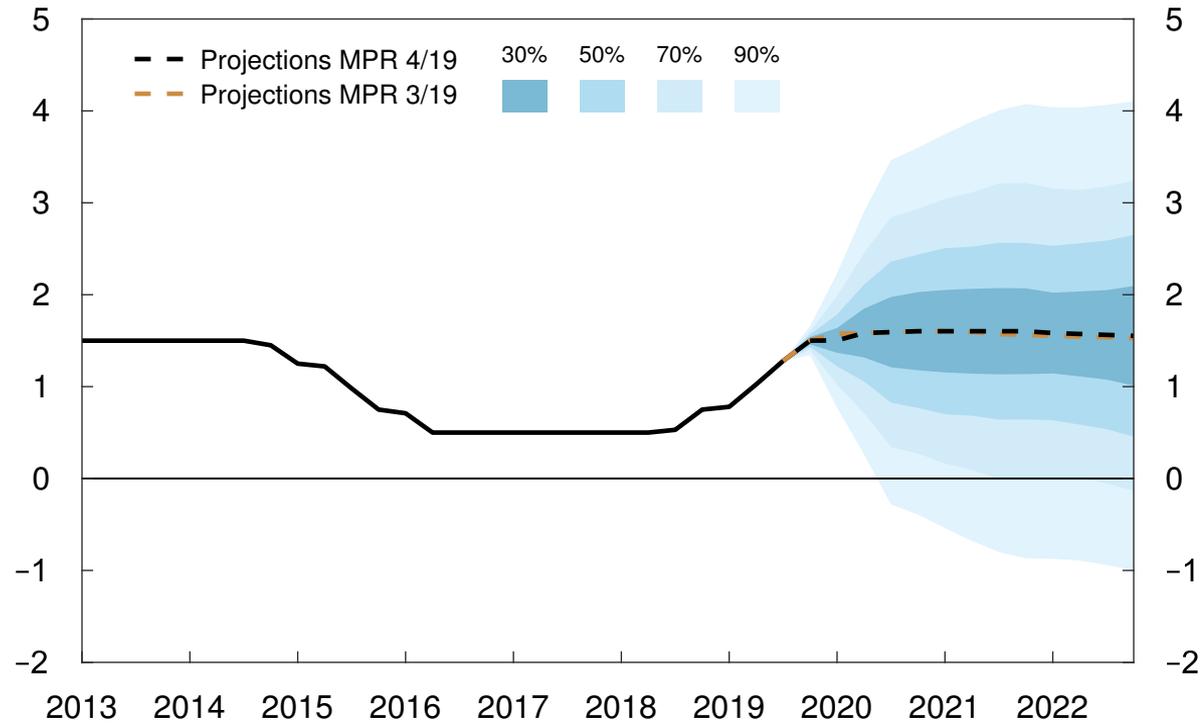


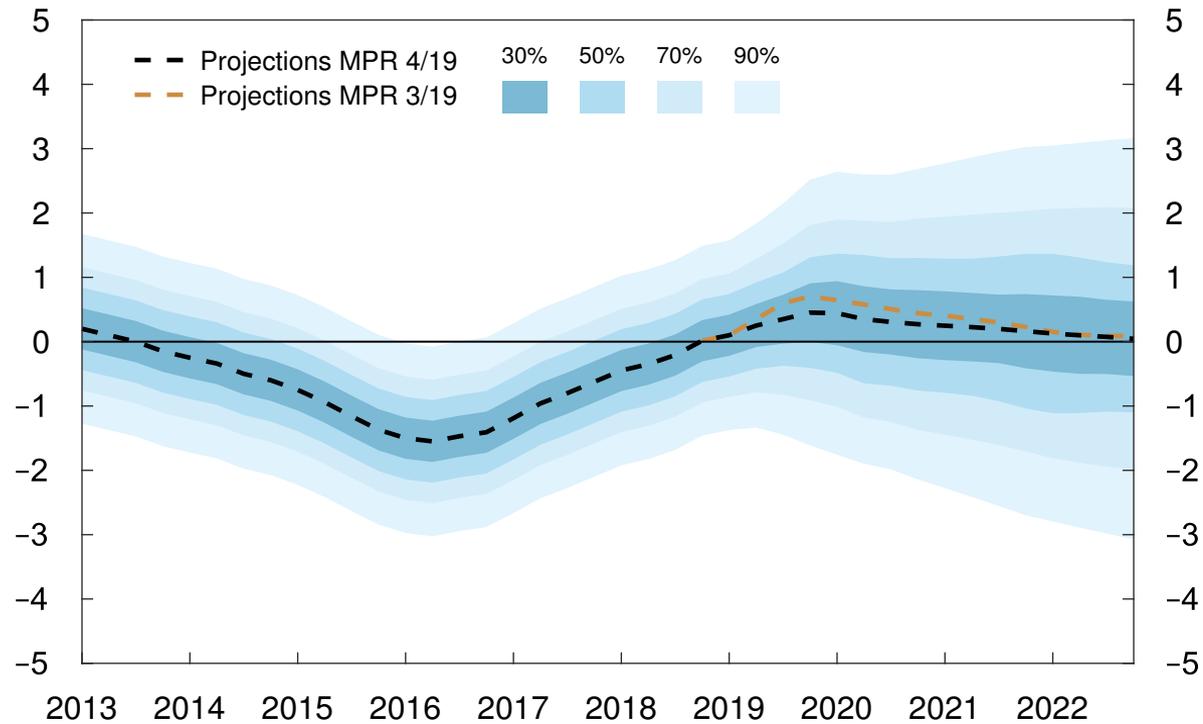
Chart 1.1a Policy rate with fan chart¹⁾.
 Percent. 2013 Q1 – 2022 Q4²⁾



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

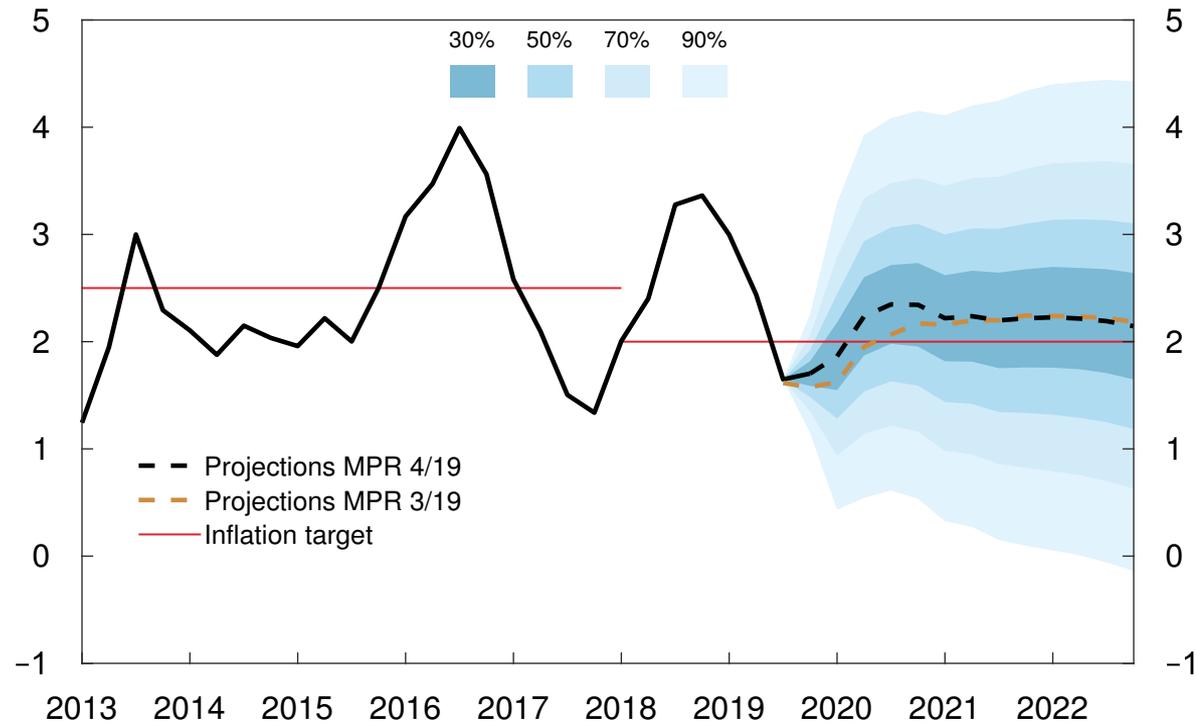
Chart 1.1b Estimated output gap¹⁾ with fan chart²⁾.
 Percent. 2013 Q1 – 2022 Q4



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

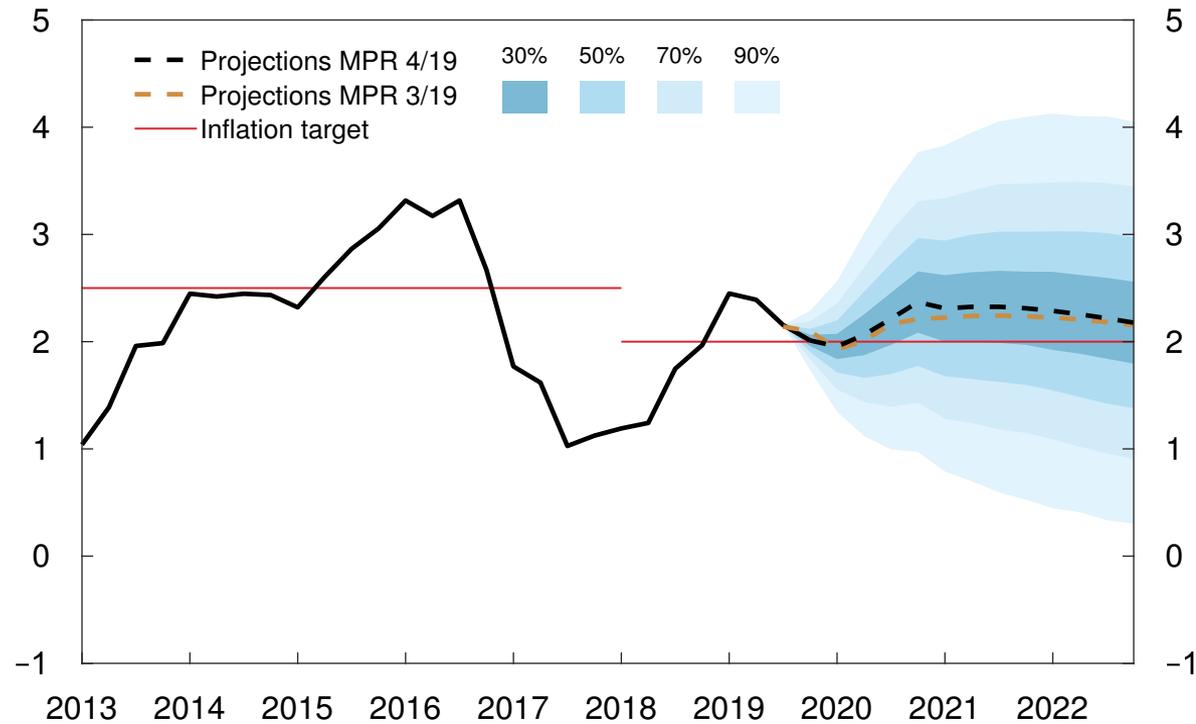
Chart 1.1c Consumer price index (CPI) with fan chart¹⁾.
 Four-quarter change. Percent. 2013 Q1 – 2022 Q4²⁾



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⁾

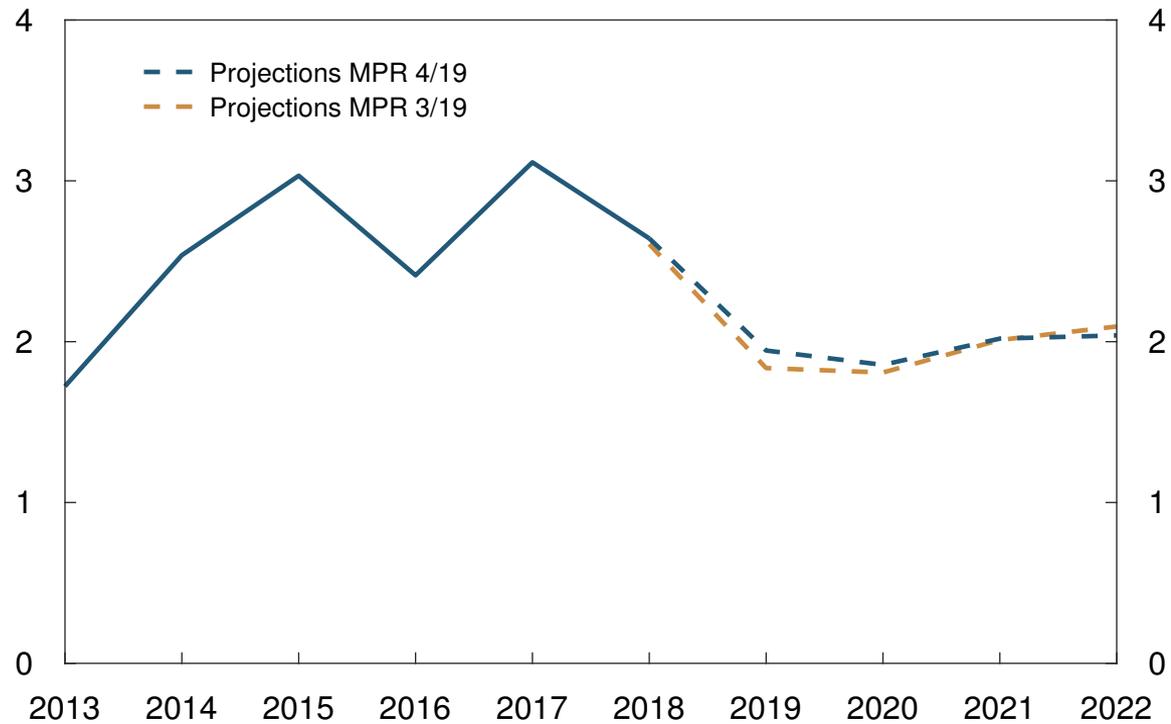


1) CPI adjusted for tax changes and excluding energy products. **2)** The fan chart is based on historical experience and stochastic simulations in Norges Bank's main macroeconomic model, NEMO.

3) Projections for 2019 Q4 – 2022 Q4.

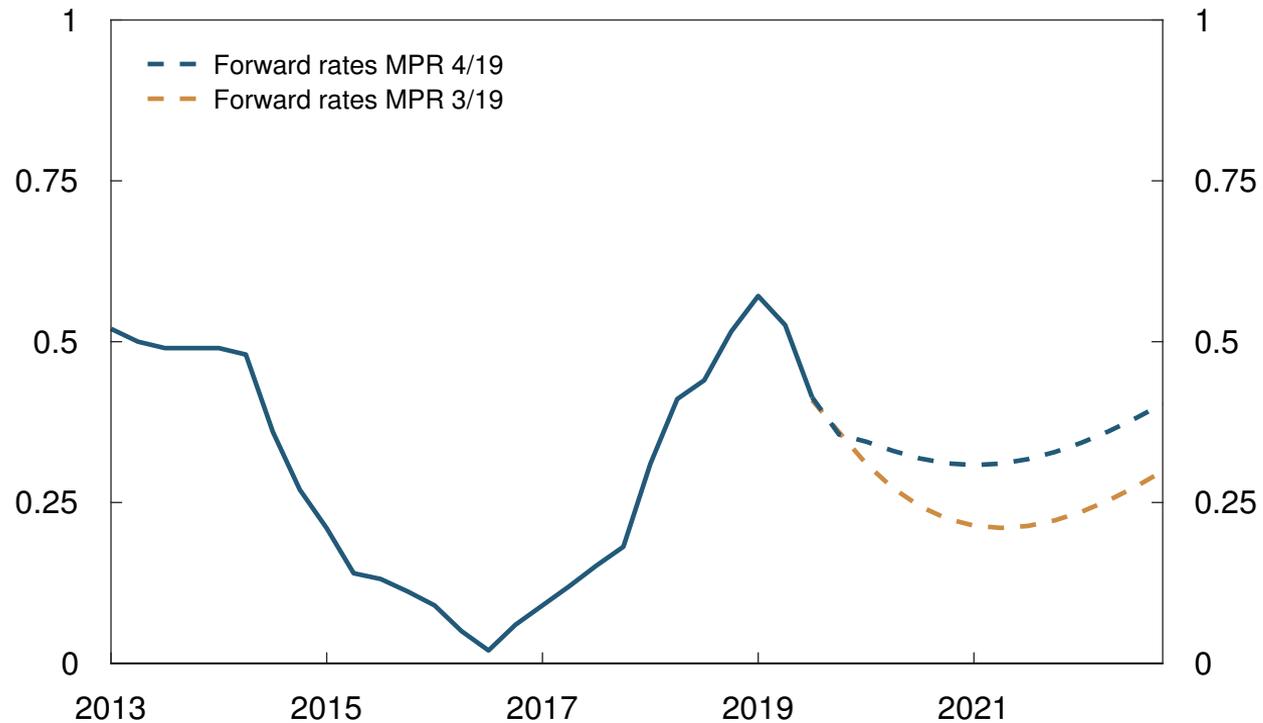
Sources: Statistics Norway and Norges Bank

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



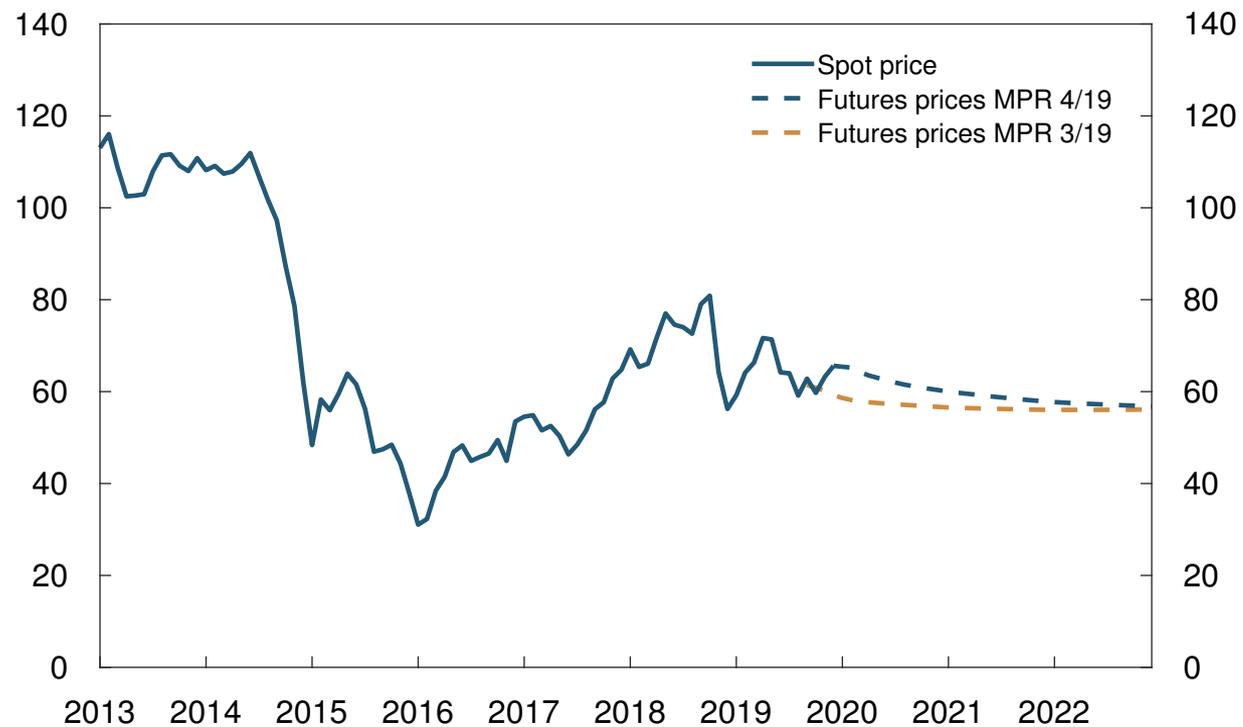
1) Export weights. Twenty-five main trading partners. 2) Projections for 2019 – 2022.
Sources: Thomson Reuters and Norges Bank

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

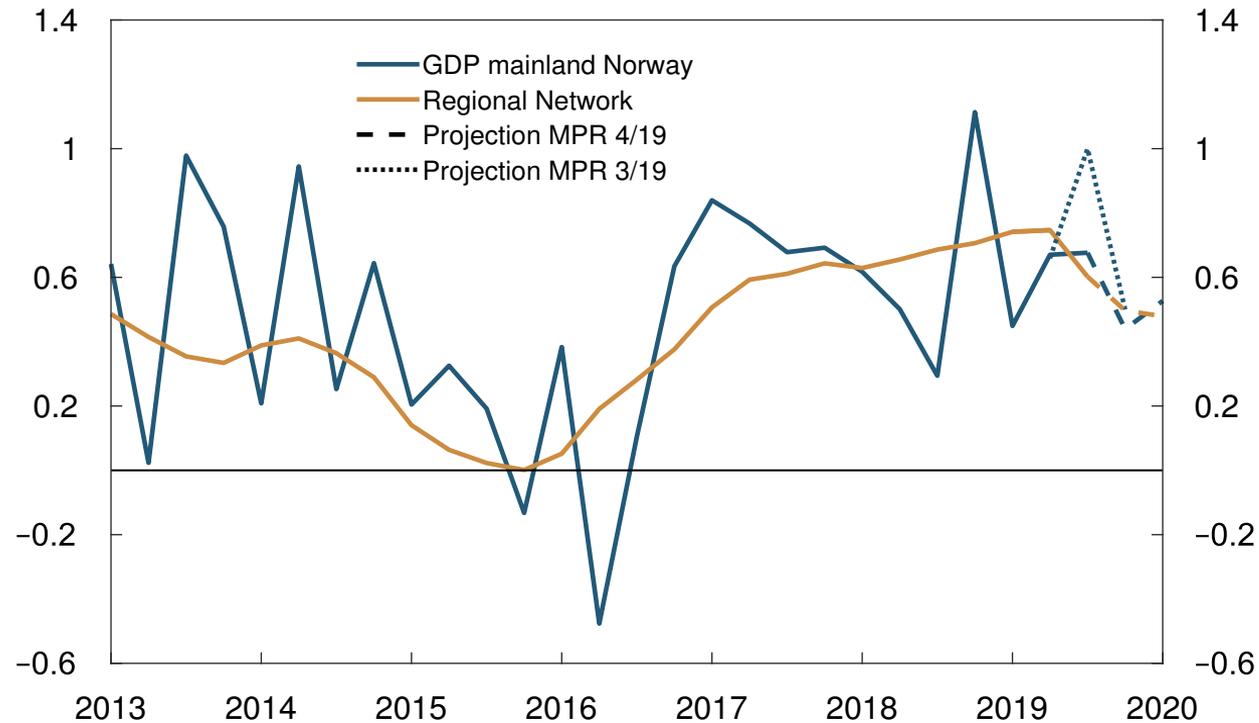
Chart 1.4 Oil price.¹⁾ USD/barrel. January 2013 – December 2022²⁾



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

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

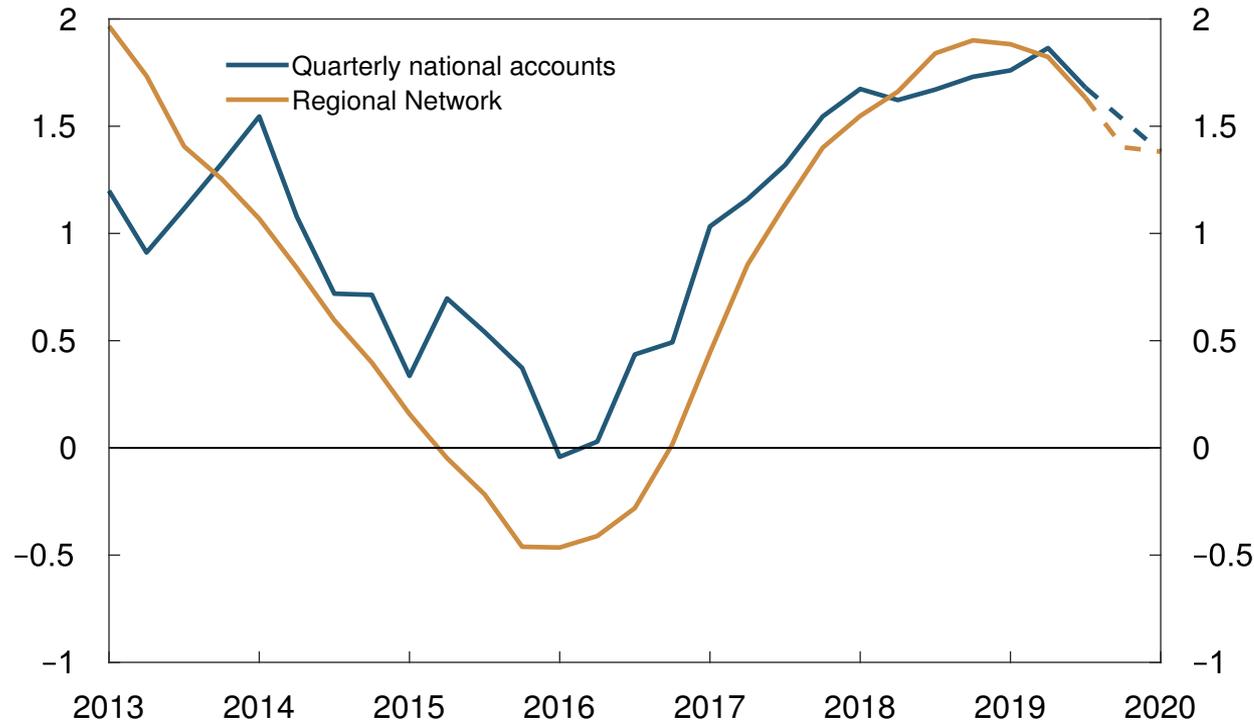


1) Seasonally adjusted. **2)** Reported output growth the past three months converted to quarterly figures. Quarterly figures are calculated by weighting three-month figures on the basis of survey timing. For 2019 Q4, a weighting of historical and expected growth is used, while for 2020 Q1, expected 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⁾



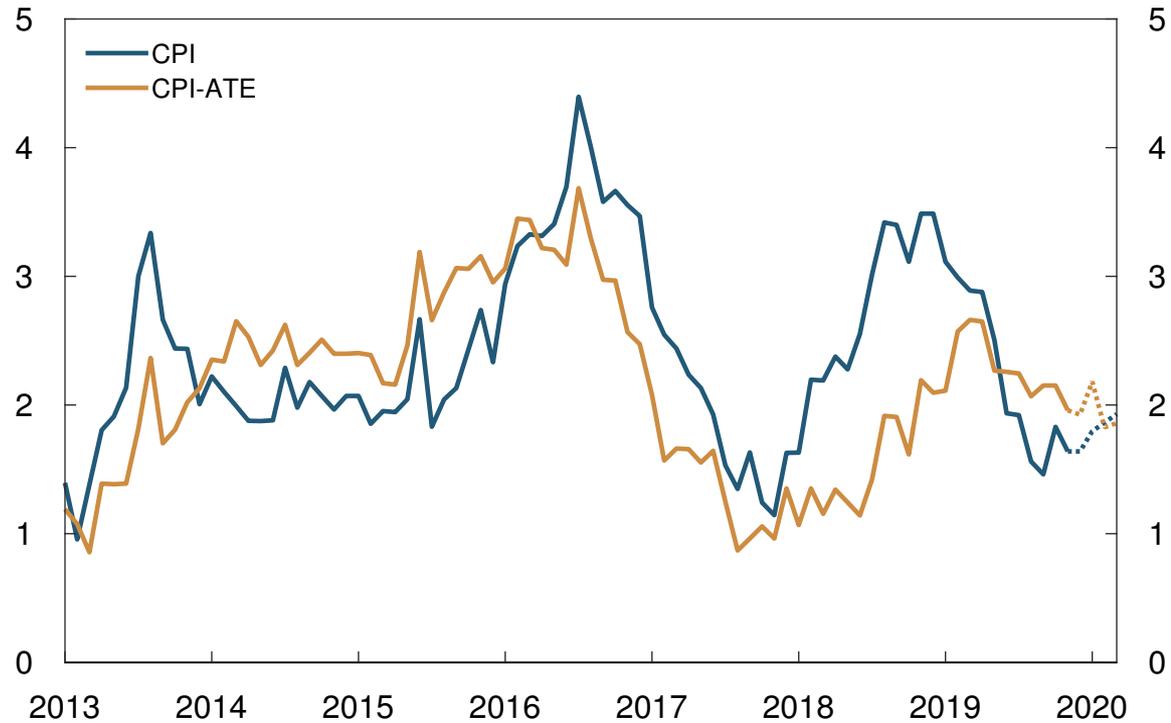
1) Seasonally adjusted. 2) Reported employment growth the past three months converted to quarterly figures. Quarterly figures are calculated by weighting three-month figures on the basis of survey timing. For 2019 Q4, a weighting of historical and expected growth is used, while for 2020 Q1, expected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

3) Projections for 2019 Q4 – 2020 Q1.

Sources: Statistics Norway and Norges Bank

Chart 1.7 CPI and CPI-ATE¹⁾.

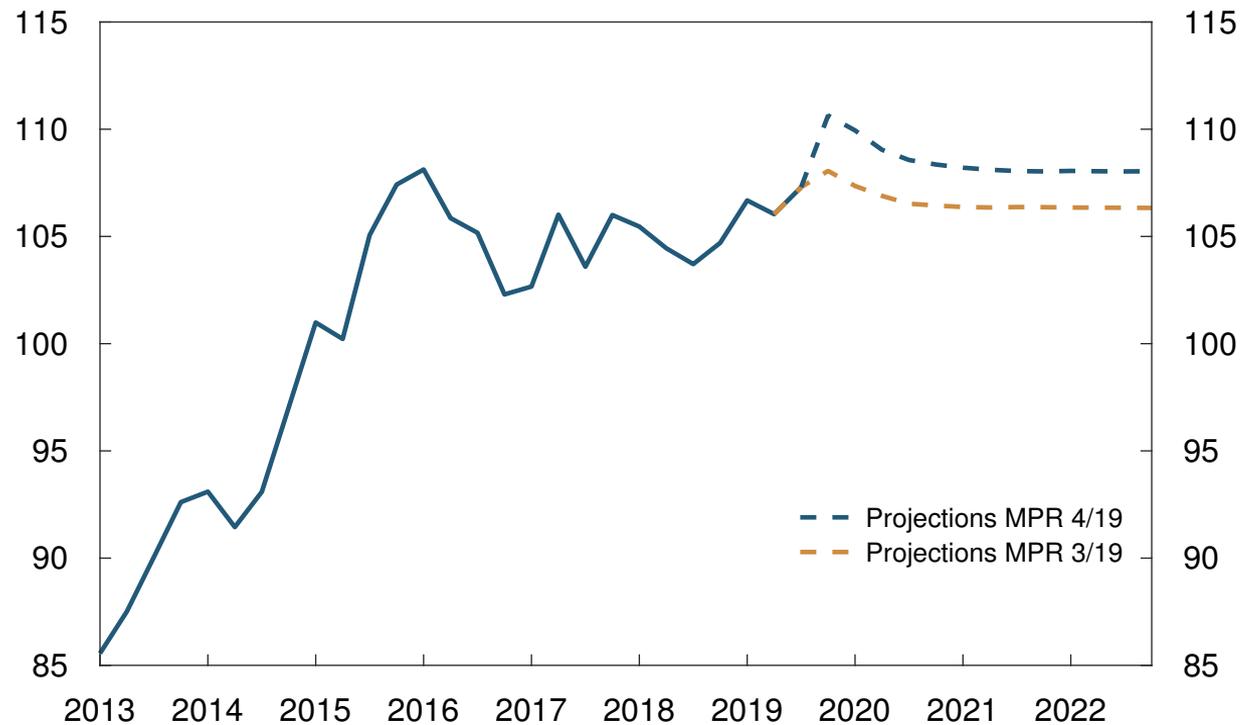
Twelve-month change. Percent. January 2013 – March 2020²⁾



1) CPI adjusted for tax changes and excluding energy products. 2) Projections for December 2019 – March 2020.

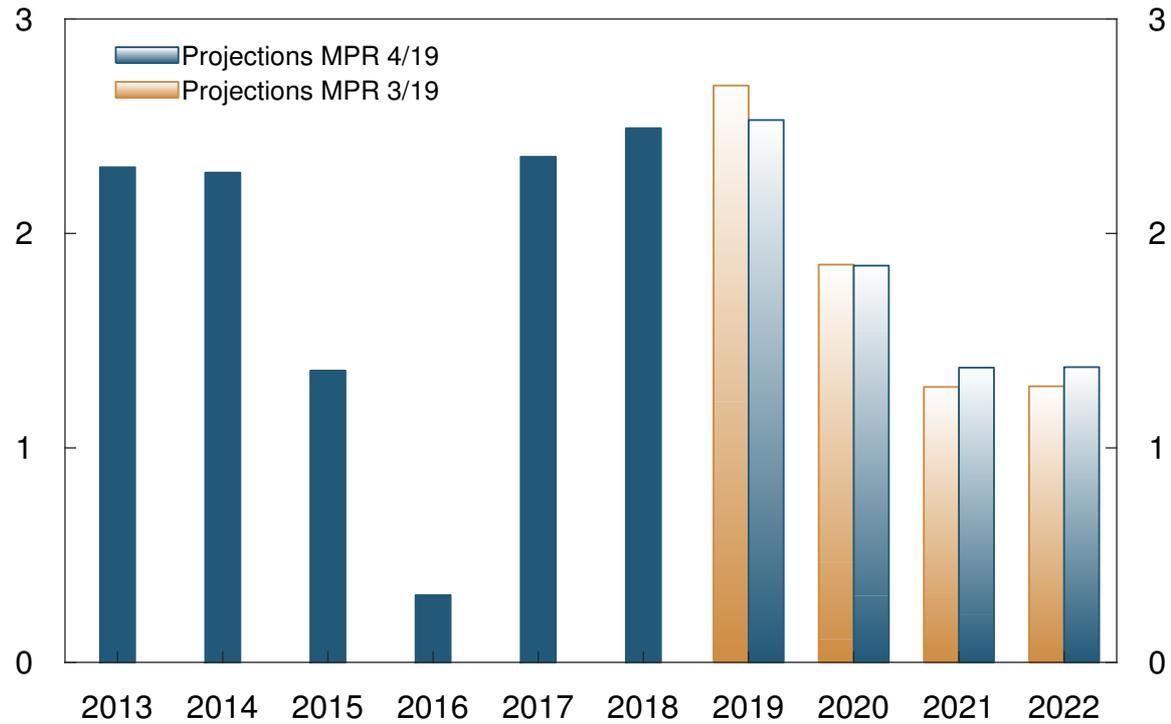
Sources: Statistics Norway and Norges Bank

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

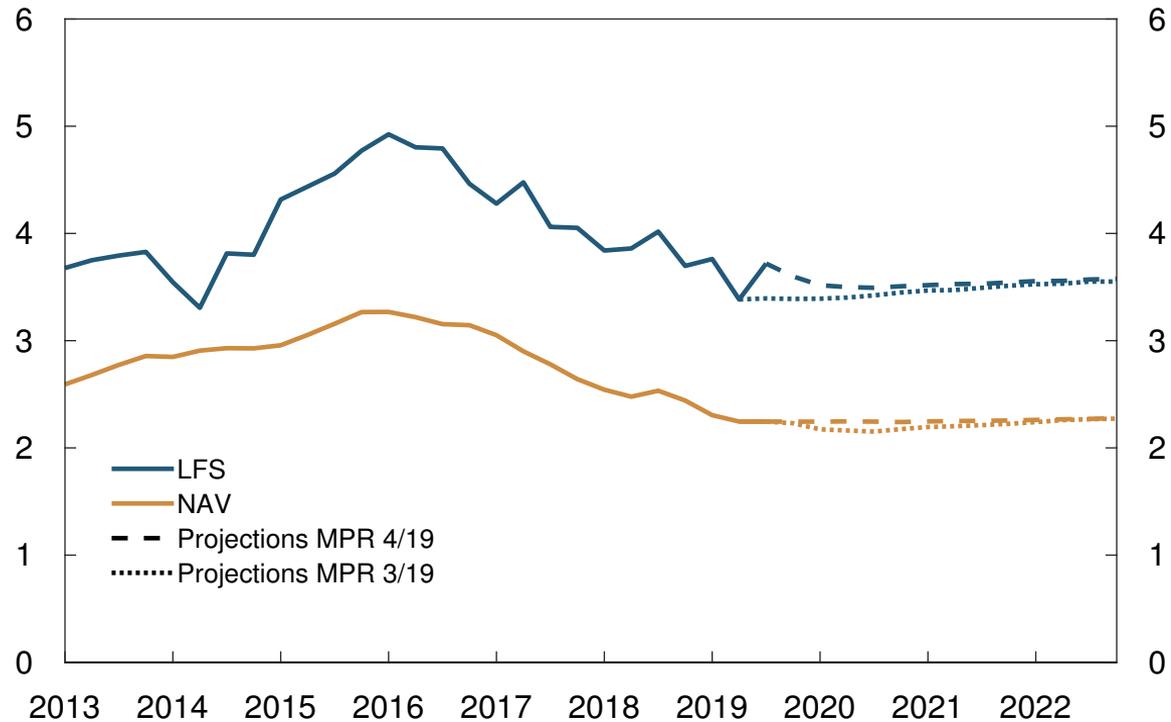
Chart 1.9 GDP for mainland Norway. ¹⁾ Annual change. Percent. 2013 – 2022 ²⁾



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

Chart 1.10 Unemployment according to LFS¹⁾ and NAV²⁾.

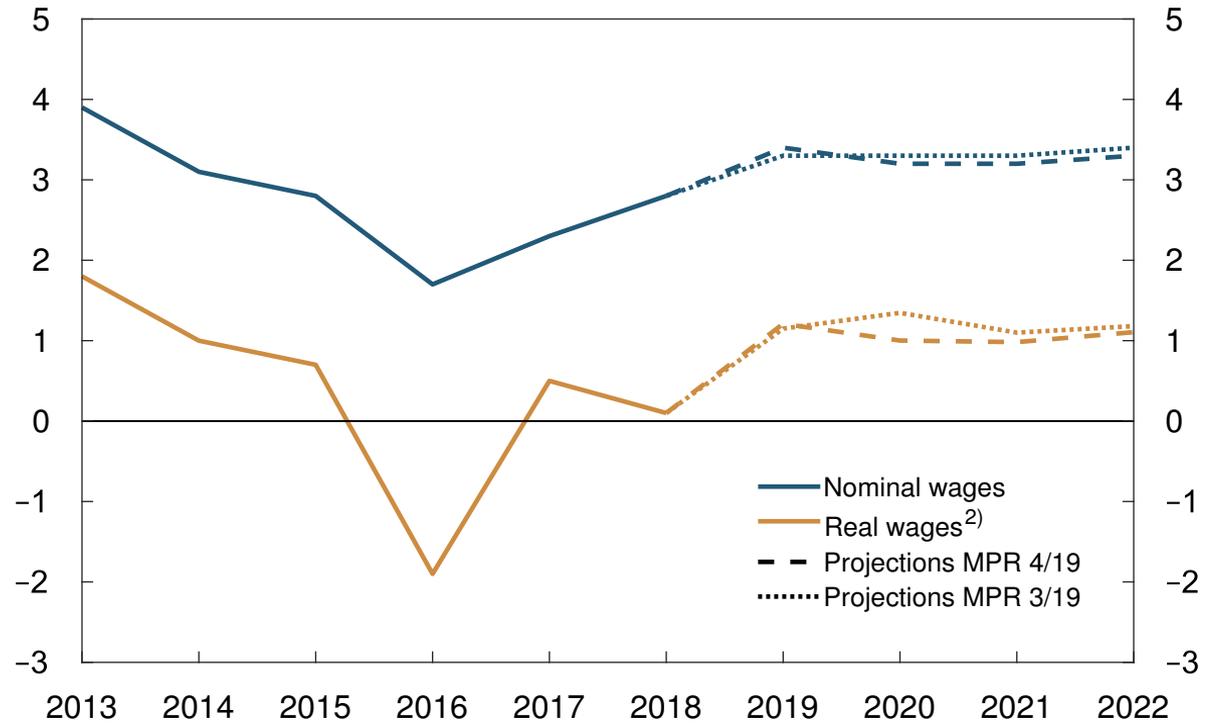
Share of the labour force. Seasonally adjusted. Percent. 2013 Q1 – 2022 Q4³⁾



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

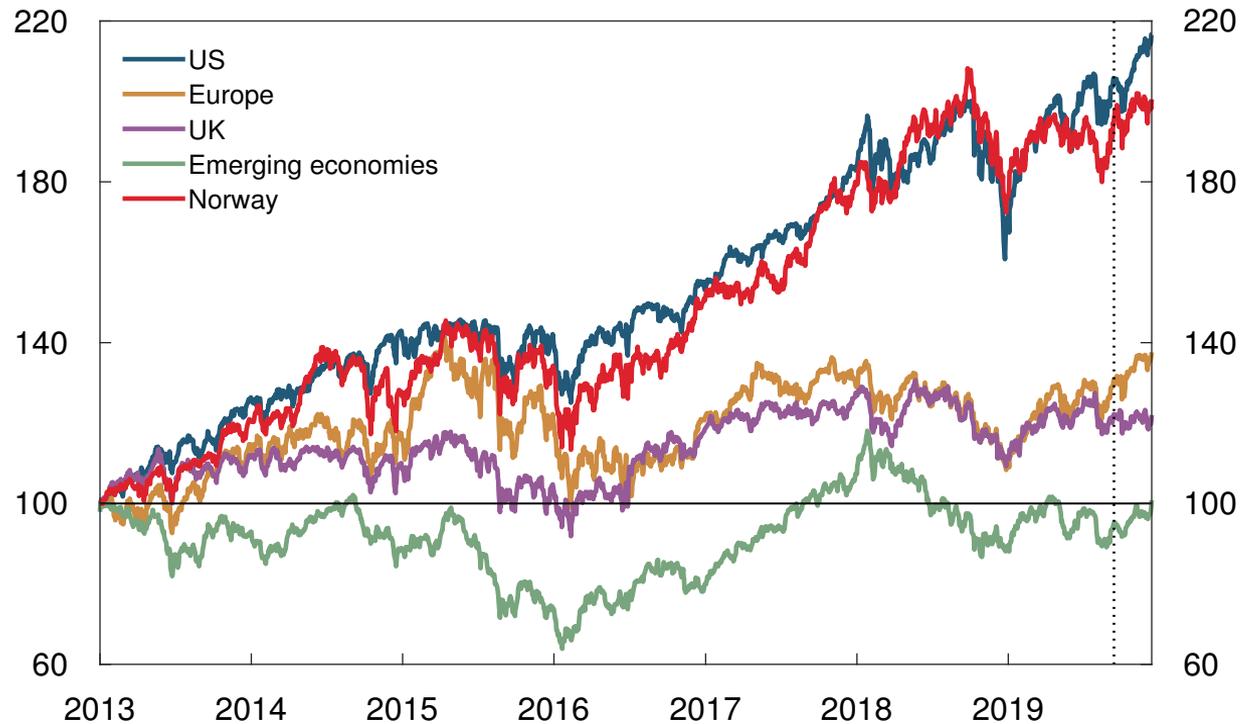
Chart 1.11 Wages. Annual change. Percent. 2013 – 2022¹⁾



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

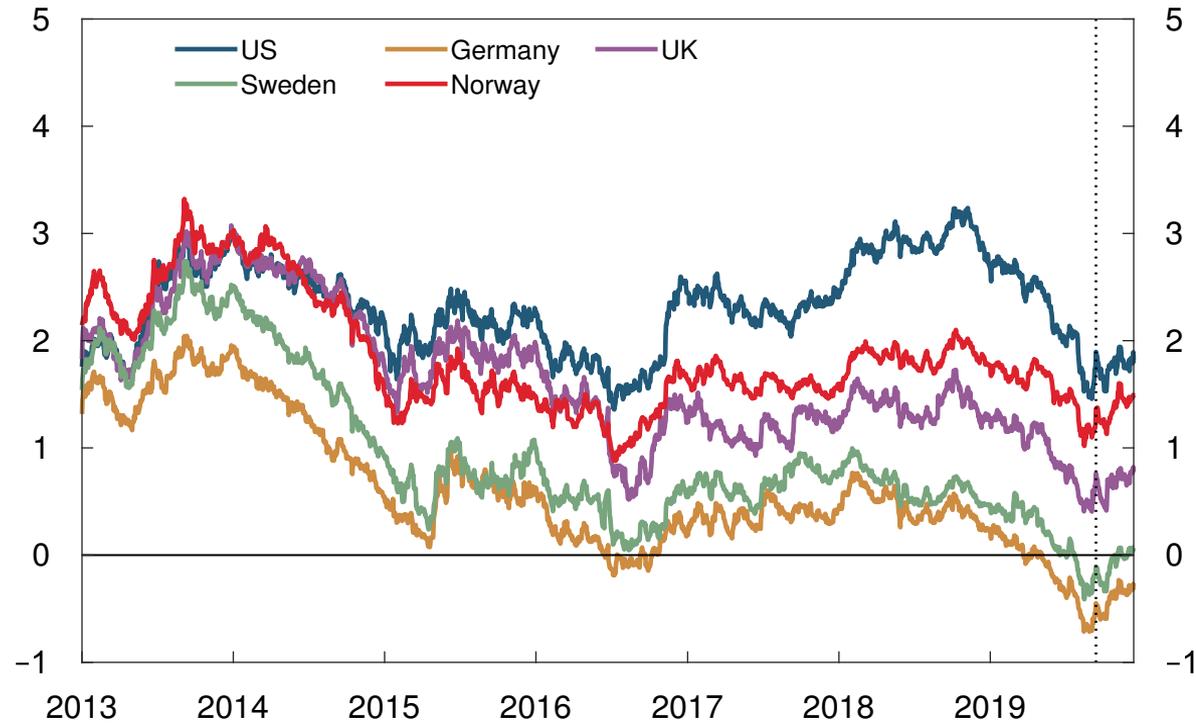
Chart 2.1 Equity prices in selected countries.¹⁾

Index. 2 January 2013 = 100. 2 January 2013 – 13 December 2019²⁾



1) Standard and Poor's 500 Index (US). Euro Stoxx 50 Index (Europe).
Financial Times Stock Exchange 100 Index (UK). MSCI Emerging Markets Index (emerging economies).
Oslo Børs Benchmark Index (Norway). 2) MPR 3/19 was based on information in the period up
to 13 September 2019, indicated by the vertical line.
Source: Bloomberg

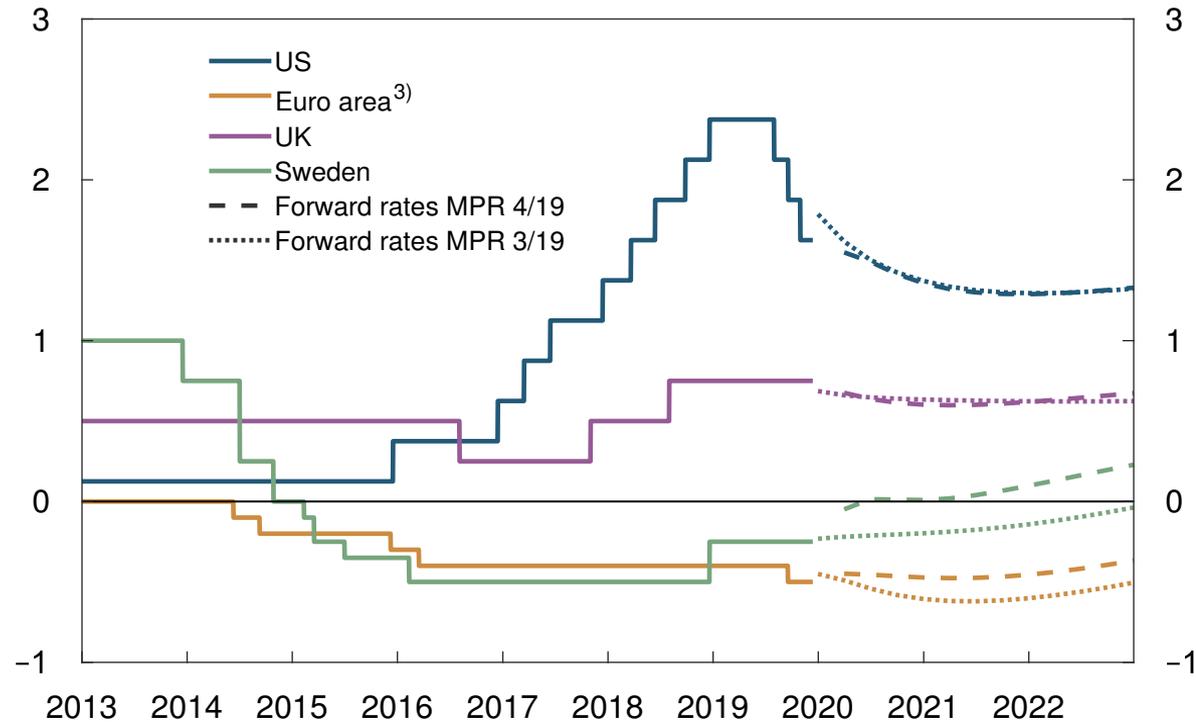
Chart 2.2 Yields on 10-year government bonds in selected countries.
Percent. 2 January 2013 – 13 December 2019¹⁾



1) MPR 3/19 was based on information in the period up to 13 September 2019, indicated by the vertical line.

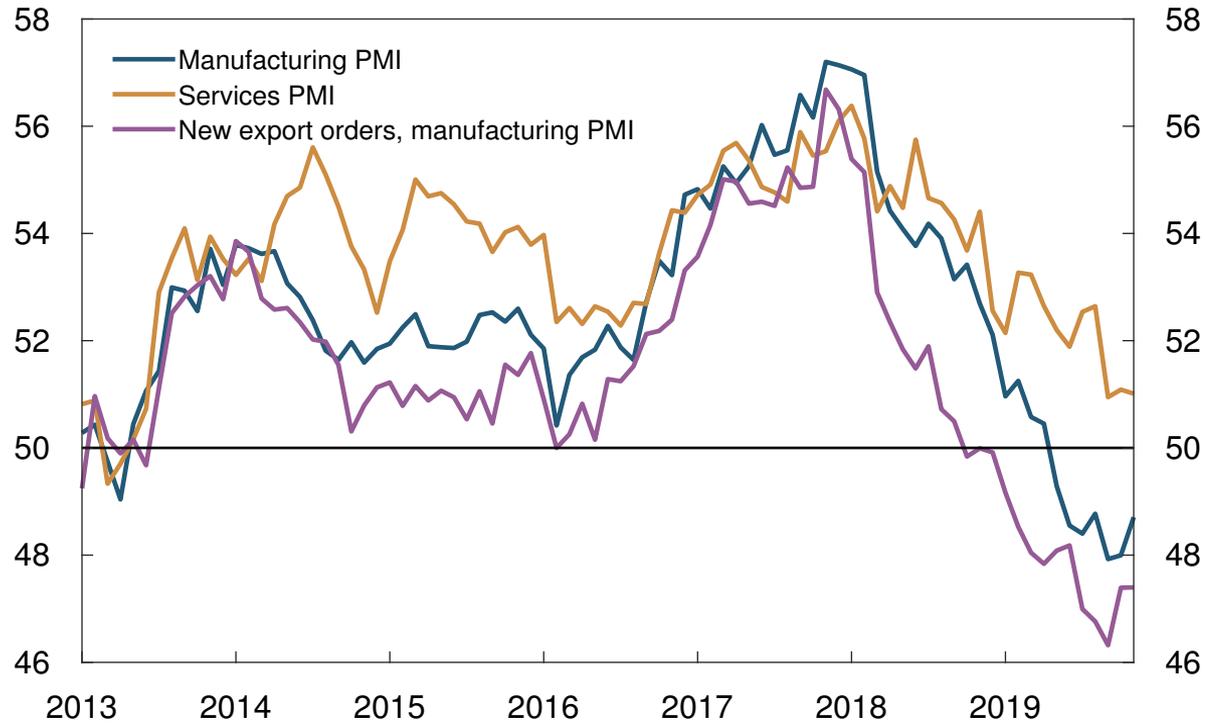
Source: Bloomberg

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

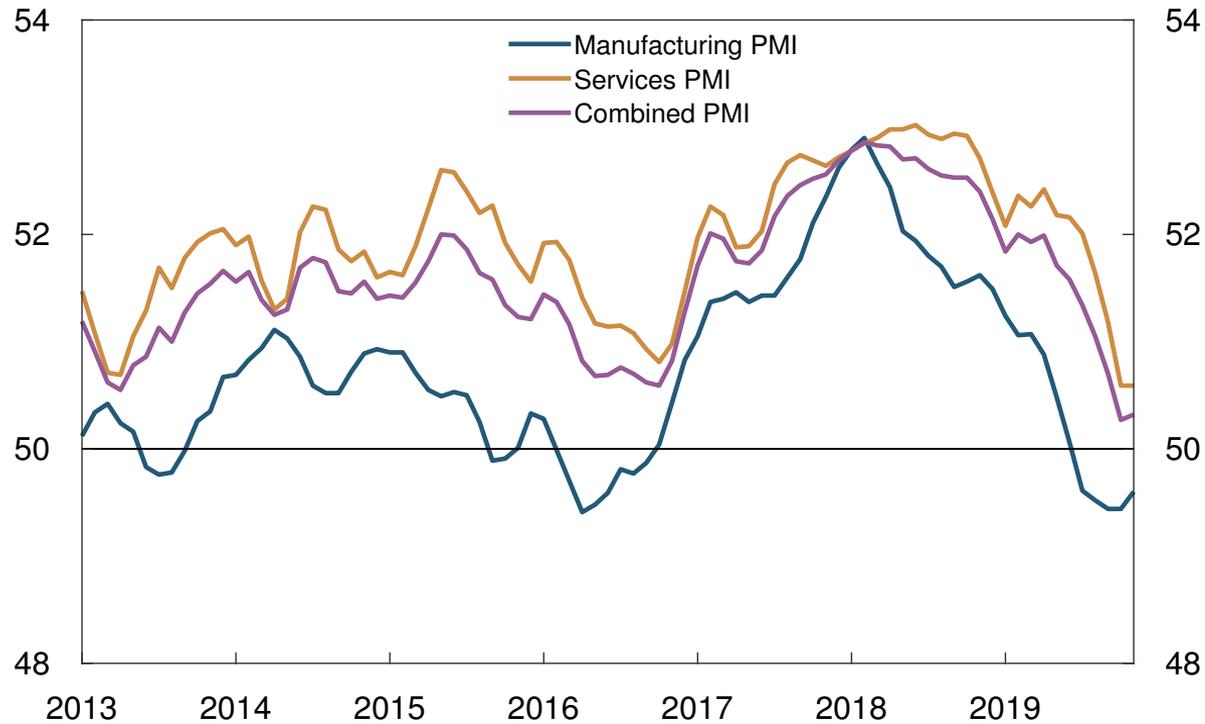
Chart 2.4 PMI for Norway's trading partners.¹⁾
 Seasonally adjusted. Index.²⁾ January 2013 – November 2019



1) Export weights. 25 main trading partners. 2) Survey of purchasing managers. Diffusion index centred around 50.

Sources: Thomson Reuters and Norges Bank

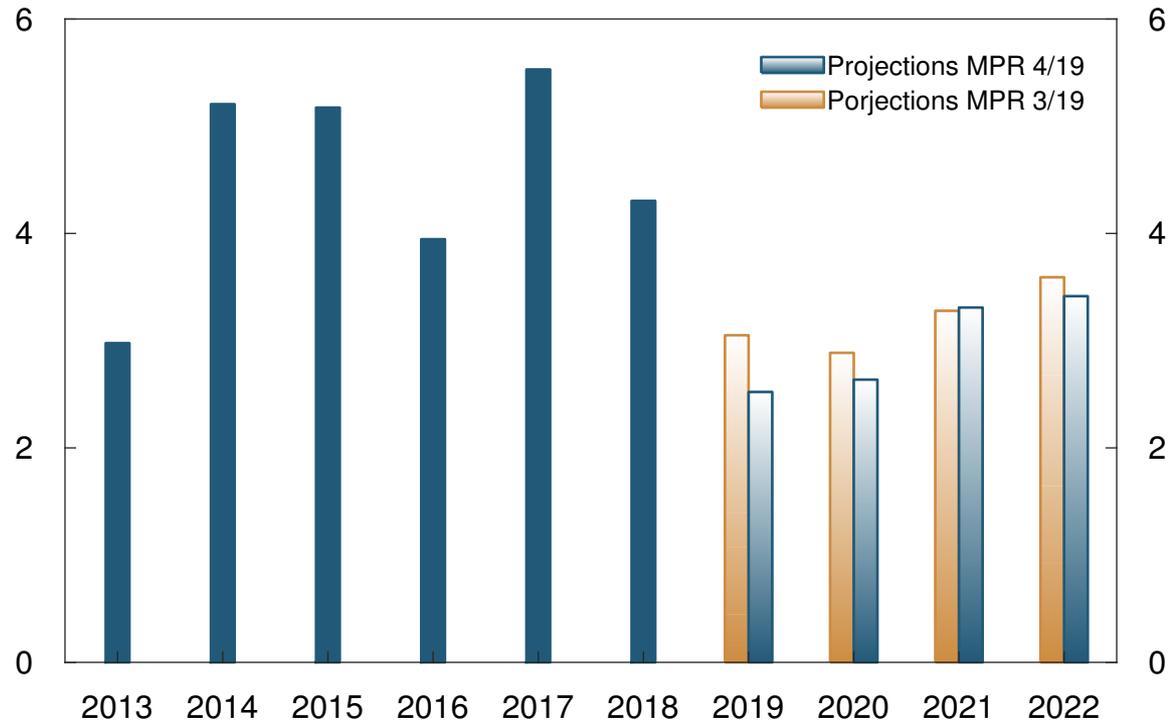
Chart 2.5 Global PMI: Employment.¹⁾
Seasonally adjusted. Index.²⁾ January 2013 – November 2019



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.

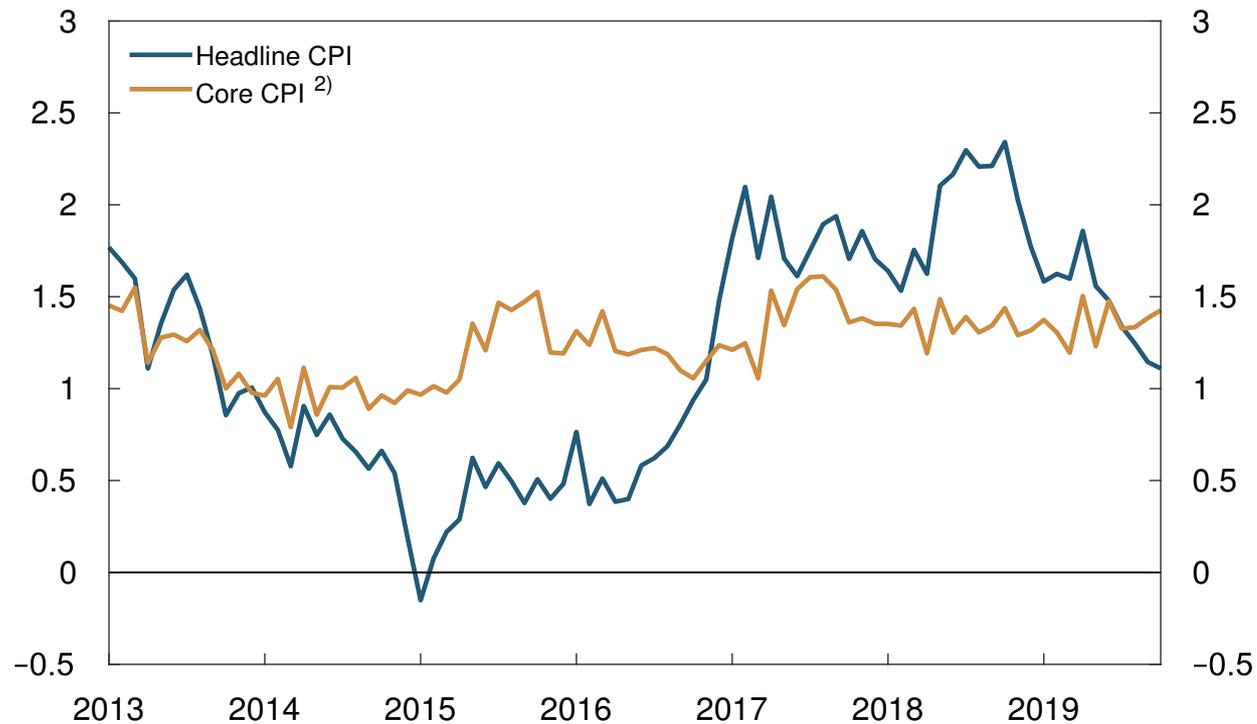
Source: Thomson Reuters

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



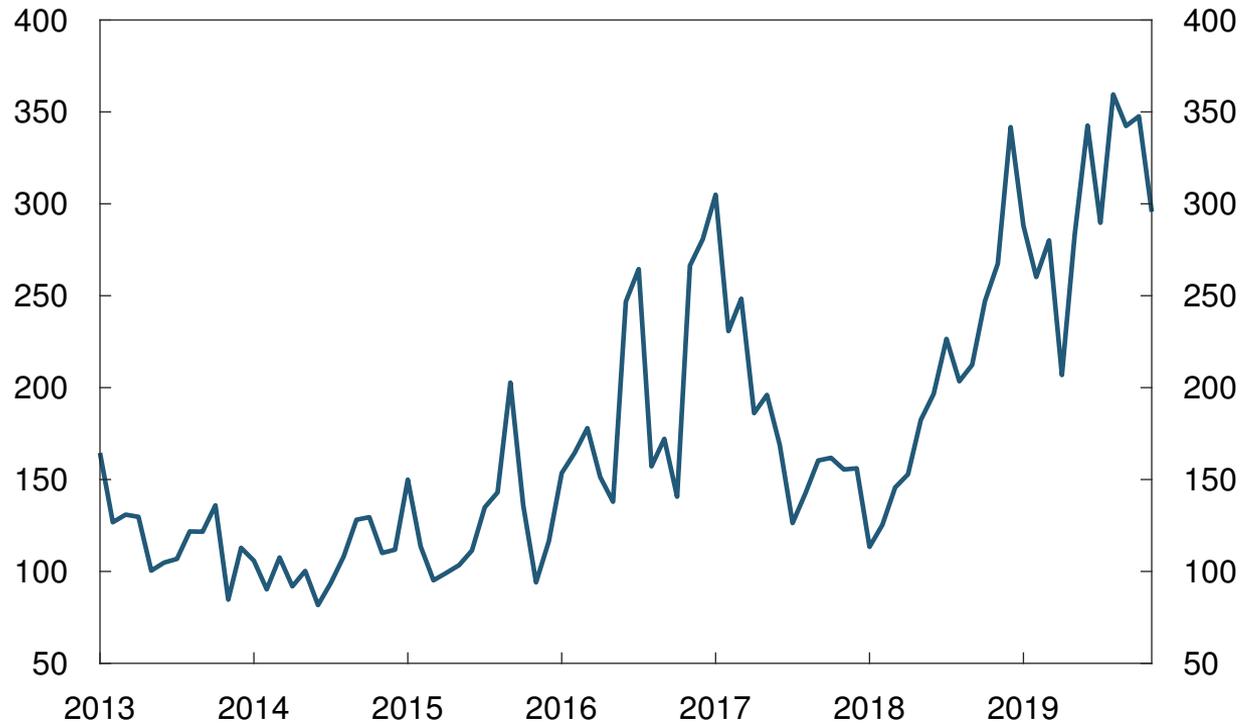
1) Export weights. 25 main trading partners. 2) Projections for 2019 – 2022.
Sources: Thomson Reuters and Norges Bank

Chart 2.7 Headline and core inflation in selected countries.¹⁾
 Twelve-month change. Percent. January 2013 – October 2019



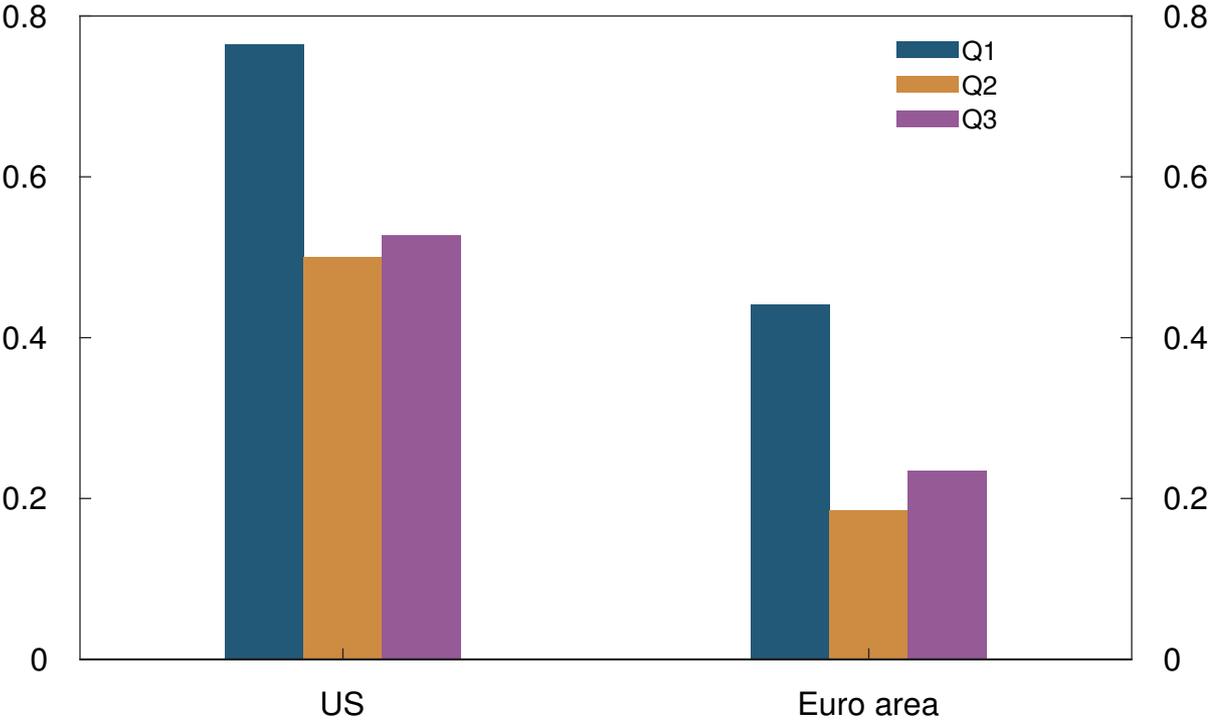
1) Import weights. US, euro area, UK and Sweden. 2) US: excluding food and energy. UK and euro area: excluding food, tobacco, alcohol and energy. Sweden: excluding energy. Sources: Thomson Reuters and Norges Bank

Chart 2.8 Global economic policy uncertainty.¹⁾
Index.²⁾ January 2013 – November 2019



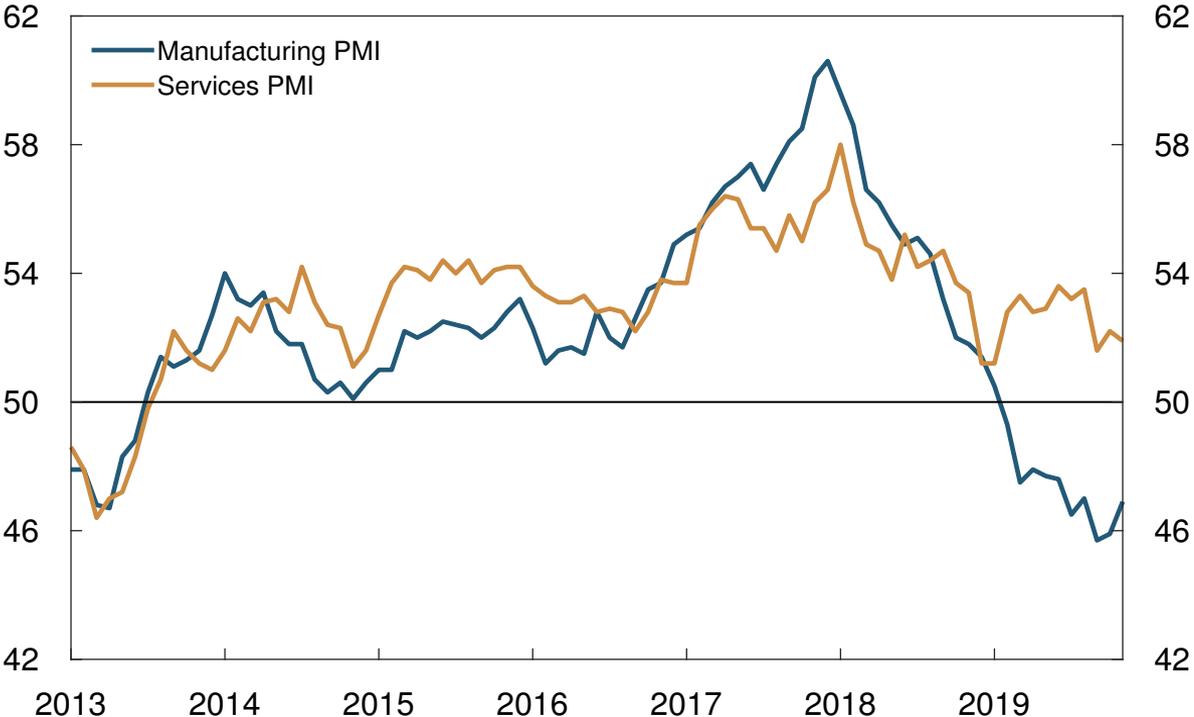
1) Indicator measuring the frequency of the word "uncertainty" connected to "economics" and "policy" in news articles. 2) Weighted by PPP-adjusted GDP. A positive slope denotes greater uncertainty.
Source: policyuncertainty.com

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



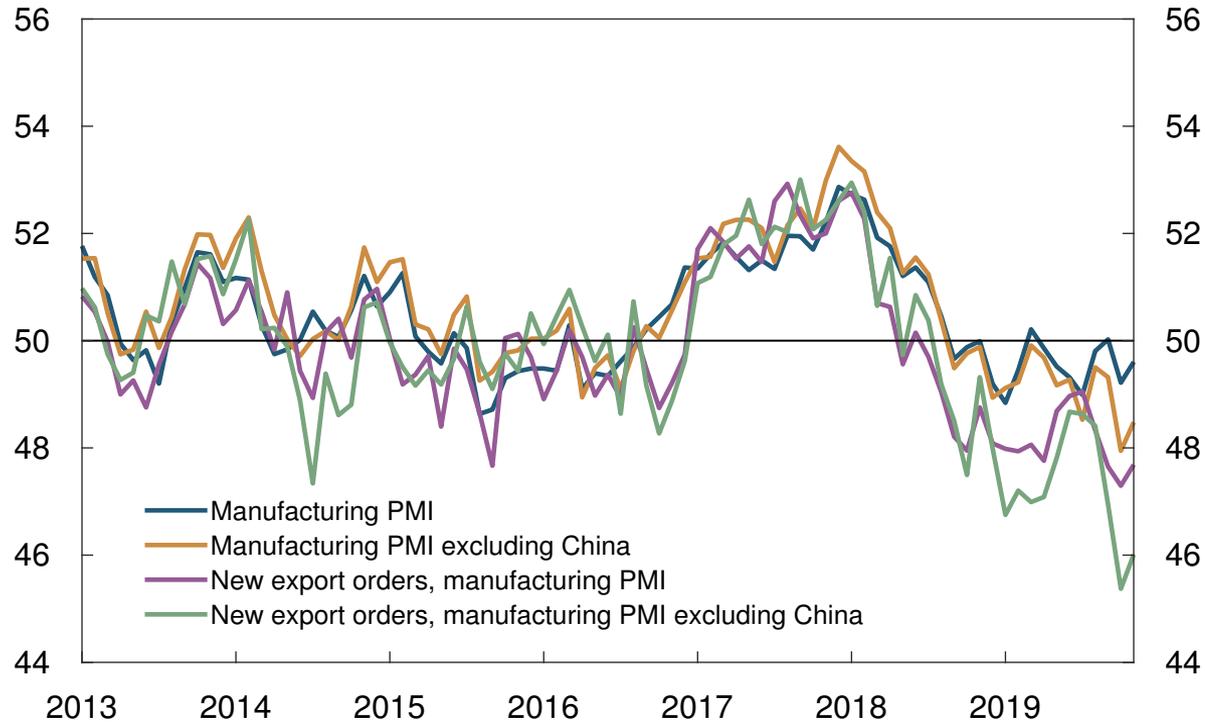
Source: Thomson Reuters

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



¹⁾ Survey of purchasing managers. Diffusion index centred around 50.
Source: Thomson Reuters

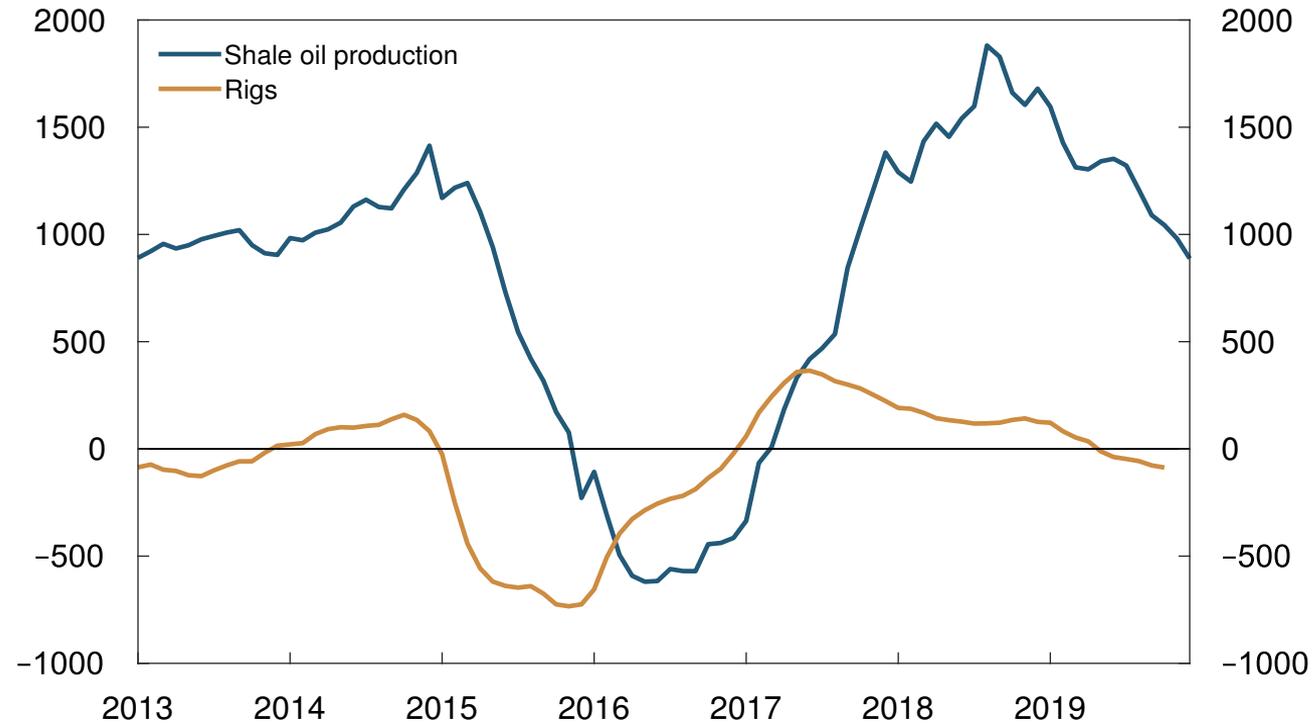
Chart 2.11 PMI in emerging economies.¹⁾
Seasonally adjusted. Index.²⁾ January 2013 – November 2019



1) Export weights. China, Thailand, Turkey, India, Russia, Indonesia and Poland. 2) Survey of purchasing managers. Diffusion index centred around 50.

Sources: Markit, Thomson Reuters, Statistics Norway and Norges Bank

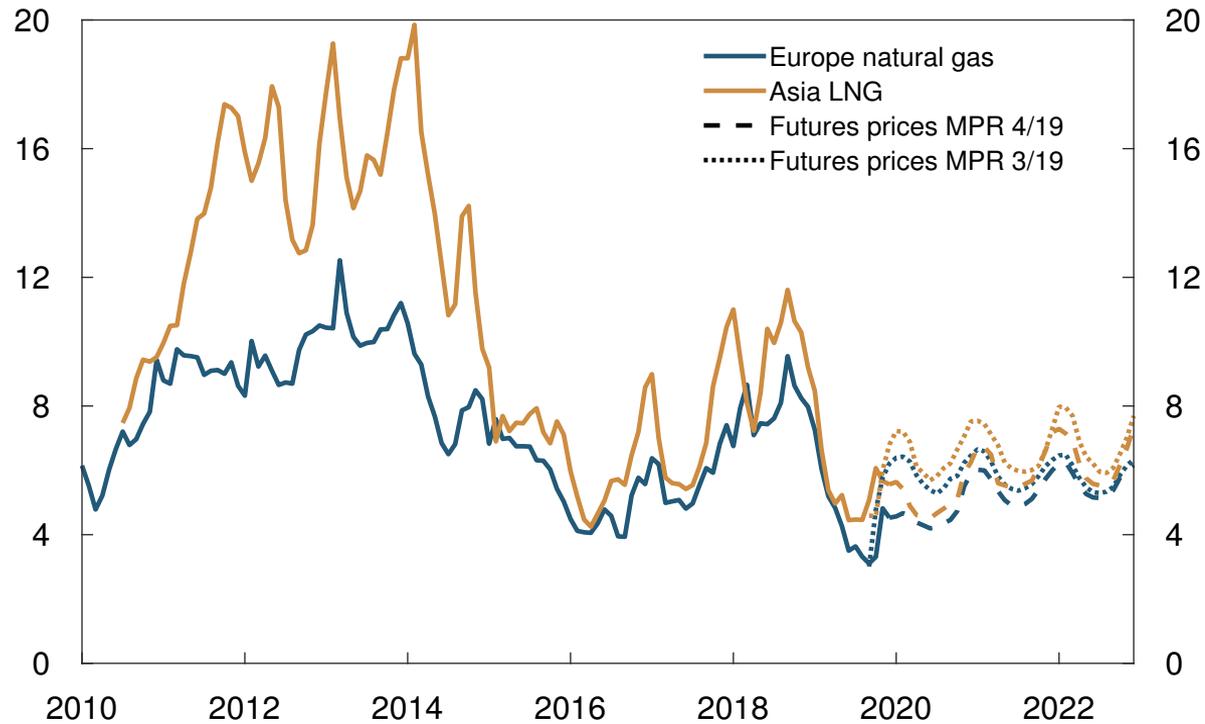
Chart 2.A Shale oil production¹⁾ and number of rigs in the US.
 Twelve-month growth. January 2013 – December 2019²⁾



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⁾

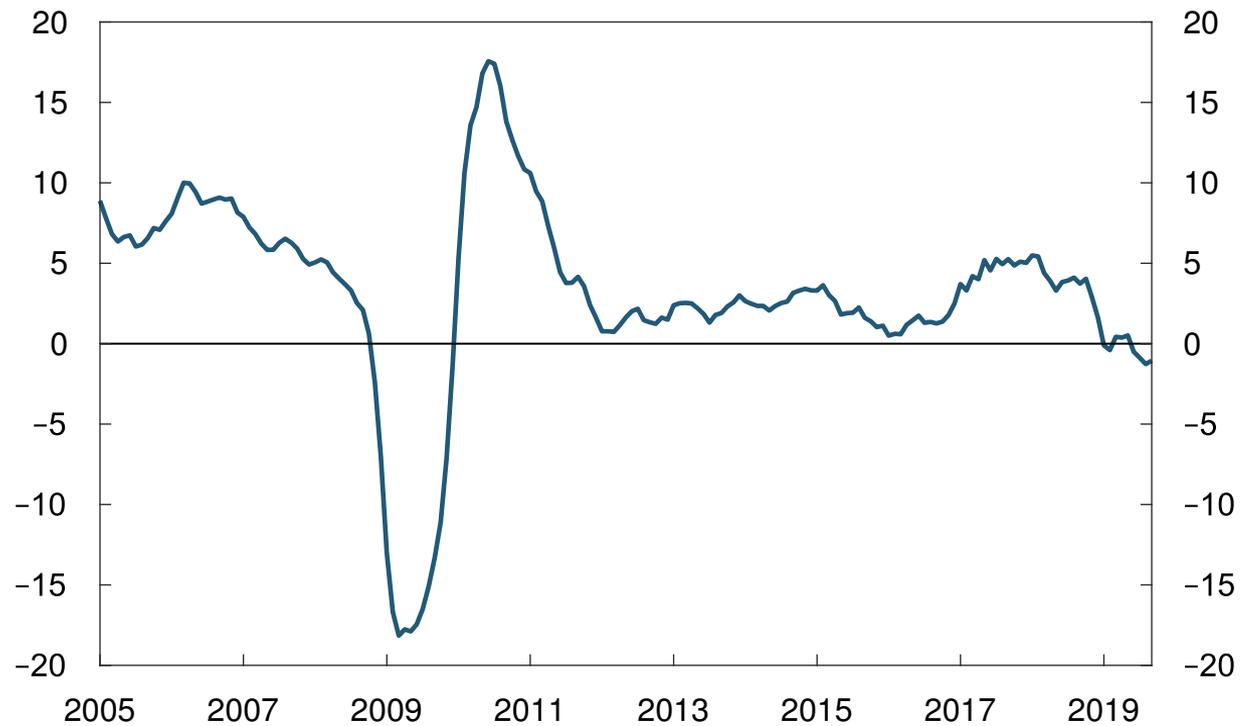


1) Value-weighted average of prices for natural gas in the Netherlands and the UK.

2) Futures prices on 13 September 2019 for MPR 3/19 and on 13 December 2019 for MPR 4/19.

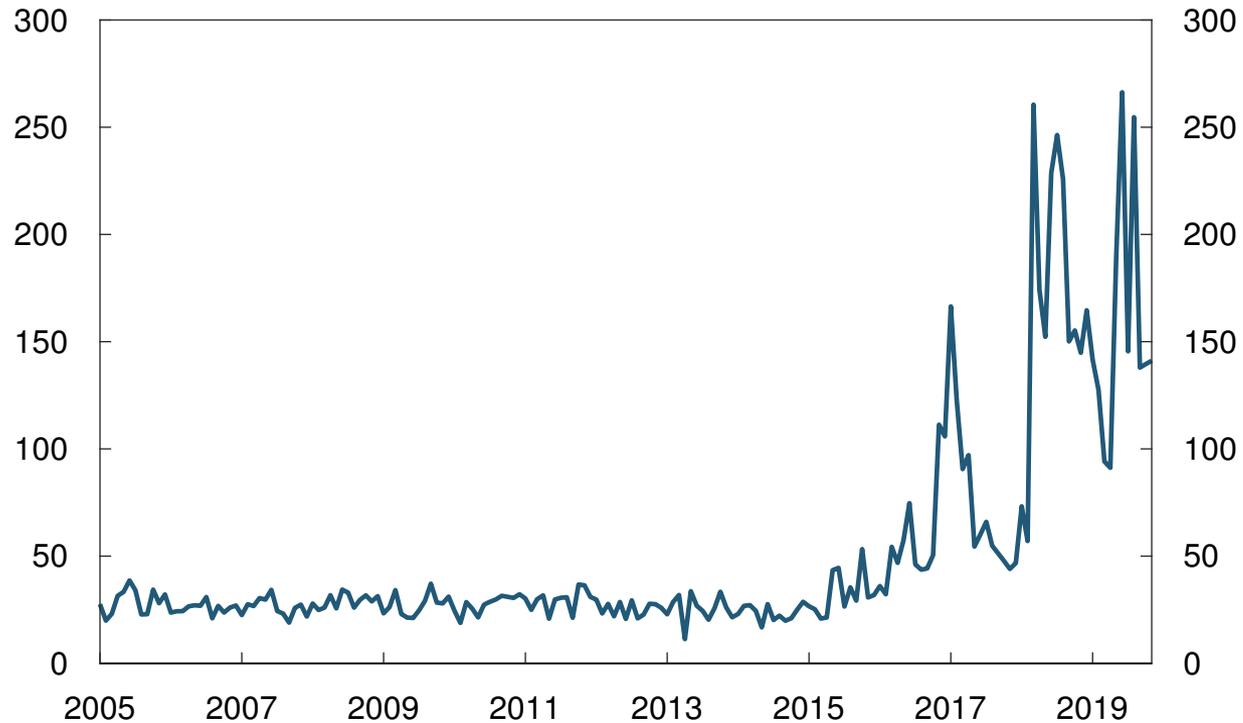
Sources: Norwegian Petroleum, Thomson Reuters and Norges Bank

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

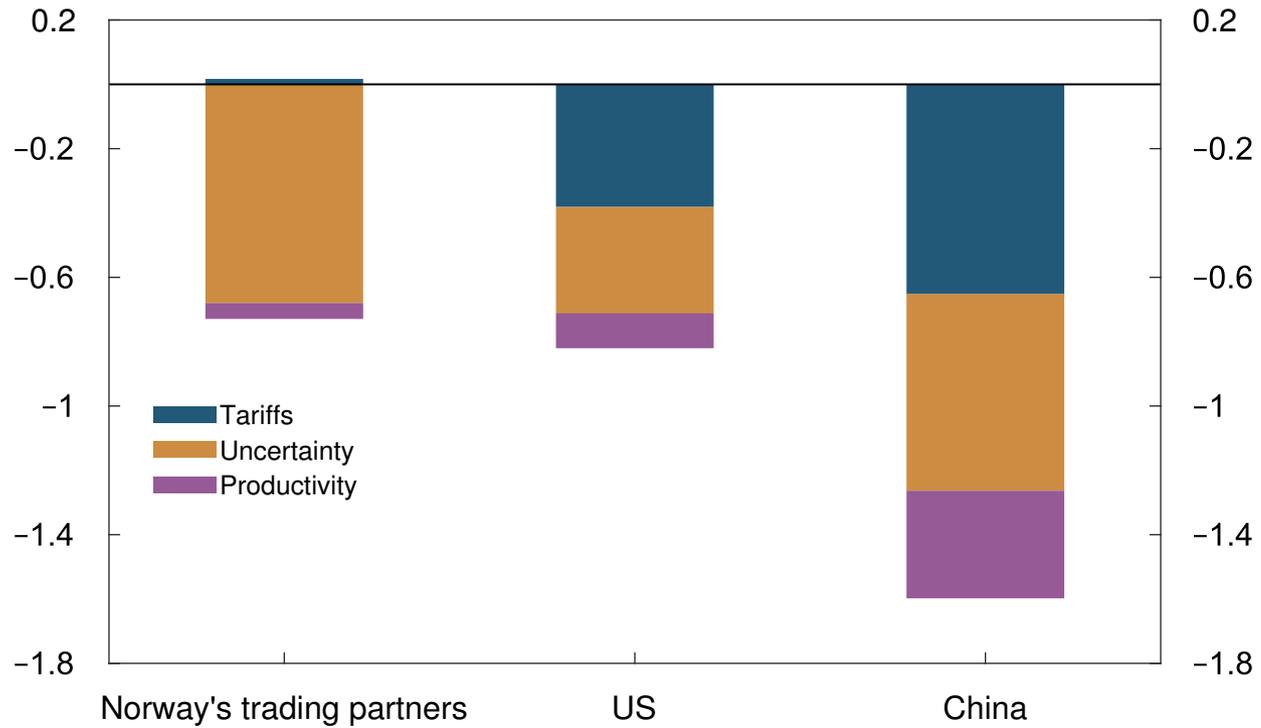


1) Indicator measuring the frequency of the word "uncertainty" connected to "trade policy" in news articles.

2) A positive slope denotes greater uncertainty.

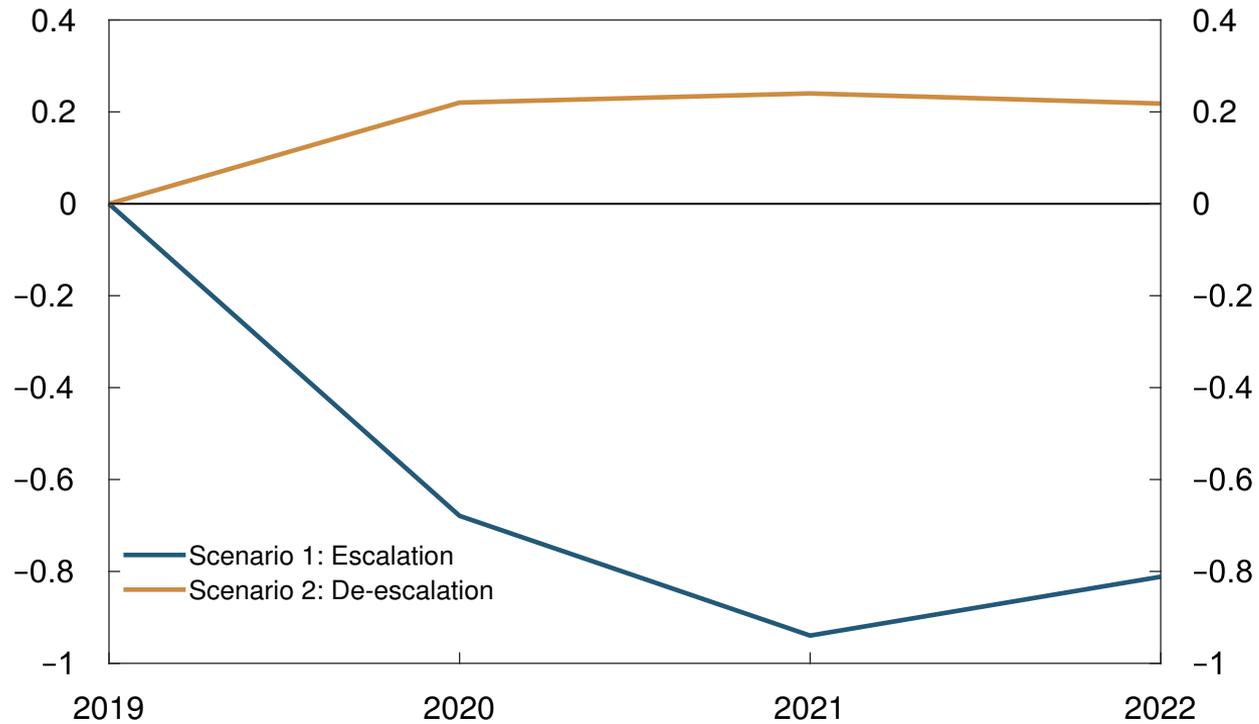
Source: Caldara, D., M. Iacoviello, P. Molligo, A. Prestipino and A. Raffo, "The Economic Effects of Trade Policy Uncertainty", revised November 2019, *Journal of Monetary Economics*, forthcoming.

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



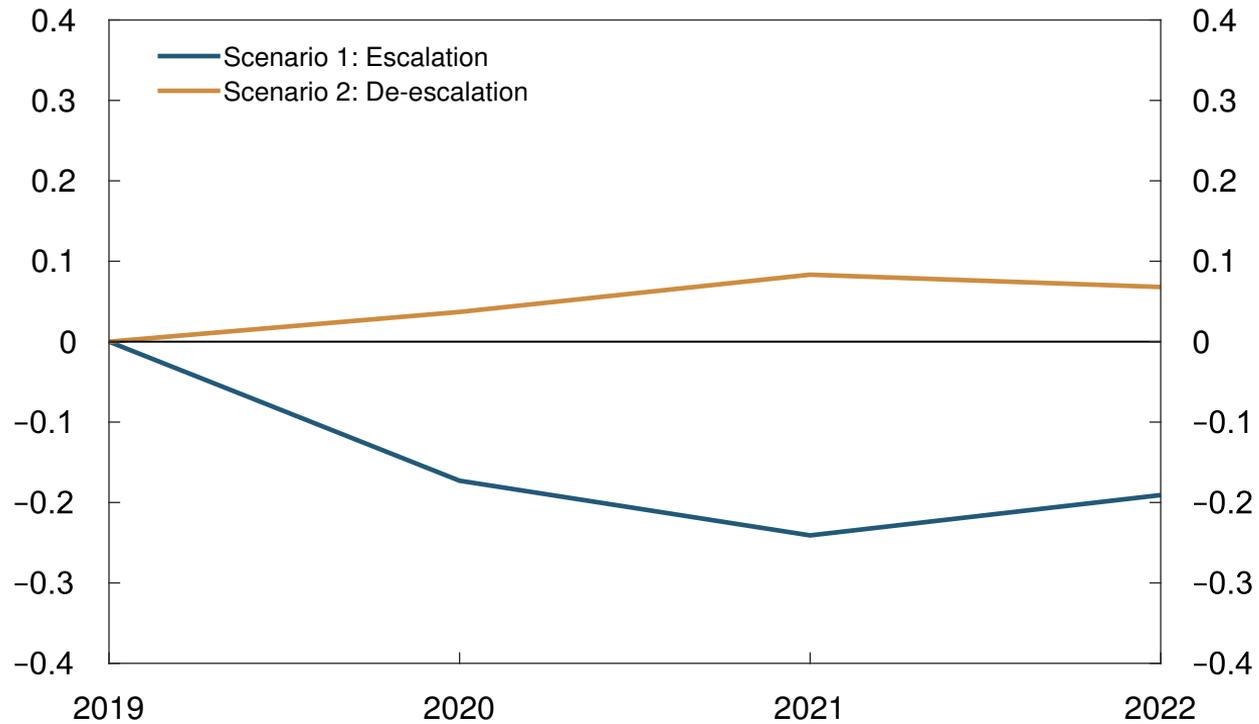
Source: Norges Bank

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



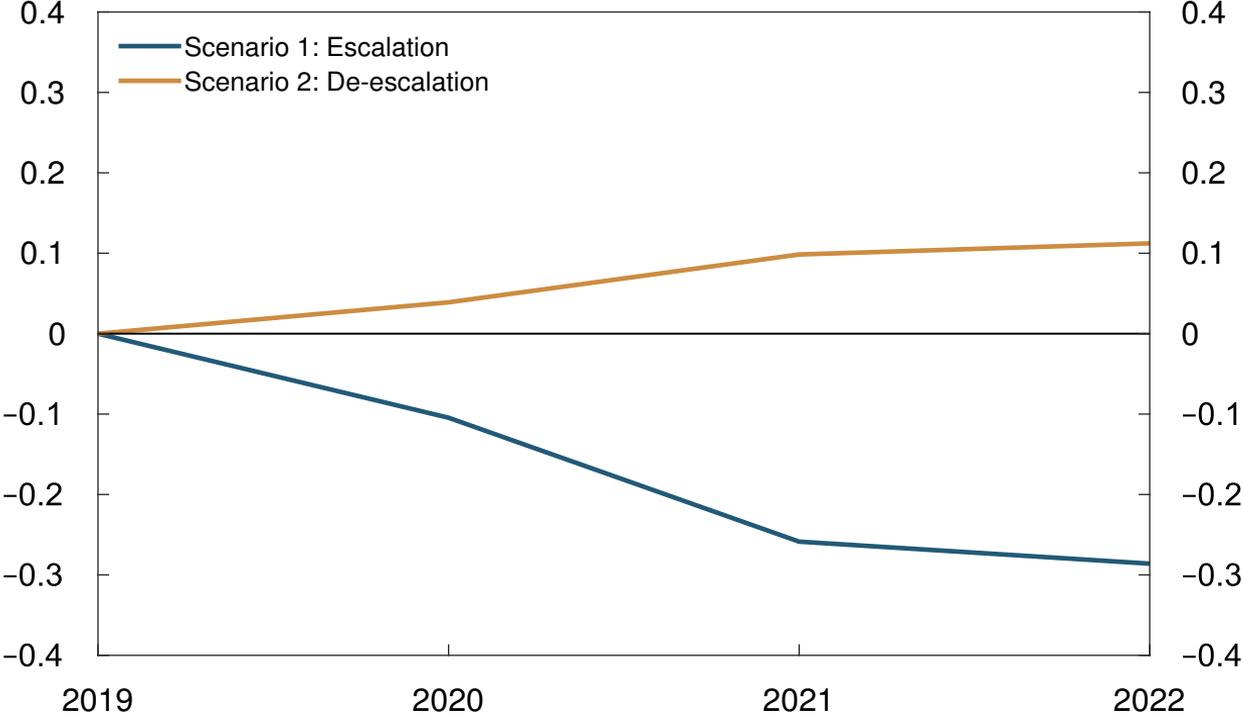
Source: Norges Bank

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



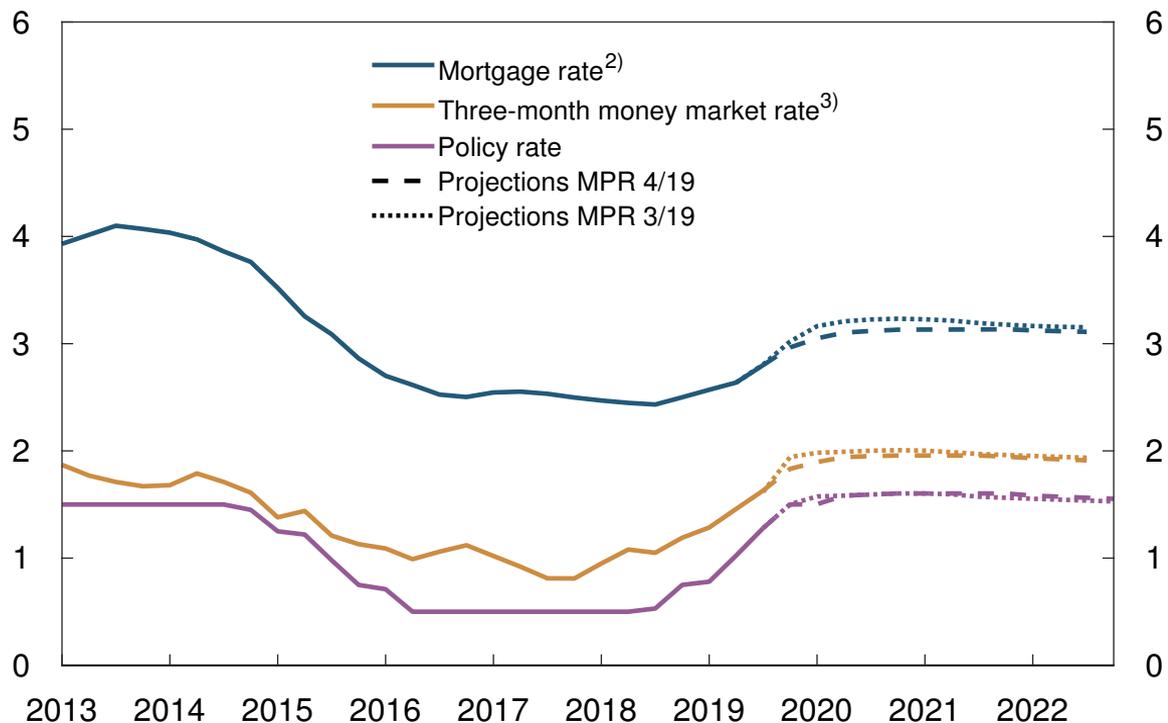
Source: Norges Bank

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



Source: Norges Bank

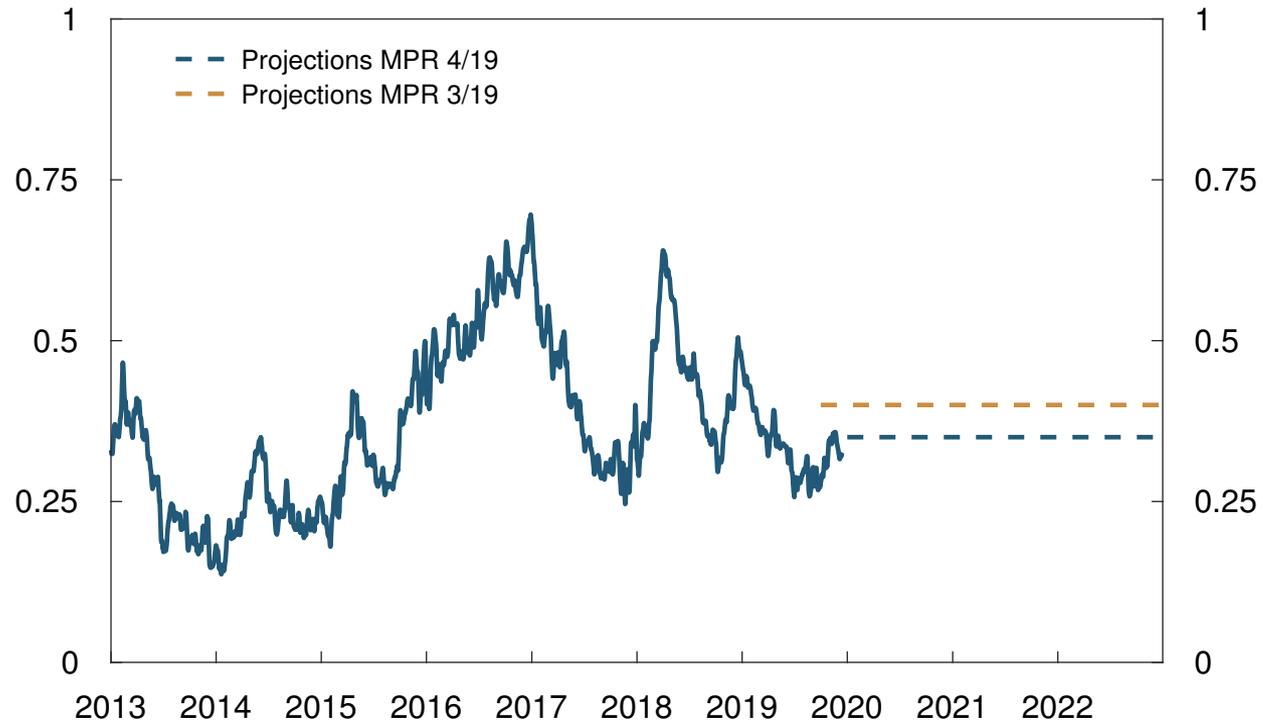
Chart 3.1 Interest rates. Percent. 2013 Q1 – 2022 Q4¹⁾



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.

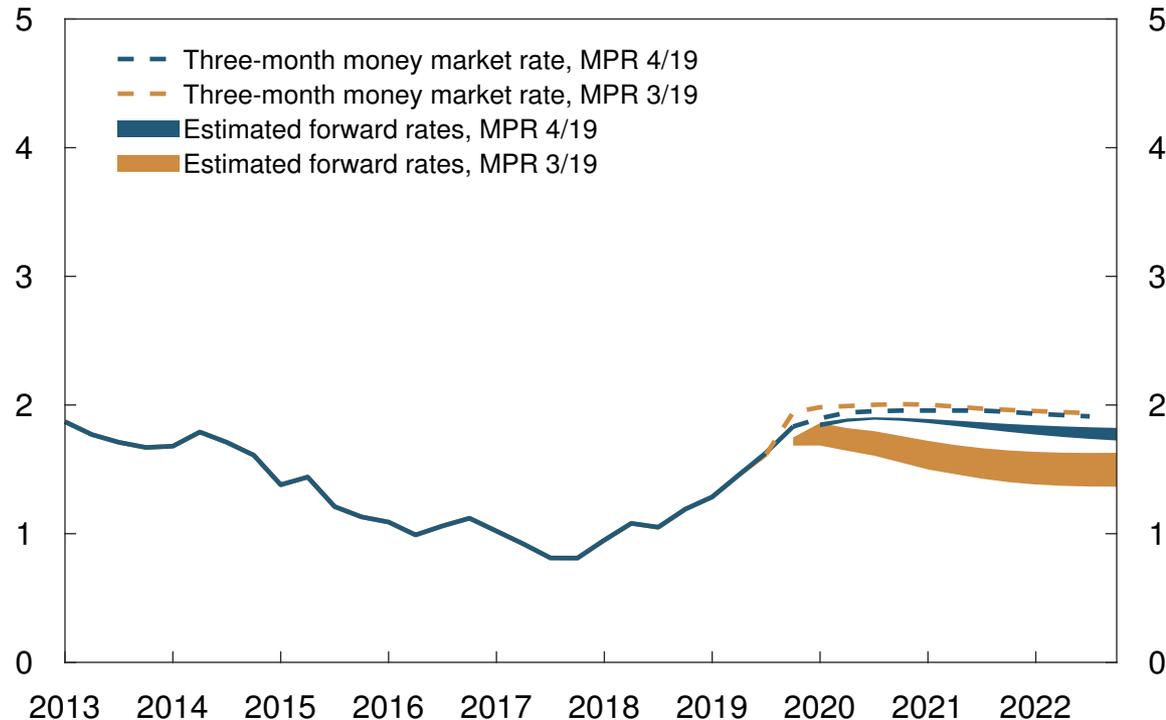
Sources: Statistics Norway, Thomson Reuters and Norges Bank

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

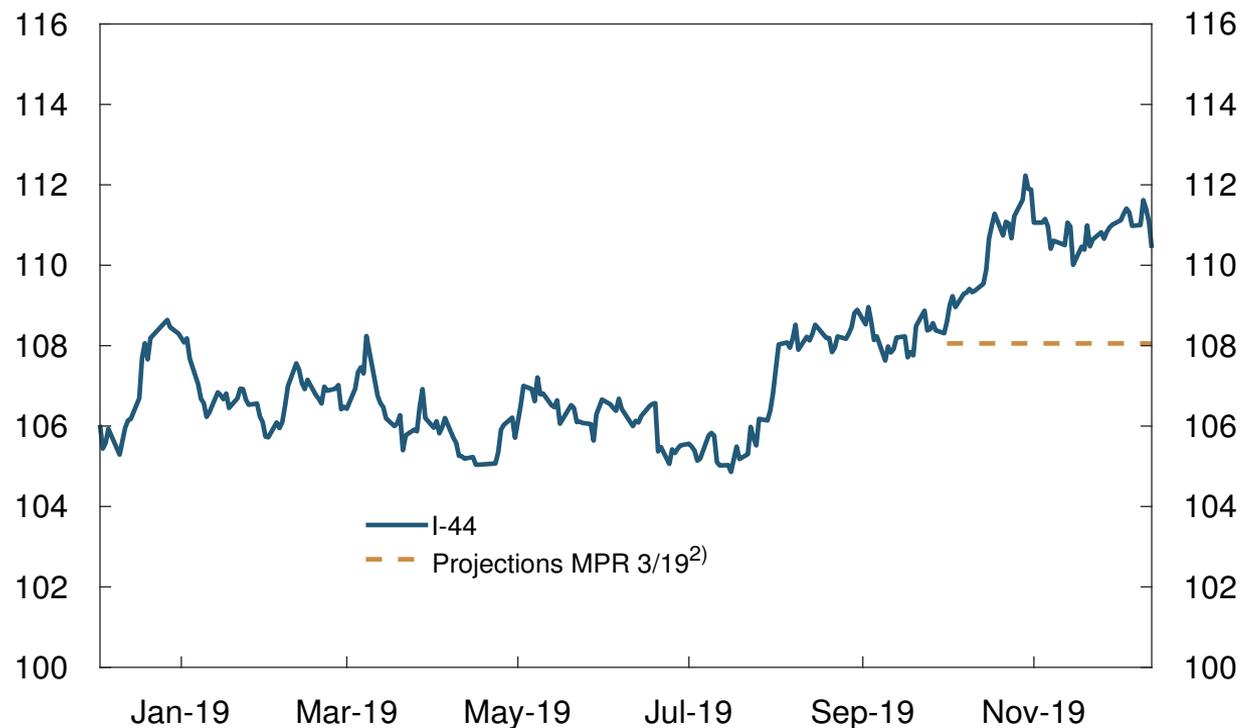
Chart 3.3 Three-month money market rate ¹⁾ and estimated forward rates ²⁾.
Percent. 2013 Q1 – 2022 Q4 ³⁾



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).

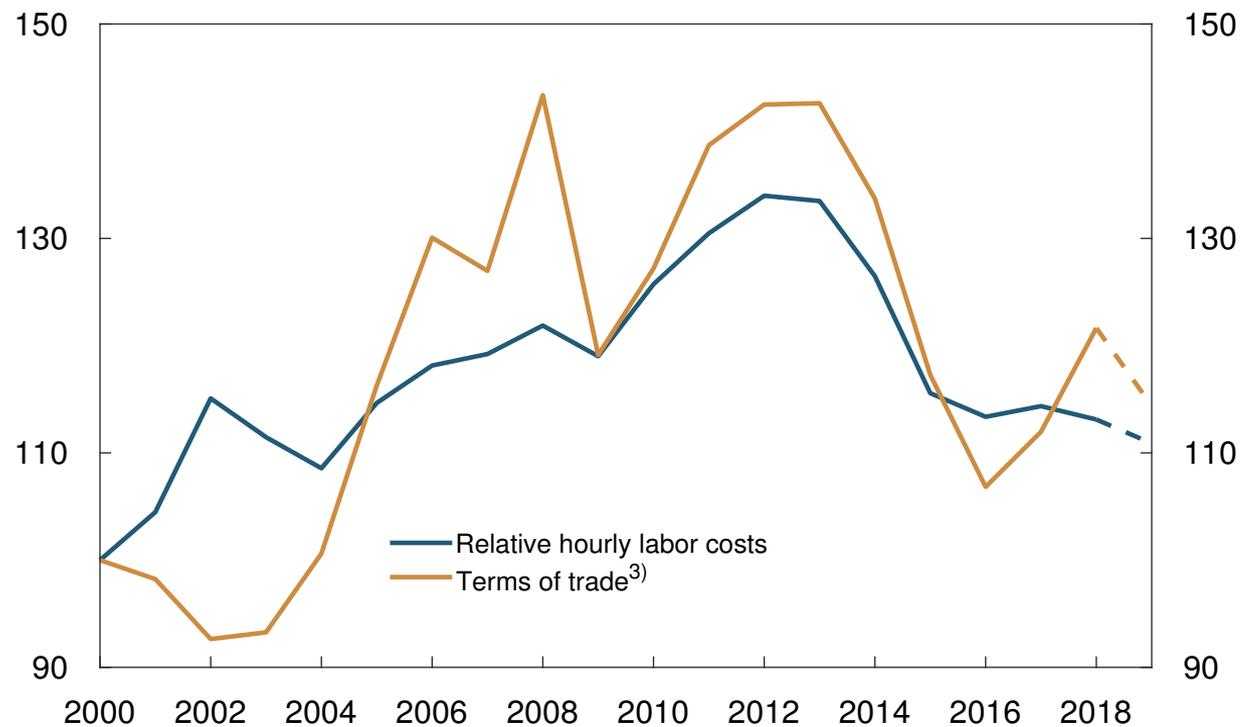
Sources: Thomson Reuters and Norges Bank

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⁾

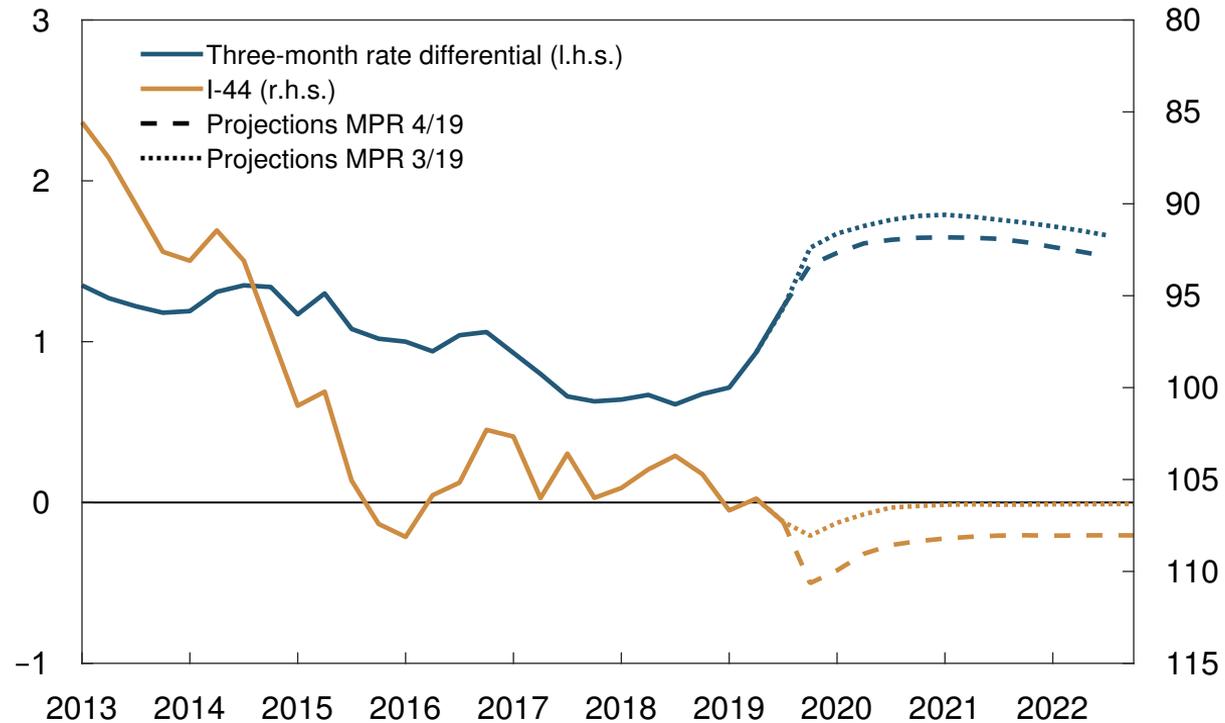


1) Hourly labour costs in manufacturing in Norway relative to EU trading partners in a common currency.

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

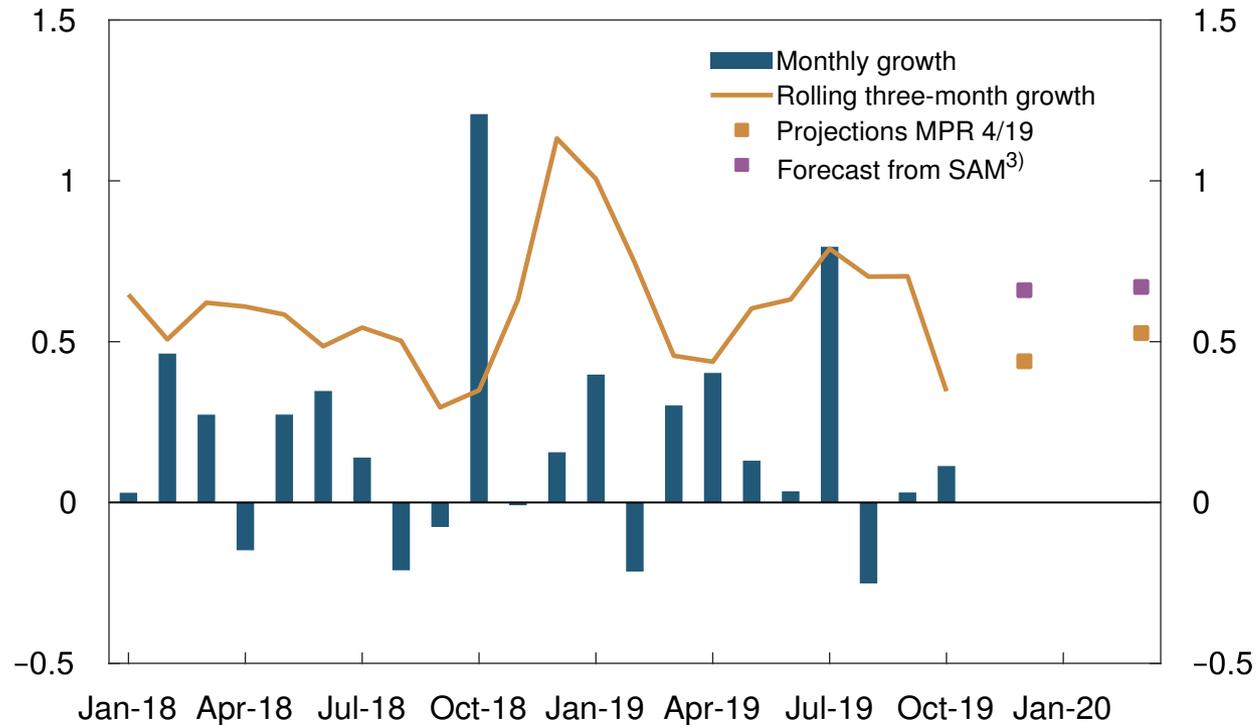
Chart 3.6 Import-weighted exchange rate index (I-44).¹⁾ Three-month money market rate differential between Norway²⁾ and trading partners³⁾. Percentage points. 2013 Q1 – 2022 Q4⁴⁾



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).

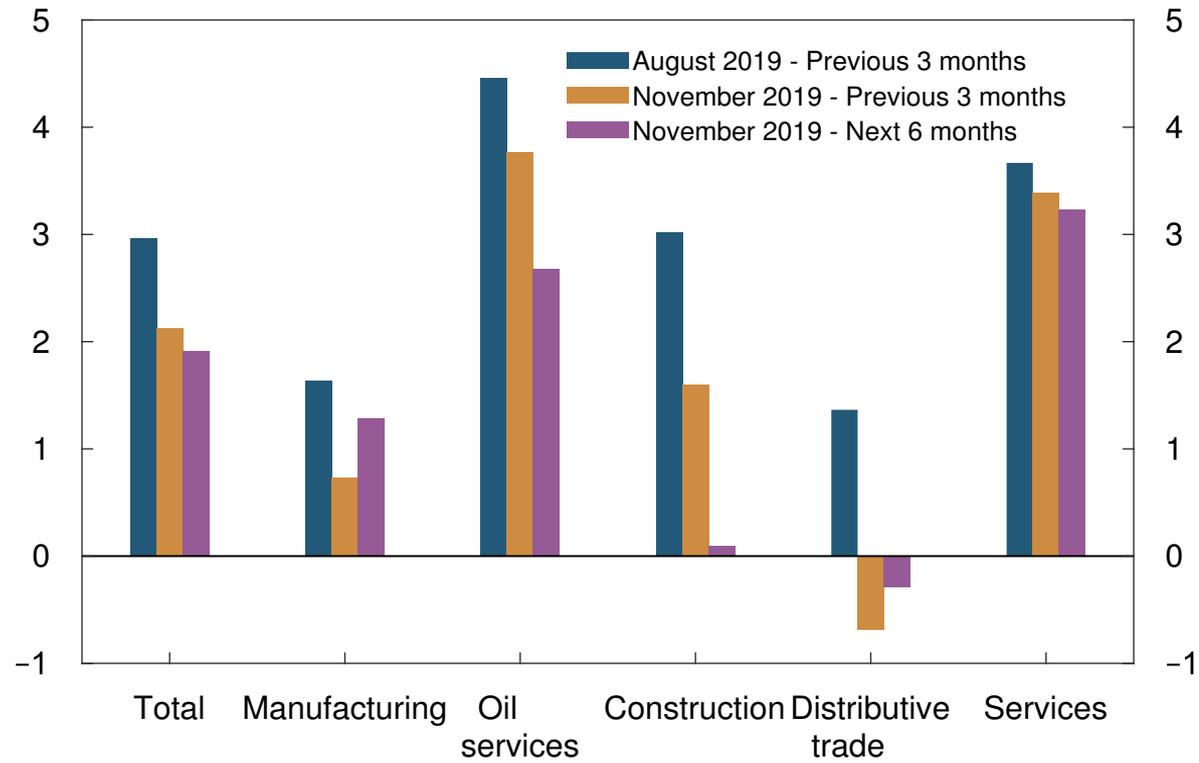
Sources: Thomson Reuters and Norges Bank

Chart 4.1 GDP for mainland Norway. Seasonally adjusted. Percent.
 Monthly growth and rolling three-month growth¹⁾. January 2018 – March 2020²⁾



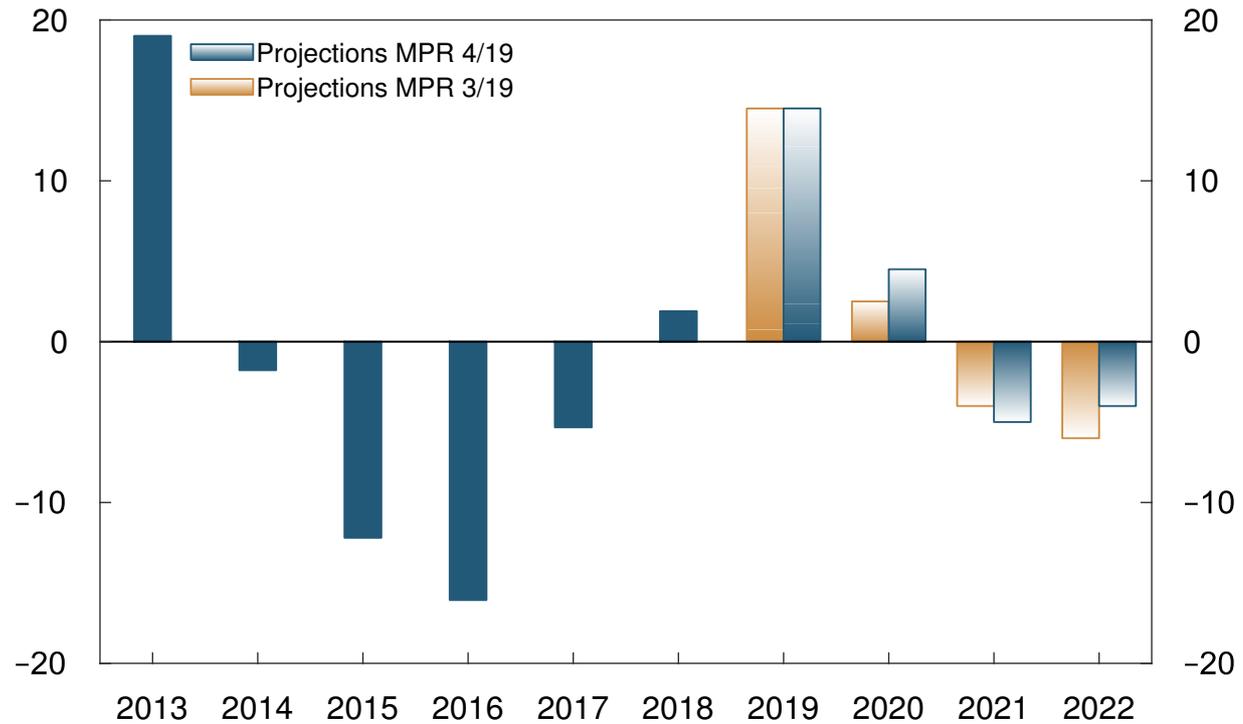
1) Growth the past three-month period compared with the previous three-month period. 2) Projections for December 2019 – March 2020. 3) System for Averaging short-term Models.
 Sources: Statistics Norway and Norges Bank

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



Source: Norges Bank

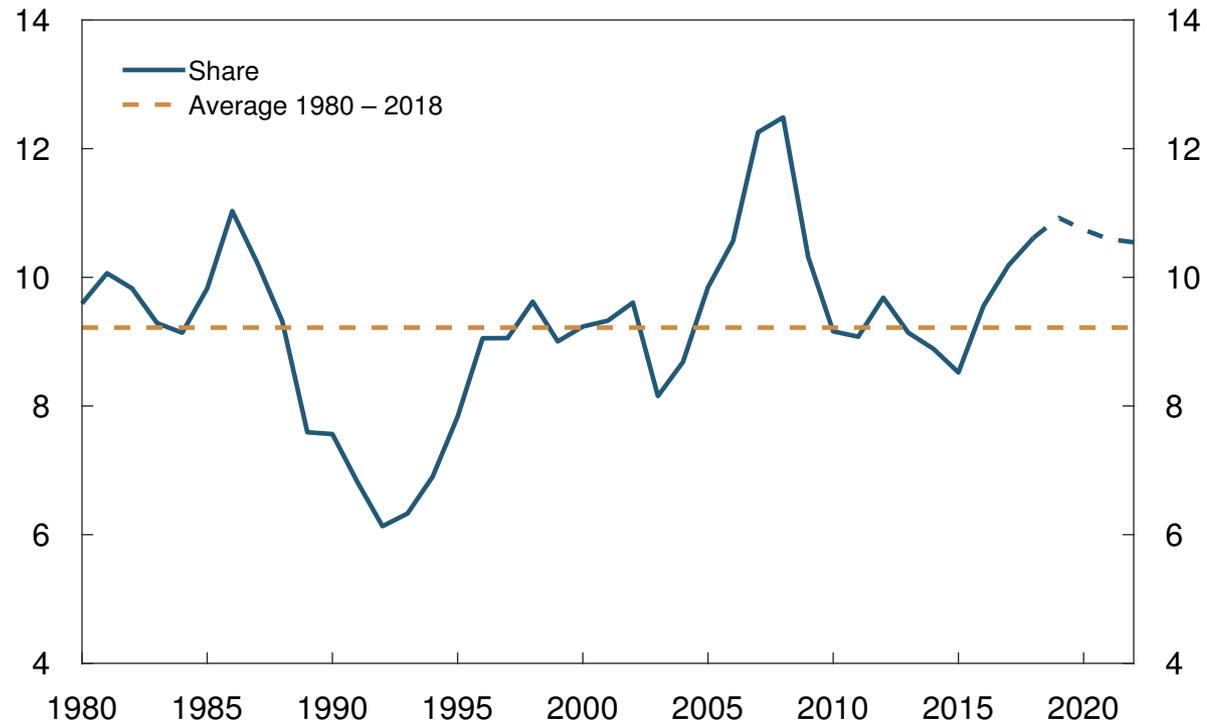
Chart 4.3 Petroleum investment. ¹⁾ Annual change. Percent. 2013 – 2022 ²⁾



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⁾

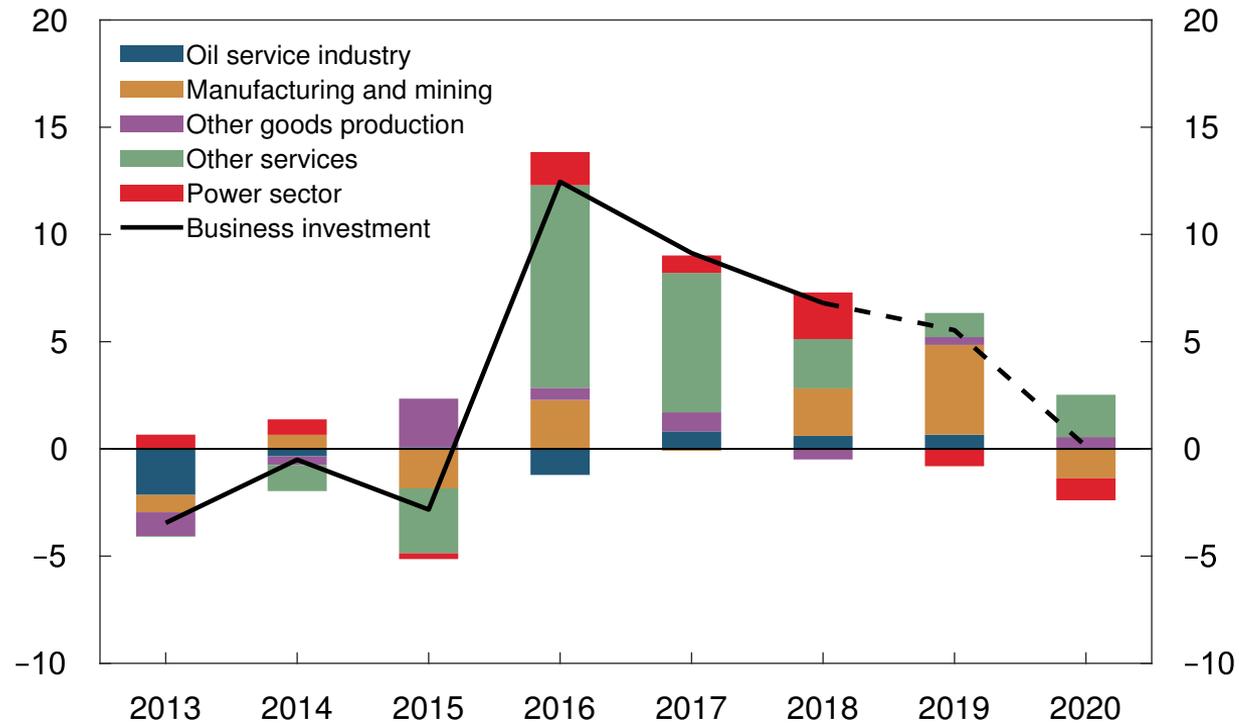


1) Working-day adjusted. 2) Projections for 2019 – 2022.

Sources: Statistics Norway and Norges Bank

Chart 4.5 Mainland business investment.¹⁾

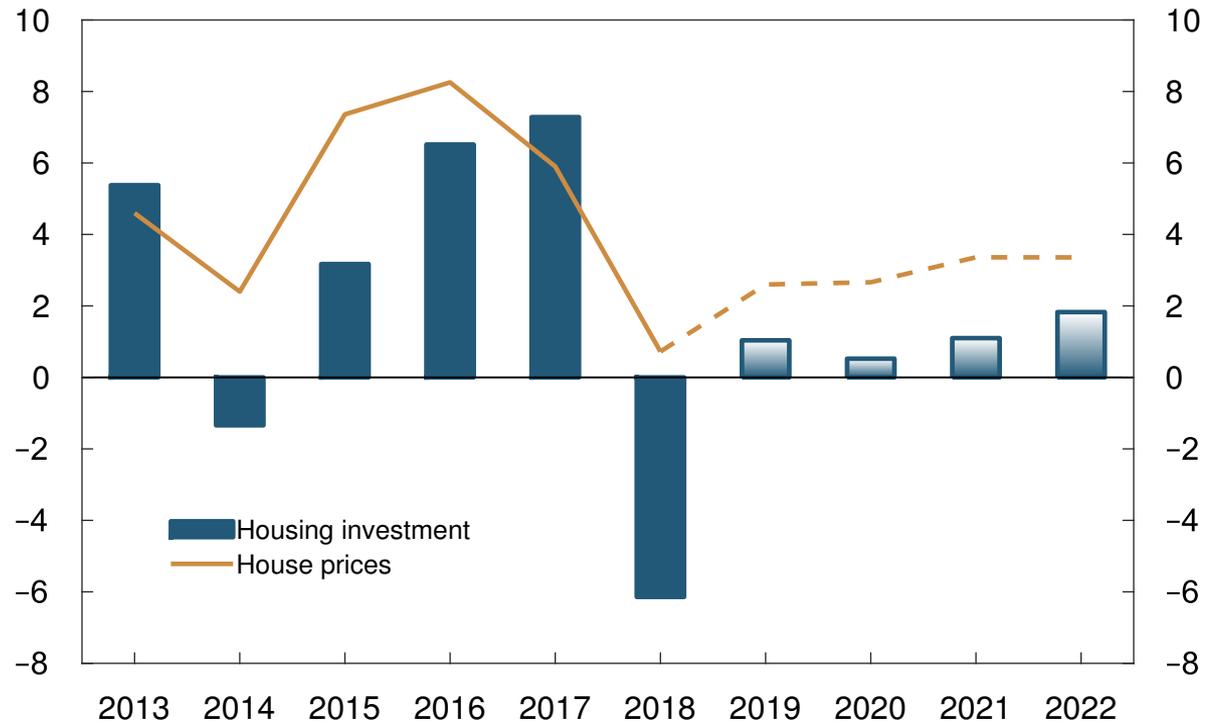
Contribution to annual change.²⁾ Percentage points. 2013 - 2020³⁾



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

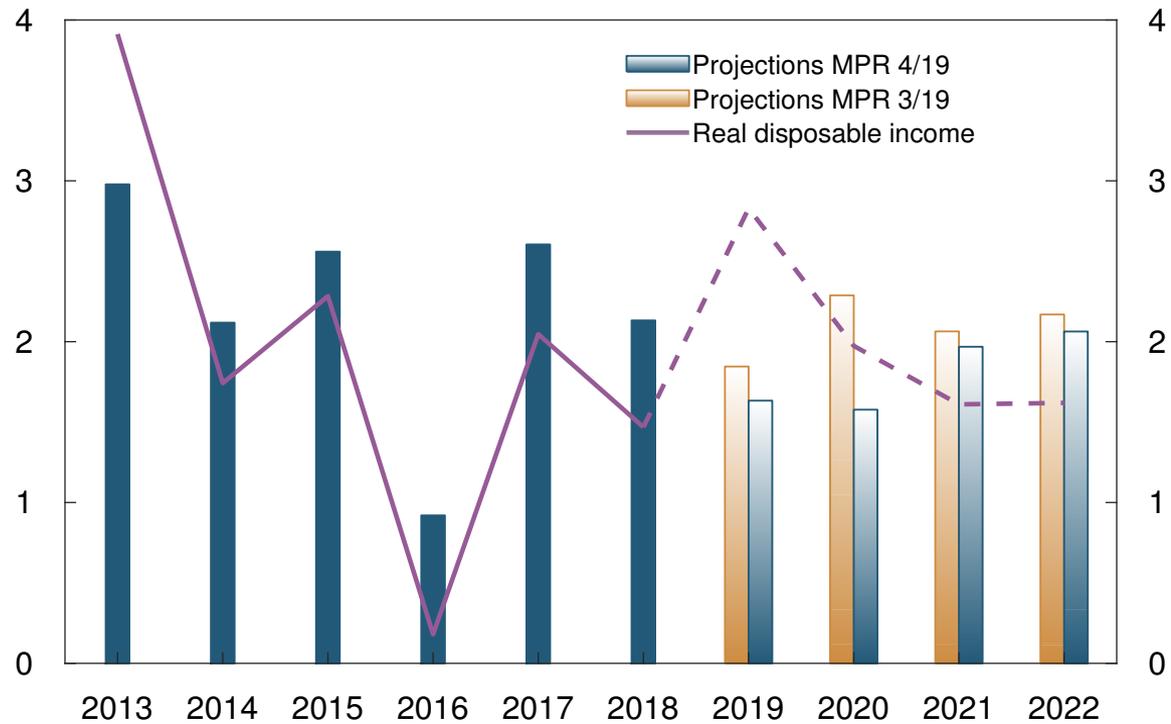
Chart 4.6 Housing investment and nominal house prices.
Annual change. Percent. 2013 – 2022¹⁾



1) Projections for 2019 – 2022.

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

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

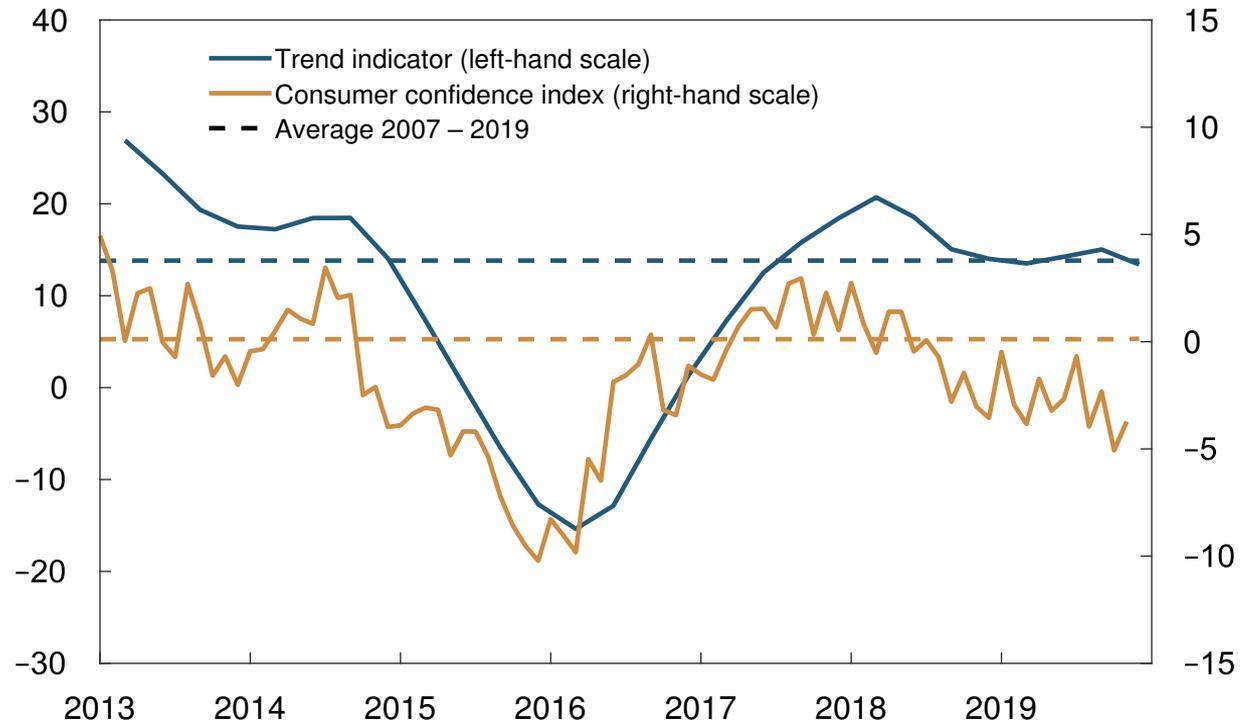


1) Working-day adjusted. 2) Excluding dividend income. 3) Includes non-profit organisations.

4) Projections for 2019 – 2022.

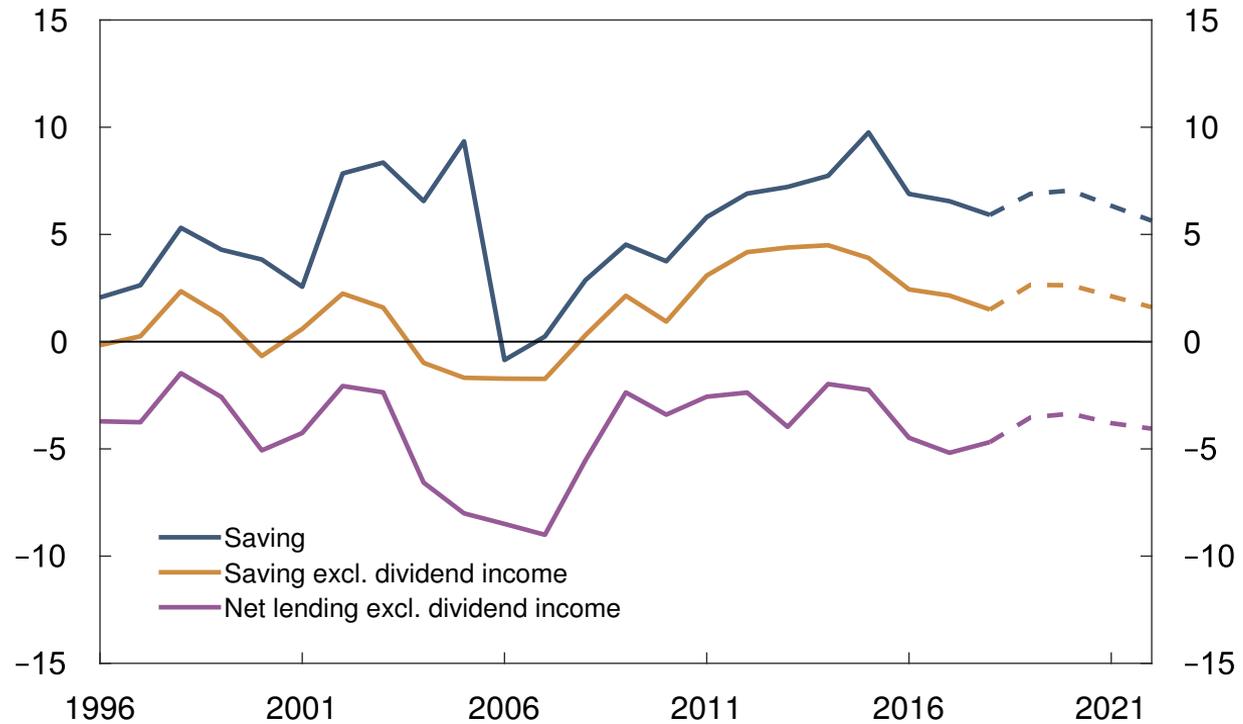
Sources: Statistics Norway and Norges Bank

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

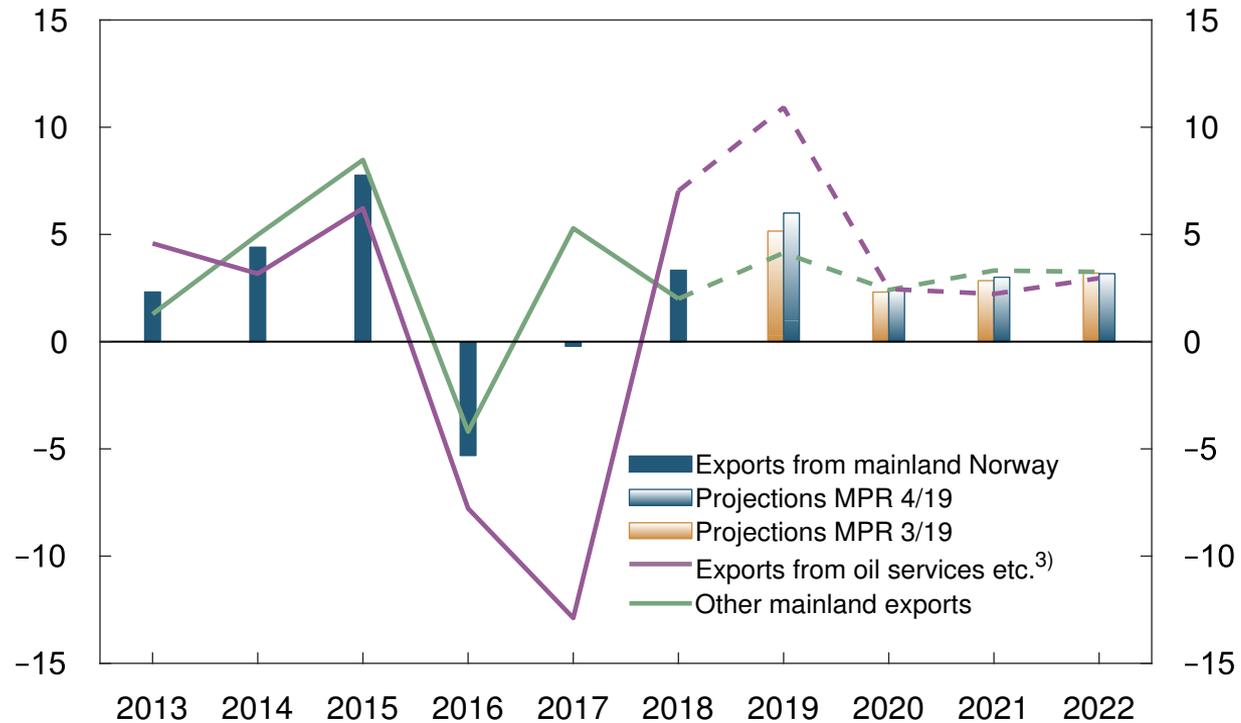
Chart 4.9 Household saving and net lending.
Share of disposable income. Percent. 1996 – 2022¹⁾



1) Projections for 2019 – 2022.

Sources: Statistics Norway and Norges Bank

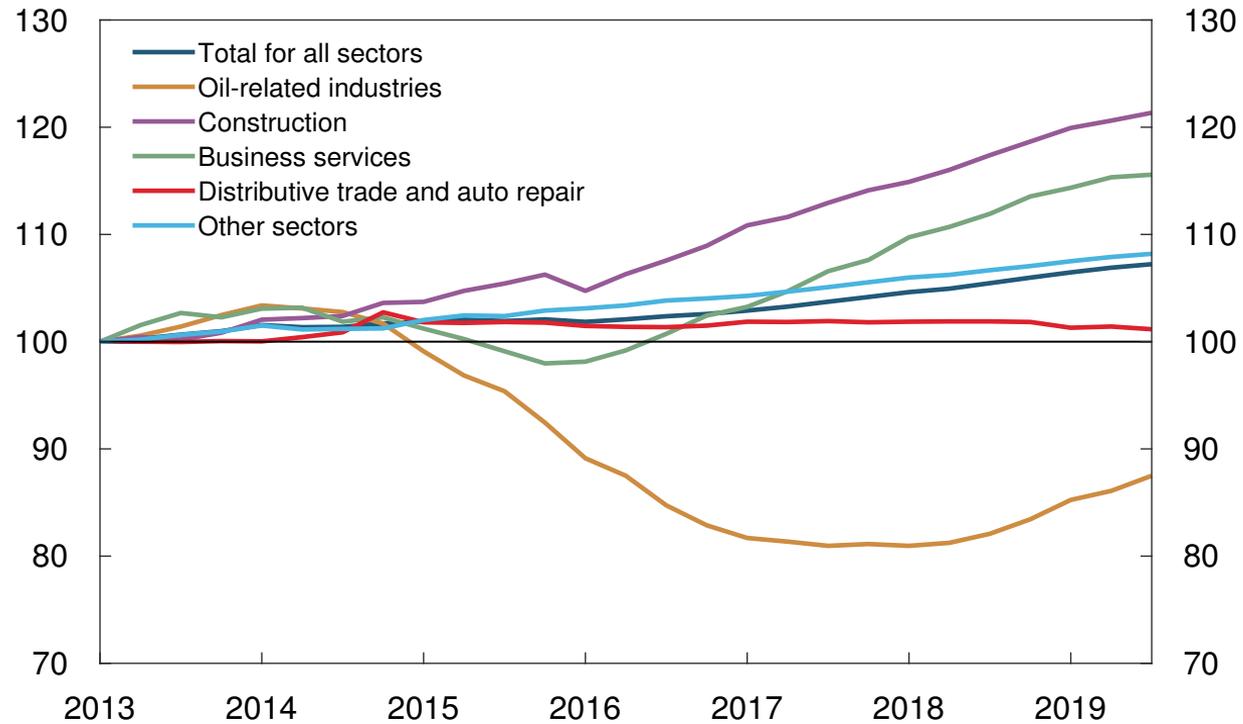
Chart 4.10 Exports from mainland Norway.¹⁾
Annual change. Percent. 2013 – 2022²⁾



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.

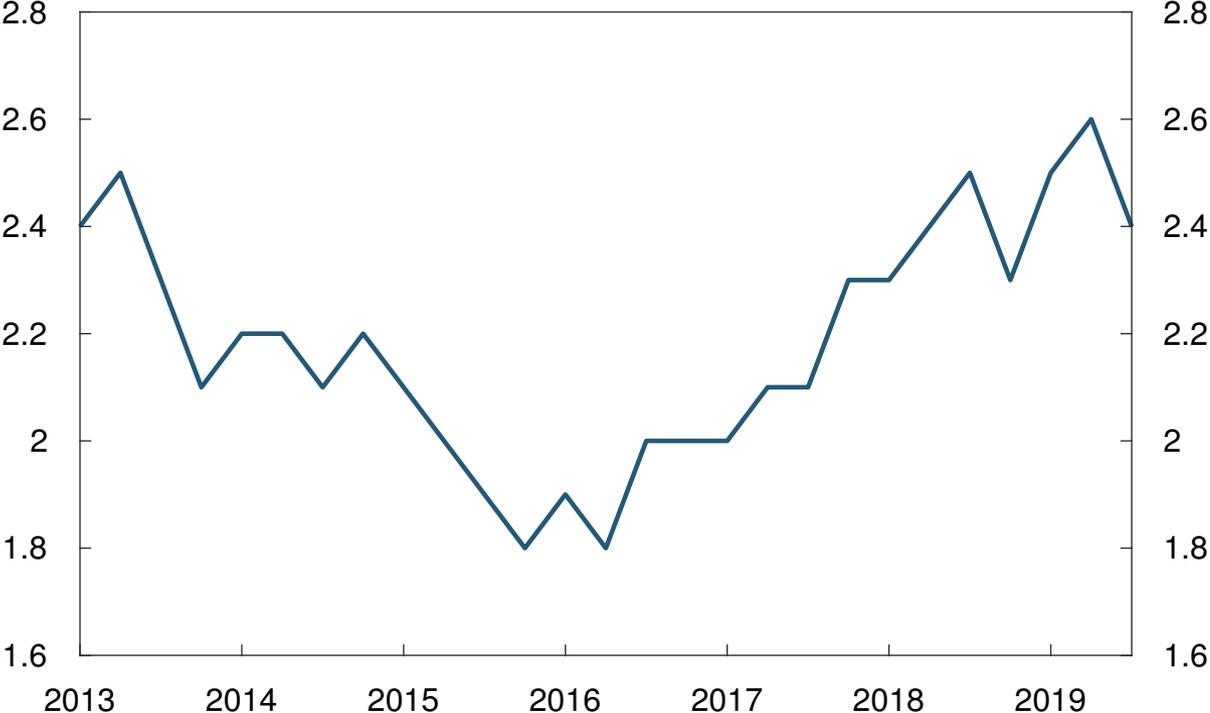
Sources: Statistics Norway and Norges Bank

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



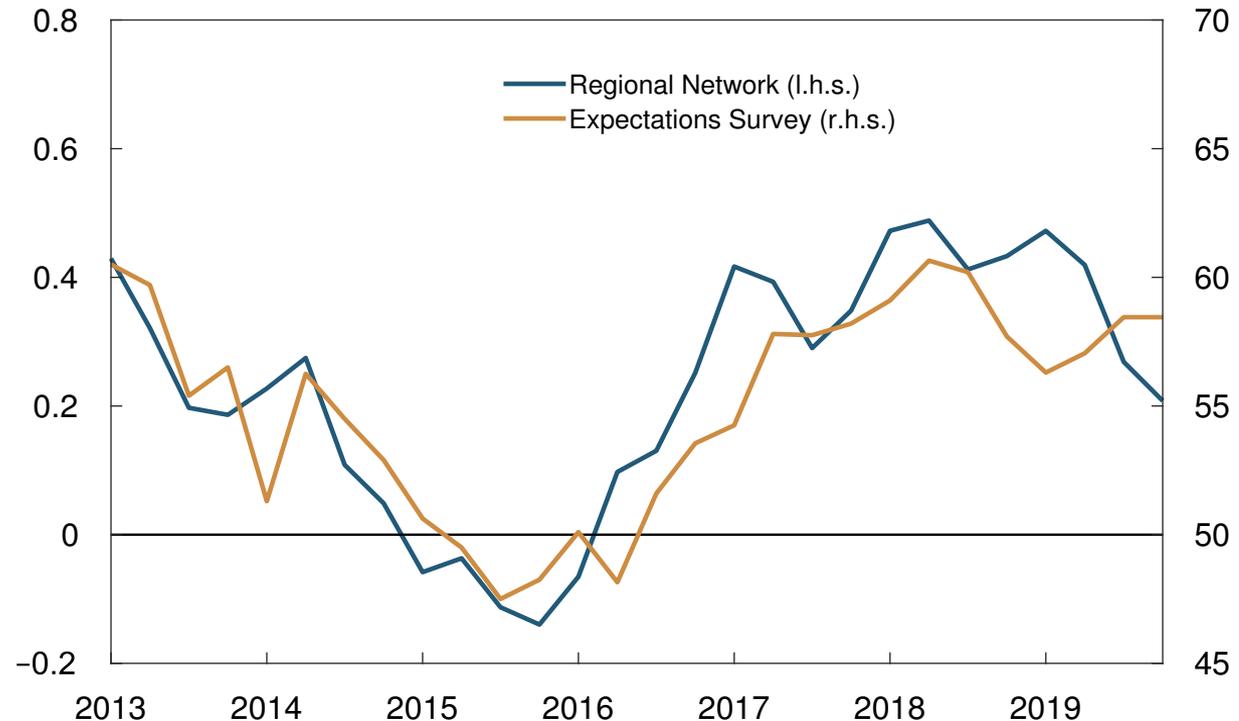
Sources: Statistic Norway and Norges Bank

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



Source: Statistics Norway

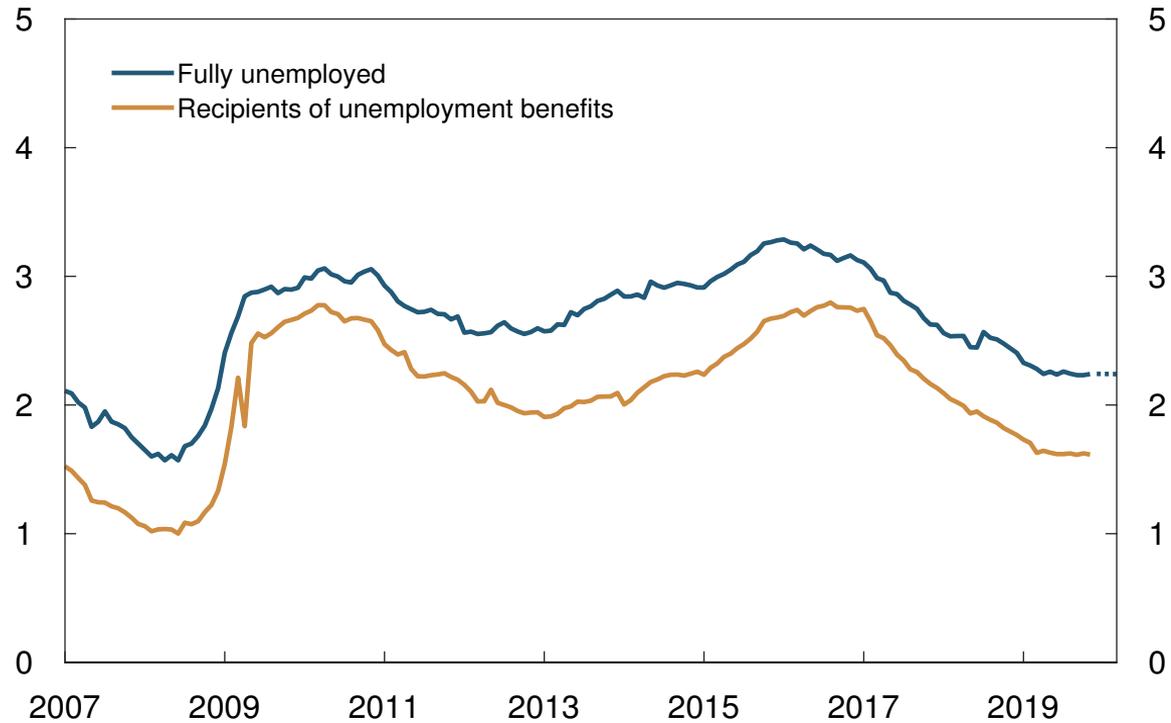
Chart 4.13 Expected employment. Regional Network.¹⁾ Quarterly change. Seasonally adjusted. Percent. Norges Bank's Expectations Survey. Diffusion index.²⁾ 2013 Q1 – 2019 Q4



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

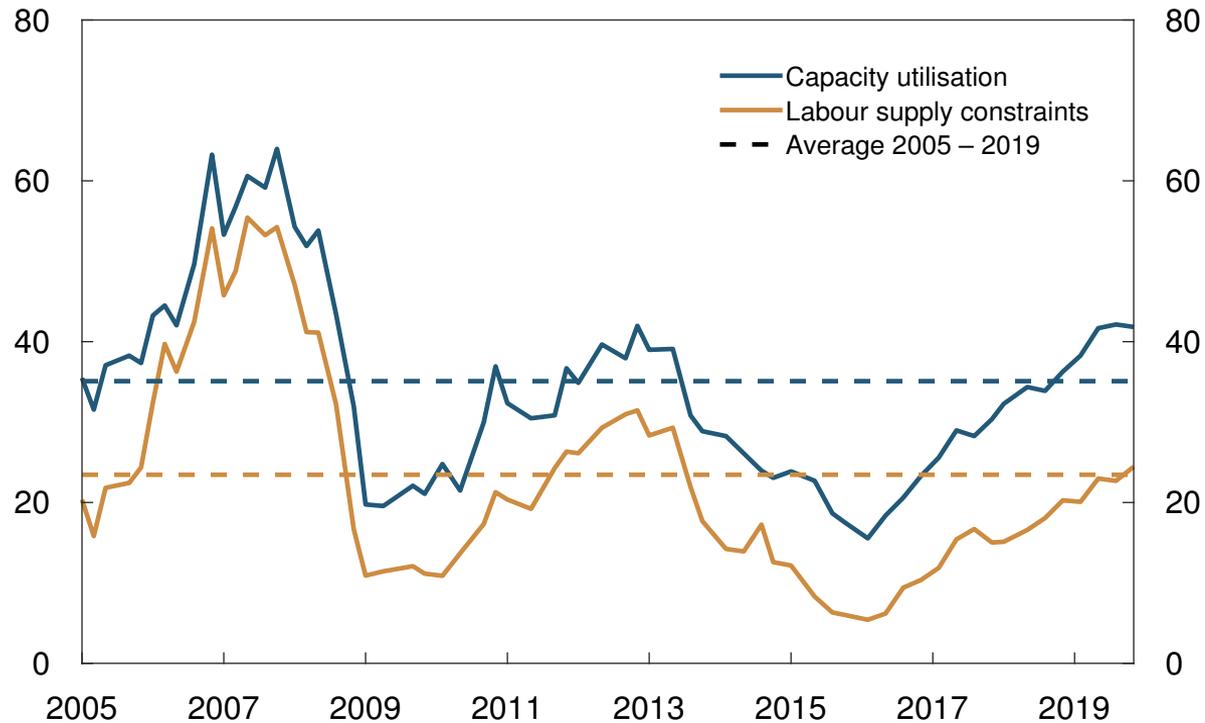
Chart 4.14 Registered fully unemployment and unemployment benefit recipients¹⁾. Share of labour force. Seasonally adjusted. Percent.
January 2007 – March 2020²⁾



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.

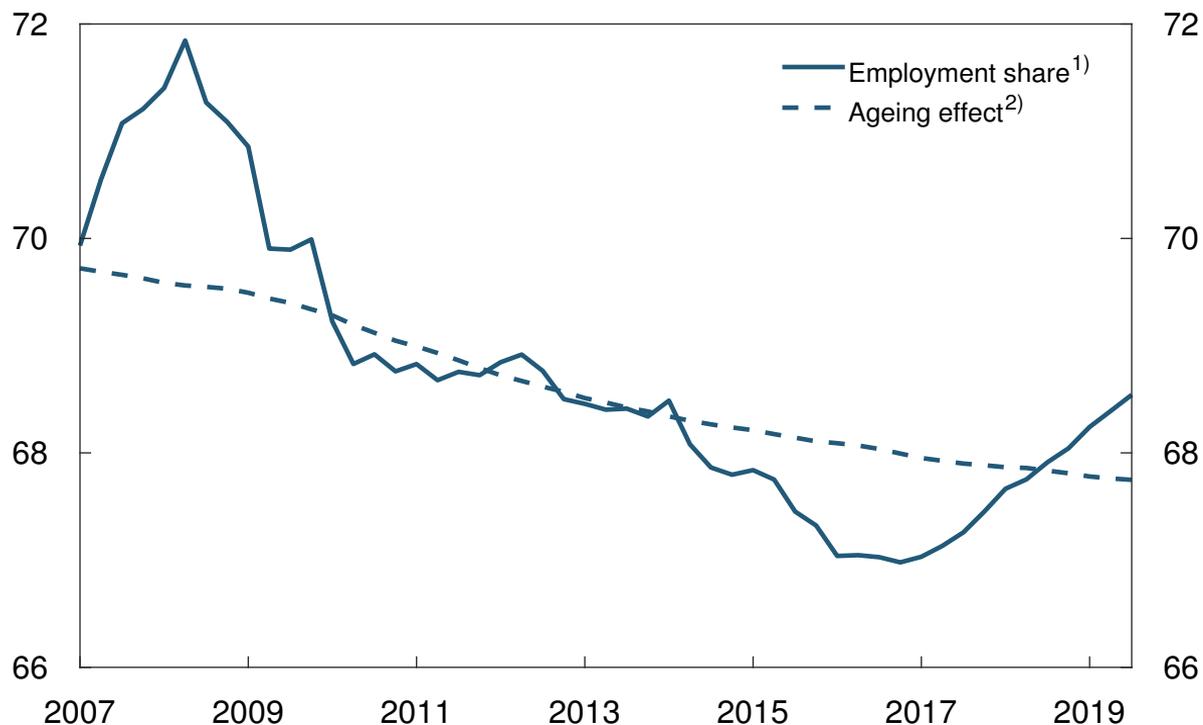
Sources: Norwegian Labour and Welfare Administration (NAV) and Norges Bank

Chart 4.15 Capacity utilisation¹⁾ and labour supply constraints²⁾ as reported by the Regional Network. Percent. January 2005 – November 2019



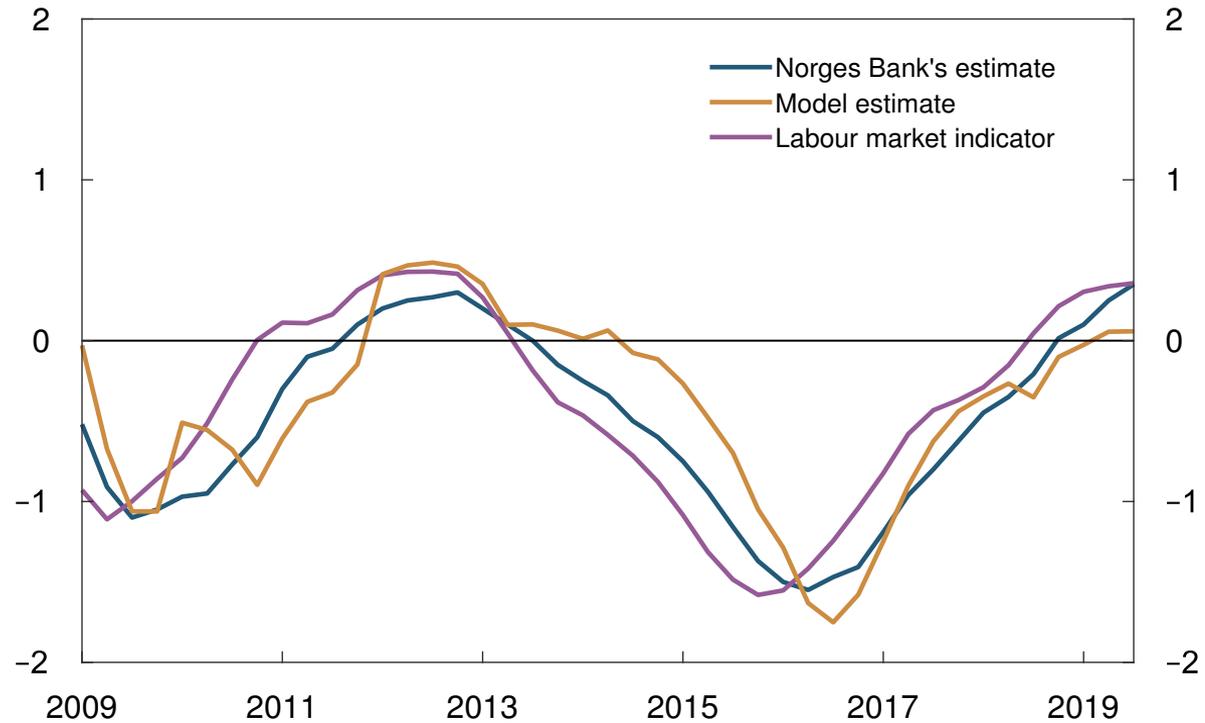
1) Share of contacts that will have some or considerable problems accommodating an increase in demand. 2) Share of contacts reporting that output is being constrained by labour supply. Only enterprises reporting full capacity utilisation are asked about labour supply, but the series shows the share of 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

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

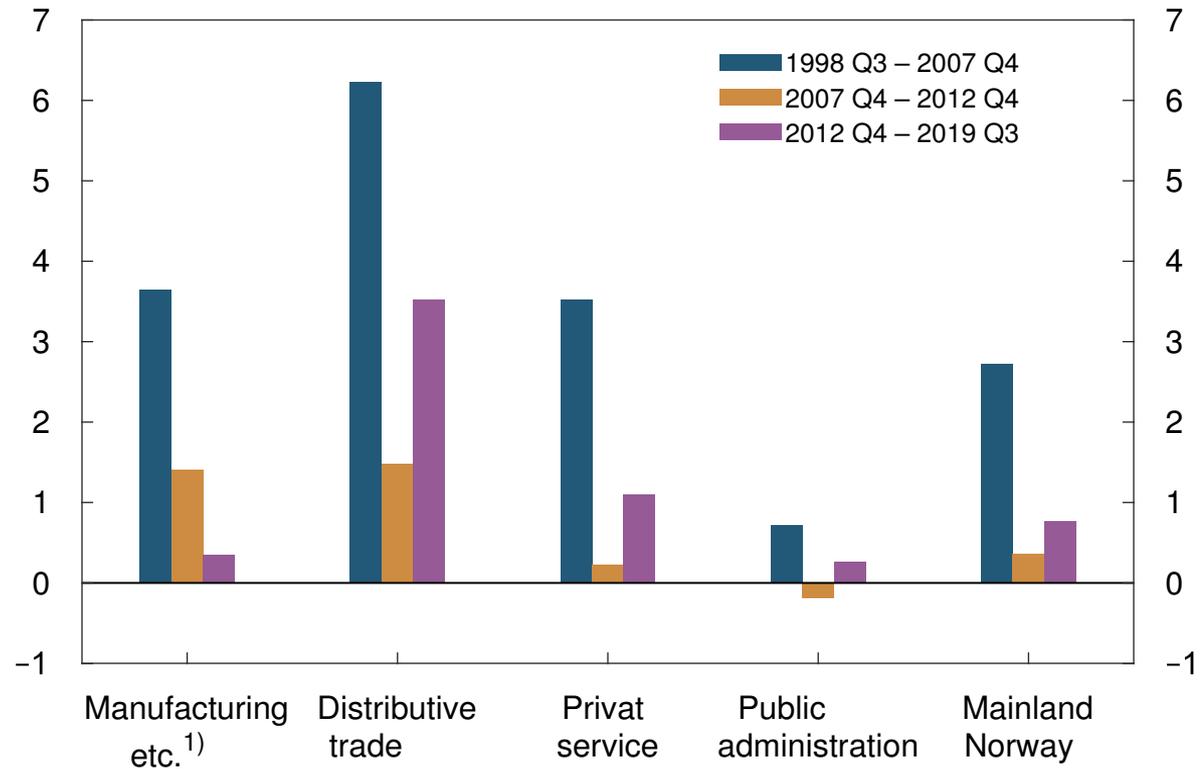
Chart 4.17 Output gap estimates.¹⁾ Percent. 2009 Q1 – 2019 Q3



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

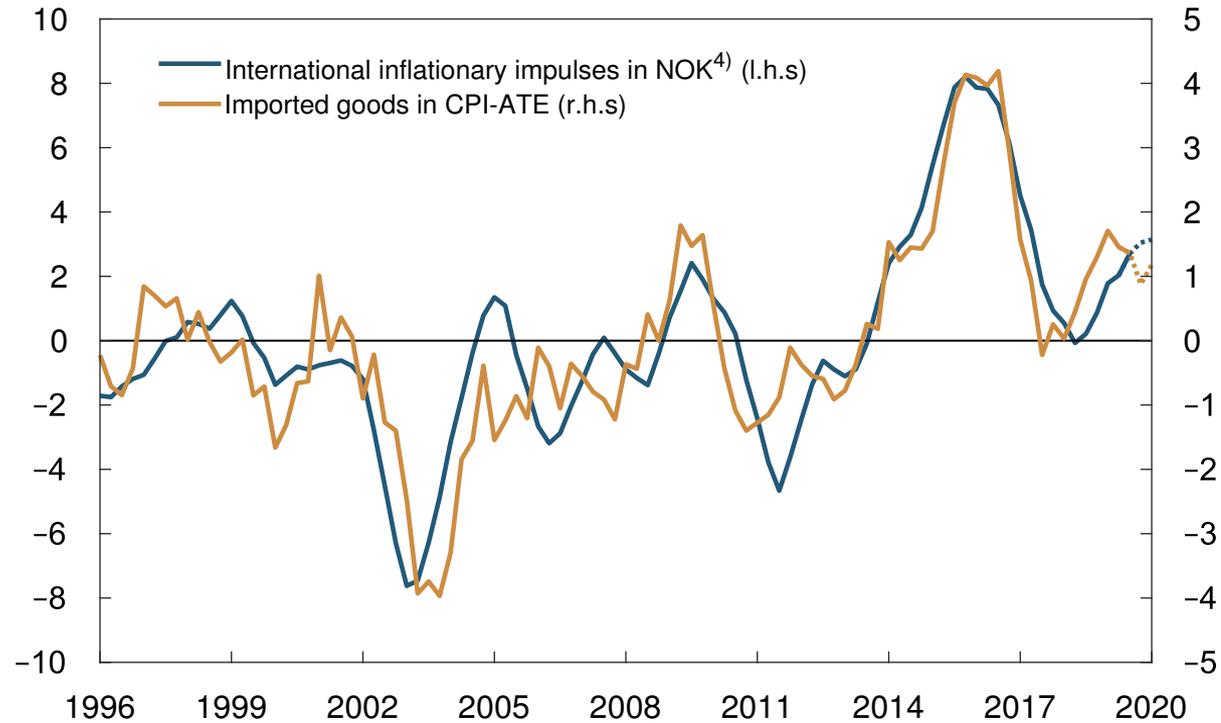
Source: Norges Bank

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

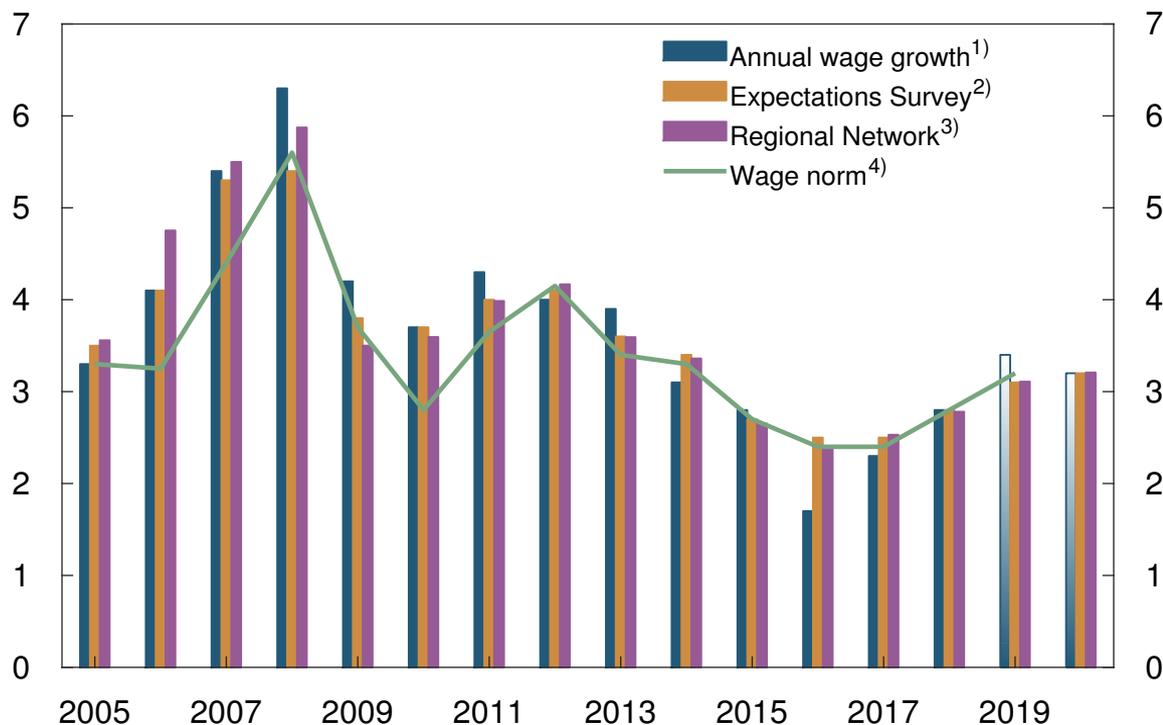
Chart 4.19 Imported consumer goods in the CPI-ATE¹⁾ and international inflationary impulses in NOK²⁾. Four-quarter change. 1996 Q1 – 2020 Q1³⁾



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.

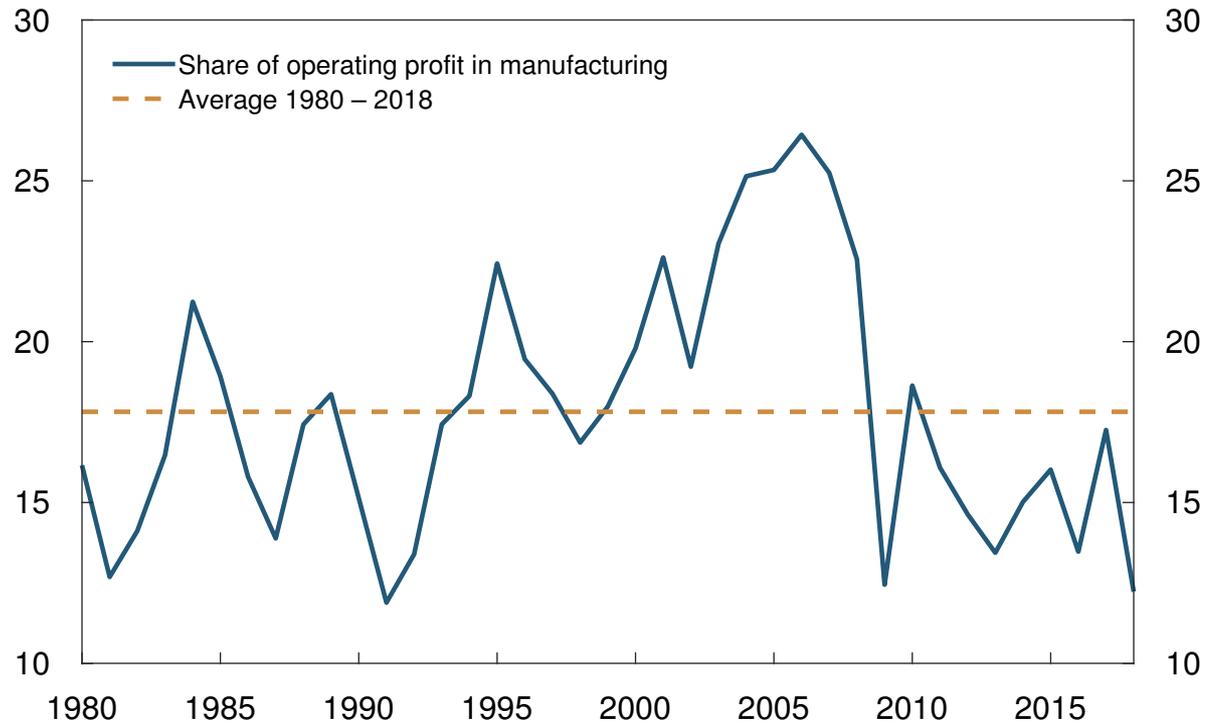
Sources: Statistics Norway, Thomson Reuters and Norges Bank

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

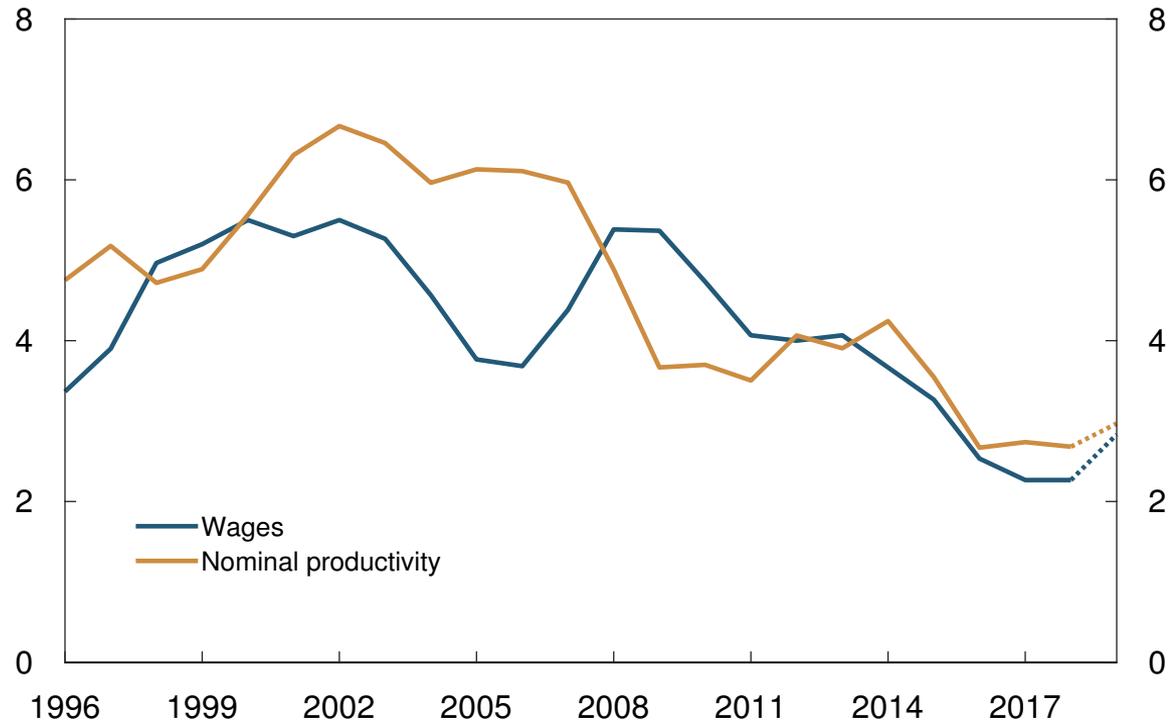
Chart 4.21 Operating profit in manufacturing. Percent.¹⁾ 1980 – 2018



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

Chart 4.22 Wages and nominal productivity¹⁾.

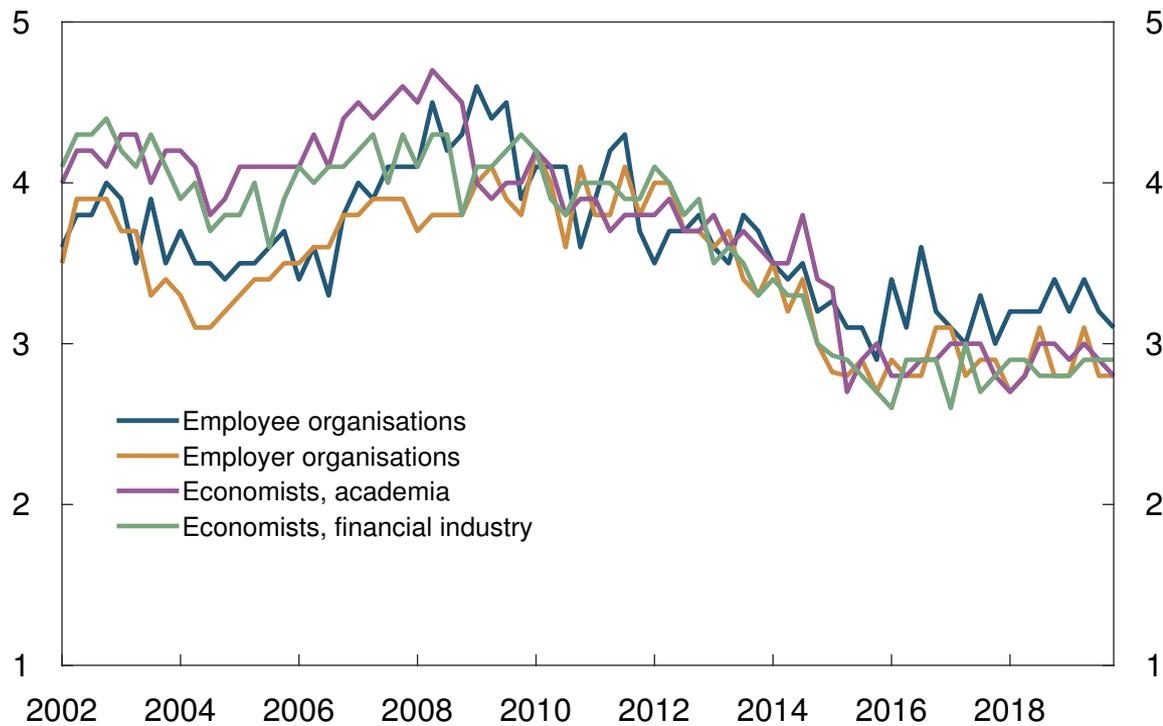
Annual change. Three-year moving average. Percent. 1996 – 2019²⁾



1) Nominal Mainland GDP per hour worked. 2) Projections for 2019.

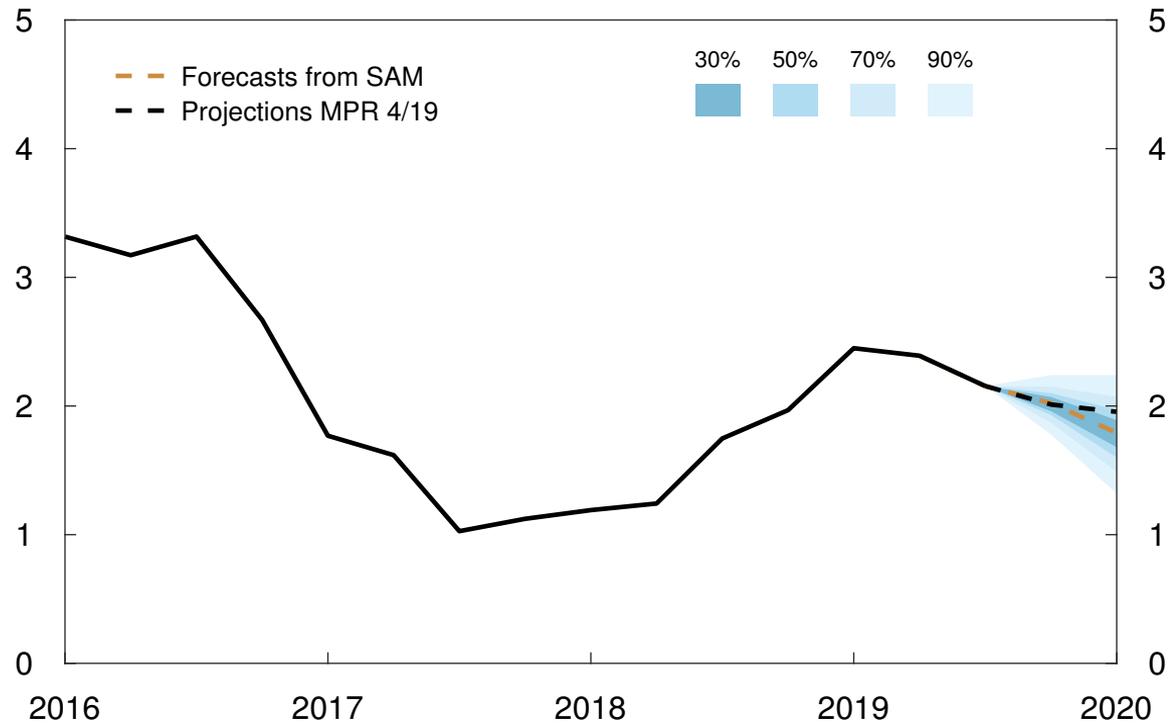
Sources: Statistics Norway and Norges Bank

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



Sources: Epinion, Kantar TNS and Opinion

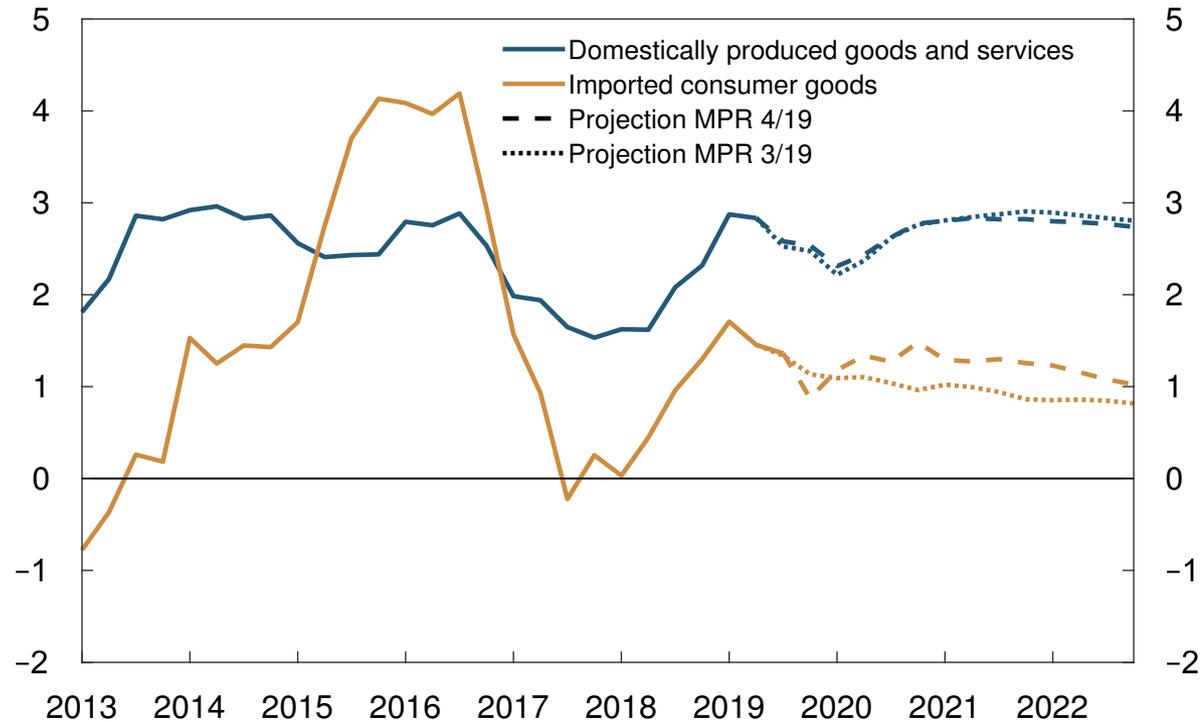
Chart 4.24 CPI-ATE¹⁾ with fan chart²⁾ from SAM³⁾.
 Four-quarter change. Percent. 2016 Q1 – 2020 Q1⁴⁾



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.

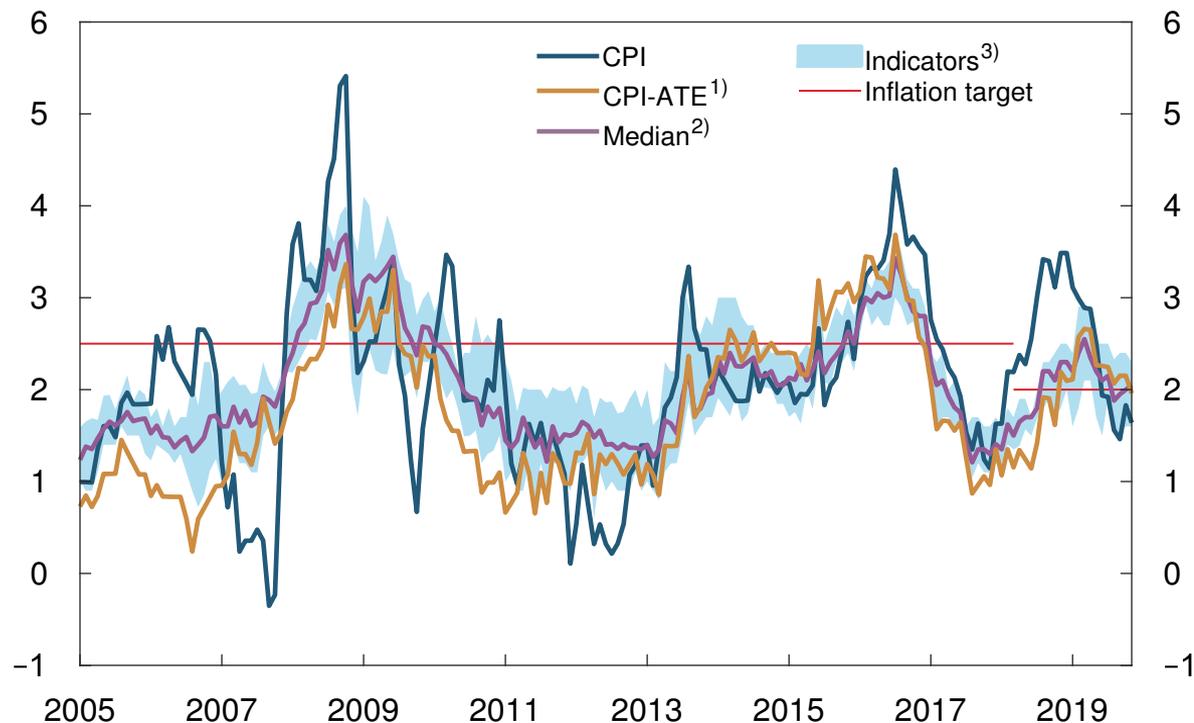
Sources: Statistics Norway and Norges Bank

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



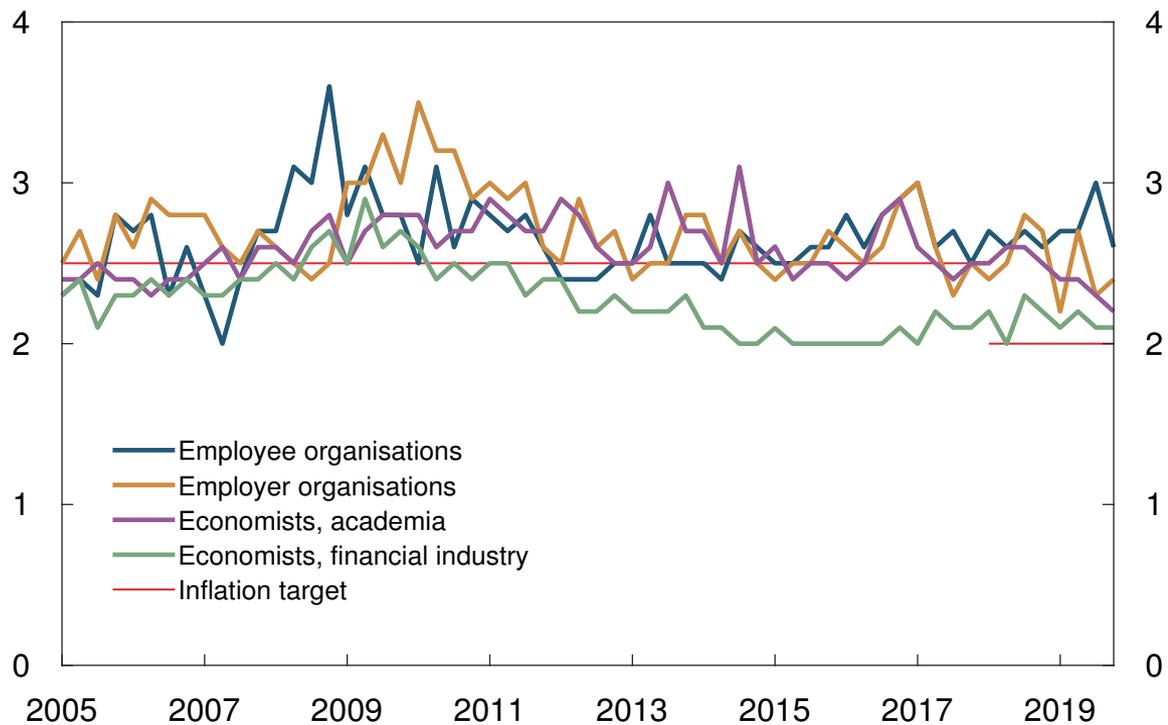
1) CPI adjusted for tax changes and excluding energy products. 2) Projections for 2019 Q4 – 2022 Q4.
Sources: Statistics Norway and Norges Bank

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



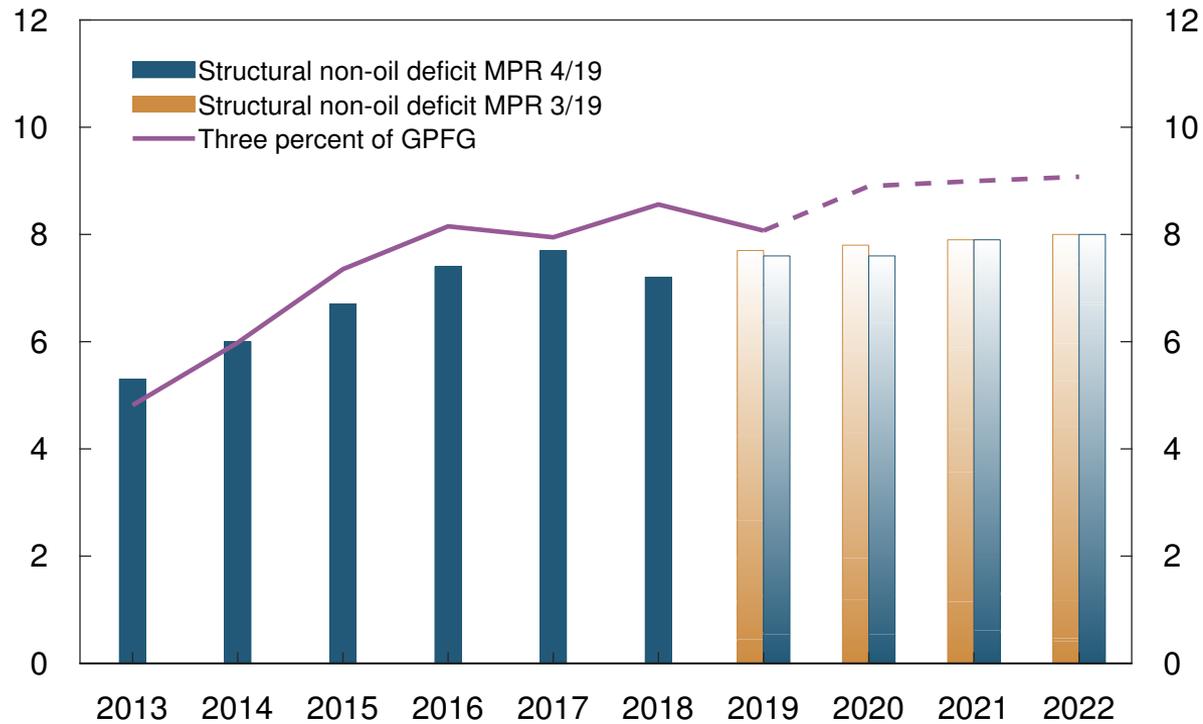
1) The CPI adjusted for tax changes and excluding energy products. **2)** Median of the CPIM, CPIXE, 20% trimmed mean, weighted median, CPI-XV and CPI common. **3)** The band shows the highest and lowest values for the CPIM, CPIXE, 20% trimmed mean, weighted median, CPI-XV and CPI common.
 Sources: Statistics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

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



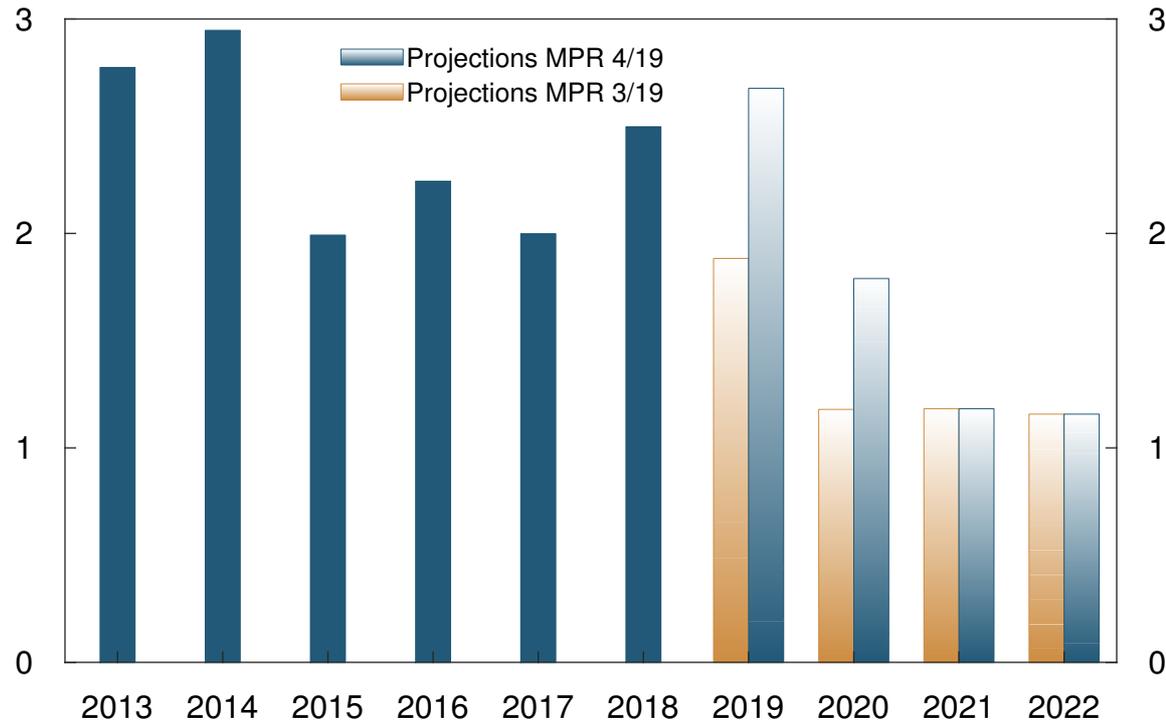
Sources: Epinion, Kantar TNS and Opinion

Chart 4.C Structural non-oil deficit and 3% of the GPFG¹⁾. 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⁾

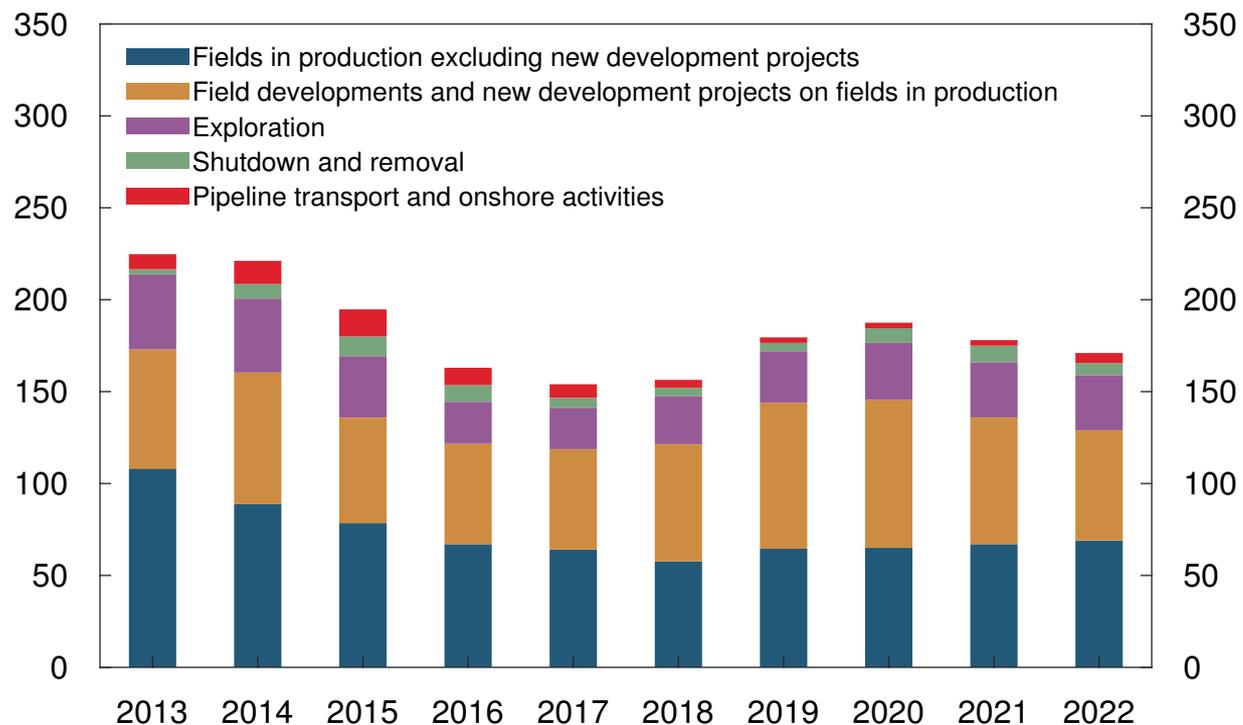


1) Working-day adjusted. 2) Projections for 2019 – 2022.

Sources: Statistics Norway and Norges Bank

Chart 4.E Petroleum investment.¹⁾

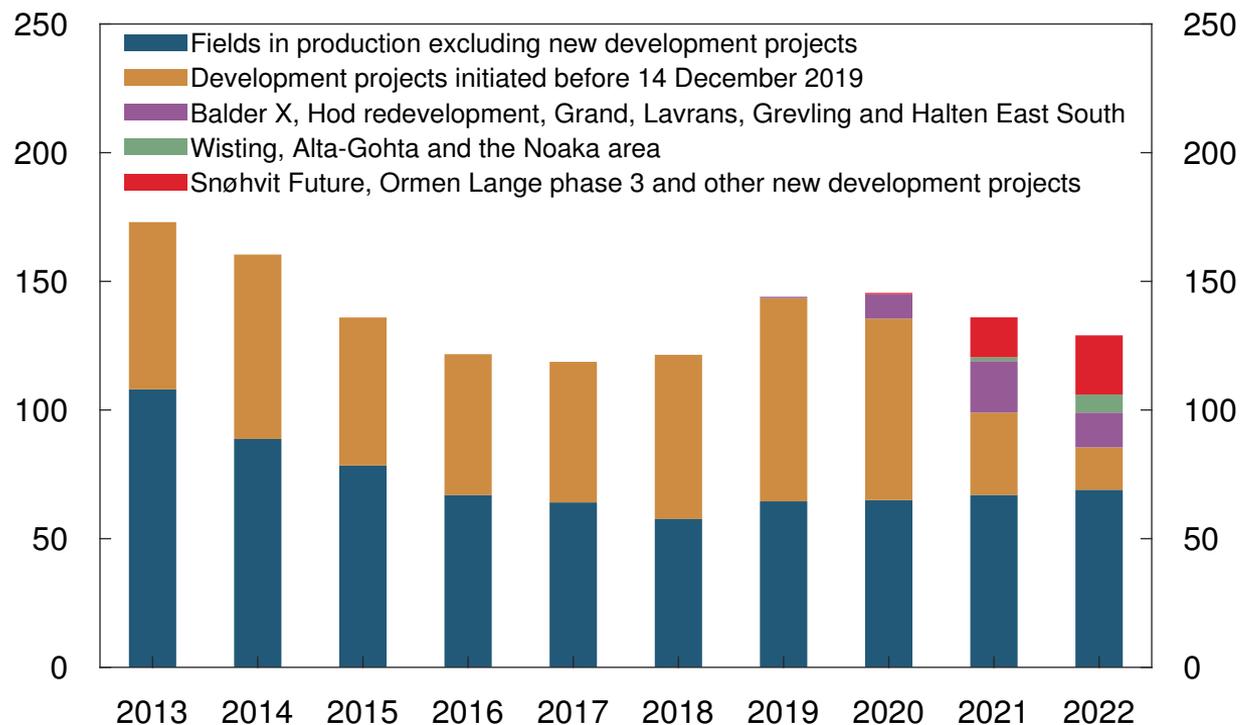
Constant 2019 prices. In billions of NOK. 2013 – 2022²⁾



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

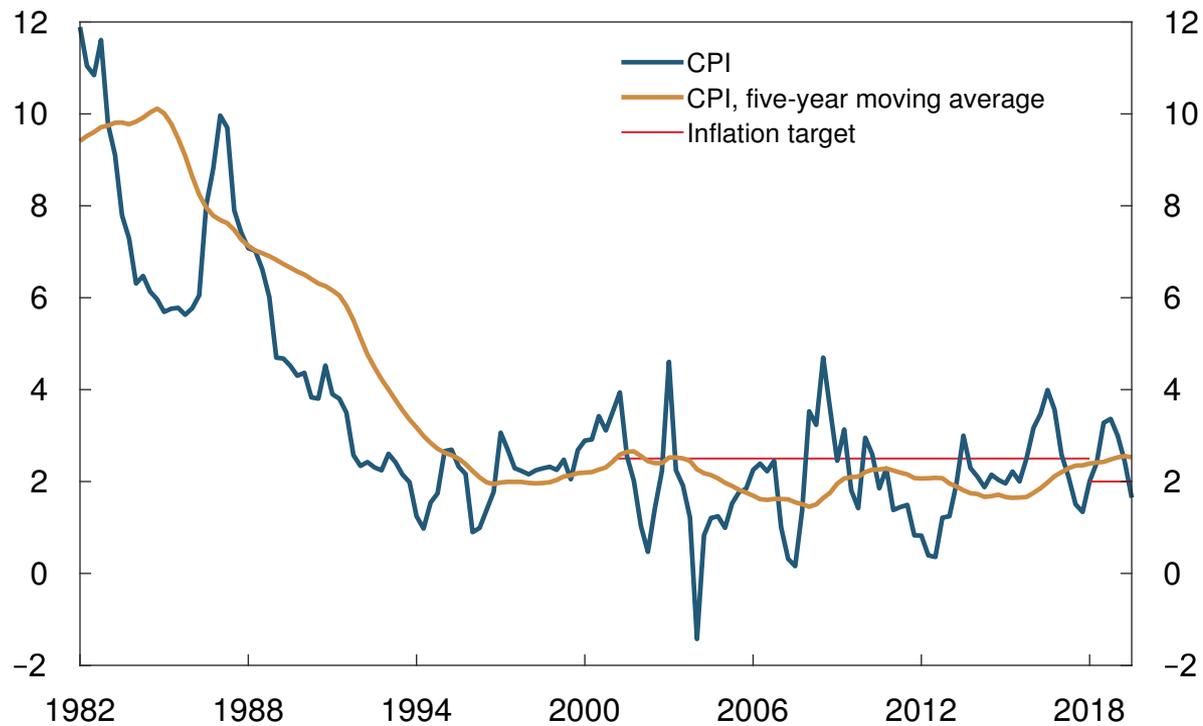
Chart 4.F Investment in field development and fields in production.¹⁾
 Constant 2019 prices. In billions of NOK. 2013 – 2022²⁾



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.

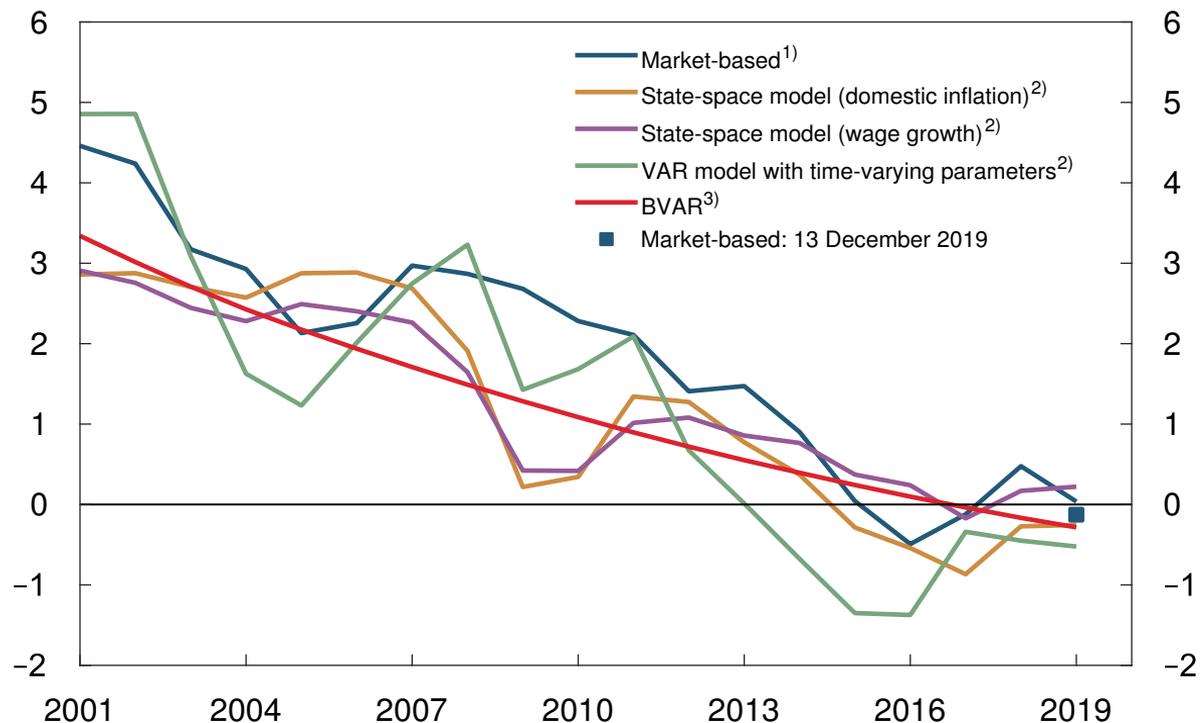
Sources: Statistics Norway and Norges Bank

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



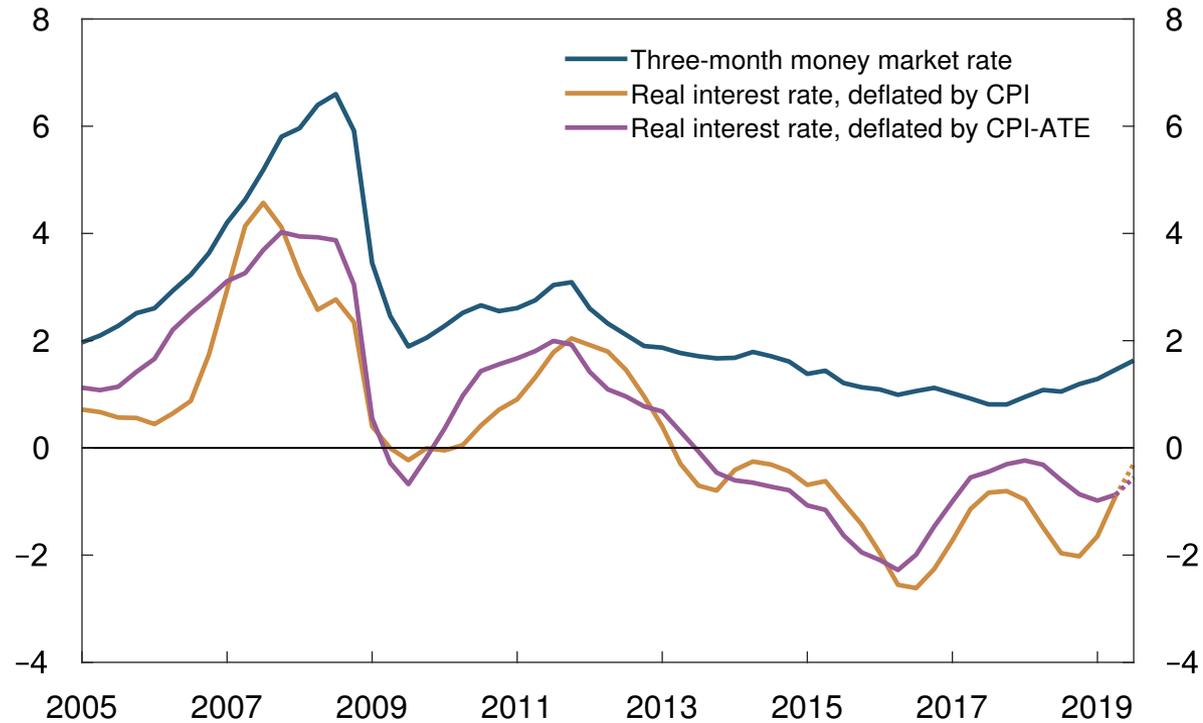
Sources: Statistics Norway and Norges Bank

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.
Source: Norges Bank

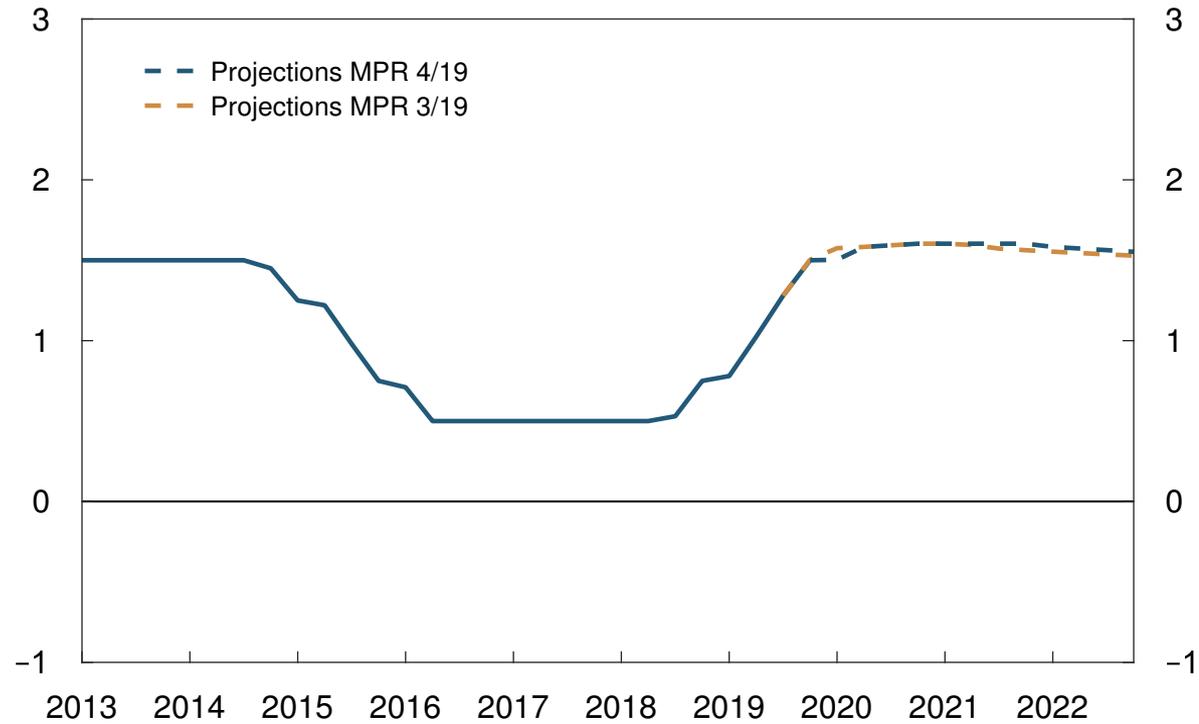
Chart 5.3 Three-month money market rate and real interest rates¹⁾.
Percent. 2005 Q1 – 2019 Q3²⁾



1) Three-month money market rate deflated by a three-quarter centred moving average of four-quarter inflation. 2) Projections for 2019 Q3.

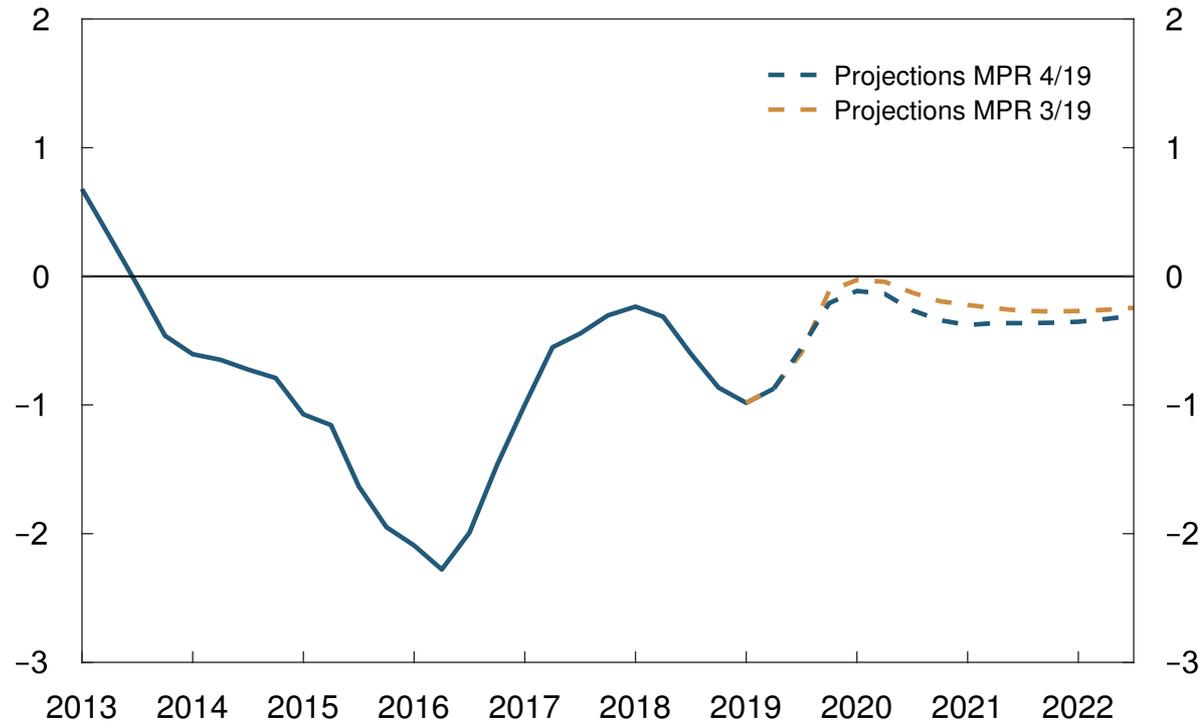
Sources: Statistics Norway and Norges Bank

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 Q3 ²⁾

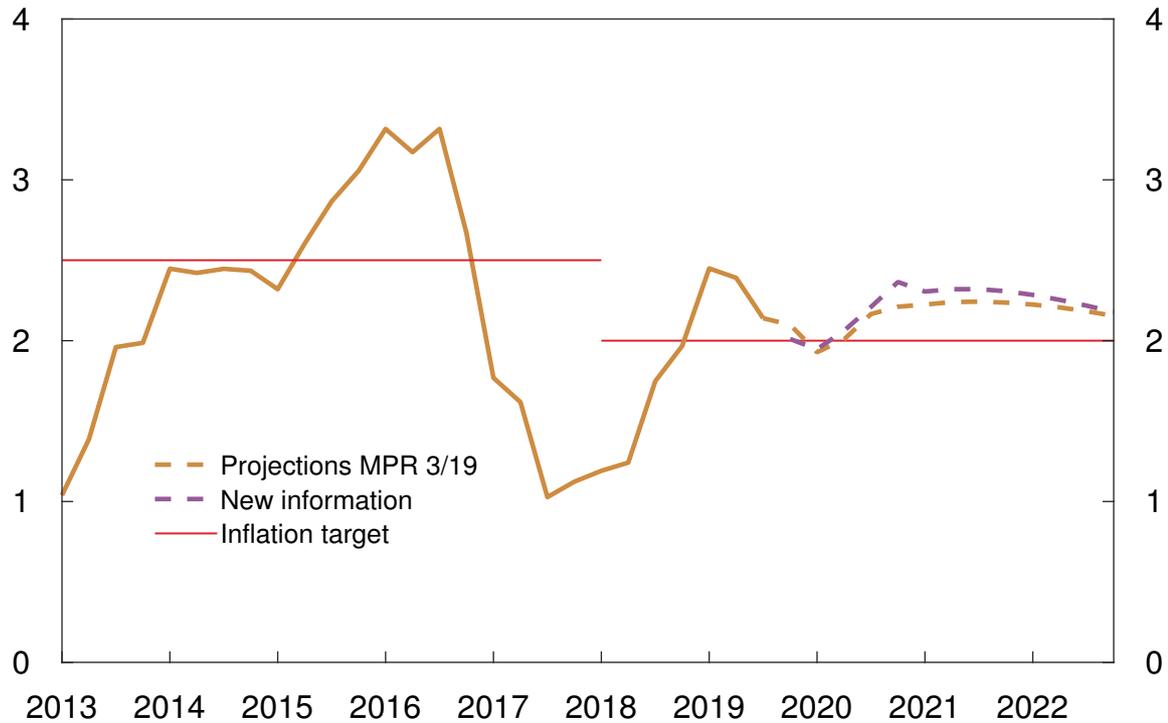


1) Three-month money market rate less a three-quarter centred moving average of four-quarter inflation as measured by the CPI-ATE. **2)** Projections for 2019 Q3 – 2022 Q3.

Sources: Statistics Norway and Norges Bank

Chart 5.A CPI-ATE.¹⁾ Projections conditional on new information concerning the economic development and the policy rate forecast in MPR 3/19.

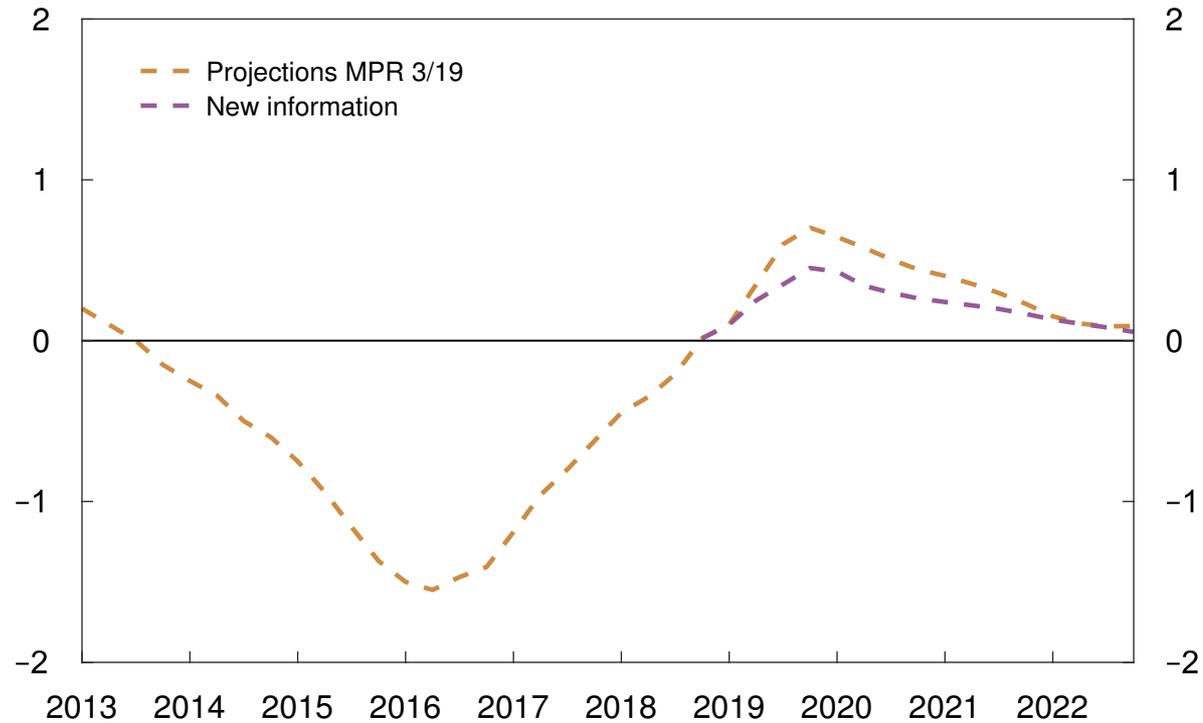
Four-quarter change. Percent. 2013 Q1 – 2022 Q4²⁾



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

Sources: Statistics Norway and Norges Bank

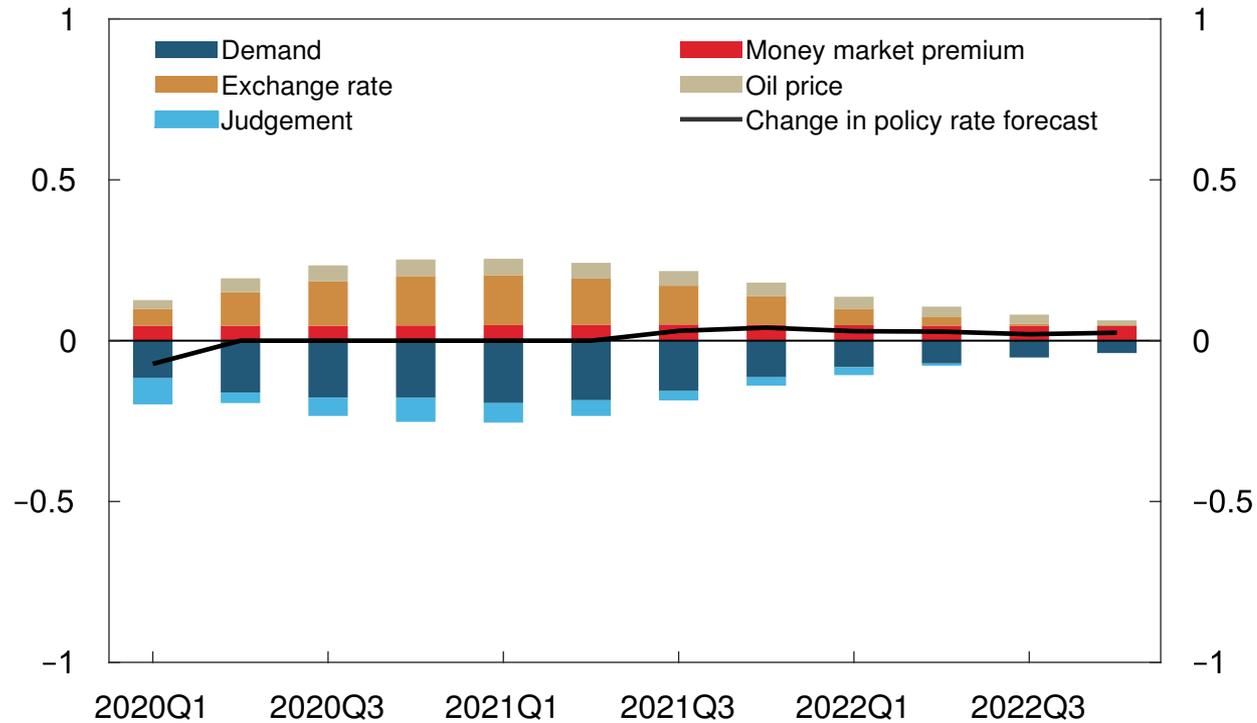
Chart 5.B Estimated output gap¹⁾. Conditional on new information concerning the economic development and the policy rate forecast in MPR 3/19. Percent. 2013 Q1 – 2022 Q4



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

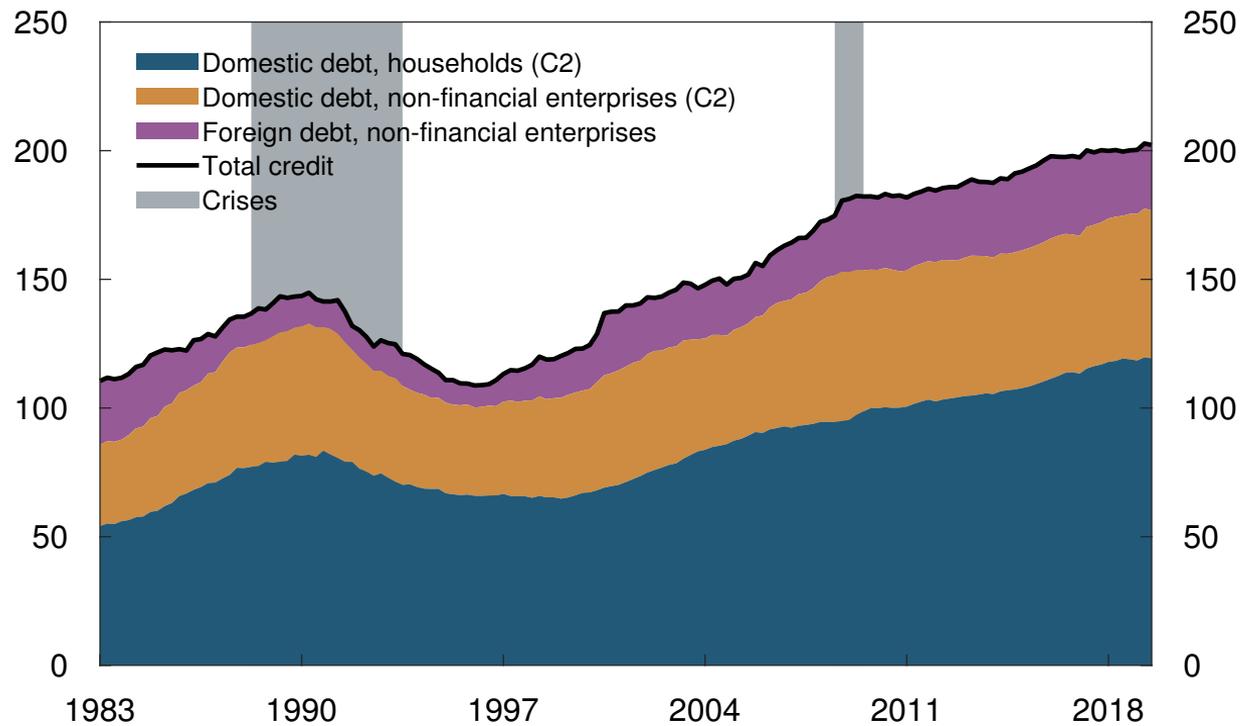
Source: Norges Bank

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



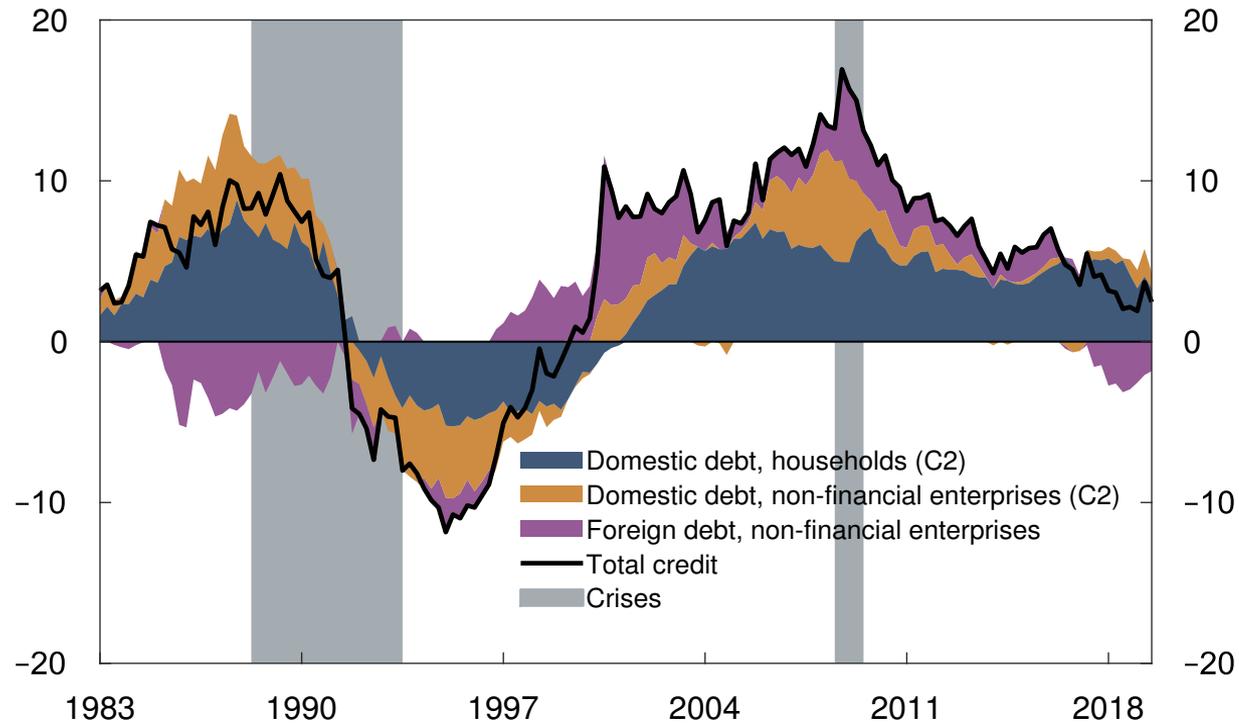
Source: Norges Bank

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



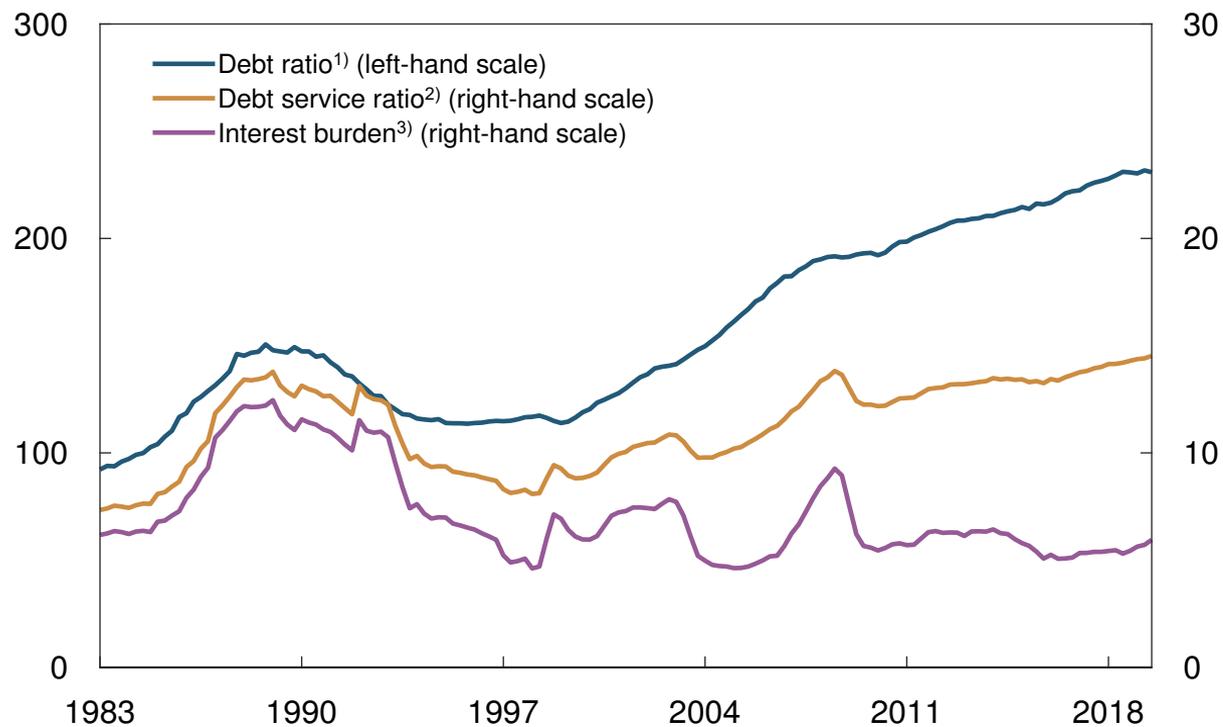
Sources: IMF, Statistics Norway and Norges Bank

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



Sources: IMF, Statistics Norway and Norges Bank

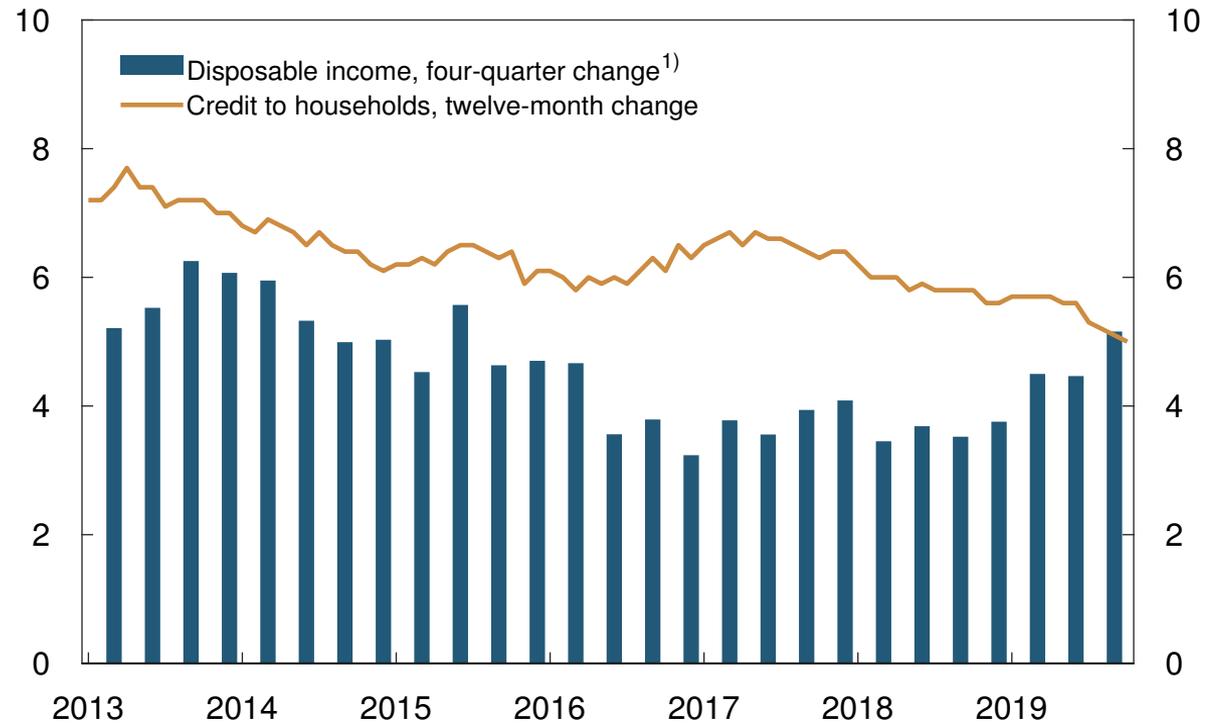
Chart 6.3 Household debt ratio, debt service ratio and interest burden.
Percent. 1983 Q1 – 2019 Q3



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.

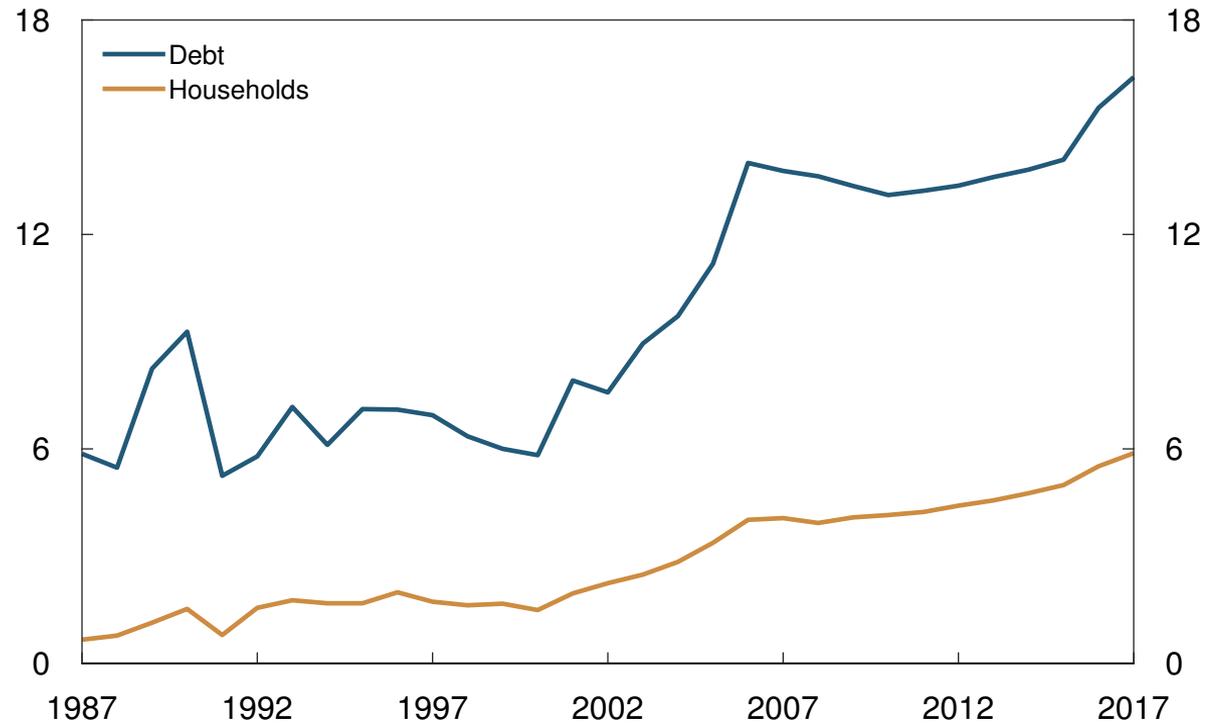
Sources: Statistics Norway and Norges Bank

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



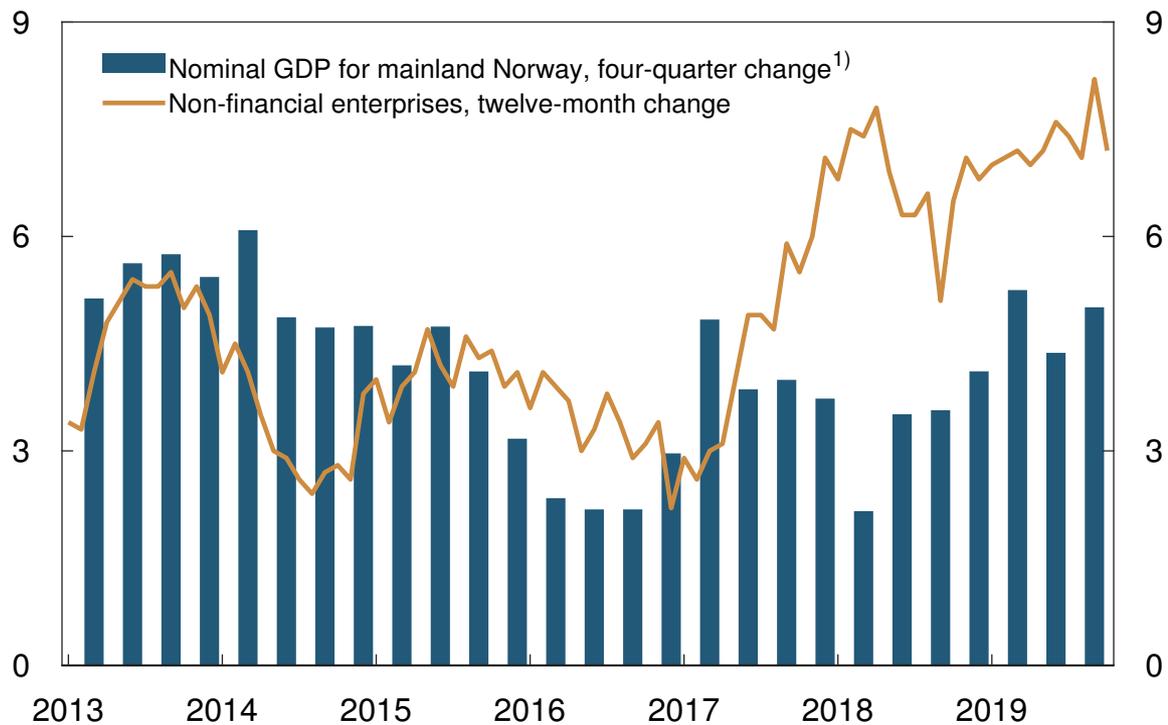
1) Four-quarter change in the sum of the last four quarters in the series. To end-2019 Q3.
Sources: Statistics Norway and Norges Bank

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



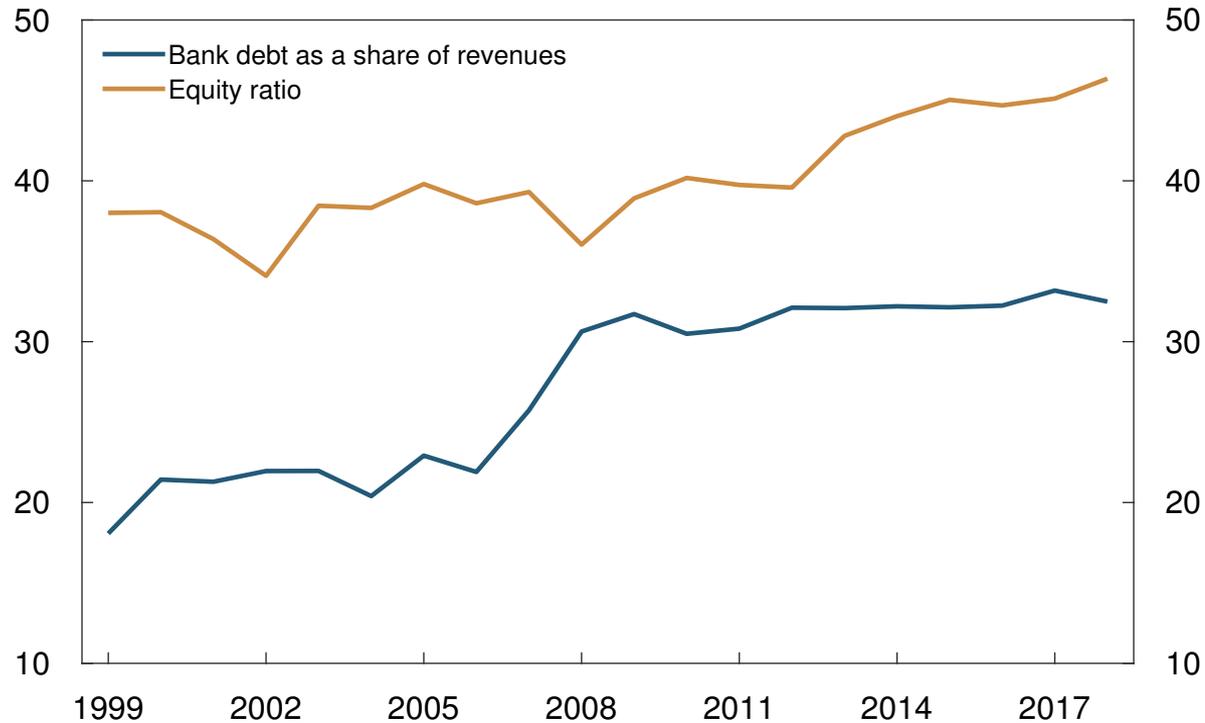
1) Debt as a share of gross income.
Sources: Statistics Norway and Norges Bank

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

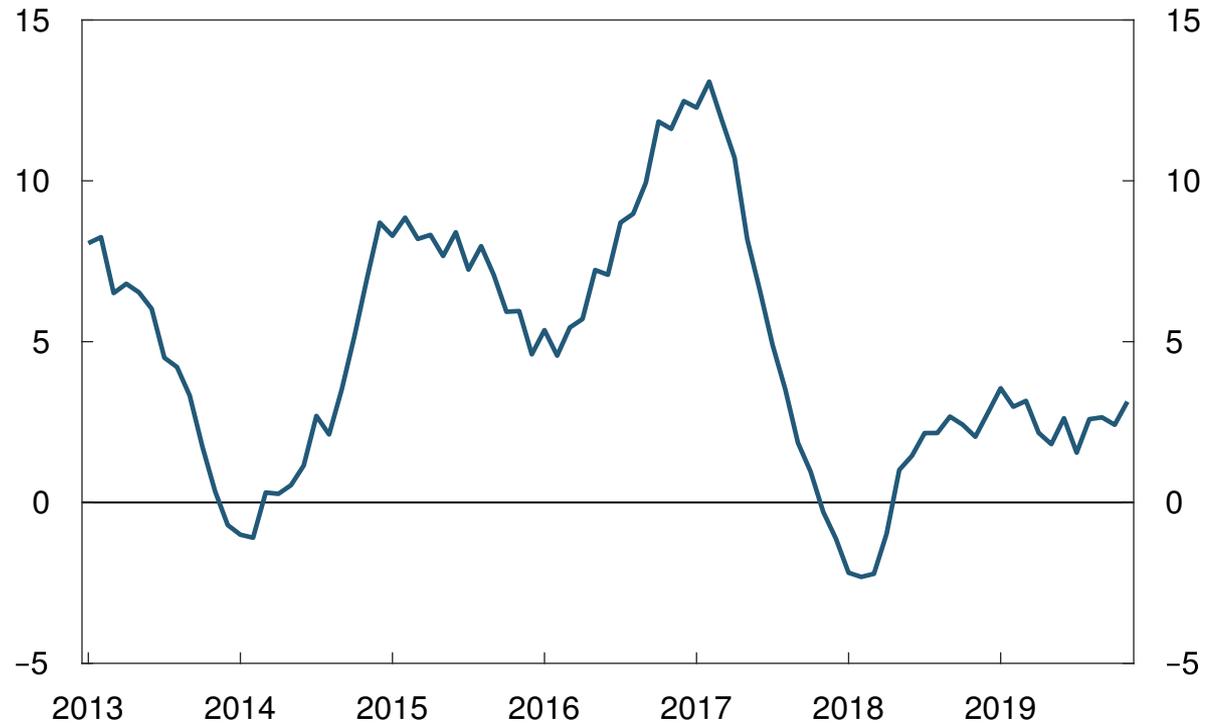
Chart 6.7 Equity ratio and bank debt as a share of revenues for Norwegian-registered non-financial limited liability companies.¹⁾ Percent. 1999 – 2018



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

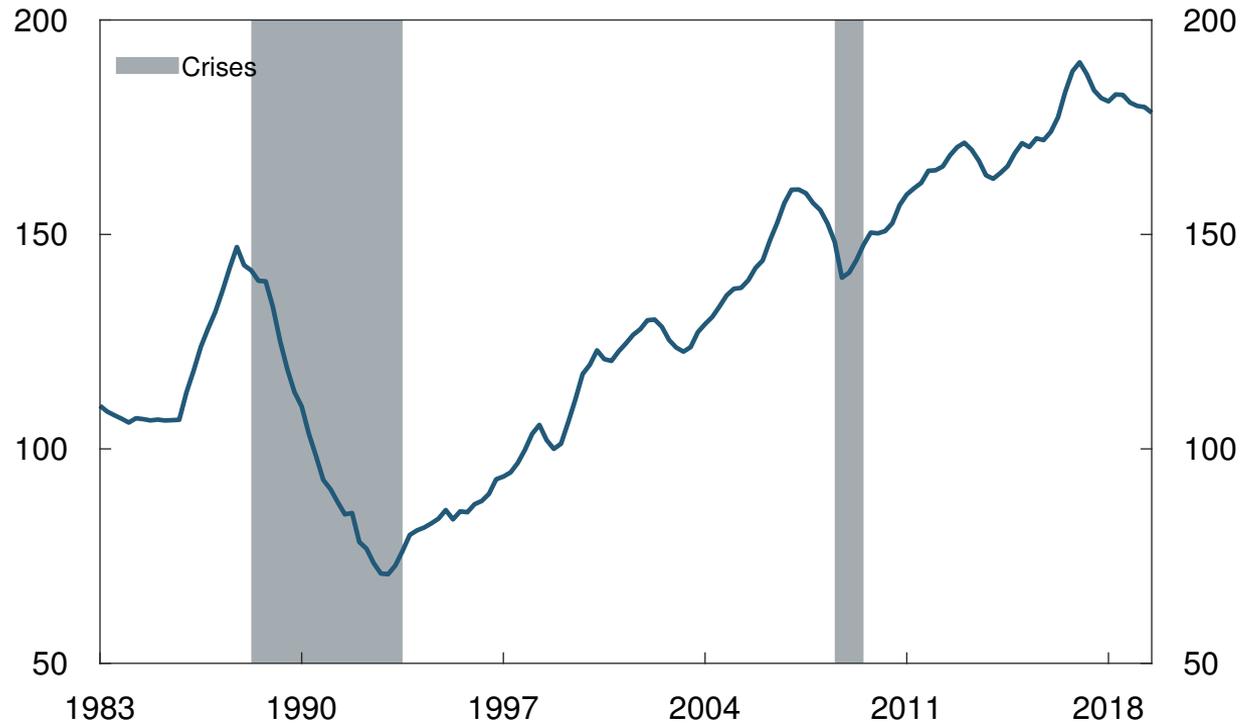
Source: Norges Bank

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



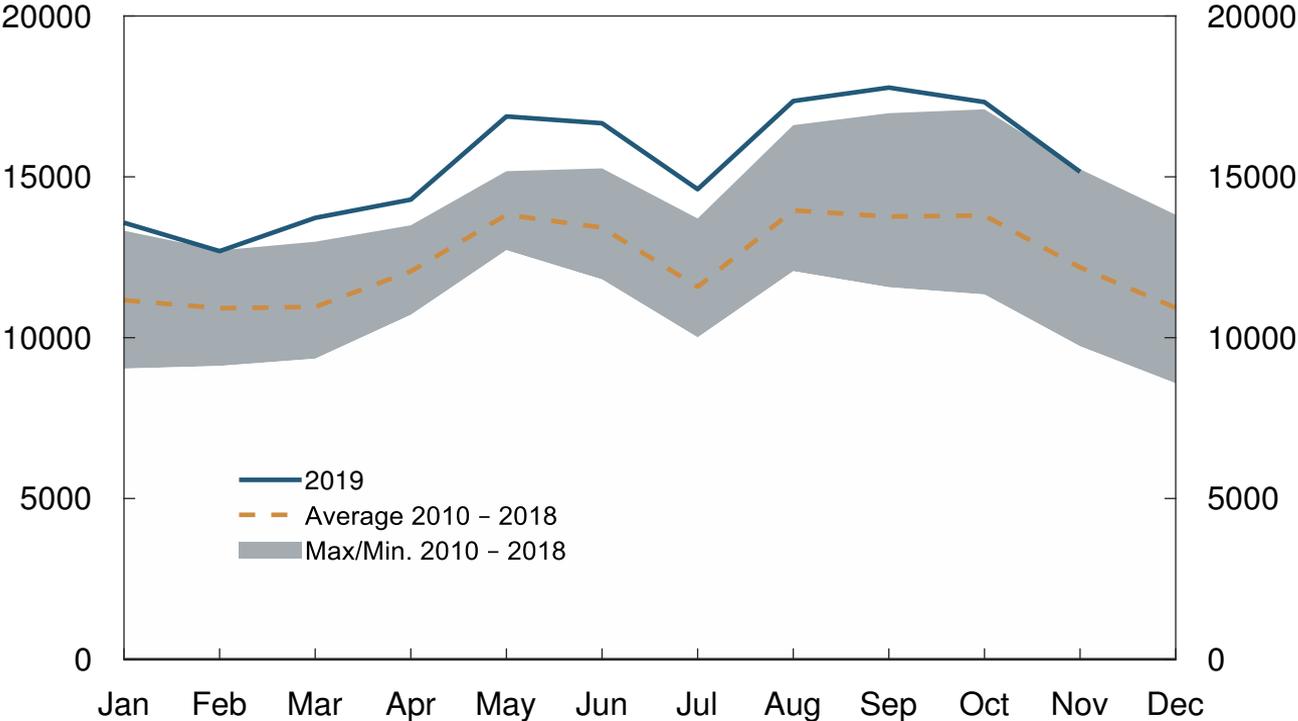
Sources: Eiendomsverdi, Finn.no, Real Estate Norway and Norges Bank

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



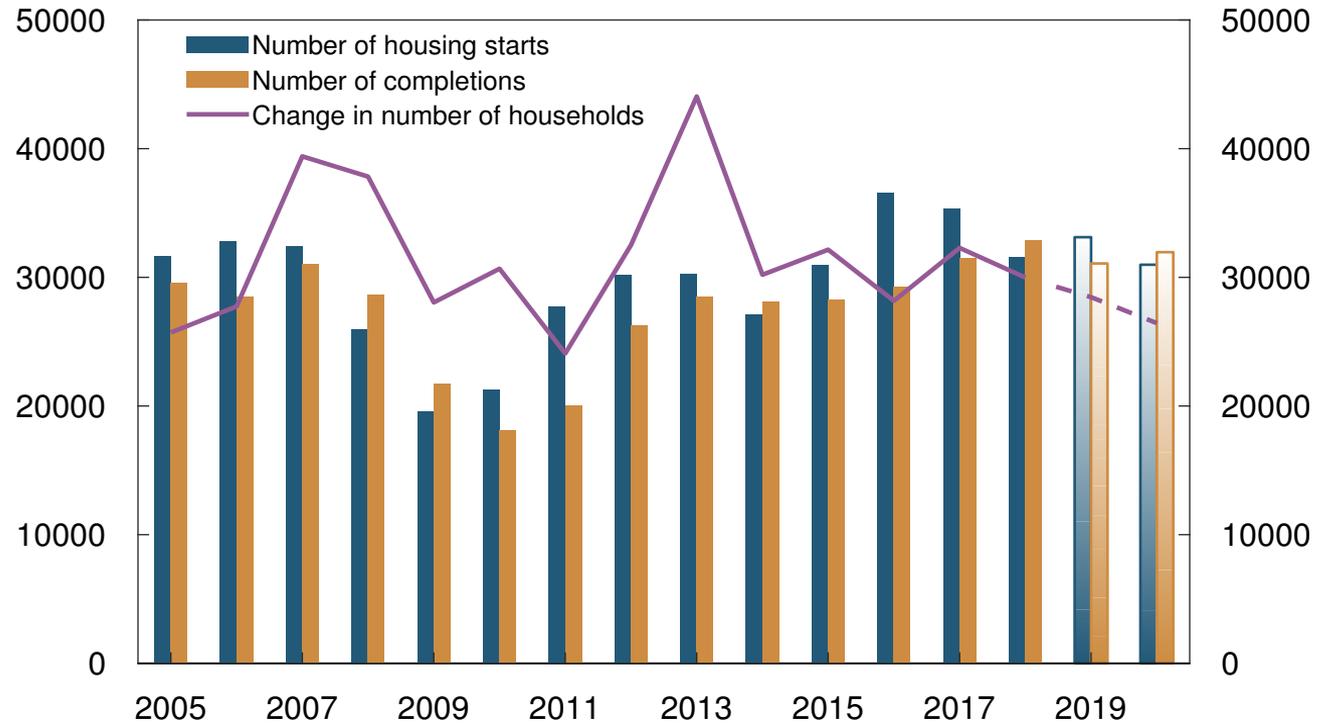
Sources: Eiendomsverdi, Finn.no, Norwegian Association of Real Estate Agents (NEF), Real Estate Norway, Statistics Norway and Norges Bank

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



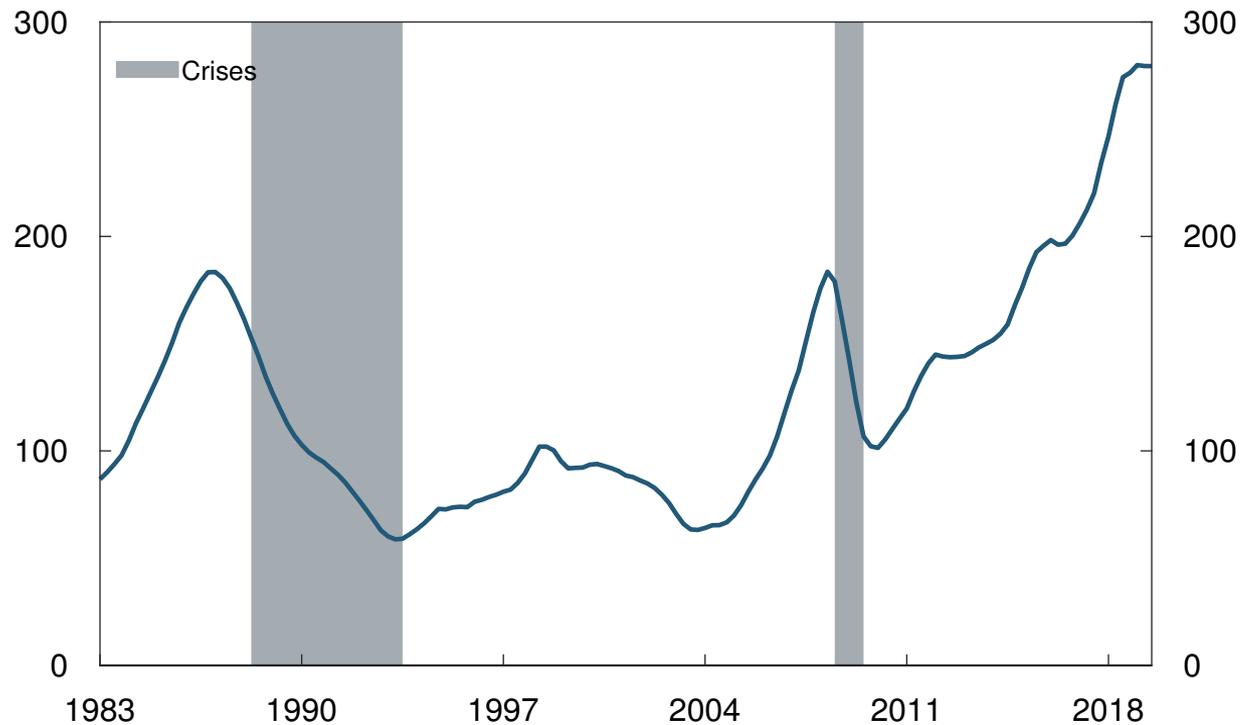
Sources: Eiendomsverdi, Finn.no and Real Estate Norway

Chart 6.11 Housing starts and completions, and annual change in number of households.
2005 – 2020¹⁾



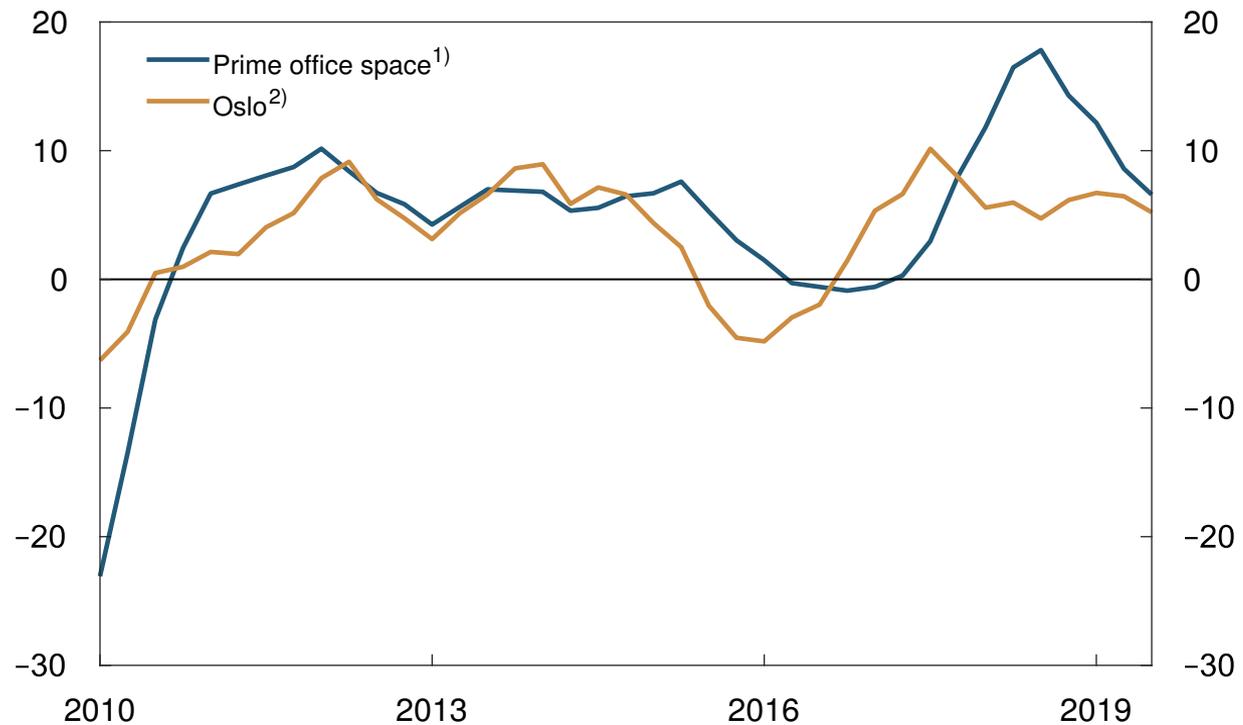
1) Projections for 2019 and 2020.
Sources: Statistics Norway and Norges Bank

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



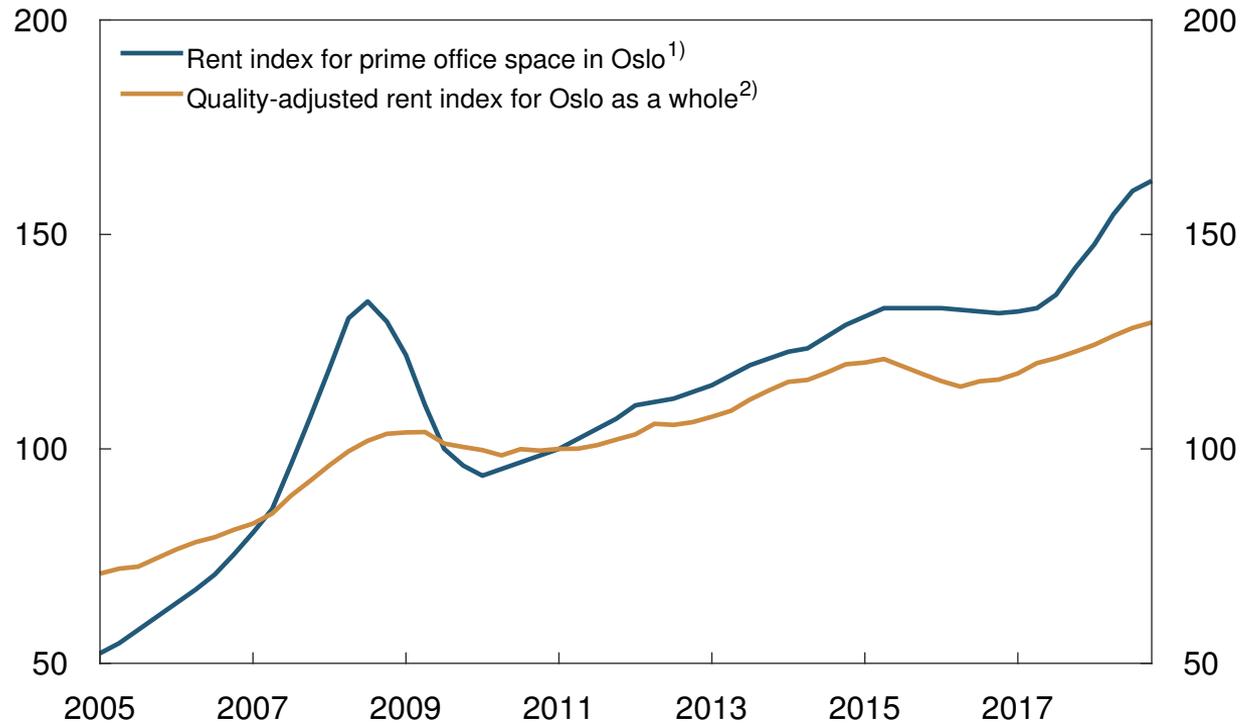
1) Estimated real selling prices per square metre for prime office space in Oslo. Deflated by GDP deflator for mainland Norway. Average for the previous four quarters.
Sources: CBRE, Dagens Næringsliv, OPAK, Statistics Norway and Norges Bank

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



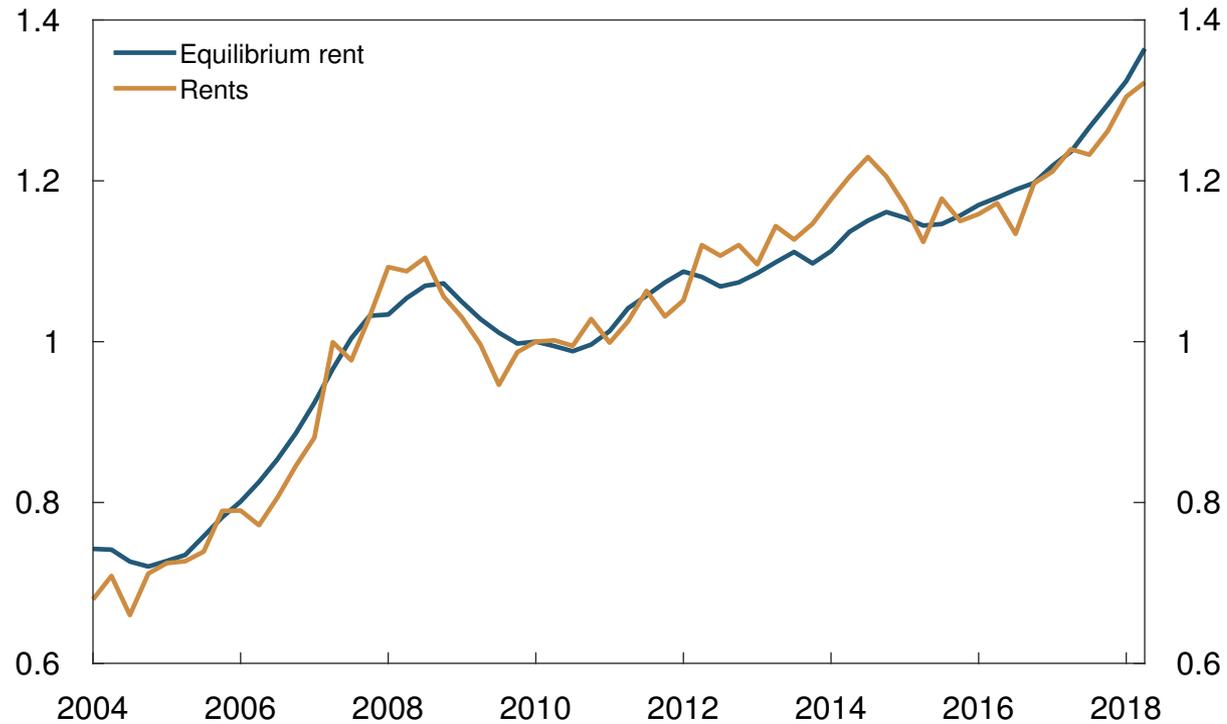
1) Market rents according to CBRE. 2) Average rent in signed leases at lease signing date.
Sources: Arealstatistikk and CBRE

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



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

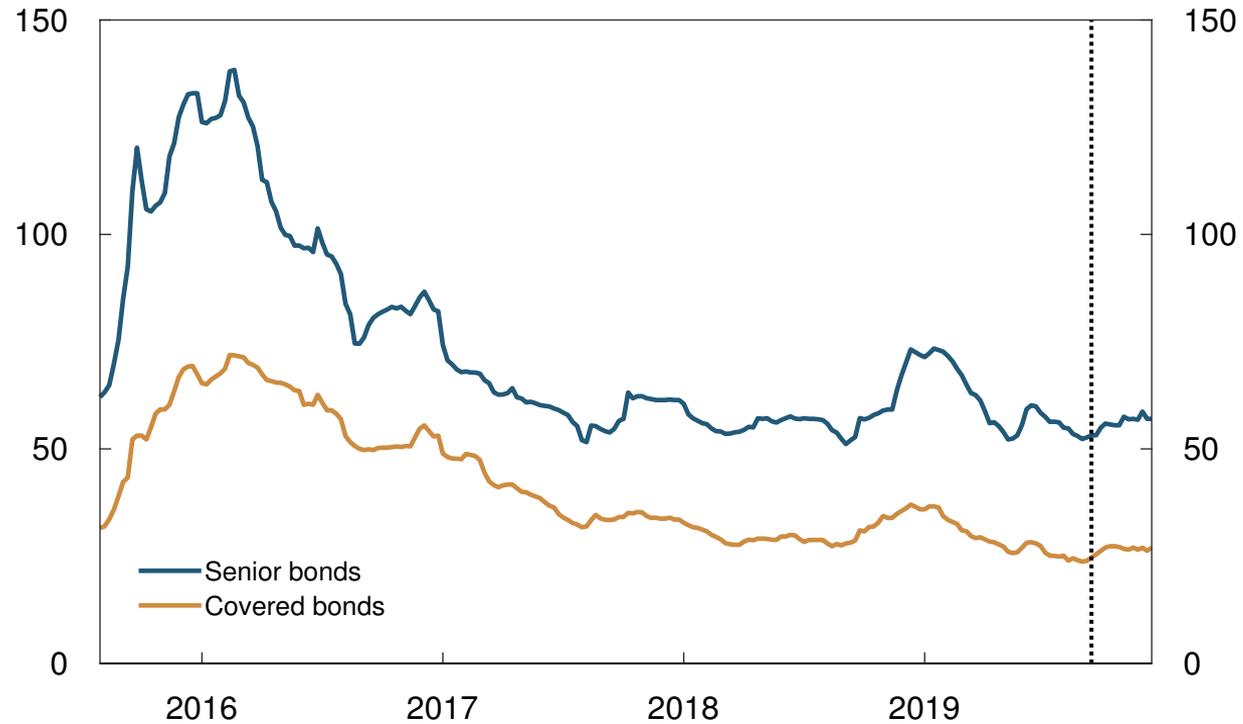
Chart 6.15 Quality-adjusted rents and estimated equilibrium rent.¹⁾ Index.
2010 Q1 = 1. 2004 Q1 – 2018 Q2



1) Average rent in signed leases at lease inception date from 2003 to 2006 and at lease signing date from 2007.

Sources: Arealstatistikk and Norges Bank

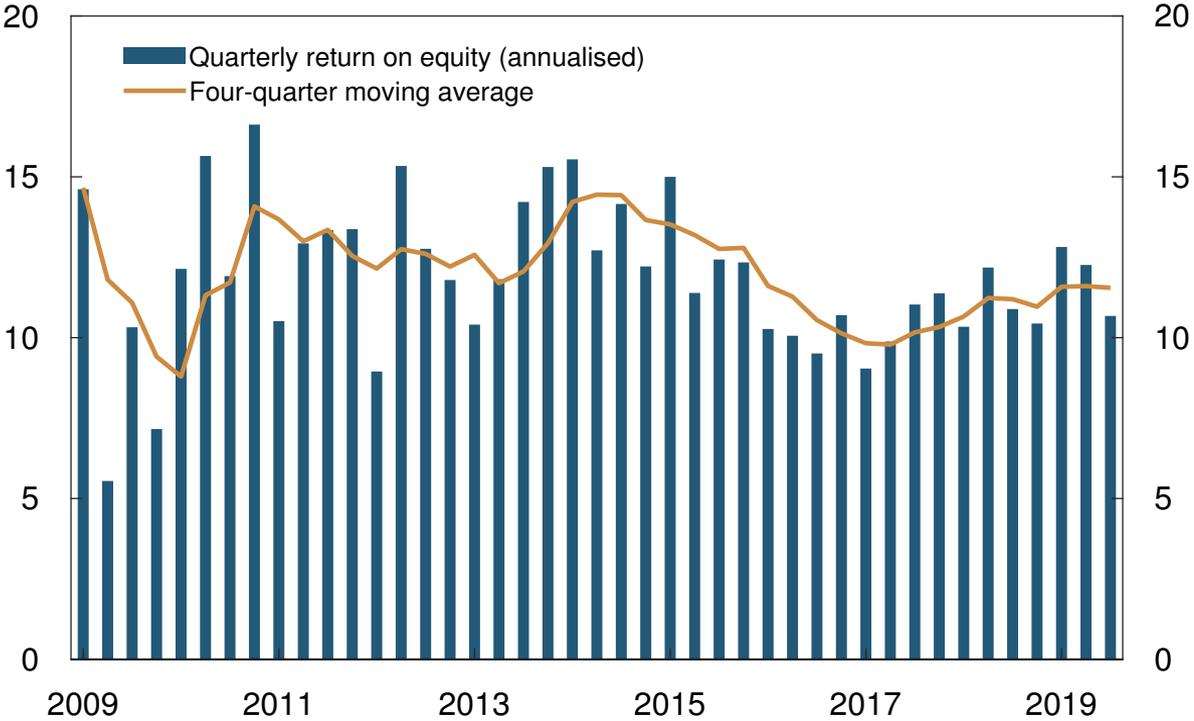
Chart 6.16 Risk premiums in Norway. Five-year maturity, basis points over three-month Nibor. ¹⁾ Week 32 2015 – week 50 2019 ²⁾



1) Risk premiums on bonds issued by large banks and mortgage companies in the Norwegian market. 2) MPR 3/19 was based on information in the period up to and including 13 September 2019, indicated by the vertical line.

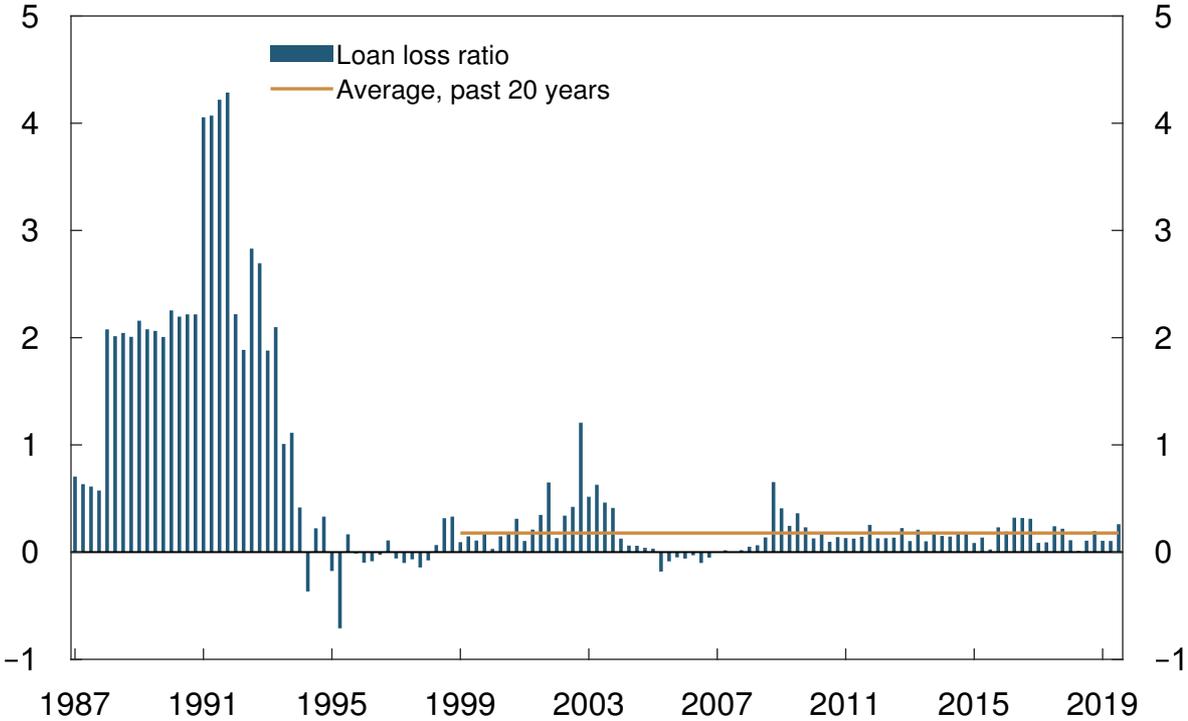
Source: Nordic Bond Pricing

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



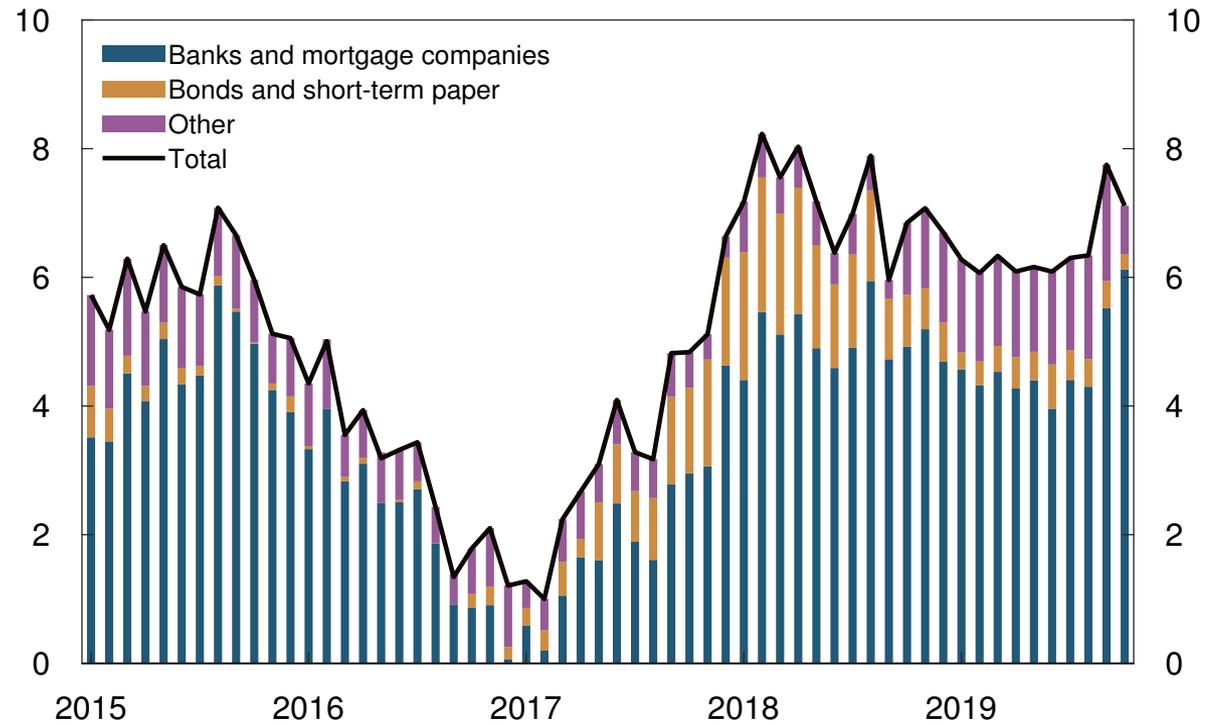
Sources: Banks' quarterly reports and Norges Bank

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



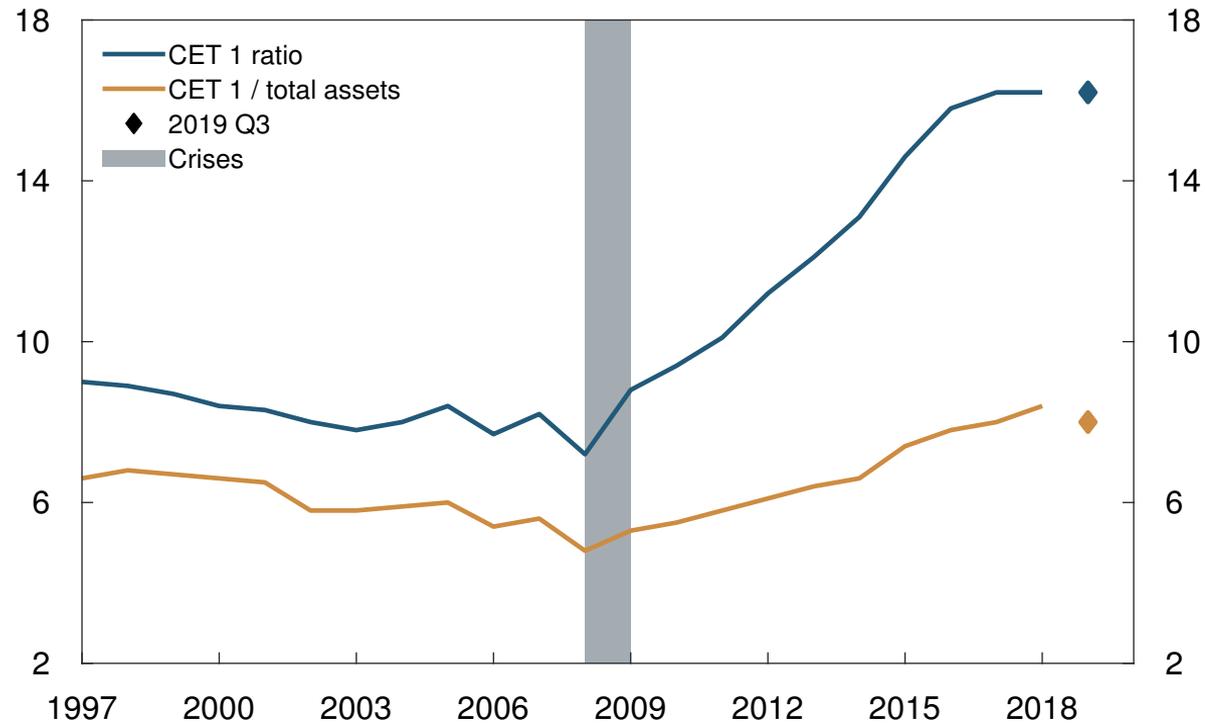
Source: Norges Bank

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

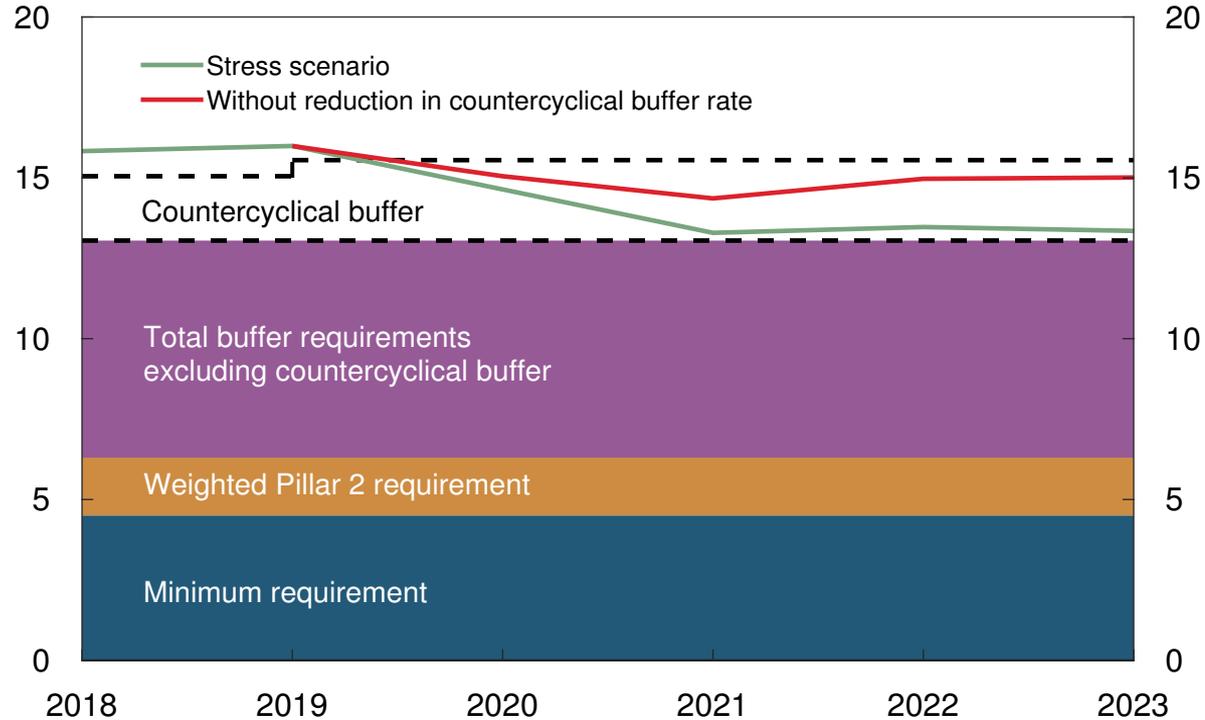
Chart 6.20 Common Equity Tier 1 (CET1) capital ratio and CET 1 capital as a share of total assets¹⁾. Norwegian banks. Percent. 1997 – 2019 Q3



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)

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⁾

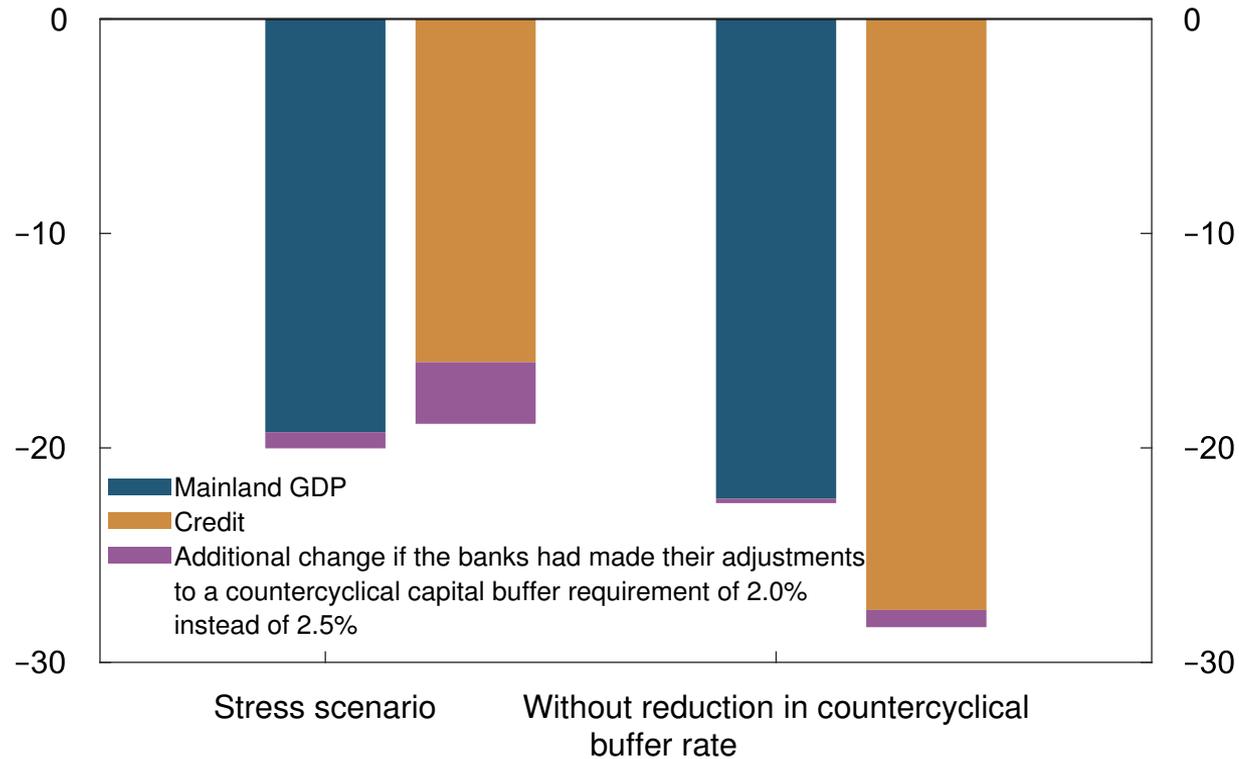


1) Pillar 2 requirements for the banks in the stress test are weighted by their risk-weighted assets.

2) Projections for the stress period 2019 – 2023.

Sources: Finanstilsynet (Financial Supervisory Authority of Norway), SNL / S&P MI and Norges Bank

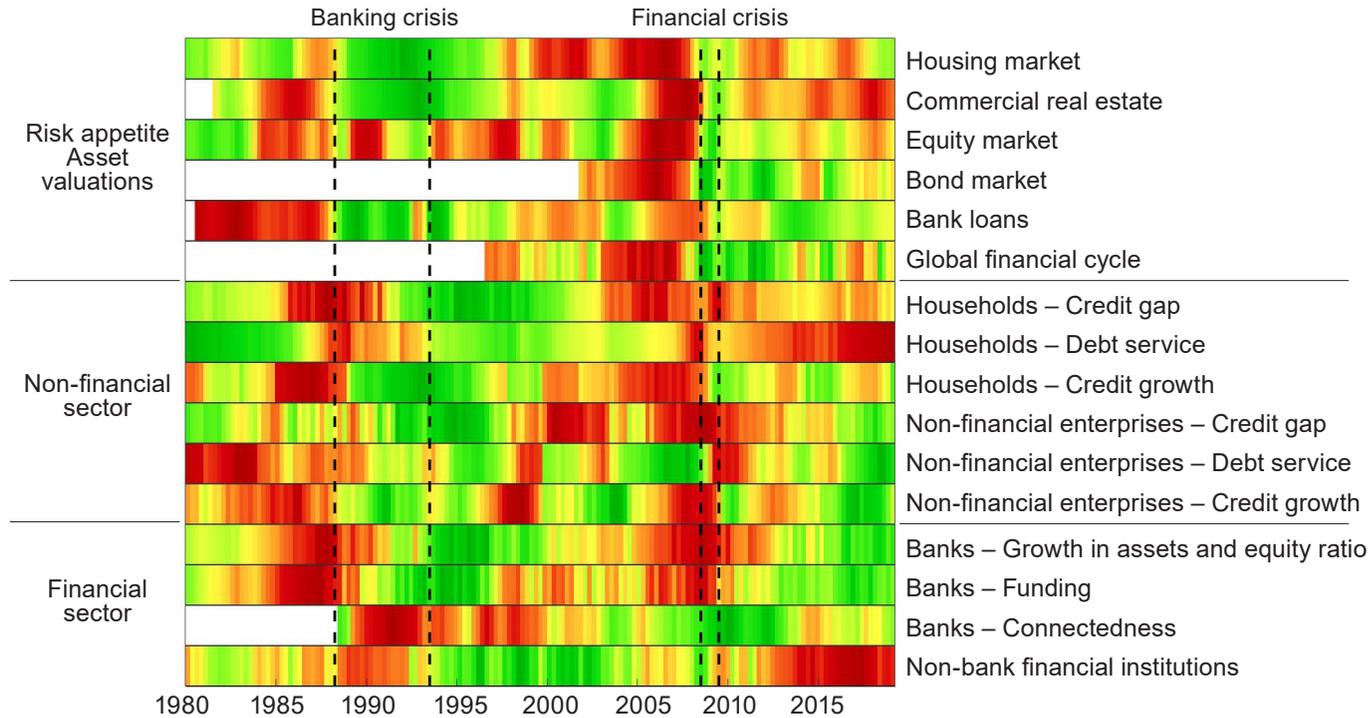
Chart 6.B Total change through the stress period in mainland GDP and credit under different assumptions about developments in banks' capital requirements.¹⁾
Percent



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

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