncertainty surrounding global developments. The deterioration in the terms of trade after the oil price fall in 2014 and uncertainty about future activity levels in the oil sector may also have weighed on the krone.

Chart 1.5 GDP for mainland Norway¹⁾ and the Regional Network's indicator of output growth²⁾. Quarterly change. Percent. 2013 Q1 – 2020 Q1³⁾



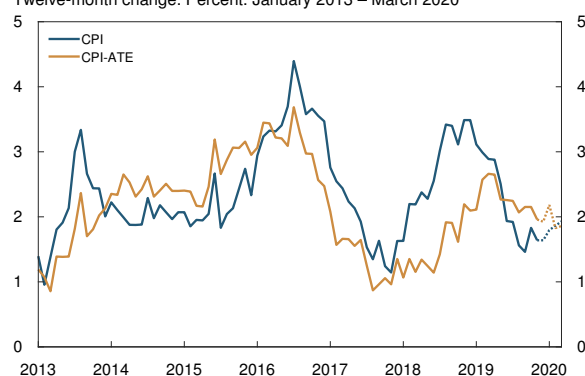
1) Seasonally adjusted. 2) Reported output growth the past three months converted to quarterly figures. Quarterly figures are calculated by weighting three-month figures on the basis of survey timing. For 2019 Q4, a weighting of historical and expected growth is used, while for 2020 Q1, expected growth is used. 3) Projections for 2019 Q3 – 2020 Q1. Sources: Statistics Norway and Norges Bank

Chart 1.6 Employment according to the quarterly national accounts¹⁾ and Regional Network²⁾. Quarterly change. Percent. 2013 Q1 – 2020 Q1³⁾



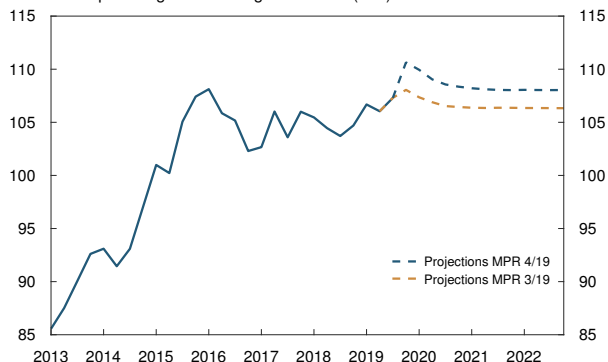
1) Seasonally adjusted. 2) Reported employment growth the past three months converted to quarterly figures. Quarterly figures are calculated by weighting three-month figures on the basis of survey timing. For 2019 Q4, a weighting of historical and expected growth is used, while for 2020 Q1, expected growth is used. 3) Projections for 2019 Q3 – 2020 Q1. Sources: Statistics Norway and Norges Bank

Chart 1.7 CPI and CPI-ATE¹⁾. Twelve-month change. Percent. January 2013 – March 2020²⁾



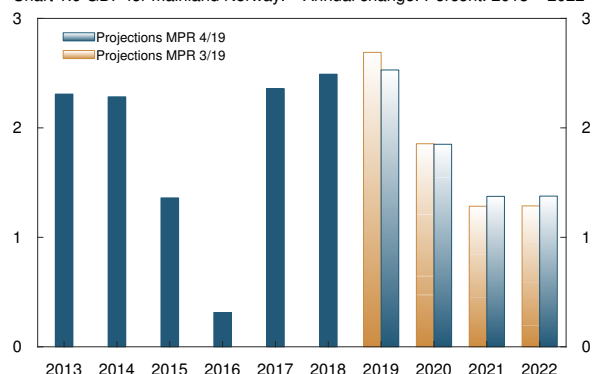
1) CPI adjusted for tax changes and excluding energy products. 2) Projections for December 2019 – March 2020. Sources: Statistics Norway and Norges Bank

Chart 1.8 Import-weighted exchange rate index (I-44).¹⁾ 2013 Q1 – 2022 Q4²⁾



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

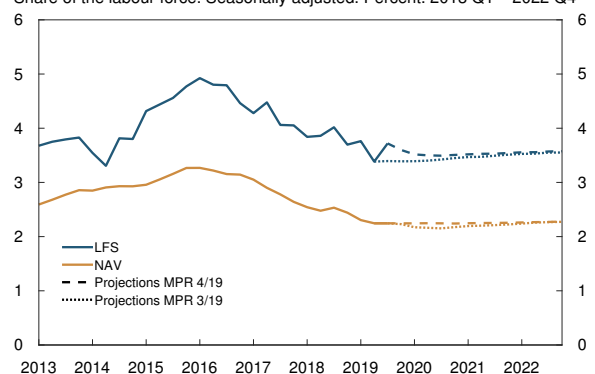
Chart 1.9 GDP for mainland Norway.¹⁾ Annual change. Percent. 2013 – 2022²⁾



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

Chart 1.10 Unemployment according to LFS¹⁾ and NAV²⁾.

Share of the labour force. Seasonally adjusted. Percent. 2013 Q1 – 2022 Q4³⁾



1) Labour Force Survey. 2) Registered unemployment. 3) Projections for 2019 Q4 – 2022 Q4. Sources: Norwegian Labour and Welfare Administration (NAV), Statistics Norway and Norges Bank

1.3 MONETARY POLICY AND PROJECTIONS

Policy rate close to the current level

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.

Since September 2018, the policy rate has been raised gradually. The monetary stance has become less expansionary. The Executive Board has decided to keep the policy rate unchanged at 1.50%, and the forecast indicates that the rate will remain close to that level ahead (Chart 1.1a).

The policy rate forecast is broadly unchanged from the September *Report*. A weaker-than-projected krone implies in isolation a higher policy rate path. On the other hand, the upswing in the Norwegian economy appears to be a little more moderate than previously assumed. In isolation, this suggests a lower rate path. With a policy rate in line with the forecast in this *Report*, the average residential mortgage rate is projected to remain approximately unchanged in the coming years and be 3.1% in 2022.

The projections are uncertain, and the uncertainty increases through the projection period. Should the economic outlook or balance of risks change, interest rate developments may also differ from the forecast.

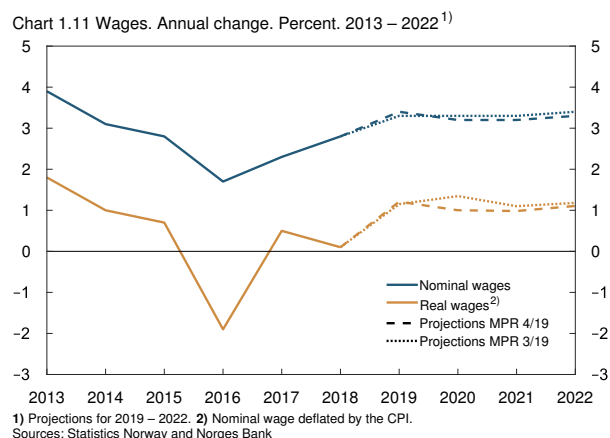
Normal capacity utilisation and inflation close to target

With a policy rate in line with the forecast in this *Report*, capacity utilisation is projected to drift down towards a normal level (Chart 1.1b). The projections for capacity utilisation are a little lower than in the September *Report* for the next few years and little changed towards the end of the projection period.

Inflation is projected to remain close to the target in the coming years (Charts 1.1c-d). Owing to the recent krone depreciation, the inflation projections are a little higher than in the September *Report*. The projections for the krone are weaker than in September throughout the projection period (Chart 1.8).

Growth in the mainland economy is expected to slow in the years ahead (Chart 1.9). Completions of large investment projects on the Norwegian shelf drag down on growth. A weaker krone has the opposite effect. The projections for GDP growth are little changed since September.

Prospects for continued growth in the Norwegian economy suggest that finding a job will be easier in the years ahead, but employment growth is expected to move down through the projection period. The projections indicate that unemployment will remain low (Chart 1.10). In the projection, wage growth remains fairly steady ahead (Chart 1.11). Low profitability in some business sectors restrains wage growth. Capacity utilisation in the Norwegian economy above a normal level has the opposite effect. Despite prospects for slightly higher inflation, the wage projections are slightly lower than in the September *Report* on the back of lower capacity utilisation.



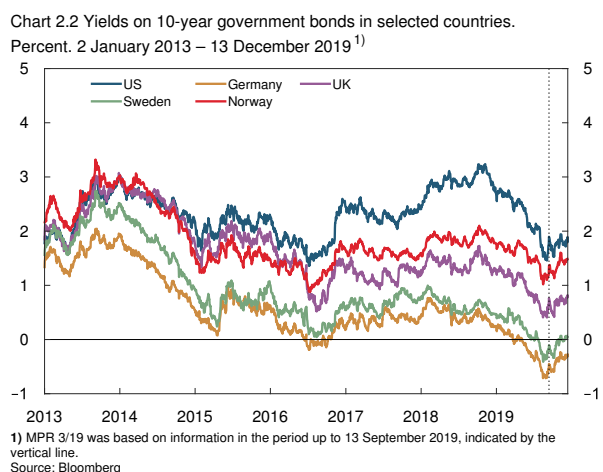
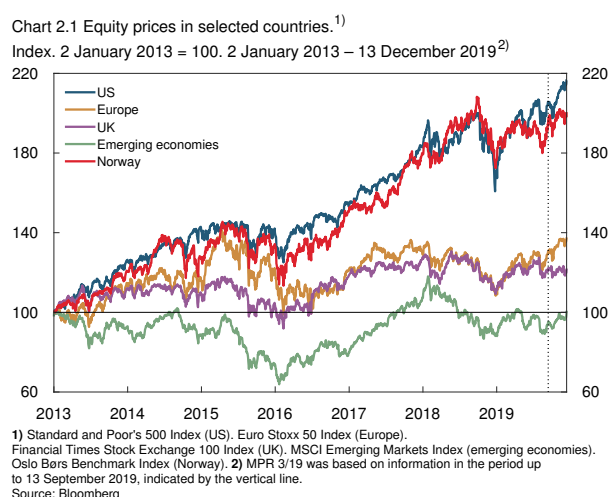
2 The global economy

Growth among trading partners has slowed since 2017, partly reflecting uncertainty relating to increased trade restrictions and the UK's withdrawal from the EU. Capacity utilisation is close to a normal level, and unemployment is low. GDP growth is projected to pick up slightly towards the end of the projection period, broadly as projected in the *September Report*. Interest rates among trading partners have edged up since the previous *Report*.

2.1 GROWTH, PRICES AND INTEREST RATES

Growth prospects remain moderate

Growth among trading partners has slowed since 2017. Developments among Norway's main trading partners have been marked by trade tensions and a decline in manufacturing in particular. Since the *September Report*, the US and China have reached a limited trade agreement which entails a small reduction in tariffs between the two countries. A box on page 17 discusses the effects of the trade conflicts on growth in Norway and trading partners and different scenarios for developments ahead. At the same time, it now appears that the UK will exit the EU at the beginning of 2020 with a withdrawal agreement. Both advanced and emerging economy equity markets have recorded gains (Chart 2.1). Long-term interest rates have edged up in a number of European countries, while US long rates are broadly unchanged (Chart 2.2). The US Federal Reserve has cut its policy rate twice since the *September Report*. Overall, market expectations concerning policy rates among main trading partners have risen since September (Chart 2.3).



GDP growth among trading partners was broadly unchanged between Q2 and Q3. Growth in the UK, US and China has been somewhat stronger than expected. Activity in the services sector has remained relatively robust, and activity indicators suggest that manufacturing is stabilising (Chart 2.4). Overall, capacity utilisation is assumed to be close to a normal level.

Labour market developments have been positive in recent years, with a rise in employment and a fall in unemployment, contributing to solid growth in household consumption. Recently, however, employment growth has slowed, and several indicators point to further weakening ahead (Chart 2.5), which is expected to push down consumption growth somewhat. Trade- and Brexit-related uncertainties have acted as a drag on investment in recent years, which could dampen underlying growth potential.

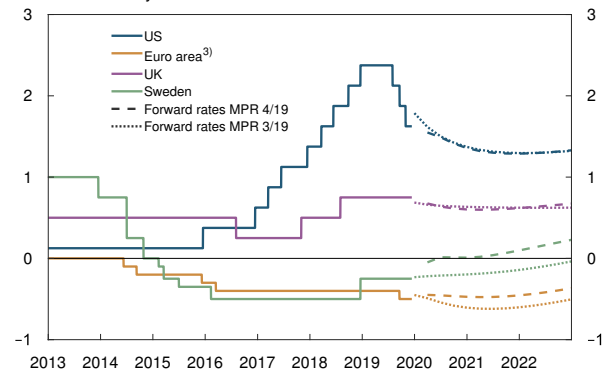
Our projections are based on the assumption that no further trade policy measures will be taken beyond the changes in tariffs and restrictions that are already imposed or agreed. It is also assumed that the UK will both leave the EU with a withdrawal agreement and come to an agreement with the EU on a trade deal. Given these assumptions, the uncertainty surrounding global economic developments will also dampen growth in 2020. The uncertainty is expected to diminish further out, contributing to a moderate investment upswing. Expansionary monetary policies are making a positive contribution in many countries, and fiscal policy is likely to prove more expansionary in 2020 in a number of European countries than assumed earlier. Trading partner GDP growth is expected to move up slightly as investment willingness picks up again (Annex Table 1). The projections for GDP growth are broadly the same as in the *September Report*. Import growth for main trading partners has been lower than expected, and the projection for 2019 and 2020 has been revised down in relation to the *September Report* (Chart 2.6).

Slightly lower inflation projection

Low energy and food price inflation has pulled down overall inflation among main trading partners in recent years (Chart 2.7). However, core inflation, which excludes those components, has shown some increase in recent months, likely accounted for by a pick-up in wage growth in both the US and Europe in the course of 2018. Wage growth continued to rise into 2019, but at a slower pace than expected. The projections for wage growth in the years ahead are therefore slightly lower than in the *September Report*, which will contribute to weaker inflation than expected earlier. Consumer price inflation is now projected at just below 2% in 2019 and 2020, before edging higher towards the end of the projection period (Annex Table 2). Oil spot prices have recently been around USD 65 per barrel. This is higher than at the time of the *September Report*, while futures prices at the end of 2022 are broadly the same as in September (Chart 1.4). Oil prices are discussed in a box on page 16.

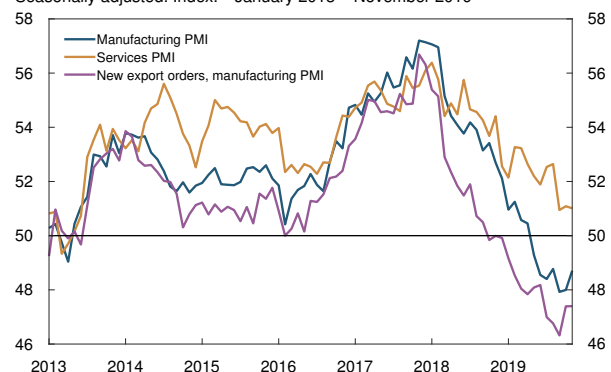
The rise in prices for Norwegian consumer goods imports, measured in foreign currency terms, accelerated rapidly through 2018. Since the *September Report*, the rate of increase has moderated and been slightly lower than projected for most groups of goods. The projections have been revised down for 2019 (Annex Table 2).

Chart 2.3 Policy rates and estimated forward rates¹⁾ in selected countries. Percent. 1 January 2013 – 31 December 2022²⁾



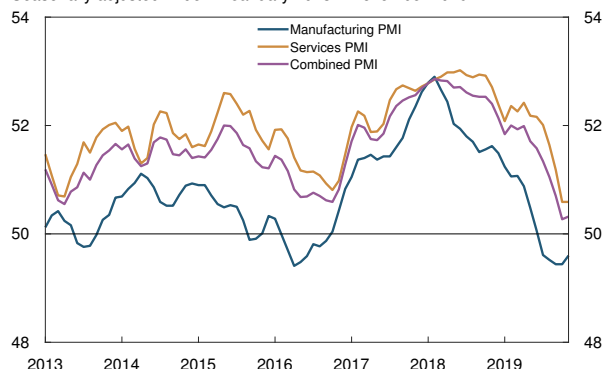
¹⁾ Forward rates at 13 September 2019 (MPR 3/19) and 13 December 2019 (MPR 4/19). Forward rates are estimated based on Overnight Index Swap (OIS) rates. ²⁾ Daily data through 13 December 2019. Quarterly data from 2020 Q1. ³⁾ ECB deposit facility rate. Sources: Bloomberg, Thomson Reuters and Norges Bank

Chart 2.4 PMI for Norway's trading partners.¹⁾ Seasonally adjusted. Index.²⁾ January 2013 – November 2019



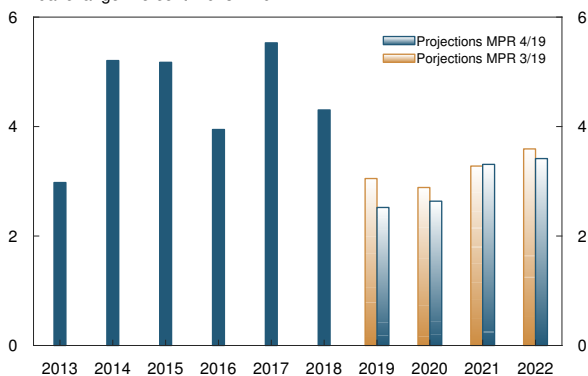
¹⁾ Export weights. 25 main trading partners. ²⁾ Survey of purchasing managers. Diffusion index centred around 50. Sources: Thomson Reuters and Norges Bank

Chart 2.5 Global PMI: Employment.¹⁾ Seasonally adjusted. Index.²⁾ January 2013 – November 2019



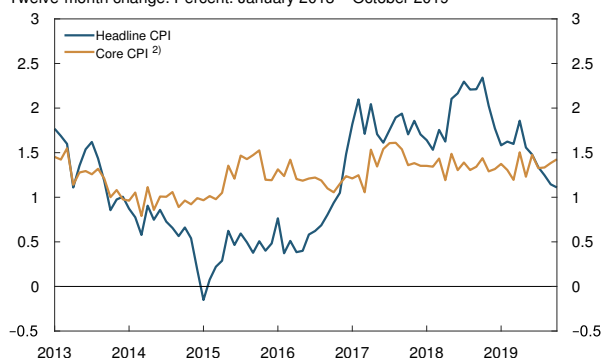
¹⁾ Weights based on contribution to global production of goods and services. ²⁾ Survey of purchasing managers. Diffusion index centred around 50. Three-month moving average. Source: Thomson Reuters

Chart 2.6 Imports for Norway's trading partners.¹⁾
Annual change. Percent. 2013 – 2022²⁾



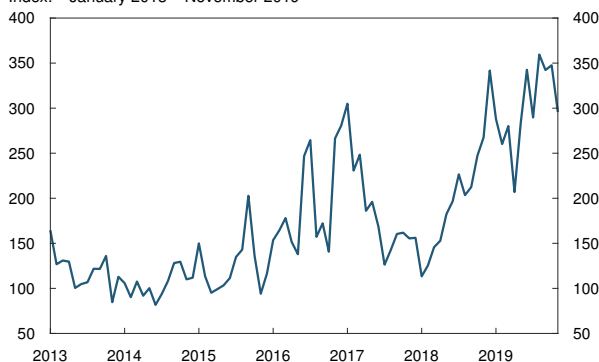
1) Export weights. 25 main trading partners. 2) Projections for 2019 – 2022.
Sources: Thomson Reuters and Norges Bank

Chart 2.7 Headline and core inflation in selected countries.¹⁾
Twelve-month change. Percent. January 2013 – October 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 2.8 Global economic policy uncertainty.¹⁾
Index.²⁾ January 2013 – November 2019



1) Indicator measuring the frequency of the word "uncertainty" connected to "economics" and "policy" in news articles. 2) Weighted by PPP-adjusted GDP. A positive slope denotes greater uncertainty.
Source: policyuncertainty.com

Downside risks still dominate

There is still considerable uncertainty associated with global developments. Financial market uncertainty indicators have fallen since the *September Report*, while text-based uncertainty indicators have remained at high levels (Chart 2.8). It is uncertain to what extent the decline in global manufacturing will impact other sectors of the economy. If new trade agreements are reached or existing tariffs reduced further, growth may prove stronger than projected. If the trade conflicts re-escalate, trading-partner growth could prove lower than projected. Norges Bank's estimations indicate that the negative consequences of an escalation may be considerably more pronounced than the positive effects of a solution to the trade conflicts (for further details, see box on trade conflicts on page 17). If the UK and the EU do not agree on a trade deal, growth in Europe will likely be lower than currently projected. Early clarification between the UK and the EU could lead to stronger-than-projected growth in Europe, (see box in *Monetary Policy Report 3/19*).

2.2 COUNTRIES AND REGIONS

US expansion continues

The US economy continues to expand, and capacity utilisation is likely higher than normal. GDP growth was 0.5% in both Q2 and Q3 (Chart 2.9). Growth is supported by continued strong growth in private consumption and an upswing in housing investment. Business investment, on the other hand, has fallen over two consecutive quarters, and imports are approximately unchanged so far in 2019. Employment growth has slowed somewhat in recent months, and wage growth has been stable just above 3%.

The US Federal Reserve has lowered its policy rate twice since the *September Report*, and the target range is now 1.50% – 1.75%. Forward rates indicate a rate cut in autumn 2020.

GDP growth is projected to slow from 2.3% in 2019 to 2.0% in 2020. The projections are higher than in the *September Report*. The slowing is attributable to fading effects of earlier tax cuts and public spending increases. Employment growth is also expected to slow gradually as available labour resources decline. At the same time, lower interest rates will likely stimulate a further rise in housing investment. The adopted tariff increases are expected to push up consumer price inflation slightly. The projections for

underlying inflation are nevertheless slightly lower than in the *September Report* owing to lower-than-expected wage growth and an expected reduction of tariffs on Chinese goods as the limited trade agreement between the US and China enters into force.

Low growth in the euro area

Euro-area economic growth has slowed markedly since the cyclical peak in 2017. Growth in Q3 was 0.2%, broadly as expected in the *September Report*. Manufacturing activity indicators have improved slightly in recent months, while service sector indicators have fallen somewhat (Chart 2.10). Capacity utilisation for the euro area as a whole is close to a normal level.

The European Central Bank (ECB) has resumed asset purchases and introduced a new two-tier system for reserve remuneration for credit institutions. Money market rates have risen slightly since the *September Report*. The ECB has not communicated any new monetary policy signals since the *September Report*, and forward rates indicate unchanged policy rates in the period to 2022.

Expansionary fiscal policies are expected to make a positive contribution to economic activity in the coming years. Low real interest rates will support growth. As the uncertainty relating to trade conflicts and the UK's exit from the EU lessens, investment and export growth should pick up. Compared with the *September Report*, the growth projections have been revised up slightly for 2019 and down slightly for 2022. The inflation projections are broadly unchanged from the *September Report*.

Growth in emerging economies likely to pick up

The trade conflict between the US and China has weighed on growth in a number of Asian economies (Chart 2.11). Four-quarter GDP growth in China slowed to 6% in Q3, the weakest growth rate in over 20 years. Chinese GDP growth is projected to slow from 6.1% in 2019 to 5.6% in 2022. The projections are somewhat higher than in the *September Report* as a result of the limited trade agreement between the US and China. After a period of particularly low growth in Brazil, India, Russia and Turkey, the recovery in these countries is expected to gather pace, supporting an increase in growth for emerging economies as a whole through the period.

Chart 2.9 GDP in the US and euro area.
Quarterly growth. Percent. Q1 2019 – Q3 2019

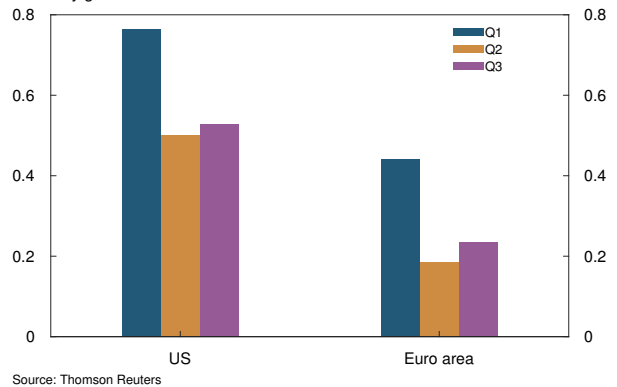


Chart 2.10 PMI in the euro area.
Seasonally adjusted. Index.¹⁾ January 2013 – November 2019

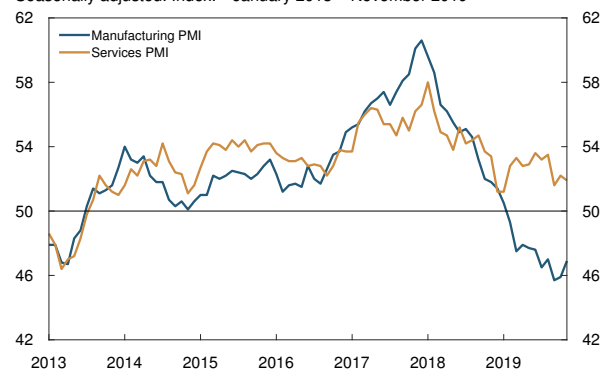


Chart 2.11 PMI in emerging economies.¹⁾
Seasonally adjusted. Index.²⁾ January 2013 – November 2019



DEVELOPMENTS IN OIL AND GAS PRICES

Oil spot prices have recently been around USD 65 per barrel. Prices are higher than at the time of the September *Report*. Growth in global oil consumption was modest in the first half of 2019, but has picked up so far in the latter half of the year and is expected to be higher in 2020 than in 2019. A further fall in production in Iran and Venezuela is pushing down global oil supply. Growth in US shale production has slowed recently and may continue to slow (Chart 2.A). On the other hand, oil production is rising in countries such as Brazil and Norway. In order to prevent excess oil supply, OPEC+ decided to cut output further from the beginning of 2020 and to the end of Q1. Cuts will be reassessed in March 2020 according to plan.

Prices are assumed to move in line with futures prices (Chart 1.4). Futures prices now indicate that oil prices will fall to around USD 57 per barrel at end-2022, approximately as anticipated in September.

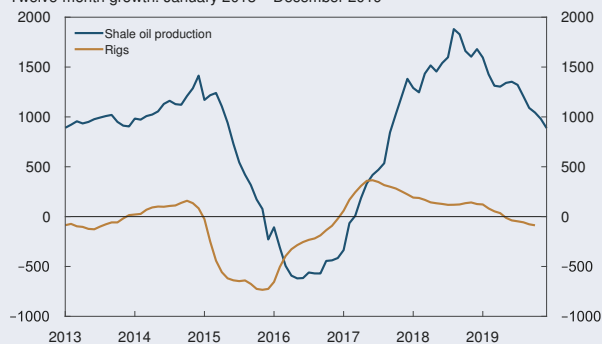
Prices could fall more than implied by futures prices if uncertainty increases again and global economic prospects weaken. Energy efficiency gains and a shift towards new energy sources to meet long-term climate goals in the Paris Agreement could dampen growth in oil consumption over time. Prices may also stay low if growth in non-OPEC oil production proves higher than expected.

On the other hand, prices may increase if US sanctions against Iran and Venezuela lead to a further decline in oil exports from those countries. If OPEC+ production restrictions are largely adhered to, OECD oil inventories may remain low. Political tensions in the Middle East may flare up again. Over time, oil prices may increase because of higher costs for developing remaining oil reserves, owing to, for example, more demanding geological conditions or higher return requirements due to greater risk.

An ample supply of liquefied natural gas (LNG) and Russian pipeline gas has resulted in abundant gas inventories in Northwest Europe, which contributed to a marked fall in European gas prices in the first half of 2019 (Chart 2.B). Since November, prices have rebounded. Gas prices normally rise as winter approaches, but the upswing could also reflect uncertainty about Russian gas transit across Ukraine to Europe from the beginning of 2020.

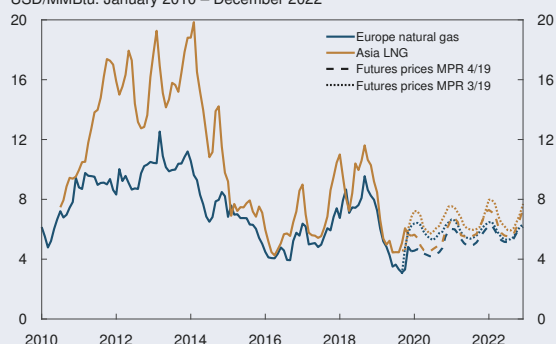
Gas prices are assumed to move in line with futures prices. Futures prices for European gas indicate somewhat higher prices ahead, but prices for 2020 are lower than in the previous *Report*. If Russian gas transit across Ukraine is maintained into 2020, gas prices may fall again given that gas inventories in Northwest Europe are at a historically high level. Continued ample LNG supply from countries such as the US and Australia could also curb the price rise. A cold winter in the Northern Hemisphere and a pick-up in Asian LNG imports could have the opposite effect.

Chart 2.A Shale oil production¹⁾ and number of rigs in the US. Twelve-month growth. January 2013 – December 2019²⁾



1) Growth measured in thousands of barrels per day. 2) Data for November and December 2019 for shale oil production are projections from the US Energy Information Administration. Number of rigs includes data through October 2019.
Sources: US Energy Information Administration and Norges Bank

Chart 2.B Natural gas prices¹⁾. USD/MMBtu. January 2010 – December 2022²⁾



1) Value-weighted average of prices for natural gas in the Netherlands and the UK. 2) Futures prices on 13 September 2019 for MPR 3/19 and on 13 December 2019 for MPR 4/19.
Sources: Norwegian Petroleum, Thomson Reuters and Norges Bank

TRADE TENSIONS ARE DAMPENING GROWTH

Since the beginning of 2018, a number of protectionist measures have been implemented globally. Most have been bilateral trade measures between China and the US. The average tariff level between these two countries has risen from around 5% in 2018 to just over 20% now. The measures have contributed to reversing a long-run trend of trade liberalisation and lower global tariffs. This box examines the effects of trade tensions so far and how an escalation or de-escalation of these tensions could affect the economic outlook.

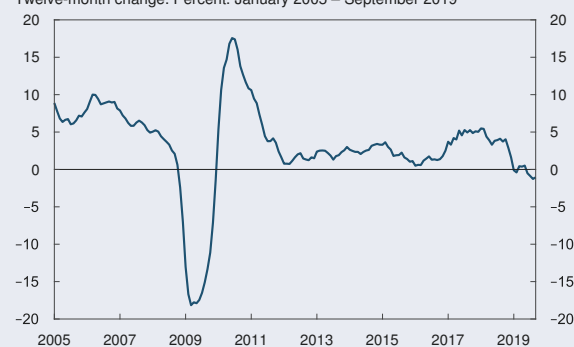
Trade tensions can influence economic developments through different channels. The direct effect of higher tariffs will depend on whether exporters adapt by raising prices or reducing margins. Lower margins will reduce profitability, while higher prices will raise costs for firms and consumers in the importing country and dampen demand. In both cases, growth in trade and investment is likely to slow. The effects can spread via value chains at home and abroad and hence to sectors and countries not directly affected by higher tariffs. Tariffs on cars in particular may have a wide-ranging impact. Expectations of further protectionist measures could also lead to uncertainty, which in itself could result in lower investment and negative effects in financial and commodity markets. Lower growth in global trade could also reduce growth in the longer term because of weaker competition and a decrease in technology transfer and specialisation across countries.

The effects of trade tensions are clearly visible in current statistics. In the course of the past year, trade between the US and China has fallen abruptly and contributed to the first decline in global trade in goods since the financial crisis (Chart 2.C). Indexes for trade policy uncertainty have risen to historically high levels (Chart 2.D), and investment growth for Norway's main trading partners is now at its weakest in more than five years. In the US, prices have risen for a number of consumer goods now subject to tariffs. This reduces purchasing power and is likely to dampen consumption growth. The projections in the *Monetary Policy Report* for growth among Norway's trading partners have been revised down several times since the beginning of 2018. The projected level of trading partners' GDP in 2020 is around 1% lower in this *Report* than in the March 2018 *Report*.

The effects of trade tensions on Norway's trading partners are illustrated using a global DSGE model developed by the IMF.¹ As the model encompasses five regions and includes bilateral trade flows and relative prices, it is well suited to exploring the effects of changes in tariff rates. In addition, the effects of heightened uncertainty on investment² and the productivity effects of reduced international trade³ have been taken

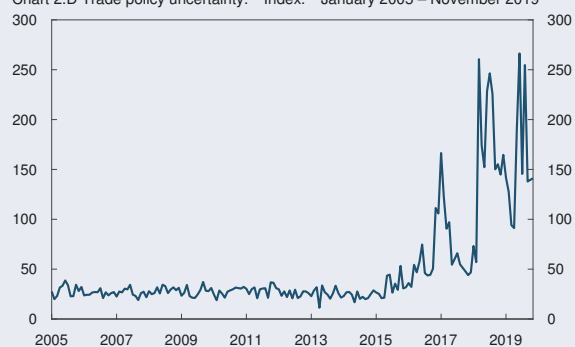
- 1 Global Integrated Monetary and Fiscal Model (GIMF)
- 2 Estimates in Caldara et al. (2019) are used for the relationship between trade policy uncertainty and investment: Caldara, D., M. Iacoviello, P. Molligo, A. Prestipino, and A. Raffo (2019) "The Economic Effects of Trade Policy Uncertainty". *International Finance Discussion Papers 1256*.
- 3 Estimates in ECB (2017) are used for the relationship between international value chain trade and productivity. The calculations assume a constant relationship between trade and the use of global value chains. *ECB Economic Bulletin, Issue 7/2017* "Does trade play a role in helping to explain productivity growth?"

Chart 2.C Global trade in goods.¹⁾
Twelve-month change. Percent. January 2005 – September 2019



1) The index for global trade in goods is an average of global imports and exports.
Sources: Thomson Reuters and Norges Bank

Chart 2.D Trade policy uncertainty.¹⁾ Index.²⁾ January 2005 – November 2019



1) Indicator measuring the frequency of the word "uncertainty" connected to "trade policy" in news articles.
2) A positive slope denotes greater uncertainty.
Source: Caldara, D., M. Iacoviello, P. Molligo, A. Prestipino and A. Raffo, "The Economic Effects of Trade Policy Uncertainty", revised November 2019, *Journal of Monetary Economics*, forthcoming.

into account. It is assumed that the effects of uncertainty are greater in countries whose economic growth relies more heavily on foreign trade. It is also assumed that lower international trade has a greater impact on productivity in emerging economies than in advanced economies, in part because of less technology transfer.

The calculations indicate that trade tensions, through direct and indirect effects, have contributed to a GDP level among Norway's trading partners that is now around ¾% lower than in a situation without protectionist measures. The calculations include all the changes in global tariffs between January 2018 and now and the increase in trade policy uncertainty in this period. For Norway's main trading partners, the indirect effects of heightened uncertainty dominate, while for China and the US, the direct effects of higher tariffs are also substantial (Chart 2.E).

The projections in this *Report* are based on the assumption that no further trade policy measures will be implemented and that trade policy uncertainty gradually abates. Two alternative scenarios for developments ahead are explored. In scenario 1, it is assumed that the tensions escalate, with tariffs imposed on the remaining trade between the US and China and on cars and car parts imported to and exported from the US.⁴ In scenario 2, it is assumed that all punitive tariffs are reversed in 2020.

Chart 2.F shows the effects on trading partners' GDP. In scenario 1, trading partners' GDP could be almost 1% lower in 2021, partly because the direct impact of higher tariffs will be greater for European countries if tariffs on cars and car parts are introduced. At the same time, uncertainty is likely to increase further, dampening investment for an extended period ahead. On the other hand, if the measures already introduced are reversed and uncertainty quickly recedes, the calculations show that GDP could be around ¼% higher than currently projected. The positive consequences of reversing the protectionist measures thus appear to be considerably smaller than the negative effects of an escalation in trade tensions in line with scenario 1.

Effects on the Norwegian economy

As a small open economy, Norway is affected by trade tensions. At the same time, growth in the Norwegian economy has been solid in recent years in spite of weaker growth among trading partners. It is likely that the direct impact of trade tensions on the Norwegian economy has so far been limited.

⁴ Scenario 1 assumes that a 15% punitive tariff is imposed on imports to the US from China worth around USD 280bn and on imports to China from the US worth around USD 40bn. In addition, it is assumed that the US imposes a 20% tariff on imports of cars and car parts and that US trading partners respond with similar countermeasures.

Chart 2.E Output gap for Norway's trading partners, the US and China. Estimated effects of trade conflicts. Percentage points. 2019

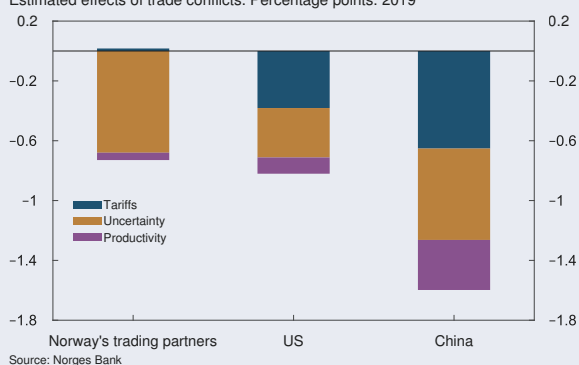
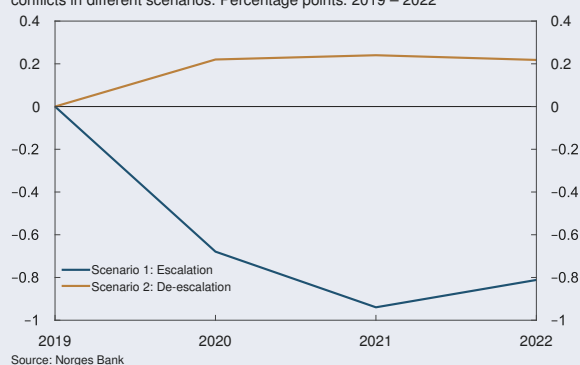


Chart 2.F Output gap for Norway's trading partners. Estimated effects of trade conflicts in different scenarios. Percentage points. 2019 – 2022



The Norwegian economy is, however, not immune to negative impulses from abroad. An escalation in trade tensions in line with scenario 1 will most likely have a negative impact on the Norwegian economy. Lower growth among Norway's trading partners will lead to lower demand for Norwegian exports. In addition, lower global growth could reduce the demand for oil, resulting in a lower oil price. Norway also has substantial exports related to the car industry. These include car parts, aluminium and ferro-alloys, which make up close to 10% of total mainland exports. There is therefore reason to believe that an increase in tariffs on cars and car parts imported from and exported to the US will have a stronger direct effect on the Norwegian economy than the measures introduced so far.

On the other hand, a de-escalation in line with scenario 2 would likely have a positive effect on the Norwegian economy through higher growth among trading partners and a slightly higher oil price.

The potential effects of the scenarios on the Norwegian economy are illustrated using the Bank's main macroeconomic model NEMO. Charts 2.G and 2.H show the effects of the scenarios on the output gap and the policy rate. It is important to emphasise that this is only a technical illustration. The effects of these scenarios on Norway's trading partners and on the Norwegian economy are highly uncertain.

The escalation in trade tensions in scenario 1 leads to lower growth in traditional exports, via lower external demand and direct effects of tariffs imposed on cars. At the same time, a lower oil price will lead to weaker developments in the oil service industry through lower offshore oil investment and lower exports. This results in weaker growth in the Norwegian economy, and the output gap will fall more rapidly than projected in this *Report*. A weaker krone because of a lower oil price will cushion the fall in exports. In the model, the central bank will react to the weaker outlook by lowering the policy rate. Prices for imported goods increase owing to a weaker krone, while lower capacity utilisation curbs wage growth and domestic inflation. Overall, inflation is approximately unchanged. Isolated effects of heightened uncertainty are not taken into account in the analysis of the Norwegian economy and could amplify the impact on the economy, for example through a decline in investment.

A de-escalation of trade tensions in line with scenario 2 could result in slightly higher growth, a stronger krone and slightly higher interest rates. The effects are less pronounced than the effects of an escalation of tensions, reflecting the likelihood that the direct effects of the protectionist measures introduced so far on the Norwegian economy are small and that the upside in international terms is also smaller.

Chart 2.G Output gap for Norway. Estimated effects in NEMO of trade conflicts in different scenarios. Percentage points. 2019 – 2022

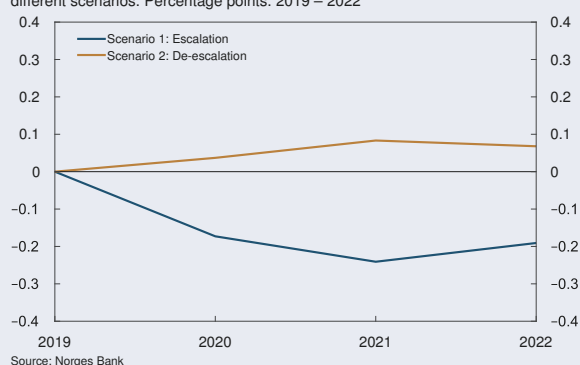
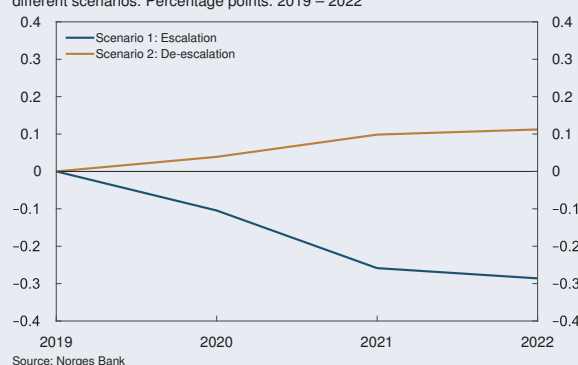


Chart 2.H Policy rate. Estimated effects in NEMO of trade conflicts in different scenarios. Percentage points. 2019 – 2022



3 Financial conditions

The average residential mortgage rate has risen gradually over the past year, although less than the policy rate. The mortgage rate is projected to remain approximately unchanged in the years ahead and be 3.1% in 2022. The krone has depreciated considerably and is weaker than projected in September. The krone is expected to remain weak in the years ahead. Overall, financial conditions appear to be slightly more accommodative than expected in the September *Monetary Policy Report*.

MONETARY POLICY SINCE SEPTEMBER

At the monetary policy meeting on 18 September, the policy rate was raised from 1.25% to 1.50%. The analyses in the September *Report* indicated that the policy rate would remain close to this level ahead. With such a policy rate path, inflation was projected to remain close to the target, while unemployment would remain low.

At the monetary policy meeting on 23 October, new information was assessed against the projections in the September *Report*. The upturn in the Norwegian economy had continued approximately as expected, and underlying inflation had been in line with projections. Growth prospects for trading partners appeared to be slightly weaker than assumed. The krone had depreciated markedly. The Executive Board's assessment was that the outlook for the policy rate for the period ahead was little changed since the September *Report*. Uncertainty about global developments had persisted, and foreign interest rates were very low. At the same time, the depreciation of the krone could push up inflation ahead. The Executive Board decided to keep the policy rate unchanged at 1.50%.

3.1 LENDING RATES

Higher residential mortgage rate

The average residential mortgage rate was 2.9% at the end of October. Developments in interest rates offered by banks suggest that the residential mortgage rate will be just over 3.0% at the end of 2019. This is slightly lower than assumed in the September *Report*.

While the policy rate was raised by a total of 1.0 percentage point between September 2018 and September 2019, it appears that the total rise in the residential mortgage rate will be just over 0.6 percentage point at the end of 2019 (Chart 3.1). Developments in the mortgage rate reflect competitive conditions in the banking sector and banks' total funding costs.

A number of banks report that there is strong competition in the residential mortgage market. These conditions may have curbed the increase in mortgage rates. At the same time, banks report that deposit market competition is weaker, and bank deposit rates rose by less than the policy rate again in Q3. Lower costs in the deposit market may have provided leeway for banks to offer lower mortgage rates than implied by the policy rate.

The interest rate on banks' wholesale funding has also increased by less than the policy rate in the past year. For wholesale funding, banks pay the money market rate Nibor plus a risk premium. The risk premium is little changed since the September *Report*, while three-month Nibor has risen.

Three-month Nibor is determined by market expectations of the average policy rate over the next three months and by a risk premium, generally referred to as the money market premium. The money market premium, as calculated here, has risen slightly since the *September Report*. So far in Q4, the premium has averaged a good 0.3 percentage point. This is slightly lower than anticipated.

Bank lending rates for enterprises are often directly linked to Nibor and have risen slightly since the *September Report*. At the end of October, the average lending rate for enterprises was 3.9%. Large firms can also raise funds directly in the bond market. Corporate bond risk premiums have fallen so far in 2019 and have shown little change since September.

Residential mortgage rate at 3.1%

In the projections, the residential mortgage rate remains approximately unchanged in the coming years and is close to 3.1% in 2022. The projections are slightly lower than in the *September Report*.

The projections are lower because of a small downward revision of the estimated money market premium in Nibor (Chart 3.2). This premium is expected to be close to 0.35 percentage point throughout the projection period, down from 0.4 percentage point in the *September Report*. The premium is being revised down as the market is pricing in a slightly lower USD money market premium ahead and as the premium has for a period been lower than estimated in the Bank's reports.

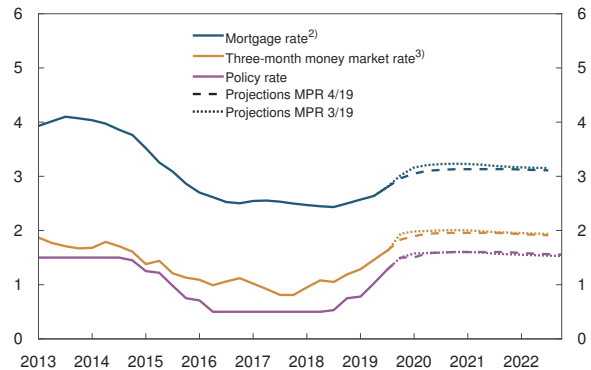
Norwegian forward three-month money market rates are higher than in the *September Report*. Market-implied rates suggest that the policy rate in the years ahead will remain approximately at today's level (Chart 3.3).

3.2 KRONE EXCHANGE RATE

Weaker-than-projected krone

The krone, as measured by the import-weighted exchange rate I-44, has depreciated by about 2% since the *September Report* (Chart 3.4). In the course of the period, the krone exchange rate has reached record-low levels, both against the euro and as measured by the I-44.

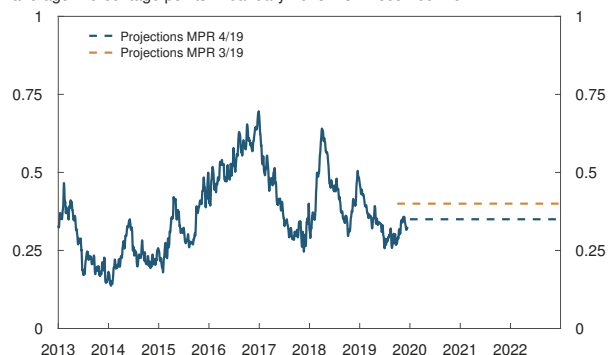
Chart 3.1 Interest rates. Percent. 2013 Q1 – 2022 Q4¹⁾



1) Projections for 2019 Q4 – 2022 Q3 (mortgage lending rate and three-month money market rate) / 2022 Q4 (policy rate). 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) Projections are calculated as a two-quarter moving average of the policy rate plus the projected money market premium.

Sources: Statistics Norway, Thomson Reuters and Norges Bank

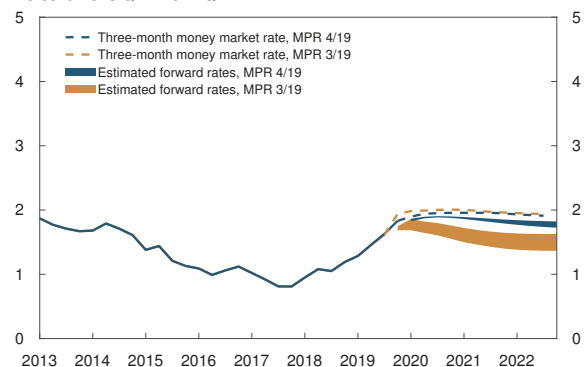
Chart 3.2 Norwegian three-month money market premium.¹⁾ Five-day moving average. Percentage points. 1 January 2013 – 31 December 2022²⁾



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

Sources: Thomson Reuters and Norges Bank

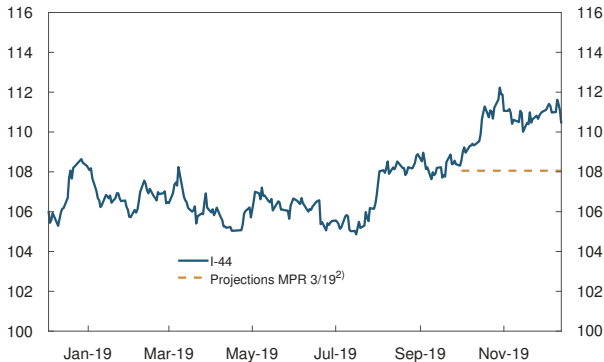
Chart 3.3 Three-month money market rate¹⁾ and estimated forward rates²⁾. Percent. 2013 Q1 – 2022 Q4³⁾



1) Projections for the money market rate are calculated as a two-quarter moving average of the policy rate plus the projected 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 2 September – 13 September in 2019 (MPR 3/19) and in the period 2 December – 13 December in 2019 (MPR 4/19), respectively. 3) Projections for 2019 Q4 – 2022 Q3 (money market rate) / 2022 Q4 (forward rates).

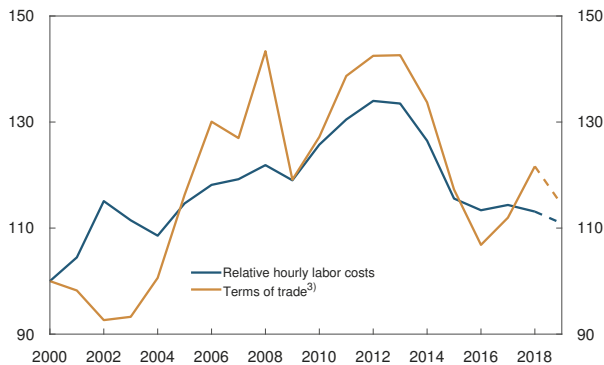
Sources: Thomson Reuters and Norges Bank

Chart 3.4 Import-weighted exchange rate index (I-44).¹⁾
3 December 2018 – 13 December 2019



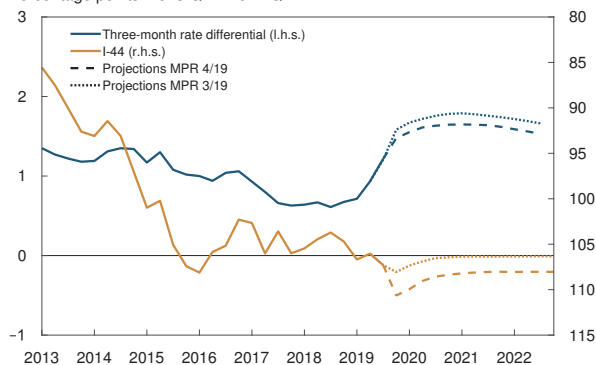
1) A positive slope denotes a weaker krone exchange rate. 2) Projection for the average in 2019 Q4.
Sources: Thomson Reuters and Norges Bank

Chart 3.5 Relative hourly labour costs¹⁾ in the manufacturing sector and terms of trade. Index. 2000 = 100. 2000 – 2019²⁾



1) Hourly labour costs in manufacturing in Norway relative to EU trading partners in a common currency. 2) Projections for 2019. 3) Terms of trade is defined as export prices divided by import prices.
Sources: Norwegian Technical Calculation Committee for Wage Settlements (TBU), Statistics Norway and Norges Bank

Chart 3.6 Import-weighted exchange rate index (I-44).¹⁾ Three-month money market rate differential between Norway²⁾ and trading partners³⁾. Percentage points. 2013 Q1 – 2022 Q4⁴⁾



1) A positive slope denotes a stronger krone exchange rate. 2) Projections for the money market rate are calculated as a two-quarter moving average of the policy rate plus the projected money market premium. 3) Forward rates for trading partners at September 13 (MPR 3/19) and 13 December 2019 (MPR 4/19). See Norges Bank (2015) "Calculation of the aggregate for trading partner interest rates". Norges Bank Papers 2/2015. 4) Projections for 2019 Q4 – 2022 Q3 (money market rate) / 2022 Q4 (I-44).
Sources: Thomson Reuters and Norges Bank

The krone is weaker than assumed in the September Report. Historically, there has been a close relationship between the krone exchange rate and developments in the oil price and interest rate differentials between Norway and trading partners. The oil price is somewhat higher than at the time of the September Report and interest rate differentials have widened slightly. This would in isolation imply a stronger krone.

Persistent uncertainty about global developments may have contributed to a weaker krone over time than projected in the Bank's reports. The uncertainty may have pushed up the risk premium on the Norwegian krone and other currencies with limited liquidity.¹ There is still considerable uncertainty around international developments, even though the US and China have reached a limited trade agreement and there are prospects that the UK will exit the EU in the new year with a withdrawal agreement.

The deterioration in Norway's terms of trade after the 2014 oil price fall and the uncertainty around future activity levels in the oil sector have likely contributed to a persistently weak krone. There has been a relatively close relationship over time between Norway's terms of trade and the real exchange rate, defined as the relationship between domestic and foreign hourly labour costs measured in a common currency (Chart 3.5). The 2014 oil price fall led to a marked deterioration in the terms of trade. The adjustment to weaker terms of trade may take the form of a weaker nominal exchange rate and lower relative wage growth. Both have been observed after the oil price fall in 2014. The developments in the terms of trade may suggest that the real krone exchange rate will not revert to the levels prevailing before the oil price fall.

The krone will remain weak ahead

The conditions that have had a weakening effect on the krone are expected to continue to weigh on the krone in the years ahead. However, the risk premium is expected to be somewhat lower. This implies a moderate appreciation of the krone in the year ahead (Chart 3.6). Interest rate differentials between Norway and trading partners are expected to remain close to today's level in the projection period. The projections

1 See Akram, Q.F. "Oil price drivers, geopolitical uncertainty and oil exporters' currencies". Norges Bank Working Papers 15/2019. Norges Bank.

for the krone exchange rate are lower than in the September *Report* throughout the projection period.

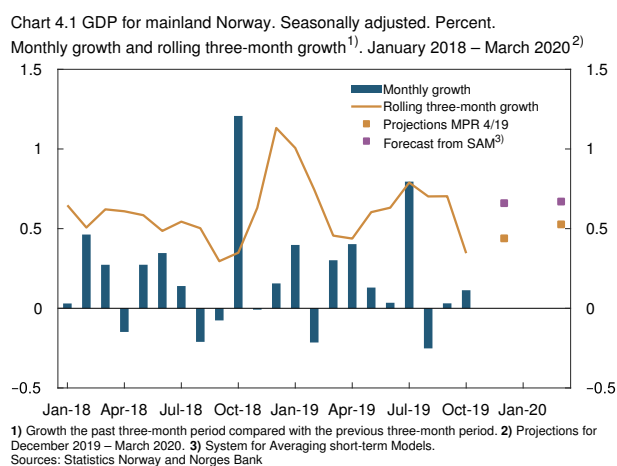
The projections for the krone are uncertain

The path of the krone exchange rate may differ from that projected in this *Report*. If global uncertainty diminishes, the krone may appreciate more rapidly than projected. On the other hand, the krone depreciation may be more persistent than assumed, and the krone may remain weaker than projected.

4 The Norwegian economy

Since 2016, growth in the Norwegian economy has been solid. Employment has risen, and unemployment has fallen. Capacity utilisation now appears to be somewhat above a normal level, and inflation is close to the inflation target.

Mainland economic growth is now tapering off. In the period ahead, growth in investment is expected to slacken. There are prospects that capacity utilisation will gradually decline ahead. Following a rise in 2019, wage growth is expected to remain fairly steady in the coming years. Inflation is projected to be a little above 2% through the projection period.



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. Interviews are conducted each quarter and more than 300 network contacts participate in each round.

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

4.1 OUTPUT AND DEMAND

Mainland economic growth is tapering off

Growth in the Norwegian economy has been solid since 2016. The global upturn, improved cost-competitiveness and higher oil prices have helped lift activity, as have low interest rates.

Growth in the mainland economy continued into 2019 Q3. National accounts figures show that mainland GDP increased by 0.7% from the previous quarter, driven by particularly strong growth in July. According to monthly national accounts figures for the period to October, mainland growth has slowed since July (Chart 4.1). GDP growth has been slightly weaker than projected in the September 2019 *Monetary Policy Report*.

Norges Bank's Regional Network contacts also report lower growth in activity through autumn. Growth has slowed in all sectors, but most in distributive trade and construction (Chart 4.2). Regional Network enterprises expect slightly slower growth ahead. Continued solid growth in services is supporting overall output growth.

Monthly national accounts figures indicate that growth has slowed between Q3 and Q4. In line with the expectations of Regional Network contacts, the slower pace of growth is expected to continue into 2020. The projections are slightly lower than estimates from Norges Bank's System for Averaging short-term Models (SAM).

Prospects for lower growth ahead

Mainland GDP growth is projected at 2.5% in 2019. Mainland growth is projected to slow to 1.9% in 2020 and 1.4% in 2021 and 2022 (Chart 1.9).

The growth picture is affected by developments in petroleum investment. After falling sharply between 2013 and 2017, petroleum investment picked up through 2018. In 2019, growth in petroleum investment has been substantial (Chart 4.3). Looking ahead, several large investment projects on the Norwegian shelf will be completed. Petroleum investment is projected to grow more slowly in 2020, declining thereafter in 2021 and 2022 (see box on page 36). Growth in other business investment is also expected to slow into 2020, after having increased substantially over several years. Markedly lower investment growth further ahead will have a dampening effect on growth in the Norwegian economy.

On the other hand, a weaker krone is strengthening the economy, improving the cost-competitiveness of Norwegian companies. This may push up net exports and boost business investment. At the same time, a weaker krone implies an increase in prices for imported goods and services. This reduces household real disposable income and may curb consumption growth.

In the projections, growth among trading partners is fairly moderate. Monetary policy in Norway has become gradually less expansionary in recent years. Fiscal policy is assumed to be slightly expansionary through the projection period (see box on page 35). The projections are based on the assumption that growth in transfers to households will pick up. At the same time, growth in public demand is expected to slow, after rising briskly in 2019.

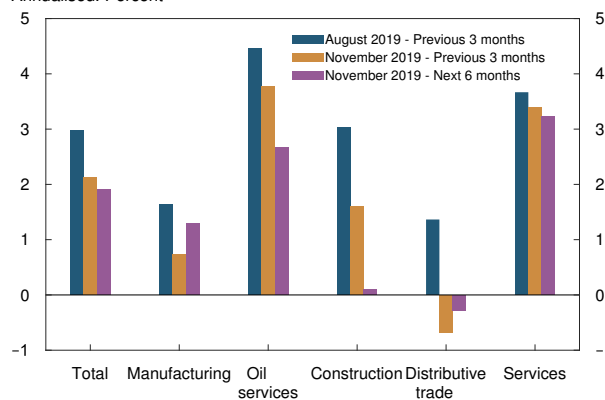
The overall projections for mainland GDP are little changed since the time of the *September Report*.

Close to zero growth in business investment

Mainland business investment has increased markedly since 2015 and has contributed to the upturn in the Norwegian economy. Business investment as a share of mainland GDP is now at a high level (Chart 4.4).

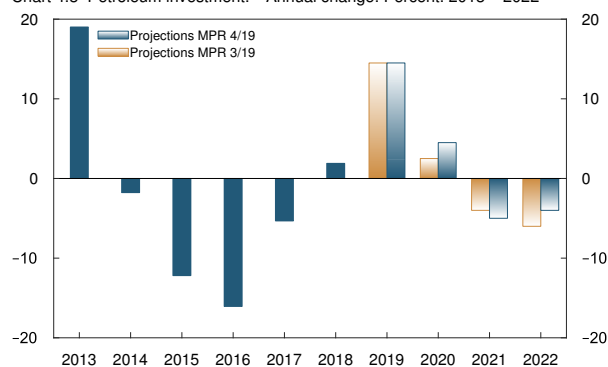
In 2019, manufacturing investment in particular has increased. According to Statistics Norway's investment intentions survey, power and manufacturing investment will decline markedly in 2020, partly owing to the completion of large investment projects. As a result, investment growth is likely to slow ahead (Chart 4.5). Prospects for a sustained rise in investment in services and other goods production will keep investment growth elevated.

Chart 4.2 Output growth by sector as reported by the Regional Network. Annualised. Percent



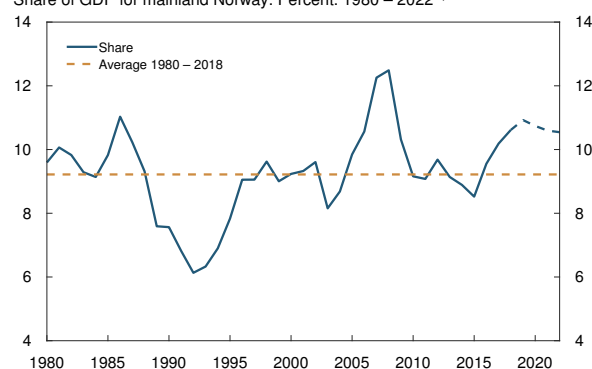
Source: Norges Bank

Chart 4.3 Petroleum investment.¹⁾ Annual change. Percent. 2013 – 2022²⁾



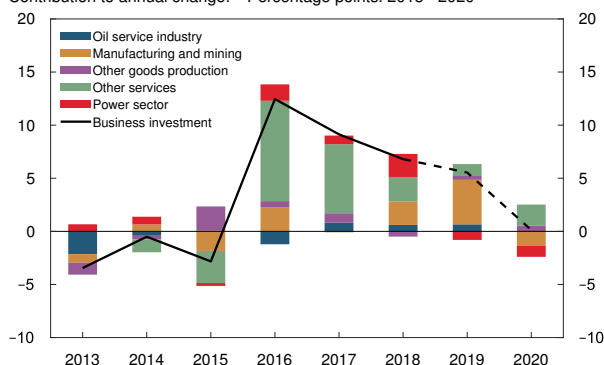
¹⁾ Working-day adjusted. ²⁾ Projections for 2019 – 2022.
Sources: Statistics Norway and Norges Bank

Chart 4.4 Mainland business investment.¹⁾ Share of GDP for mainland Norway. Percent. 1980 – 2022²⁾



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

Chart 4.5 Mainland business investment.¹⁾
Contribution to annual change.²⁾ Percentage points. 2013 - 2020³⁾



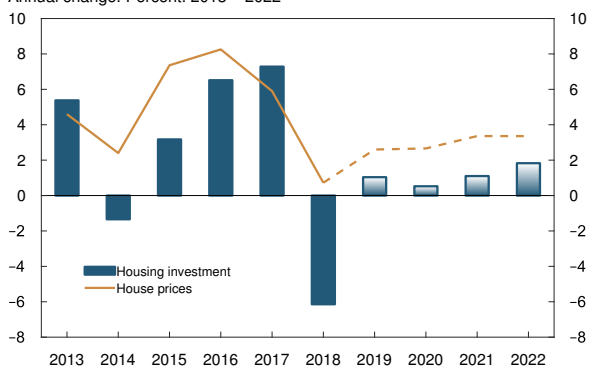
1) Working-day adjusted. 2) Discrepancies occur in the statistics between the sum of the components and aggregate business investment prior to base year 2017. 3) Projections for 2019 and 2020.
Sources: Statistics Norway and Norges Bank

Investment measured as a share of mainland GDP is expected to decrease in the years ahead, but remain above its historical average. Capacity utilisation in the Norwegian economy appears to be somewhat above a normal level, which may contribute to keeping investment high. The krone depreciation is improving the profitability of export firms and may have the same effect.

Moderate growth in housing investment

Growth in housing investment is also expected to slow in the coming period. After a marked fall in house prices in the second half of 2017 pulled down investment for a period, housing investment has increased gradually since summer 2018. Recently, house price inflation has been moderate. Through autumn, the 12-month rise in prices was between 2% and 4%.

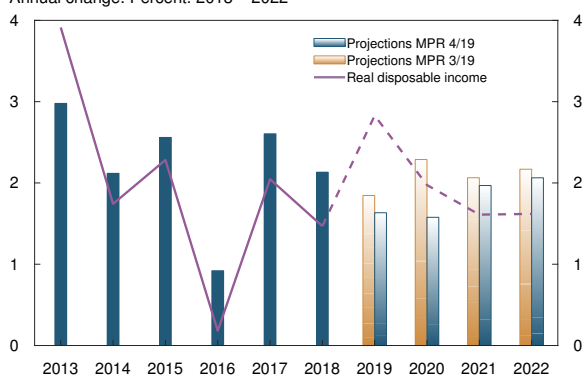
Chart 4.6 Housing investment and nominal house prices.
Annual change. Percent. 2013 – 2022¹⁾



1) Projections for 2019 – 2022.
Sources: Real Estate Norway, Eiendomsverdi, Finn.no, Statistics Norway and Norges Bank

Turnover in the market for existing homes have been high through 2019. At the same time, a large number of dwellings are nearing completion. Together with a higher residential mortgage lending rate, this will likely also contribute to moderate house price inflation in the coming years (Chart 4.6). Moderate house price developments and the large stock of unsold homes imply a slight decline in housing investment in the coming quarters. Housing investment growth is expected to hold steady thereafter, broadly in line with developments in real house prices. A further discussion of the housing market is provided in Section 6.

Chart 4.7 Household consumption¹⁾ and real disposable income^{2),3)}
Annual change. Percent. 2013 – 2022⁴⁾



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

Temporary factors dampen consumption growth

Following solid growth in recent years, growth in private consumption is lower in 2019, and lower than growth in real household disposable income (Chart 4.7). Consumer confidence indicators are lower than in September and are now close to, but slightly below their historical averages (Chart 4.8). More households consider their finances to be tighter now than one year ago. Higher interest rates have contributed to slower consumption growth and a higher household saving ratio. The saving ratio is expected to continue to rise slightly in the near term (Chart 4.9).

A number of temporary factors are having a dampening effect on consumption growth in 2019 and 2020. New European emission standards for car manufacturers will likely lead to a postponement of electric vehicle deliveries from 2019 to 2020, which will restrain consumption growth in 2019. At the start of

2020, the Norwegian Broadcasting Corporation (NRK) licence fee will be replaced by tax financing. This entails a reclassification of NRK's financing from private to public consumption in the national accounts. This dampens consumption, while producing a corresponding increase in public demand. At the same time, the reclassification implies higher taxes, which reduces disposable income. Consumer debt regulation and new credit registers have helped to restrain growth in consumer debt, which may also be dampening consumption growth somewhat.

Further out, wage and employment growth are projected to slow. Along with a weaker krone, this will entail a slowdown in growth in real disposable income. However, a slight increase in consumption growth is expected as the effects of the temporary factors dissipate. The projections imply a small decrease in the household saving ratio.

Surge in export growth in 2019

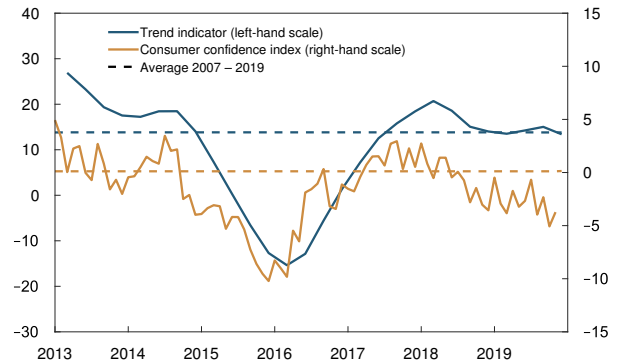
Growth in mainland exports has picked up over the past few years, and mainland exports have shown marked growth in 2019 (Chart 4.10). Some export firms in the Regional Network report noticing the effects of global trade tensions, but the weak krone has, at the same time, strengthened many exporters' competitiveness. A weaker krone and higher demand from the global petroleum industry are contributing to the marked rise in exports in 2019, despite weaker growth among Norway's trading partners. Oil-related exports in particular have increased, but exports of other services and seafood have also shown some increase in 2019.

In 2020, export growth is expected to slow, largely owing to weaker impulses from the global petroleum industry. Further out in the projection period, export growth is expected to pick up slightly in pace with a pick-up in growth among Norway's trading partners.

Imports have also increased markedly in 2019, reflecting the upswing in oil investment but also strong growth in other business investment and exports. Prospects that investment growth will abate imply lower import growth ahead. In isolation, a weaker krone has a dampening impact on demand for foreign goods and services. However, the impact is assumed to be relatively modest.¹

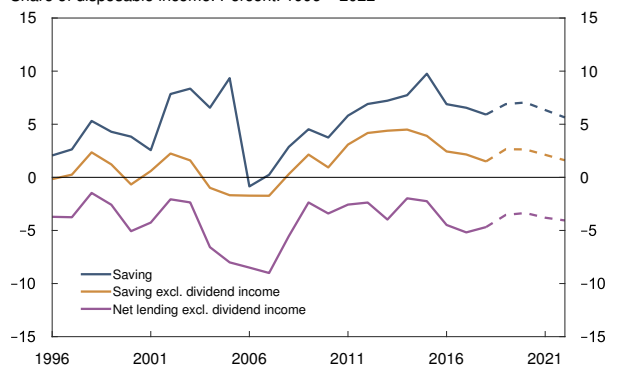
¹ See Naug, B. and E. Nordbø (2018) "How much of a tailwind have we had from the weaker krone?". *Staff Memo 6/2019*. Norges Bank.

Chart 4.8 Consumer confidence. Net values. Kantar TNS trend indicator for households. 2013 Q1 – 2019 Q4. Opinion consumer confidence index (CCI). January 2013 – November 2019



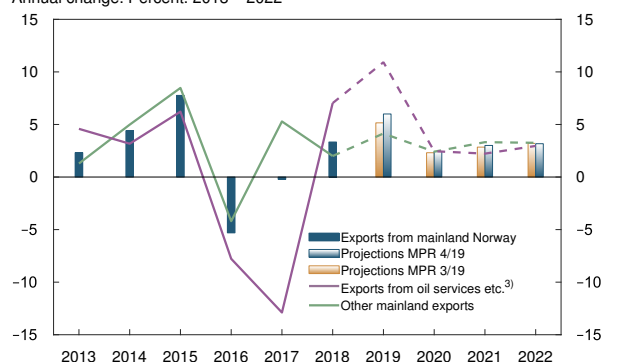
Sources: ForbrukerMeteret™ from Opinion, Kantar TNS and Norges Bank

Chart 4.9 Household saving and net lending. Share of disposable income. Percent. 1996 – 2022¹⁾



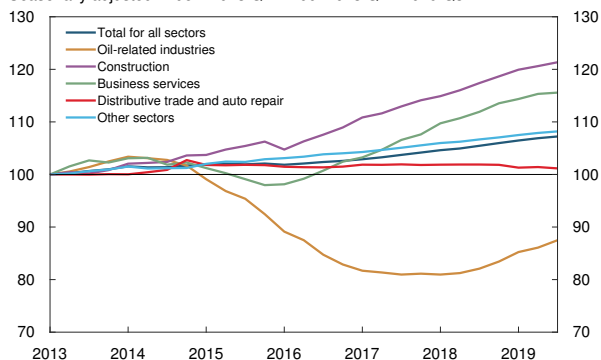
¹⁾ Projections for 2019 – 2022. Sources: Statistics Norway and Norges Bank

Chart 4.10 Exports from mainland Norway.¹⁾ Annual change. Percent. 2013 – 2022²⁾



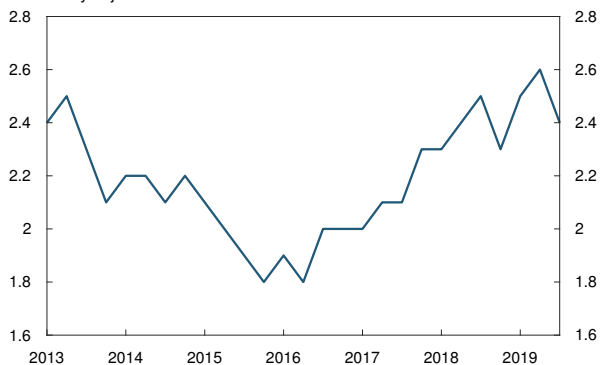
¹⁾ Working-day adjusted. ²⁾ Projections for 2019 – 2022. ³⁾ Groups of goods and services in the national accounts where the oil service industry accounts for a considerable share of exports. Sources: Statistics Norway and Norges Bank

Chart 4.11 Employed persons. Wage earners and self-employed. Seasonally adjusted. Index. 2013 Q1 = 100. 2013 Q1 - 2019 Q3



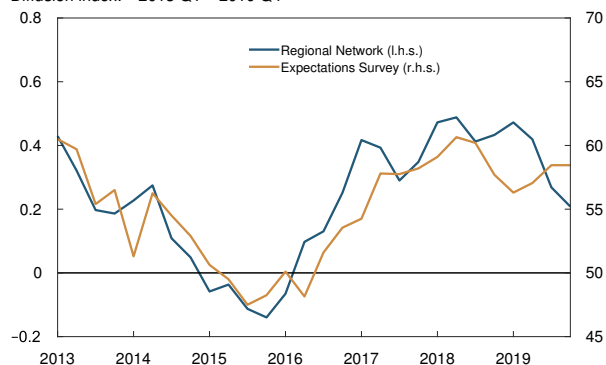
Sources: Statistic Norway and Norges Bank

Chart 4.12 Job vacancies. Share of the total number of jobs. Seasonally adjusted. Percent. 2013 Q1 - 2019 Q3



Source: Statistics Norway

Chart 4.13 Expected employment. Regional Network.¹⁾ Quarterly change. Seasonally adjusted. Percent. Norges Bank's Expectations Survey. Diffusion index.²⁾ 2013 Q1 - 2019 Q4



1) Expected change in employment next three months. 2) Share of business leaders expecting "more employees" in their own firm in the following 12 months + 0.5 * share expecting "unchanged number of employees".

Sources: Epinion, Opinion and Norges Bank

The projections are uncertain

Growth in the Norwegian economy is projected to slow into 2020, but the extent of the slowdown is uncertain. If investment activity remains elevated longer, the upturn may continue for longer than envisaged. On the other hand, persistent global uncertainty may lead to lower growth among Norway's trading partners than projected in this Report, which could have a dampening effect on export growth. If global trade tensions escalate, growth in the Norwegian economy may prove lower than projected. See box on page 17 for a further discussion of consequences of different outcomes of the ongoing trade tensions for global and domestic growth.

4.2 LABOUR MARKET AND OUTPUT GAP

Employment growth has slowed

Employment growth has been high since 2016. Growth continued in 2019 Q3, but at a more moderate pace than in the preceding quarters and was somewhat weaker than projected in the September Report. Since 2018 Q3, the number of employed has risen by 47 000. Of these, 8 000 are non-resident workers in Norway.

Employment growth has slowed in most industries. Business services is among the industries where growth has slowed the most (Chart 4.11). In distributive trade, developments in employment have been weak for several years and in 2019 Q3, the number of employed declined. On the other hand, employment growth has picked up further in oil-related industries.

The job vacancy rate has fallen since the September Report (Chart 4.12). Norges Bank's Regional Network expects employment growth to slow further into 2020. Contacts have also revised down their employment growth expectations (Chart 4.13). The expectations survey suggests that employment growth will not slow ahead.

Unemployment declined between the beginning of 2016 and spring 2019 (Chart 4.14), and has since shown little change. In November, registered unemployment was 2.2%, in line with projections. The share receiving unemployment benefits has also recently remained stable. The Labour Force Survey (LFS) shows that unemployment has increased since the September Report, reaching 3.9% in September. The LFS is a sample survey and there is considerable uncertainty

associated with month-to-month changes. However, viewed over a somewhat longer period, the LFS confirms the impression that unemployment may have bottomed out in the current business cycle.

Prospects that unemployment will remain low

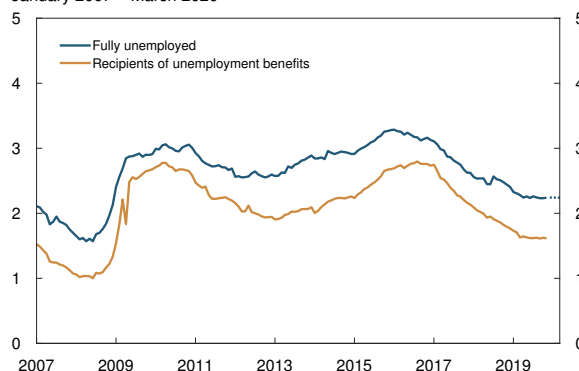
Employment growth will normally follow GDP growth with a slight lag. The GDP projections imply that employment will continue to rise, but that employment growth will slow through the projection period. The number of employed is projected to increase by just over 40 000 between year-end 2019 and year-end 2022. Unemployment is expected to show little change ahead (Chart 1.10).

The economy is near a cyclical peak

Since 2016, there has been an upturn in the Norwegian economy and spare capacity has steadily diminished. The Bank's assessment is that capacity utilisation reached a normal level at year-end 2018 and increased further in the first half of 2019 (Chart 1.1b). In the *September Report*, capacity utilisation was projected to pick up further through 2019 Q3 and 2019 Q4.

According to Regional Network contacts, overall capacity utilisation has shown little change since spring (Chart 4.15 and Table 4.1). The share reporting labour shortages has increased slightly since the *September Report*, but the indicator remains close to its historical average. The number of employed persons as a share of the population, ie the employment rate, has picked up further (Chart 4.16). Adjusted for the effect of an ageing labour force, the employment rate is now appreciably

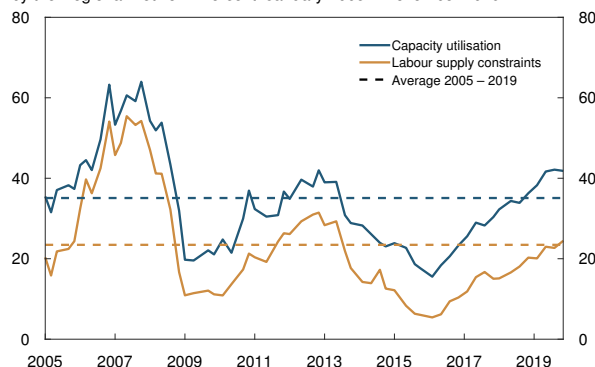
Chart 4.14 Registered fully unemployed and unemployment benefit recipients¹⁾. Share of labour force. Seasonally adjusted. Percent. January 2007 – March 2020²⁾



1) Approximately half of the fully unemployed receive unemployment benefits. Some partly unemployed persons and labour market programme participants are also eligible for unemployment benefits. 2) Projections for December 2019 - March 2020.

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

Chart 4.15 Capacity utilisation¹⁾ and labour supply constraints²⁾ as reported by the Regional Network. Percent. January 2005 – November 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. Only enterprises reporting full capacity utilisation are asked about labour supply, but the series shows the share of all the contacts in the interview round. The local government and hospital sector does not respond to the question about capacity utilisation but still responds to the question about labour supply. Source: Norges Bank

Table 4.1 Capacity utilisation indicators¹⁾

Indicator type	Low	Close to normal	High
Employment and unemployment	Unemployment (LFS)	Registered unemployment (NAV)	QNA employment (2013 trend) ²⁾
		Employment, 25–54 (LFS)	Labour force (LFS, 2013 trend) ²⁾
Prices and wages	Wage growth	Domestic inflation ³⁾	
Business surveys		Labour supply (RN) ⁴⁾	Capacity utilisation (RN) ⁴⁾
		Capacity utilisation (SSB) ⁵⁾	
Other		Job vacancies (SSB)	New job seekers (NAV)

1) The indicators are placed in columns according to whether they signal low, close to normal or high capacity utilisation. The colour indicates the change since the *June Report*. Red indicates lower capacity utilisation. Green indicates higher capacity utilisation.

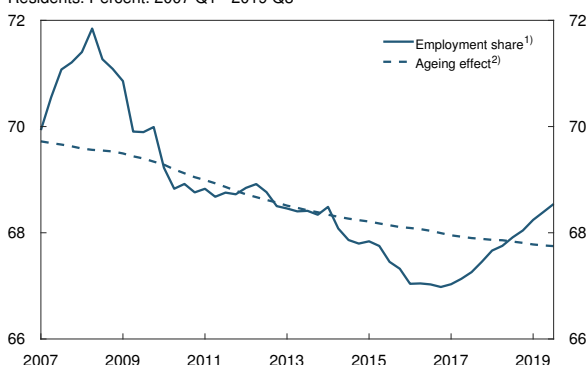
2) Labour force and employment developments if the share for each five-year age cohort had been unchanged from 2013 levels.

3) Domestically produced goods and services in the CPI-ATE.

4) Regional Network.

5) Statistics Norway's business sentiment survey for manufacturing and mining and quarrying.

Chart 4.16 Employed as a share of population aged 15 – 74. Residents. Percent. 2007 Q1 - 2019 Q3



1) Employment (QNA) minus non-resident workers (register data). The series for non-resident workers has been adjusted back in time owing to breaks in the series in 2015. 2) Employment share if the employment share for each five-year age cohort had remained unchanged at 2013-levels. The curve slopes downward owing to ageing of the population aged 15-74. The year 2013 was selected because capacity utilisation was, in Norges Bank's opinion, close to a normal level in that year. Sources: Statistics Norway and Norges Bank

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 employment 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.

higher than in 2013, when capacity utilisation was considered by the Bank to be close to a normal level.

A weighted average of labour market indicators suggests that capacity utilisation increased between 2019 Q2 and 2019 Q3 and is now slightly above a normal level (Chart 4.17). On the other hand, a model estimation that also takes into account developments in other parts of the economy suggests that capacity utilisation has shown little change and remains close to a normal level.

Overall, capacity utilisation is assessed as having increased slightly since September, albeit less than expected. Capacity utilisation is estimated to have increased further between 2019 Q3 and 2019 Q4, and the economy is estimated to have reached a cyclical peak in 2019 Q4. From 2020, capacity utilisation is projected to fall gradually towards a normal level. For capacity utilisation, the projections for the next few years are a little lower than in the *September Report* and little changed towards the end of the projection period. Employment remains high throughout the projection period, ie close to or above what is now considered potential employment (see box on page 37).

Trend productivity growth has declined over time

Potential output is projected to grow by just over 1½% annually from 2020 to the end of the projection period. The projection is based on trend productivity growth of just under 1% and growth in potential employment of around ¾% on average.

The estimate for trend productivity growth is based on developments in actual productivity. However, productivity growth will vary through the business cycle. An indicator of trend productivity growth may therefore be the average productivity growth of an entire business cycle. During the most recently ended business cycle, annual mainland productivity growth had been just under 1% (Chart 4.18). This is a little higher than in the previous cycle, which included the financial crisis, but substantially lower than in the preceding cycle. The lower productivity growth in the two most recent business cycles reflects declines in most industries.

Trend employment growth is estimated based on Statistics Norway's demographic projections. Lower immigration and an ageing population have pulled

down potential employment in recent years. The projections imply labour immigration will increase slightly through the projection period. At the same time, the Bank expects the number of non-resident workers to continue to increase.

Uncertainty regarding trend productivity growth

There is uncertainty regarding trend productivity growth. Actual productivity will normally increase more than trend productivity at the beginning of a cyclical upturn. Firms' spare capacity will be better utilised when demand increases. Since the cyclical upturn started in the middle of 2016, productivity growth has averaged below 1%, which may indicate lower-than-assumed trend growth. On the other hand, high business investment, new technology and increasing digitalisation may lead to higher productivity ahead, even if it may take time before the effect shows up in reported data.

4.3 COSTS AND PRICES

Inflation has remained close to target

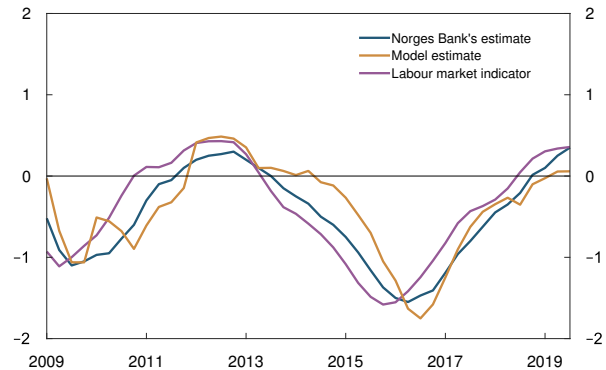
Inflation increased markedly through 2018 and was for a period above 3%. This was due in part to a substantial rise in electricity prices, but rising wage growth and higher capacity utilisation also pushed up domestic inflation. At the same time, prices for imported goods rose (Chart 4.19).

Inflation has slowed in 2019. In November, the 12-month rise in the consumer price index (CPI) was 1.6%. The consumer price index adjusted for tax changes and excluding energy products (CPI-ATE) increased by 2.0%. Other indicators of underlying inflation showed a 12-month rise of between 1.7% and 2.3% in November (see box on page 34). Since the *September Report*, inflation has overall shown little change.

Long-term inflation expectations fell slightly between 2019 Q3 and 2019 Q4 but remain slightly above the inflation target (see box on page 34).

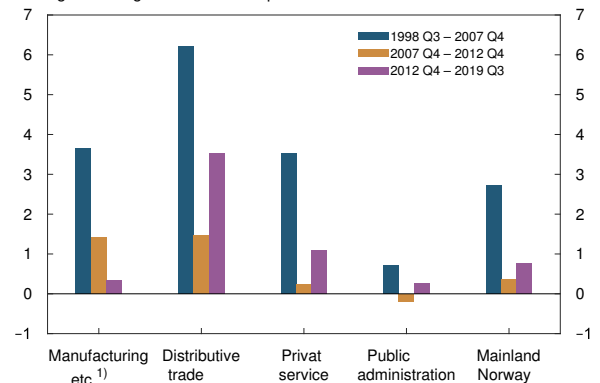
Since the *September Report*, the 12-month rise in the CPI-ATE has been as projected. The rise in prices for imported consumer goods has been slightly lower than expected, while the rise in prices for domestically produced goods and services has been broadly in line with projections. Energy price inflation has slowed

Chart 4.17 Output gap estimates.¹⁾ Percent. 2009 Q1 – 2019 Q3



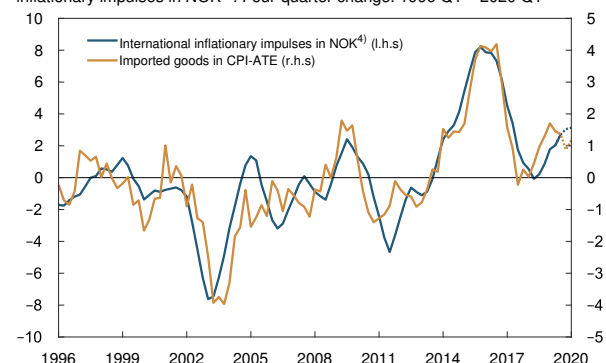
¹⁾ The output gap measures the percentage difference between mainland GDP and estimated potential mainland GDP.
Source: Norges Bank

Chart 4.18 Productivity growth in different sectors.
Average annual growth in different periods. 1998 Q3 – 2019 Q3



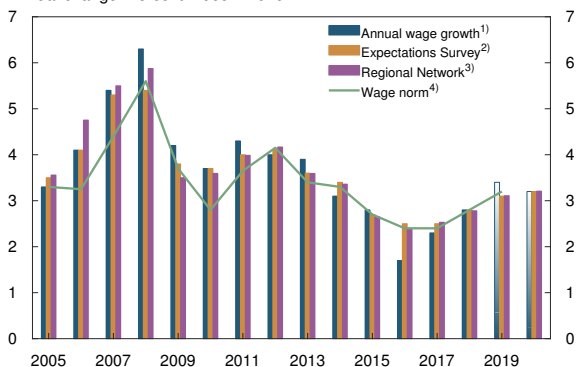
¹⁾ Manufacturing and other goods production.
Sources: Statistics Norway and Norges Bank

Chart 4.19 Imported consumer goods in the CPI-ATE¹⁾ and international inflationary impulses in NOK²⁾. Four-quarter change. 1996 Q1 – 2020 Q1³⁾



¹⁾ CPI adjusted for tax changes and excluding energy products. ²⁾ Norges Bank's indicator of international inflationary impulses to imported consumer goods in NOK. ³⁾ Projections for 2019 Q4 – 2020 Q1. ⁴⁾ Simple average for the past eight quarters.
Sources: Statistics Norway, Thomson Reuters and Norges Bank

Chart 4.20 Wages, 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. 2) Social partners' wage growth expectations for the current year as measured by Norges Bank's Expectations Survey in Q4 each year and expected annual wage growth for 2020 measured in 2019 Q4. 3) Expected wage growth for the current year as reported by the Regional Network in Q4 each year and expected annual wage growth in 2020 measured in November 2019. 4) Before 2014: For manufacturing as projected by the National Mediator or NHO. From 2014: For the overall industry, based on an assessment by NHO, done in cooperation with LO. Sources: Epinion, Kantar TNS, LO, NHO, Opinion, Statistics Norway and Norges Bank

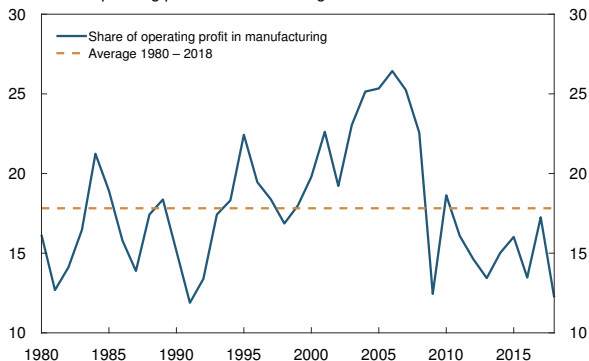
less than expected. Overall, 12-month CPI inflation has been slightly higher than projected.

Fairly stable wage growth ahead

Tighter labour market conditions in recent years have contributed to an increase in wage growth, which is expected to rise further to 3.4% in 2019 (Chart 4.20), in line with developments in current statistics. The projection is a little higher than the wage norm in this year's wage settlement and is also slightly above the expectations in Norges Bank's expectations survey and among Regional Network contacts. Solid employment growth in high-wage industries (Chart 4.11) is giving a boost to overall wage growth in 2019.

The expectations survey shows that the social partners' wage expectations for 2020 have been at a little above 3% in recent quarters, despite a tighter labour market and the krone depreciation. This may indicate that wage growth may turn out to be a little lower than previously assumed. Wage growth in 2020 is projected at 3.2%, in line with the expectations in the expectations survey and among Regional Network contacts.

Chart 4.21 Operating profit in manufacturing. Percent.¹⁾ 1980 – 2018



1) Operating profit in manufacturing as a share of factor income. Sources: Statistics Norway and Norges Bank

Wage growth is expected to remain fairly stable further out in the projection period. Profitability in manufacturing is lower than its historical average (Chart 4.21), reflecting the low profitability persisting in some manufacturing industries. In isolation, this implies lower wage growth. Capacity utilisation above a normal level suggests the opposite.

Chart 4.22 Wages and nominal productivity¹⁾. Annual change. Three-year moving average. Percent. 1996 – 2019²⁾



1) Nominal Mainland GDP per hour worked. 2) Projections for 2019. Sources: Statistics Norway and Norges Bank

The projections imply that wage growth will remain low compared with previous upturns, which must be viewed in the context of the decline in productivity growth (Chart 4.22). According to Norges Bank's expectations survey, long-term wage expectations are now around 3% (Chart 4.23). This is lower than the expectations in the early 2000s. The deterioration in the terms of trade after the oil price fall in 2014 and uncertainty surrounding the future activity level in the oil sector may have contributed to the decline in wage expectations.

The wage projection for 2019 is a little higher than in the *September Report*. The projections for the years ahead have been revised down compared with the *September Report*, despite prospects that inflation

may prove to be slightly higher. This is because it appears that capacity utilisation will turn out lower than projected earlier and that wage expectations have not risen as expected.

Higher imported inflation owing to a weaker krone

Underlying inflation is projected to remain close to 2% in the coming months. The projections are slightly higher than the SAM-based projections (Chart 4.23) and imply annual CPI-ATE inflation of 2.3% in 2019. The annual projection is unchanged from September.

Inflation is expected to move up somewhat through 2020 as the depreciation of the krone feeds through to import prices. Weaker external price impulses will have a dampening effect on the rise. Further out, imported inflation is expected to slow as the effects of the krone depreciation unwind. At the same time, above-normal capacity utilisation levels and continued growth in unit labour costs will contribute to underpinning domestic inflation. CPI-ATE inflation is projected overall to remain a little above 2% in the coming years.

Inflation projections for the coming years are slightly higher than in the *September Report* (Chart 4.25), primarily reflecting prospects for a weaker krone than previously assumed. Prospects for lower wage growth and lower capacity utilisation than projected earlier in isolation pull down the inflation projections.

Overall, the projections for CPI inflation and wage growth are consistent with a rise in real wage growth in 2019, with little change in growth thereafter. The projections imply that real wage growth further out in the projection period will be in line with productivity growth.

The projections are uncertain

Price and wage inflation ahead is uncertain. The expected rise in imported goods inflation owing to a weaker krone may lead to higher wage growth than anticipated. This may in turn lead to higher inflation. In the light of the relatively substantial depreciation of the krone, there is also a risk that the rise in prices will occur somewhat more rapidly than assumed. On the other hand, business sector profitability may prove weaker than projected. Price and wage inflation may then turn out to be lower than projected.

Chart 4.23 Expected annual wage growth five years ahead. Percent. 2002 Q1 – 2019 Q4

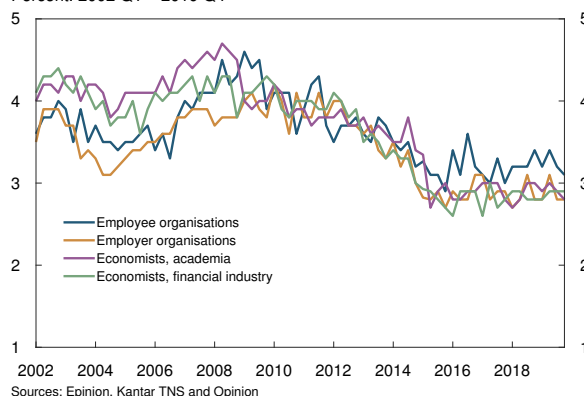
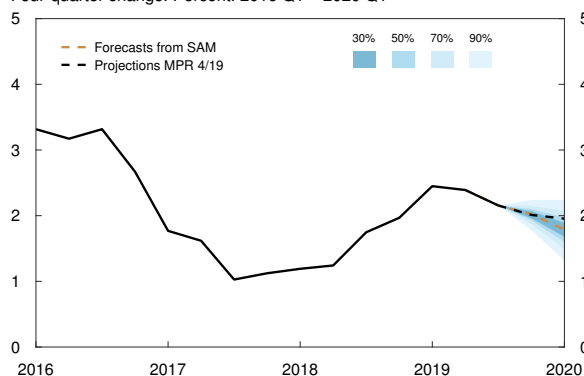
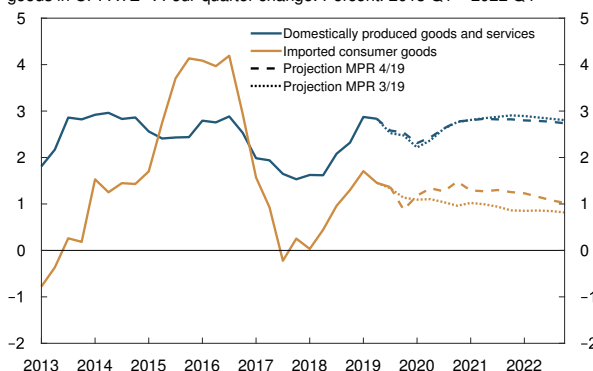


Chart 4.24 CPI-ATE¹⁾ with fan chart²⁾ from SAM³⁾. Four-quarter change. Percent. 2016 Q1 – 2020 Q1⁴⁾



1) CPI adjusted for tax changes and excluding energy products. 2) The fan chart illustrates the uncertainty in the projections. 3) System for Averaging short-term Models. 4) Projections for 2019 Q4 – 2020 Q1.

Chart 4.25 Domestically produced goods and services and imported consumer goods in CPI-ATE¹⁾. Four-quarter change. Percent. 2013 Q1 – 2022 Q4²⁾



1) CPI adjusted for tax changes and excluding energy products. 2) Projections for 2019 Q4 – 2022 Q4.

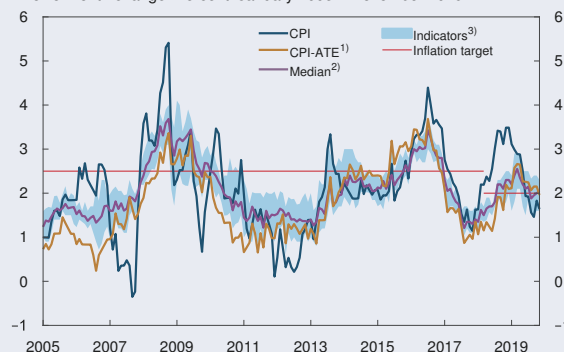
INDICATORS OF UNDERLYING INFLATION

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), but supplementing this index with other indicators may be useful. The 12-month rise in other indicators the Bank looks at ranged between 1.7% and 2.3% in November (Chart 4.A). The 12-month average rise in these indicators was 2.0%. The underlying inflation indicators showed a clear increase in the period to March 2019, but have since edged down.

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

Chart 4.A CPI and indicators of underlying inflation. Twelve-month change. Percent. January 2005 – November 2019



1) The CPI adjusted for tax changes and excluding energy products. 2) Median of the CPIM, CPIXE, 20% trimmed mean, weighted median, CPI-XV and CPI common. 3) The band shows the highest and lowest values for the CPIM, CPIXE, 20% trimmed mean, weighted median, CPI-XV and CPI common. Sources: Statistics Norway and Norges Bank

INFLATION EXPECTATIONS

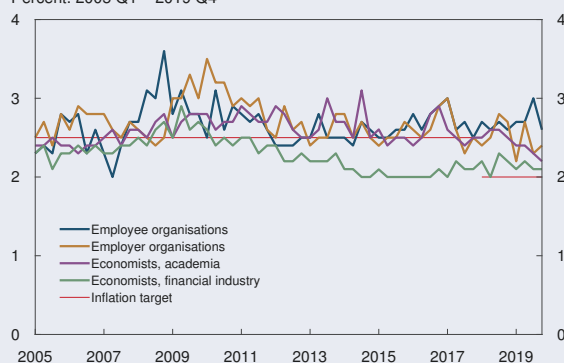
Expectations of future inflation have a bearing on many economic decisions, such as price setting and wage formation. Inflation expectations are often referred to as anchored when medium- and long-term inflation expectations show little response to new information and remain at a level close to the inflation target. 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.

In recent years, longer-term inflation expectations, as measured in Norges Bank's expectations survey, have overall remained close to 2.5% (Chart 4.B).¹ The inflation target for monetary policy was lowered from 2.5% to 2.0% in March 2018. 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. The expectations survey for 2019 Q4² showed that long-term inflation expectations have declined slightly overall from Q3, but are still somewhat above target. In recent quarters, economists' inflation expectations have declined towards 2%, while the social partners' expectations have remained close to 2.5%.

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 between 28 October and 15 November 2019. For business leaders, the survey was conducted in the period between 28 October and 22 November 2019.

Chart 4.B Expected twelve-month change in CPI five years ahead. Percent. 2005 Q1 – 2019 Q4



Sources: Epinion, Kantar TNS and Opinion

ASSUMPTIONS CONCERNING FISCAL POLICY

The fiscal policy assumptions in this *Report* are based on the central government budgets for 2019 and 2020 and other publicly available information. Petroleum revenue spending, as measured by the structural non-oil deficit, is estimated at 7.6% of trend mainland GDP in 2019 and 2020. The structural deficit has been revised down for both years compared with the *September Report*, but the projected deficits in 2021 and 2022 are unchanged (Chart 4.C). Substantial revenues from the sale of emission permits reduce the structural deficit in 2019 and 2020, but a noticeable decline in these revenues is expected from 2021.¹

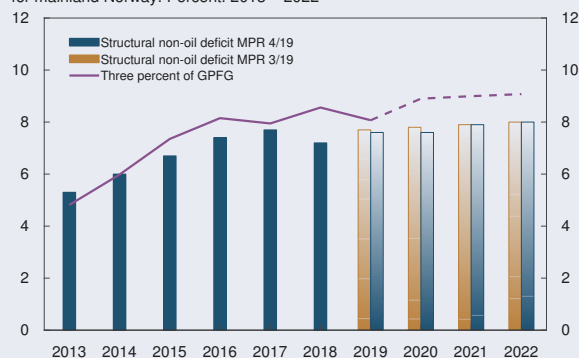
Petroleum revenue spending in 2019 is projected to be equivalent to 2.8% of the value of the Government Pension Fund Global (GPF) at the beginning of 2019. This percentage appears to decline through the remainder of the projection period as the value of the GPF has increased substantially since the beginning of the year.

Since 2013, public sector demand has increased by 2%-3% annually (Chart 4.D). The most recent national accounts figures suggest that the relatively strong growth in public sector demand will continue in 2019. Growth is set to become markedly higher than assumed in both the *September Report* and the National Budget for 2020. The projections ahead are based on the assumption that growth in public sector demand will decelerate sharply. The projections are for all intents broadly unchanged from the *September Report*. The upward revision for 2020 is due to the reclassification of services provided by the Norwegian Broadcasting Corporation (NRK) from the new year as public consumption in the national accounts. This reflects the replacement of the NRK licence fee by tax financing. The projection for private consumption has been revised down correspondingly.

Transfers to households are assumed to be consistent with the multi-year projections in the budget, implying faster growth in transfers. Direct and indirect taxes in real terms are assumed to remain unchanged as from 2020.

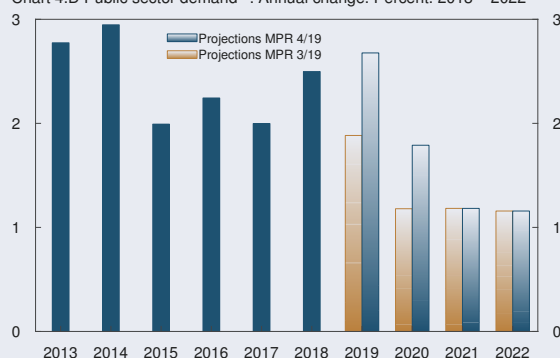
¹ Lower revenues from emission permit sales could alone contribute to increasing the structural deficit by 0.2 percentage point, measured as a share of GDP, between 2020 and 2021. Since permit sales take place in the European market and have little bearing on economic activity in Norway, they have been included as an addition to the normal technical assumption of a 0.1 percentage point increase in the deficit in years for which a budget is not yet available. In 2021, the total deficit thus increases by 0.3 percentage point. The increase in 2022 is 0.1 percentage point, as assumed in the *September Report*.

Chart 4.C Structural non-oil deficit and 3% of the GPF¹. Share of trend GDP for mainland Norway. Percent. 2013 – 2022²



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

Chart 4.D Public sector demand¹. Annual change. Percent. 2013 – 2022²



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

PROJECTIONS FOR PETROLEUM INVESTMENT

After falling markedly between 2013 and 2017, petroleum investment has shown a solid rise over the past two years (Chart 4.E). This primarily reflects substantial cost-cutting measures by oil companies, the pronounced rise in oil prices since the beginning of 2016 and the large discoveries made at the beginning of the 2010s. 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, oil companies are expected to launch more development projects during the projection period (see box on page 16).

Investment in ongoing development projects will increase by well above 20% in 2019, falling somewhat thereafter in 2020 and markedly in 2021 and 2022 as development projects are completed. This decrease will be partially offset by new development projects scheduled to start ahead (Chart 4.F). 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 appreciably after 2020.

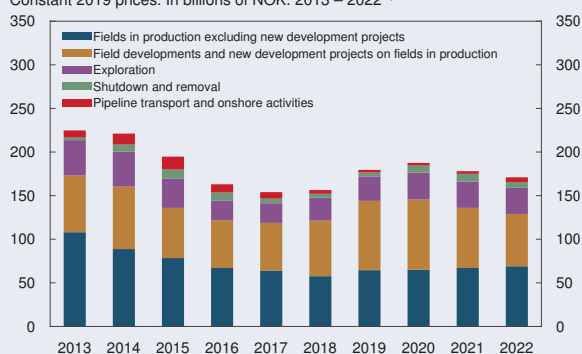
Other petroleum investment is projected to increase noticeably in 2019 and 2020, in line with the investment intentions survey for Q4, and then increase somewhat over the next two years. Investment in *fields in production* increased substantially in 2019, while increased investment in *exploration*, and *shutdown and removal* are the main contributors to projected growth in 2020.

Overall petroleum investment is projected to increase by 14.5% in 2019 and by 4.5% in 2020, before falling by 5% in 2021 and 4% in 2022. The projection for the level of investment in 2020 has been revised up by 2% since September, primarily owing to new cost projections for two of the ongoing development projects (Njord and Martin Linge). The projections for 2021 and 2022 are also slightly higher than in the September Report. The projections for *exploration* and *fields in production* have been revised up because oil price projections are somewhat higher than in September. At the same time, projections for *development projects* in 2021 and 2022 have been revised down in the light of new information on coming development projects. The Fogelberg development project is expected to be cancelled and the Brasse and Noaka area development projects will commence later than projected in September.

1 Development of the Wisting, Alta-Gohta and Noaka fields may bring investment to a total of over NOK 100bn in the period between 2021 and 2026. The Wisting field development is expected to commence towards the end of 2021, and Alta-Gohta and Noaka towards the end of 2022.

Chart 4.E Petroleum investment.¹⁾

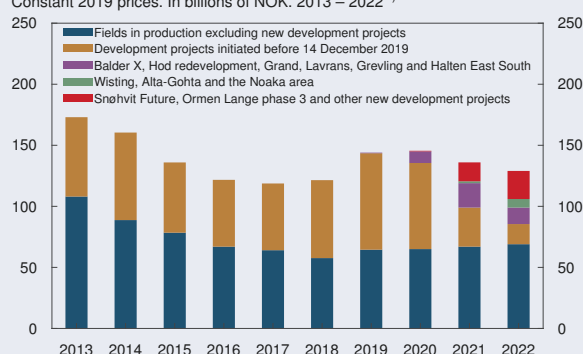
Constant 2019 prices. In billions of NOK. 2013 – 2022²⁾



1) Figures for 2013 – 2018 are from Statistics Norway's investment intentions survey and are deflated by the price index for petroleum investment in the national accounts. The price index is projected to rise by 3% in 2019 and 2% in 2020. 2) Projections for 2019 – 2022. Sources: Statistics Norway and Norges Bank

Chart 4.F Investment in field development and fields in production.¹⁾

Constant 2019 prices. In billions of NOK. 2013 – 2022²⁾



1) Figures for 2013 – 2018 are from Statistics Norway's investment intentions survey and are deflated by the price index for petroleum investment in the national accounts. The price index is projected to rise by 3% in 2019 and 2% in 2020. 2) Projections for 2019 – 2022. Sources: Statistics Norway and Norges Bank

HIGH EMPLOYMENT

In its conduct of monetary policy, Norges Bank's primary task is securing low and stable inflation. At the same time, monetary policy is to contribute to high and stable output and employment and to counteract the build-up of financial imbalances.

The level of employment depends on a number of conditions on both the supply and the demand side of the economy. The labour supply will change *over time*, partly owing to demographic changes. Underlying developments in the labour supply are also affected by the tax system, welfare programmes, wage formation and other structural factors. For example, changes in the pension system since 2011 may have contributed to an increase in the underlying trend for labour supply, because more people remain employed for longer.

At the same time, both the supply and demand for labour will vary according to the *business cycle*. During downturns, when demand for labour is low and job prospects are poor, the labour supply will be lower than the underlying trend. For example, youths may choose to continue their education rather than seek work. Conversely, the labour supply will periodically be higher than the underlying trend when labour demand is high and job prospects are favourable.

Over time, employment is limited by the underlying labour supply trend. At the same time, there will always be some unemployment in the economy. This partly reflects the fact that there will always be some people who are temporarily between jobs, and that employers' needs do not fully match the qualifications and wage expectations of those seeking work. In the literature, this is referred to as natural unemployment or equilibrium unemployment. This unemployment may change over time in response to structural changes in the labour market. Equilibrium unemployment subtracted from the underlying labour supply trend can be referred to as potential employment, ie the level of employment sustainable over time. If employment remains above potential, pressures normally emerge that accelerate wage growth and bring inflation above target.

The objective of high and stable employment is interpreted to mean that labour demand should be stabilised around potential employment. That is, the aim is to stabilise employment at close to the highest level compatible with price stability over time. Attempting to raise employment above this level through systematically expansionary monetary policy entails a risk of accelerating price and wage inflation and a build-up of financial imbalances.

Monetary policy cannot influence potential employment directly, but when other policy areas contribute to increasing the potential, monetary policy may contribute to a pick-up in labour demand. By helping to sustain employment in a downturn, monetary policy can also counteract what are called hysteresis effects, where unemployment becomes entrenched at high levels or employees permanently exit the labour market, implying a reduction in potential employment.

It is not possible to measure precisely the level of potential employment. There is normally a close correlation between the gap between employment and potential employment on the one hand, and overall capacity utilisation in the economy on the other. When capacity utilisation is estimated to be above a normal level, employment is usually also assessed as above potential. When capacity utilisation is estimated to be below a normal level, employment appears able to increase without the risk of accelerating price and wage inflation.

5 Monetary policy analysis

The policy rate was kept unchanged at 1.50% at this monetary policy meeting, and the forecast indicates that the policy rate will remain close to the current level ahead.

The policy rate forecast is broadly unchanged from the September 2019 *Monetary Policy Report*. A weaker-than-projected krone suggests in isolation a higher policy rate path. On the other hand, the upswing in the Norwegian economy appears to be slightly more moderate than previously projected. In isolation, this pulls down the rate path.

Chart 5.1 Consumer price index (CPI).
Four-quarter change. Percent. 1982 Q1 – 2019 Q3

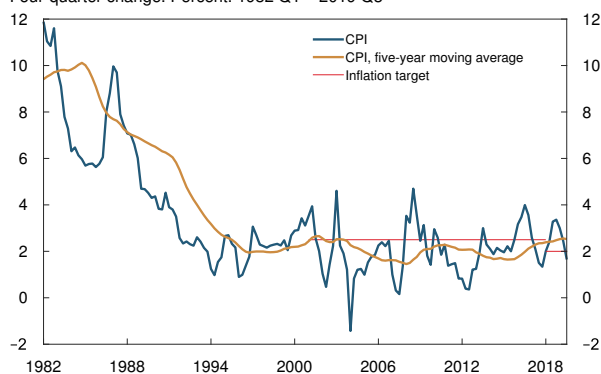
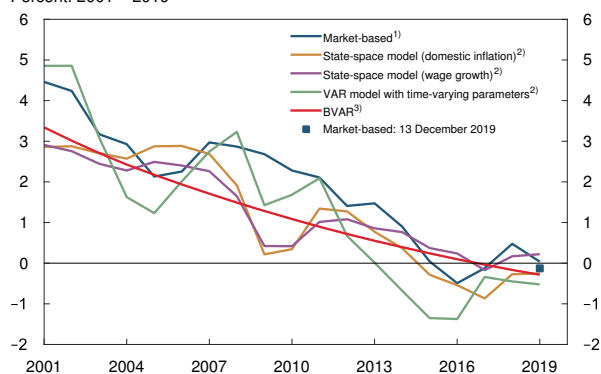


Chart 5.2 Model estimates of the neutral real interest rate in Norway.
Percent. 2001 – 2019



1) Implicit five-year forward rates five years ahead based on interest rate swaps with five and ten years maturity for Norway less the inflation target. 2) See Brubakk, L., J. Ellingsen, Ø. Robstad (2018) "Estimates of the neutral rate of interest in Norway". *Staff Memo 7/2018*. Norges Bank. 3) The underlying trend in interest rates in a Bayesian vector autoregressive model.

5.1 OBJECTIVES AND RECENT DEVELOPMENTS

Low and stable inflation

The primary objective of monetary policy is low and stable inflation. When the inflation target was introduced in 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 5.1).

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. 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 43.

Monetary policy has become less expansionary

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. It cannot be observed and must be estimated. Model estimates as well as long-term domestic and foreign interest rates indicate that the neutral real interest rate has remained low also in the past few years (Chart 5.2). The neutral real interest rate in Norway, measured as the three-month money market rate less inflation, is estimated to be close to 0%. The estimate is shrouded in considerable uncertainty.

The policy rate was kept low for a long time in order to stimulate economic activity and stabilise inflation close to the target. In recent years, there has been an upturn in the Norwegian economy and unemployment has moved down. Since September 2018, the policy rate has been raised gradually, and the monetary stance has become less expansionary.

The money market rate has risen over the past year (Chart 5.3), in line with the increase in the policy rate. The real interest rate has also risen recently.

5.2 NEW INFORMATION AND ASSESSMENTS

Unchanged policy rate

Growth in the mainland economy slowed this autumn, but capacity utilisation is still somewhat above a normal level. Looking ahead, there are prospects that large investment projects on the Norwegian shelf will be completed. This will dampen growth in the Norwegian economy. Underlying inflation has changed little in recent months and is close to the 2% inflation target. The krone depreciation will push up imported consumer goods inflation through 2020. At the same time, the social partners' wage expectations indicate that wage growth will be moderate ahead.

Financial imbalances are no longer building up, and there are now some signs that they are receding. Household debt growth has abated over the past few years, and house price inflation has been moderate. Since the September *Report*, house price inflation and household debt growth have been a little lower than expected.

A policy rate that is too low over time may increase pressures in the economy, triggering an acceleration in wage and price inflation, and may contribute to the build-up of financial imbalances. On the other hand, a policy rate that is too high may dampen economic activity, resulting in higher unemployment and below-target inflation.

The policy rate forecast in the September *Report* indicated a rate close to the current level ahead. A model-based analysis of new information suggests that with a policy rate forecast unchanged since September, inflation will increase slightly ahead, but remain close to the inflation target. Capacity utilisation will decline gradually towards a normal level (see box on page

HOW TO INTERPRET THE POLICY RATE PATH

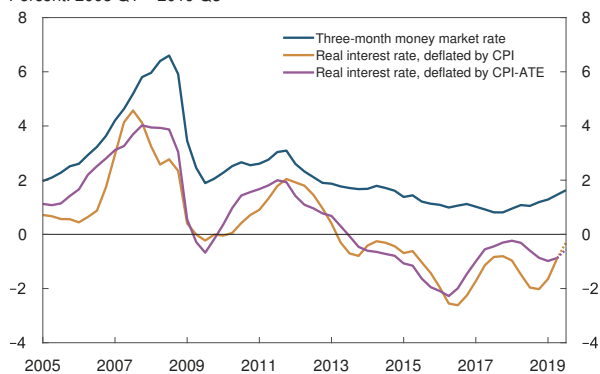
Norges Bank's policy rate path is the Bank's forecast of the policy rate and expresses the interest rate that in the Bank's opinion provides the best possible trade-off between monetary policy objectives. The rate path shows the Bank's expected developments in the policy rate, given its current assessment of the state of the economy, outlook, balance of risks and functioning of the economy. The policy rate forecast is shrouded in considerable uncertainty. If the economic outlook, balance of risks or the Bank's assessment of the functioning of the economy change, the policy rate may turn out differently from the one indicated by the rate path. The fan around the rate path illustrates that uncertainty.

The policy rate path shows the forecast of the average policy rate for each quarter. The path in this *Report* lies between 1.50% and 1.60% throughout the projection period. As Norges Bank ordinarily changes the policy rate stepwise, often in quarter-percentage point increments, it will not be possible in practice for the average policy rate to be equal to level of the policy rate path.¹ It is assumed at the outset that the uncertainty surrounding the rate path is symmetrical.² Since the rate path is closer to 1.50% than 1.75%, the path can be interpreted to mean that there is a greater probability of the policy rate remaining at 1.50% than being raised to 1.75% in the coming period. Moreover, the rate path is closer to 1.75% than 1.25%, indicating a greater probability of a rate hike than a rate cut in the coming period. Even though 1.50% is the most likely level of the policy rate in each quarter, there is little likelihood that the policy rate will remain unchanged throughout the projection period. The fan chart shows a significant probability that the policy rate will be raised or lowered in the coming years.

1 This would require raising the policy rate by less than 0.25 percentage point or raising it first and then lowering it again in the same quarter.

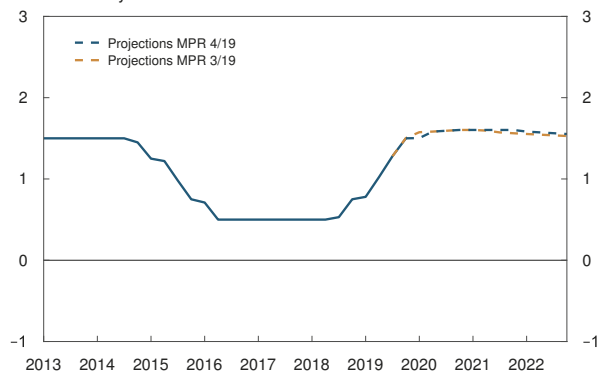
2 As there is a lower bound on the policy rate, this assumption is not entirely correct, but is likely a good approximation close to the rate path.

Chart 5.3 Three-month money market rate and real interest rates¹⁾. Percent. 2005 Q1 – 2019 Q3²⁾



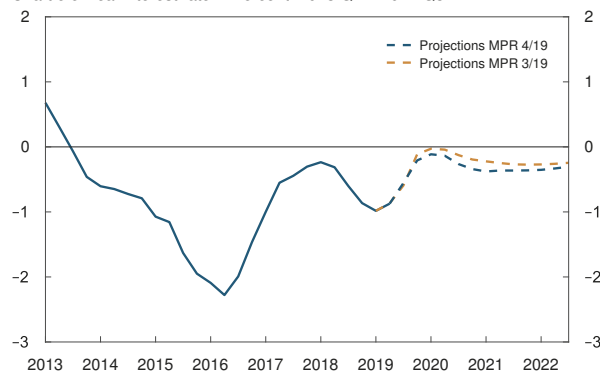
1) Three-month money market rate deflated by a three-quarter centred moving average of four-quarter inflation. 2) Projections for 2019 Q3. Sources: Statistics Norway and Norges Bank

Chart 5.4 Policy rate. Percent. 2013 Q1 – 2022 Q4¹⁾



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

Chart 5.5 Real interest rate.¹⁾ Percent. 2013 Q1 – 2022 Q3²⁾



1) Three-month money market rate less a three-quarter centred moving average of four-quarter inflation as measured by the CPI-ATE. 2) Projections for 2019 Q3 – 2022 Q3. Sources: Statistics Norway and Norges Bank

41). Compared with the September *Report*, capacity utilisation will be somewhat lower and inflation a little higher. New information provides no clear indications of a change in the policy rate path.

Trade tensions continue to be a source of considerable uncertainty about global developments, and foreign interest rates are very low. The krone has depreciated considerably, and the impact of the depreciation on price and wage inflation is uncertain. The Norwegian economy seems to be near a cyclical peak, where the rise in capacity utilisation is followed by a decline. The upswing may continue longer than envisaged if investment growth remains elevated ahead. On the other hand, growth may prove lower than projected, if, for example, global trade tensions deepen and oil prices fall.

The overall outlook and balance of risks suggest that the policy rate be kept unchanged at 1.50%. The forecast indicates that the policy rate will remain at this level ahead (Chart 5.4).

Policy rate forecast broadly unchanged

The policy rate forecast is broadly unchanged from the September *Report*. The krone has been weaker than projected. A weaker krone will push up imported goods inflation and suggests in isolation a higher rate path. On the other hand, the upswing in the Norwegian economy appears to be a little more moderate than envisaged in September. This suggests a lower rate path. The box on page 42 describes the factors behind the changes in the policy rate path.

Both the real and nominal interest rate can influence how monetary policy affects the Norwegian economy. In the analysis, the money market rate is assumed to change little through the projection period, in line with the policy rate forecast (Chart 3.1). In the projection, the real interest rate rises in the coming period before falling back a little through 2020 owing to higher inflation (Chart 5.5).

Inflation is projected to be close to the inflation target in the years ahead, while capacity utilisation gradually declines towards a normal level. Employment remains high through the projection period, ie close to or above what is now considered to be potential employment (see box on page 37).

MODEL-BASED INTERPRETATION OF NEW INFORMATION

In assessing the effects of new information and new assessments on the outlook for inflation and the output gap, a model-based exercise is performed where the policy rate forecast from the previous *Report* is held constant. Norges Bank's macroeconomic model NEMO¹ is used in this exercise, where updated projections for the current and next quarter are applied. For exogenous variables, updated projections for the entire projection period are used and comprise the following variables: foreign import growth, external inflation, foreign interest rates, oil prices, domestic money market premiums, domestic public demand and domestic petroleum investment.

The krone has for some time been weaker than projected in the *Monetary Policy Report*. The forecasts are based on the assumption that the conditions that have been weighing on the krone will contribute to keeping the krone weak in the years ahead. The weak krone may partly be explained by persistent global uncertainty. In the model estimations, this is interpreted as a risk premium on the Norwegian krone that gradually diminishes through the projection period. The deterioration in the terms of trade after the oil price fall in 2014 and uncertainty surrounding the future activity level in the oil sector have also probably contributed to keeping the krone weak. In the model estimation, this is taken into account by adjusting the equilibrium exchange rate. A weaker equilibrium exchange rate and lower capacity utilisation implies slightly lower wage growth ahead. See box in MPR 1/19 for a detailed discussion of the effect in NEMO of an adjustment of the equilibrium exchange rate.

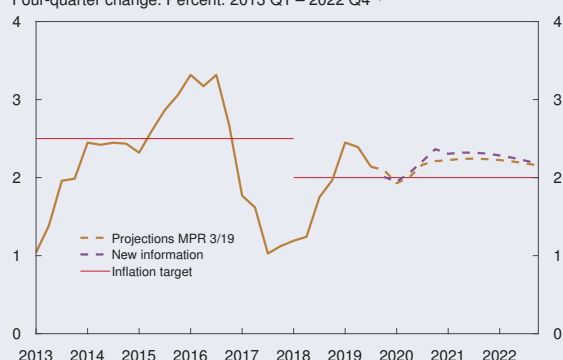
The model-based analysis suggests that with a policy rate forecast unchanged since September, CPI-ATE inflation will be a little higher through the projection period than projected in the September *Report* (Chart 5.A). The upward revision is ascribable to higher imported inflation owing to a weaker krone. Lower wage growth contributes in isolation to slightly lower inflation.

Capacity utilisation will remain lower than in the September *Report* up until the beginning of 2022 (Chart 5.B). This is primarily because the near-term projections have been revised down. Higher petroleum investment and higher exports owing to higher oil prices and a weaker-than-projected krone contribute in isolation to slightly higher capacity utilisation.

Higher inflation and lower capacity utilisation have opposing effects on the policy rate outlook.

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

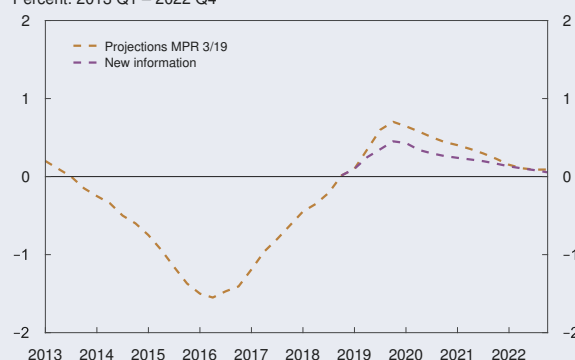
Chart 5.A CPI-ATE.¹⁾ Projections conditional on new information concerning the economic development and the policy rate forecast in MPR 3/19. Four-quarter change. Percent. 2013 Q1 – 2022 Q4²⁾



1) CPI adjusted for tax changes and excluding energy products. 2) Projections for 2019 Q4 – 2022 Q4.

Sources: Statistics Norway and Norges Bank

Chart 5.B Estimated output gap¹⁾. Conditional on new information concerning the economic development and the policy rate forecast in MPR 3/19. Percent. 2013 Q1 – 2022 Q4



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

Source: Norges Bank

FACTORS BEHIND CHANGES IN THE POLICY RATE PATH

The main factors behind the changes in the rate path since the *September Report* are illustrated in Chart 5.C. 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 *September Report* and the effect on the new rate path.

The krone has been weaker than projected in the *September Report*. It is assumed that the conditions that have been weighing on the krone will contribute to keeping the krone weak in the years ahead. A weaker krone pulls up the rate path (orange bars).

Petroleum investment appears to be higher in the coming years than projected in the *September Report* and higher than implied by oil price developments in isolation. At the same time, residential mortgage rates have risen less than assumed, which points to slightly higher household consumption. In isolation, this pulls up the rate path slightly. On the other hand, house price inflation has been a little lower than expected. Moreover, employment growth is a little weaker than expected, and the upswing in the Norwegian economy appears to be a little more moderate than previously projected. Changes in demand overall pull down the rate path (dark blue bars).

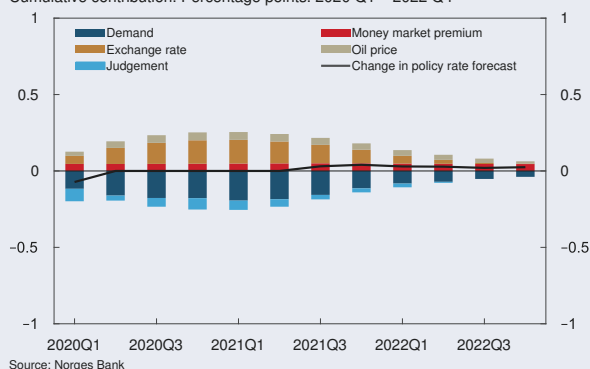
Oil prices have risen since September. Higher oil prices lift activity in oil-related industries and pull up the rate path slightly (beige bars).

The money market premium has been lower than expected and is also expected to remain lower in the period ahead than projected in September. In isolation, this pulls the rate path up slightly (red bars).

Foreign forward rates are somewhat higher than in the *September Report*. On the other hand, it appears that trading partner import growth will be a little lower than expected and that external price and wage inflation will be lower than anticipated. The overall contribution of external growth, prices and foreign interest rates to changes in the rate path is minimal.

In the Executive Board's assessment, the overall outlook and balance of risks suggest a policy rate at close to the current level ahead. This implies a slightly lower policy rate path than indicated by the model-based analysis. The light blue bars reflect the Executive Board's element of judgement.

Chart 5.C Factors behind changes in policy rate forecast since MPR 3/19. Cumulative contribution. Percentage points. 2020 Q1 – 2022 Q4



MONETARY POLICY OBJECTIVES AND TRADE-OFFS

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

The policy rate is set with a view to stabilising inflation 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 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. Nevertheless, 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.

6 Financial stability assessment

– decision basis for the countercyclical capital buffer

Norges Bank has advised the Ministry of Finance to keep the countercyclical capital buffer at 2.5% from the end of 2019.¹ The current countercyclical capital buffer of 2% and the decision to increase the buffer to 2.5% reflect the build-up of financial imbalances over a long period. In the Bank's assessment, financial imbalances are no longer building up and there are now some signs that they are receding. Banks have good profitability, low losses and ample access to wholesale funding. Developments in credit growth and credit standards suggest that enterprises and households have ample access to credit. Banks satisfy the capital requirements and are well positioned to meet the announced capital requirements. The stress test in *Financial Stability Report 2019* shows that banks have the capital to absorb large loan losses and that the increase in the countercyclical capital buffer from 2.0% to 2.5% will make it easier for the banking sector to maintain credit supply in the event of a downturn.

6.1 FINANCIAL IMBALANCES

Financial imbalances no longer building up

Household debt-to-income ratios are high and property prices are elevated. The high level of household debt is a key financial system vulnerability. Household debt growth has gradually slowed and is now close to growth in disposable income. Moderate house price inflation in recent years has reduced housing market vulnerabilities. The slower pace of debt growth and house price inflation may reflect bank credit standards requirements and interest rate increases over the past year. The rapid rise in commercial property prices has slowed. Looking ahead, the higher interest rate level and moderate house price inflation are expected to continue to curb debt growth. Developments in the commercial real estate (CRE) market imply that prices will likely continue to rise more moderately than previously. Our assessment is that financial imbalances are no longer building up and that there are now some signs that they are receding.

In its work to prepare the decision basis for the countercyclical capital buffer, the Bank analyses financial imbalances to assess time-varying systemic risk. Norges Bank's heatmap is a useful starting point for such an analysis. The heatmap signals whether there

are areas the Bank should focus on in particular. Developments in the CRE market and household debt service ratios, ie the ratio of interest and normal principal payments to disposable income, have long signalled high risk, while recent developments in the housing market have signalled low risk (see box on page 53).²

High household debt is a key financial system vulnerability

In Norway, credit in the mainland economy has long risen faster than GDP (see credit indicator in Chart 6.1), although the difference has narrowed in recent years. The credit gap, which shows the difference between the indicator and an estimated trend, is slightly higher than in 2018 Q3 (Chart 6.2).

Household debt-to-income ratios have been rising for a long period and are at a historically high level (Chart 6.3). Households are therefore vulnerable to a sharp fall in income or a marked rise in the interest rate level. Most households have the financial leeway to either defer principal payments, draw down financial buffers or tighten consumption if they are exposed to shocks. The risk of a large number of households tightening consumption at the same time constitutes a systemic risk. Norges Bank regards

1 See Norges Bank's letter: Advice on the countercyclical capital buffer 2019 Q4. Norges Bank published a revised framework for the elements that should be included in the decision basis for the Bank's advice on the countercyclical capital buffer on 16 December 2019 (see box on page 54). The Bank's advice is based on an assessment of the following four main areas: (i) developments in financial imbalances, (ii) access to credit, (iii) banks' capacity to absorb losses and (iv) the effect of a change in the buffer requirement on banks and the economy.

2 Non-bank financial institutions also signal high risk in the heatmap. One reason for this is the increase in credit to the private sector from life insurance companies. In the Bank's assessment, the increase does not give cause for concern because the increase is from low levels. Nevertheless, it is important to monitor developments because rising credit growth in the non-bank sector can be a source of systemic risk.

household debt as a key financial system vulnerability in Norway (see *Financial Stability Report 2019*).

Household debt growth has gradually slowed in recent years and is now close to growth in disposable income (Chart 6.4). In early 2019, debt growth was at its lowest level for over 20 years. Debt growth has fallen further since then, to 5.0% in October, partly because the start of the period for converting student loans to grants was changed from November to July. Statistics Norway estimates that this will pull down 12-month growth by 0.2 percentage point in the period to November 2019.

The policy rate rises in the past year have led to a slightly higher interest burden, ie the ratio of interest expenses to disposable income (Chart 6.3). However, although from a historical perspective the interest burden is still low because the interest rate level remains low, interest rate increases now have a stronger impact on household interest burdens than previously owing to high debt-to-income ratios. For any given loan term, a larger share of household disposable income is being used for principal payments.

Tax assessment data for 2017, which are the most recent household data available, show that the share of households with a debt-to-income ratio above five and the share of debt held by these households

Chart 6.1 Credit as a share of GDP. Mainland Norway. Percent. 1983 Q1 – 2019 Q3

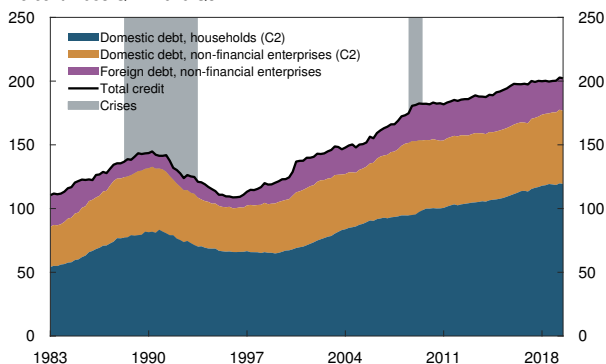


Chart 6.2 Decomposed credit gap. Credit as a share of GDP. Mainland Norway. Gap calculated as deviation from trend. Percentage points. 1983 Q1 – 2019 Q3

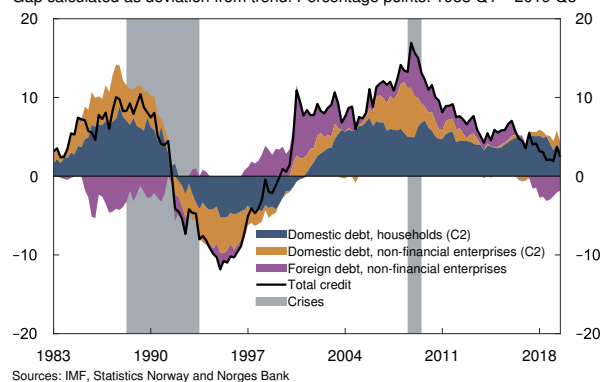
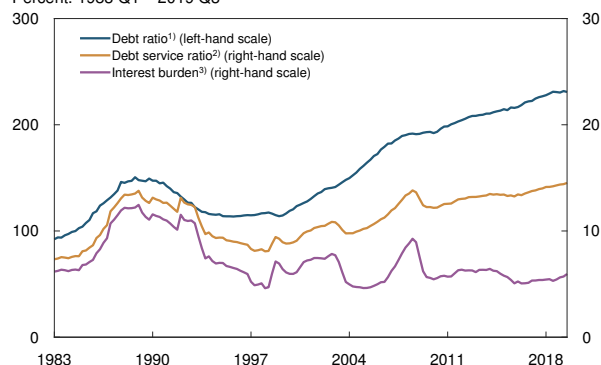
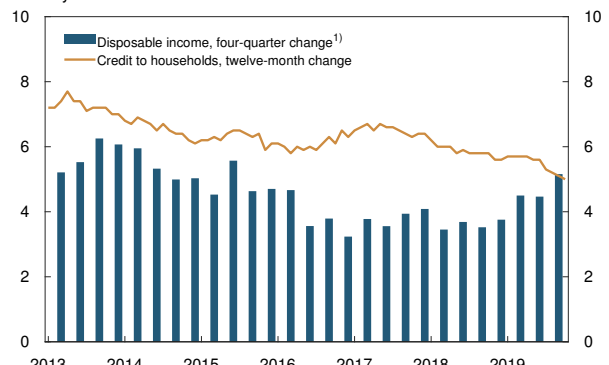


Chart 6.3 Household debt ratio, debt service ratio and interest burden. Percent. 1983 Q1 – 2019 Q3



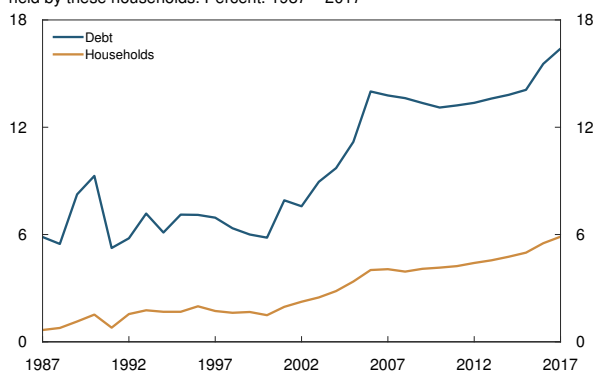
1) Loan debt as a percentage of disposable income. 2) Interest expenses and estimated principal payments as a percentage of disposable income and interest expenses. 3) Interest expenses as a percentage of disposable income and interest expenses.

Chart 6.4 Credit to households and disposable income. Percent. January 2013 – October 2019



1) Four-quarter change in the sum of the last four quarters in the series. To end-2019 Q3.

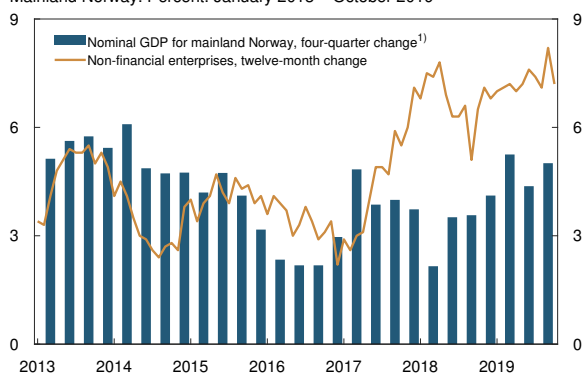
Chart 6.5 Share of households with a DTI ratio¹⁾ above five and share of debt held by these households. Percent. 1987 – 2017



¹⁾ Debt as a share of gross income.
Sources: Statistics Norway and Norges Bank

increased between 2016 and 2017 (Chart 6.5). Since then, household debt growth and house price inflation have been more moderate, which suggests that the build-up of vulnerabilities is slowing. On the other hand, the residential mortgage lending survey published by Finanstilsynet (Financial Supervisory Authority of Norway) indicates that the percentage of borrowers and the percentage of the total loan amount that did not comply with the residential mortgage regulation's debt-to-income ratio (DTI) requirements rose slightly in 2018 and 2019.

Chart 6.6 Domestic credit to non-financial enterprises and nominal GDP. Mainland Norway. Percent. January 2013 – October 2019



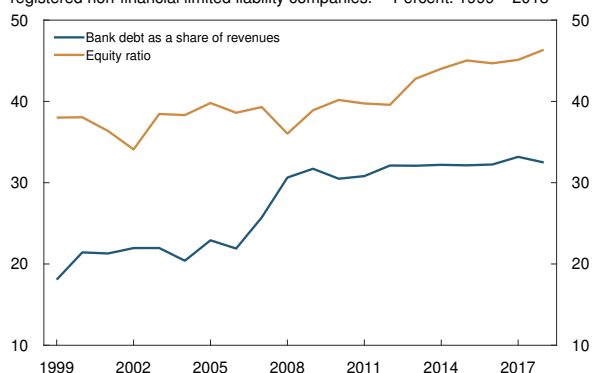
¹⁾ Four-quarter change in the sum of the last four quarters in the series. To end-2019 Q3.
Sources: Statistics Norway and Norges Bank

Consumer debt accounts for only 3%-4% of total household debt. Consumer credit growth was high for a long period, but has slowed markedly since the peak in 2016. It is likely that lower consumer credit growth reflects the introduction by the authorities of a number of measures to regulate consumer credit in recent years and the establishment of credit registers for unsecured debt.

In contrast to developments in household debt, corporate debt developments signal low risk in Norges Bank's heatmap. Aggregate mainland corporate debt grew markedly faster than GDP in the years prior to the banking and financial crisis, but has since been fairly stable at about 80%-85% of GDP (Chart 6.1). Compared with other countries, this is not very high.

Growth in mainland corporate credit from domestic sources picked up through 2017 and has since outpaced GDP growth (Chart 6.6), reflecting growth in business investment (see Section 4.1), with 12-month growth at 7.2% in October.

Chart 6.7 Equity ratio and bank debt as a share of revenues for Norwegian-registered non-financial limited liability companies.¹⁾ Percent. 1999 – 2018



¹⁾ Only companies with total liabilities of more than NOK 1m. Enterprises involved in natural resource extraction are excluded.
Source: Norges Bank

Higher borrowing increases enterprises' vulnerability to abrupt falls in revenue. At the same time, according to accounting data up to 2018, enterprises as a whole appear to be less vulnerable now than in the years prior to the financial crisis (Chart 6.7). Equity ratios have risen steadily over the past ten years. Higher equity ratios increase enterprises' resilience to large losses. In 2007 and 2008, enterprises' bank debt grew markedly faster than revenues. Enterprises' bank debt and revenues have grown at approximately the same pace in recent years.

Growth in credit to households has been slightly lower than projected, while growth in credit to enterprises

has been in line with the September projections. Looking ahead, the higher interest rate level and moderate house price inflation are expected to continue to have a dampening effect on household debt growth (Annex Tables 3e and 4). In addition, growth in credit to enterprises is expected to gradually slow, in pace with declining business investment.

Reduced housing market vulnerabilities

House prices have risen substantially over a long period and are currently about 70% higher in nominal terms than at the peak prior to the financial crisis. High house prices are a key financial system vulnerability. House prices edged down through 2017, and house price inflation has since then been moderate (Chart 6.8), with 12-month house price inflation at between 2% and 4% in recent months. Owing to the rapid rise in house prices prior to 2017, the house price indicator, ie house prices relative to per capita disposable income, is at a high level (Chart 6.9). Since 2017 Q1, the indicator has fallen by 6%. A cooling housing market has reduced the risk of a sudden and more pronounced price fall further out, reducing housing market vulnerabilities somewhat compared with 2018.

Activity in the market for existing homes remains high. A large number of existing homes were listed for sale in 2019 and 2018, reflecting the large number of housing completions. The high supply of existing homes has resulted in a large stock of unsold existing homes (Chart 6.10). At the same time, turnover is high and the stock of unsold homes has decreased somewhat in recent months, also taking into account seasonal variations.

Residential construction activity has been high for a number of years, and a large number of new homes were completed in 2018 (Chart 6.11). The Bank's analyses show that residential construction over time is not excessive relative to the rate of household formation and primarily takes place where household formation is highest.³ There have been fewer housing completions than expected so far in 2019. It is assumed that developers have held back projects following a period of weaker new home sales, indicating a more rapid supply-side adjustment than previ-

Chart 6.8 House prices. Twelve-month change. Percent. January 2013 – November 2019

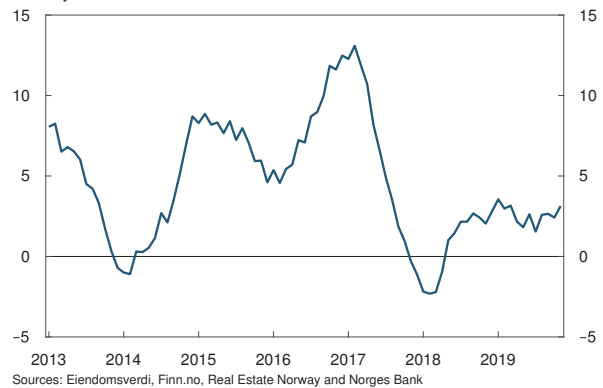


Chart 6.9 House prices relative to per capita disposable income (aged 15 – 74). Index. 1998 Q4 = 100. 1983 Q1 – 2019 Q3

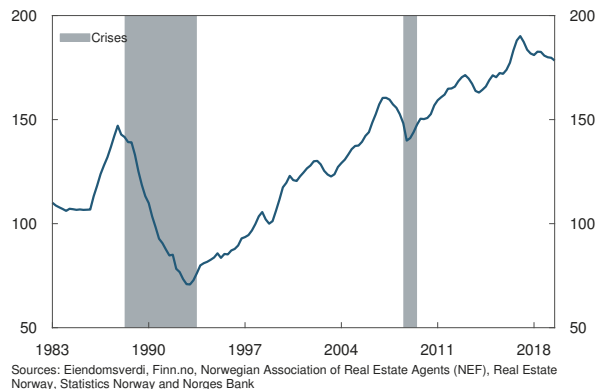
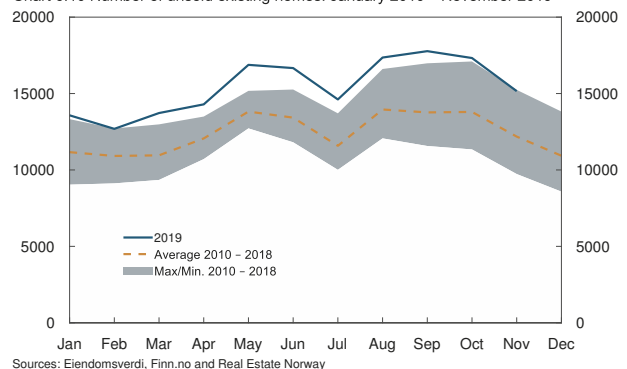
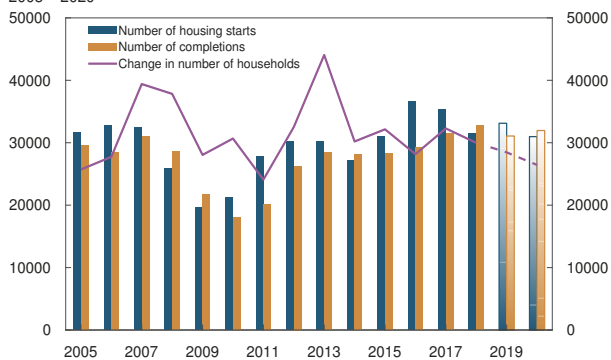


Chart 6.10 Number of unsold existing homes. January 2010 – November 2019



³ See Monetary Policy Report 3/19 and Mæhlum, S., P. M. Pettersen and H. Xu (2018) "Residential construction and household formation". Staff Memo 12/2018. Norges Bank.

Chart 6.11 Housing starts and completions, and annual change in number of households. 2005 – 2020 ¹⁾



¹⁾ Projections for 2019 and 2020. Sources: Statistics Norway and Norges Bank

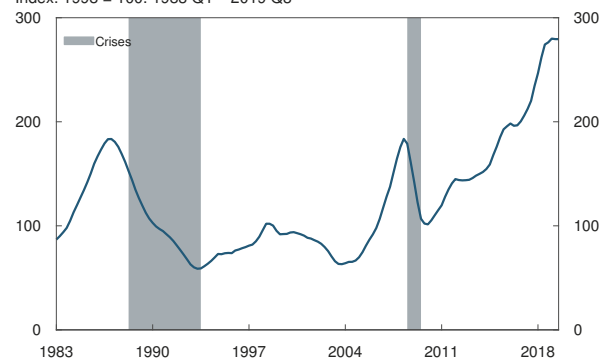
ously assumed. The Bank's projections are now based on the assumption of a larger share of cancelled projects than assumed previously. But it is also assumed that some of the decline in the number of completions is delays or postponements of projects, with some of the projects taking longer than normal to complete.

House price inflation has been slightly lower than projected in the *September Report*. Looking ahead, the higher interest rate level and the large number of completed homes still on the market are expected to contribute to continued moderate house price inflation (Annex Tables 3d and 4).

From strong to moderate commercial property price inflation

High commercial property prices are one of the key financial system vulnerabilities. In Norway and many other countries, banks have incurred large losses on CRE exposures during financial crises. Within the CRE market, the office segment is especially important for financial stability since banks have substantial exposures to this segment. A relatively large share of the stock of office buildings is located in Oslo, and selling prices for prime office space in Oslo are therefore used as an important indicator of vulnerabilities in the CRE market. Historically, these prices have risen considerably ahead of financial crises.

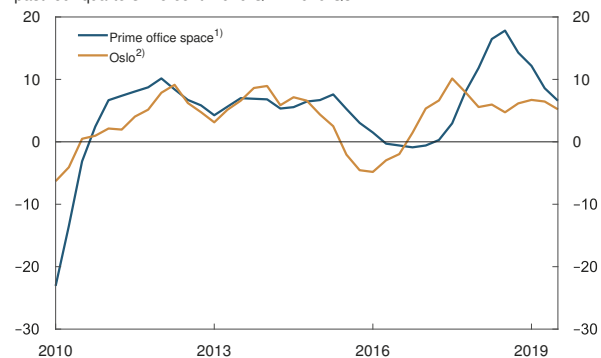
Chart 6.12 Real commercial property prices.¹⁾ Index. 1998 = 100. 1983 Q1 – 2019 Q3



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

Selling prices have risen sharply for a number of years, but the rise has slowed in the past year (Chart 6.12). Selling prices are calculated using observed rents and estimated yields. After many years of falling long-term interest rates and falling yields, CRE yields have remained more or less unchanged in recent years. Over the past two years, rents in Oslo have risen sharply (Chart 6.13).

Chart 6.13 Office rents in Oslo. Four-quarter change, moving average over the past four quarters. Percent. 2010 Q1 – 2019 Q3



¹⁾ Market rents according to CBRE. ²⁾ Average rent in signed leases at lease signing date. Sources: Arealstatistikk and CBRE

The office segment in Oslo is heterogeneous, and limited data has made it difficult to assess the extent to which prices for prime office space are representative for the office segment as a whole and identify the drivers of rents and yields. A quality-adjusted rental price index has been developed by the Bank using quarterly rental data based on actual leases for

around two-thirds of the office market in Oslo.⁴ Such an index allows a more accurate comparison over time as it controls for property characteristics such as location and quality.

Rents for prime office space in Oslo have moved in the same direction as the quality-adjusted index for Oslo as a whole (Chart 6.14). At the same time, prime rents rose more sharply both during the financial crisis and around 2018. Higher volatility in prime rents is as expected and indicates that the willingness to pay for the best office space is more cyclical than for non-prime office space. Rental developments in this segment can therefore provide a signal when risk is building up. The results support Norges Bank's practice of using rents in the prime office space segment as an indicator of financial imbalances.

The difference in rent inflation between prime office space and Oslo as a whole in 2017–2018 suggests that the rise in selling prices was particularly strong in this segment in this period. According to market participants' figures⁵, the decline in rental yields for the prime segment in the period 2015–2017 was also more pronounced than for the non-prime office segment. In sum, this indicates that selling prices for prime office space have for several years risen more rapidly than selling prices for office space in Oslo as a whole.⁶

The risk of a marked fall in selling prices will depend on whether rents and yields are in line with traditional explanatory variables. The Bank has constructed a model to analyse the drivers of office rents in Oslo. The model estimates an equilibrium rent based on developments in explanatory variables such as employment and the supply of office space.⁷ Chart 6.15 shows that actual rents have tracked the estimated equilibrium rent closely. In periods of deviation, the results indicate that rents quickly adjust back to the equilibrium. The results suggest that developments in the office rental market in Oslo as a whole are closely in line with developments in the economy.

Chart 6.14 Office rental price indexes for Oslo. Four-quarter moving average. Index. 2011 Q1 = 100. 2005 Q1 – 2018 Q4

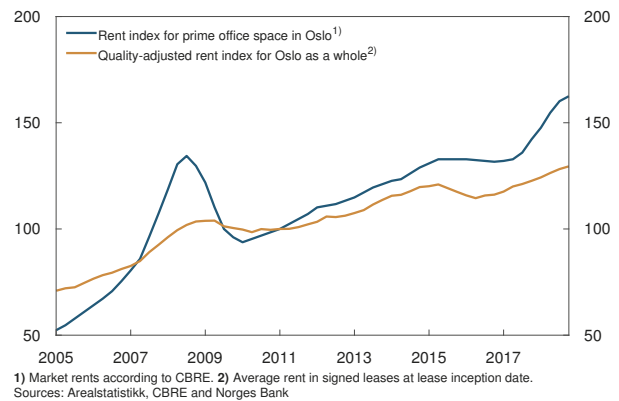


Chart 6.15 Quality-adjusted rents and estimated equilibrium rent.¹⁾ Index. 2010 Q1 = 1. 2004 Q1 – 2018 Q2

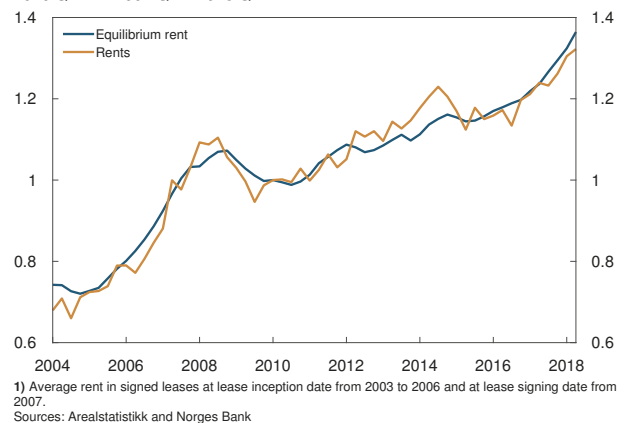
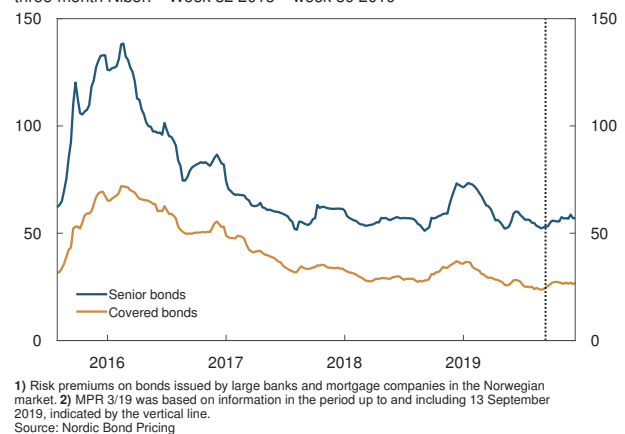


Chart 6.16 Risk premiums in Norway. Five-year maturity, basis points over three-month Nibor.¹⁾ Week 32 2015 – week 50 2019²⁾



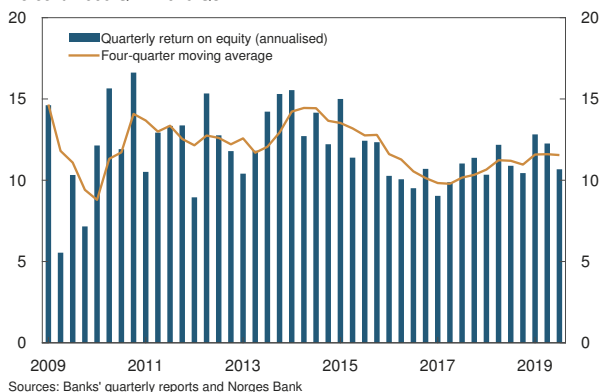
4 See box on page 22 of Financial Stability Report 2019 and Anundsen, A. and M. Hagen (2020) "Hedonic indices for rental prices in the Oslo office market". Forthcoming in *Norges Bank Working Papers*.

5 See for example DNB Næringsmøtting.

6 According to information from market participants, the decline in yields and the rise in rents have been more moderate in the other cities in Norway, which also indicates that selling prices in the rest of the country have shown a more moderate rise.

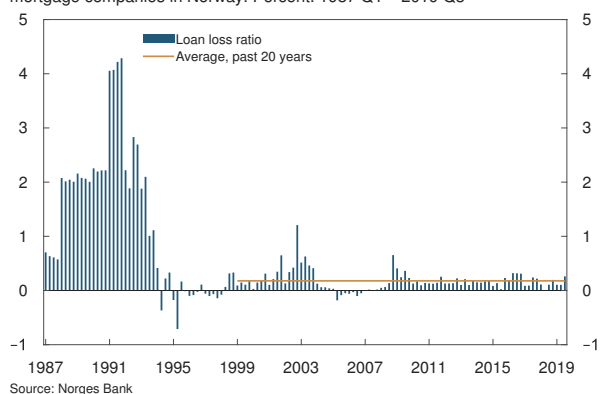
7 See Bjørland, C. and M. Hagen (2019) "What drives office rents?" *Staff Memo 12/2019*. Norges Bank.

Chart 6.17 Return on equity for large Norwegian banks. Percent. 2009 Q1 – 2019 Q3



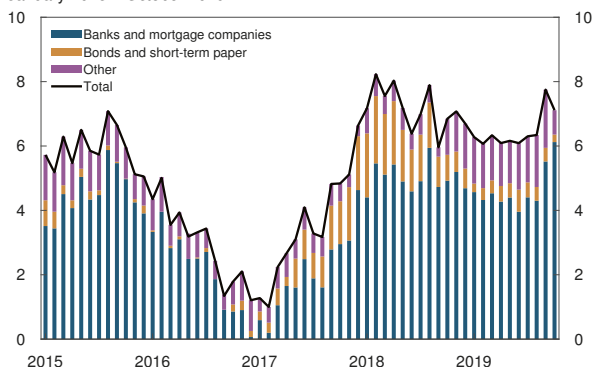
Sources: Banks' quarterly reports and Norges Bank

Chart 6.18 Loan losses as a share of gross loans to customers. All banks and mortgage companies in Norway. Percent. 1987 Q1 – 2019 Q3



Source: Norges Bank

Chart 6.19 Credit to Norwegian non-financial enterprises. Contribution to twelve-month growth in holdings from various sources of funding. Percent. January 2015 – October 2019



Sources: Statistics Norway and Norges Bank

This implies that a marked fall in rents will not occur unless explained by conditions in the real economy.

Commercial property price inflation in Oslo is expected to remain moderate ahead. Office vacancy rates are low, but market participants⁸ expect vacancy rates to edge up in the coming years, resulting in a somewhat slower rise in rents, partly owing to a higher supply of new office buildings in Oslo. Market participants also expect prime yields in Oslo to remain low, driven by strong demand for attractive investment opportunities and continued low long-term interest rates.

6.2 BANKS' ADJUSTMENT AND ACCESS TO CREDIT

The stress test in *Financial Stability Report 2019* shows that banks have the capital to absorb large loan losses and that the increase in the countercyclical capital buffer from 2.0% to 2.5% will make it easier for the banking sector to maintain credit supply in the event of a downturn (see box on page 52).

Bank funding conditions do not appear to be a constraint on lending. Banks have ample access to long-term funding in Norwegian and in international financial markets. The risk premiums Norwegian banks pay for senior bonds and covered bonds are little changed since the *September Report* (Chart 6.16).

Banks' profitability influences their capacity to absorb losses and their lending capacity. Major Norwegian banks have maintained profitability over the past year, and profitability is at a high level compared with other European banks. Return on equity fell in 2019 Q3 compared with Q1 and Q2 (Chart 6.17), primarily reflecting high extraordinary revenues in Q1 and Q2 that boosted return on equity in these quarters. Credit losses increased in Q3, primarily owing to losses on a single DNB exposure. Banks' credit losses in the past year are still low from a historical perspective (Chart 6.18).

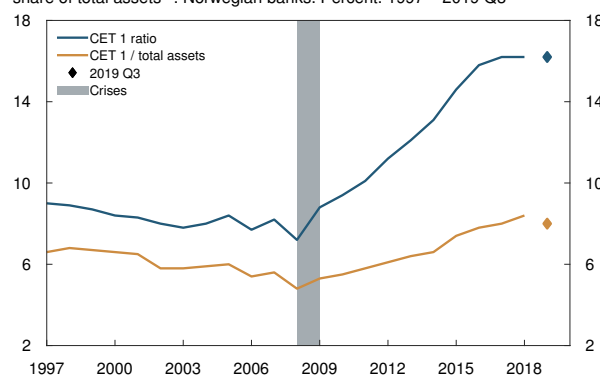
These developments indicate that banks will be able to accommodate households' and enterprises' credit demand ahead. Growth in credit to enterprises from all the banking groups has increased in recent months, pushed up in particular by DNB and branches of

8 See Entra's Consensus Report for 2019 Q3.

foreign banks. In Norges Bank's Survey of Bank Lending, banks report unchanged credit standards and lending conditions for both households and enterprises in 2019 Q3. Banks also expect credit standards to remain unchanged ahead. Enterprises also appear to have ample access to bond market credit, even though the contribution to lending growth from the bond market has been low compared with the contribution from other sources of funding (Chart 6.19).

The countercyclical capital buffer will increase from 2.0% to 2.5% at year-end 2019. Norwegian banks' Common Equity Tier 1 (CET1) capital ratios, ie CET1 capital as a share of risk-weighted assets, have increased considerably since the financial crisis (Chart 6.20). CET1 capital as a percentage of total assets has also increased. Owing to higher capital ratios, banks are now more resilient to losses and market turbulence. Upon incorporation of the EU capital framework (CRR/CRD IV) into Norwegian law on 31 December 2019, the Basel I floor will no longer apply and the SME discount will be introduced in Norway. When the Basel I floor is removed, risk-weighted assets will decrease for banks applying risk weights calculated using the IRB approach.⁹ The SME discount reduces banks' capital requirements for lending to small and medium-sized enterprises. For most large banks, the removal of the Basel I floor and the introduction of the SME discount will entail a reduction in risk-weighted assets and thus lead to an increase in CET1 capital ratios. Leverage ratios, ie CET1 capital as a share of total assets, will not show a corresponding increase. To prevent an undesirable fall in banks' leverage ratios, the Ministry of Finance has decided to increase the systemic risk buffer from 3.0% to 4.5% and introduce temporary average risk weight floors for residential and CRE exposures. These changes in the capital requirements will be effective from end-2020. For smaller banks, the new requirements will not apply until end-2022. Considering the expected regulatory amendments, banks are well positioned to meet the capital targets without having to tighten credit standards.

Chart 6.20 Common Equity Tier 1 (CET1) capital ratio and CET 1 capital as a share of total assets¹⁾. Norwegian banks. Percent. 1997 – 2019 Q3



¹⁾ Consolidated figures are used for banks that are banking groups. Parent bank figures are used for the other banks.
Source: Finanstilsynet (Financial Supervisory Authority of Norway)

⁹ For more on the capital framework, see Annex 2 in *Norway's financial system 2019*.

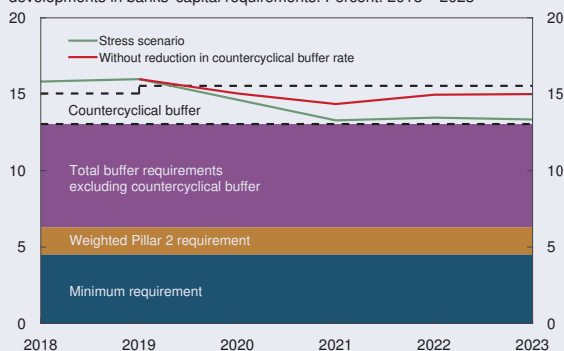
THE STRESS TEST IN FINANCIAL STABILITY REPORT 2019

Historical experience and empirical analyses show that crises and downturns are more severe when preceded by a build-up of financial imbalances.¹ Banks' capacity to absorb losses must therefore be assessed in the light of the level of financial imbalances. The stress test in *Financial Stability Report 2019* analyses the impact of a severe economic downturn on banks' credit losses, capital ratios and behaviour.² In the stress test scenario, financial imbalances have built up over a long period. The macro bank's³ CET1 capital ratio falls markedly in this scenario (Chart 6.A). The fall in the capital ratio is reduced by the macro bank's adjustment to meet the capital requirement, partly by tightening new lending. This amplifies the downturn. However, reducing the countercyclical capital buffer rate from 2.5% to 0% dampens the downturn. If the buffer had been kept at 2.5%, banks would have had to tighten lending further in order to comply with the requirement. The result would have been somewhat weaker GDP growth and a substantial fall in credit supply (Chart 6.B).

The analysis shows the importance of having sufficient time-varying capital buffers before a financial crisis occurs. The increase in the countercyclical capital buffer from 2.0% to 2.5% will make it easier for the banking sector to maintain credit supply in the event of a future downturn (Chart 6.B).

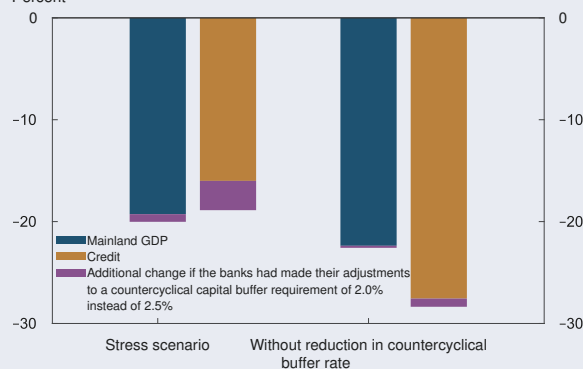
- 1 See for example Jordà, O., M. Schularick and A. Taylor (2013) "When Credit Bites Back". *Journal of Money, Credit and Banking* 45(2), December, pp. 3–28.
- 2 A detailed description of the stress test framework is presented in Andersen, H., K. Gerdrup, R. M. Johansen and T. Krogh (2019) "A macroprudential stress testing framework". *Staff Memo 1/2019*. Norges Bank.
- 3 The macro bank is the sum of nine large banks in Norway.

Chart 6.A The macro bank's Common Equity Tier 1 (CET1) ratio and the CET1 ratio requirement under Pillar 1 and Pillar 2¹⁾ under different assumptions about developments in banks' capital requirements. Percent. 2018 – 2023²⁾



- 1) Pillar 2 requirements for the banks in the stress test are weighted by their risk-weighted assets.
 - 2) Projections for the stress period 2019 – 2023.
- Sources: Finanstilsynet (Financial Supervisory Authority of Norway), SNL / S&P MI and Norges Bank

Chart 6.B Total change through the stress period in mainland GDP and credit under different assumptions about developments in banks' capital requirements.¹⁾ Percent



- 1) Defined as the cumulative deviation from an estimated trend for GDP and the deviation from an estimated trend at the end of the stress period for total credit. Trend GDP growth at constant prices is set at 1.2% and trend credit growth is set at 3.7%.
- Source: Norges Bank

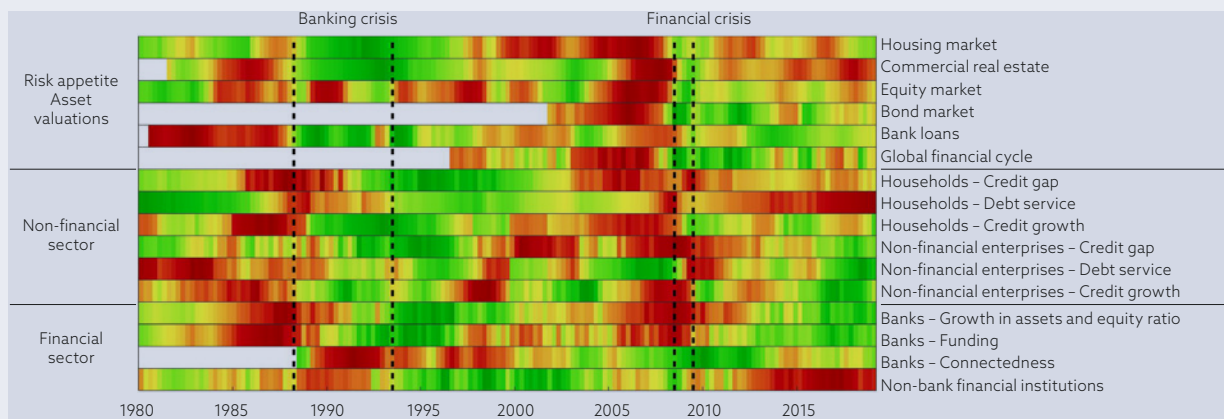
A HEATMAP FOR MONITORING SYSTEMIC RISK

Norges Bank's ribbon heatmap is a tool for assessing time-varying systemic risk in the Norwegian financial system. The heatmap tracks developments in a broad set of indicators for three main areas: risk appetite and asset valuations, the non-financial sector (households and enterprises) and the financial sector.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 representation of systemic risk in the Norwegian financial system compared with historical episodes. The composite indicators are constructed by averaging individual indicators.

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

Chart 6.C Composite Indicators in the heatmap 1980 Q1 – 2019 Q3



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

NORGES BANK'S ADVICE ON THE COUNTERCYCLICAL CAPITAL BUFFER

Norges Bank is responsible for preparing a decision basis and advising the Ministry of Finance on the level of the countercyclical capital buffer for banks four times a year. The countercyclical capital buffer shall as a rule be set at between 0% and 2.5% of banks' risk-weighted assets, but may be set higher in exceptional circumstances. Norges Bank published a revised framework for the elements that should be included in the decision basis for Norges Bank's advice on 16 December 2019 (see *Norges Bank Papers* 4/2019).

Banks should build up and hold a countercyclical capital buffer when financial imbalances are building up or have built up. Large financial imbalances entail a risk of an abrupt decline in demand from households and enterprises and large bank losses. The buffer should be activated at an early stage if there are signs that financial imbalances are increasing.

The objective of the buffer is to increase banks' resilience to losses in a downturn and should not be changed frequently in an attempt to manage credit growth or asset prices. The buffer rate should not necessarily be reduced even if there are signs that financial imbalances are receding. If financial imbalances recede substantially over time and the financial stability outlook is favourable, a reduction of the buffer could be considered. In the event of a severe downturn and clearly reduced access to credit, the buffer rate should be lowered to counteract tighter bank lending. The buffer requirement should be viewed in the light of banks' adjustment to the overall capital requirements.

Advice regarding the level of the countercyclical capital buffer is based on an assessment of four main areas:

- *Financial imbalances* are analysed to assess cyclical systemic risk that could trigger or amplify a severe downturn.
- *Access to credit* is analysed to assess whether there is or may be a need to reduce the buffer because creditworthy enterprises and households are not able to obtain credit.
- *Banks' capacity to absorb losses* is analysed to assess whether the level of the buffer is sufficient given the assessment of financial imbalances.
- *The effect of a change in the buffer rate on banks and the economy* is assessed before advice is given on whether to change the buffer rate.

The decision basis for Norges Bank's advice is presented in Section 6 of the *Monetary Policy Report with financial stability assessment*. In addition, a fixed set of indicators is updated on Norges Bank's website. The assessments and the advice on the level of the countercyclical buffer are based on judgement in addition to indicators and quantitative analyses. The advice is sent to the Ministry of Finance in connection with the publication of the *Report* and is published when the Ministry of Finance has made its decision.



Annex

Monetary policy meetings in Norges Bank

Tables and detailed projections

Monetary policy meetings in Norges Bank

Date ¹	Policy rate ²	Change
18 March 2020		
22 January 2020		
18 December 2019	1.50	0
23 October 2019	1.50	0
18 September 2019	1.50	0.25
14 August 2019	1.25	0
19 June 2019	1.25	0.25
8 May 2019	1.00	0
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

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 <i>Monetary Policy Report 3/19</i> in brackets	Share of world GDP ¹			Percentage change from previous year				
	PPP	Market exchange rates	Trading partners ⁴	2018	2019	2020	2021	2022
US	16	25	9	2.9 (0)	2.3 (0.1)	2 (0.3)	1.7 (0)	1.7 (0)
Euro area	12	16	33	1.9 (0)	1.2 (0.1)	1.2 (0)	1.4 (0)	1.3 (-0.2)
UK	2	4	10	1.4 (0)	1.3 (0.2)	1.2 (0.2)	1.4 (0)	1.4 (-0.1)
Sweden	0.4	0.7	12	2.3 (-0.1)	1.4 (-0.1)	1.2 (-0.2)	1.6 (-0.1)	1.8 (0)
Other advanced economies ²	7	10	18	2.2 (0.2)	1.5 (0.1)	1.6 (0.3)	1.8 (0)	1.8 (0)
China	16	15	6	6.6 (0)	6.1 (0.1)	5.8 (0.1)	5.7 (0)	5.6 (0)
Other emerging economies ³	19	11	12	3.8 (0.1)	2.7 (0.1)	3.8 (0.2)	3.9 (0.1)	3.9 (0)
Trading partners ⁴	72	79	100	2.7 (0.1)	1.9 (0.1)	1.9 (0.1)	2 (0)	2 (-0.1)
World (PPP) ⁵	100			3.6 (0)	3 (-0.1)	3.3 (-0.1)	3.5 (0)	3.6 (0)
World (market exchange rates) ⁵		100		3.2 (0.1)	2.6 (0.1)	2.7 (0)	2.9 (0.1)	2.9 (0)

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 <i>Monetary Policy Report 3/19</i> in brackets	Trading partners ⁴	Percentage change from previous year				
		2018	2019	2020	2021	2022
US	8	2.4 (0)	1.8 (0)	2.2 (-0.1)	2.3 (0)	2.3 (0)
Euro area	33	1.8 (0)	1.2 (0)	1.2 (-0.1)	1.5 (0)	1.6 (0)
UK	6	2.3 (0)	1.7 (-0.2)	1.7 (-0.4)	1.9 (-0.2)	2 (0)
Sweden ¹	13	2.1 (0)	1.7 (0)	1.8 (0)	1.9 (0)	2 (0)
Other advanced economies ²	17	1 (-0.1)	0.6 (-0.1)	1.1 (-0.2)	1.4 (-0.2)	1.6 (0)
China	12	2.1 (0)	2.8 (0.4)	2.3 (0)	2.6 (0)	2.6 (0)
Other emerging economies ³	10	4.4 (0)	4.5 (-0.3)	4.4 (-0.3)	4.3 (-0.2)	4.2 (-0.3)
Trading partners ⁴	100	2 (0)	1.8 (0)	1.8 (-0.2)	2 (-0.1)	2.1 (0)
Underlying inflation ⁵		1.4 (0)	1.4 (0)	1.6 (-0.1)	1.8 (0)	1.8 (0)
Wage growth ⁶		2.6 (0)	2.4 (-0.1)	2.7 (-0.1)	2.7 (-0.1)	2.7 (-0.1)
Prices for consumer goods imported to Norway ⁷		1.4 (0)	1.7 (-0.1)	0.6 (0)	0.6 (0)	0.7 (0)

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. Import weights.

7 Measured in foreign currency terms. Including compositional effects.

Sources: IMF, Thomson Reuters and Norges Bank

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

	Sep	2019			Jan	2020	
		Oct	Nov	Dec	Feb	Mar	
Consumer price index (CPI)							
Actual	1.5	1.8	1.6				
Projections in MPR 3/19	1.4	1.8	1.4	1.5			
Projections in MPR 4/19				1.6	1.8	1.9	1.9
CPI-ATE¹							
Actual	2.2	2.2	2.0				
Projections in MPR 3/19	2.1	2.3	2.0	2.0			
Projections in MPR 4/19				1.9	2.2	1.8	1.9
Imported consumer goods in the CPI-ATE							
Actual	1.2	0.9	0.8				
Projections in MPR 3/19	1.2	1.2	1.1	1.1			
Projections in MPR 4/19				0.8	1.7	0.7	1.1
Domestically produced goods and services in the CPI-ATE²							
Actual	2.6	2.7	2.5				
Projections in MPR 3/19	2.4	2.7	2.4	2.3			
Projections in MPR 4/19				2.4	2.4	2.3	2.2

1 CPI adjusted for tax changes and excluding energy products.

2 The aggregate "domestically produced goods and services in the CPI-ATE" is calculated by Norges Bank.

Sources: Statistics Norway and Norges Bank

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

	2019			2020	
	Q1	Q2	Q3	Q4	
Actual	0.7	0.7			
Projections in MPR 3/19		1.0	0.5		
Projections in MPR 4/19			0.4	0.5	

Sources: Statistics Norway and Norges Bank

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

	2019				2020		
	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Actual	2.2	2.2	2.2				
Projections in MPR 3/19	2.2	2.2	2.2	2.2			
Projections in MPR 4/19				2.2	2.2	2.2	2.2

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

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

	2019				2020		
	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Actual	2.6	2.4	3.1				
Projections in MPR 3/19	2.5	2.8	3.5	3.1			
Projections in MPR 4/19				2.6	2.5	2.6	2.5

Sources: Eiendomsvardi, Finn.no, Real Estate Norway and Norges Bank

Table 3e Credit to households. Twelve-month change. Percent

	2019					2020		
	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Actual	5.2	5.1	5.0					
Projections in MPR 3/19	5.2	5.2	5.2	5.5	5.5			
Projections in MPR 4/19				5.2	5.2	5.1	5.1	5.0

Sources: Statistics Norway and Norges Bank

Table 4 Projections for main economic aggregates

Change from projections in <i>Monetary Policy Report 3 /19</i> 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)	2.2 (0)	2.2 (0.2)	2.2 (0)	2.2 (0)
CPI-ATE ¹		1.6 (0)	2.3 (0)	2.2 (0.1)	2.3 (0.1)	2.2 (0)
Annual wages		2.8 (0)	3.4 (0.1)	3.2 (-0.1)	3.2 (-0.1)	3.3 (-0.1)
Real economy²						
Gross domestic product (GDP)	3531	1.5 (-0.1)	1.0 (-0.3)	2.4 (0.2)	2.0 (0.1)	1.6 (0)
GDP, mainland Norway	2907	2.5 (-0.1)	2.5 (-0.2)	1.9 (0)	1.4 (0.1)	1.4 (0.1)
Output gap, mainland Norway (level) ³		-0.2 (0)	0.3 (-0.1)	0.3 (-0.2)	0.2 (-0.1)	0.1 (0)
Employment, persons, QNA		1.7 (0)	1.7 (-0.1)	1.1 (-0.1)	0.4 (0.1)	0.4 (0.1)
LFS unemployment ⁴ (rate, level)		3.8 (0)	3.6 (0.1)	3.5 (0.1)	3.5 (0)	3.6 (0.1)
Registered unemployment (rate, level)		2.5 (0)	2.3 (0)	2.2 (0)	2.3 (0.1)	2.3 (0)
Demand²						
Mainland demand ⁵	3062	2.1 (0)	2.3 (0.3)	1.4 (-0.4)	1.4 (-0.1)	1.6 (-0.1)
- Household consumption ⁶	1538	2.0 (0)	1.6 (-0.2)	1.6 (-0.7)	2.0 (-0.1)	2.1 (-0.1)
- Business investment	311	6.8 (0)	5.5 (1.7)	0.1 (-2.5)	0.0 (-0.4)	0.9 (-0.3)
- Housing investment	194	-6.1 (0)	1.0 (0.1)	0.5 (-0.1)	1.1 (0)	1.8 (0.3)
- Public demand ⁷	1020	2.5 (0)	2.7 (0.8)	1.8 (0.6)	1.2 (0)	1.2 (0)
Petroleum investment ⁸	153	1.9 (0)	14.5 (0)	4.5 (2.0)	-5.0 (-1.0)	-4.0 (2.0)
Mainland exports ⁹	661	3.3 (-0.1)	6.0 (0.8)	2.4 (0.1)	3.0 (0.2)	3.2 (0)
Imports	1155	1.9 (0)	6.3 (2.0)	2.2 (1.0)	1.8 (-0.7)	2.1 (-0.3)
House prices and debt						
House prices ¹⁰		0.7 (0)	2.6 (-0.1)	2.7 (0.1)	3.4 (0.2)	3.4 (0.1)
Credit to households (C2) ¹¹		5.6 (0)	5.2 (-0.3)	5.2 (-0.2)	5.1 (-0.6)	4.9 (-0.9)
Interest rate and exchange rate (level)						
Policy rate ¹²		0.6 (0)	1.1 (0)	1.6 (0)	1.6 (0)	1.6 (0.1)
Import-weighted exchange rate (I-44) ¹³		104.6 (0)	107.7 (0.7)	109.0 (2.2)	108.1 (1.7)	108.0 (1.7)
Money market rates, trading partners ¹⁴		0.4 (0)	0.5 (0)	0.3 (0)	0.3 (0.1)	0.4 (0.1)
Oil price						
Oil price, Brent Blend. USD per barrel ¹⁵		71 (0)	64 (1)	62 (5)	59 (3)	57 (1)

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 Change from previous period does not correspond to annual change in MPR 3/19 owing to errors in the calculation of annual change in the *September Report*.

11 Credit growth is calculated as the four-quarter change at year-end.

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

13 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.

14 Based on three-month money market rates and interest rate swaps.

15 Spot price for 2018. The price for 2019 is calculated as the average spot price so far in 2019. Futures prices for 2020–2022. Futures prices at 13 December 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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