Chart 1.1a Key policy rate with fan chart\(^1\). Percent. 2010 Q1 – 2020 Q4 \(^2\)

1) The fan charts are based on historical experience and stochastic simulations in Norges Bank’s main macroeconomic model, NEMO. The fan chart for the key policy rate does not take into account that a lower bound for the interest rate exists.

2) Projections for 2017 Q4 – 2020 Q4 (broken line).

Source: Norges Bank
Chart 1.1b Projected output gap\(^1\) with fan chart\(^2\). Percent. 2010 Q1 – 2020 Q4

1) The output gap measures the percentage deviation between mainland GDP and projected potential mainland GDP.
2) The fan charts are based on historical experience and stochastic simulations in Norges Bank’s main macroeconomic model, NEMO.

Source: Norges Bank

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1) The output gap measures the percentage deviation between mainland GDP and projected potential mainland GDP.
2) The fan charts are based on historical experience and stochastic simulations in Norges Bank’s main macroeconomic model, NEMO.

Source: Norges Bank
Chart 1.1c Consumer price index (CPI) with fan chart\(^1\). Four-quarter change. Percent. 2010 Q1 – 2020 Q4 \(^2\)

1) The fan charts are based on historical experience and stochastic simulations in Norges Bank’s main macroeconomic model, NEMO.
2) Projections for 2017 Q4 – 2020 Q4 (broken lines).
Sources: Statistics Norway and Norges Bank

\(^1\) Projections MPR 4/17
\(^2\) Projections MPR 3/17
Chart 1.1d CPI-ATE\(^1\) with fan chart\(^2\). Four-quarter change. Percent. 2010 Q1 – 2020 Q4 \(^3\)

1) CPI adjusted for tax changes and excluding energy products.
2) The fan charts are based on historical experience and stochastic simulations in Norges Bank’s main macroeconomic model, NEMO.
3) Projections for 2017 Q4 – 2020 Q4 (broken lines).
Sources: Statistics Norway and Norges Bank
Chart 1.2 GDP for Norway’s trading partners. ¹) Annual change. Percent. 2010 – 2020 ²)

¹) Export weights, 25 main trading partners.
²) Projections for 2017 – 2020 (broken lines).
Sources: Thomson Reuters and Norges Bank

Projections MPR 4/17
Projections MPR 3/17
Chart 1.3 Three-month money market rates for Norway’s trading partners.¹)
Percent. 2010 Q1 – 2020 Q4 ²)

1) Based on money market rates and interest rate swaps. For information about the aggregate for trading partner interest rates, see Norges Bank Papers 2/2015.
2) Forward rates at 15 September 2017 (broken orange line) and 8 December 2017 (broken blue line).
Sources: Thomson Reuters and Norges Bank
Chart 1.4 Oil price. ¹) USD/barrel. January 2010 – December 2020 ²)

1) Brent Blend.
2) Futures prices (broken lines) are the averages of futures prices for the period 4 December – 8 December 2017 for MPR 4/17 and 11 September – 15 September 2017 for MPR 3/17.
Sources: Thomson Reuters and Norges Bank
Chart 1.5 Oil price\(^1\) and import-weighted exchange rate index (I-44)\(^2\). 1 January 2014 – 8 December 2017

1) Brent Blend. USD/barrel.
2) A positive slope denotes a stronger krone exchange rate.
3) MPR 3/17 was based on information through 15 September 2017, indicated by the vertical line.

Sources: Thomson Reuters and Norges Bank
Chart 1.6 GDP for mainland Norway\textsuperscript{1}) and Regional Network indicator of output growth \textsuperscript{2}). Four-quarter change. Percent. 2005 Q1 – 2018 Q1\textsuperscript{3})

\textsuperscript{1} Seasonally adjusted.

\textsuperscript{2} Reported output growth for the past three months converted to quarterly figures. The quarterly figures are calculated by weighting together three-monthly figures based on when the survey was carried out. For 2017 Q4 expected output growth is estimated by weighting together reported growth over the past three months and expected growth in the next six months. 2018 Q1 is expected growth in the next six months, as measured in November.

\textsuperscript{3} Projections for 2017 Q4 – 2018 Q1 (broken lines).

Sources: Statistics Norway and Norges Bank
Chart 1.7 Growth in employment in the quarterly national accounts and Regional Network. Four-quarter change. Percent. 2005 Q1 – 2018 Q1

1) Reported employment growth for the past three months. Quarterly figures are calculated by weighting together three-monthly figures based on when the survey was carried out. For 2017 Q4, expected employment growth is estimated by weighting together reported growth over the past three months and expected growth in the next three months. 2018 Q1 is expected growth in the next three months as measured in November.

2) Projections for 2017 Q4 – 2018 Q1 (broken lines).

Sources: Statistics Norway and Norges Bank.
Chart 1.8 Three-month money market rate differential between Norway\(^1\) and trading partners\(^2\) and import-weighted exchange rate index (I-44)\(^3\). 2010 Q1 – 2020 Q4 \(^4\)

1) Key policy rate plus Norwegian money market premium. The calculations are based on the assumption that the key policy rate forecast is priced into the money market.

2) Forward rates for trading partners at 8 December 2017 and 15 September 2017. The aggregate for trading partner interest rates is described in *Norges Bank Papers* 2/2015.

3) A positive slope denotes a stronger krone exchange rate.

4) Projections for 2017 Q4 – 2020 Q4 (broken lines).

Sources: Thomson Reuters and Norges Bank

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\(^1\) Key policy rate plus Norwegian money market premium. The calculations are based on the assumption that the key policy rate forecast is priced into the money market.

\(^2\) Forward rates for trading partners at 8 December 2017 and 15 September 2017. The aggregate for trading partner interest rates is described in *Norges Bank Papers* 2/2015.

\(^3\) A positive slope denotes a stronger krone exchange rate.

\(^4\) Projections for 2017 Q4 – 2020 Q4 (broken lines).
Sources: Statistics Norway and Norges Bank
Chart 1.10 Petroleum investment. Annual change. Percent. 2010 – 2020¹)


Sources: Statistics Norway and Norges Bank
Chart 1.11 Unemployment as a share of the labour force. LFS \(^1\) and NAV \(^2\). Seasonally adjusted. Percent. 2010 Q1 – 2020 Q4 \(^3\)

1)Labour Force Survey.
2)Registered unemployment.
3)Projections for 2017 Q4 – 2020 Q4 (broken lines).
Sources: Norwegian Labour and Welfare Administration (NAV), Statistics Norway and Norges Bank
Chart 2.1 Global confidence indicators. Consumer confidence\(^1\) and PMI\(^2\). Seasonally adjusted. Index. January 2007 – November 2017\(^3\)

\(^1\) GDP weights. Index of standardised consumer confidence indexes for selected countries.
\(^2\) GDP weights. Manufacturing PMI for selected countries.
\(^3\) The latest observation for consumer confidence is October 2017.

Sources: Thomson Reuters and Norges Bank
Chart 2.2 Policy rates and estimated forward rates$^1$ in selected countries. Percent. 1 January 2010 – 31 December 2020$^2$

1) Forward rates at 15 September 2017 and 8 December 2017 (broken lines). Forward rates are based on Overnight Index Swap (OIS) rates.
2) Daily data through 8 December 2017. Quarterly data from 2018 Q1.
3) ECB’s deposit rate. Eonia from 2018 Q1.

Sources: Bloomberg, Thomson Reuters and Norges Bank
Chart 2.3 Core inflation\(^1\) and inflation targets in selected countries. Twelve-month change. Percent. October 2017\(^2\)


2) The latest observation for the euro area is November 2017.

Source: Thomson Reuters
Chart 2.4 Yields on ten-year government bonds in selected countries. Percent. 1 January 2010 – 8 December 2017

1) MPR 3/17 was based on information through 15 September 2017, indicated by the vertical line.

Source: Bloomberg
Chart 2.5 Imports for Norway’s trading partners.

Annual change. Percent. 2012 – 2020

1) Export weights. 25 main trading partners.

Sources: Thomson Reuters and Norges Bank
Chart 2.6 Indicator of external inflationary impulses to imported consumer goods (IPC). Foreign currency. Annual change. Percent. 2002 – 2020

1) Projections for 2017 – 2020 (broken lines and shaded bars).
2) The compositional effect captures the negative effect on inflationary impulses when Norway shifts its imports towards countries with low price levels.
Sources: Statistics Norway, Thomson Reuters and Norges Bank
Chart 2.7 Real wages\(^1\) and productivity\(^2\) in the US. Four-quarter change. Percent. Three-quarter moving average. 2009 Q1 – 2017 Q3

1) Real compensation per hour worked.
2) Gross output per hour.

Sources: Thomson Reuters and Norges Bank
Chart 2.8 Unemployment in selected euro area countries. Deviation from average.\(^1\) Percentage points. January 2008 – October 2017


Sources: Thomson Reuters and Norges Bank
Chart 2.9 Unemployment\(^1\) and employment growth\(^2\) in the UK. Percent.
January 2003 – September 2017

1) Unemployed as a share of the labour force.
2) Twelve-month change. Percent.
Source: Thomson Reuters

1) Unemployed as a share of the labour force.
2) Employed as a share of the population aged 15 – 74.
Source: Thomson Reuters

1) Export weights. The index consists of Brazil, India, Indonesia, Poland, Russia, Thailand and Turkey. Sources: Thomson Reuters and Norges Bank
Chart 2.12 Total OECD oil inventories.
In days of forward demand\(^1\). January 2012 – September 2017

1\(^1\) Days of forward demand are calculated using average expected demand over the next three months.
2\(^2\) The difference between the highest and lowest levels in the period 2012 – 2016.

Sources: IEA and Norges Bank
Chart 2.13 Active rigs and crude oil production in the US.¹)

Production. In millions of barrels per day. Week 1 2012 – week 49 2017

¹) The abrupt changes in crude oil production in the autumn of 2017 are primarily attributable to hurricanes.

Source: Thomson Reuters
Chart 3.1 Norwegian three–month money market premium.  

1) Percentage points. Five–day moving average. 1 January 2014 – 31 December 2020

Projections MPR 4/17
Projections MPR 3/17

1) Norges Bank estimates of the difference between the three-month money market rate and the expected key policy rate.
2) Projections for 2018 Q1 – 2020 Q4 (broken lines).
Sources: Bloomberg, Thomson Reuters and Norges Bank
Chart 3.2 Interest rates. Percent. 2010 Q1 – 2020 Q4  

1) Projections for 2017 Q4 – 2020 Q4 (broken lines).
2) Average interest rate on outstanding loans to households and non-financial enterprises for the sample of banks and mortgage companies included in Statistics Norway’s monthly interest rate statistics.
3) Key policy rate plus Norwegian money market premium. The calculations are based on the assumption that the key policy rate forecast is priced into the money market.

Sources: Statistics Norway, Thomson Reuters and Norges Bank
Chart 3.3 Risk premium on high- and low-yield corporate bonds. 5-year term to maturity. Percentage points over three-month money market rate.

Week 1 2014 – week 49 2017

Sources: Nordic Bond Pricing, Stamdata and Norges Bank

Low-yield

High-yield excluding oil
Chart 3.4 Cross-check model for the krone exchange rate.\(^1\) Index.
Week 1 2014 – week 49 2017

1) The cross-check model includes the oil price and one- and ten-year interest rate differential against Norway’s trading partners.
2) Import-weighted exchange rate index. A positive slope denotes a stronger krone exchange rate.
Sources: Bloomberg, Thomson Reuters and Norges Bank
Chart 3.5: Output growth as reported by the Regional Network. Annualised.

Percent

Source: Norges Bank

August 2017, output growth past three months
November 2017, output growth past three months
November 2017, expected output growth next six months

Source: Norges Bank
Chart 3.6 GDP for mainland Norway and Regional Network indicator of output growth¹). Quarterly change. Percent. 2014 Q1 – 2018 Q1 ²)

1) Reported output growth past three months converted to quarterly figures (solid line). The quarterly figures are calculated by weighting together three-monthly figures based on when the survey was carried out. For 2017 Q4 expected output growth is estimated by weighting together reported growth over the past three months and expected growth in the next six months. 2018 Q1 is expected growth in the next six months as reported in November (broken orange line).

2) Projections for 2017 Q4 – 2018 Q1 (broken lines).

3) System for Averaging short-term Models.

Sources: Statistics Norway and Norges Bank

1) Projections for 2017 – 2020 (broken lines).
Sources: Statistics Norway and Norges Bank

Saving ratio
Saving ratio excl. dividend income
Net lending ratio excl. dividend income
Chart 3.8 Household consumption of goods and services. Volume.
Four-quarter change. Seasonally adjusted. Percent. 2010 Q1 – 2017 Q3

Source: Statistics Norway

Sources: Kantar TNS and Opinion
Chart 3.10 Household consumption\(^1\) and real disposable income\(^2\). Annual change. Percent. 2010 – 2020\(^3\)

1) Includes consumption for non-profit organisations.
2) Excluding dividend income. Including income for non-profit organisations. Deflated by the CPI.
3) Projections for 2017 – 2020 (broken line and shaded bars).

Sources: Statistics Norway and Norges Bank
Chart 3.11 House prices and household debt\(^1\). Four-quarter change. Percent. 2005 Q1 – 2020 Q4\(^2\)

1) Domestic credit to households (C2).
2) Projections for 2017 Q4 – 2020 Q4 (broken lines).

Sources: Eiendomsverdi, Finn.no, Real Estate Norway, Statistics Norway and Norges Bank
Chart 3.12 Unsold homes. Number of homes. January 2014 – October 2017

1) Includes only unsold properties in housing projects containing more than 15 units.
Sources: Economics Norway, Eiendomsverdi, Finn.no and Real Estate Norway
Chart 3.13 Housing investment. Annual change. Percent. 2010 – 2020¹)

Sources: Statistics Norway and Norges Bank
Chart 3.14 Business investment by sector. Contribution to growth in the past four quarters compared with the four preceding quarters. Percentage points. 2014 Q1 – 2017 Q3

Source: Statistics Norway
Chart 3.15 Expected change in business investment over next 12 months.¹

¹ Norges Bank’s Regional Network. Index. Weighted average of manufacturing, oil service, retail trade and services.

Sources: Statistics Norway and Norges Bank
Chart 3.16 Business investment and GDP. Annual change. Percent. 2000 – 2020

Sources: Statistics Norway and Norges Bank

1) Projections for 2017 – 2020 (broken lines and shaded bars).
2) Groups of goods and services in the national accounts where the oil service industry accounts for a considerable share of exports.

Sources: Statistics Norway, Thomson Reuters and Norges Bank
Chart 3.18 Employment according to the quarterly national accounts (QNA). Seasonally adjusted. In thousands. 2014 Q1 – 2018 Q1


Sources: Statistics Norway and Norges Bank
1) Includes extraction of crude oil and natural gas, including services, production of metals, electrical equipment and machines, shipbuilding and construction of other means of transport and repairs and installation of machines and equipment. These sectors employed 166 000 persons in 2010 Q1, accounting for 6 percent of total employment in Norway.

Sources: Statistics Norway and Norges Bank
Chart 3.20 Expected change in employment. Regional Network.\(^1\) Quarterly change. Percent. Norges Bank’s expectations survey. Diffusion index.\(^2\)

2010 Q1 – 2017 Q4

1) Expected change in employment next three months.
2) Share of business leaders expecting "more employees" in their own firm in the following 12 months + \((1/2 \times \text{share expecting "unchanged number of employees"})\).

Sources: Epinion and Norges Bank
Chart 3.21 Unemployment as a share of the labour force. LFS\(^1\) and NAV\(^2\). Seasonally adjusted. Percent. January 2014 – March 2018\(^3\)

1) Labour Force Survey.
2) Registered unemployment.
3) Projections for December 2017 – March 2018 (registered unemployment) and October 2017 – January 2018 (LFS).
4) Registered unemployed and ordinary labour market programme participants.

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

Source: Norwegian Labour and Welfare Administration (NAV)

Source: Norwegian Labour and Welfare Administration (NAV)
Chart 3.24 Labour force, employment and alternative labour force\(^1\) as a share of the population (15 - 74 years). Percent. 2007 Q1 – 2020 Q4\(^2\)

1) Sum of employed persons in the quarterly national accounts and ordinary job training participants.
3) Rise in the rate if the rate for each five-year age cohort had been unchanged at the 2013-levels. The curve falls because the population is ageing. 2013 was selected because capacity utilisation in this year is considered to have been close to a normal level. The projections also take account of non-western immigrants, who have a somewhat lower labour force participation rate than the wider population.
4) The curve is a parallel displacement of the 2013 LFS rate.

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

¹) Projections for 2017 (shaded bar).
Sources: Statistics Norway and Norges Bank
Chart 3.26 Capacity constraints and labour supply as reported by the Regional Network. 1) Percent. January 2005 – November 2017

1) Share of contacts that will have some or considerable problems accommodating an increase in demand and the share of contacts reporting that output is being constrained by labour supply.
Source: Norges Bank
Chart 3.27 CPI-ATE\(^1\) by supplier sector.

Twelve-month change. Percent. January 2014 – March 2018 \(^2\)

1) CPI adjusted for tax changes and excluding energy products.
2) Projections for December 2017 – March 2018 (broken lines).
3) Norges Bank’s estimates.

Sources: Statistics Norway and Norges Bank
Chart 3.28 CPI-ATE \(^1\) by goods and services. Contributions to twelve–month change. Percentage points. January 2016 – November 2017

1) CPI adjusted for tax changes and excluding energy products.
Sources: Statistics Norway and Norges Bank
Chart 3.29 CPI-ATE\(^1\) in MPR 4/17 with fan chart given by SAM \(^2\).
Four-quarter change. Percent. 2016 Q1 – 2018 Q1 \(^3\)

1) CPI adjusted for tax changes and excluding energy products.
2) System for Averaging short-term Models.
3) Projections for 2017 Q4 – 2018 Q1 (broken lines).
Sources: Statistics Norway and Norges Bank


2) Due to a change in the statistics at the detailed level, there are breaks in the series in January 2016 and January 2017.

Sources: Statistics Norway and Norges Bank.
Chart 3.31 Annual wage growth.\(^1\) Model estimated contribution from estimated wage equation.\(^2\) Percentage points. 1994 – 2016

1) Annual rise in mainland hourly labour costs as the deviation from average growth in the period.
2) Estimated values are based on a wage equation estimate for the period 1994–2016. The model explains the rise in hourly labour costs by the trend in expected inflation (TBU), registered unemployment, changes in terms of trade and trend productivity.
3) Given by the difference between actual annual wage growth and annual wage growth given the employment rates for the previous year.
4) The bars show the deviations between estimated and actual growth.

Sources: Statistics Norway, TBU and Norges Bank
Chart 3.32 Wage growth, wage norm and wage expectations. Annual change. Percent. 2005 – 2018

2) Social partners’ wage growth expectations for the current year as measured in Q4 each year, and expected wage growth for 2018 as measured in 2017 Q4.
3) Expected wage growth for the current year as reported by the Regional Network in November each year, and expected wage growth for 2018 in November 2017.
1) Projections for 2017 – 2020 (broken lines).
2) Nominal wage growth deflated by the CPI.

Chart 3.34 CPI-ATE$^{1)}$. Four-quarter change. Percent. 2010 Q1 – 2020 Q4$^{2)}$

1) CPI adjusted for tax changes and excluding energy products.
2) Projections for 2017 Q4 – 2020 Q4 (broken lines).
Sources: Statistics Norway and Norges Bank
Chart 3.36 Structural non-oil deficit and 3% of the GPFG \(^1\).

Share of trend GDP for mainland Norway. Percent. 2002 – 2020 \(^2\)

1) Government Pension Fund Global.
2) Projections for 2017 – 2020 (broken line and shaded bars).
Sources: Ministry of Finance and Norges Bank

1) Projections for 2017 – 2020 (broken lines).
Sources: Statistics Norway and Norges Bank

1) Projections for 2017 – 2020. Figures for 2010 – 2016 are from the investment intentions survey by Statistics Norway, deflated by the price index for petroleum investment in the national accounts. The index is projected to fall by 5.5% between 2016 and 2017 and to be unchanged between 2017 and 2018. Sources: Statistics Norway and Norges Bank

1) Projections for 2017 – 2020. Figures for 2010 – 2016 are from Statistics Norway’s investment intentions survey, deflated by the price index for petroleum investment in the national accounts. The projections are based on reports to the Storting, impact analyses, forecasts from the Norwegian Petroleum Directorate, Statistics Norway’s investment intentions survey and current information about development investment.

Sources: Statistics Norway and Norges Bank
Chart 3.40 Real time properties\(^1\) of the model estimate. Percent. 2005 Q1 – 2017 Q3

1) The degree to which projections in real time change due to new information.
2) Lambda = 40 000.
3) The projections and model estimate are based on the information available up to the period the projection applies.

Source: Norges Bank
Chart 3.41 Output gap.\(^1\) Percent. 2005 Q1 – 2017 Q3

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

Source: Norges Bank
Chart 4.1 CPI. Four-quarter change. Percent. 1985 Q1 – 2017 Q3

Sources: Statistics Norway and Norges Bank
Chart 4.2 Interest rates for 10-year government bonds. 14 OECD countries including Norway. 1) Percent. 1985 Q1 – 2017 Q3

1) The other countries are Austria, Belgium, Canada, Denmark, France, Germany, Italy, Japan, Netherlands, Sweden, Switzerland, UK and US. Unweighted average.

2) The real interest rate is the nominal government bond yield less the average inflation rate over the past year.

Sources: OECD and Norges Bank
Chart 4.3a Key policy rate. Projections in MPR 3/17. Percent. 2010 Q1 – 2020 Q4

Source: Norges Bank
Chart 4.3b CPI-ATE\(^1\). Projection conditional on new information and key policy rate forecast in MPR 3/17. Four-quarter change. Percent. 2010 Q1 – 2020 Q4\(^2\)

1) CPI adjusted for tax changes and excluding energy products.
2) Projections for 2017 Q4 – 2020 Q4 (broken lines).

Sources: Statistics Norway and Norges Bank
Chart 4.3c Projected output gap\(^1\). Projection conditional on new information and key policy rate forecast in MPR 3/17. Percent. 2010 Q1 – 2020 Q4

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

Source: Norges Bank
1) The fan charts are based on historical experience and stochastic simulations in Norges Bank’s main macroeconomic model, NEMO. The fan chart for the key policy rate does not take into account that a lower bound for the interest rate exists.

2) Projections for 2017 Q4 – 2020 Q4 (broken line).

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

Source: Norges Bank
Chart 4.4c CPI with fan chart<sup>1</sup>.

Four-quarter change. Percent. 2010 Q1 – 2020 Q4<sup>2</sup>

1) The fan charts are based on historical experience and stochastic simulations in Norges Bank’s main macroeconomic model, NEMO.

2) Projections for 2017 Q4 – 2020 Q4 (broken line).

Sources: Statistics Norway and Norges Bank
Chart 4.4d CPI-ATE\(^1\) with fan chart\(^2\).  
Four-quarter change. Percent. 2010 Q1 – 2020 Q4 \(^3\)

1) CPI adjusted for tax changes and excluding energy products.
2) The fan charts are based on historical experience and stochastic simulations in Norges Bank's main macroeconomic model, NEMO.
Sources: Statistics Norway and Norges Bank
Chart 4.5 Key policy rate. Percent. 2010 Q1 – 2020 Q4

1) Projections for 2017 Q4 – 2020 Q4 (broken lines).

Source: Norges Bank
Chart 4.6 Factors behind changes in key policy rate forecast since MPR 3/17. Cumulative contribution. Percentage points. 2018 Q1 – 2020 Q4

- Domestic demand
- Exchange rate
- Oil price
- Foreign factors
- Prices and wages
- Financial imbalances and uncertainty
- Change in key policy rate forecast

Source: Norges Bank
Chart 4.7 Three-month money market rate in the baseline scenario\(^1\) and estimated forward rates\(^2\). Percent. 2010 Q1 – 2020 Q4\(^3\)

1) Key policy rate in the baseline scenario plus Norwegian money market premiums. The calculations are based on the assumption that the key policy rate forecast is priced into the money market.

2) Forward rates are based on money market rates and interest rate swaps. The orange and blue bands show the highest and lowest rates in the period 4 September – 15 September and 27 November – 8 December, respectively.

3) Projections for 2017 Q4 – 2020 Q4 (broken lines).

Sources: Thomson Reuters and Norges Bank
Chart 4.8 Key policy rate and interest rate path that follows from Norges Bank’s average pattern of interest rate setting. ¹) Percent. 2005 Q1 – 2018 Q1

1) Interest rate movements are explained by developments in inflation, mainland GDP growth, wage growth and three-month money market rates among trading partners, as well as the key policy rate in the preceding period. The equation is estimated over the period 1999 Q1 – 2017 Q3. For further discussion, see Staff Memo 3/2008, Norges Bank.

2) Projections for 2017 Q4 – 2018 Q1 (broken line).

Source: Norges Bank
Chart 4.9 House prices. Index. 2011 Q4 = 100. 2011 Q4 – 2020 Q4


Sources: Finn.no, Real Estate Norway, Statistics Norway and Norges Bank
Chart 4.10 House prices and housing investment. Annual change.\(^1\) Percent. 1979 – 2020 \(^2\)

1) Deviations from average annual growth in the period 1979 – 2016.

Sources: Statistics Norway and Norges Bank
Chart 4.11 House prices and housing investment. Annual change. Percent.
2010 – 2020

1) Projections for 2017 – 2020 (broken lines and shaded bars).

Source: Norges Bank
Chart 4.12 Projected output gap\textsuperscript{1).} Percent. 2010 Q1 – 2020 Q4

The output gap measures the percentage deviation between mainland GDP and projected potential mainland GDP.

Source: Norges Bank
Chart 4.13 CPI-ATE. 1) Four-quarter change. Percent. 2010 Q1 – 2020 Q4 2)

1) CPI adjusted for tax changes and excluding energy products.
2) Projections for 2017 Q4 – 2020 Q4
Source: Norges Bank
Chart 1 Stock of securities\(^1\) held by the Fed, ECB, BoE and BoJ.
In billions of USD. January 2009 – December 2018

\(^1\) Government and government-related securities.
Sources: Bank of England, Bloomberg and Norges Bank
Chart 2 Implied forward rates among trading partners and in Norway.
Percent. 2018 Q1 – 2020 Q4

Sources: Bloomberg and Norges Bank
Chart 3 Risk premiums on covered bonds. Premium over swap rate. Basis points. 5 August 2009 – 5 December 2017

Sources: DNB, Thomson Reuters and Norges Bank
Chart 5.1 Chicago Board Options Exchange Volatility Index (VIX) and the SKEW Index\(^1\). 100-day moving average. Percentage points (VIX) and index (SKEW). 4 January 2010 – 8 December 2017

1) The CBOE SKEW index is a measure of tail risk related to expected S&P 500 returns based on option prices. A value of 100 indicates that the options market has priced in a low probability of very low returns. Rising values express an increasing probability of very adverse outcomes.

Source: Thomson Reuters
Chart 5.2 Credit mainland Norway as a share of mainland GDP. Percent. 1983 Q1 – 2017 Q3

Sources: IMF, Statistics Norway and Norges Bank
Chart 5.3 Decomposed credit gap. Credit mainland Norway as a share of mainland GDP. Deviation from trend with augmented HP filter.\(^1\)
Percentage points. 1983 Q1 – 2017 Q3

\(^1\) One-sided Hodrick-Prescott filter estimated on data augmented with a simple projection. Lambda = 400 000.
Sources: IMF, Statistics Norway and Norges Bank
The debt ratio is loan debt as a percentage of disposable income. The interest burden is calculated as interest expenses as a percentage of disposable income plus interest expenses. The debt service ratio also includes estimated principal payments on an 18-year mortgage. Disposable income is adjusted for estimated reinvested dividend income for 2000 Q1 – 2005 Q4 and reduction of equity capital for 2006 Q1 – 2012 Q3. For 2015 Q1 – 2017 Q2 growth in disposable income excluding dividends is used.

Sources: Statistics Norway and Norges Bank
Chart 5.5 Credit demand and banks’ credit standards.  
Change from previous quarter. Households. 2008 Q1 – 2017 Q3

1) The banks respond on a scale of +/-2. In the aggregated figures, banks are weighted by the size of their balance sheets. Negative values denote lower demand or tighter credit standards.

Source: Norges Bank’s Survey of Bank Lending
Chart 5.6 Credit to households and non-financial enterprises in mainland Norway. Twelve-month change. Percent. January 2014 – October 2017

Sources: Statistics Norway and Norges Bank
Chart 5.7 Domestic credit to non-financial enterprises, by source. Twelve-month change. Percent. January 2014 – October 2017

Source: Norges Bank
Chart 5.8 Debt-servicing capacity\(^1\) and historical averages. Listed companies.\(^2\) Percent. 2003 Q1 – 2017 Q3

1) Earnings before interest, tax, depreciation and amortisation (EBITDA) for the previous four quarters as a percentage of net-interest bearing debt.

2) Norwegian non-financial companies listed on Oslo Børs, excluding oil and gas extraction. Norsk Hydro is excluded to end-2007 Q3.

Sources: Bloomberg and Norges Bank
Chart 5.9 Estimated credit risk, bank debt held by bankrupt enterprises and corporate sector loan losses. Aggregated. Percent. 2007 – 2018

1) Estimated bank debt at risk as a share of total bank debt in the corporate sector.
2) Bank debt held by enterprises declared bankrupt one-two years after the most recently submitted accounts as a share of total bank debt.
3) Loan losses as a share of total corporate lending. Only includes industries used in the model.

Source: Norges Bank
Chart 5.10 House prices relative to disposable income. ¹)
Index. 1998 Q4 = 100. 1983 Q1 – 2017 Q3


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

Sources: Eiendomsverdi, Finn.no and Real Estate Norway

Sources: Eiendomsverdi, Finn.no and Real Estate Norway
Chart 5.13 Stock of unsold existing homes for sale at month-end.

Number of homes

Sources: Eiendomsverdi, Finn.no and Real Estate Norway
Chart 5.14 Total new home sales in Norway.¹) Number of homes

1) Statistics for Norway as from October 2013. Figures of the earlier part of 2013 have been chained back in time using the rise in sales for eastern Norway. The statistics only include homes sold in housing projects of more than 15 units. The statistics cover most of the housing market in eastern Norway and a somewhat smaller share in the other regions.

Source: Economics Norway
Chart 5.15 Commercial property price indicator\(^1\) and selling prices for prime real estate\(^2\). Deflated by the GDP deflator. Index. 1998 = 100. 1983 Q1 – 2017 Q2

1) We have not received figures for commercial property prices in 2017 due to a reorganisation of the statistics. The most recent figures for the commercial property price indicator are from 2016 Q4.

2) Calculated based on average selling prices for the past four quarters. Annual figures 1991–1994 only. Quarterly figures are constructed using linear interpolation.

Sources: CBRE, Dagens Næringsliv, OPAK, Statistics Norway and Norges Bank
Chart 5.16 Rents for high-standard office space in central Oslo.¹)
NOK per sqm. Nominal prices. 2008 – 2019

¹) Calculated as an average of estimates from market specialists.
Source: Entra Consensus Report
Chart 5.17 Banks’ loan losses as a share of gross lending to customers. Quarterly annualised. All banks and mortgage companies in Norway. Percent. 1987 Q1 – 2017 Q3

Source: Norges Bank
Chart 5.18 Large Norwegian banks’ Common Equity Tier 1 (CET1) capital ratios and targets at 2017 Q3. Percent

1) Includes quarterly result for 2017 Q3.

Sources: Banks’ quarterly reports and Norges Bank
Chart 5.19 Domestic credit to non-financial enterprises from banks and mortgage companies. Stock. Twelve-month change. Percent. January 2014 – October 2017

Source: Norges Bank
Chart 5.20 Composite indicators in the heatmap. 1980 Q1 – 2017 Q3

Sources: BIS, Bloomberg, Dagens Næringsliv, DNB Markets, Eiendomsverdi, Finn.no, Norwegian Association of Real Estate Agents (NEF), OECD, OPAK, Real Estate Norway, Statistics Norway, Thomson Reuters and Norges Bank
Chart 5.21 Credit gap. Total credit mainland Norway\textsuperscript{1)} as a share of mainland GDP. Deviation from estimated trends\textsuperscript{2)} Percentage points. 1983 Q1 – 2017 Q3


2) The trends are estimated based on data from 1975 Q4 onwards.

3) One-sided Hodrick-Prescott filter estimated on data augmented with a simple projection. Lambda = 400 000.

4) One-sided Hodrick-Prescott filter. Lambda = 400 000.

Sources: IMF, Statistics Norway and Norges Bank
Chart 5.22 Reference rates for the countercyclical capital buffer under alternative trend estimates. Percent. 1983 Q1 – 2017 Q3

1) One-sided Hodrick-Prescott filter estimated on data augmented with a simple projection. Lambda = 400 000.
2) One-sided Hodrick-Prescott filter. Lambda = 400 000.
Sources: IMF, Statistics Norway and Norges Bank
Chart 5.23 House price gap. House prices relative to disposable income\(^1\) as deviation from estimated trends.\(^2\) Percent. 1983 Q1 – 2017 Q3


2) The trends are estimated based on data from 1978 Q4 onwards.

3) One-sided Hodrick-Prescott filter estimated on data augmented with a simple projection. Lambda = 400 000.

4) One-sided Hodrick-Prescott filter. Lambda = 400 000.

Sources: Eiendomsverdi, Finn.no, Norwegian Association of Real Estate Agents (NEF), Real Estate Norway, Statistics Norway and Norges Bank
Chart 5.24 Commercial property price gap. Real commercial property prices\(^1\) as deviation from estimated trends.\(^2\) Percent. 1983 Q1 – 2016 Q4

1) Estimated selling prices for high-standard office space in central Oslo deflated by the GDP deflator for mainland Norway.
2) The trends are estimated based on data from 1981 Q2 onwards.
3) One-sided Hodrick-Prescott filter estimated on data augmented with a simple projection. Lambda = 400 000.
4) One-sided Hodrick-Prescott filter. Lambda = 400 000.
Sources: Dagens Næringsliv, OPAK, Statistics Norway and Norges Bank
Chart 5.25 Banks’ wholesale funding ratio. Percent. 1983 Q1 – 2017 Q3

1) All banks and covered bond mortgage companies in Norway except branches and subsidiaries of foreign banks.
2) Based on data from 1975 Q4 onwards.
Source: Norges Bank
Chart 5.26 Wholesale funding gap. Banks'\textsuperscript{1}) wholesale funding ratio as deviation from estimated trends.\textsuperscript{2}) Percentage points. 1983 Q1 – 2017 Q3

1) All banks and covered bond mortgage companies in Norway except branches and subsidiaries of foreign banks.
2) The trends are estimated based on data from 1975 Q4 onwards.
3) One-sided Hodrick-Prescott filter estimated on data augmented with a simple projection. Lambda = 400 000.
4) One-sided Hodrick-Prescott filter. Lambda = 400 000.

Source: Norges Bank
Chart 5.27 Estimated crisis probabilities based on various model specifications. 1983 Q1 – 2017 Q3

Source: Norges Bank