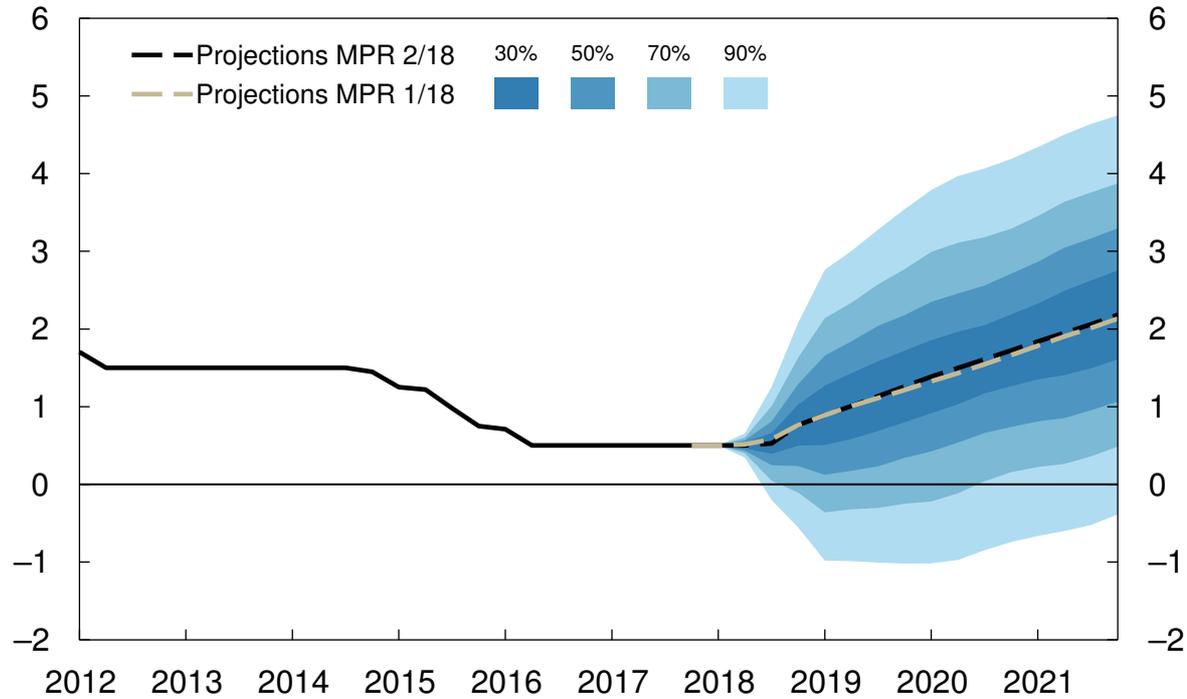Chart 1.1a Key policy rate with fan chart[1].
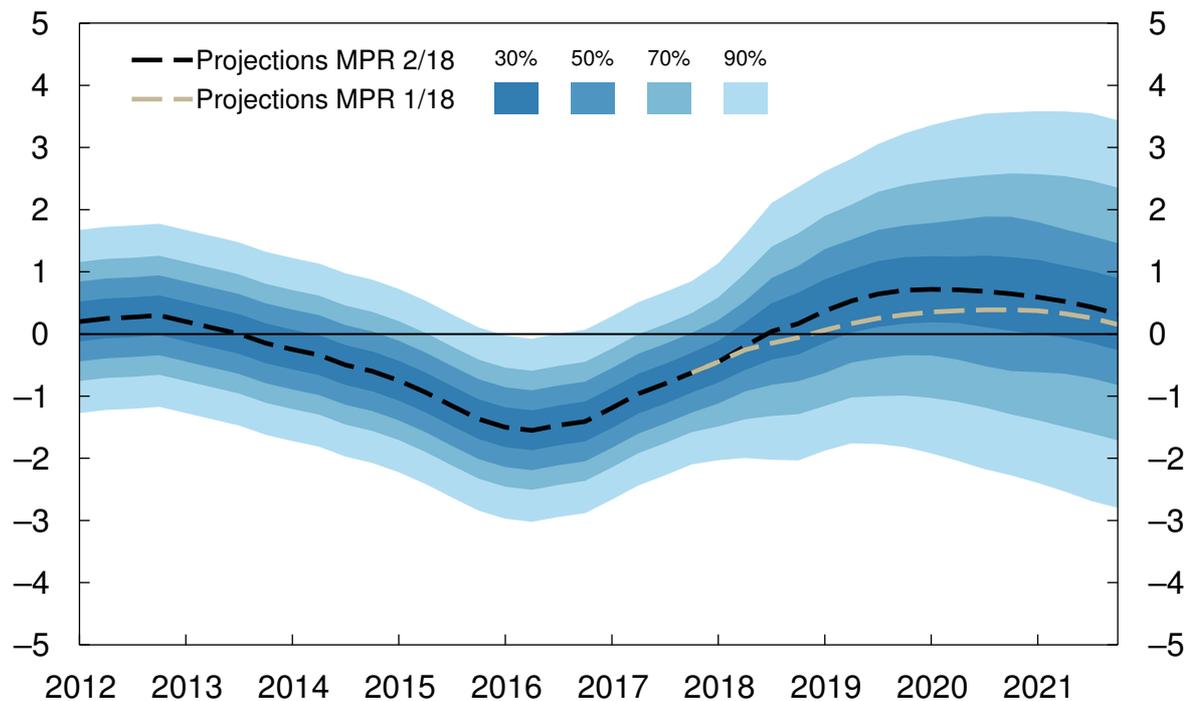Percent. 2012 Q1 – 2021 Q4 [2]

1) The fan chart is based on historical experience and stochastic simulations in Norges Bank's main macroeconomic model, NEMO. It does not take into account that a lower bound for the interest rate exists.
2) Projections for 2018 Q2 – 2021 Q4.
Source: Norges Bank

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

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

Chart 1.1c Consumer price index (CPI) with fan chart[1].
Four-quarter change. Percent. 2012 Q1 – 2021 Q4[2]
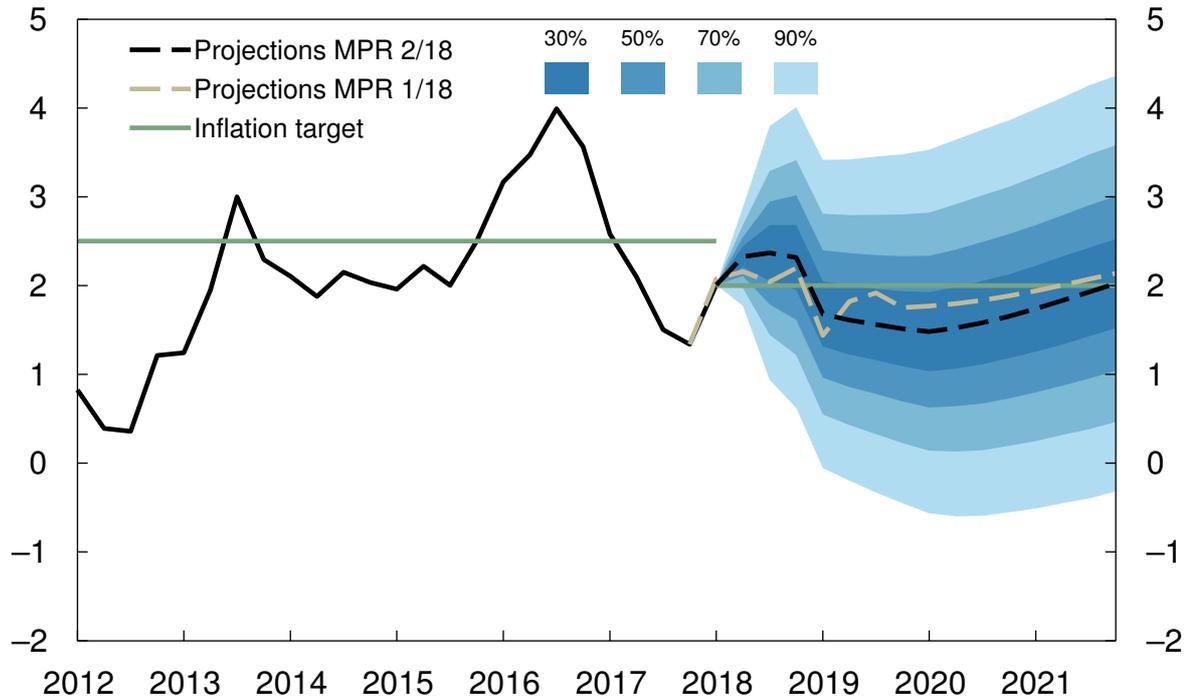
1) The fan chart is based on historical experience and stochastic simulations in Norges Bank's main macroeconomic model, NEMO.
2) Projections for 2018 Q2 – 2021 Q4.
Sources: Statistics Norway and Norges Bank

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

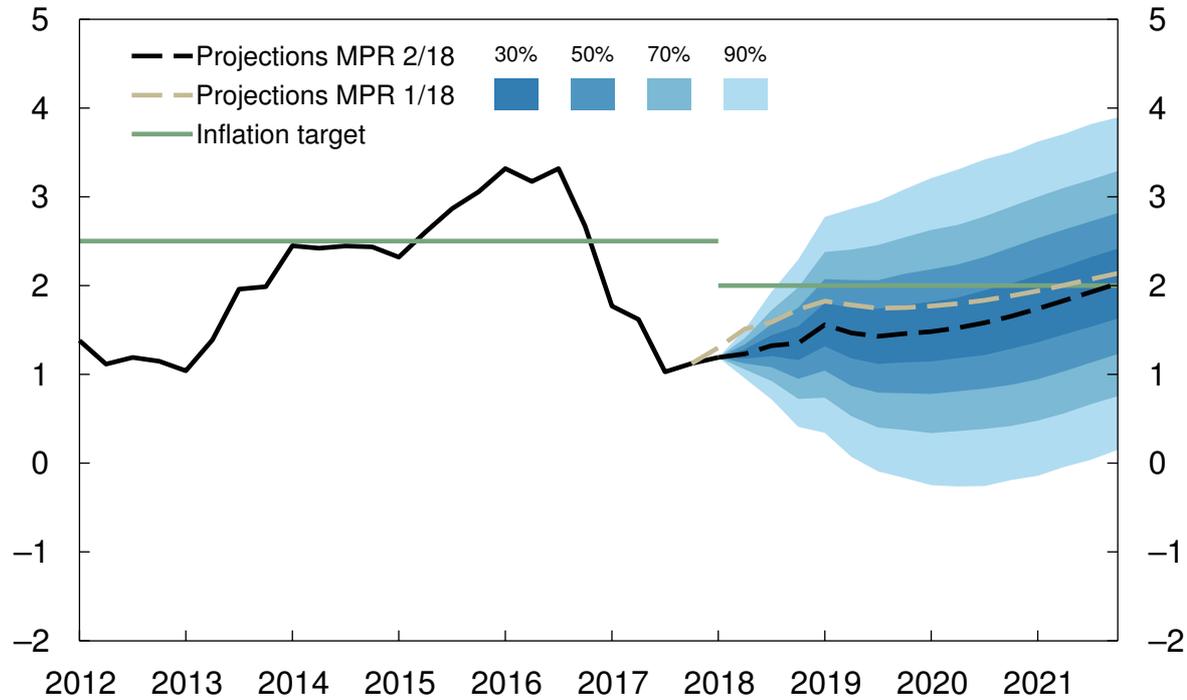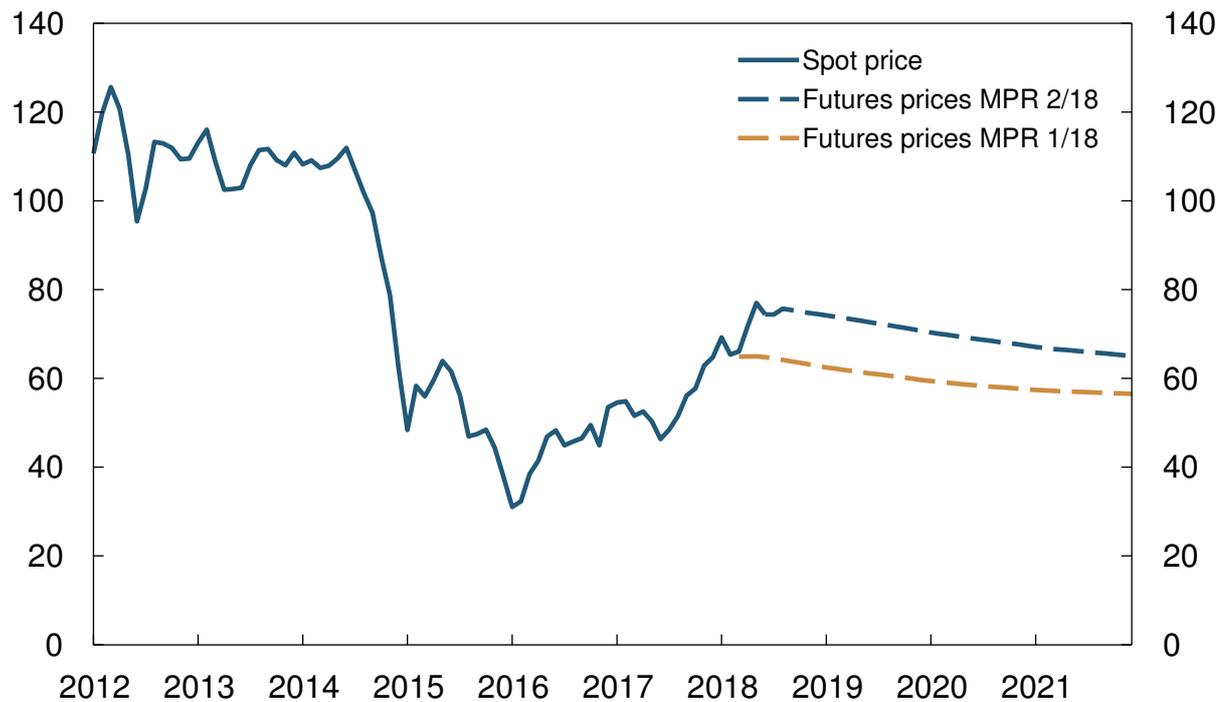1) CPI adjusted for tax changes and excluding energy products.
2) The fan chart is based on historical experience and stochastic simulations in Norges Bank's main macroeconomic model, NEMO.
3) Projections for 2018 Q2 – 2021 Q4.
Sources: Statistics Norway and Norges Bank

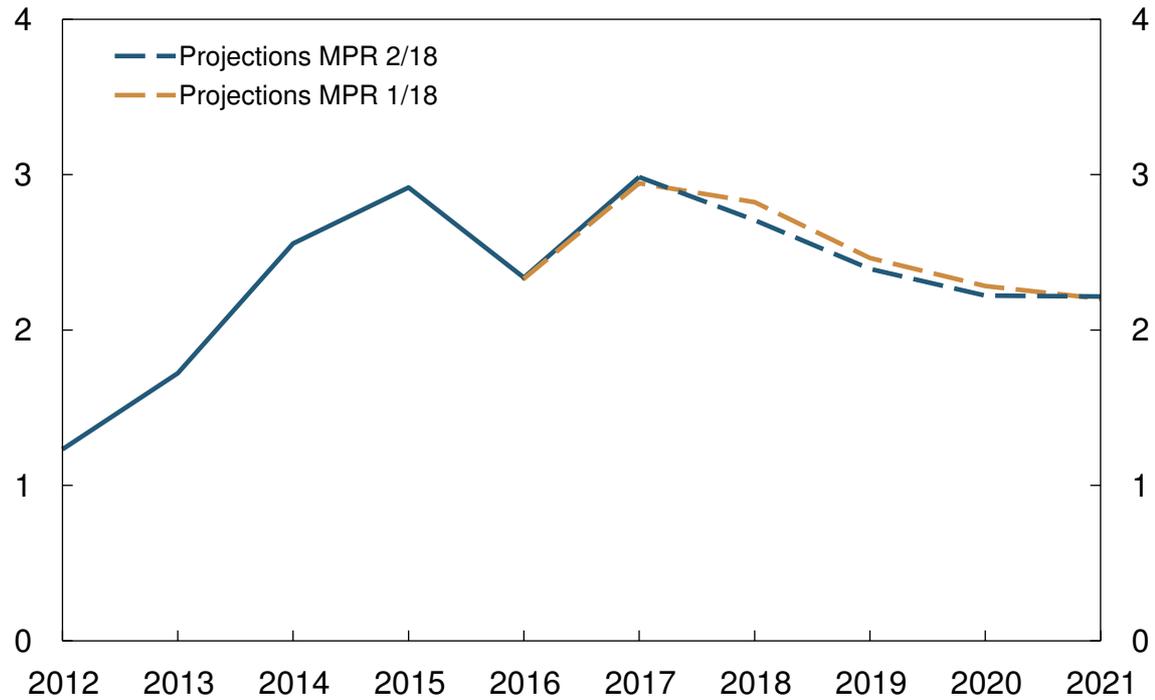Chart 1.2 Oil price.[1] USD/barrel. January 2012 – December 2021 [2]

1) Brent Blend.
2) Futures prices are the average of futures prices for the period 5 March – 9 March 2018 for MPR 1/18 and
11 June – 15 June 2018 for MPR 2/18.
Sources: Thomson Reuters and Norges Bank

Chart 1.3 GDP for Norway's trading partners.[1] Annual change. Percent. 2012 – 2021[2]

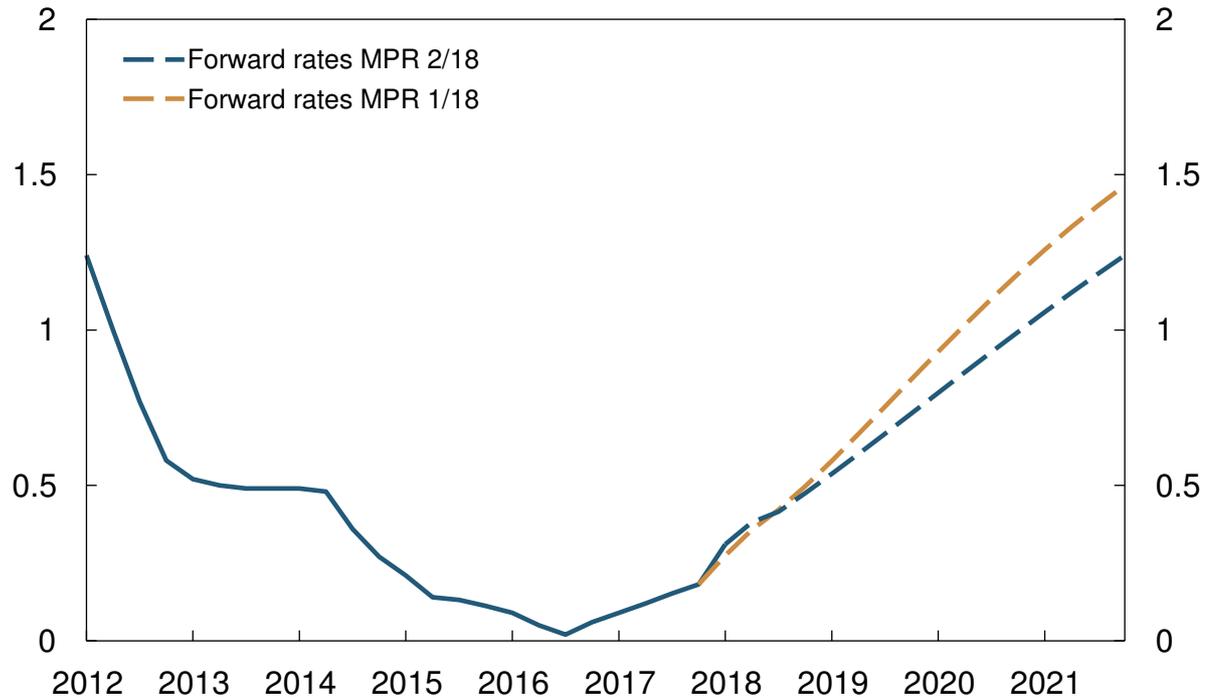- - Projections MPR 2/18
- - Projections MPR 1/18

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

Chart 1.4 Three-month money market rates for Norway's trading partners.[1]
Percent. 2012 Q1 – 2021 Q4 [2]

Legend:
- – – Forward rates MPR 2/18
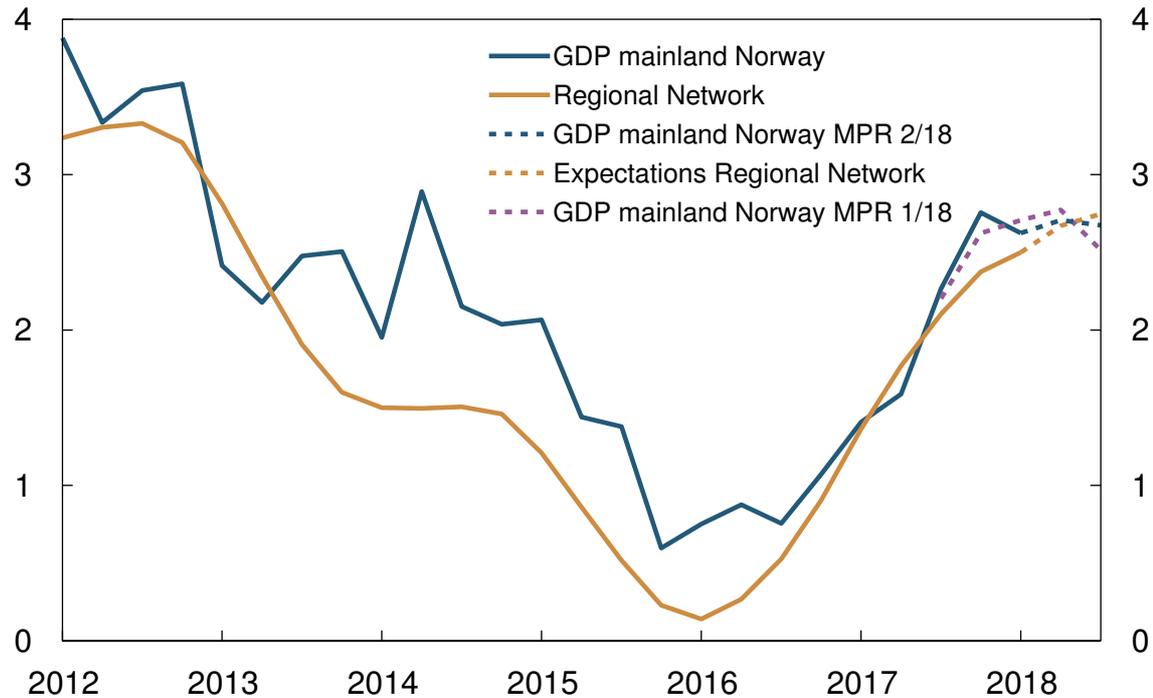- – – Forward rates MPR 1/18

1) Based on money market rates and interest rate swaps. See *Norges Bank Papers* 2/2015 for information about the aggregate for trading partner interest rates.
2) Forward rates at 9 March 2018 for MPR 1/18 and 15 June 2018 for MPR 2/18.
Sources: Thomson Reuters and Norges Bank

Chart 1.5 GDP for mainland Norway[1] and Regional Network indicator of output growth [2]. Four-quarter change. Percent. 2012 Q1 – 2018 Q3[3]

Legend:
- GDP mainland Norway
- Regional Network
- GDP mainland Norway MPR 2/18
- Expectations Regional Network
- GDP mainland Norway MPR 1/18

1) Seasonally adjusted.
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 survey timing. For 2018 Q2 expected output growth is estimated by weighting together reported growth over the past three months and expected growth in the next six months. 2018 Q3 is expected growth in the next six months measured in May.
3) Projections for 2018 Q2 – 2018 Q3.
Sources: Statistics Norway and Norges Bank

Chart 1.6 Employment growth according to the quarterly national accounts and Regional Network[1]. Quarterly change. Percent. 2012 Q1 – 2018 Q3[2]
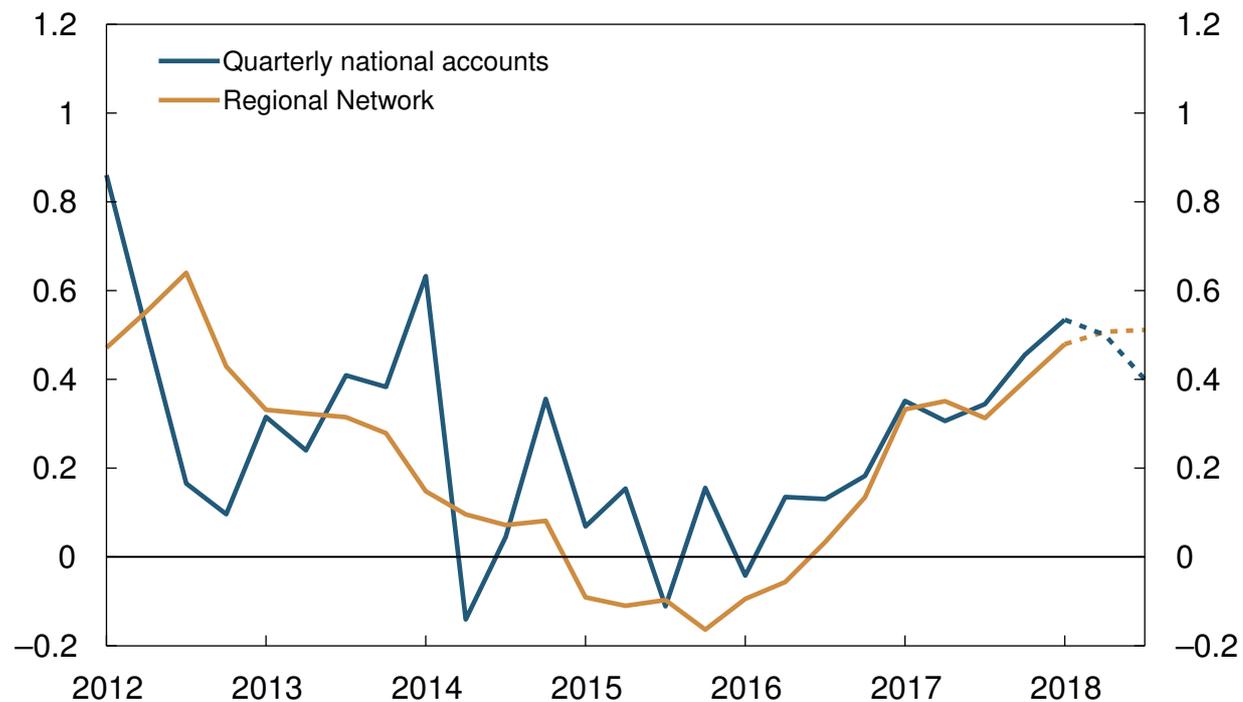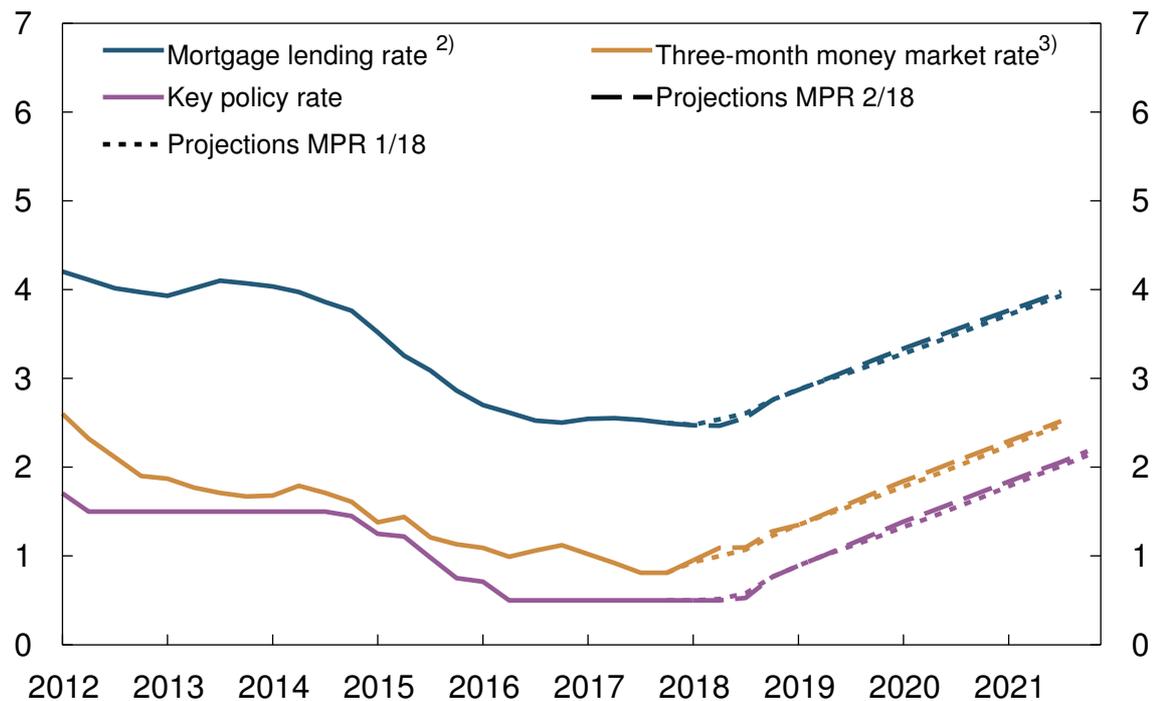

1) Reported employment growth for the past three months. Quarterly figures are calculated by weighting together three-monthly figures based on survey timing. For 2018 Q2, expected employment growth is estimated by weighting together reported growth over the past three months and expected growth in the next three months. 2018 Q3 is expected growth in the next three months measured in May.
2) Projections for 2018 Q2 – 2018 Q3 (broken lines).
Sources: Statistics Norway and Norges Bank

Chart 1.7 Interest rates. Percent. 2012 Q1 – 2021 Q4 [1]

Legend:
- Mortgage lending rate [2]
- Key policy rate
- Projections MPR 1/18
- Three-month money market rate[3]
- Projections MPR 2/18

1) Projections for 2018 Q2 – 2021 Q4.
2) The mortgage lending rate is the average interest rate on outstanding mortgage loans to households. From the sample of banks and mortgage companies included in Statistics Norway's monthly interest rate statistics.
3) Projections for the money market rate are calculated as an average of the key policy rate in the current and subsequent quarter plus an estimate of the money market premium.
Sources: Statistics Norway, Thomson Reuters and Norges Bank

Chart 1.8 Three-month money market rate differential between Norway[1] and trading partners[2]. Percentage points. Import-weighted exchange rate index (I-44)[3]. 2012 Q1 – 2021 Q4 [4]
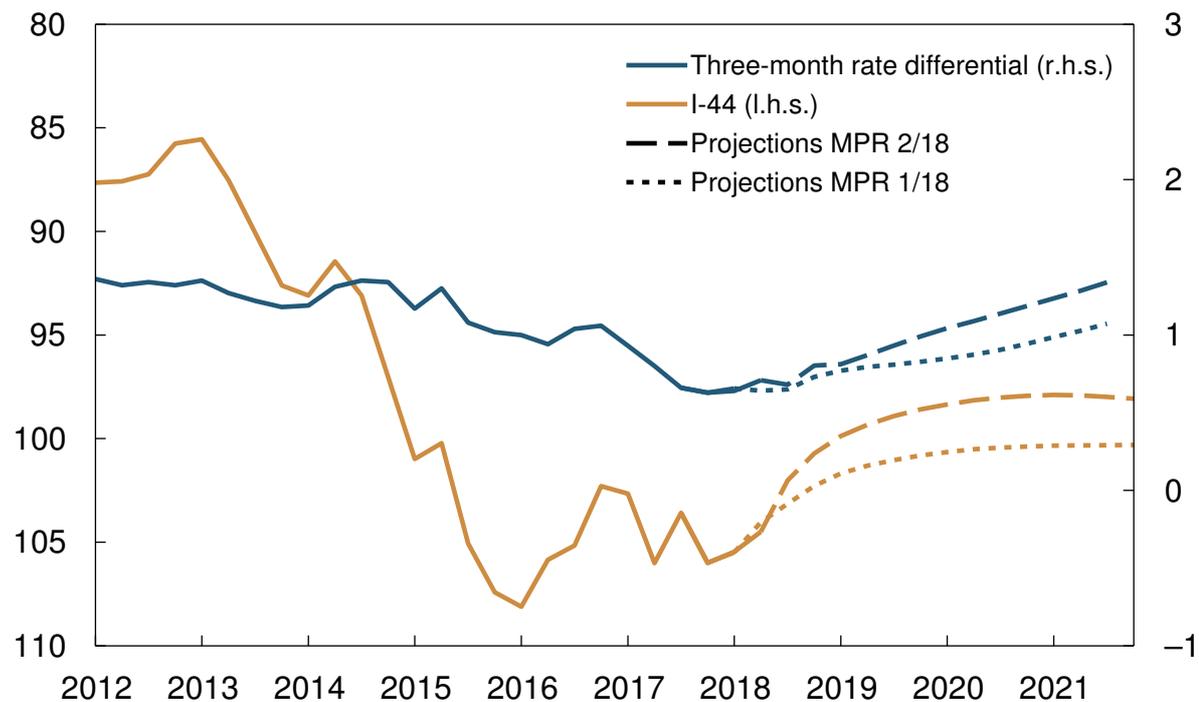
Legend:
- Three-month rate differential (r.h.s.)
- I-44 (l.h.s.)
- Projections MPR 2/18
- Projections MPR 1/18

1) Projections for the money market rate are calculated as an average of the key policy rate in the current and subsequent quarter plus an estimate of the money market premium.
2) Forward rates for trading partners at 9 March 2018 for MPR 1/18 and 15 June 2018 for MPR 2/18. 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.
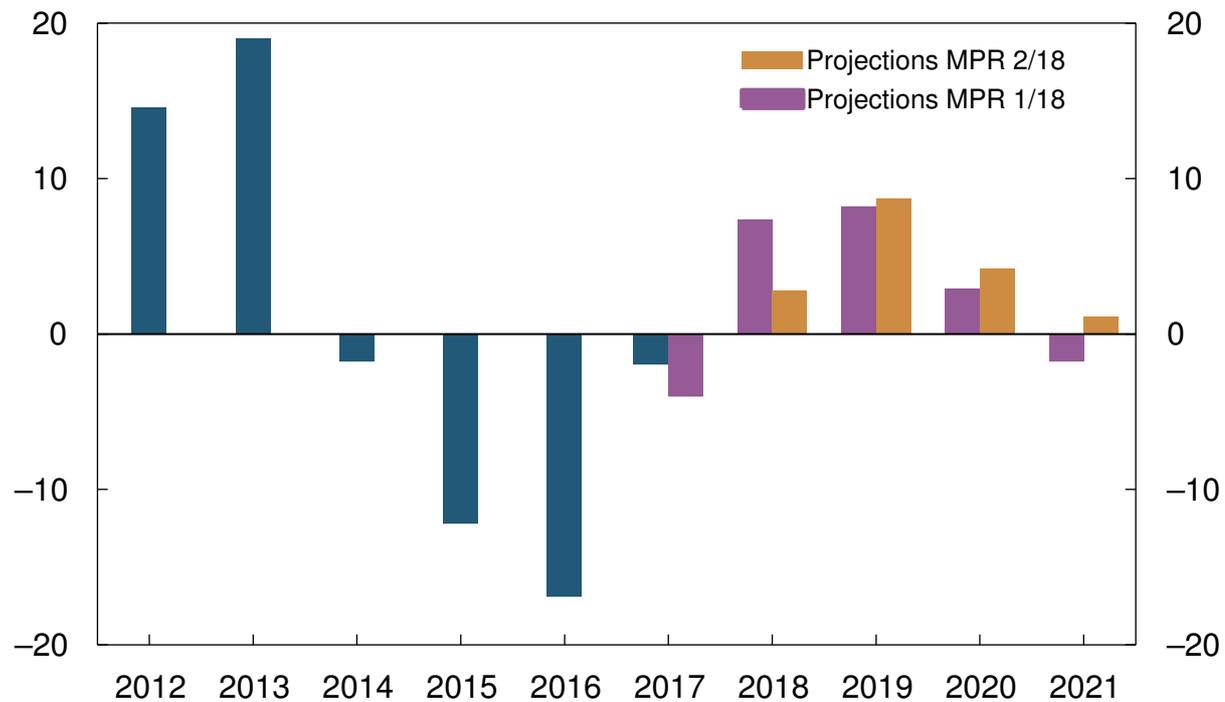4) Projections for 2018 Q2 – 2021 Q4.
Sources: Thomson Reuters and Norges Bank

Chart 1.9 GDP for mainland Norway. Annual change. Percent. 2012 – 2021[1]

Legend:
- Projections MPR 2/18
- Projections MPR 1/18
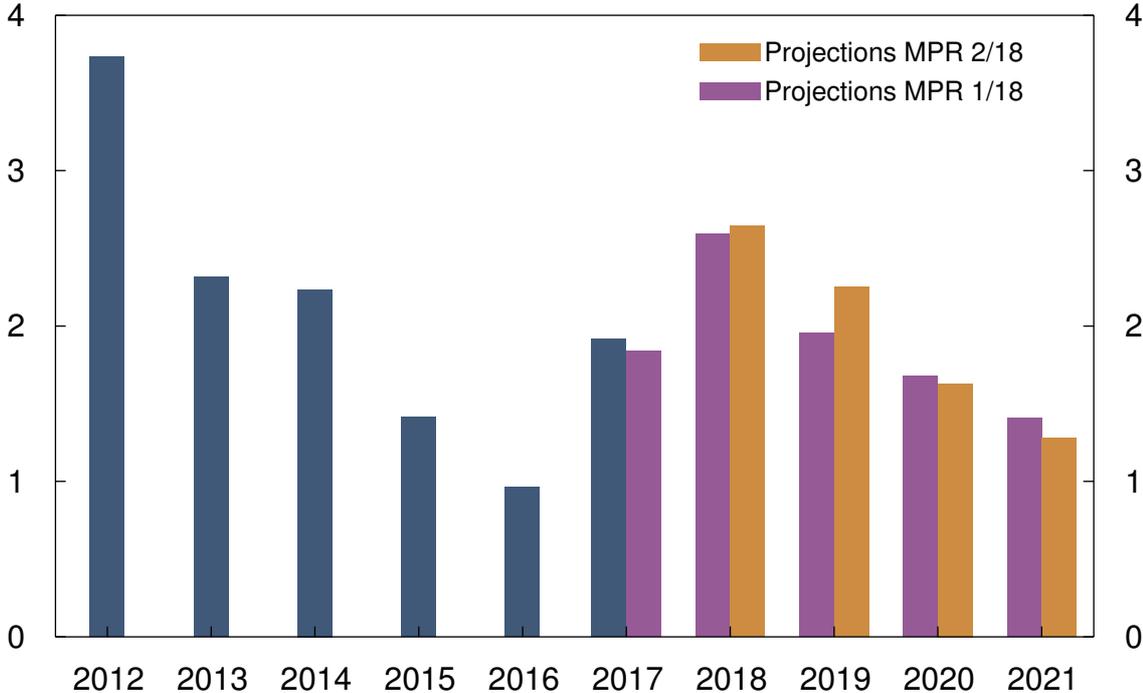
1) Projections for 2018 – 2021.
Sources: Statistics Norway and Norges Bank

Chart 1.10 Petroleum investment. Annual change. Percent. 2012 – 2021[1]

Legend:
- Projections MPR 2/18
- Projections MPR 1/18

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

Chart 1.11 Unemployment according to LFS [1] and NAV [2].
Share of the labour force. Seasonally adjusted. Percent. 2012 Q1 – 2021 Q4 [3]
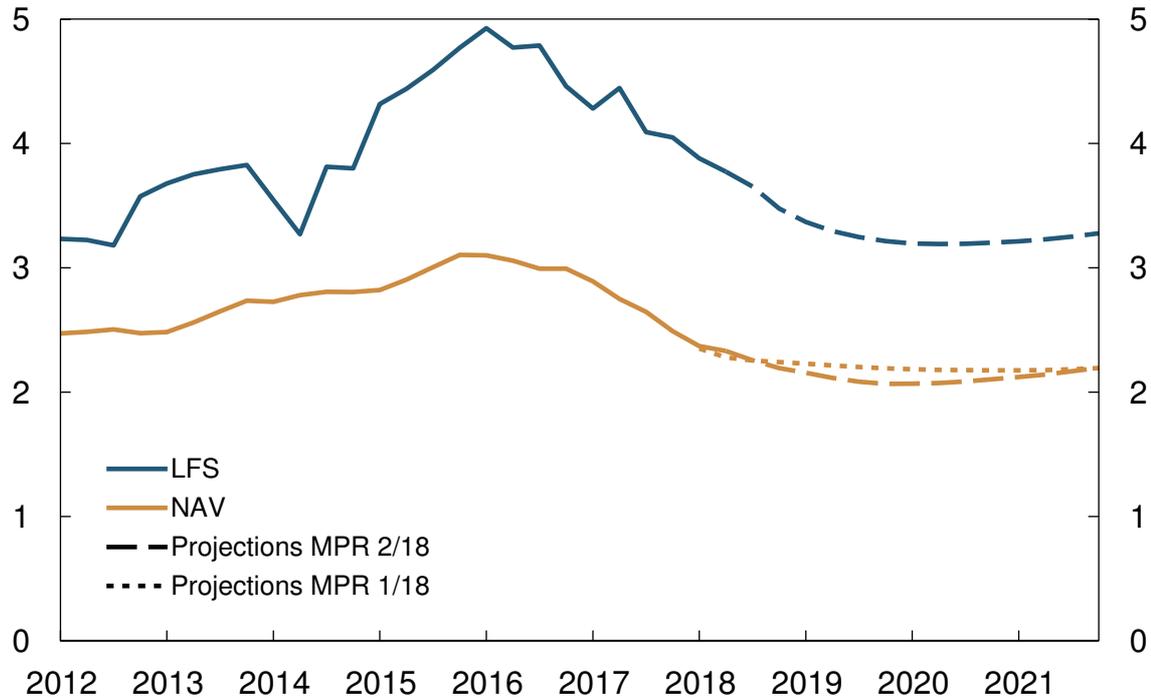
1) Labour Force Survey. The LFS has been revised, and projections from MPR 1/18 are not directly comparable with the projections in this *Report*. The projections from the previous *Report* are therefore not shown in the chart.
2) Registered unemployment.
3) Projections for 2018 Q2 – 2021 Q4.
Sources: Norwegian Labour and Welfare Administration (NAV), Statistics Norway and Norges Bank

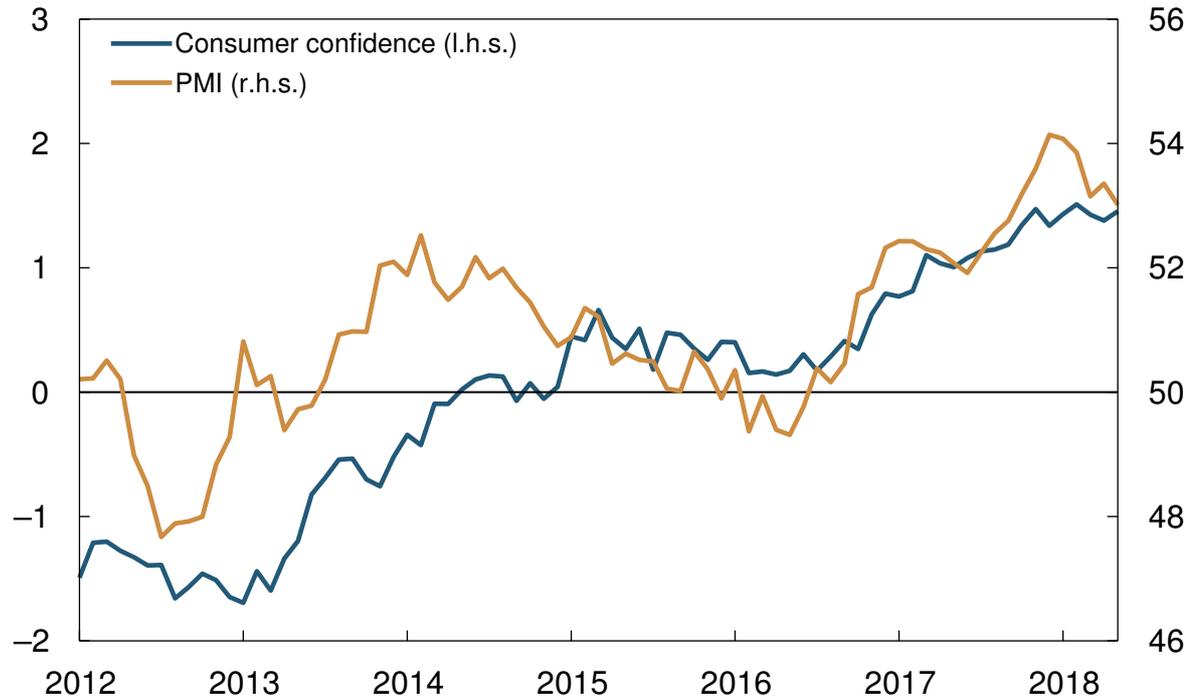Chart 1.12 Wages. Annual change. Percent. 2012 – 2021[1]
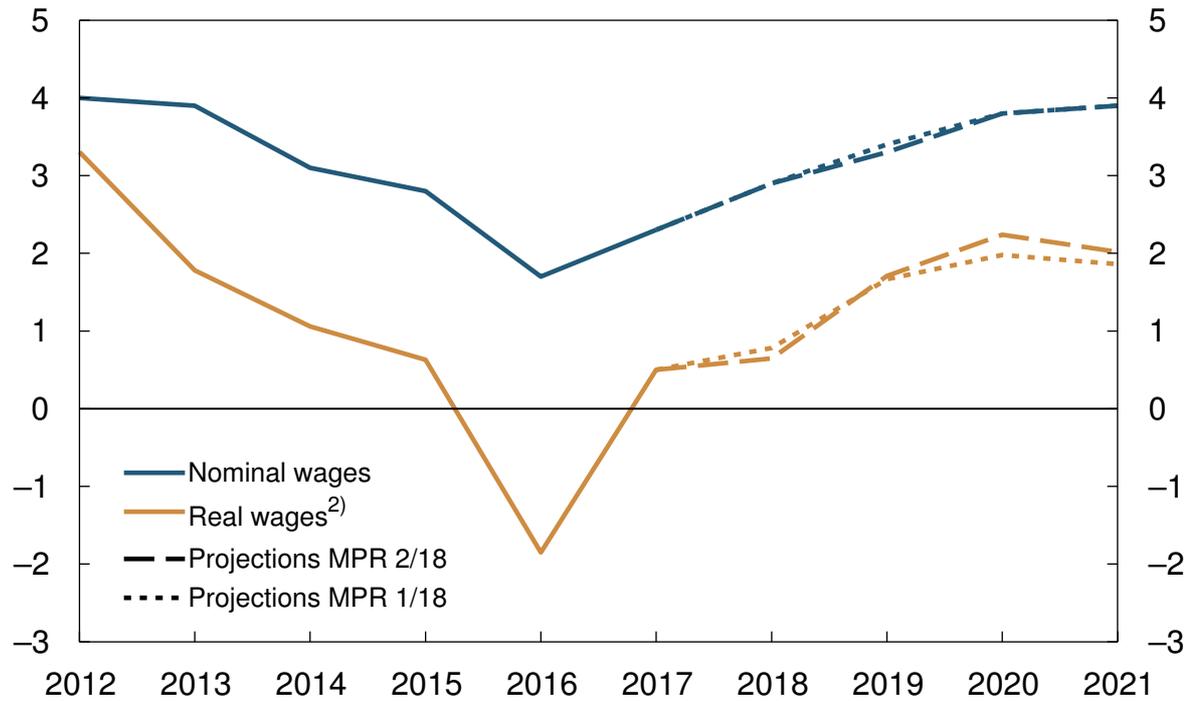
1) Projections for 2018 – 2021.
2) Nominal wage growth deflated by the CPI.
Sources: Norwegian Technical Calculation Committee for Wage Settlements (TBU), Statistics Norway
and Norges Bank

Chart 2.1 Global confidence indicators.
Consumer confidence[1] and PMI[2]. Seasonally adjusted. January 2012 – May 2018
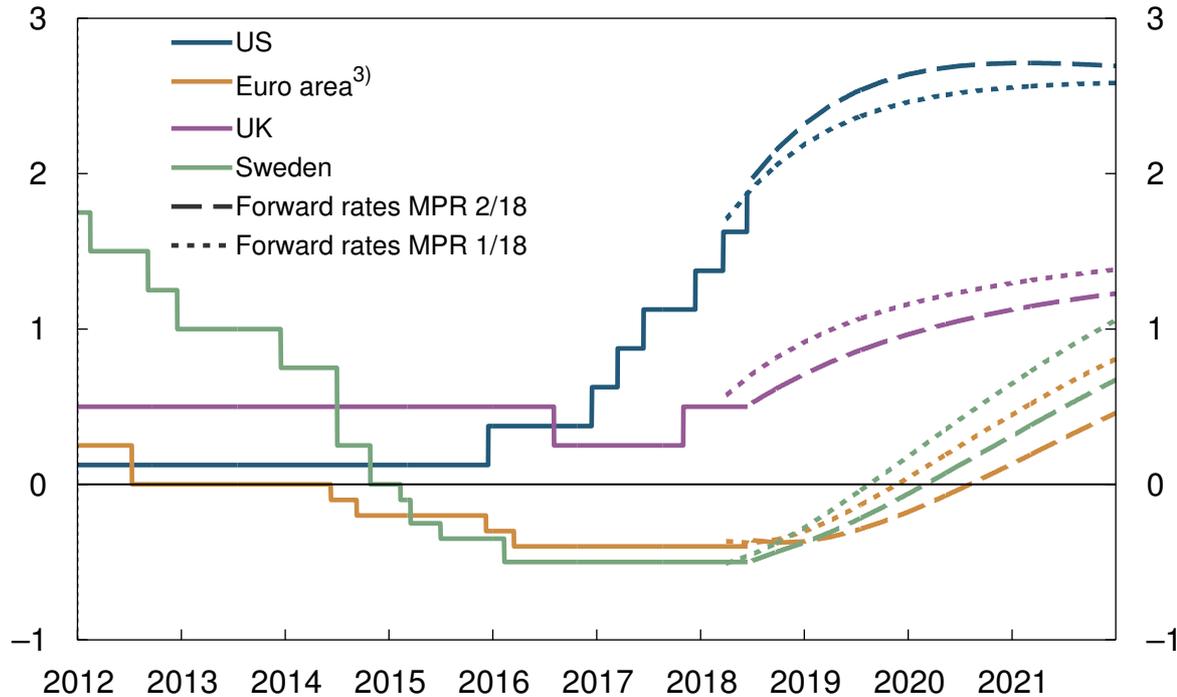

1) GDP weights. Standardised consumer confidence indexes in selected countries.
2) GDP weights. Manufacturing PMI in selected countries.
Sources: Thomson Reuters and Norges Bank

Chart 2.2 Policy rates and estimated forward rates[1] in selected countries.
Percent. 1 January 2012 – 31 December 2021[2]

1) Forward rates at 9 March 2018 for MPR 1/18 and 15 June 2018 for MPR 2/18. Forward rates are
estimated based on Overnight Index Swap (OIS) rates.
2) Daily data through 15 June 2018. Quarterly data from 2018 Q3.
3) ECB deposit facility rate. Eonia from 2018 Q3.
Sources: Bloomberg, Thomson Reuters and Norges Bank

Chart 2.3 Yields on ten-year government bonds in selected countries.
Percent. 2 January 2014 – 15 June 2018 [1]
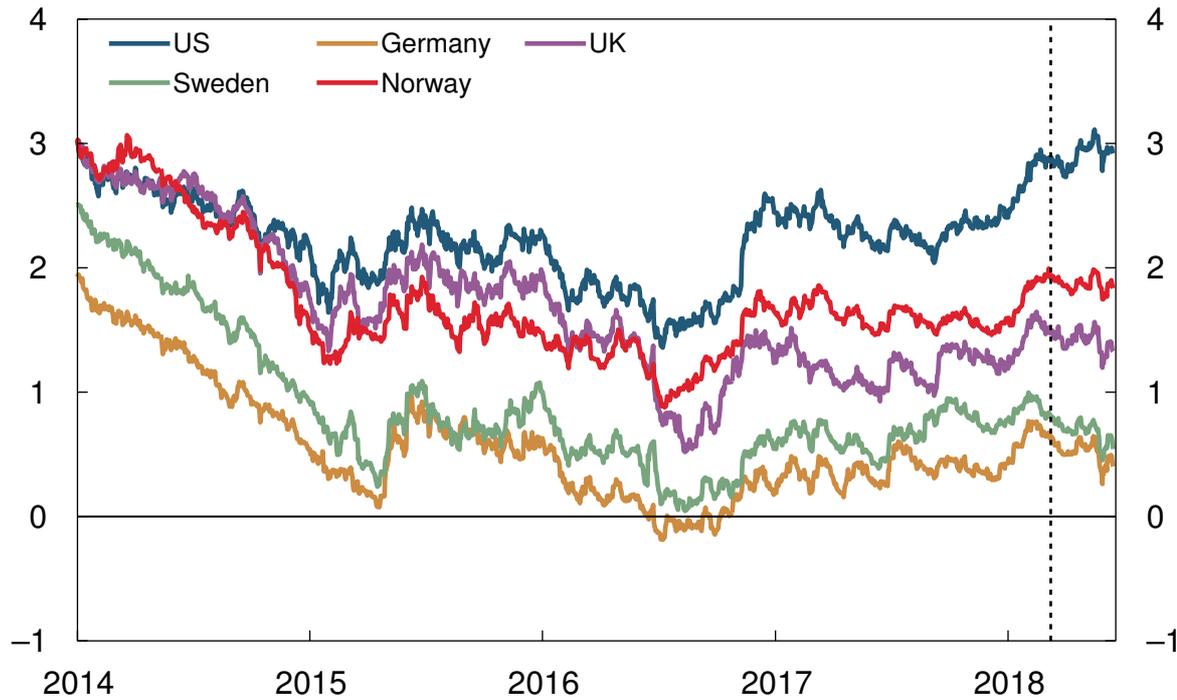
1) MPR 1/18 was based on information in the period to 9 March 2018 indicated by the vertical line.
Source: Bloomberg

Chart 2.4 Equity price indexes in selected countries.[1]
**Index. 2 January 2014 = 100. 2 January 2014 – 15 June 2018[2]**
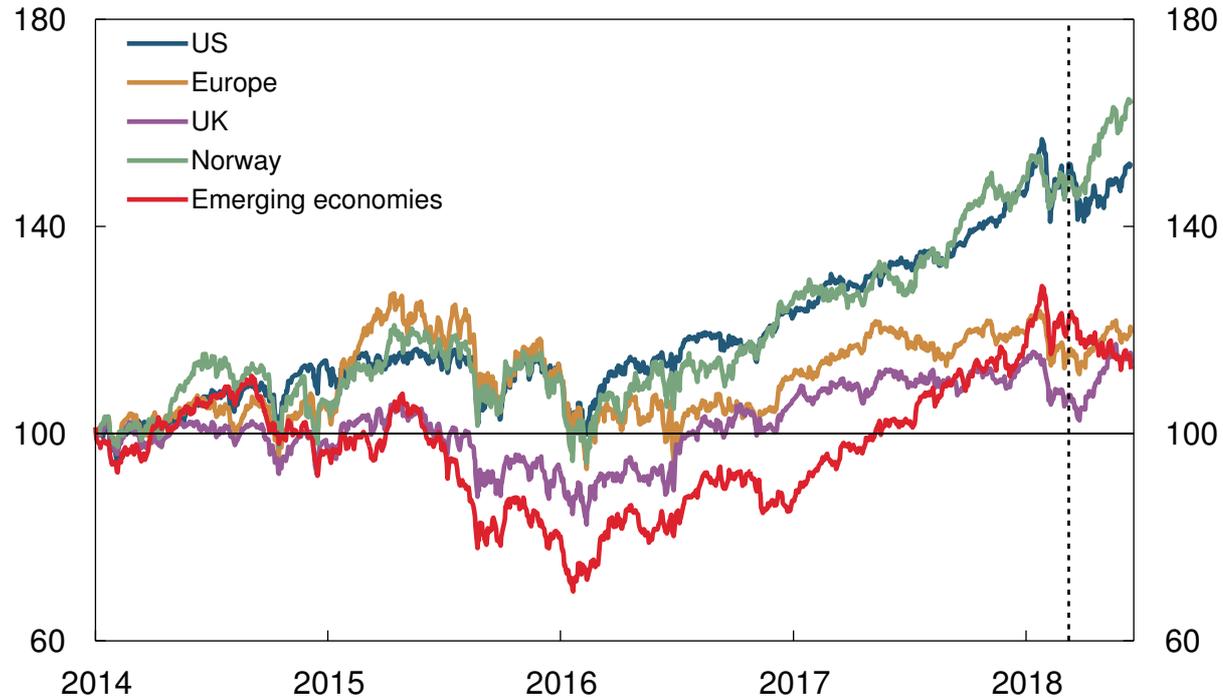
1) Standard and Poor's 500 Index (US). Stoxx Europe 600 Index (Europe).
Financial Times Stock Exchange 100 Index (UK). Oslo Børs Benchmark Index (Norway).
MSCI Emerging Markets Index (emerging economies).
2) MPR 1/18 was based on information in the period to 9 March 2018 indicated by the vertical line.
Source: Bloomberg

Chart 2.5 Imports for Norway's trading partners.[1]
Annual change. Percent. 2012 – 2021 [2]
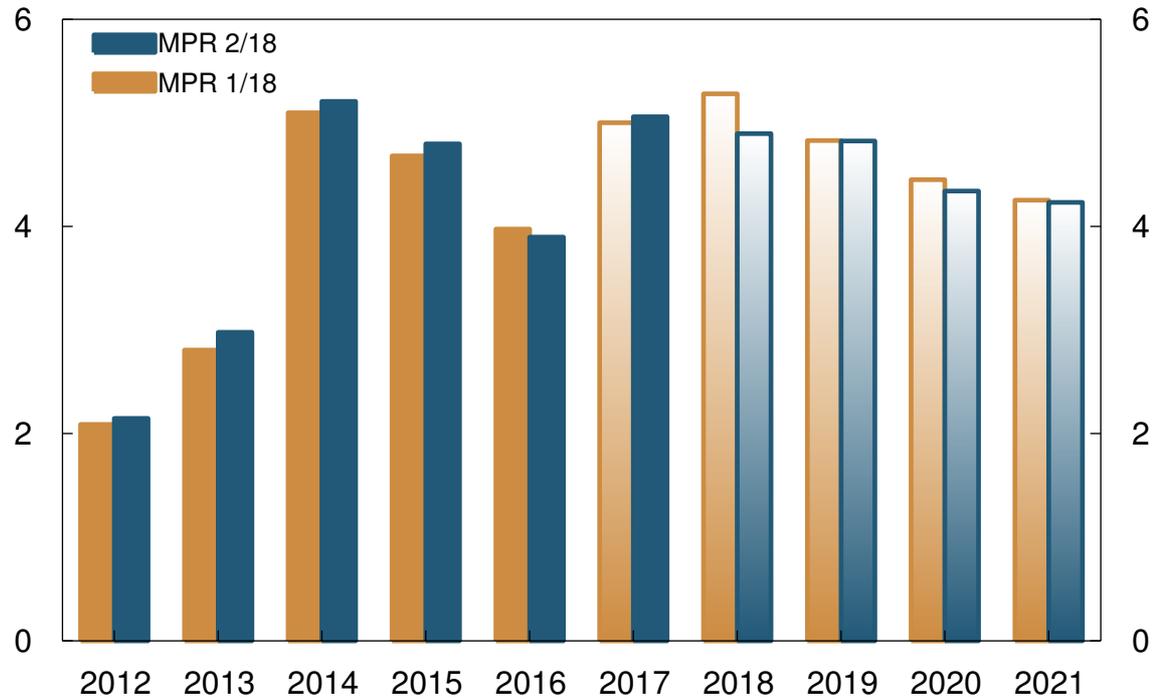
1) Export weights. 25 main trading partners.
2) Projections for 2018 – 2021 (shaded bars).
Sources: Thomson Reuters and Norges Bank

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

- Headline CPI
- Core CPI
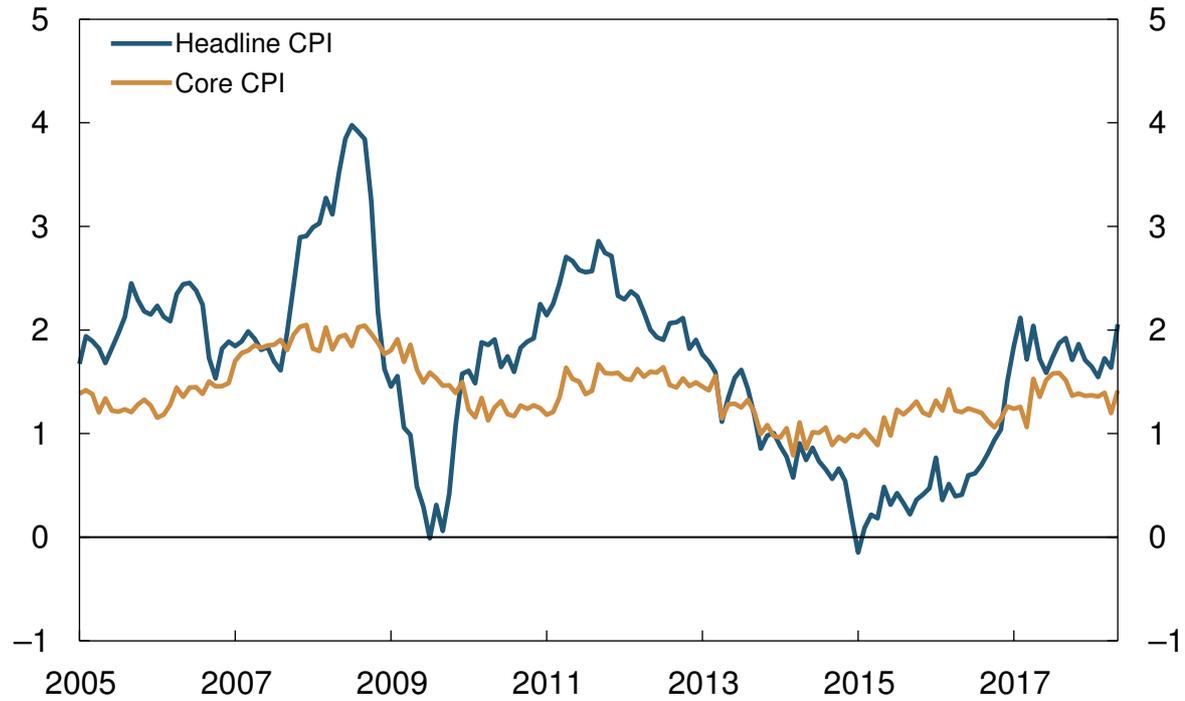
1) Import weights. US, euro area, UK and Sweden.
Sources: Thomson Reuters and Norges Bank

Chart 2.7 Wage growth [1] and estimated output gap [2] in selected countries. [3]
Percent. 2005 – 2021 [4]
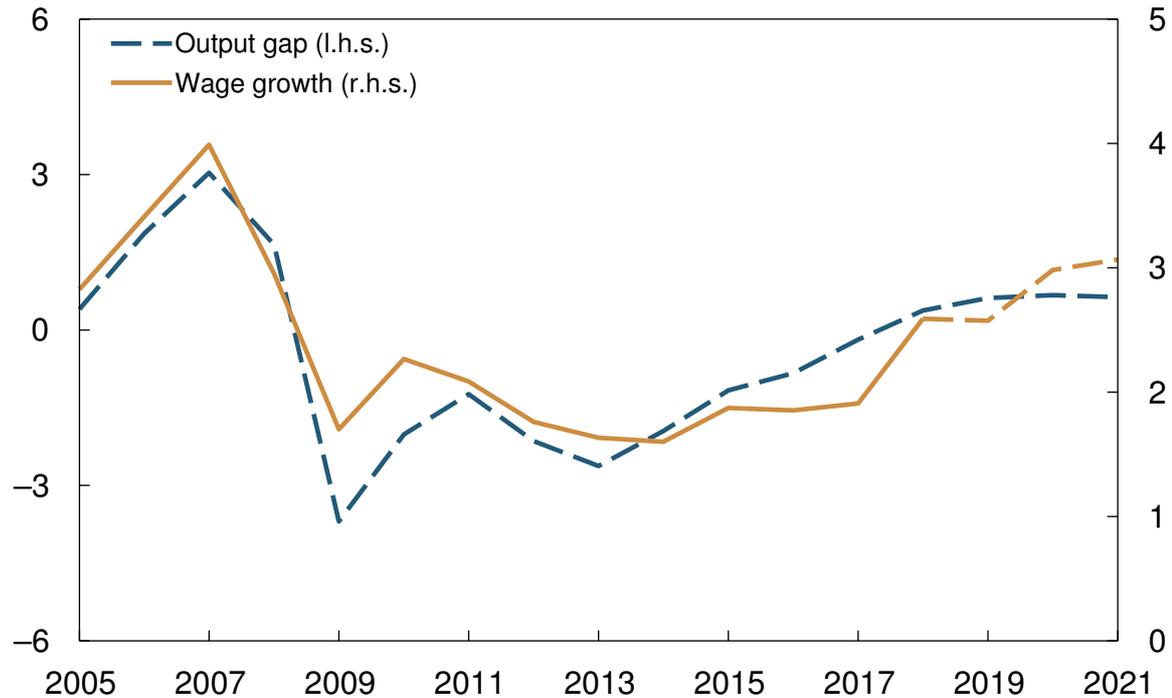
1) Annual percentage change. Compensation per employee in the total economy.
2) The output gap measures the percentage deviation between GDP and estimated potential GDP.
IMF estimates for 2005 – 2015. Norges Bank projections for the rest of the period.
3) Export weights. US, euro area, UK and Sweden.
4) Projections for wage growth 2018 – 2021 (broken yellow line).
Sources: Thomson Reuters and Norges Bank

Chart 2.8 Indicator of international inflationary impulses to imported consumer goods (IPC). Foreign currency. Annual change. Percent. 2005 – 2021[1]
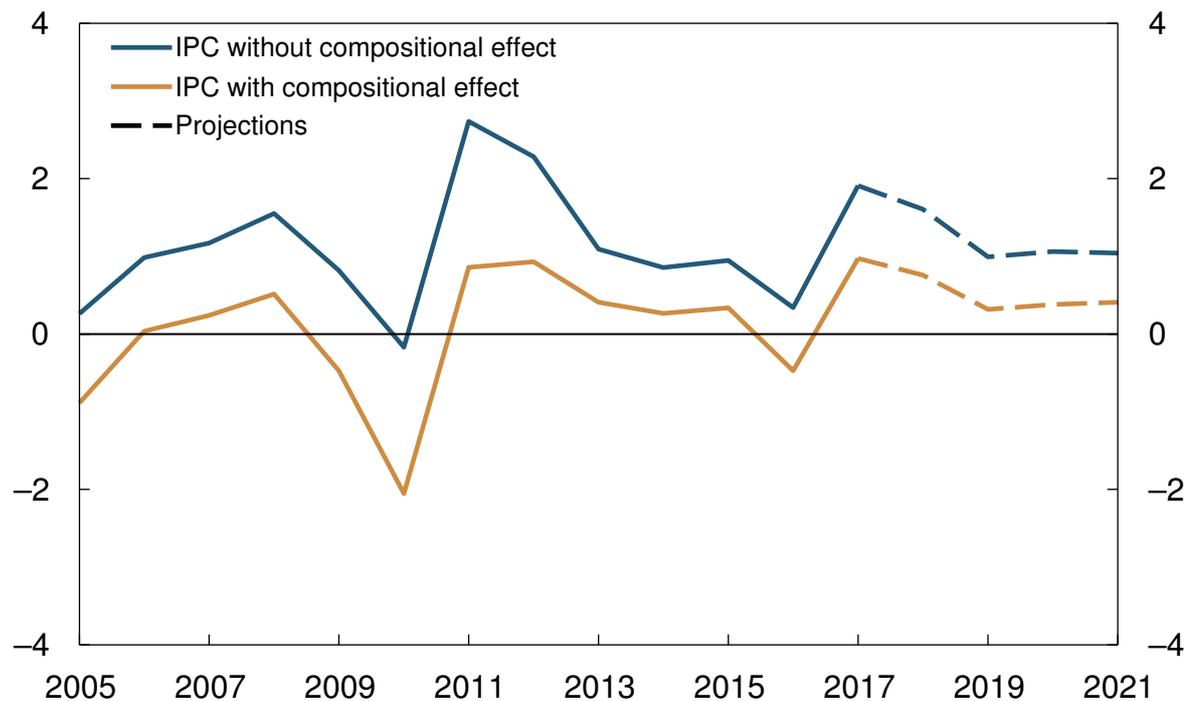
- IPC without compositional effect
- IPC with compositional effect
- — Projections

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

Chart 2.9 Private investment and contribution from investment in mining structures in the US. Annualised quarterly change. Seasonally adjusted. Percent. 2014 Q1 – 2018 Q1
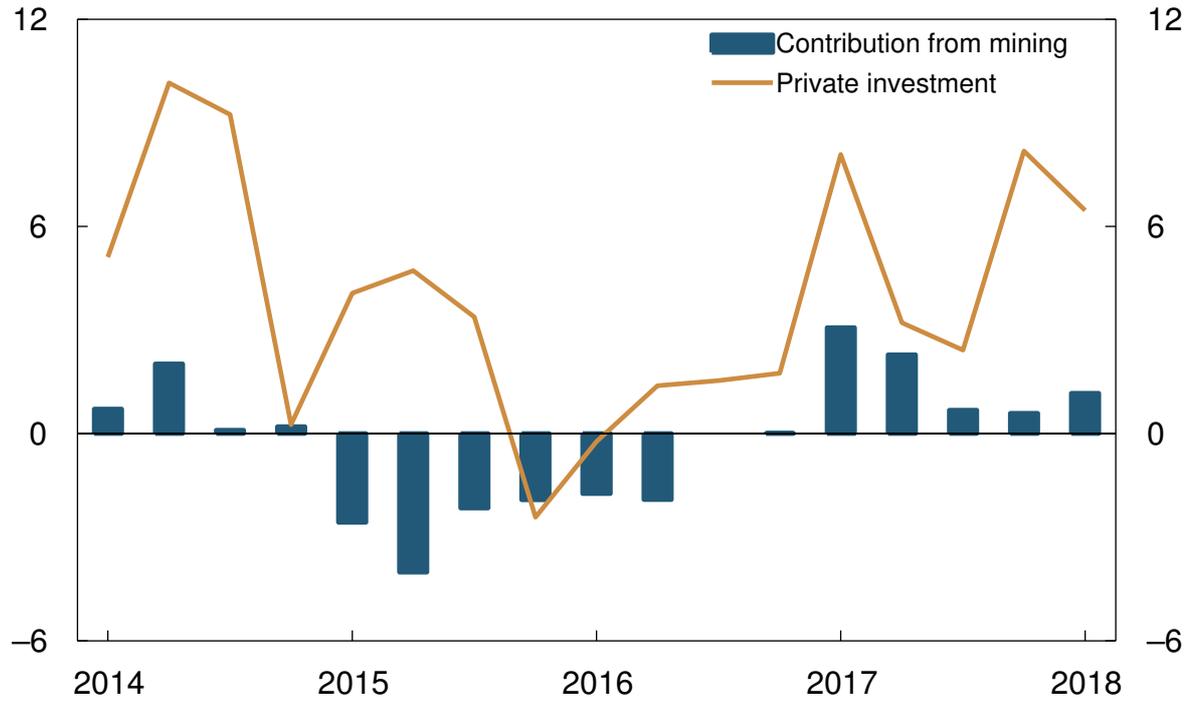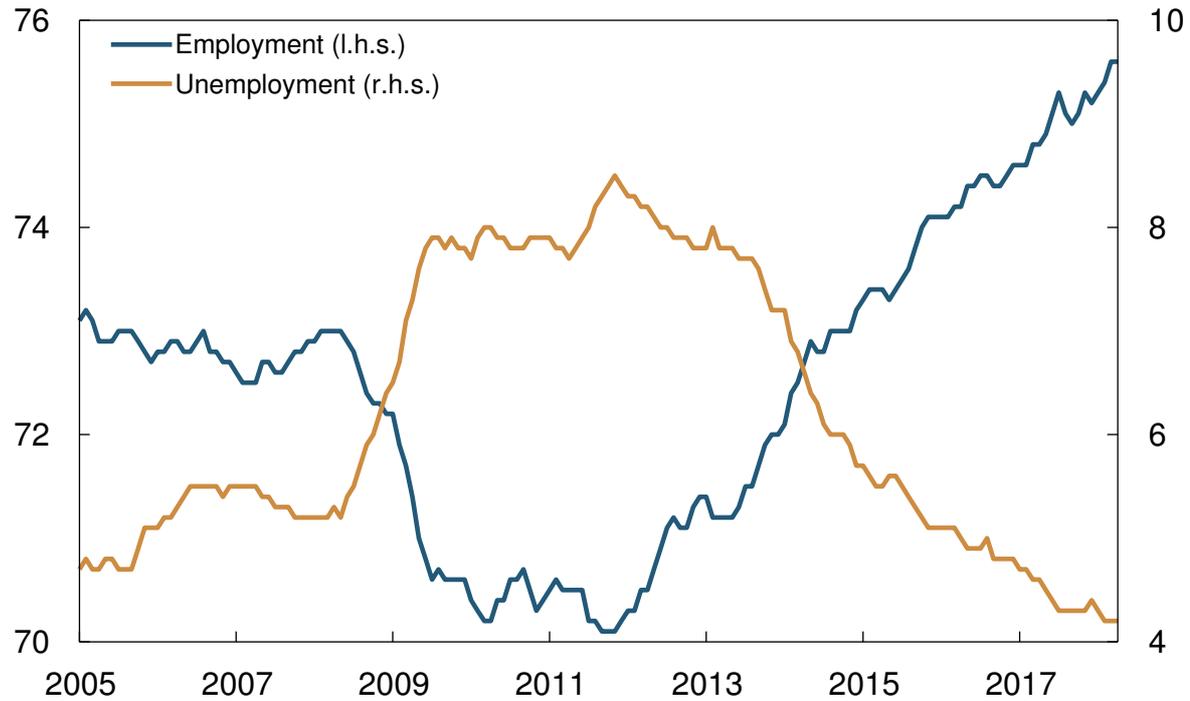

Source: Thomson Reuters

Chart 2.10 Labour shortages in selected countries in the euro area.[1]
Seasonally adjusted. Percent. 2005 Q1 – 2018 Q2

Germany
France
Italy
Spain
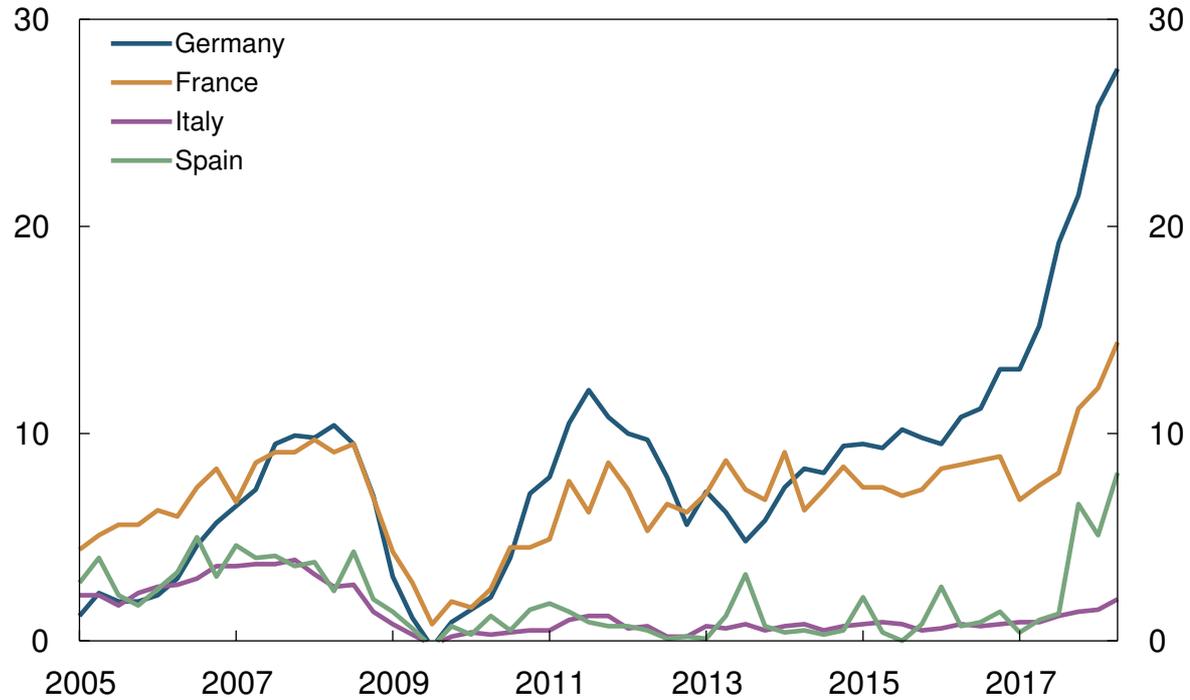
1) Survey from the European Commission. Share of businesses in manufacturing that report labour
as a factor limiting production.
Source: Thomson Reuters

Chart 2.11 Employment[1] and unemployment[2] in the UK.
Seasonally adjusted. Percent. January 2005 – April 2018
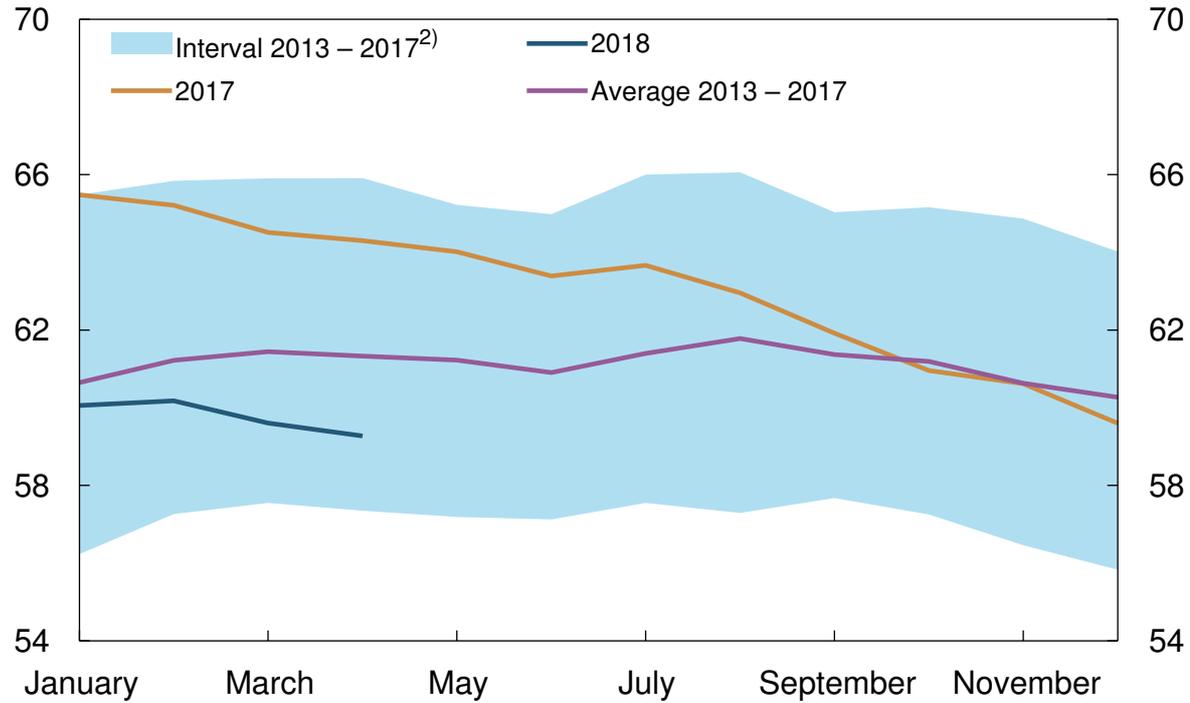

1) Employment as a share of the population aged 16 – 64.
2) Unemployment as a share of the labour force.
Source: Thomson Reuters

Chart 2.12 Total OECD oil inventories.
In days of consumption.[1] January 2017 – April 2018

1) Days of consumption is calculated using average expected demand over the next three months.
2) Interval between the highest and lowest level for a given month in the period 2013 – 2017.
Sources: IEA and Norges Bank

Chart 2.13 Difference between US oil benchmarks.
WTI Midland[1] minus WTI Cushing[2]. USD/barrel. 2 January 2018 – 15 June 2018
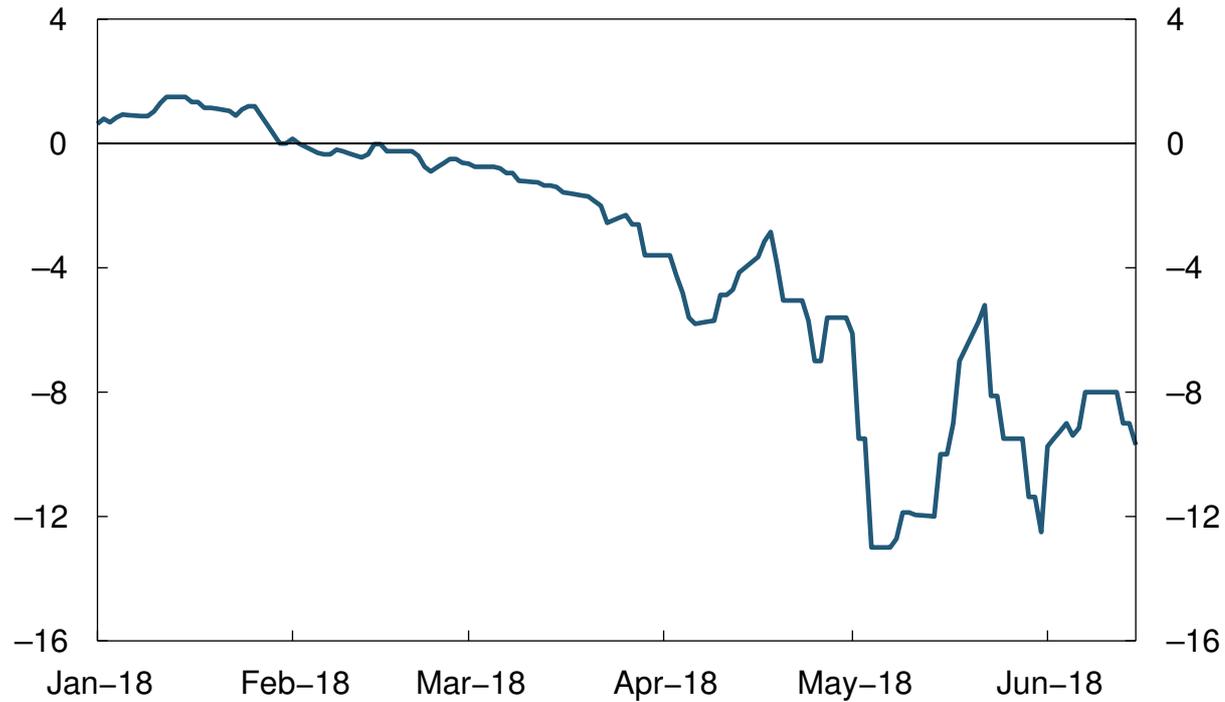
1) WTI Midland is the benchmark price for oil in Midland, Texas. The oil is primarily from the Permian Basin.
2) WTI Cushing is the benchmark price for oil in Cushing, Texas. This price is the primary
benchmark for US crude oil.
Source: Thomson Reuters

Chart 3.1 Norwegian three-month money market premium.[1] Five-day moving average. Percentage points. 1 January 2014 – 31 December 2021[2]

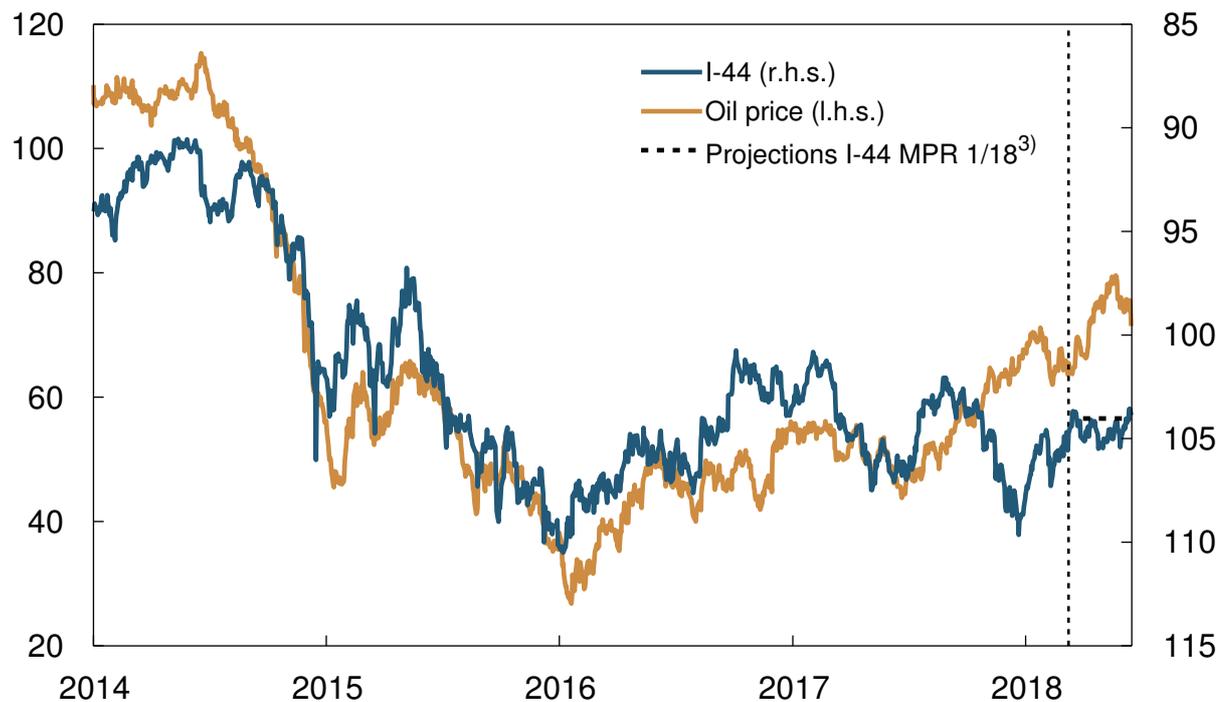- - - Projections MPR 2/18
- - - Projections MPR 1/18
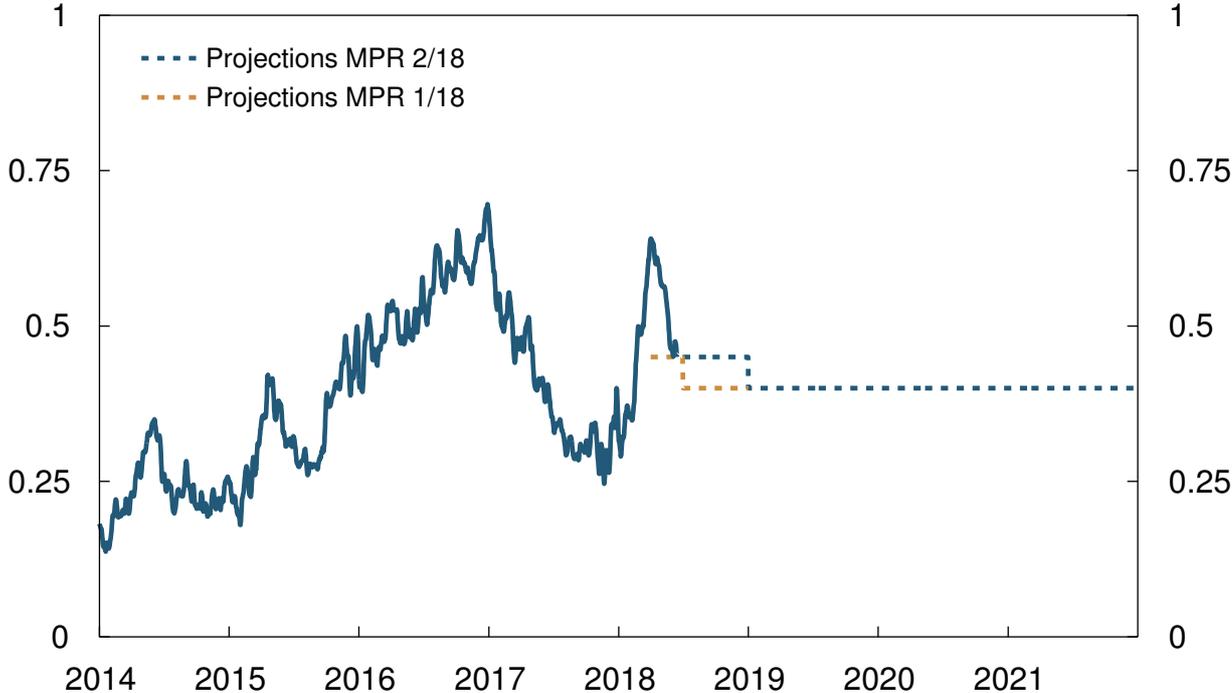
1) Norges Bank estimates of the difference between the three-month money market rate and the expected key policy rate.
2) Projections for 2018 Q3 – 2021 Q4.
Sources: Thomson Reuters and Norges Bank

Chart 3.2 Import-weighted exchange rate index (I-44)[1] and oil price[2].
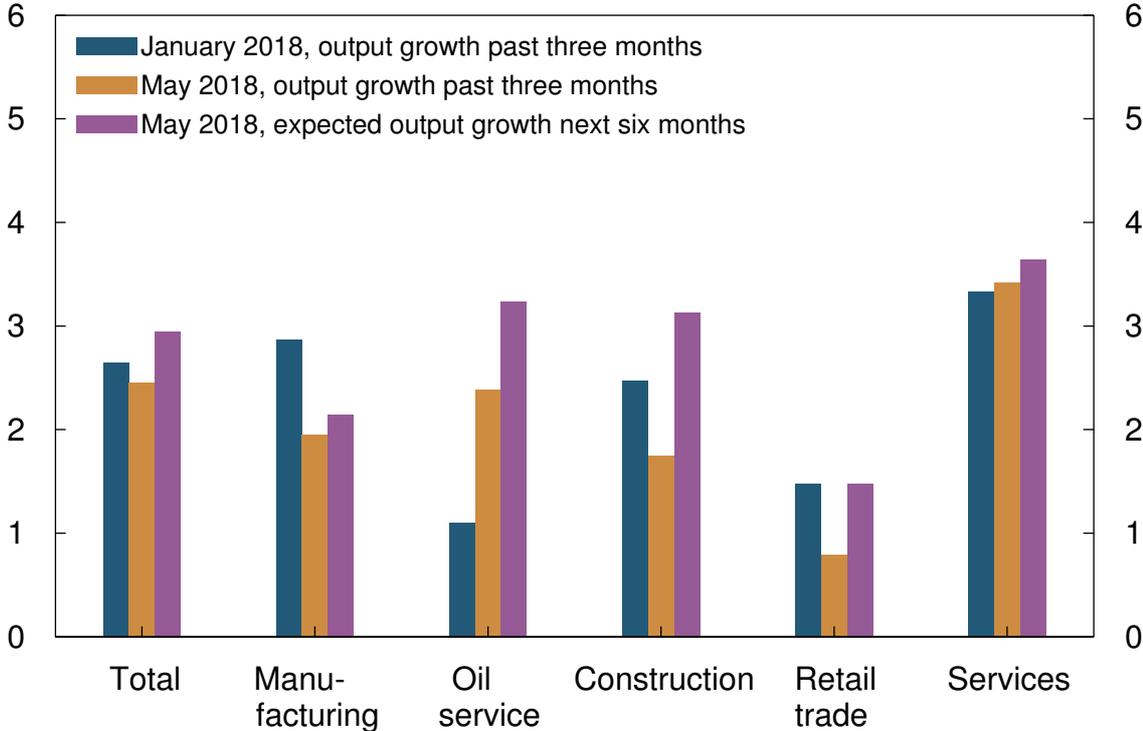1 January 2014 – 15 June 2018

1) A positive slope denotes a stronger krone exchange rate.
2) Brent Blend. USD/barrel.
3) MPR 1/18 was based on information through 9 March 2018, indicated by the vertical line.
Sources: Thomson Reuters and Norges Bank

Chart 3.3 Output growth by sector as reported by the Regional Network. Annualised. Percent

Legend:
- January 2018, output growth past three months
- May 2018, output growth past three months
- May 2018, expected output growth next six months

Categories: Total, Manu-facturing, Oil service, Construction, Retail trade, Services

Source: Norges Bank

Chart 3.4 GDP for mainland Norway[1] and the Regional Network's indicator of output growth[2]. Quarterly change. Percent. 2014 Q1 – 2018 Q3[3]
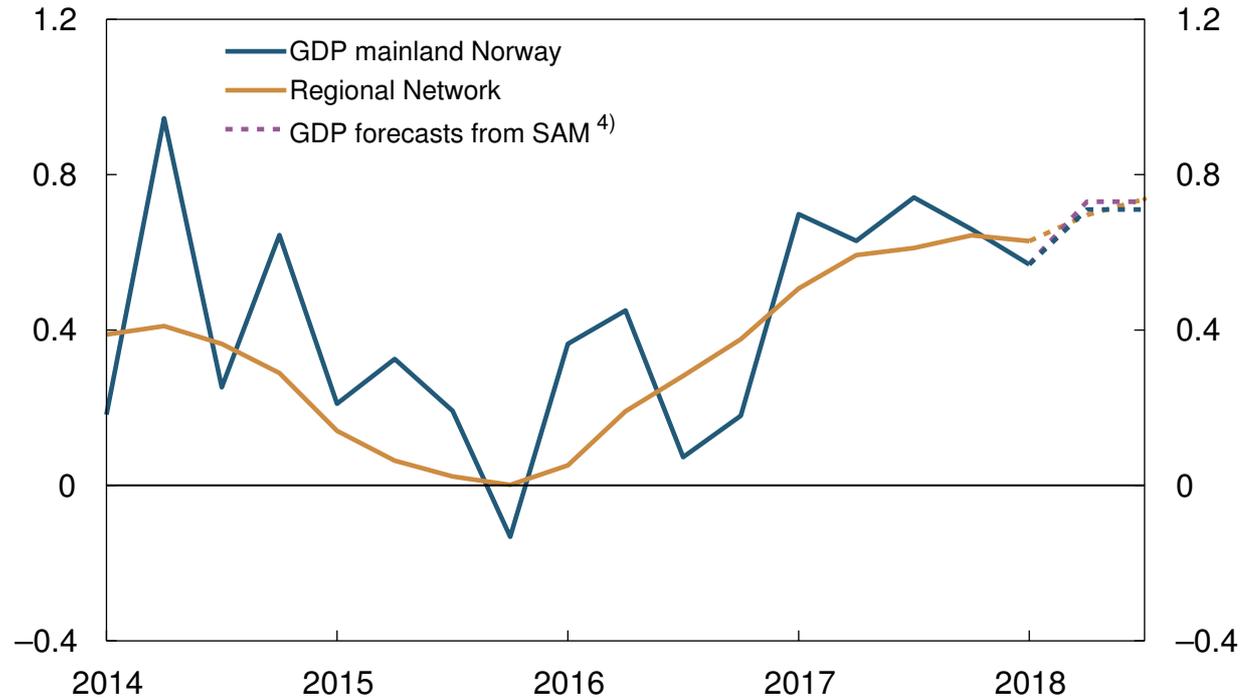

1) Seasonally adjusted.
2) Reported output growth past three months converted to quarterly figures. Quarterly figures are calculated by weighting together three-month figures on the basis of survey timing. For 2018 Q2 expected output growth is estimated by weighting together reported growth over the past three months and expected growth in the next six months. 2018 Q3 is expected growth in the next six months as reported in May.
3) Projections for 2018 Q2 – 2018 Q3 (broken lines).
4) System for Averaging short-term Models.
Sources: Statistics Norway and Norges Bank

Chart 3.5 Consumer confidence. Net values. Kantar TNS trend indicator for households. 2012 Q1 – 2018 Q2. Opinion consumer confidence index (CCI). January 2012 – May 2018
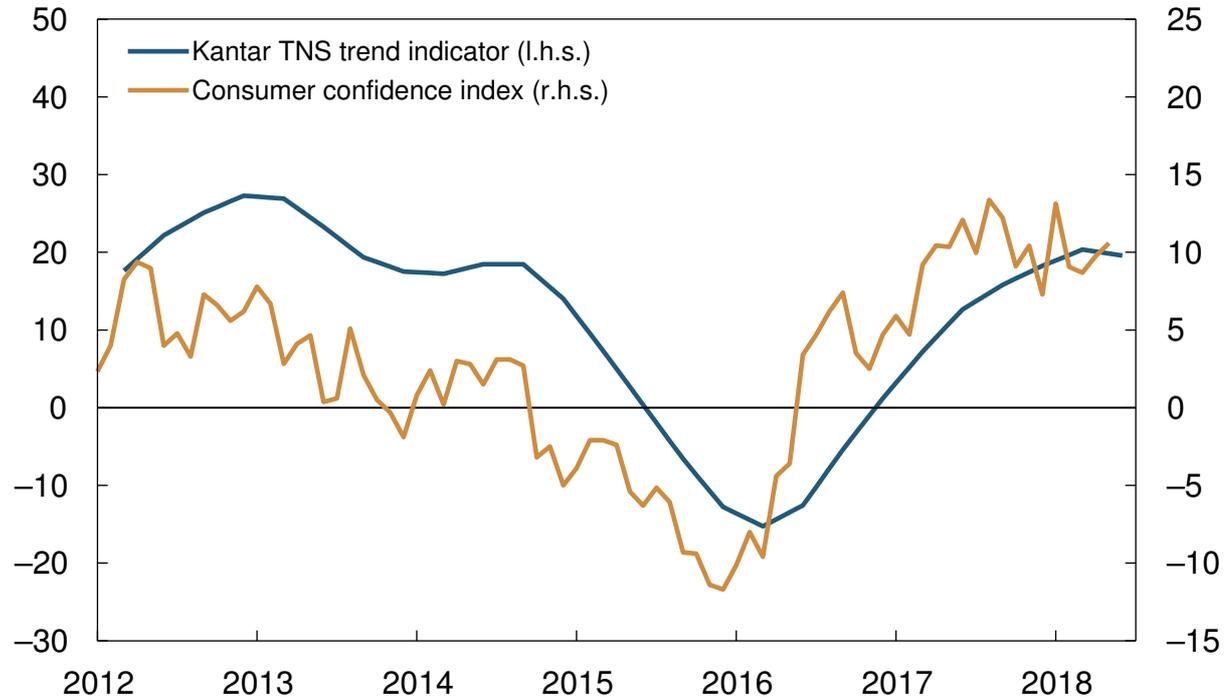
Sources: ForbrukerMeteret™ from Opinion and Kantar TNS

Chart 3.6 Household consumption[1] and real disposable income[2].
Annual change. Percent. 2012 – 2021[3]
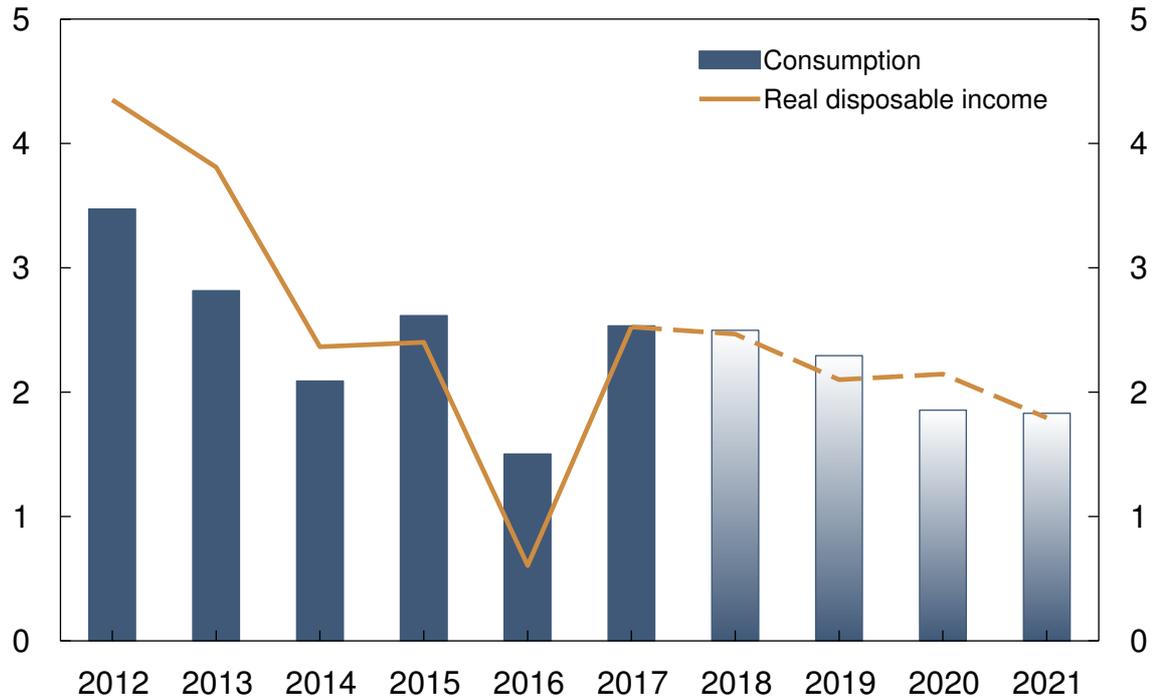
1) Includes consumption from non-profit organisations.
2) Excluding dividend income. Including income from non-profit organisations.
3) Projections for 2018 – 2021 (broken line and shaded bars).
Sources: Statistics Norway and Norges Bank

Chart 3.7 Household saving and net lending.
Share of disposable income. Percent. 1995 – 2021[1]
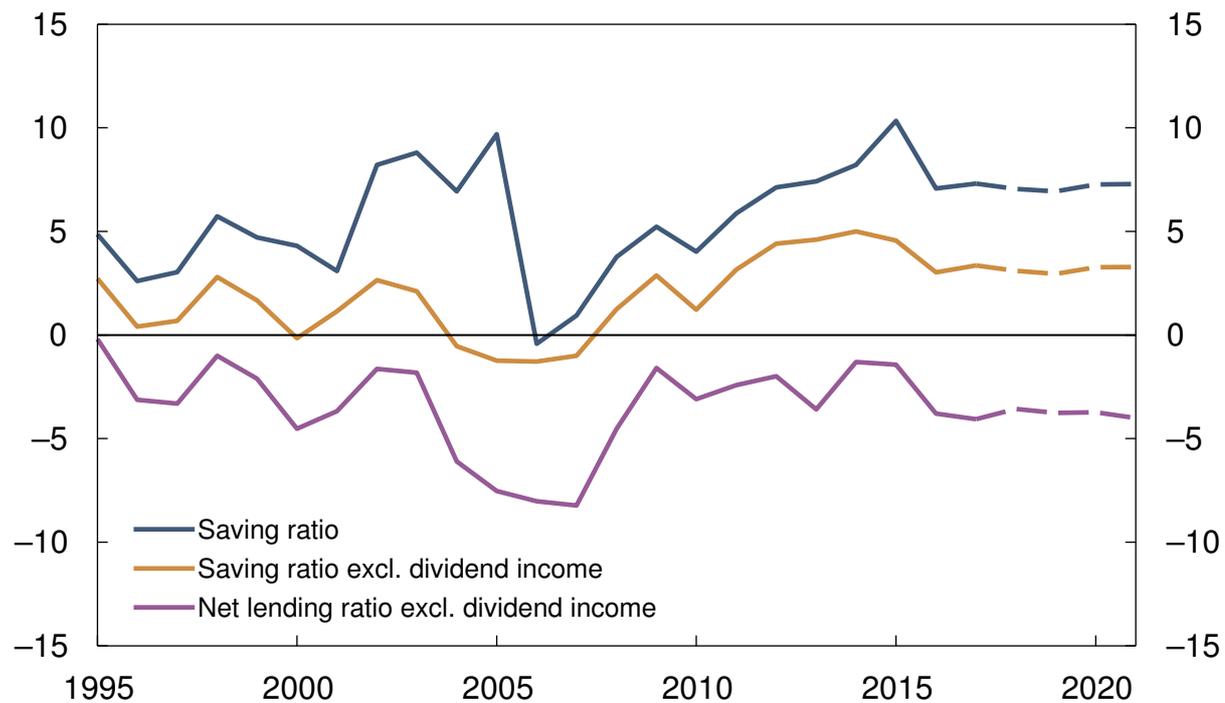
- Saving ratio
- Saving ratio excl. dividend income
- Net lending ratio excl. dividend income

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

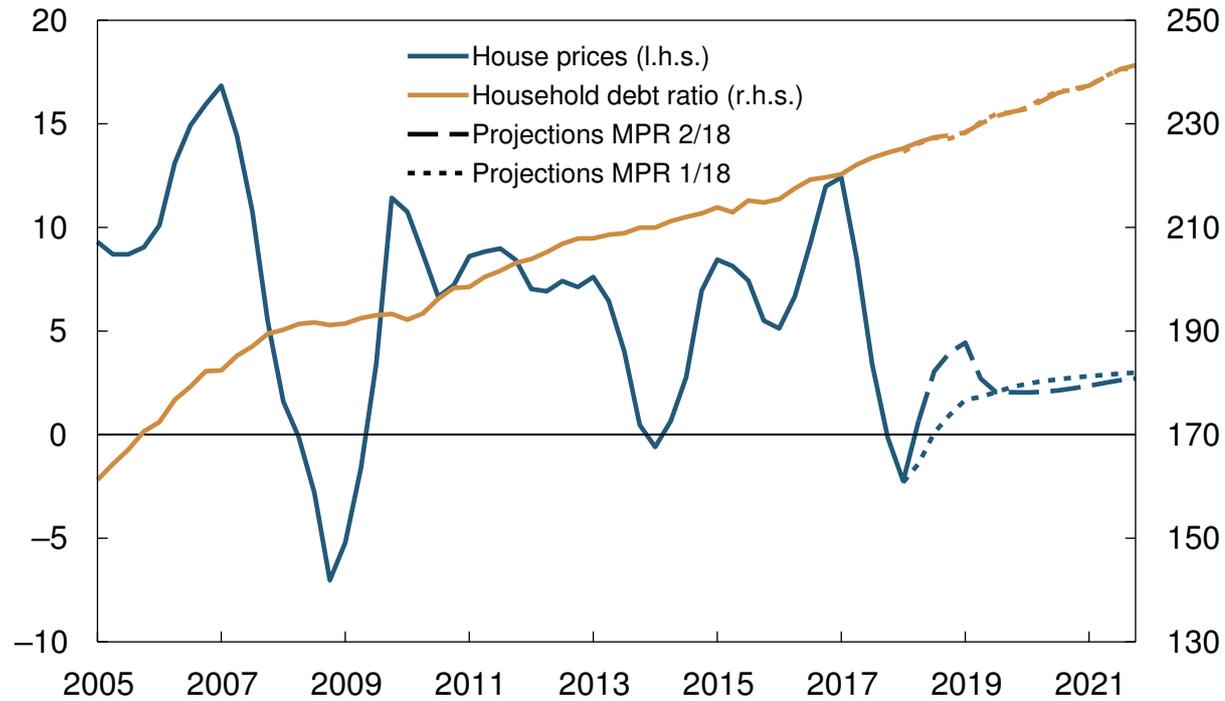Chart 3.8 House prices. Four-quarter change. Percent. Household debt ratio[1].
Percent. 2005 Q1 – 2021 Q4 [2]

- House prices (l.h.s.)
- Household debt ratio (r.h.s.)
- Projections MPR 2/18
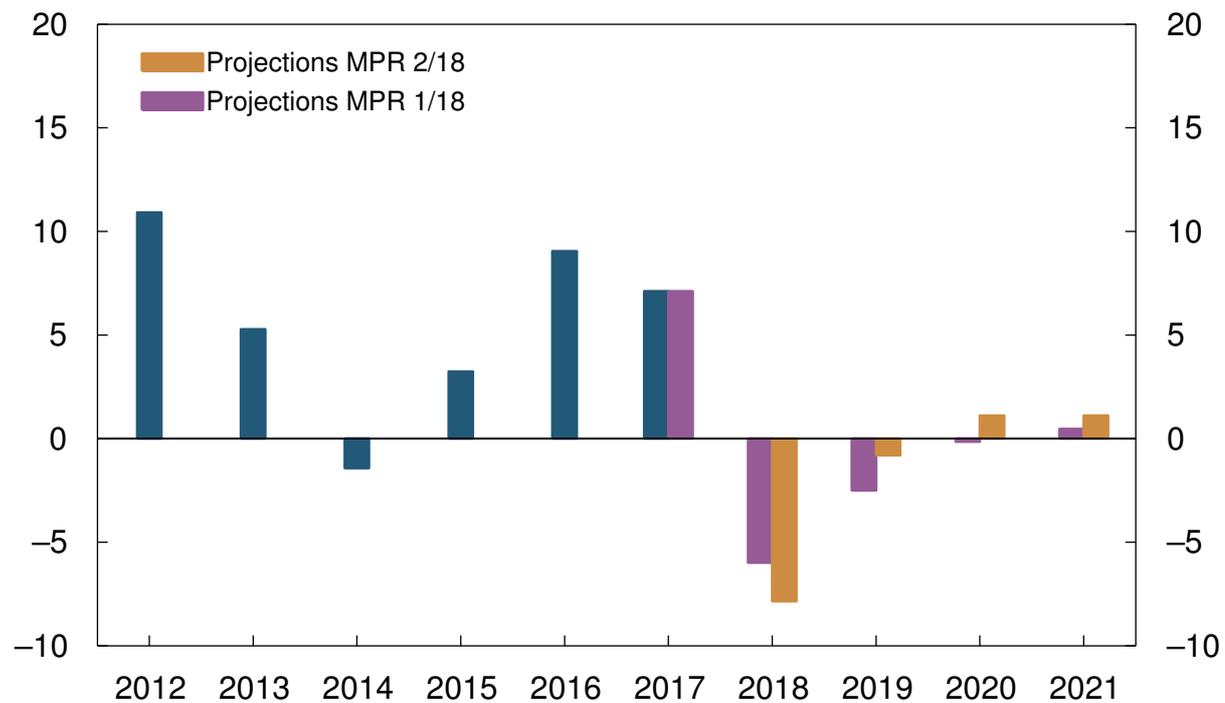- Projections MPR 1/18

1) Loan debt as a percentage of disposable income.
2) Projections for 2018 Q2 – 2021 Q4.
Sources: Eiendomsverdi, Finn.no, Real Estate Norway, Statistics Norway and Norges Bank

Chart 3.9 Housing investment. Annual change. Percent. 2012 – 2021[1]

Chart 3.10 Expected change in business investment over the next 12 months.[1] Index. Business investment for mainland Norway. Four-quarter change. Percent. 2003 Q1 – 2018 Q2 [2]

Expected investment (l.h.s.)
Investment (r.h.s.)
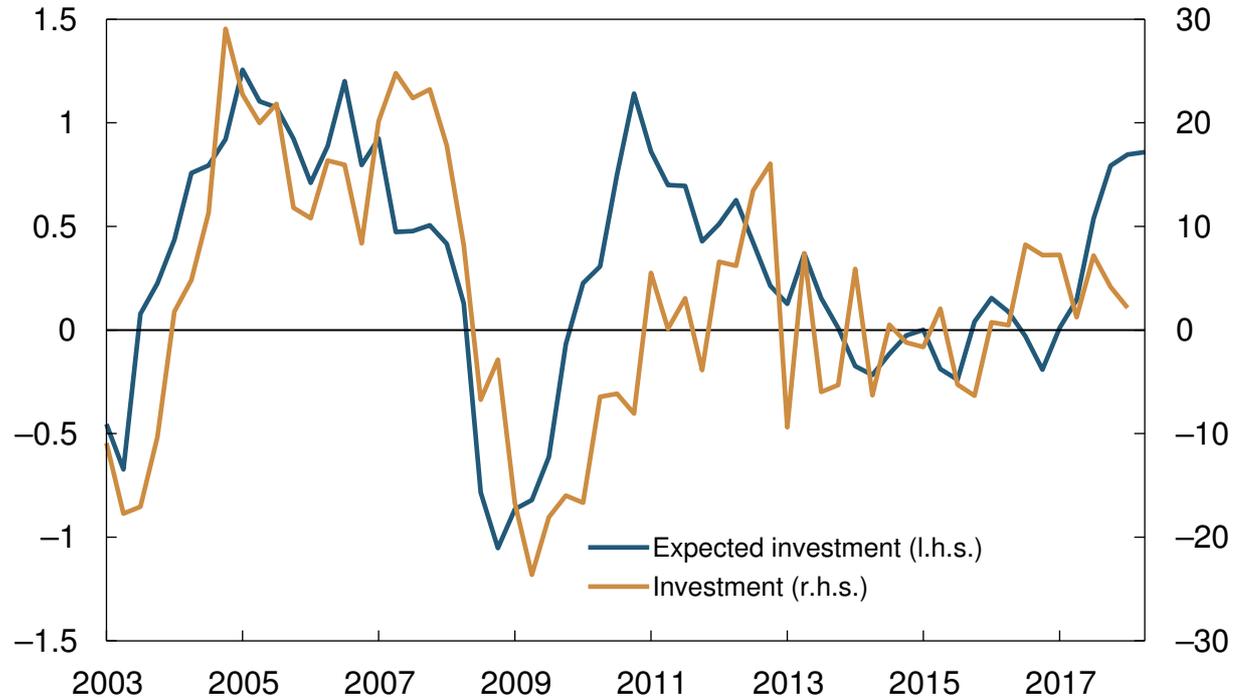
1) Regional Network. Weighted average of manufacturing, oil services, retail trade and services.
2) Latest observation for investment is 2018 Q1.
Sources: Statistics Norway and Norges Bank

Chart 3.11 Business investment for mainland Norway and GDP for mainland Norway.
Annual change. Percent. 2000 – 2021[1]

Business investment (l.h.s.)
Projections MPR 2/18 (l.h.s.)
Projections MPR 1/18 (l.h.s.)
GDP mainland Norway (r.h.s.)
Projections MPR 2/18 (r.h.s.)
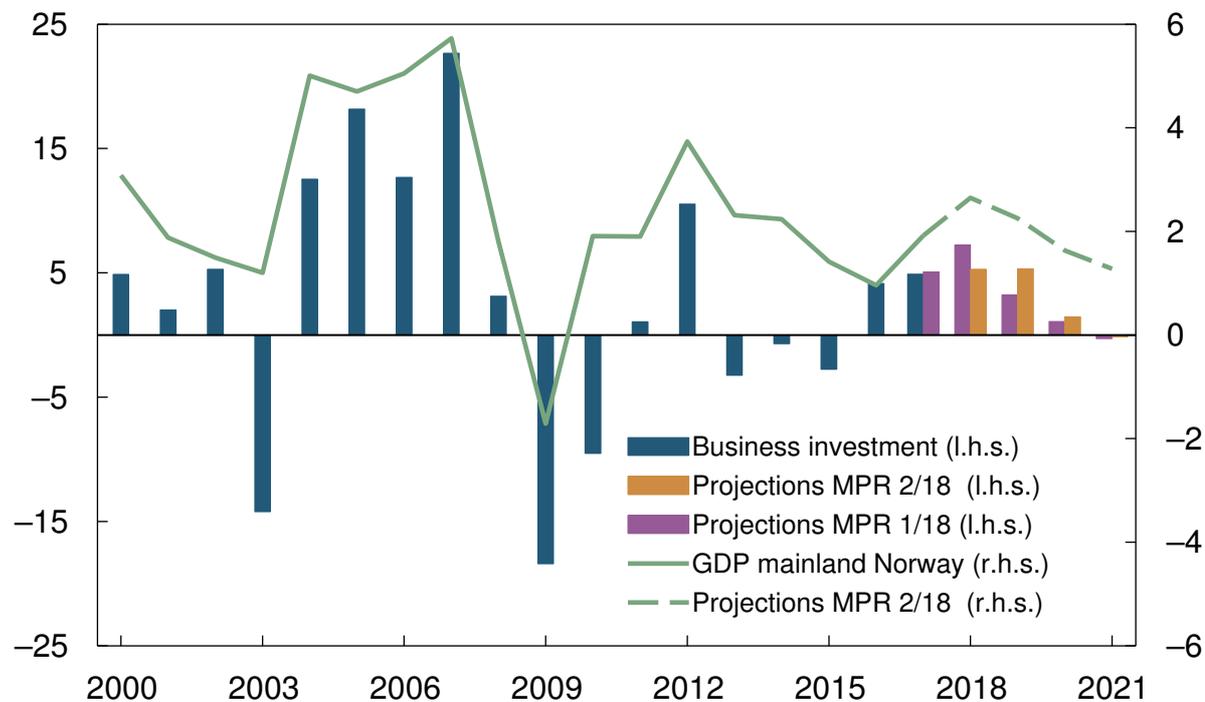
1) Projections for 2018 – 2021.
Sources: Statistics Norway and Norges Bank

Chart 3.12 Norwegian labour costs relative to trading partners'.[1]
Index. 1995 = 100. 1995 – 2017
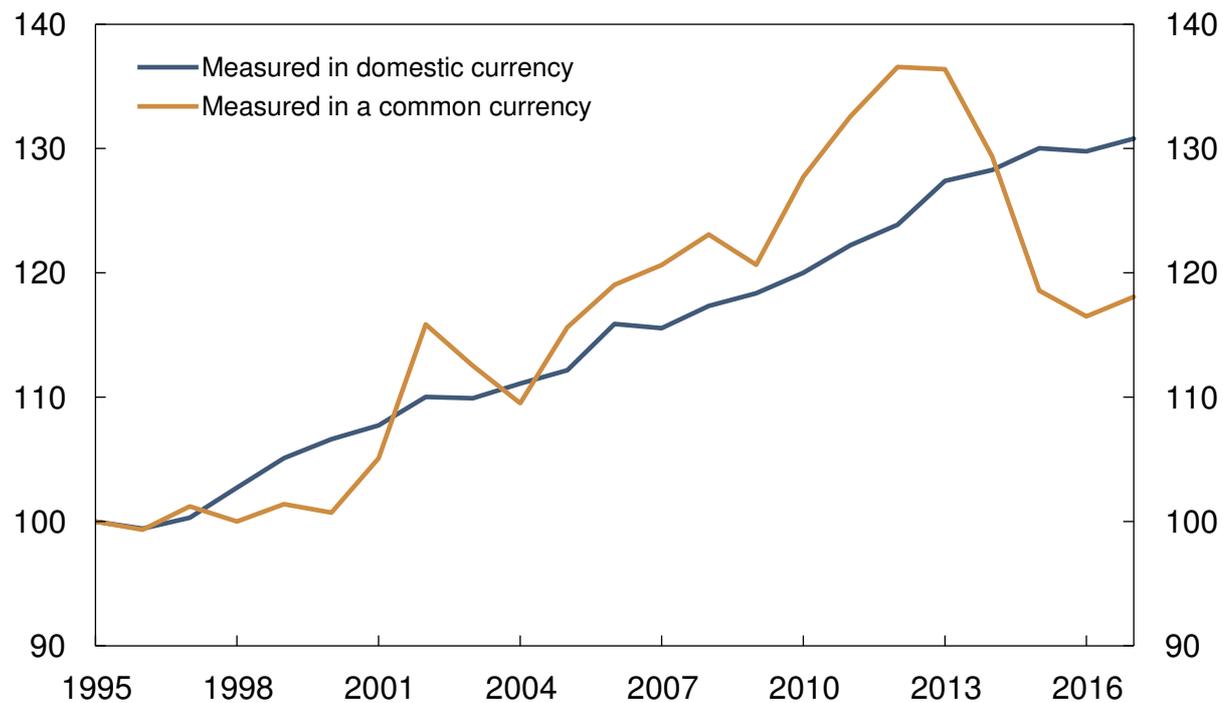

- Measured in domestic currency
- Measured in a common currency

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

Chart 3.13 Exports from mainland Norway and imports for Norway's trading partners. Annual change. Percent. 2014 – 2021[1]

Imports for Norway's trading partners
Exports from mainland Norway
Projections MPR 2/18
Projections MPR 1/18
Exports from oil service industry etc.[2]
Other exports from mainland Norway
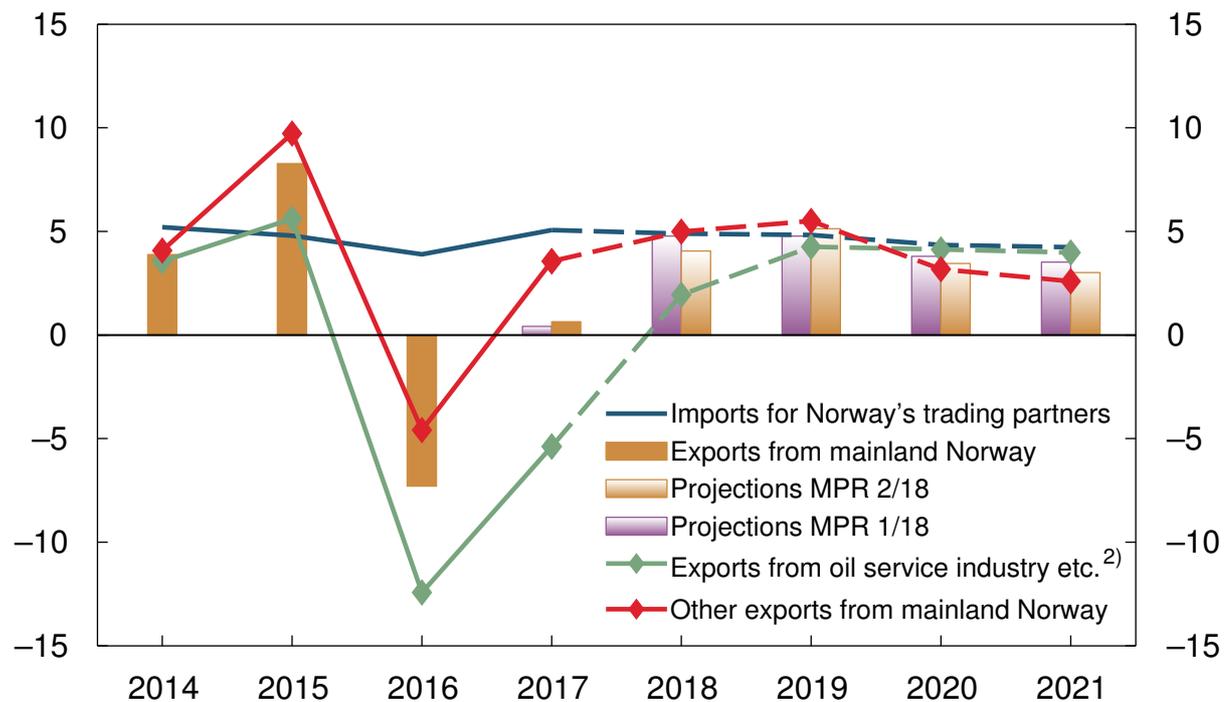
1) Projections for 2018 – 2021 (broken lines and shaded bars).
2) Groups of goods and services in the national accounts where the oil service industry accounts for a considerable share of exports.
Sources: Statistics Norway, Thomson Reuters and Norges Bank

Chart 3.14 Employment.[1] Seasonally adjusted. In thousands. 2014 Q1 – 2018 Q3[2]

- - Projections MPR 2/18
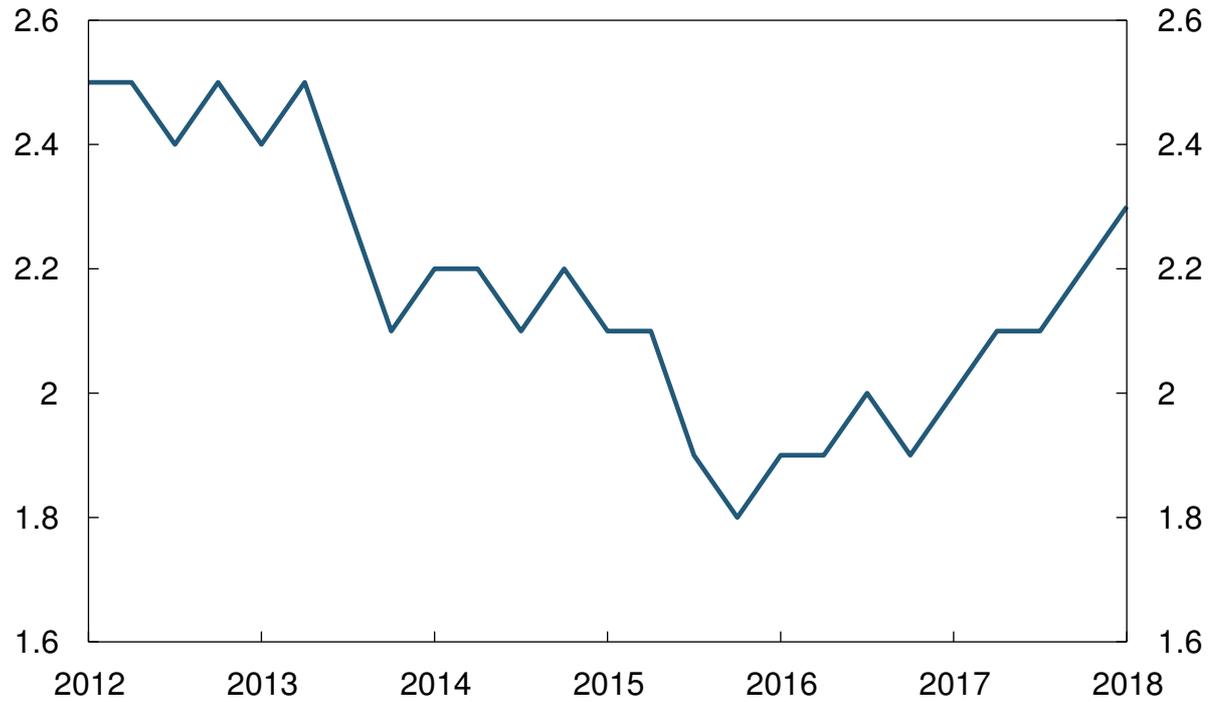- - Projections MPR 1/18
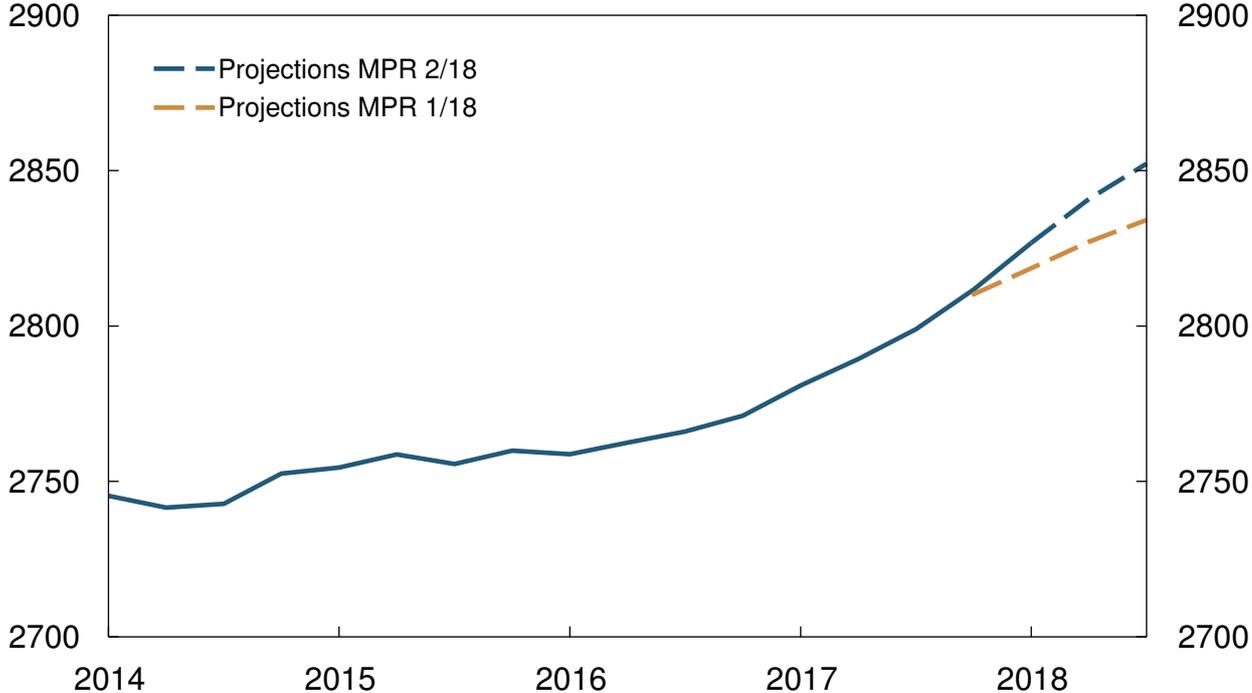
1) According to the quarterly national accounts.
2) Projections for 2018 Q2 – 2018 Q3.
Sources: Statistics Norway and Norges Bank

Chart 3.15 Job vacancies. Share of the total number of positions. Seasonally adjusted. Percent. 2012 Q1 – 2018 Q1

Source: Statistics Norway

Chart 3.16 Unemployment according to LFS[1] and NAV [2]. Share of the labour force. Seasonally adjusted. Percent. January 2012 – September 2018[3]

LFS unemployment
Registered unemployment
Gross unemployment [4]
— — Projections MPR 2/18
· · · · Projections MPR 1/18
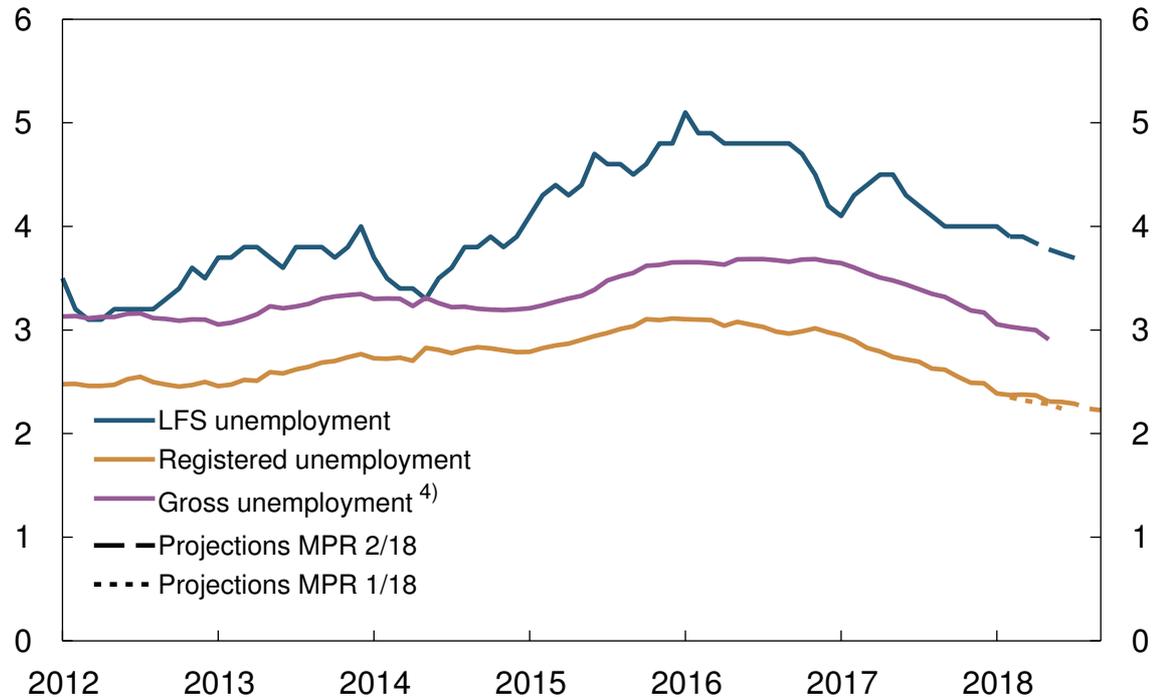
1) Labour Force Survey. Owing to a revision of the LFS, the projections from MPR 1/18 are not directly comparable with the projections in this *Report*. The projections from the March *Report* are therefore not shown in the chart.
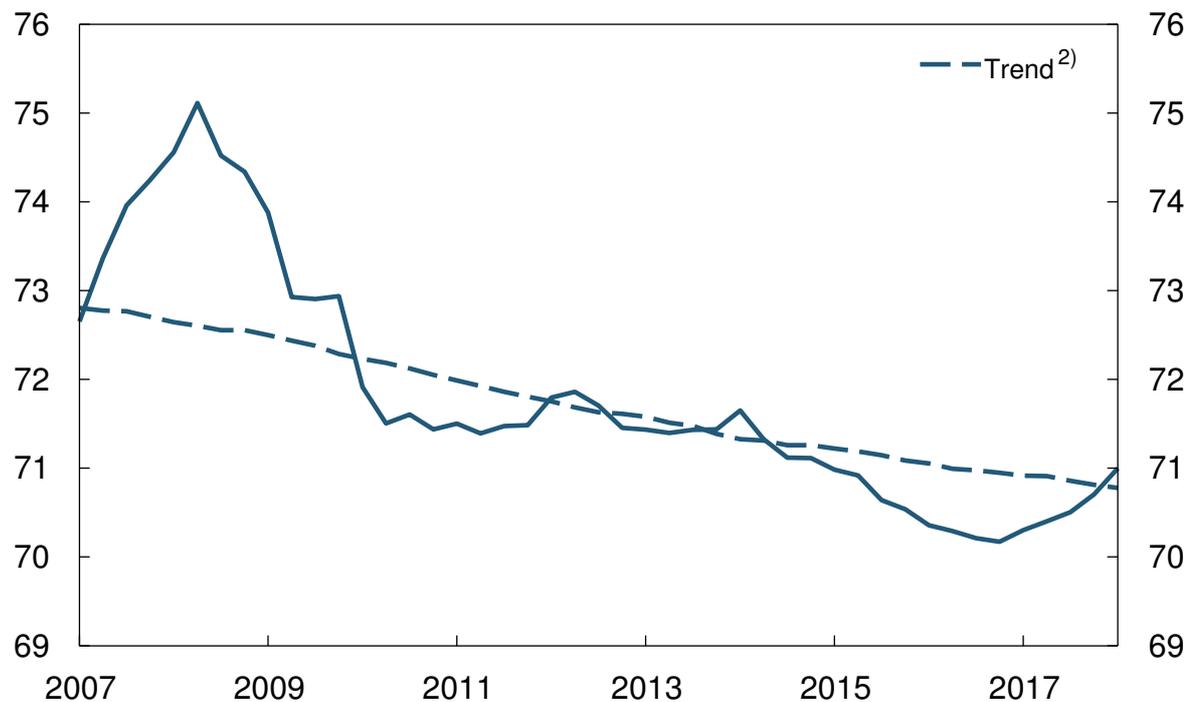2) Registered unemployment.
3) Projections for June 2018 – September 2018 (NAV) and April 2018 – July 2018 (LFS).
4) Registered unemployed and ordinary labour market programme participants.
Sources: Norwegian Labour and Welfare Administration (NAV), Statistics Norway and Norges Bank

Chart 3.17 Employment rate.[1]
Share of the population (aged 15-74). Percent. 2007 Q1 – 2018 Q1

1) Employment rate in quarterly national accounts.
2) Change in the employment rate if the rate for each five–year age cohort had been unchanged at 2013 levels. The curve slopes downward because the population is ageing. 2013 was selected because capacity utilisation in that year was close to a normal level. The projections also take into account non-Western immigrants' somewhat lower labour force participation rate than the population as a whole.
Sources: Statistics Norway and Norges Bank

Chart 3.18 Capacity[1] and labour supply[2] constraints as reported by the Regional Network. Percent. January 2005 – May 2018
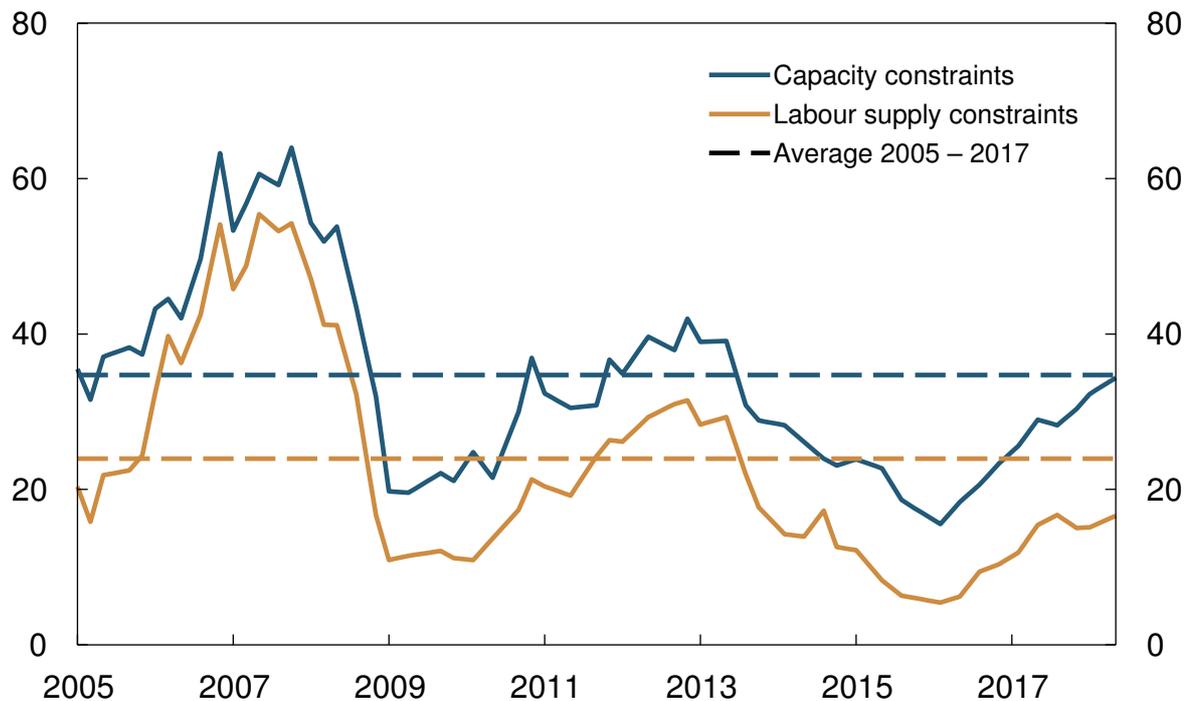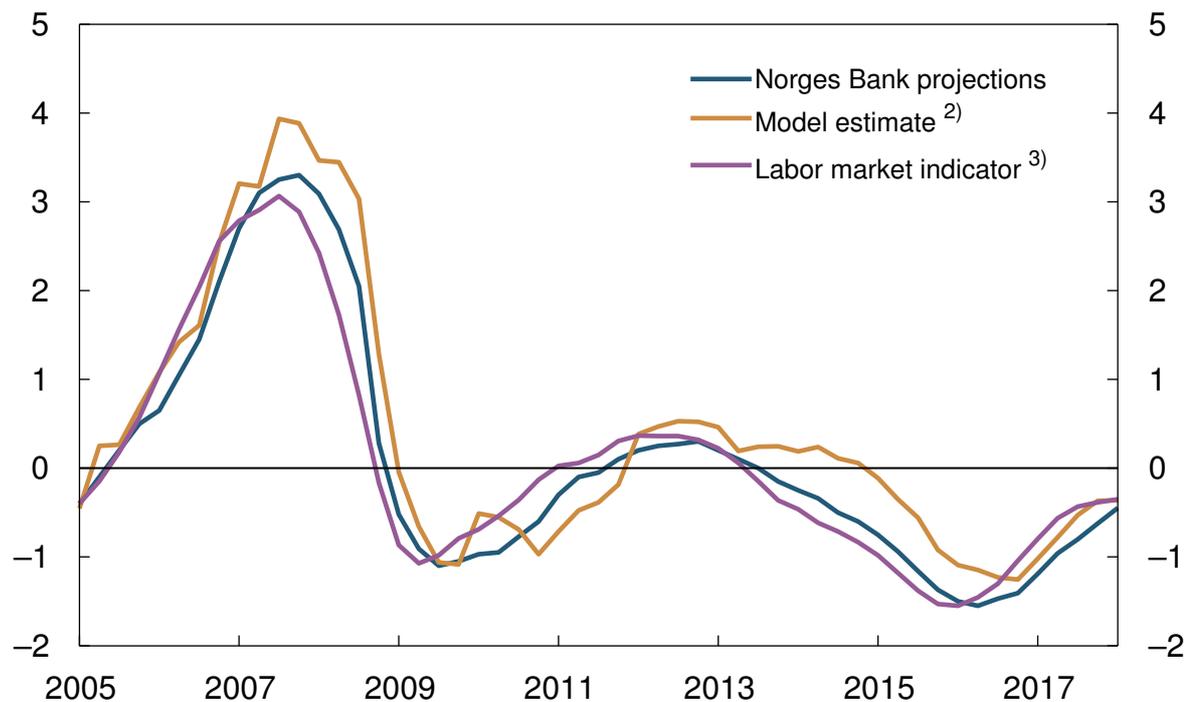

1) Share of contacts that will have some or considerable problems accommodating an increase in demand.
2) Share of contacts reporting that output is being constrained by labour supply.
Source: Norges Bank

Chart 3.19 Estimated output gap[1]. Percent. 2005 Q1 – 2018 Q1

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

Chart 3.20 Productivity. Mainland GDP per hour worked.
Annual change. Percent. 1995 – 2021[1]
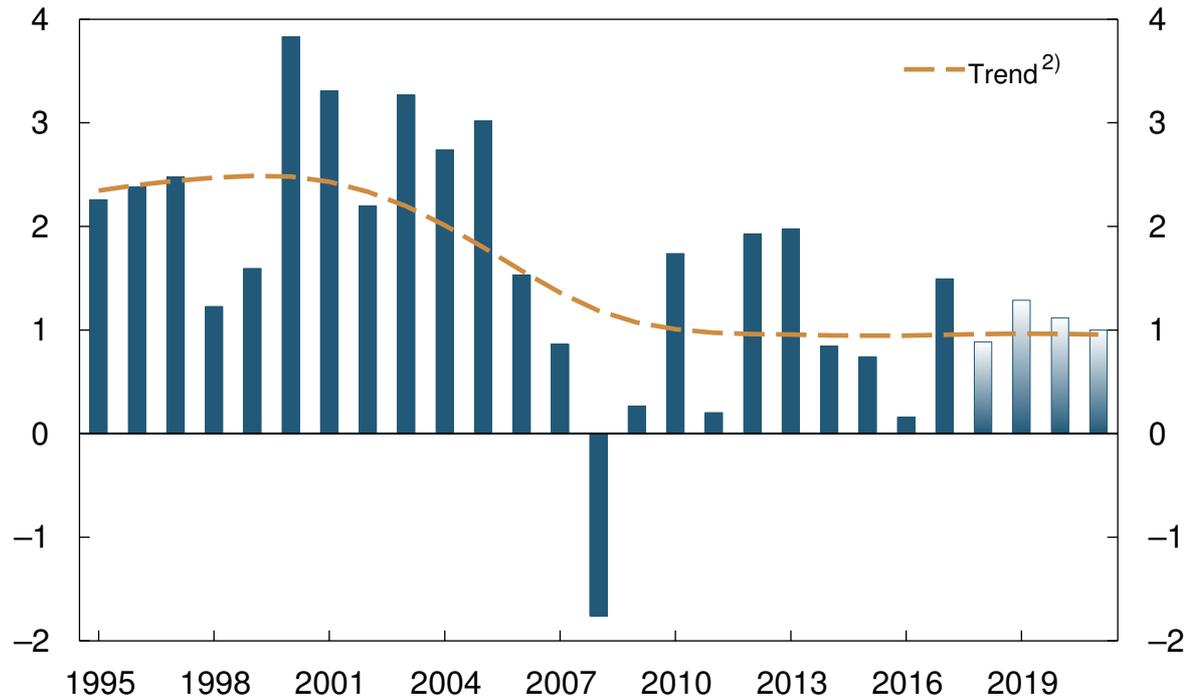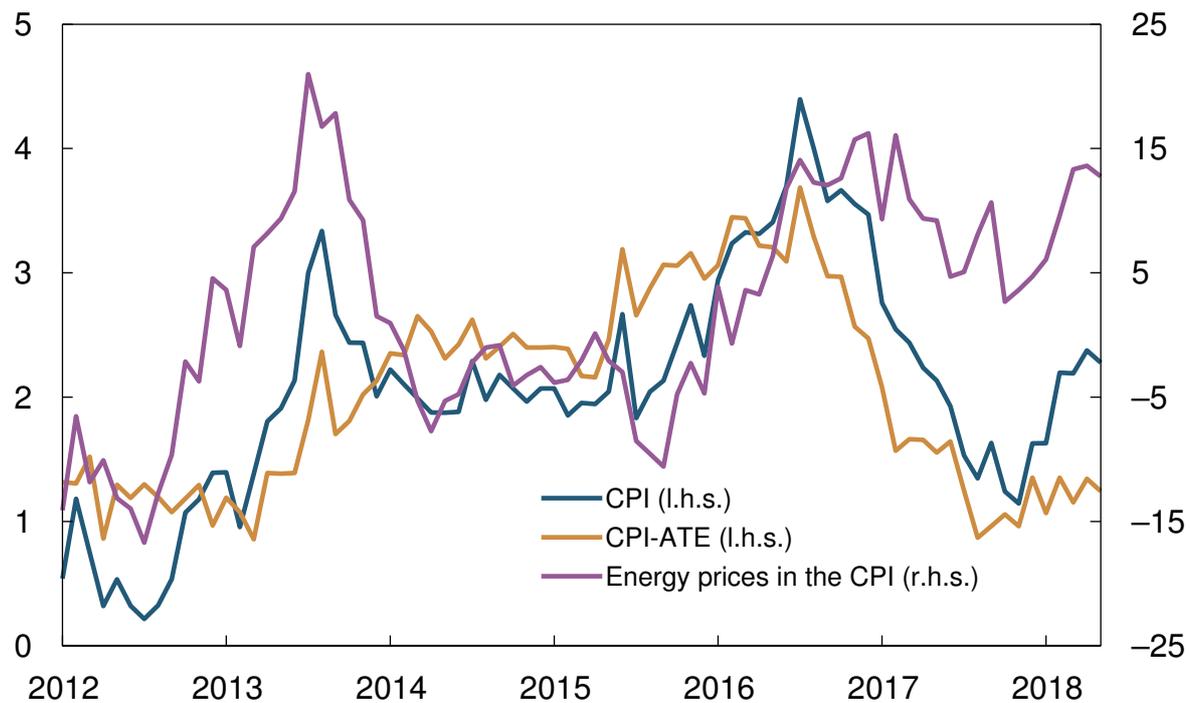

1) Projections for 2018 – 2021 (shaded bars).
2) The trend is calculated using an HP filter with lambda = 100. The data set is extended with projections
for the years 2018 – 2021.
Sources: Statistics Norway and Norges Bank

Chart 3.21 CPI, CPI-ATE[1] and energy prices in the CPI[2].
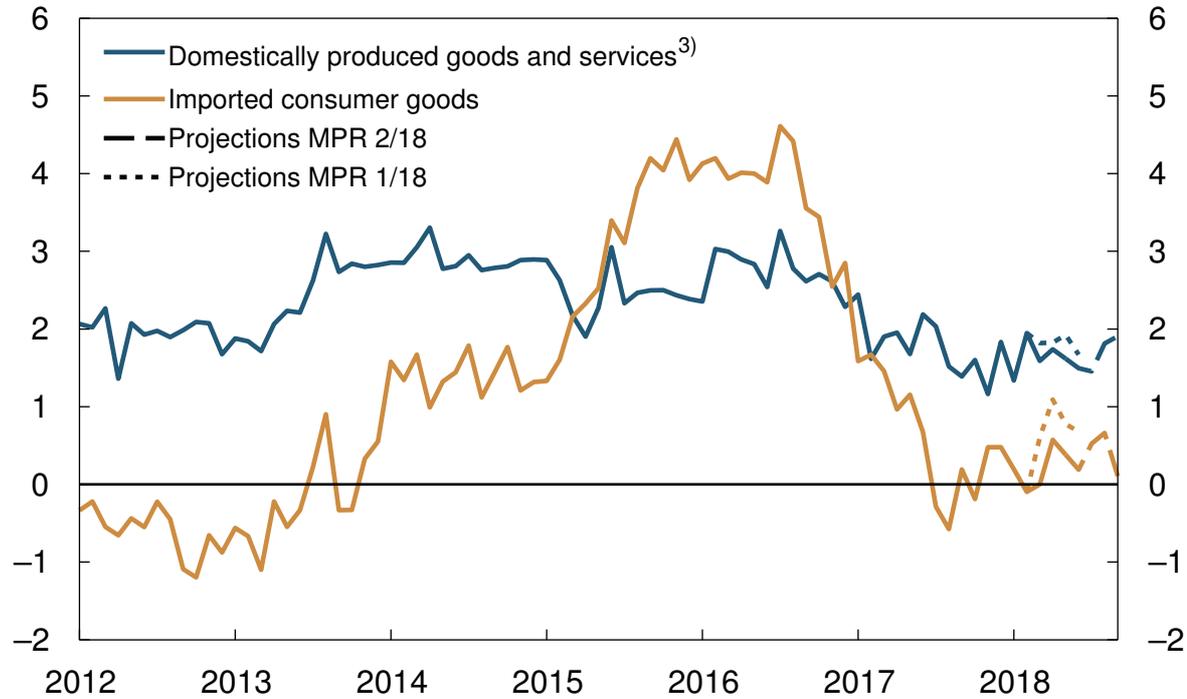Twelve-month change. Percent. January 2012 – May 2018

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

Chart 3.22 CPI-ATE[1] by supplier sector.
Twelve-month change. Percent. January 2012 – September 2018[2]

- Domestically produced goods and services[3]
- Imported consumer goods
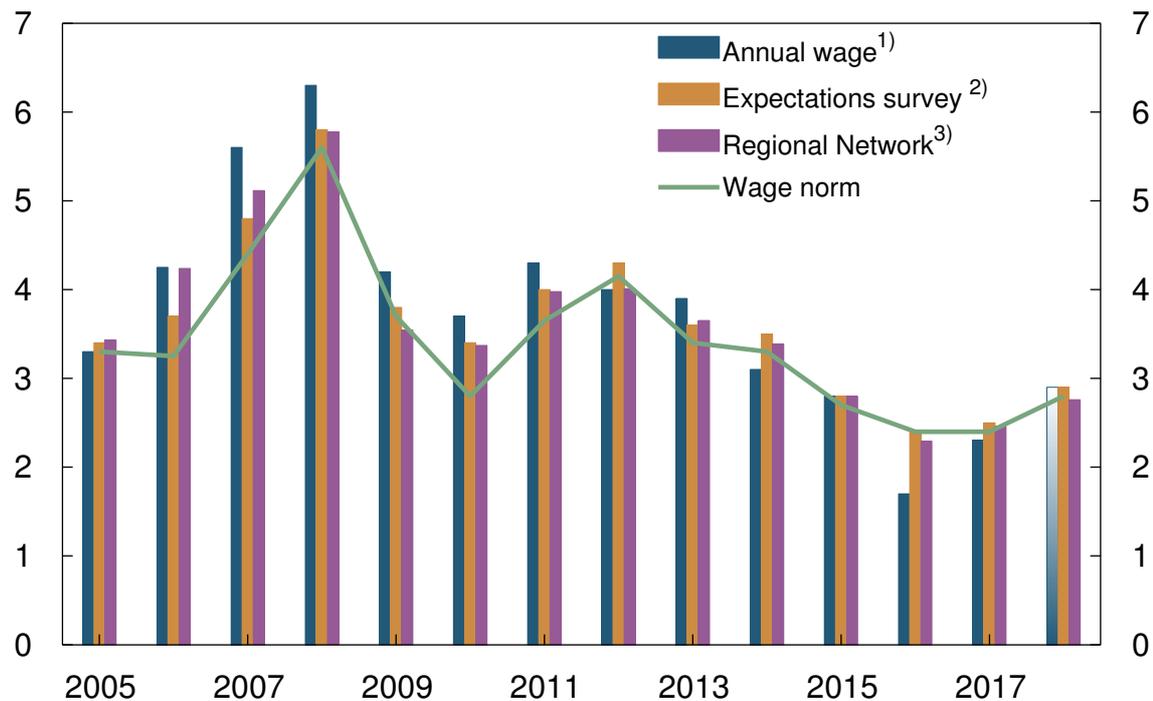- Projections MPR 2/18
- Projections MPR 1/18

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

Chart 3.23 Wage, wage norm and wage expectations.
Annual change. Percent. 2005 – 2018

1) Actual annual wage growth from Statistics Norway. Norges Banks' projections for 2018 (shaded bars).
2) Social partners' wage growth expectations for the current year as measured by Norges Bank's expectations survey in Q2 each year.
3) Expected wage growth for the current year as reported by the Regional Network in Q2 each year.
Sources: Epinion, Kantar TNS, Opinion, Statistics Norway and Norges Bank.

Chart 3.24 Wage growth in Norway and for main trading partners[1].
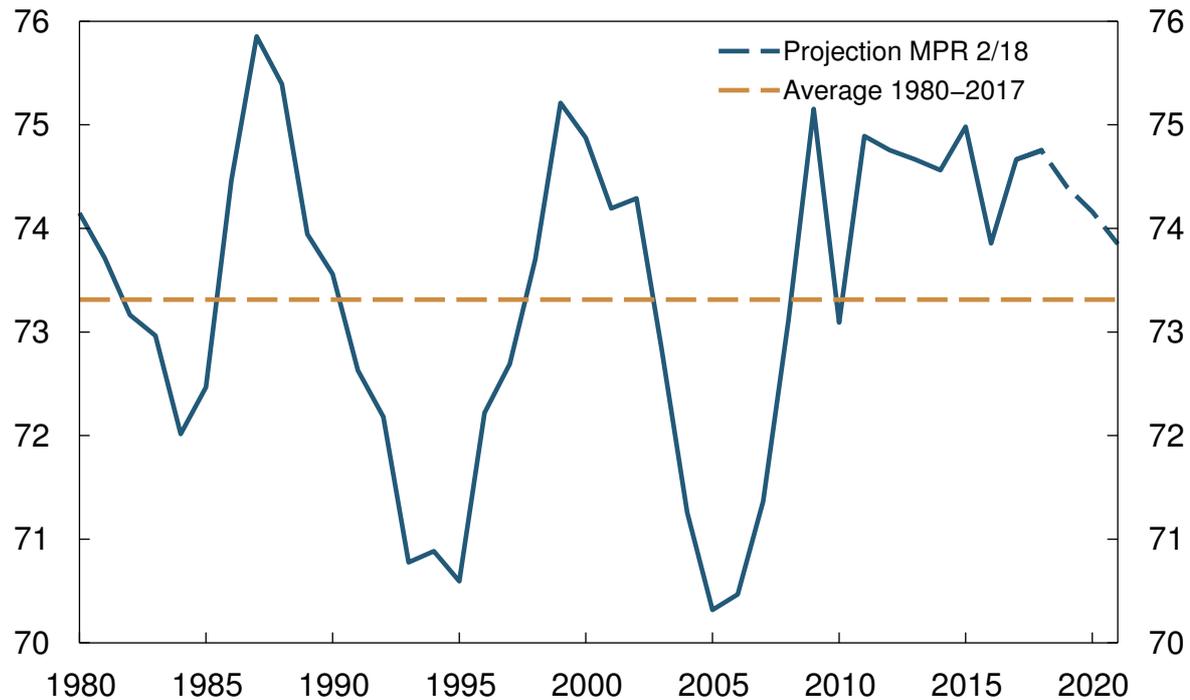Annual change. Percent. 2005 – 2021[2]
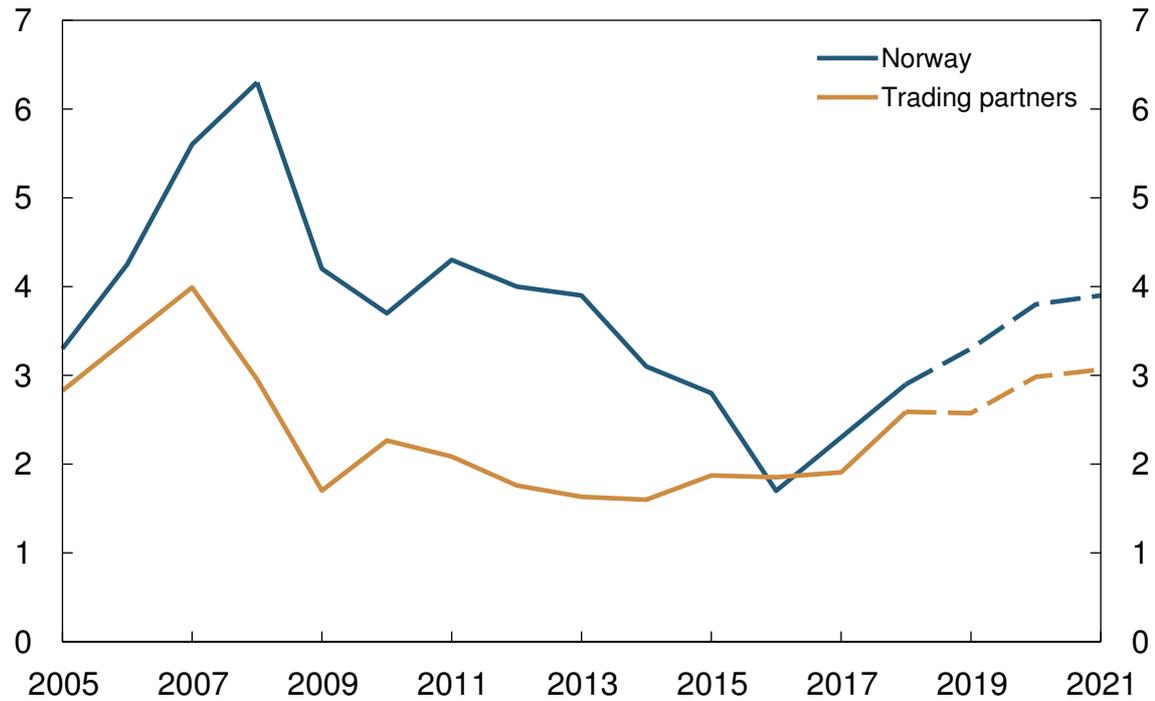
1) Aggregate for wage growth is based on labour cost growth in the euro area, US, UK and Sweden.
2) Projections for 2018 – 2021 (broken lines).
Sources: Norwegian Technical Calculation Committee for Wage Settlements (TBU), Statistics Norway,
Thomson Reuters and Norges Bank

Chart 3.25 Labour share for mainland Norway.[1] Percent. 1980 – 2021 [2]
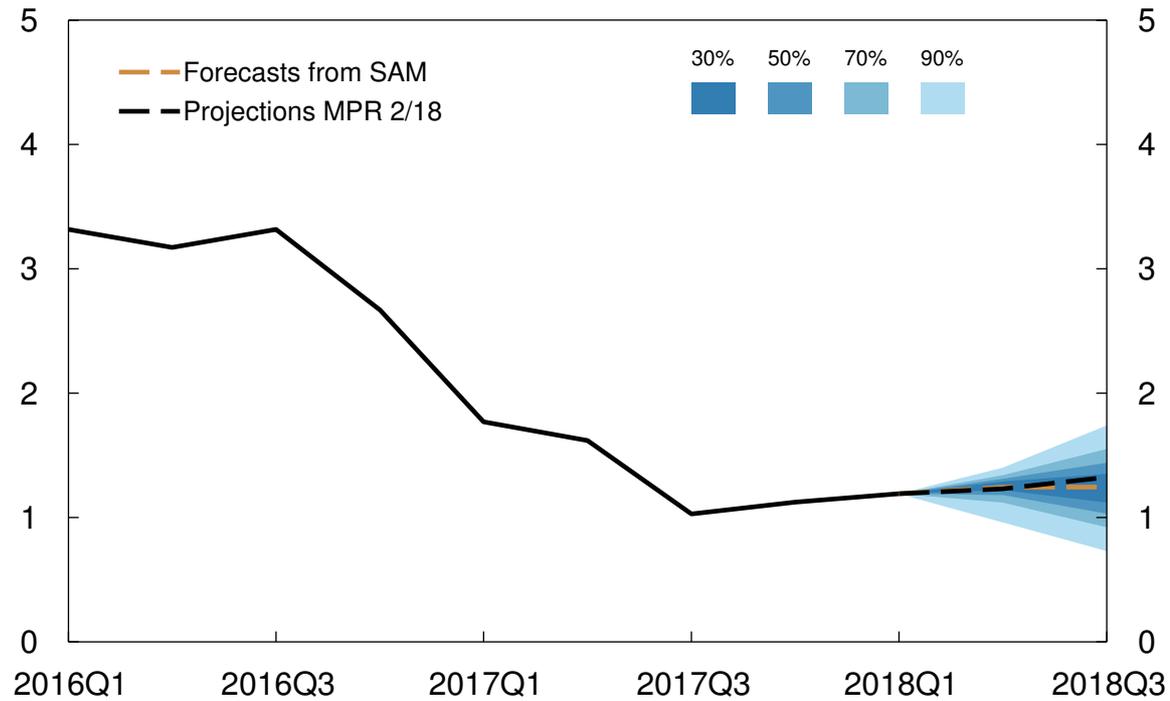

1) Labour costs as a share of the sum of labour costs and operating profit.
2) Projections for 2018 – 2021.
Sources: Statistics Norway and Norges Bank

Chart 3.26 CPI-ATE[1] with fan chart given by SAM [2].
Four-quarter change. Percent. 2016 Q1 – 2018 Q3[3]

- - Forecasts from SAM
- - Projections MPR 2/18

30% 50% 70% 90%

1) CPI adjusted for tax changes and excluding energy products.
2) System for Averaging short-term Models.
3) Projections for 2018 Q2 – 2018 Q3.
Sources: Statistics Norway and Norges Bank

Chart 3.27 Domestically produced goods and services in CPI-ATE. Four-quarter change. Percent. Lagged output gap.[1] Percent. 1995 Q1 – 2019 Q4

Domestically produced goods and services in CPI-ATE (r.h.s.)
Output gap (l.h.s.)
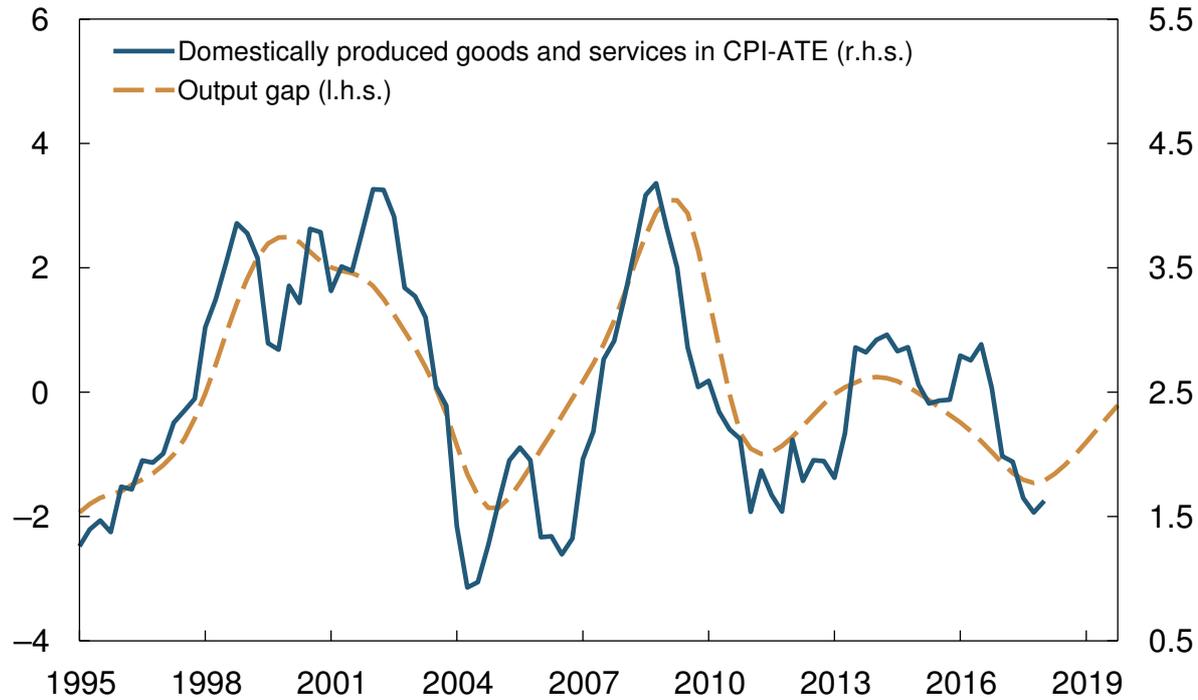
1) The output gap is measured by the percentage difference between mainland GDP and estimated potential mainland GDP. The gap is a five-quarter moving average lagged by four quarters.
Sources: Statistics Norway and Norges Bank

Chart 3.28 CPI and indicators of underlying inflation.
Twelve-month change. Percent. January 2005 – May 2018
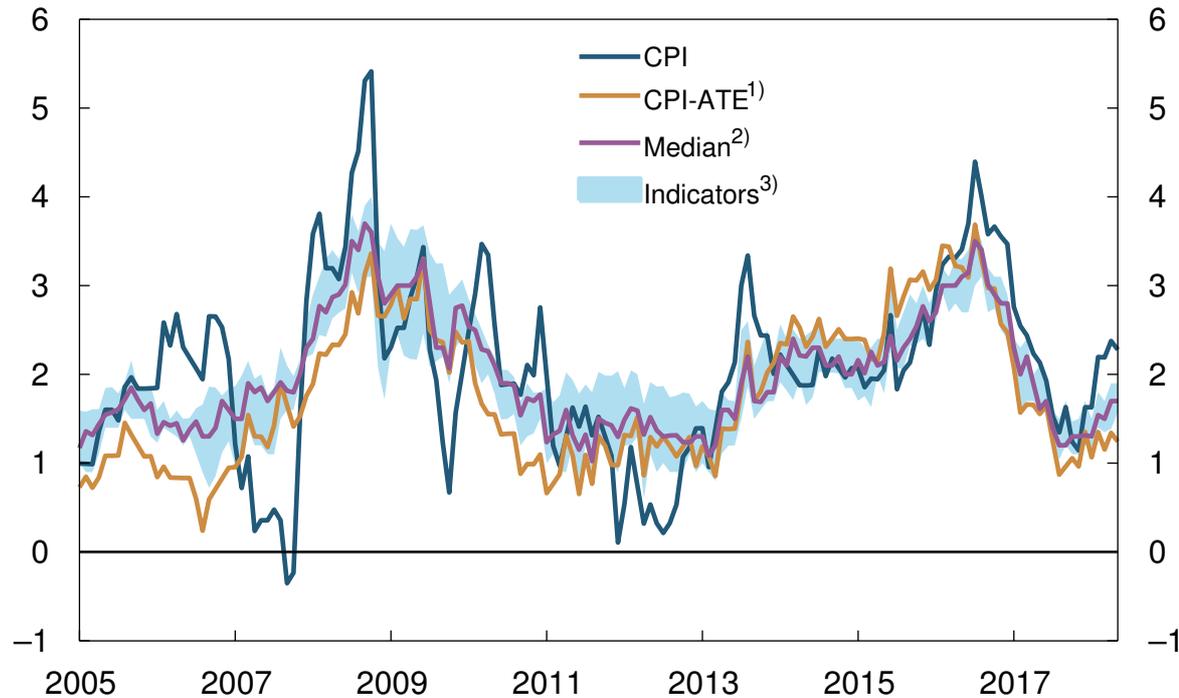
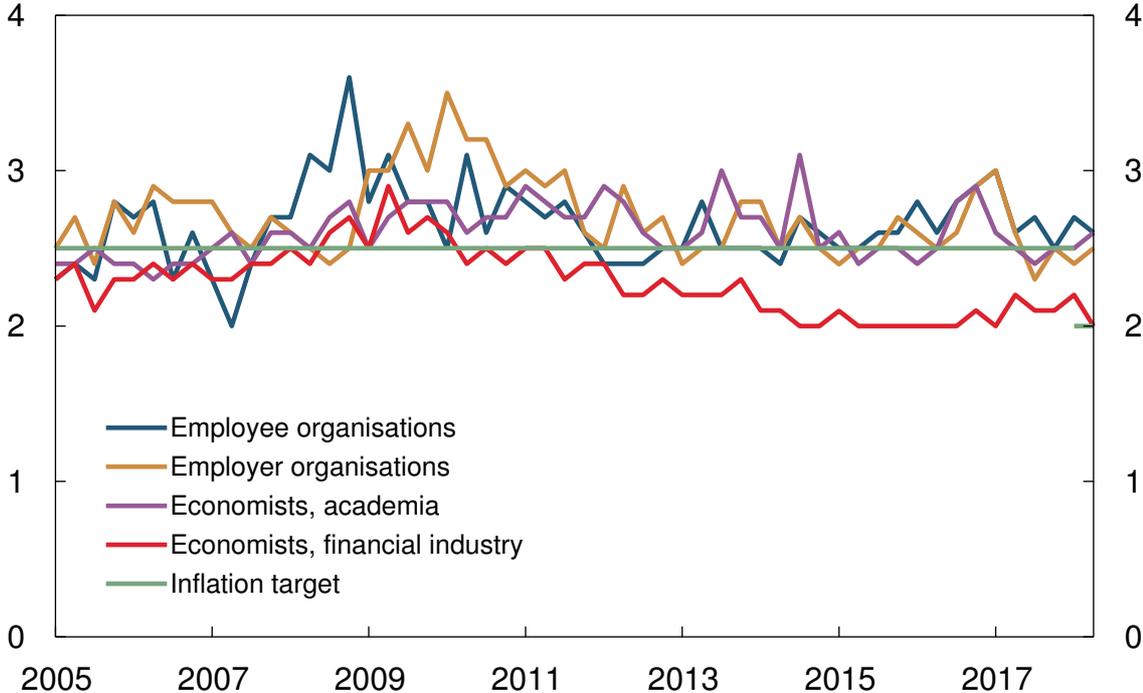1) CPI adjusted for tax changes and excluding energy products.
2) Median of CPIM, CPIXE, 20% trimmed mean, CPI-XV and CPI common. See Husabø, E. (2017)
"Indicators of underlying inflation in Norway". *Staff Memo* 13/2017. Norges Bank, for a review of the indicators.
3) The band shows the highest and lowest values for CPIM, CPIXE, 20% trimmed mean, CPI-XV and CPI common.
Sources: Statistics Norway and Norges Bank

Chart 3.29 Expected 12-month change in consumer price five years ahead.
Percent. 2005 Q1 – 2018 Q2

- Employee organisations
- Employer organisations
- Economists, academia
- Economists, financial industry
- Inflation target

Chart 3.30 Structural non-oil deficit and 3% of the GPFG[1].
Share of trend GDP for mainland Norway. Percent. 2002 – 2021[2]

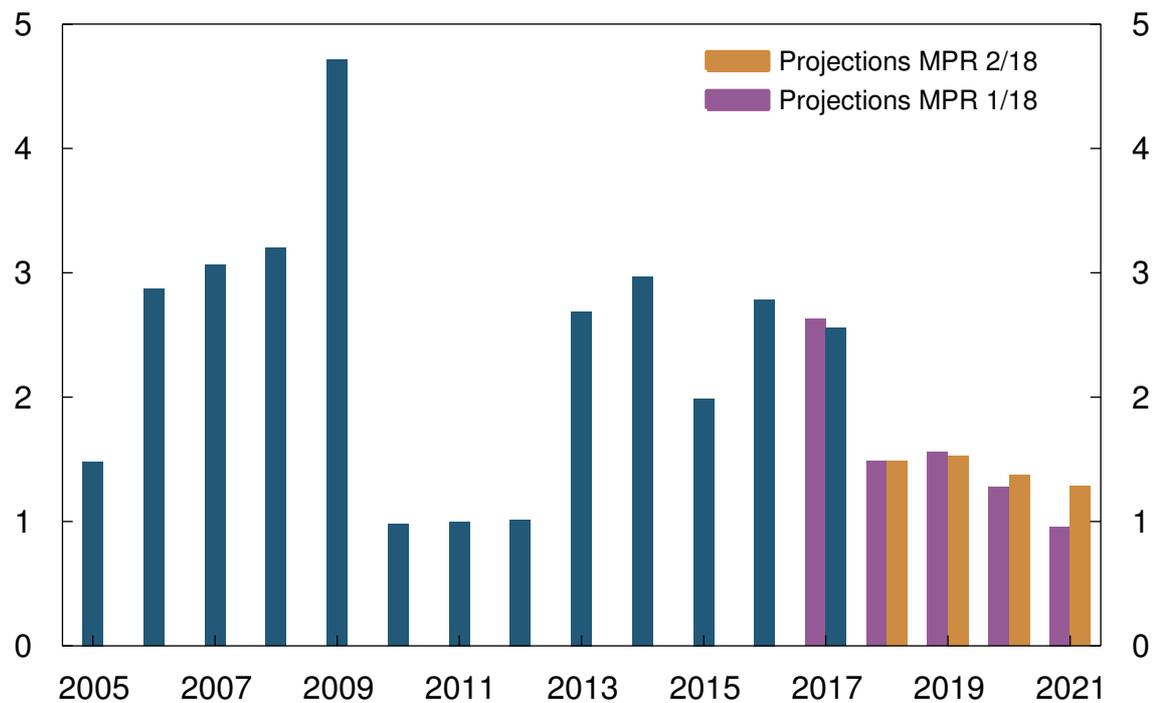- Structural non-oil deficit
- 3% of the GPFG
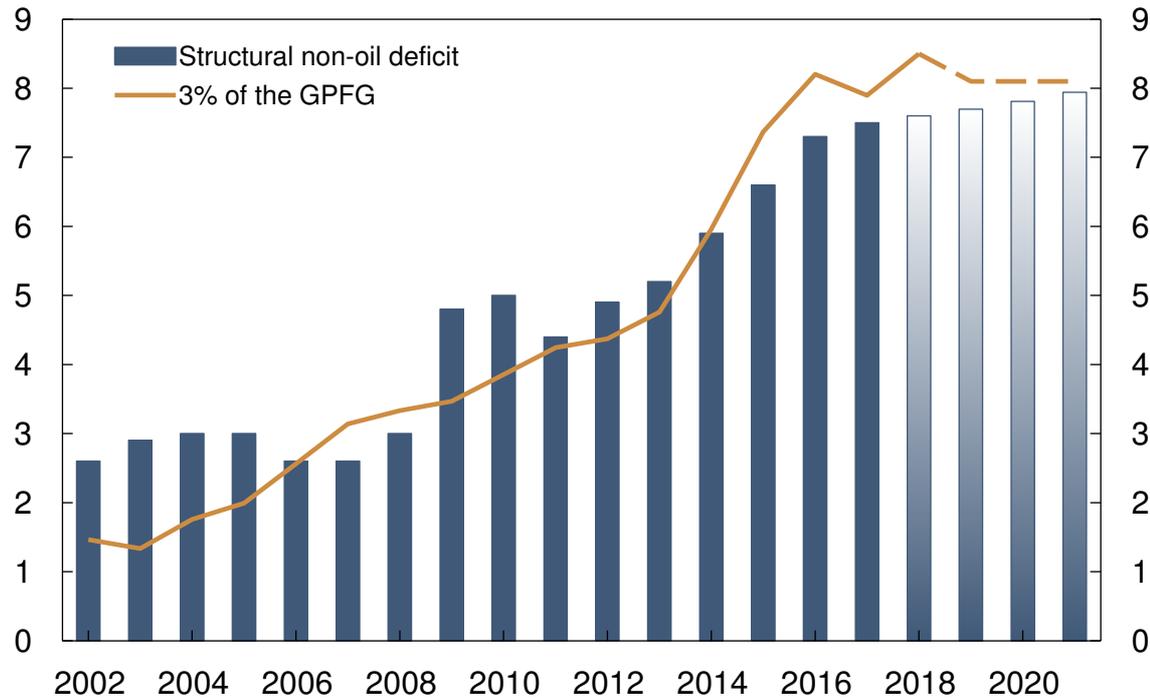
1) Government Pension Fund Global.
2) Projections for 2018 – 2021 (broken line and shaded bars).
Sources: Ministry of Finance and Norges Bank

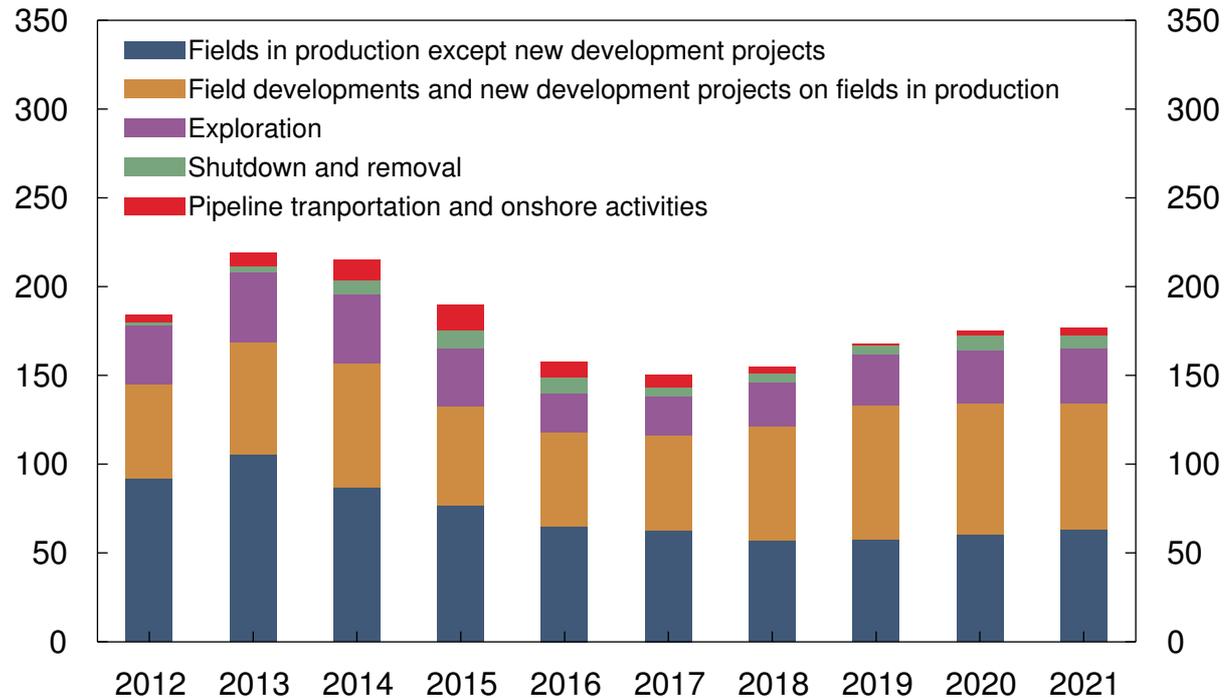Chart 3.31 Public sector demand. Annual change. Percent. 2005 – 2021[1]

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

Chart 3.32 Petroleum investment.
Constant 2018 prices. In billions of NOK. 2012 – 2021[1]

Legend:
- Fields in production except new development projects
- Field developments and new development projects on fields in production
- Exploration
- Shutdown and removal
- Pipeline tranportation and onshore activities

1) Projections for 2018 – 2021. Figures for 2010 – 2017 are from the investment intentions survey by Statistics Norway and deflated by the price index for petroleum investment in the national accounts. The index is projected to increase by 1% between 2017 and 2018.
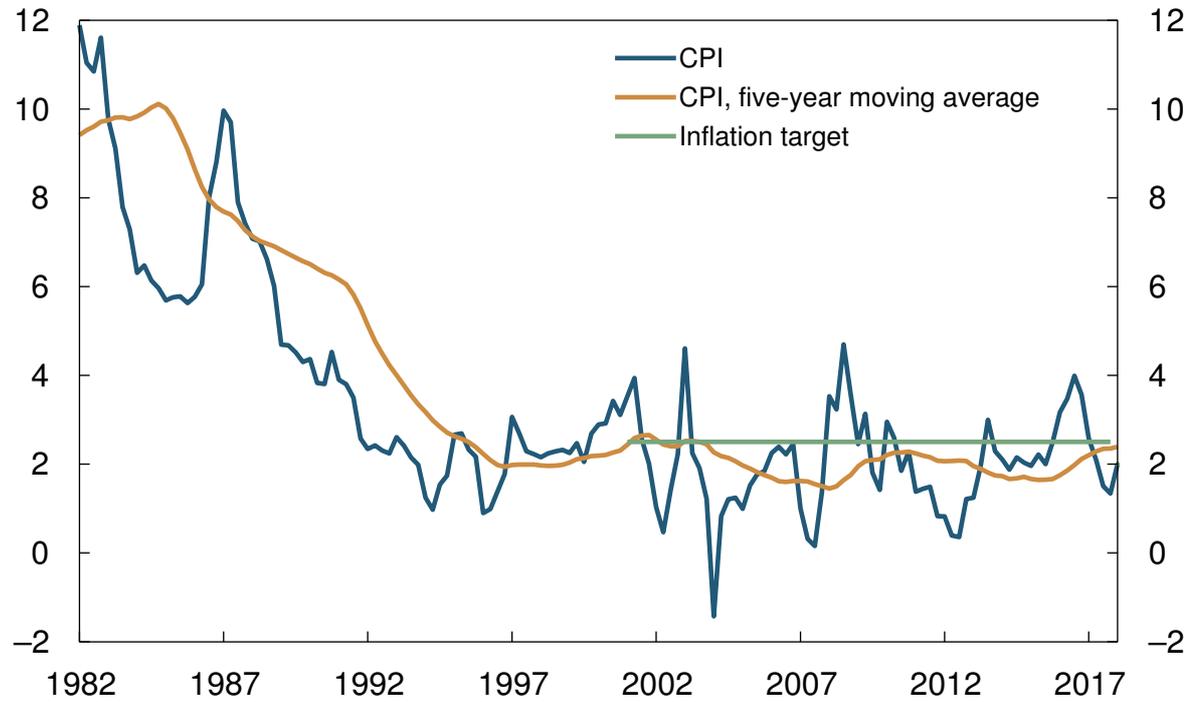Sources: Statistics Norway and Norges Bank

Chart 3.33 Investment in field development and fields in production.
Constant 2018 prices. In billions of NOK. 2012 – 2021 [1]

Legend:
- Fields in production except new development projects
- Development projects initiated before 16 June 2018
- Troll phase 3, Johan Sverdrup phase 2 and Luno 2
- Brasse, Cara, NOAKA, Fogelberg, Grevling, Garantiana and Mikkel Sør
- Other new development projects
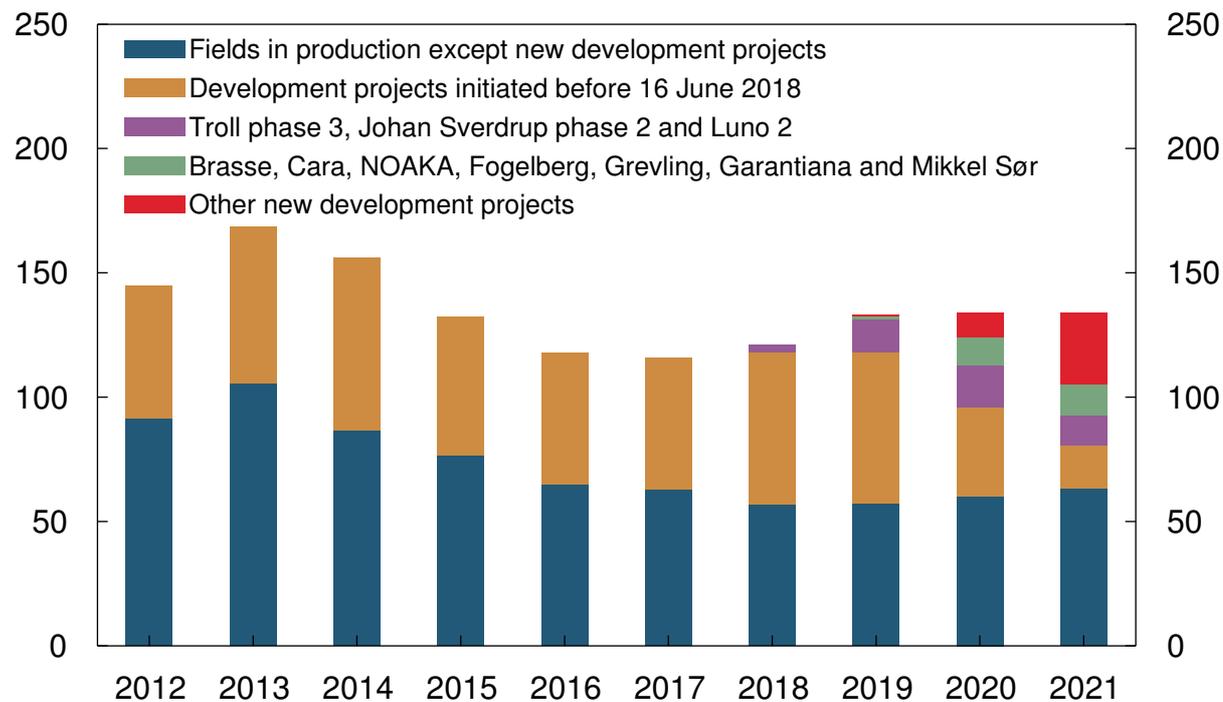
1) Projections for 2018 – 2021. Figures for 2010 – 2017 are from Statistics Norway's investment intentions survey and deflated by the price index for petroleum investment in the national accounts. The projections are based on reports to the Storting, impact analyses, forecasts from the Norwegian Petroleum Directorate, Statistics Norway's investment intentions survey and current information about development projects.
Sources: Statistics Norway and Norges Bank

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

Sources: Statistics Norway and Norges Bank

Chart 4.2 GDP for mainland Norway and employment.
Deviation from trend.[1] Percent. 1982 Q1 − 2017 Q4
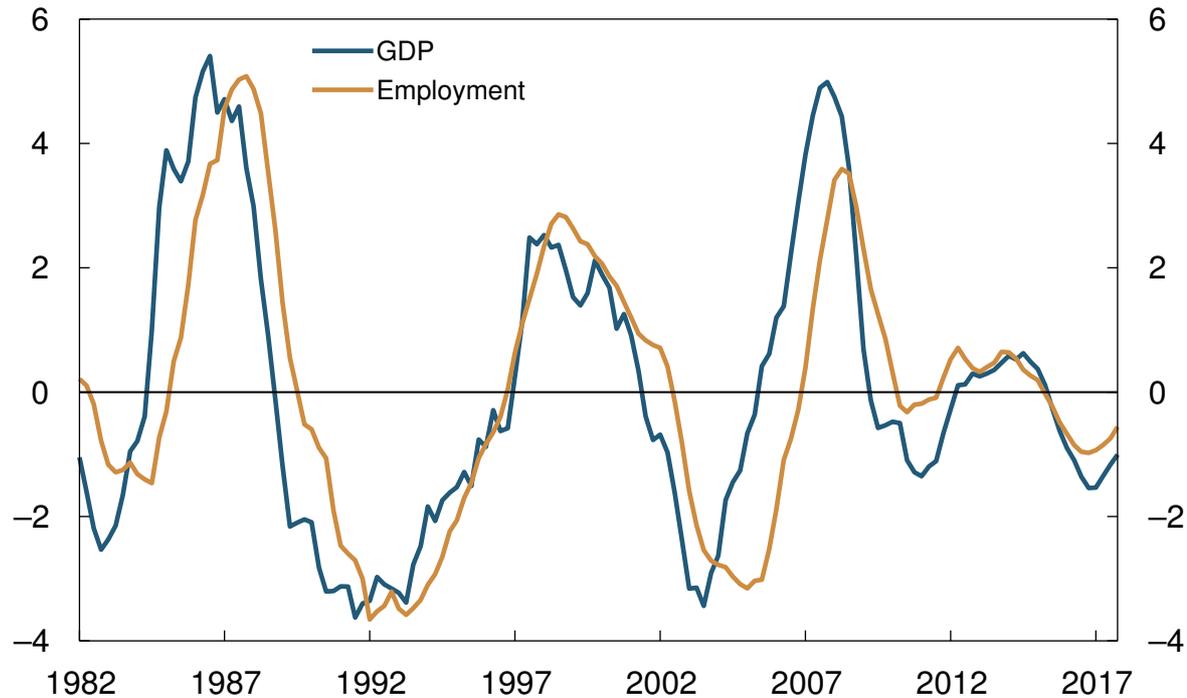
1) The trend for both series is calculated using an HP filter with lambda = 40 000. Calculations are based on data from 1978 Q1 − 2018 Q1. The deviation from trend is smoothed over three quarters.
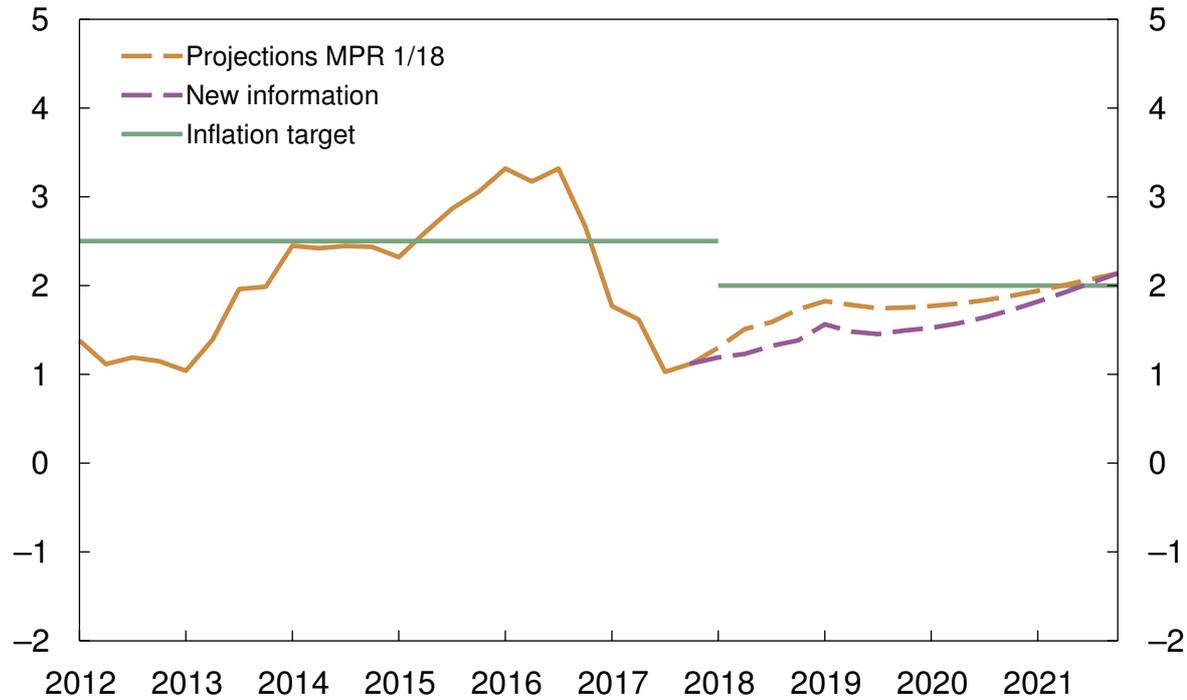Sources: Statistics Norway and Norges Bank

Chart 4.3 Three-month money market rate and real interest rates [1].
Percent. 2005 Q1 – 2018 Q1 [2]
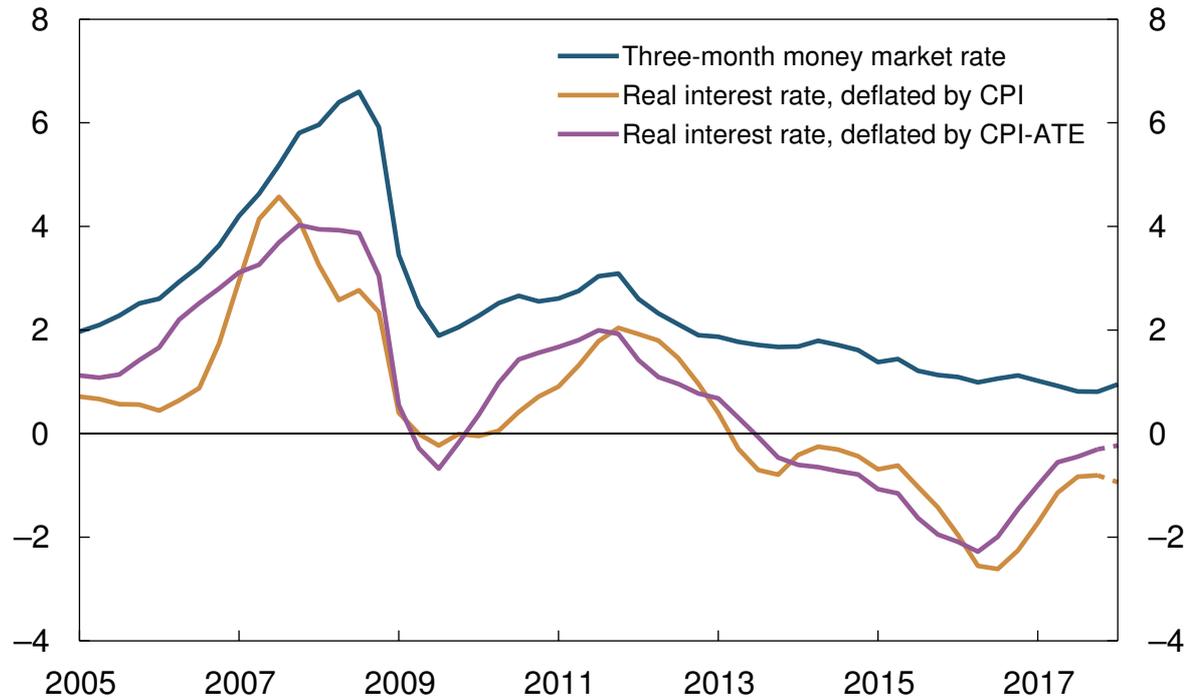
Legend:
- Three-month money market rate
- Real interest rate, deflated by CPI
- Real interest rate, deflated by CPI-ATE

1) Three-month money market rate deflated by a three-quarter centered moving average of inflation, measured by four-quarter CPI inflation and CPI inflation adjusted for tax changes and excluding energy prices (CPI-ATE).
2) Projections for 2018 Q1 (broken lines).
Sources: Statistics Norway and Norges Bank

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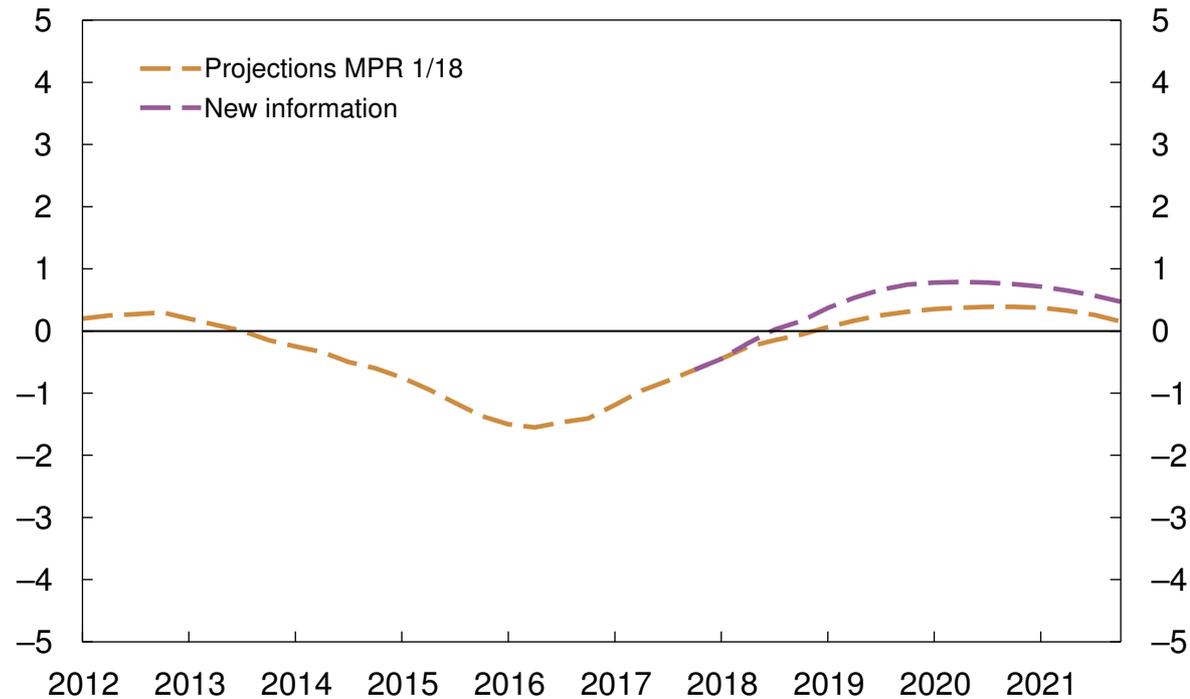

1) CPI adjusted for tax changes and excluding energy products.
2) Projections for 2018 Q2 – 2021 Q4.
Sources: Statistics Norway and Norges Bank

Chart 4.4b Estimated output gap[1]. Projection conditional on new information and key policy rate forecast in MPR 1/18. Percent. 2012 Q1 – 2021 Q4

- - - Projections MPR 1/18
- - - New information

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

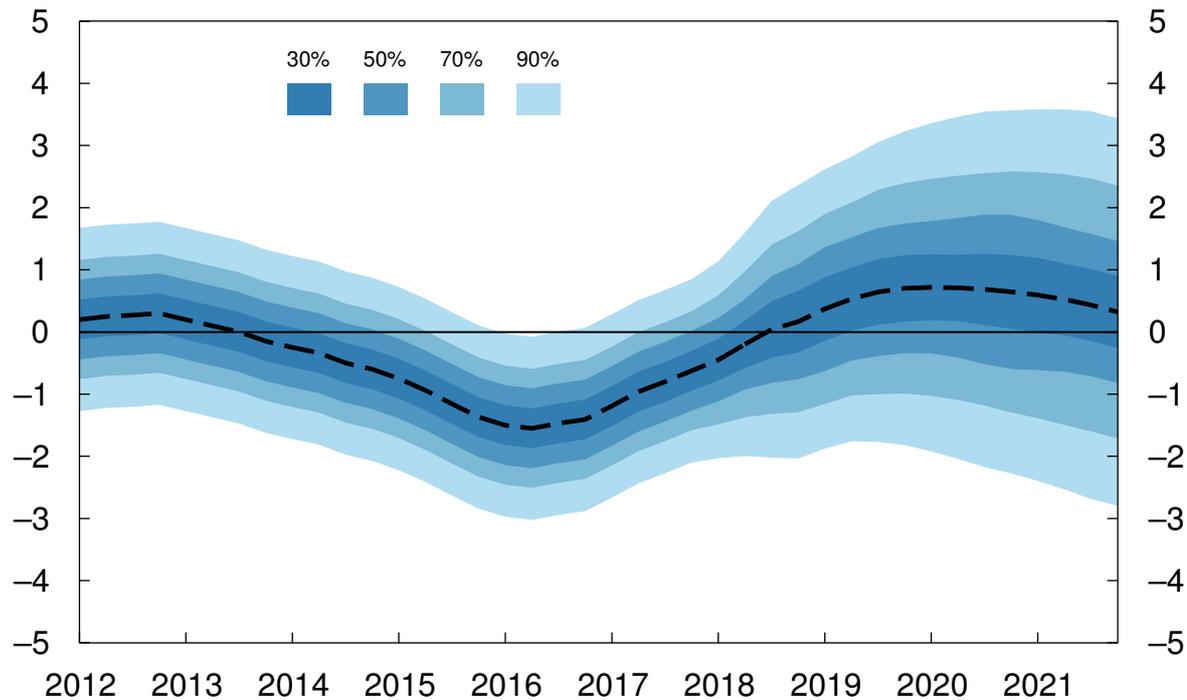Chart 4.5a Key policy rate with fan chart[1]. Percent. 2012 Q1 – 2021 Q4[2]
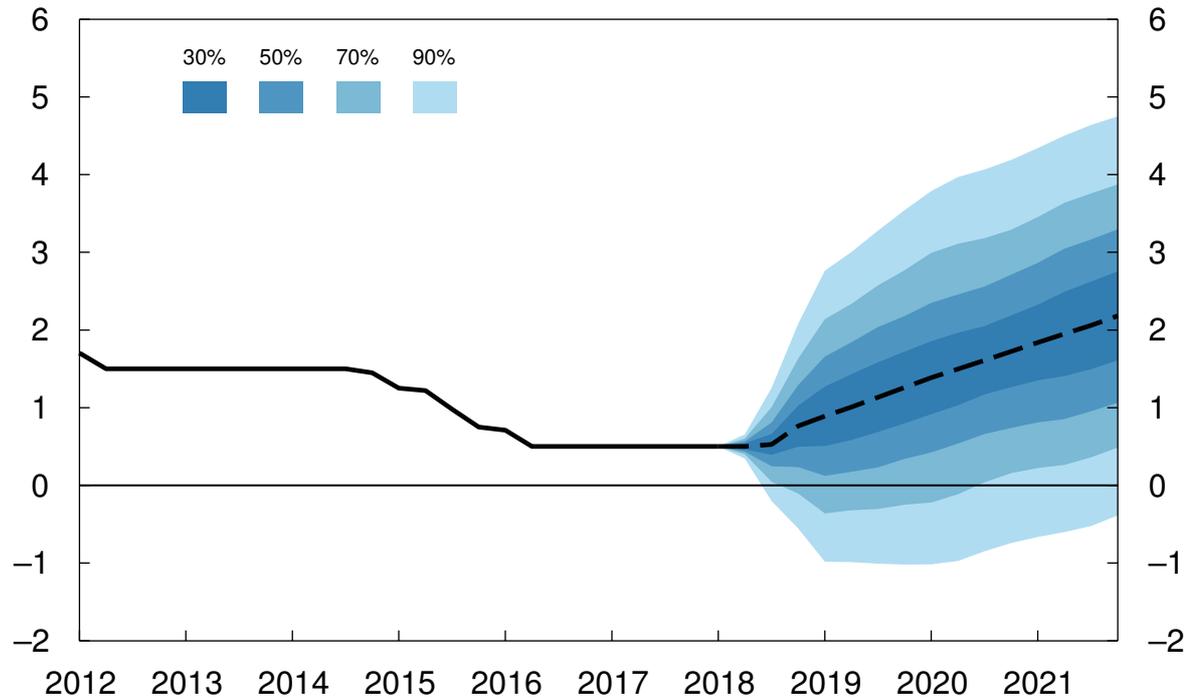
1) The fan chart is based on historical experience and stochastic simulations in Norges Bank's main macroeconomic model, NEMO. It does not take into account that a lower bound for the interest rate exists.
2) Projections for 2018 Q2 – 2021 Q4 (broken line).
Source: Norges Bank

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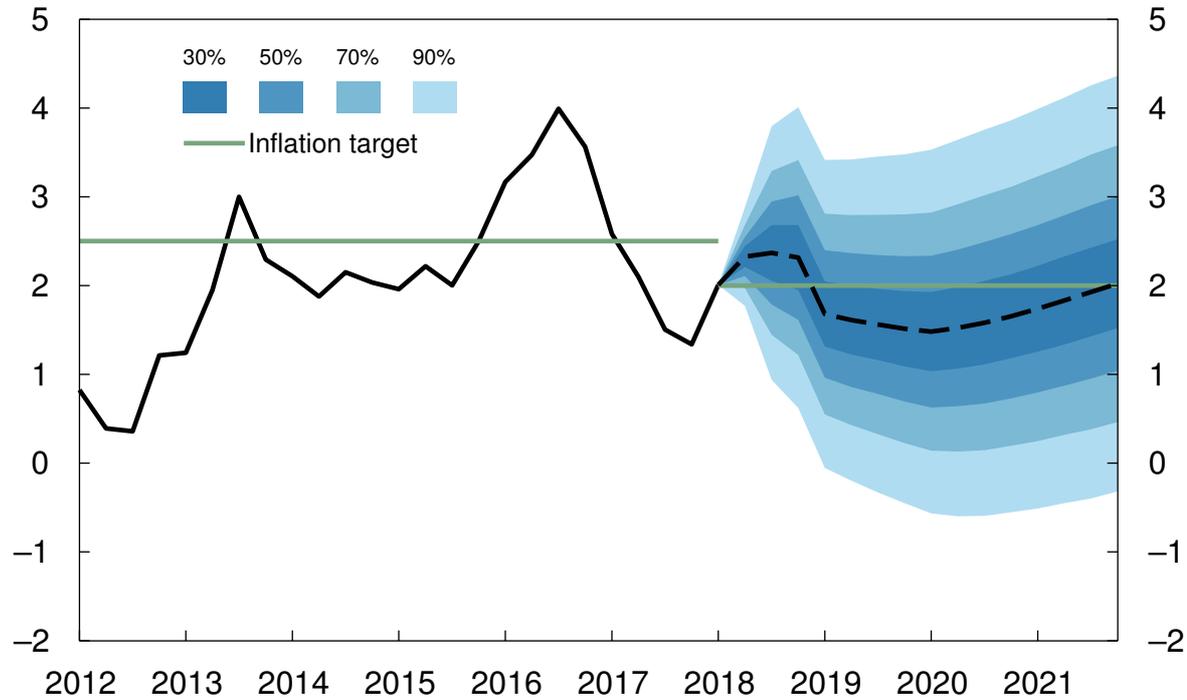Percent. 2012 Q1 – 2021 Q4

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

Chart 4.5c CPI with fan chart[1].
Four-quarter change. Percent. 2012 Q1 – 2021 Q4[2]

1) The fan chart is based on historical experience and stochastic simulations in Norges Bank's main macroeconomic model, NEMO.
2) Projections for 2018 Q2 – 2021 Q4 (broken line).
Sources: Statistics Norway and Norges Bank

Chart 4.5d CPI-ATE[1] with fan chart[2].
Four-quarter change. Percent. 2012 Q1 – 2021 Q4[3]

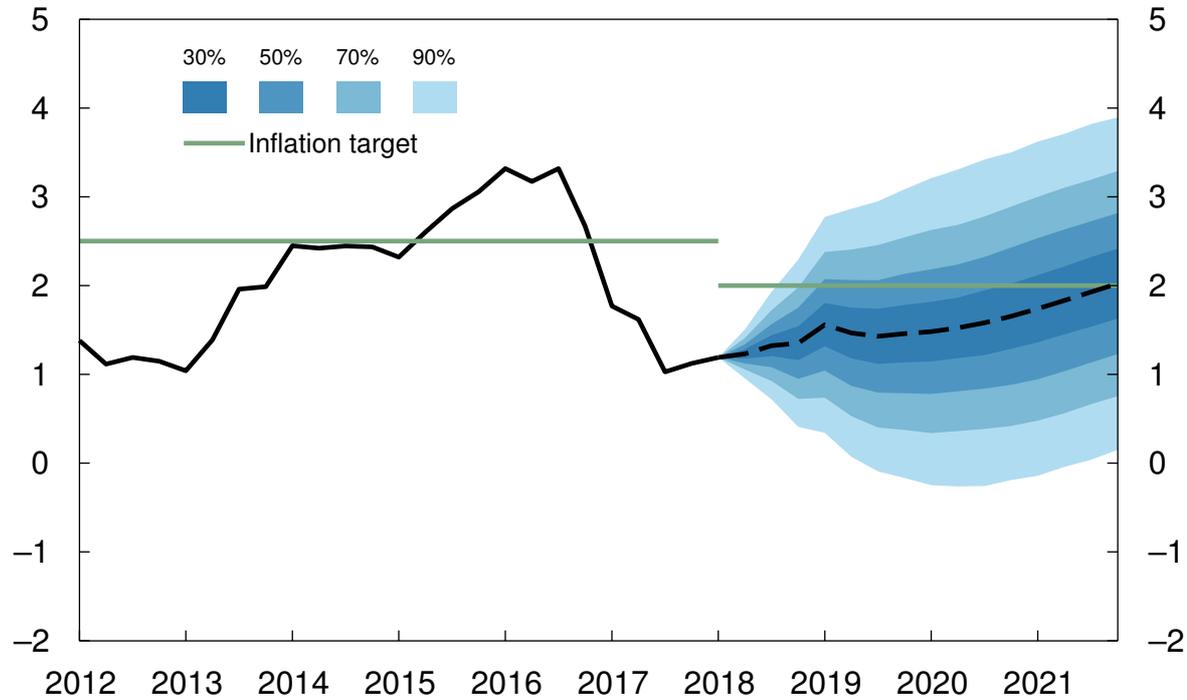1) CPI adjusted for tax changes and excluding energy products.
2) The fan chart is based on historical experience and stochastic simulations in Norges Bank's main macroeconomic model, NEMO.
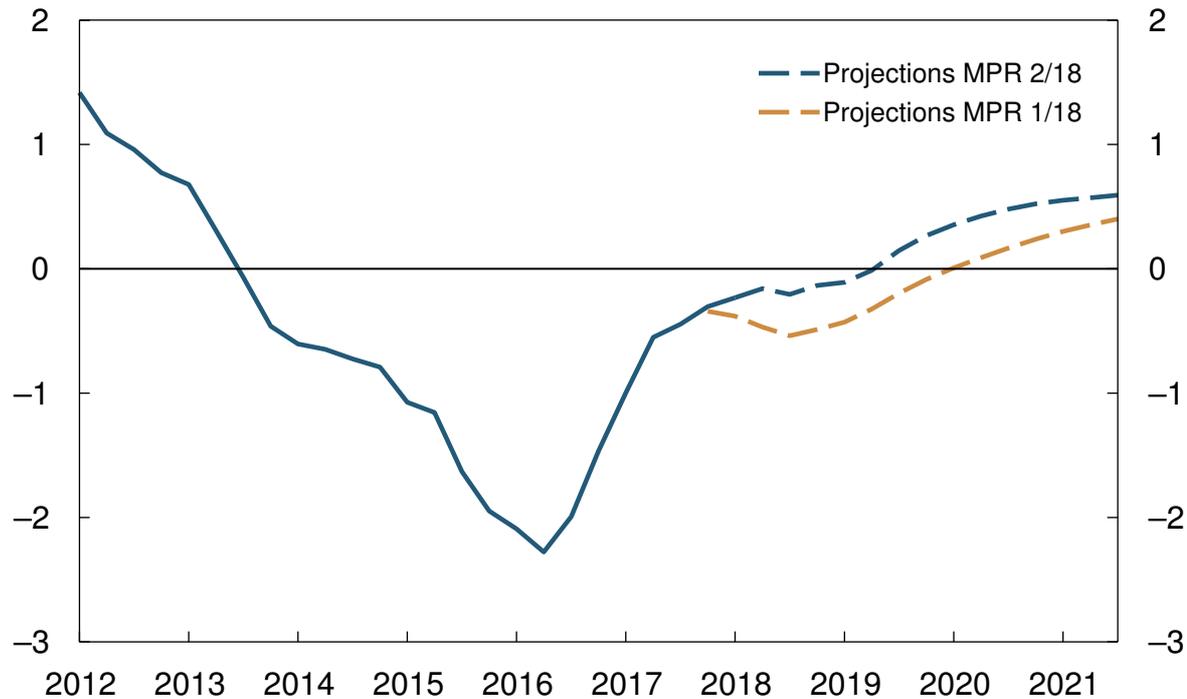3) Projections for 2018 Q2 – 2021 Q4 (broken line).
Sources: Statistics Norway and Norges Bank

Chart 4.6 Key policy rate. Percent. 2012 Q1 – 2021 Q4[1]

- - Projections MPR 2/18
- - Projections MPR 1/18
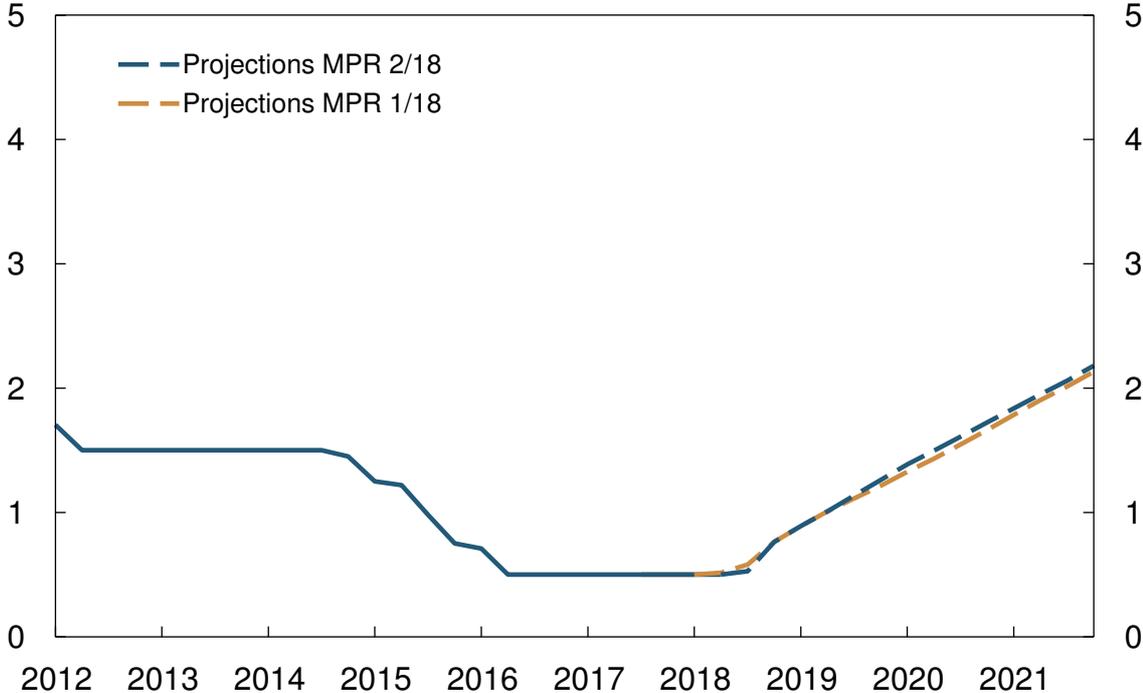
1) Projections for 2018 Q2 – 2021 Q4.
Source: Norges Bank

Chart 4.7 Real interest rate.[1] Percent. 2012 Q1 – 2021 Q3[2]


- - Projections MPR 2/18
- - Projections MPR 1/18

1) Three-month money market rate deflated by a three-quarter centered moving average of inflation,
measured by four-quarter CPI inflation adjusted for tax changes and excluding energy prices (CPI-ATE).
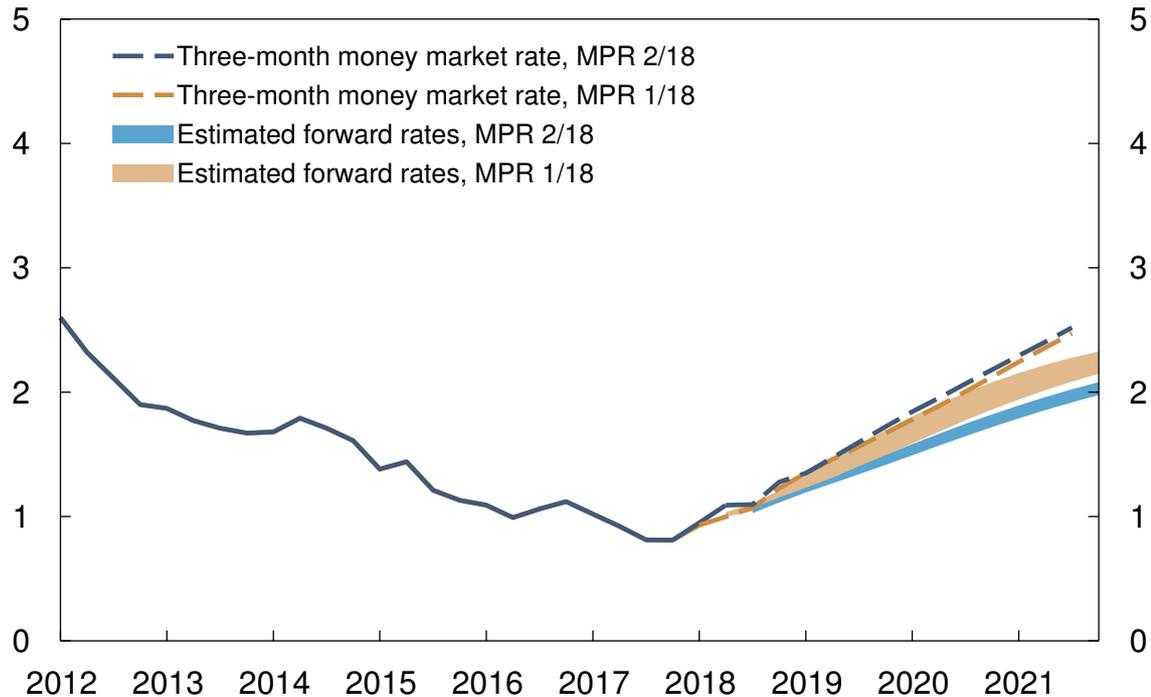2) Projections for 2018 Q1 – 2021 Q3.
Source: Statistics Norway and Norges Bank

Chart 4.8 Factors behind changes in key policy rate forecast since MPR 1/18.
Cumulative contribution. Percentage points. 2018 Q3 – 2021 Q4
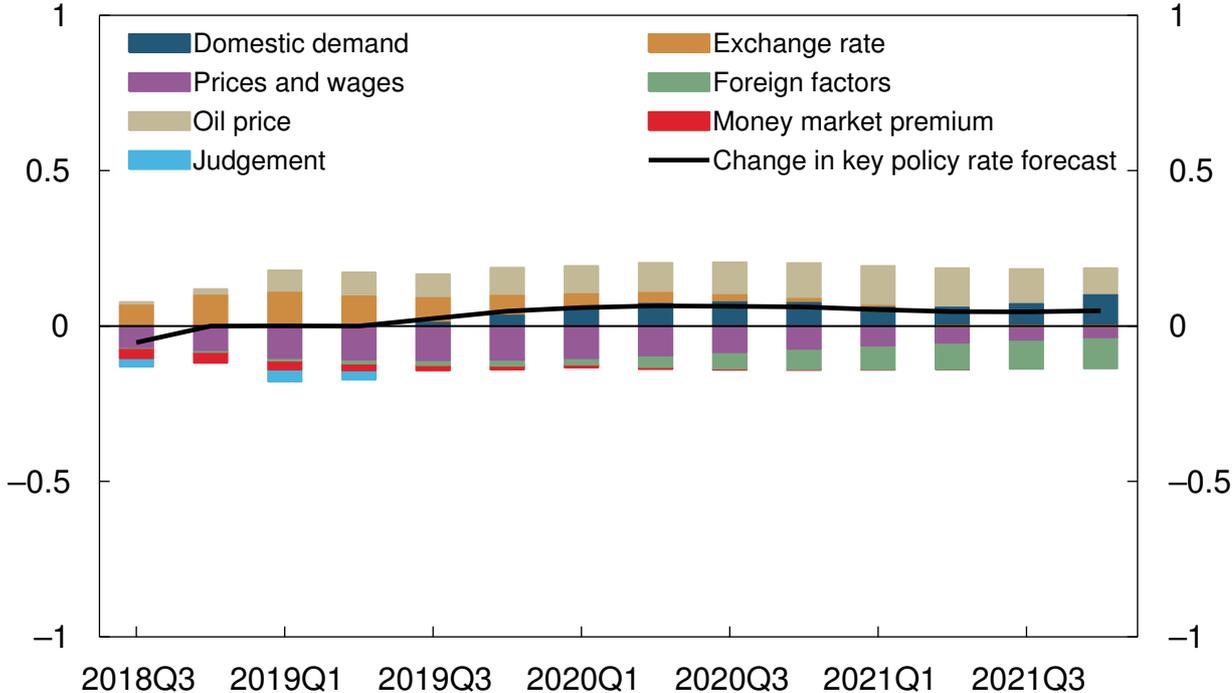
Source: Norges Bank

Chart 4.9 Three-month money market rate [1] and estimated forward rates[2].
Percent. 2012 Q1 – 2021 Q4 [3]

Legend:
- Three-month money market rate, MPR 2/18
- Three-month money market rate, MPR 1/18
- Estimated forward rates, MPR 2/18
- Estimated forward rates, MPR 1/18

1) Projections for the money market rate are calculated as an average of the key policy rate in the current and subsequent quarter plus an estimate of the money market premium.
2) Forward rates are based on money market rates and interest rate swaps. The orange and blue bands show the highest and lowest rates in the period 26 February – 9 March in 2018 for MPR 1/18 and 4 June – 15 June in 2018 for MPR 2/18 respectively.
3) Projections for 2018 Q2 – 2021 Q4.
Sources: Thomson Reuters and Norges Bank

Chart 1 Ten-year government bond yields in 14 OECD countries including Norway.[1] Percent. 1985 Q1 – 2018 Q1
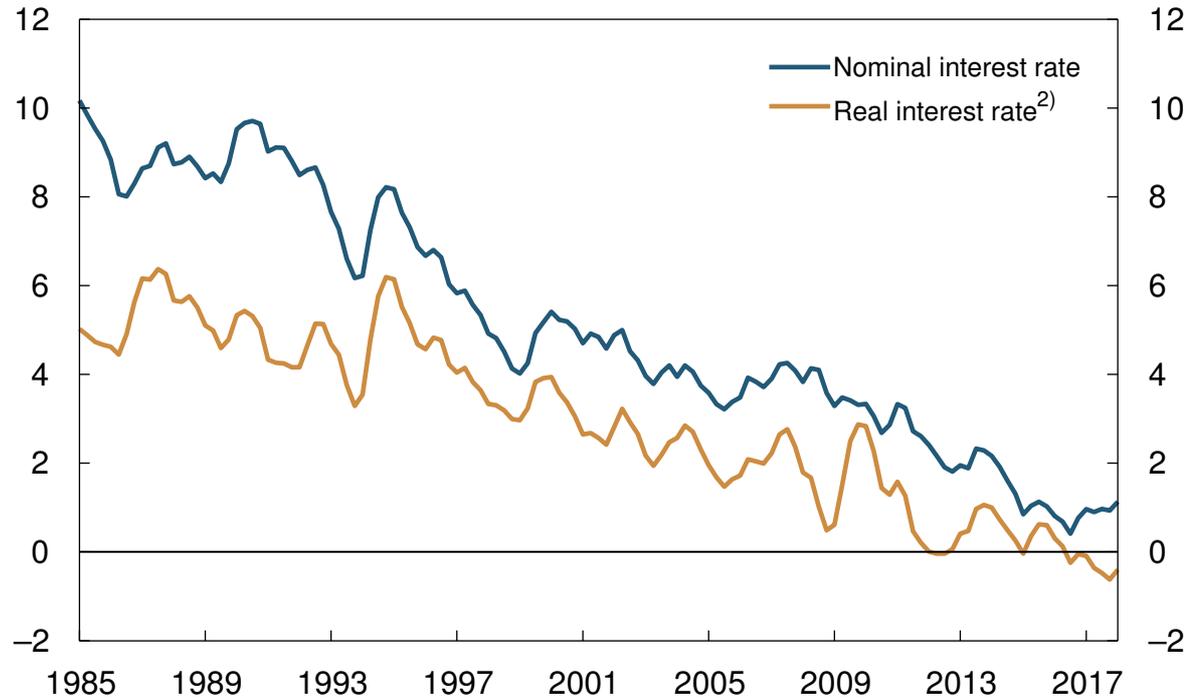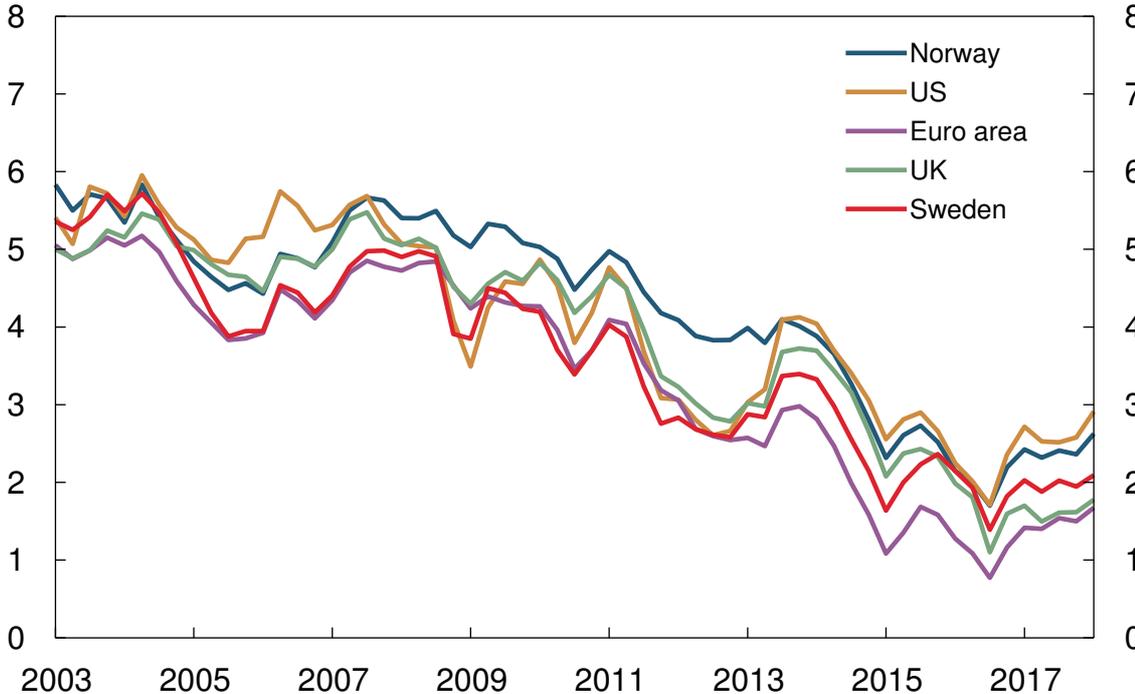

1) The other countries are Austria, Belgium, Canada, Denmark, France, Germany, Italy, Japan, Netherlands, Sweden, Switzerland, UK and US. Unweighted average.
2) Real interest rate measured by the nominal rate less average inflation in the latest year.
Sources: OECD and Norges Bank
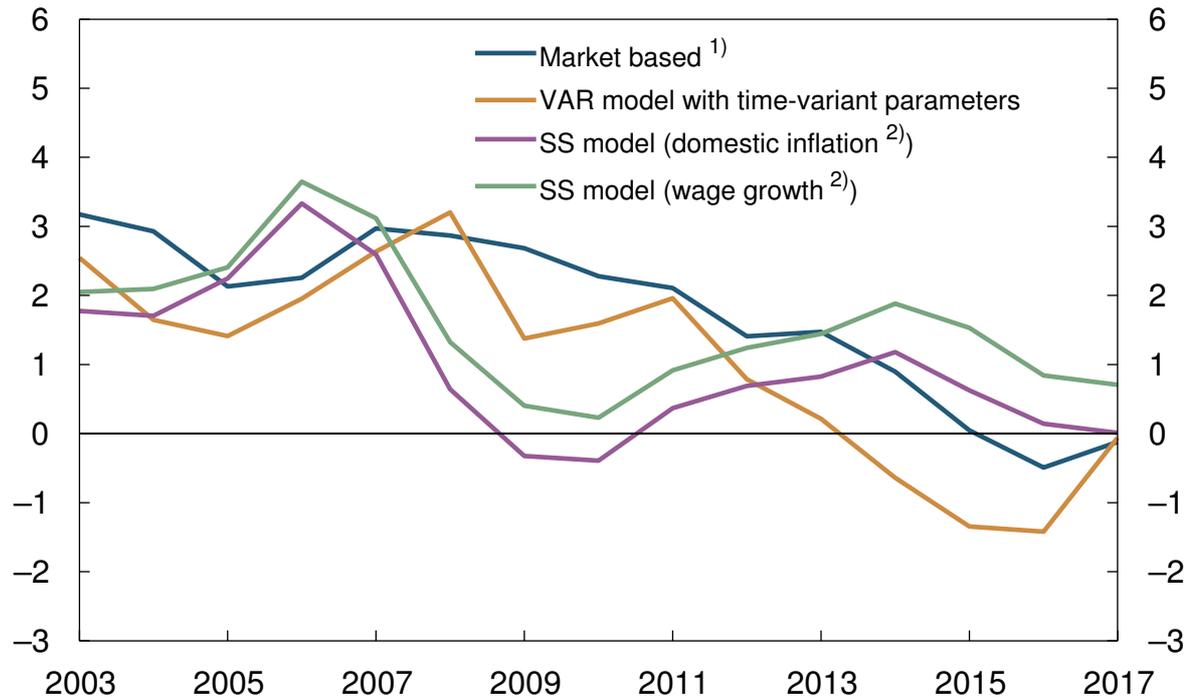
Chart 2 Five-year interest rates five years ahead.[1] Percent. 2003 Q1 – 2018 Q1

- Norway
- US
- Euro area
- UK
- Sweden

1) Implied five-year forward rates five years ahead based on swap rates with 5- and 10-year maturities.
Source: Bloomberg

Chart 3 Neutral real interest rate.
Projections by various methods. Percent. 2003 – 2017

Market based [1]
VAR model with time-variant parameters
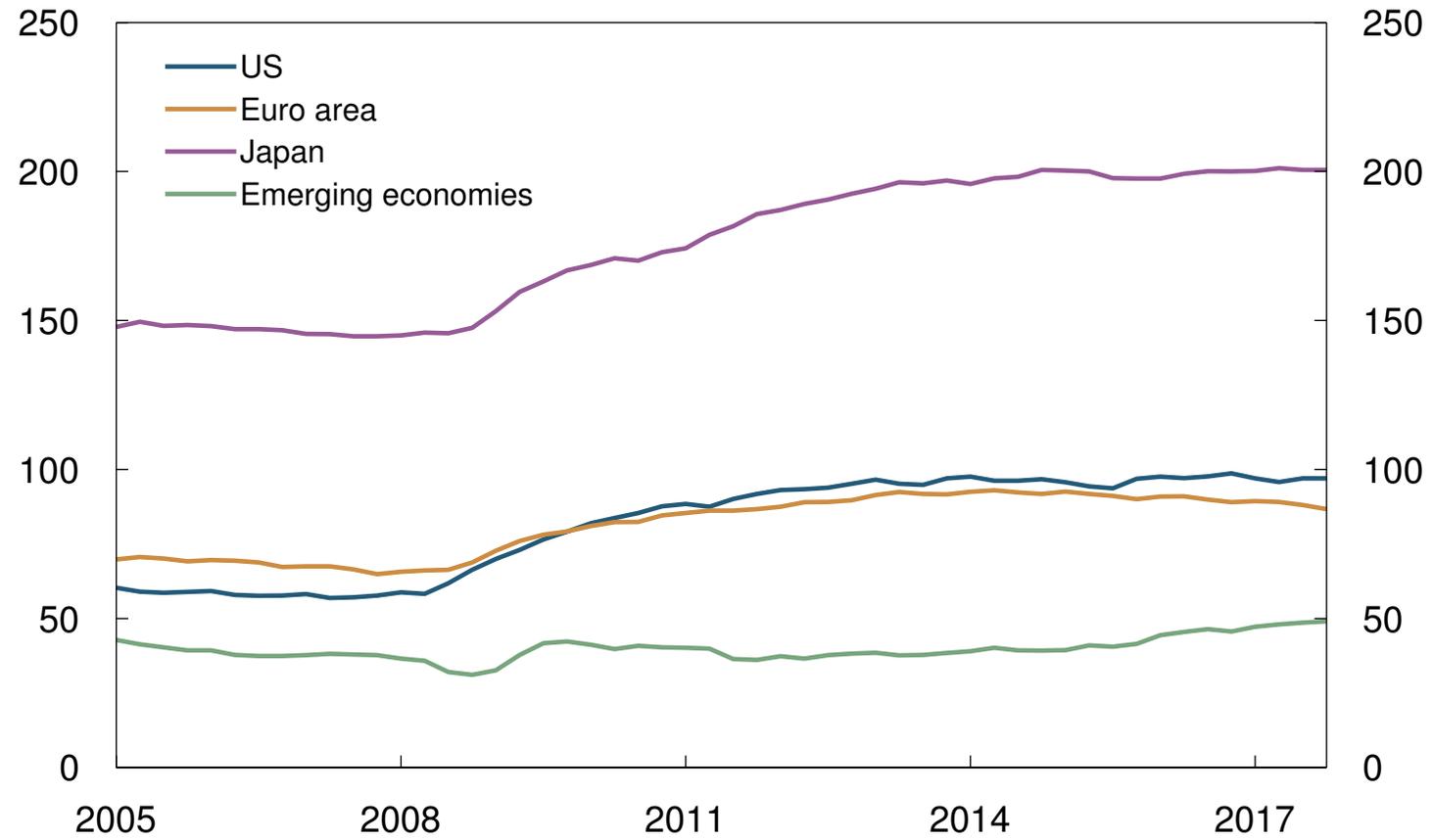SS model (domestic inflation [2])
SS model (wage growth [2])

1) Implied five-year forward rates five years ahead based on swap rates with 5- and 10-year maturities for Norway.
2) The variable used in the Phillips curve.
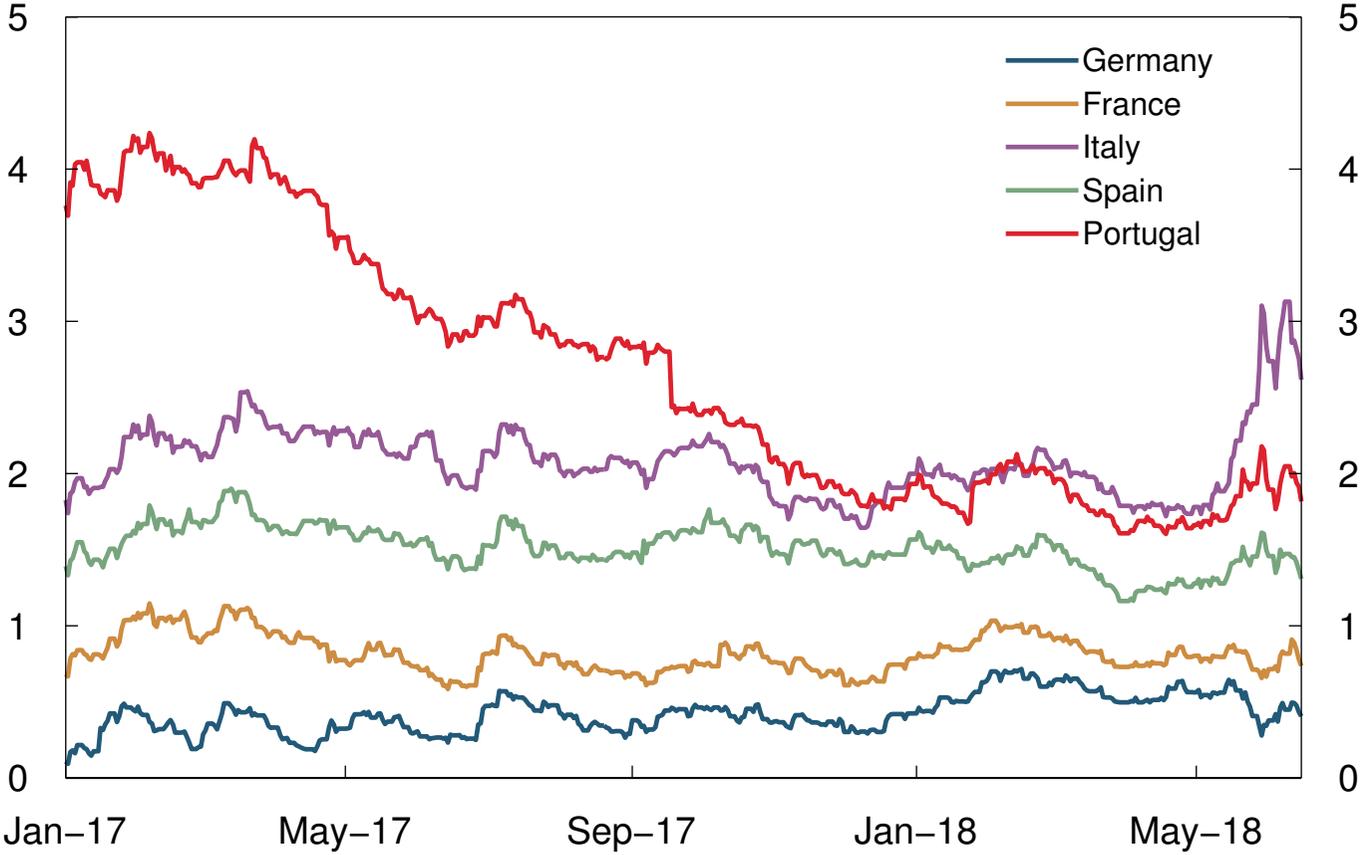Sources: Thomson Reuters and Norges Bank

Chart 5.1 Public sector debt as a share of GDP in selected countries. Percent. 2005 Q1 – 2017 Q4

Chart 5.2 Yields on 10-year government bonds in selected euro area countries.
Percent. 1 January 2017 – 15 June 2018
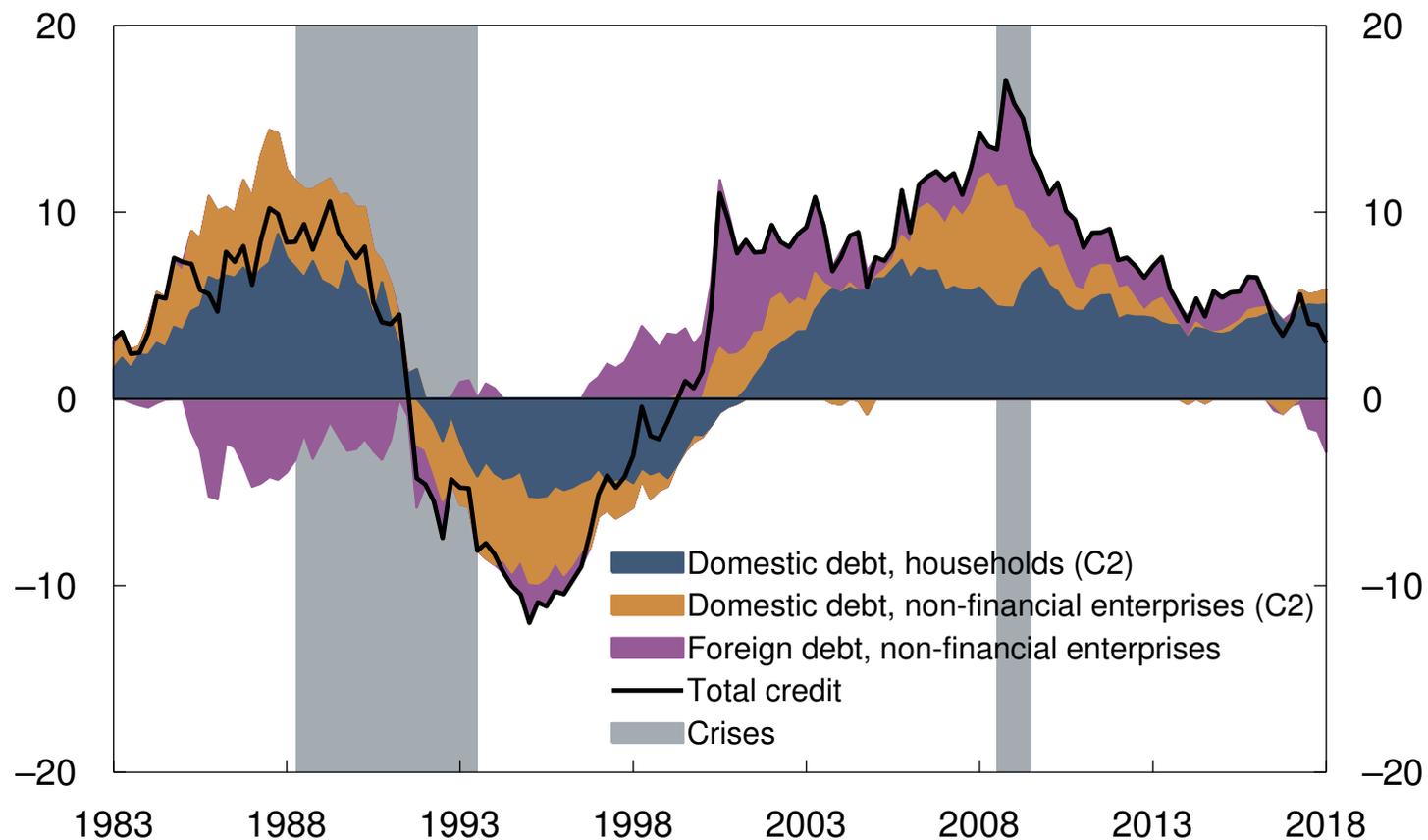

Source: Thomson Reuters

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

- Domestic debt, households (C2)
- Domestic debt, non-financial enterprises (C2)
- Foreign debt, non-financial enterprises
- Total credit
- Crises
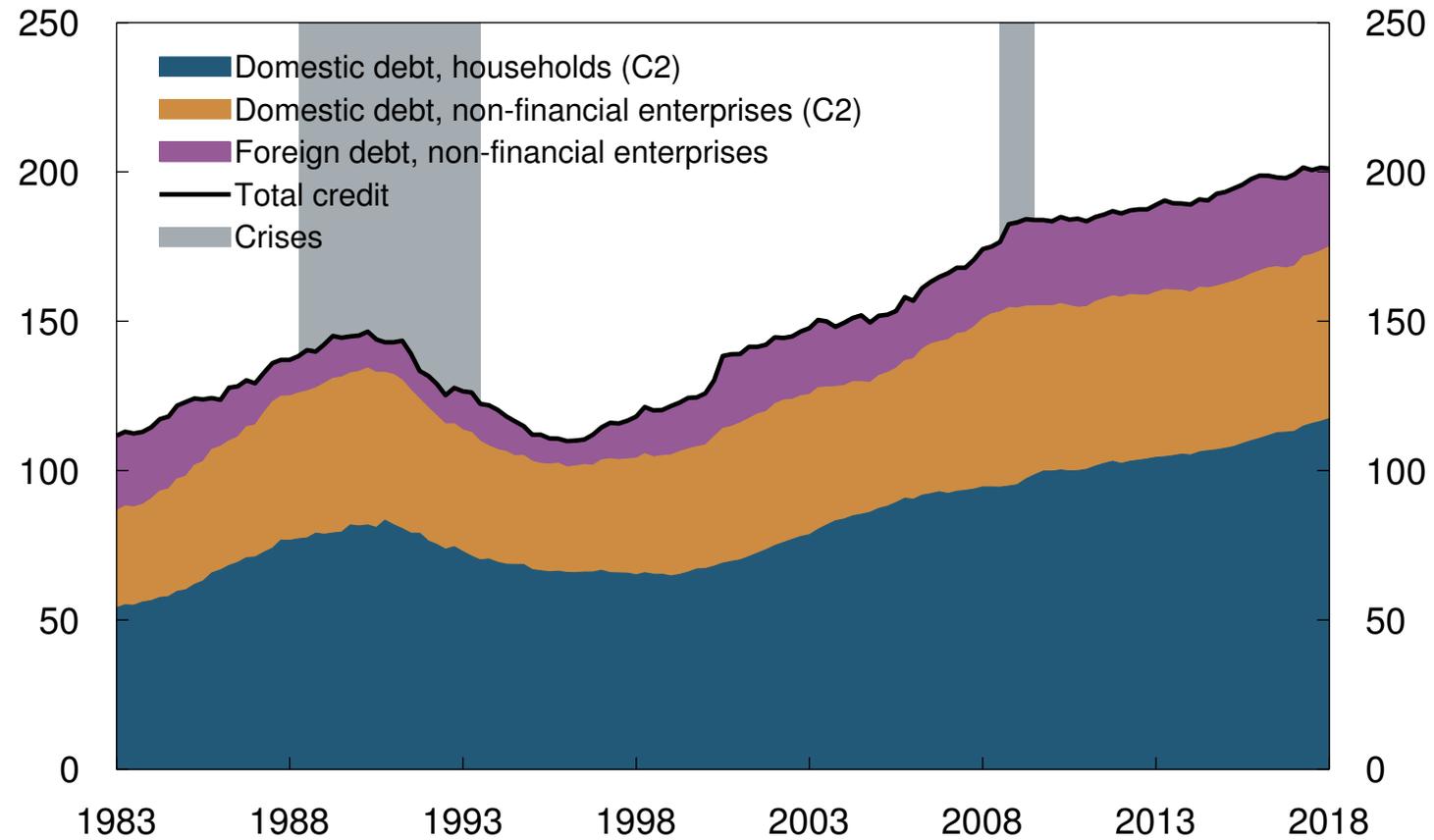
Sources: IMF, Statistics Norway and Norges Bank

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

Legend:
- Domestic debt, households (C2)
- Domestic debt, non-financial enterprises (C2)
- Foreign debt, non-financial enterprises
- Total credit
- Crises

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

Chart 5.5 Credit to households and non-financial enterprises in mainland Norway. Twelve-month change. Percent. January 2007 – April 2018
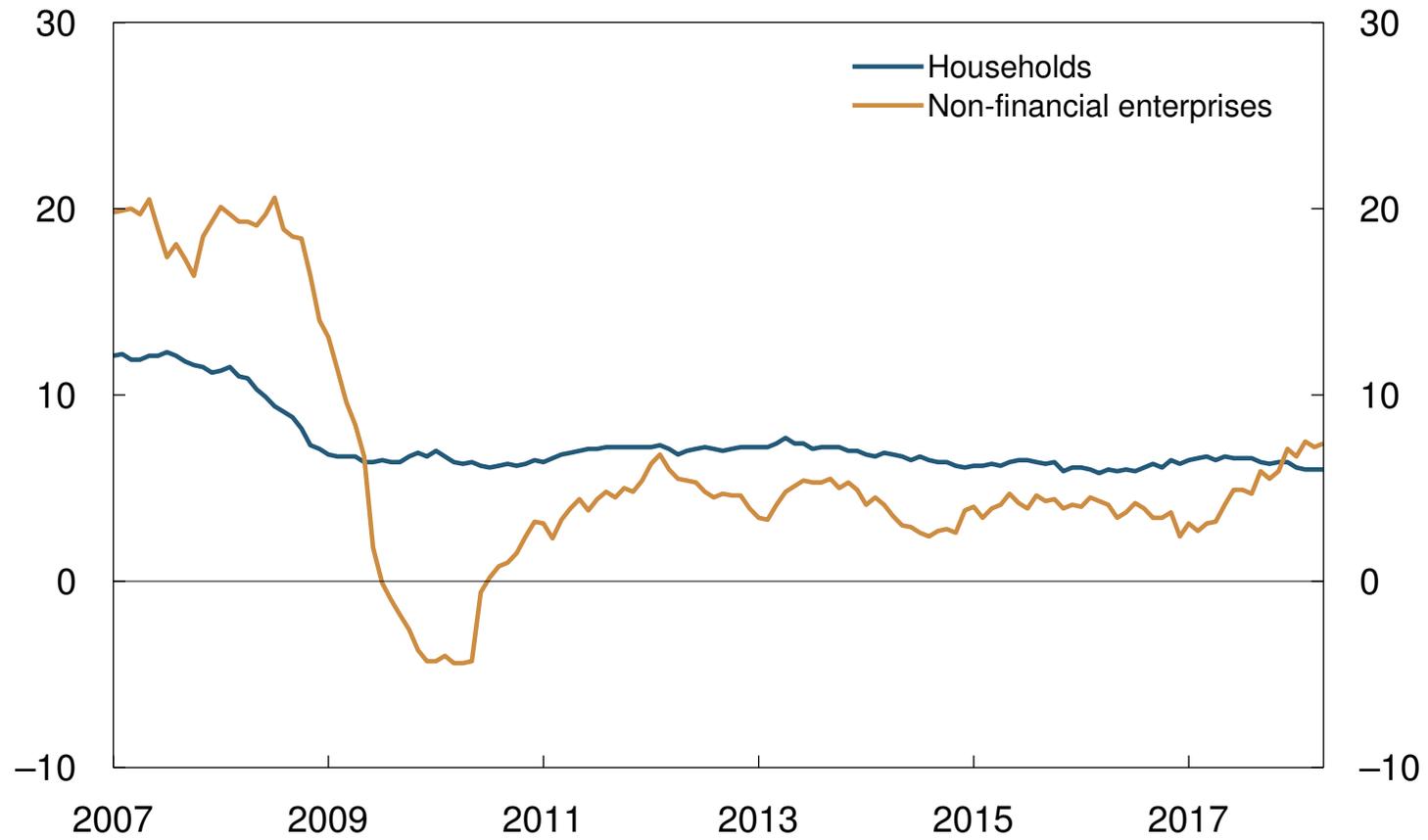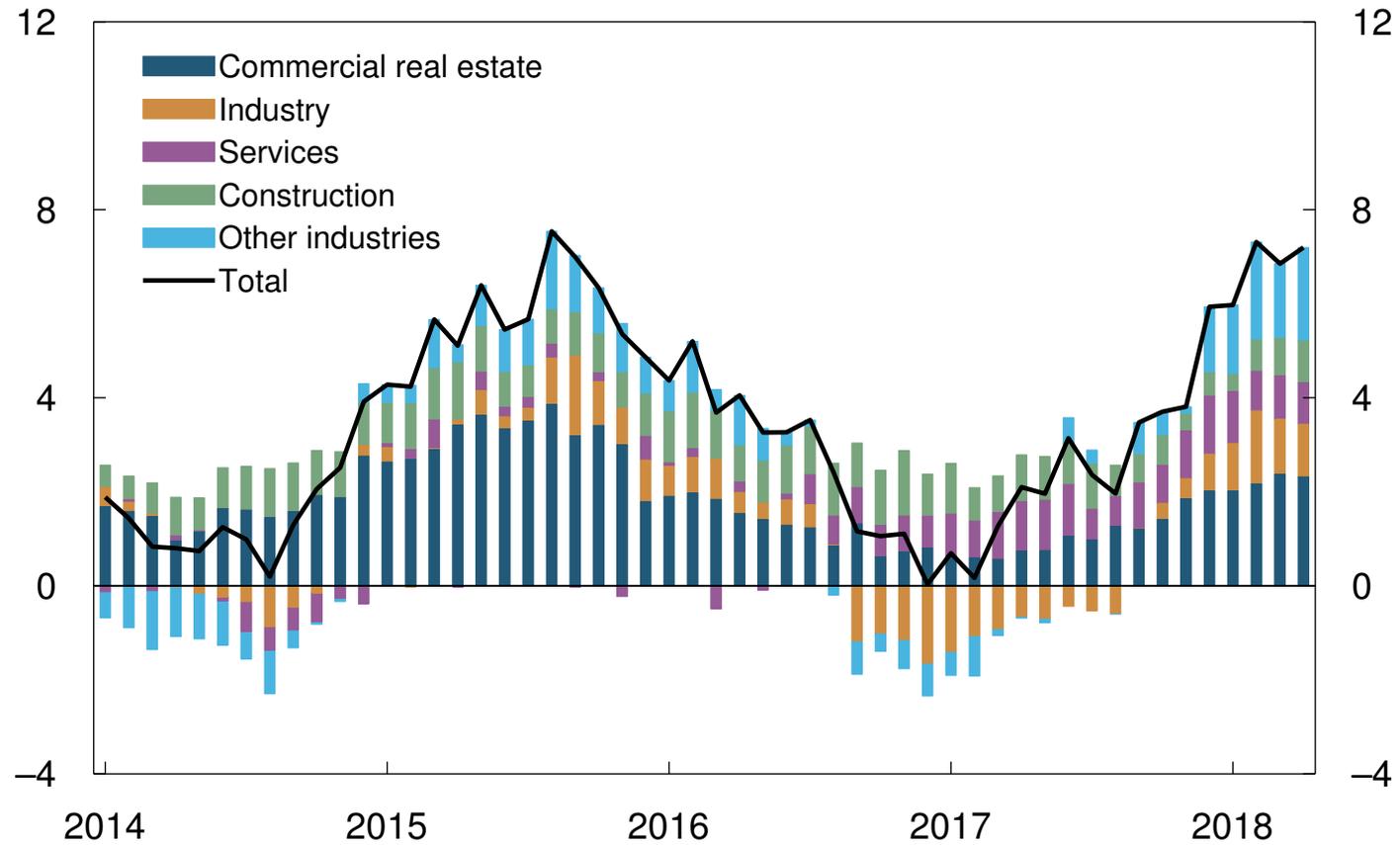

Sources: Statistics Norway and Norges Bank

Chart 5.6 Household debt ratio[1], debt service ratio[2] and interest burden[3].
Percent. 1982 Q1 – 2017 Q4
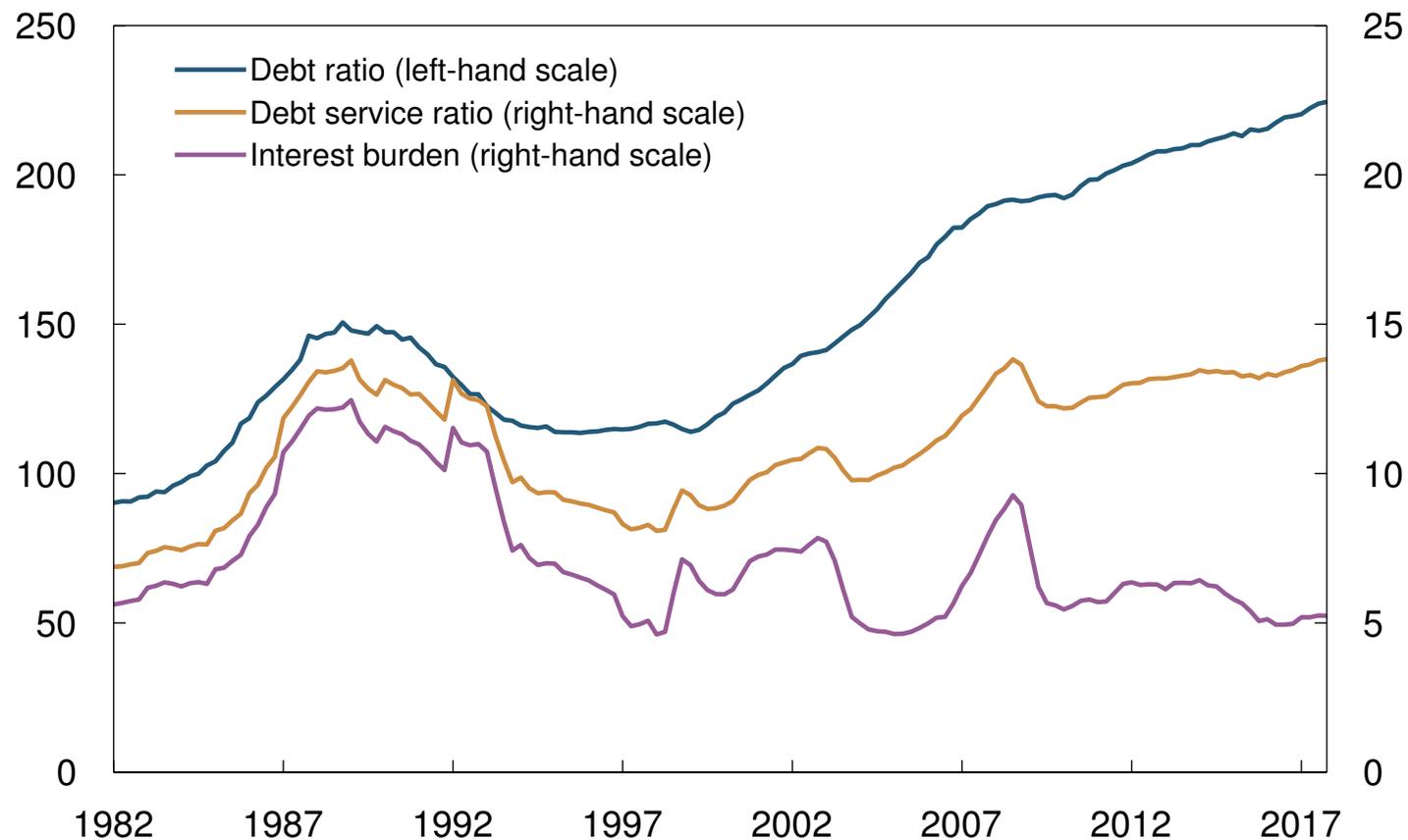
1) The debt ratio is loan debt as a percentage of disposable income. Disposable income is adjusted for estimated reinvested dividend income for 2000 Q1 – 2005 Q4 and reduction of equity capital for 2006 Q1 – 2012 Q3. For 2015 Q1 – 2017 Q4, growth in disposable income excluding dividends is used.
2) The debt service ratio also includes estimated principal payments on an 18-year mortgage.
3) The interest burden is interest expenses as a percentage of disposable income plus interest expenses.
Sources: Statistics Norway and Norges Bank

Chart 5.7 Bank and mortgage company lending to Norwegian non-financial enterprises by industry. Contribution to 12-month change in stock. Percent. January 2014 – April 2018
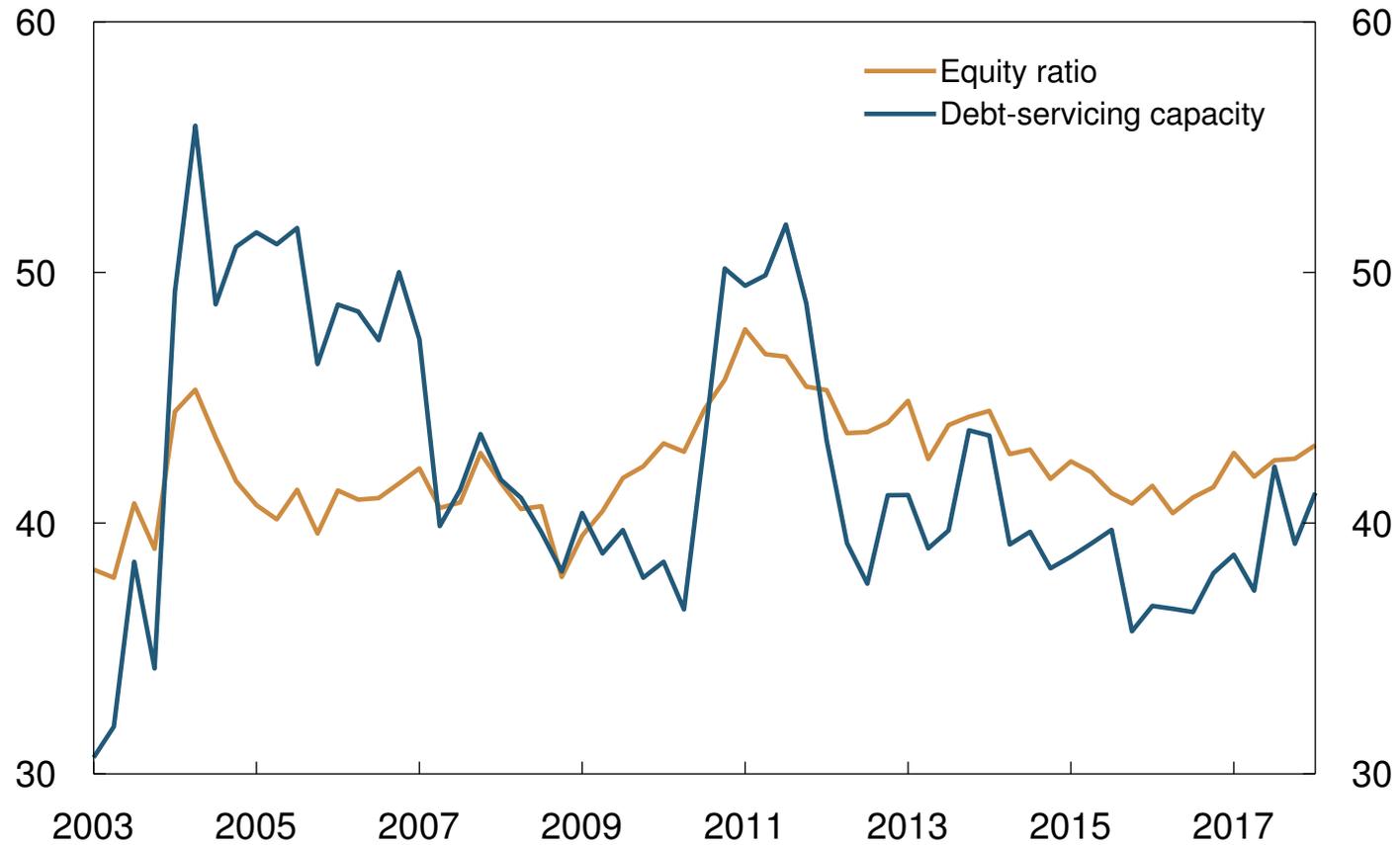
Sources: Statistics Norway and Norges Bank

Chart 5.8 Lending to Norwegian non-financial enterprises in the Norwegian bond market by industry. Contribution to 12-month change in stock. Percent. January 2014 – May 2018
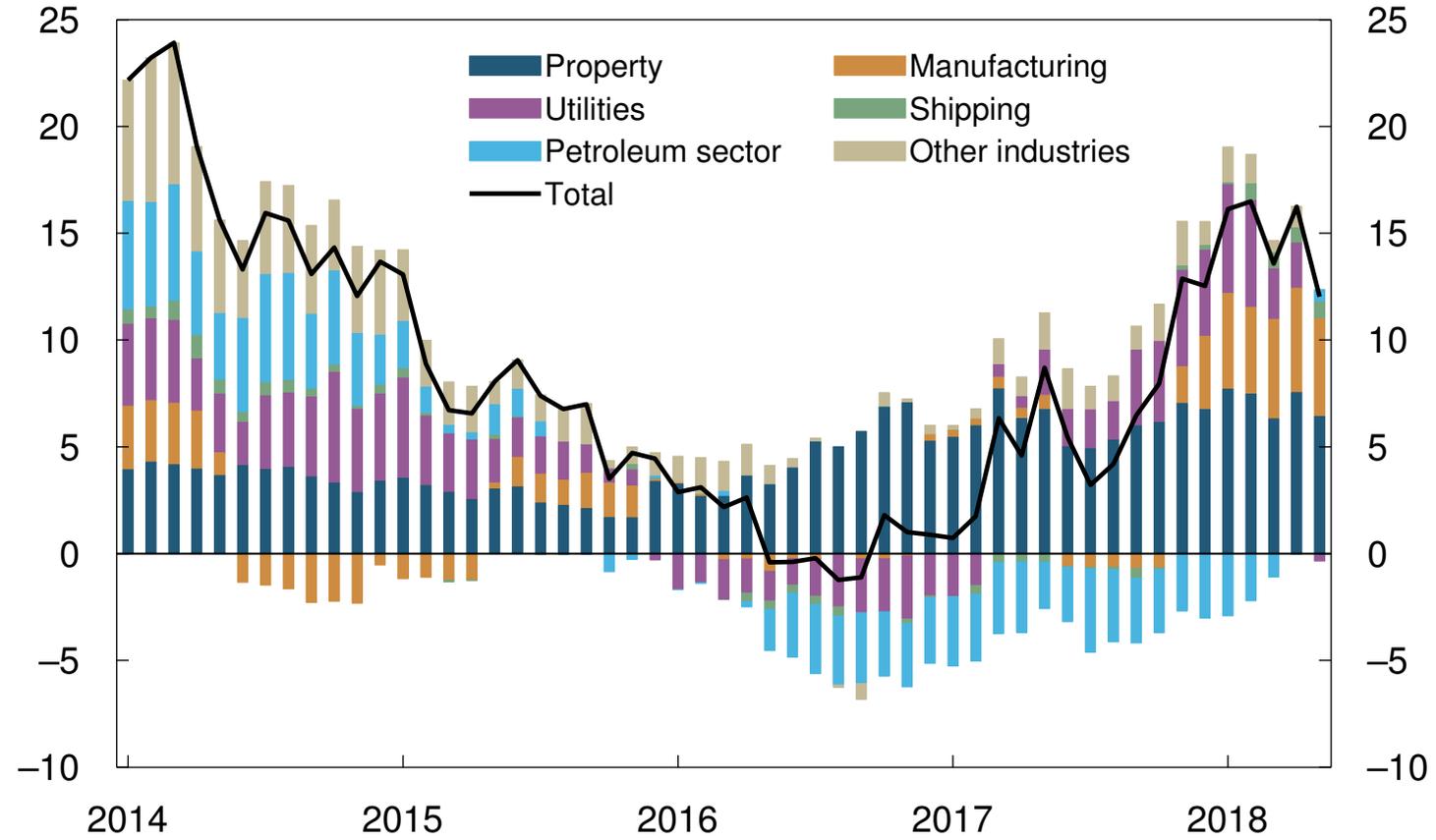
Sources: Stamdata and Norges Bank

Chart 5.9 Debt-servicing capacity[1] and equity ratio of listed companies[2].
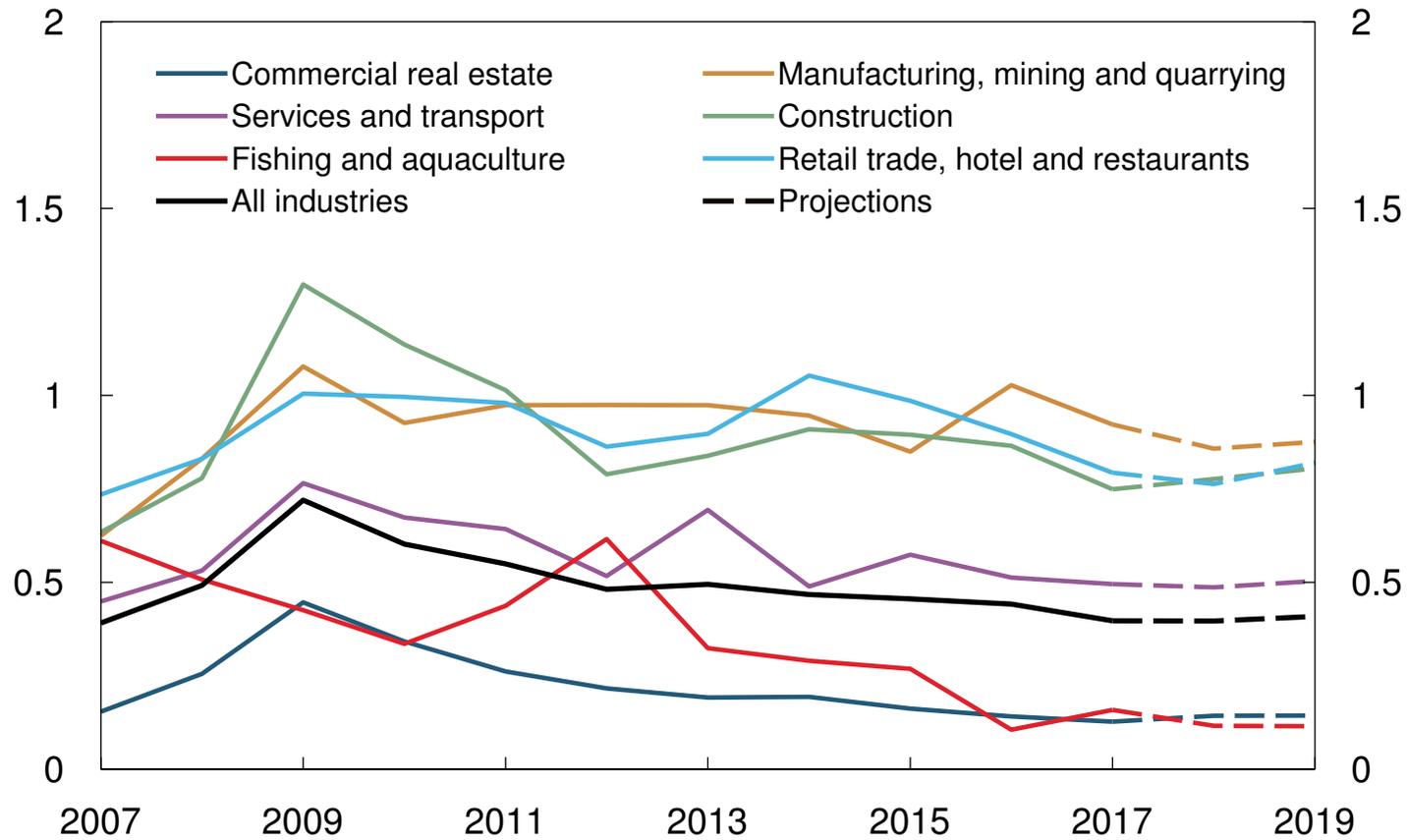Percent. 2003 Q1 – 2018 Q1

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 enterprises listed on Oslo Børs, excluding oil and gas extraction.
Norsk Hydro is excluded to end-2007 Q3.
Sources: Bloomberg and Norges Bank

Chart 5.10 Estimated credit risk[1] by industry. Percent. 2007 – 2019[2]

- Commercial real estate
- Manufacturing, mining and quarrying
- Services and transport
- Construction
- Fishing and aquaculture
- Retail trade, hotel and restaurants
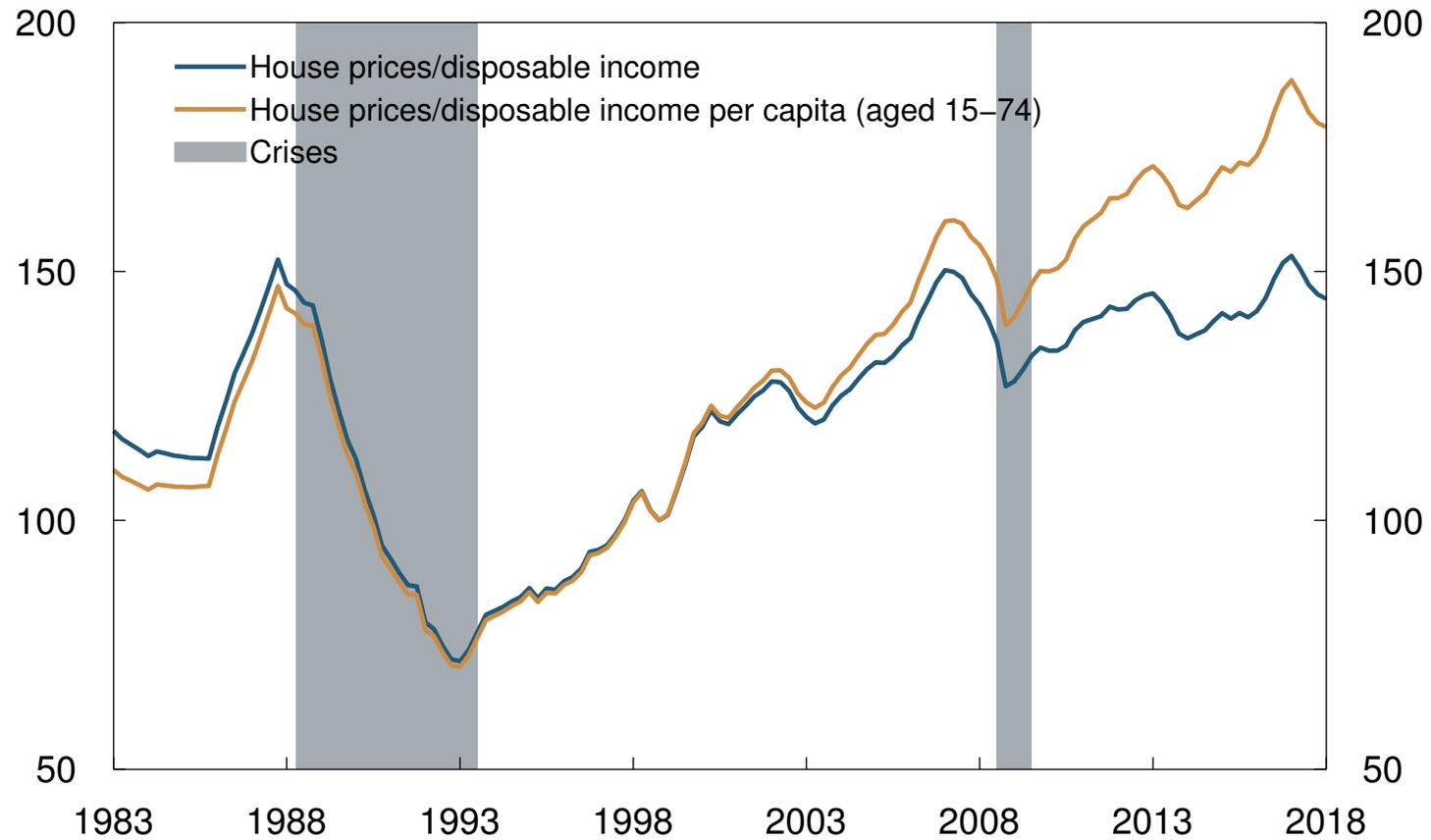- All industries
- Projections

1) Estimated bankruptcy-exposed bank debt as a share of total bank debt in each industry.
2) Projections for 2018 – 2019.
Source: Norges Bank

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

1) Disposable income adjusted for estimated reinvested dividend income for 2003 − 2005 and reduction of equity capital for 2006 Q1 − 2012 Q3. Change in disposable income excluding dividend income is used for 2015 Q1 − 2018 Q1.
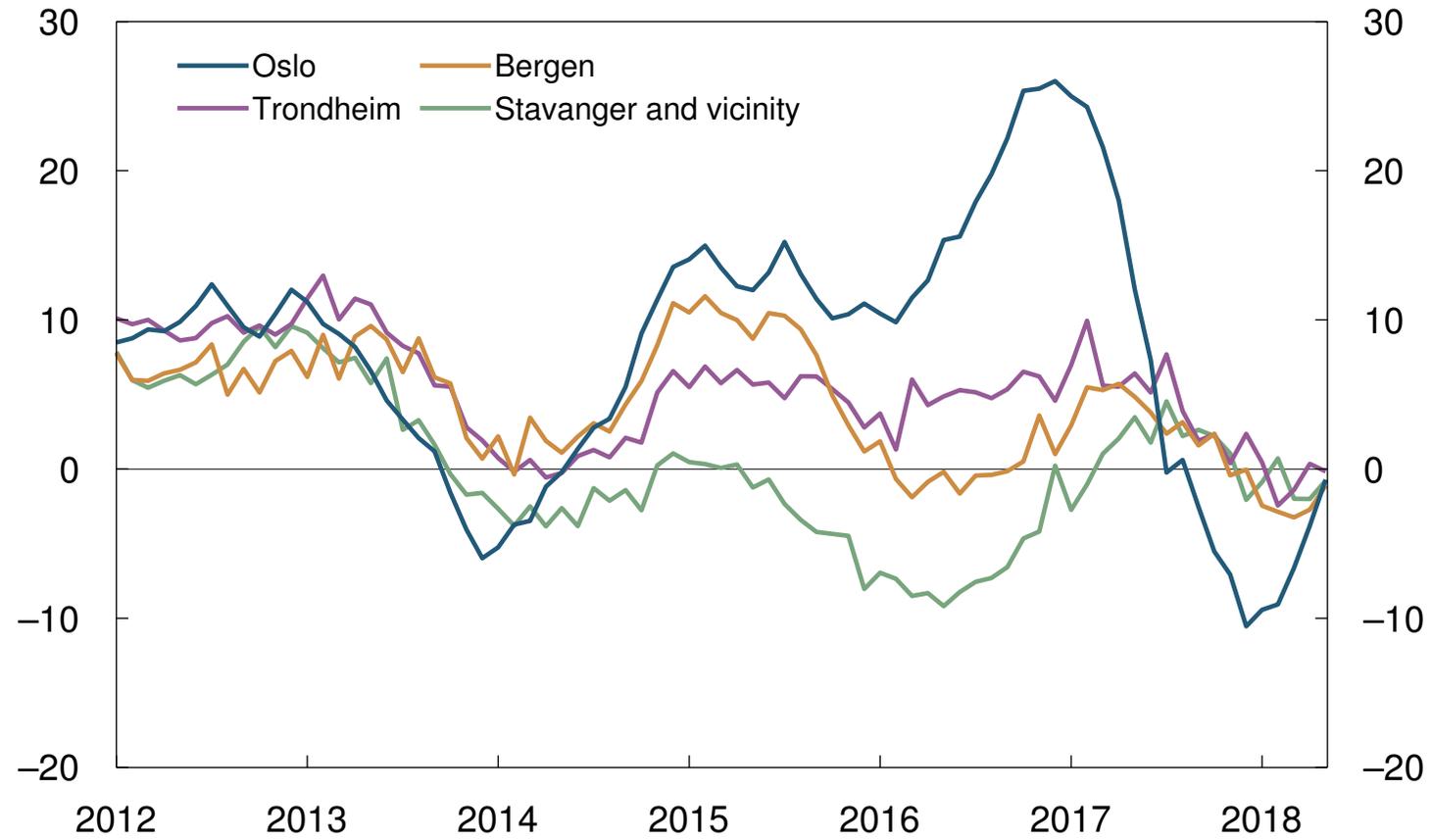Sources: Eiendomsverdi, Finn.no, Norwegian Association of Real Estate Agents (NEF), Real Estate Norway, Statistics Norway and Norges Bank

Chart 5.12 House prices. Twelve-month change and seasonally adjusted monthly change. Percent. January 2012 – May 2018
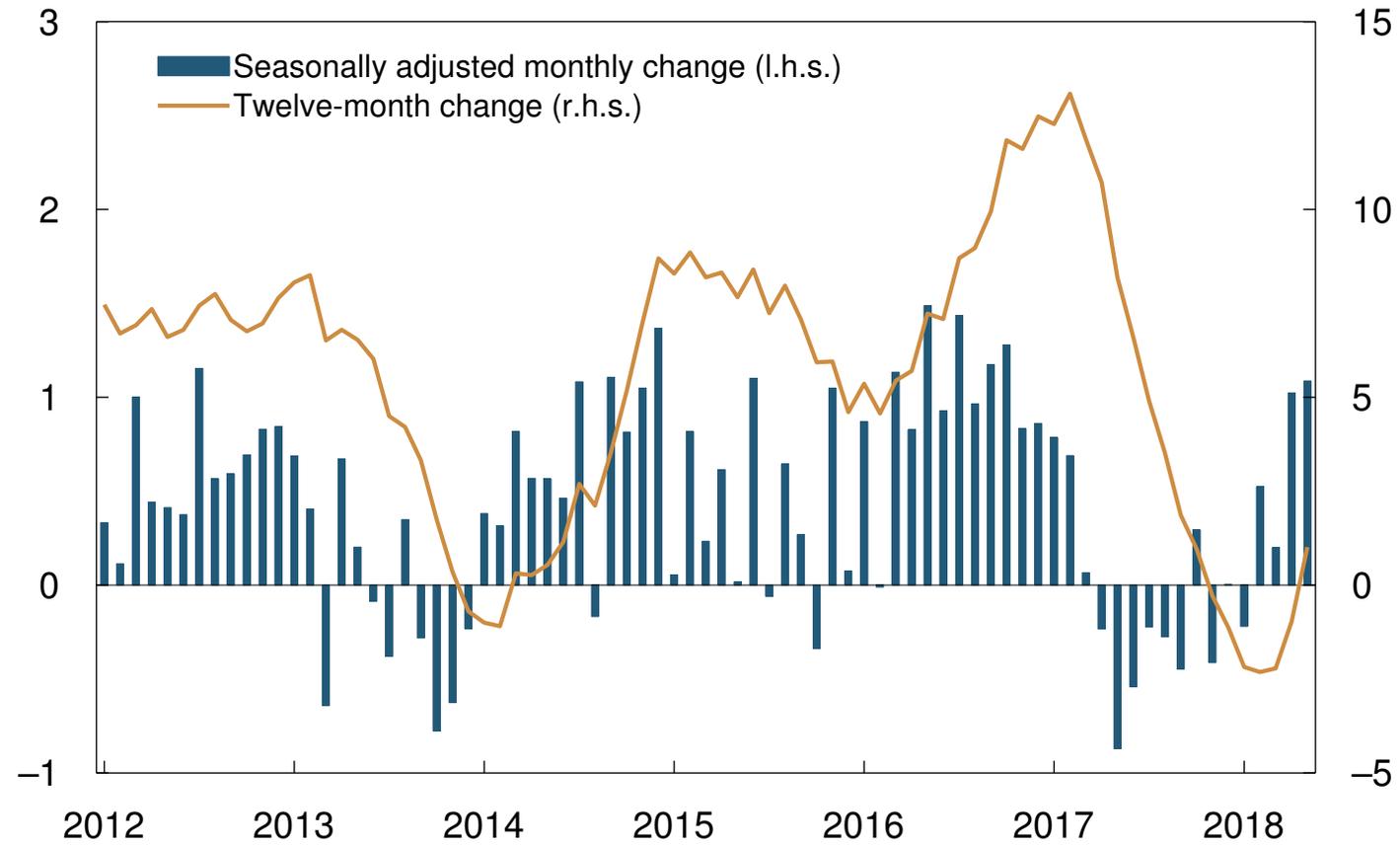
Chart 5.13 House prices in Norwegian cities.
Twelve-month change. Percent. January 2012 – May 2018

Sources: Eiendomsverdi, Finn.no and Real Estate Norway

Chart 5.14 Existing homes listed for sale. Number of homes.
January 2009 – May 2018

Legend:
- Average 2009 – 2016
- 2017
- 2018
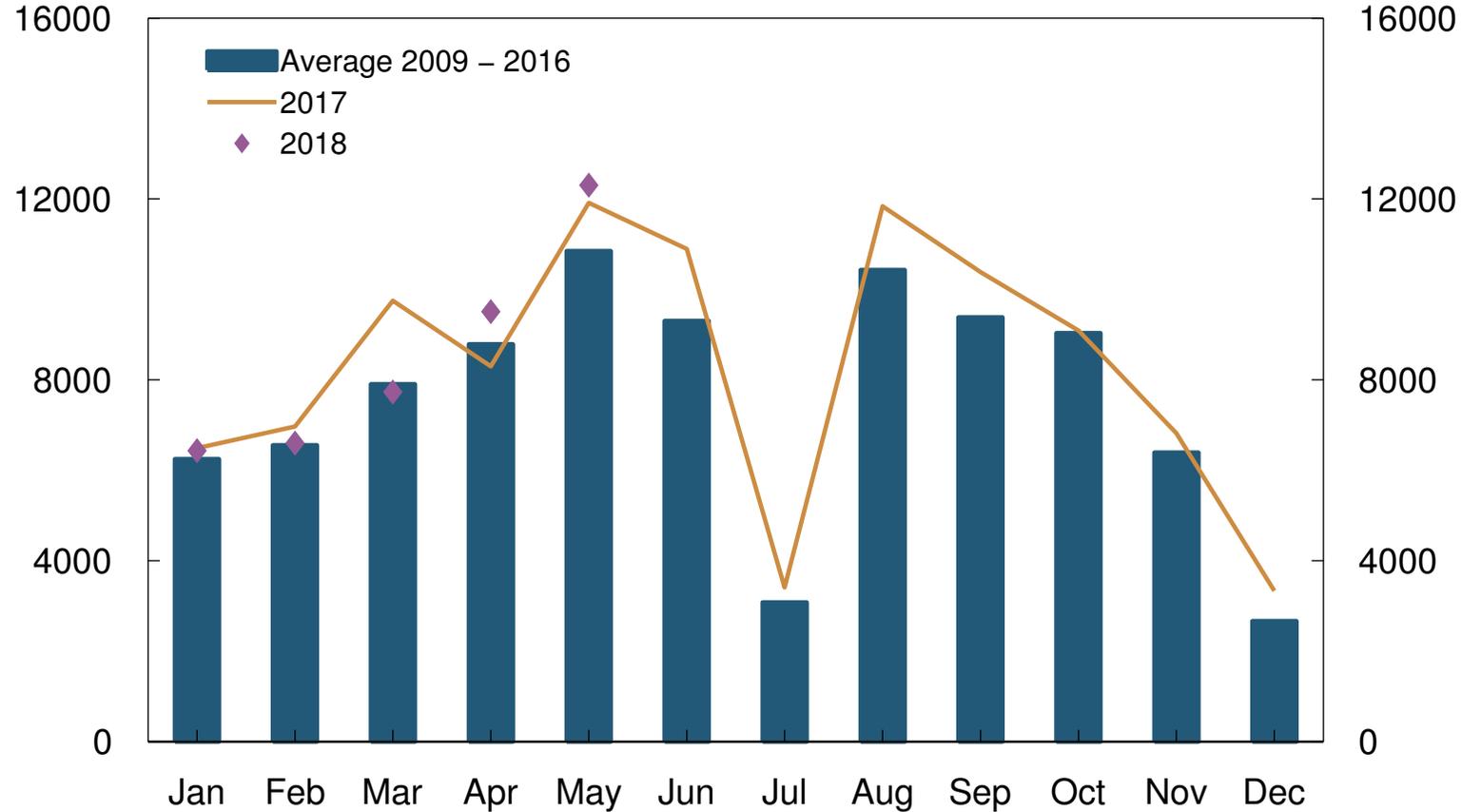
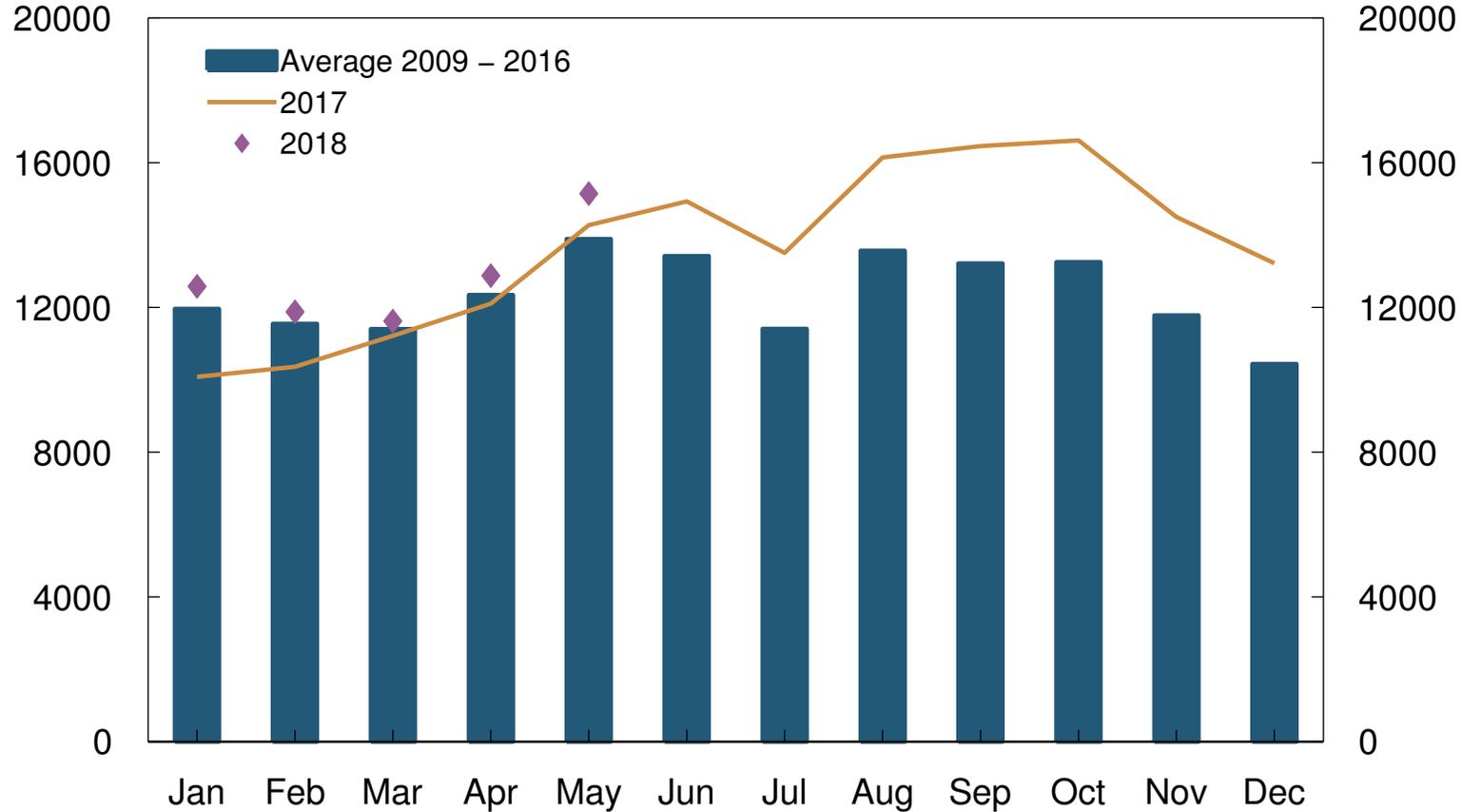Chart 5.15 Stock of unsold existing homes at month-end. Number of homes.
January 2009 – May 2018

Sources: Eiendomsverdi, Finn.no and Real Estate Norway

Chart 5.16 New home sales in Norway.[1] Number of homes.
January 2013 – April 2018
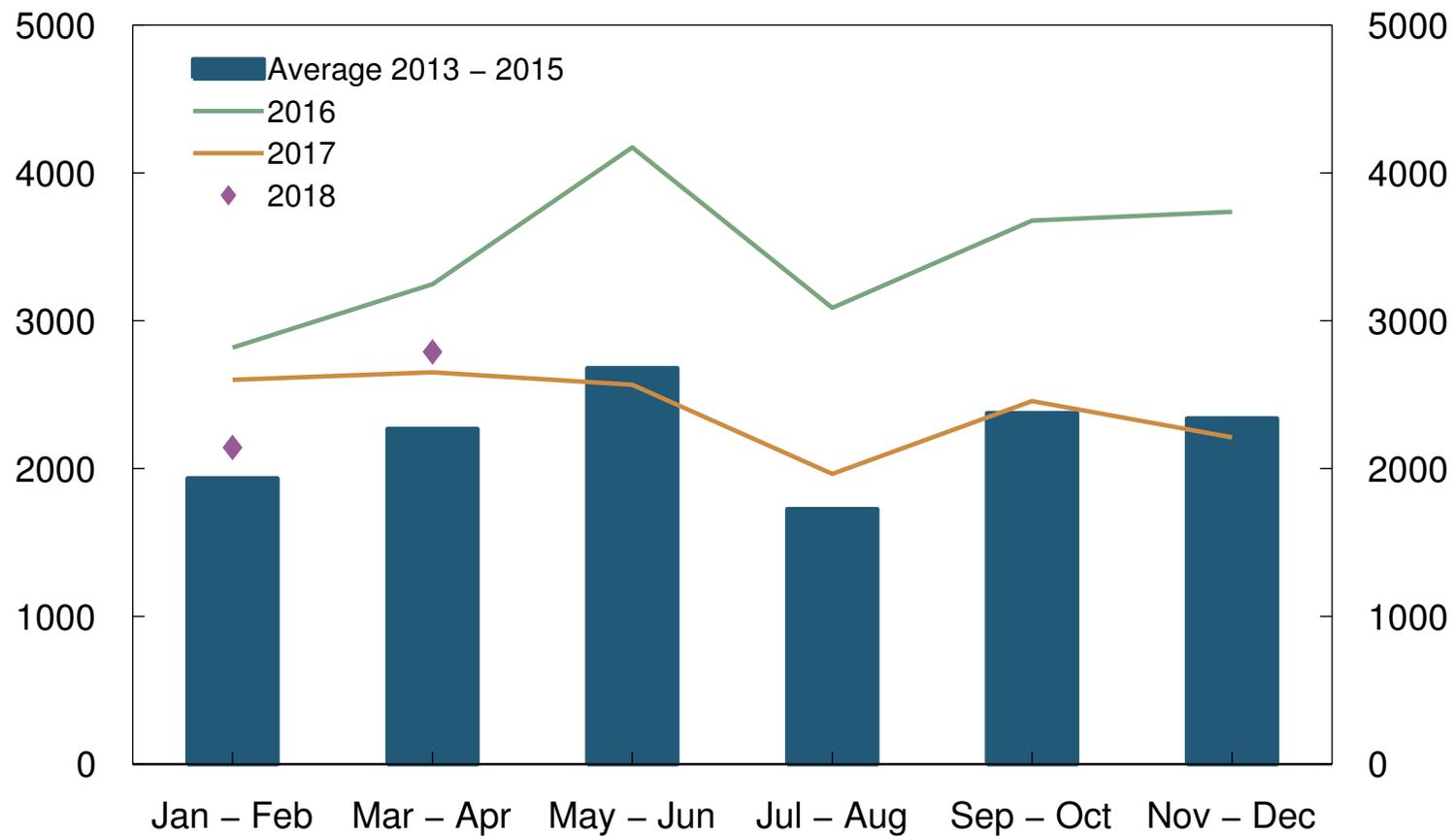
1) Statistics for Norway as from October 2013. Data for the earlier part of 2013 have been chained back in time using the rise in sales for eastern Norway. The statistics only include homes sold in housing projects of more than 15 units. The statistics cover most of the housing market in eastern Norway and a somewhat smaller share in the other regions.
Source: Economics Norway

Chart 5.17 Real commercial property prices.[1]
Index. 1998 = 100. 1983 Q1 − 2018 Q1

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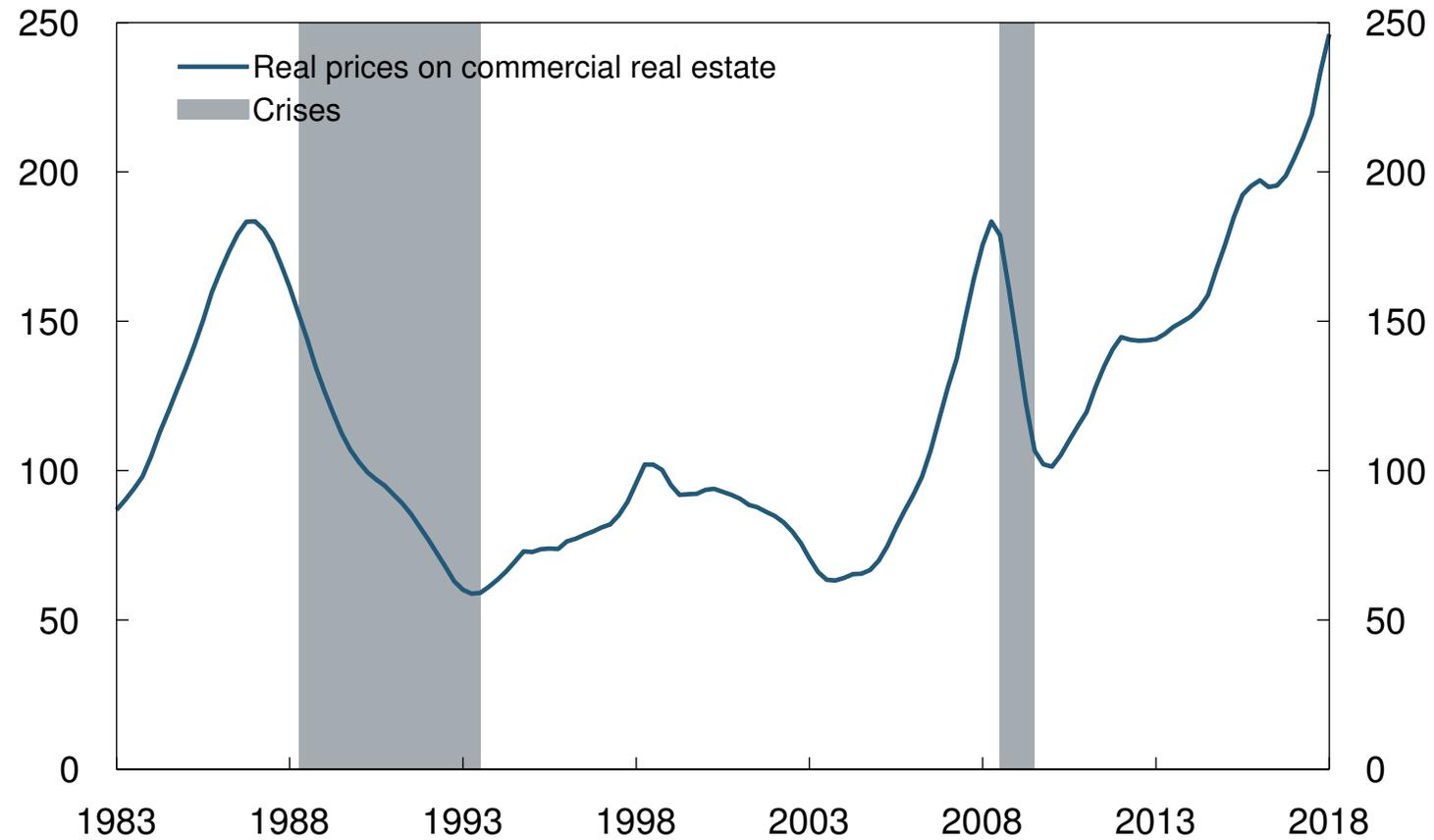
1) Estimated real selling prices per square metre for prime office space in Oslo. Deflated by the GDP deflator for mainland Norway. Average selling price for the previous four quarters.
Sources: CBRE, Dagens Næringsliv, OPAK, Statistics Norway and Norges Bank

Chart 5.18 Office property values[1] in Oslo. Annual change.
Percent. 2010 − 2017

- Oslo CBD[2]
- Oslo central
- Oslo west and north
- Oslo east and south
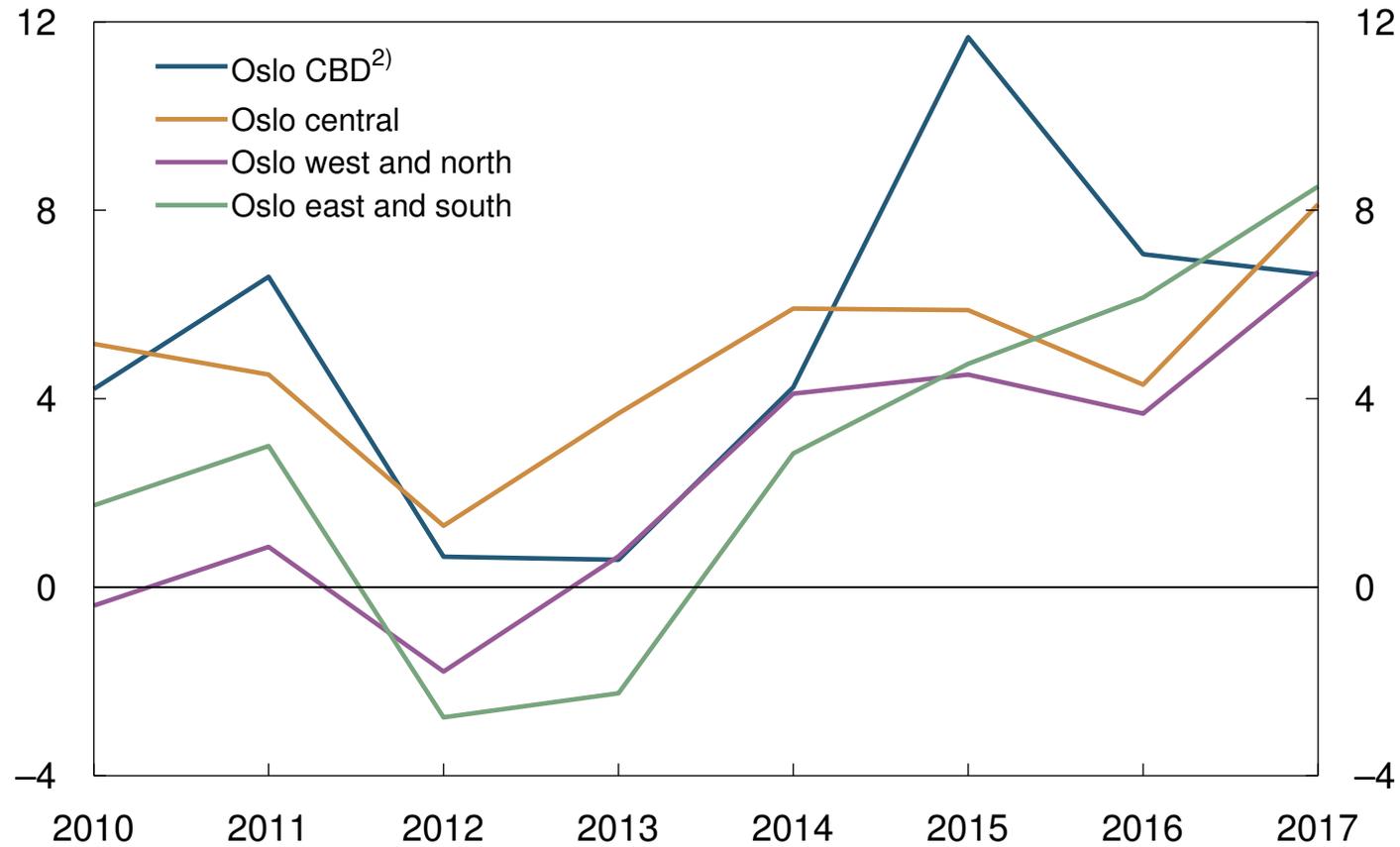
1) Estimated property values based on valuations of real estate companies' properties.
2) Central business district.
Source: MSCI (IPD)

Chart 5.19 Return on equity for large Norwegian banks.[1]
Percent. 2009 Q1 – 2018 Q1

Quarterly return on equity (annualised)
Four-quarter moving average
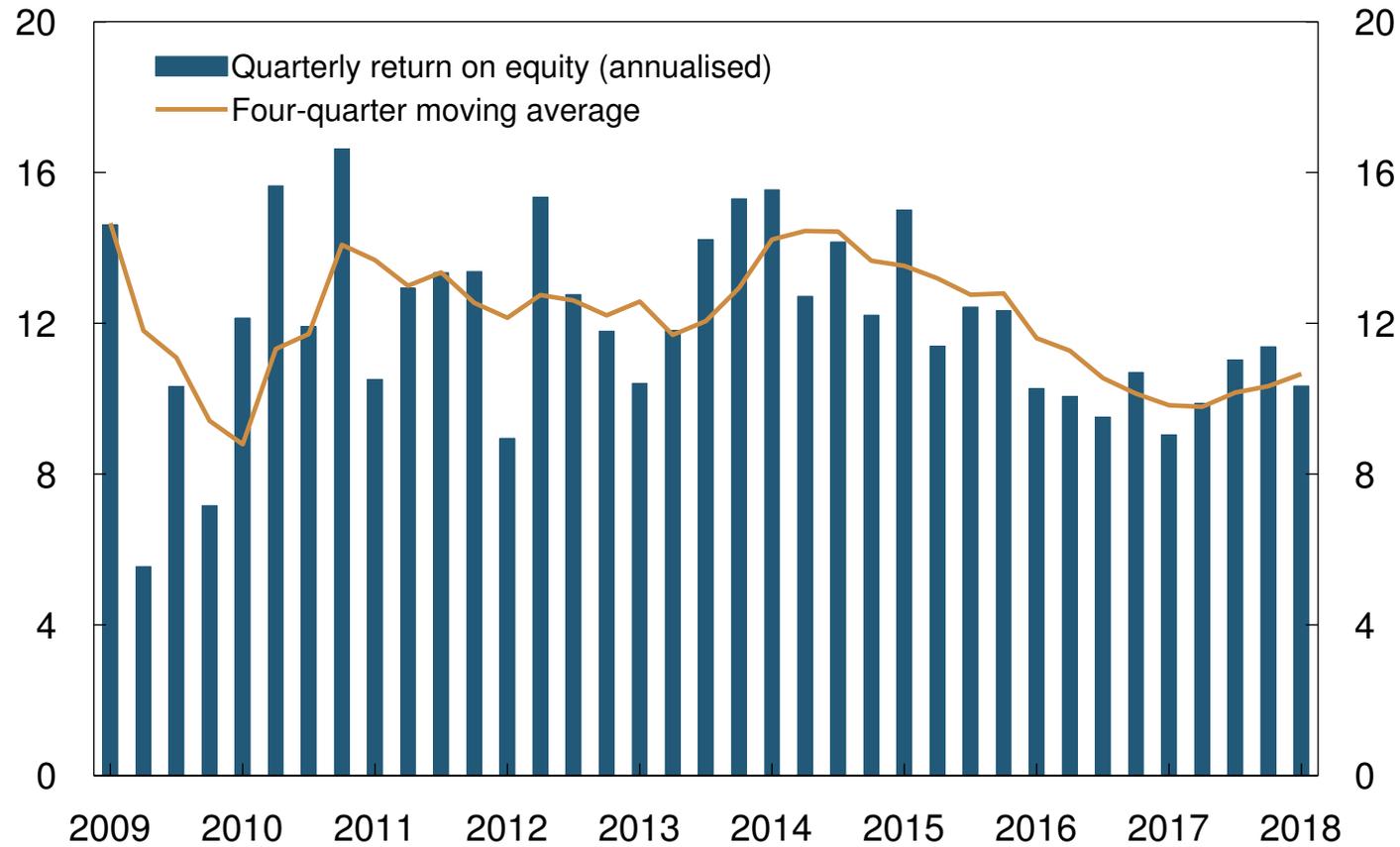
1) Banks included in 2017 and 2018: DNB Bank, SpareBank 1 SR-bank, Sparebanken Vest,
SpareBank 1 SMN, Sparebanken Sør, SpareBank 1 Østlandet and SpareBank 1 Nord-Norge.
Sources: Banks' quarterly reports and Norges Bank

Chart 5.20 Large Norwegian banks' Common Equity Tier 1 (CET1) capital ratios and targets at 2018 Q1. Percent
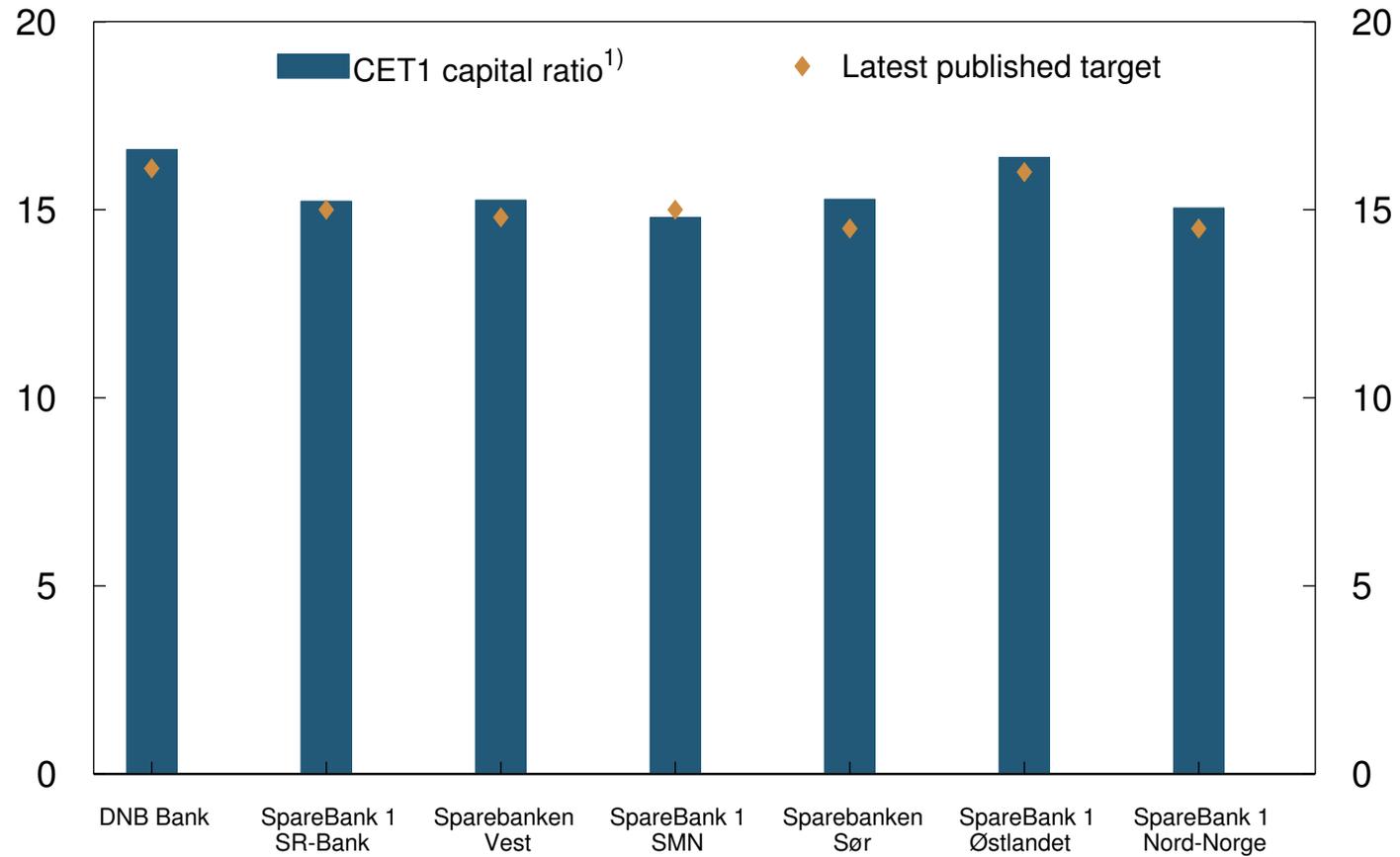
1) Includes the entire profit for the quarter 2018 Q1.
Sources: Banks' quarterly reports and Norges Bank

Chart 5.21 Bank and mortgage company lending to non-financial enterprises. Contribution to 12-month change in stock of loans by banks and mortgage companies. Percent. January 2014 – April 2018

Legend:
- DNB
- Other Norwegian banks
- Nordea
- Other branches
- Total
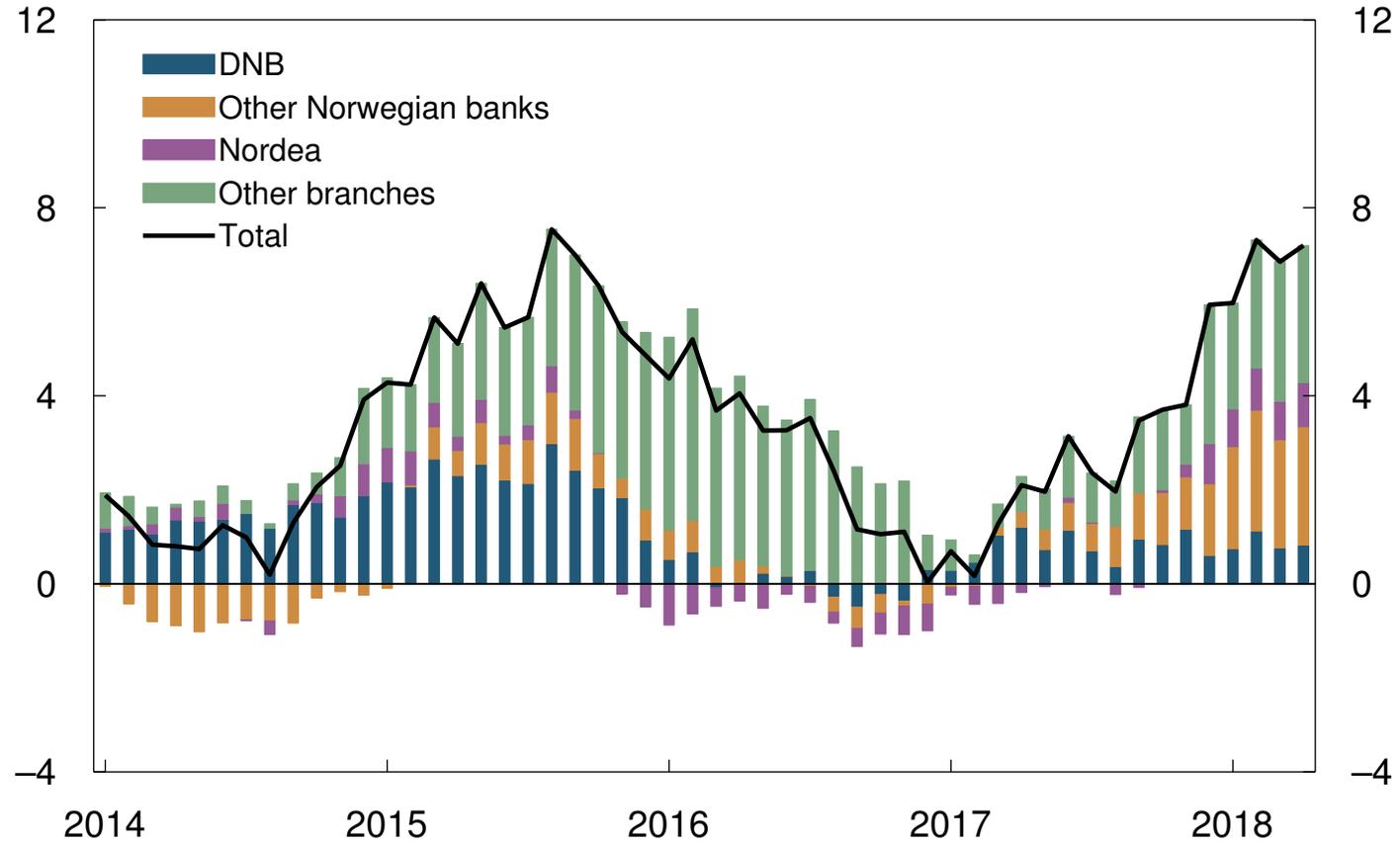
Sources: Statistics Norway and Norges Bank

Chart 5.22 Effects of break in domestic credit to households and enterprises as a share of total credit in each sector. Stock. Percent. Average for 2017

Legend:
- Individual loan loss provisions
- Accrued (but unpaid) interest
- Changes in fair value
- Own holdings
- ◆ Total effect of the break

Categories: Households; Non-financial enterprises; Households and non-financial enterprises total

Sources: Statistics Norway and Norges Bank

Banking crisis   Financial crisis

Risk appetite / Asset valuations
- Housing market
- Commercial real estate
- Equity market
- Bond market
- Bank loans
- Global financial cycle

Non-financial sector
- Households – Leverage
- Households – Debt service
- Households – Credit growth
- Non-financial enterprises – Leverage
- Non-financial enterprises – Debt service
- Non-financial enterprises – Credit growth

Financial sector
- Banks – Growth in assets and equity ratio
- Banks – Funding
- Banks – Connectedness
- Non-bank financial institutions

1980   1985   1990   1995   2000   2005   2010   2015

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