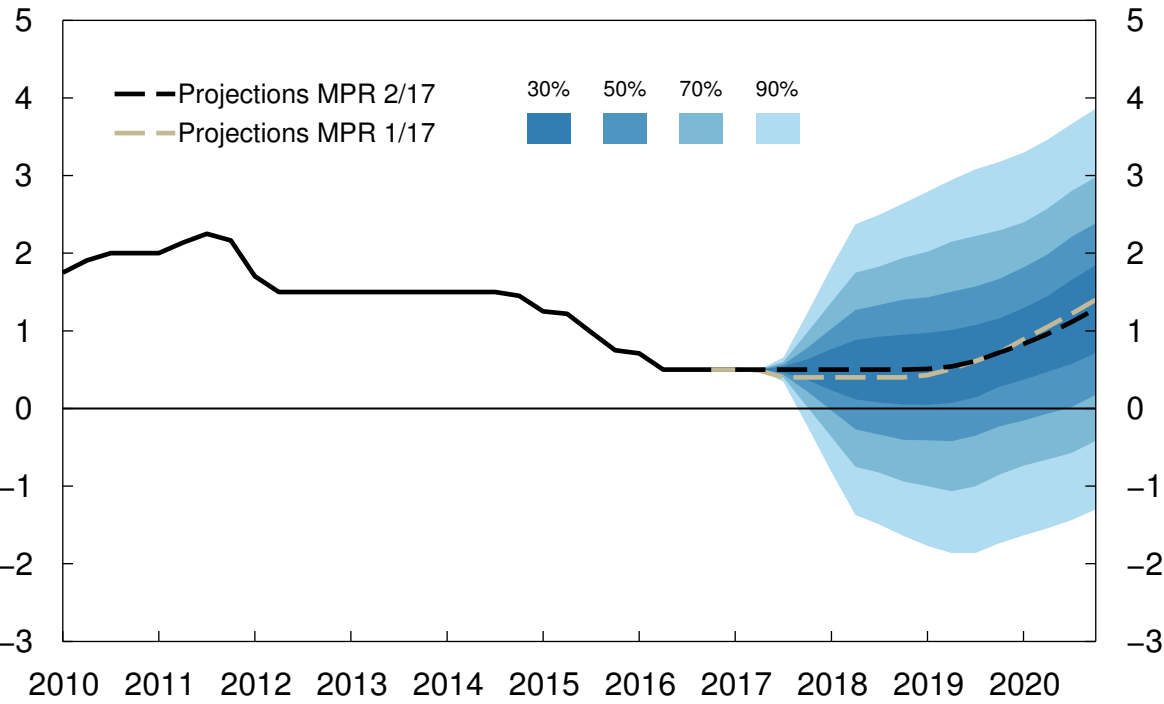Chart 1.1a Projected key policy rate with fan chart and projected key policy rate in MPR 1/17. [1] Percent. 2010 Q1 – 2020 Q4 [2]

Legend:
- Projections MPR 2/17
- Projections MPR 1/17
- 30%
- 50%
- 70%
- 90%

1) The fan charts are based on historical experience and stochastic simulations in Norges Banks's main macroeconomic model, NEMO. The fan chart for the key policy rate does not take into account that a lower bound for the interest rate exists.
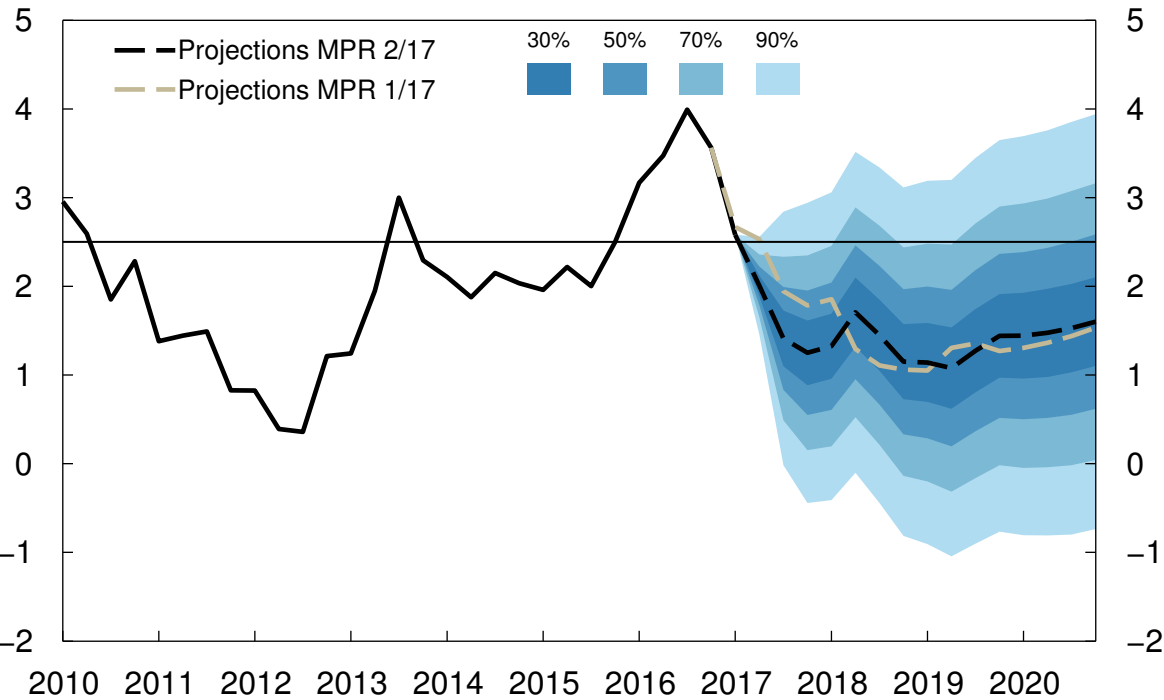2) Projections for 2017 Q2 – 2020 Q4 (broken line).
Source: Norges Bank

Chart 1.1b Projected output gap[1] with fan chart and projected output gap in MPR 1/17. Percent. 2010 Q1 – 2020 Q4
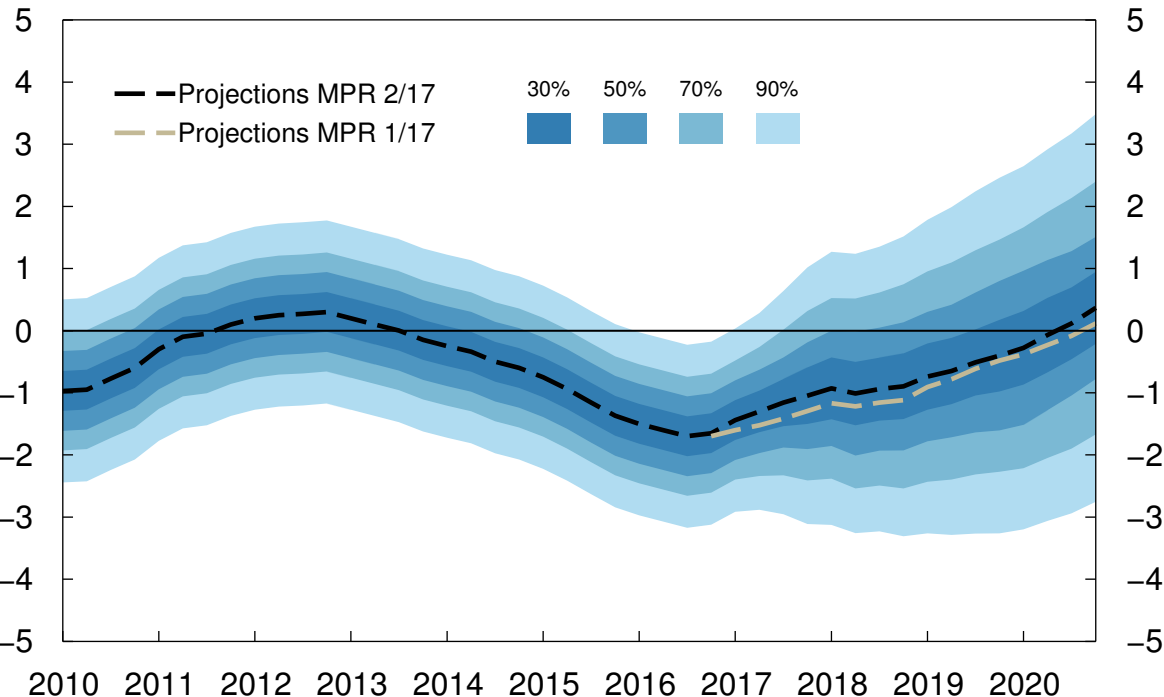

- – Projections MPR 2/17
- – Projections MPR 1/17

30% 50% 70% 90%

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

Chart 1.1c Projected CPI with fan chart and projected CPI in MPR 1/17. Four-quarter change. Percent. 2010 Q1 – 2020 Q4[1]

Projections MPR 2/17
Projections MPR 1/17

30% 50% 70% 90%

Chart 1.1d Projected CPI-ATE[1] with fan chart and projected CPI-ATE in MPR 1/17. Four-quarter change. Percent. 2010 Q1 – 2020 Q4[2]
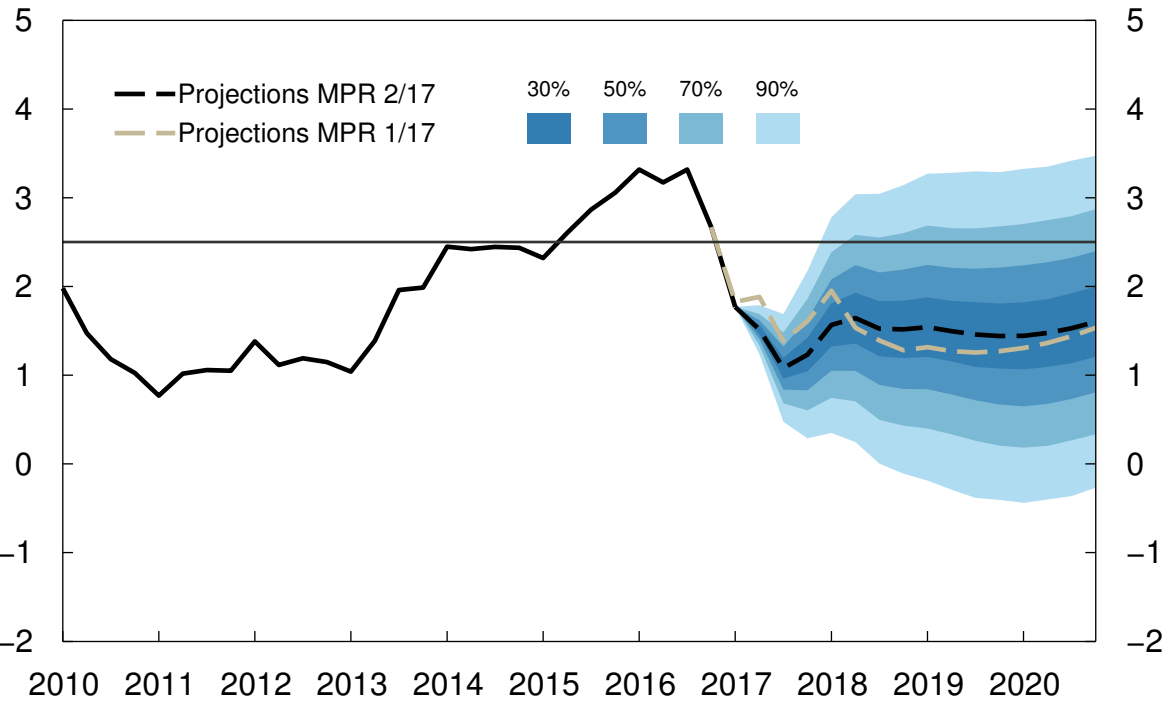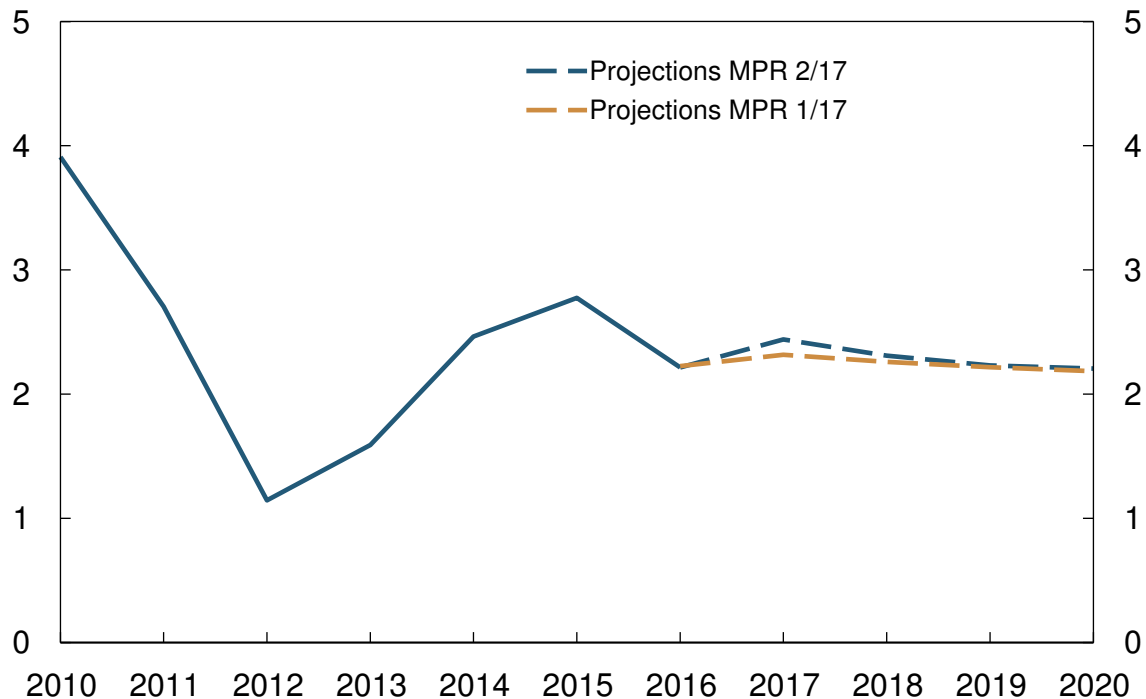

1) CPI adjusted for tax changes and excluding energy products.
2) Projections for 2017 Q2 – 2020 Q4 (broken lines).
Sources: Statistics Norway and Norges Bank

Chart 1.2 GDP for trading partners[1]. Annual growth. Percent. 2010 – 2020[2]

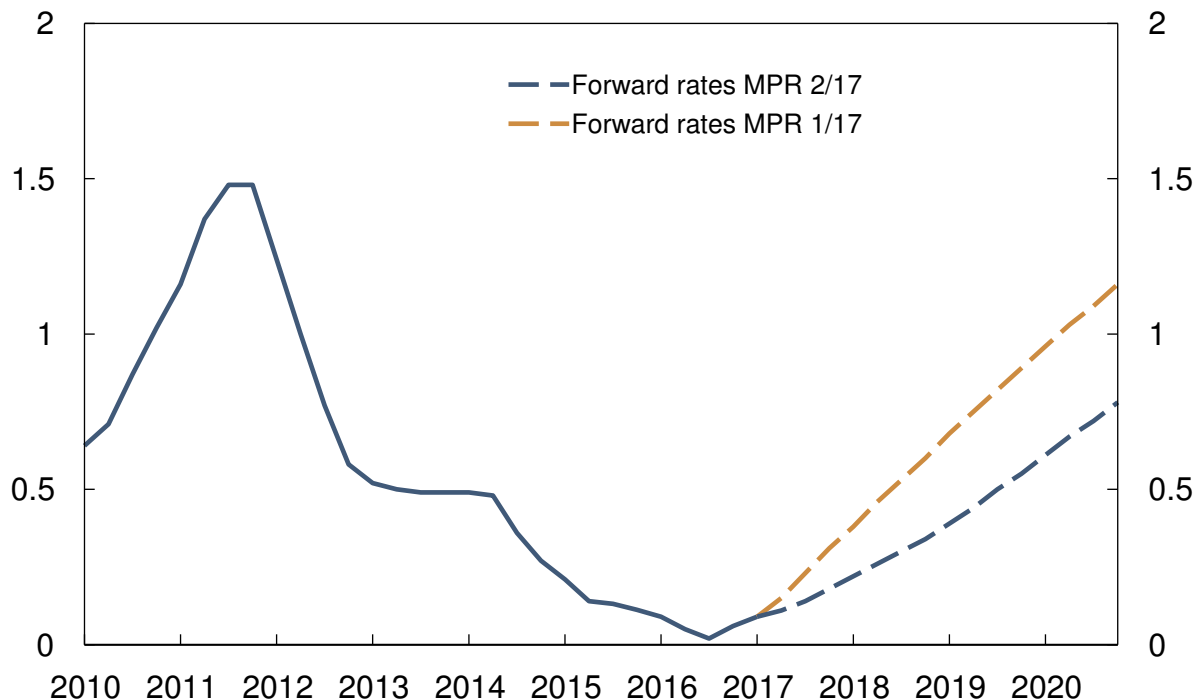- - - Projections MPR 2/17
- - - Projections MPR 1/17

1) Export weights.
2) Projections for 2017 – 2020 (broken lines).
Sources: IMF, Statistics Norway, Thomson Reuters and Norges Bank

Chart 1.3 Three-month money market rates for trading partners.[1]
Percent. 2010 Q1 – 2020 Q4 [2]

Forward rates MPR 2/17
Forward rates MPR 1/17

1) Based on money market rates and interest rate swaps. For information about the aggregate
for trading partner interest rates, see *Norges Bank Papers* 2/2015.
2) Blue and orange broken lines show forward rates at 16 June 2017 and 10 March 2017 , respectively.
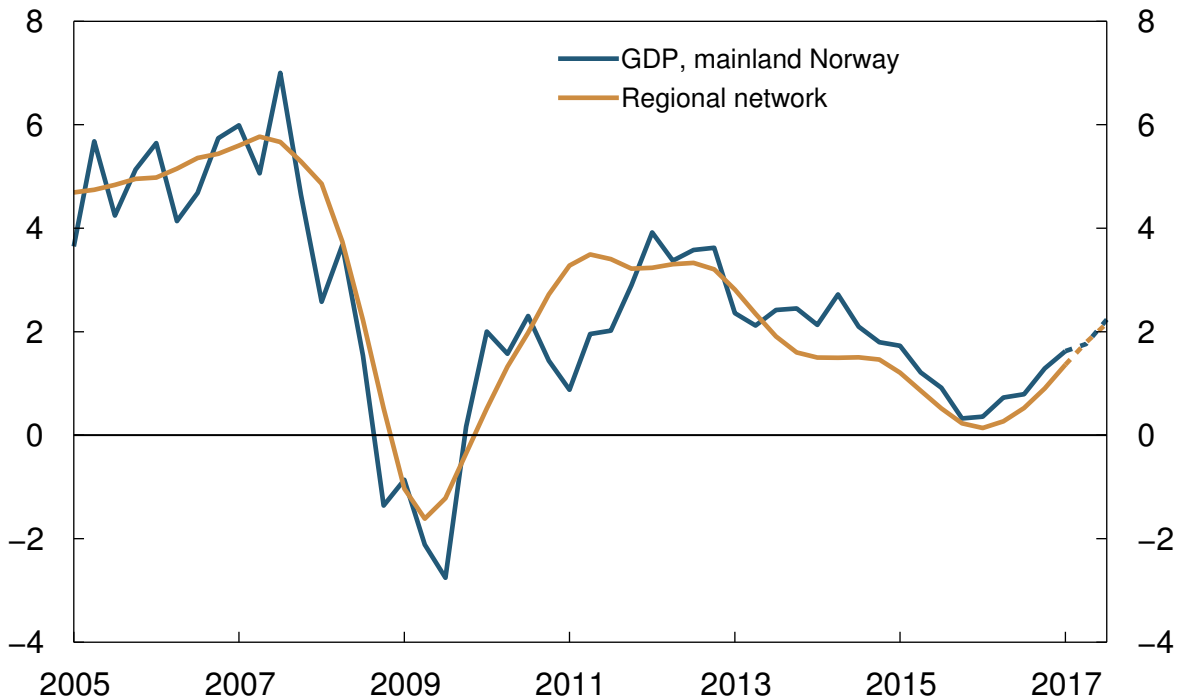Sources: Thomson Reuters and Norges Bank

Chart 1.4 Oil price. USD/barrel. January 2010 – December 2020 [1]
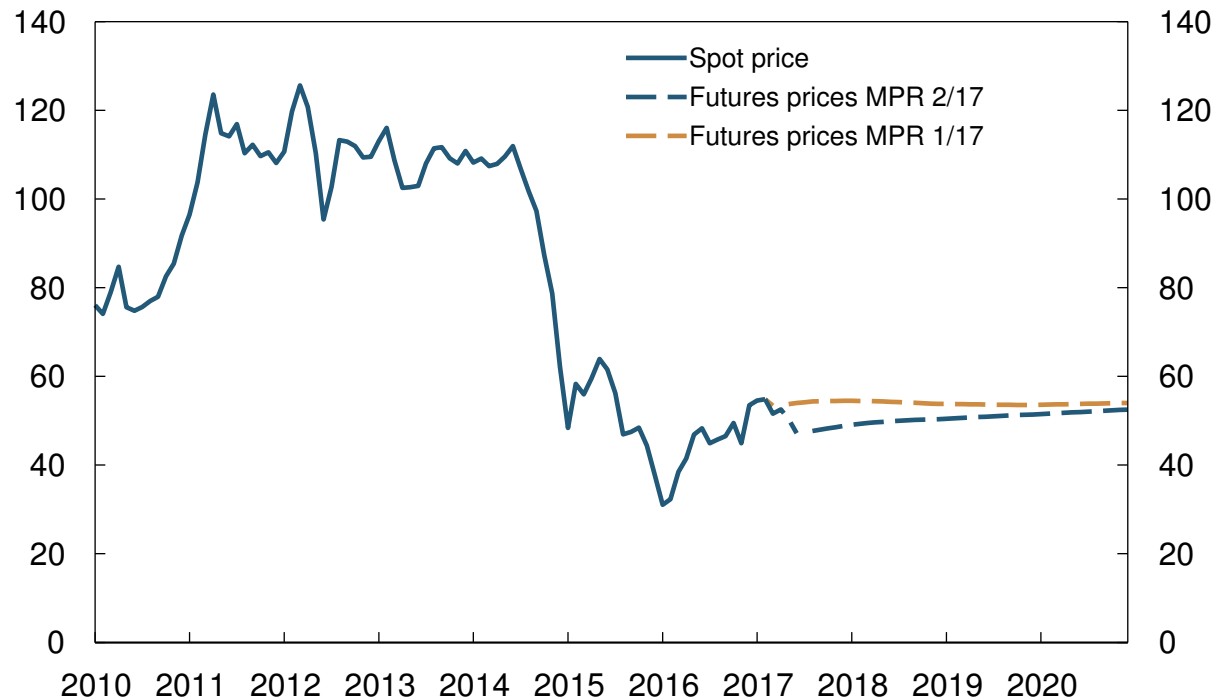
Chart 1.5 GDP for mainland Norway and regional network's indicator of output growth[1]. Four-quarter growth. Percent. 2005 Q1 – 2017 Q3 [2]
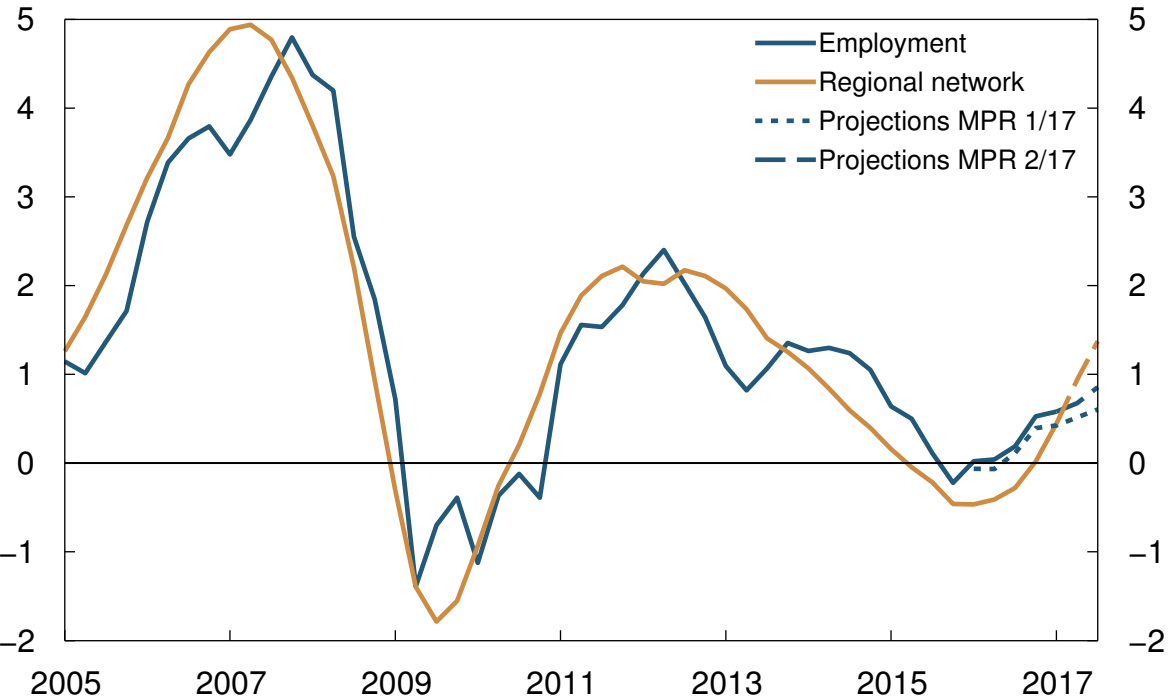

1) Reported output growth past three months converted to quarterly figures (solid line). The quarterly figures are calculated by weighting together three−monthly figures based on when the survey was carried out. For 2017 Q2, expected output growth is estimated by weighting together reported growth over the past three months and expected growth in the next six months and 2017 Q3 is expected growth in the next six months (broken orange line).
2) Projections for 2017 Q2 – 2017 Q3 (broken lines).
Sources: Statistics Norway and Norges Bank

Chart 1.6 Growth in employment in the quarterly national accounts and the regional network [1]. Four-quarter change. Percent. 2003 Q1 – 2017 Q3[2]


1) Reported output growth past three months (solid line). Quarterly figures from the regional network are calculated by weighting together three–monthly figures based on when the survey was carried out. For 2017 Q2, expected output growth is estimated by weighting together reported growth over the past three months and expected growth in the next three months and 2017 Q3 is expected growth in the next three months (broken orange line).
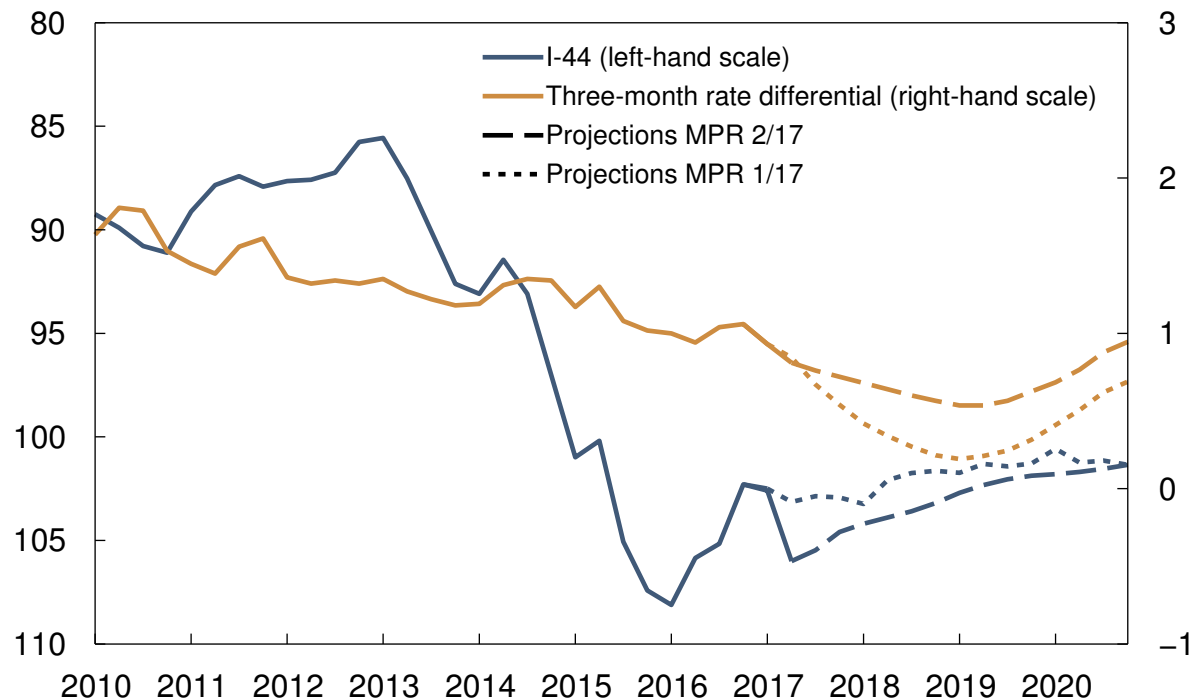2) Projections for 2017 Q2 – 2017 Q3 (broken lines).
Sources: Statistics Norway and Norges Bank

Chart 1.7 House prices. Twelve-month change and seasonally adjusted monthly change. Percent. January 2010 – May 2017
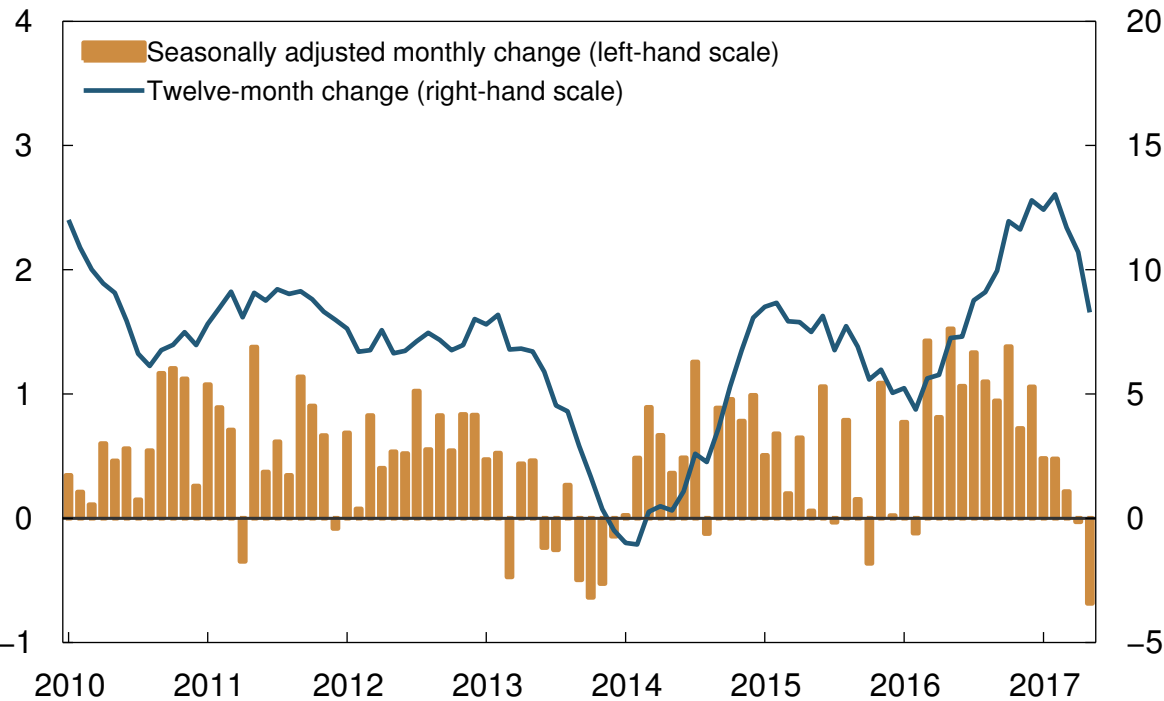
Sources: Eiendomsverdi, Finn.no and Real Estate Norway

Chart 1.8 Three-month money market rate differential between Norway[1] and trading partners[2] and import-weighted exchange rate index (I-44)[3]. 2010 Q1 – 2020 Q4[4]

- I-44 (left-hand scale)
- Three-month rate differential (right-hand scale)
- Projections MPR 2/17
- Projections MPR 1/17

1) Key policy rate plus Norwegian money market premium. The calculations
are based on the assumption that the key policy rate forecast is priced into the money market.
2) Forward rates for trading partners at 16 June 2017 and 10 March 2017. The aggregate
for trading partner interest rates is described in *Norges Bank Memo* 2/2015.
3) A positive slope denotes a stronger krone exchange rate.
4) Projections for 2017 Q2 – 2020 Q4 (broken lines).
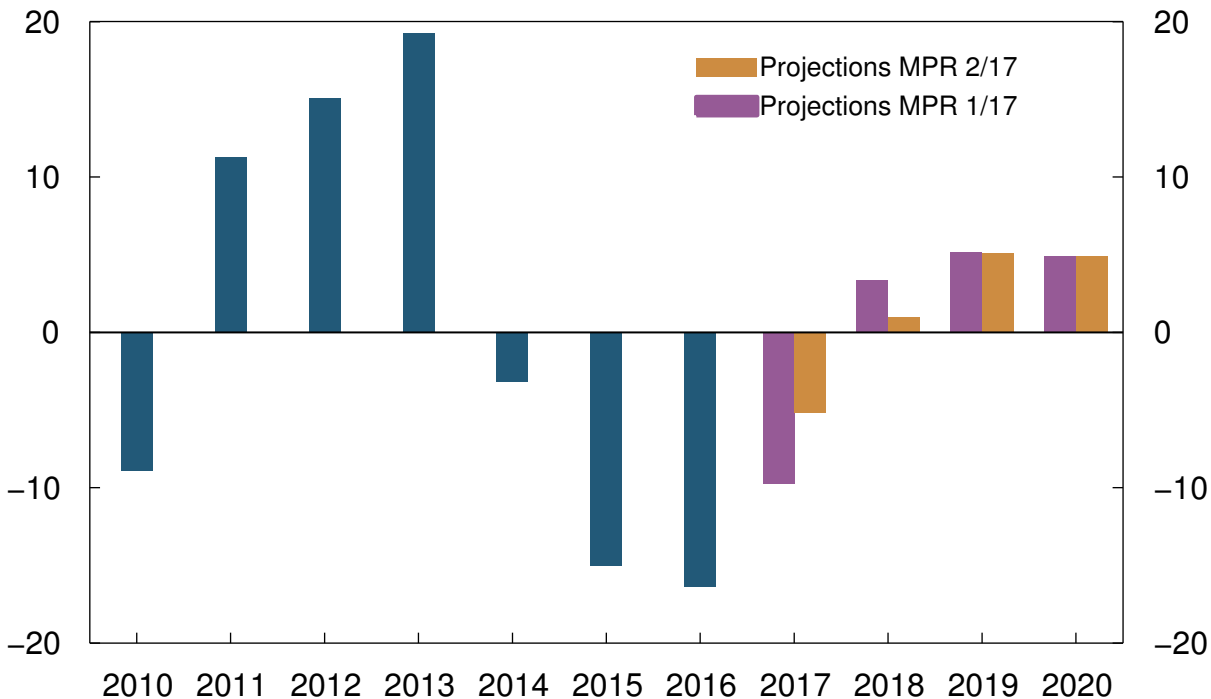Sources: Thomson Reuters and Norges Bank

Chart 1.9 GDP for mainland Norway. Annual growth. Percent. 2010 – 2020 [1]

Legend:
- Projections MPR 2/17
- Projections MPR 1/17
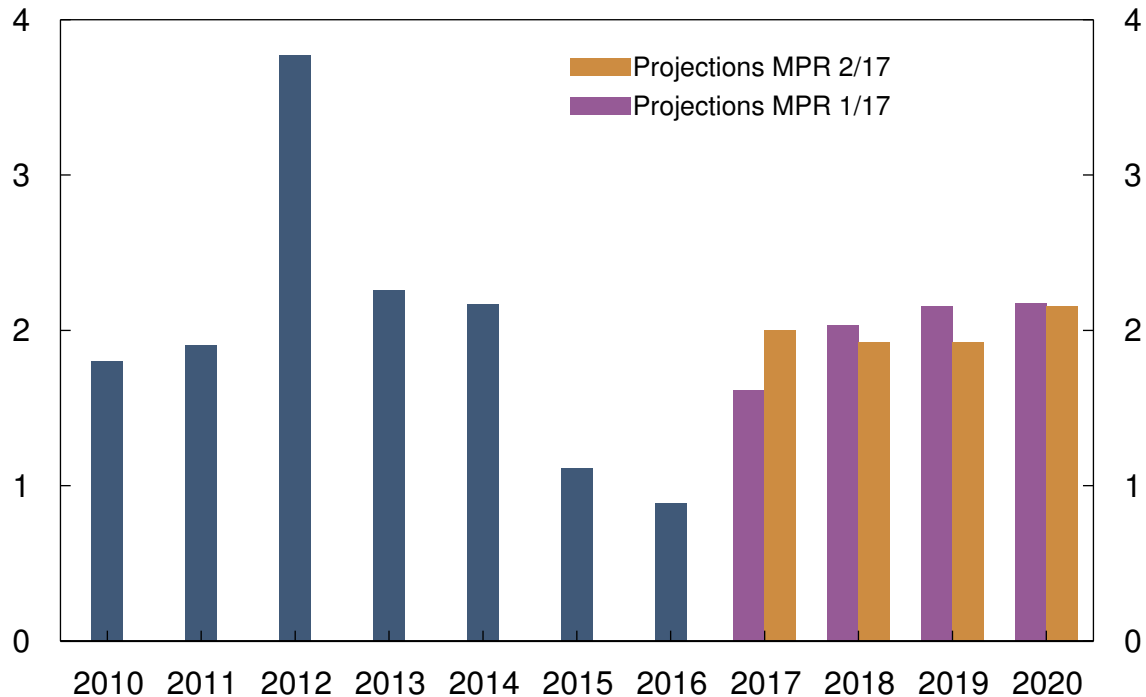
1) Projections for 2017 – 2020.
Sources: Statistics Norway and Norges Bank

Chart 1.10 Petroleum investment. Annual change. Percent. 2010 – 2020 [1]

Projections MPR 2/17
Projections MPR 1/17

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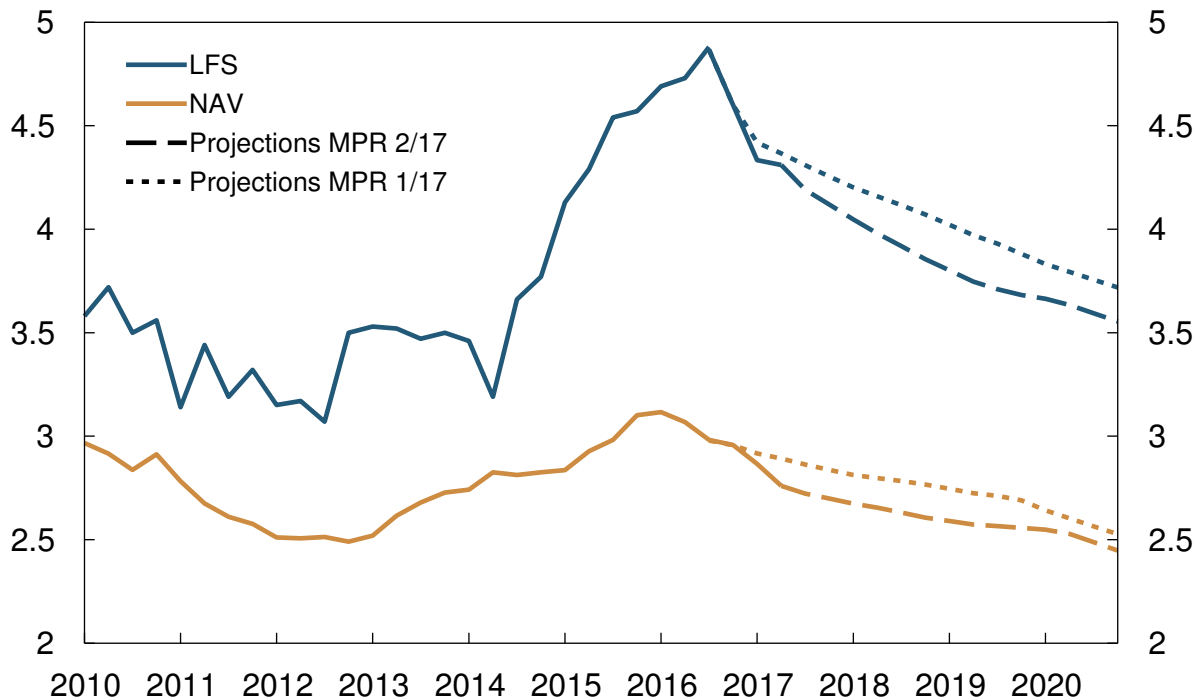Sources: Statistics Norway and Norges Bank

Chart 1.11 Change in structural non-oil deficit as a share of trend GDP for mainland Norway. Percentage points. 2002 – 2020[1]
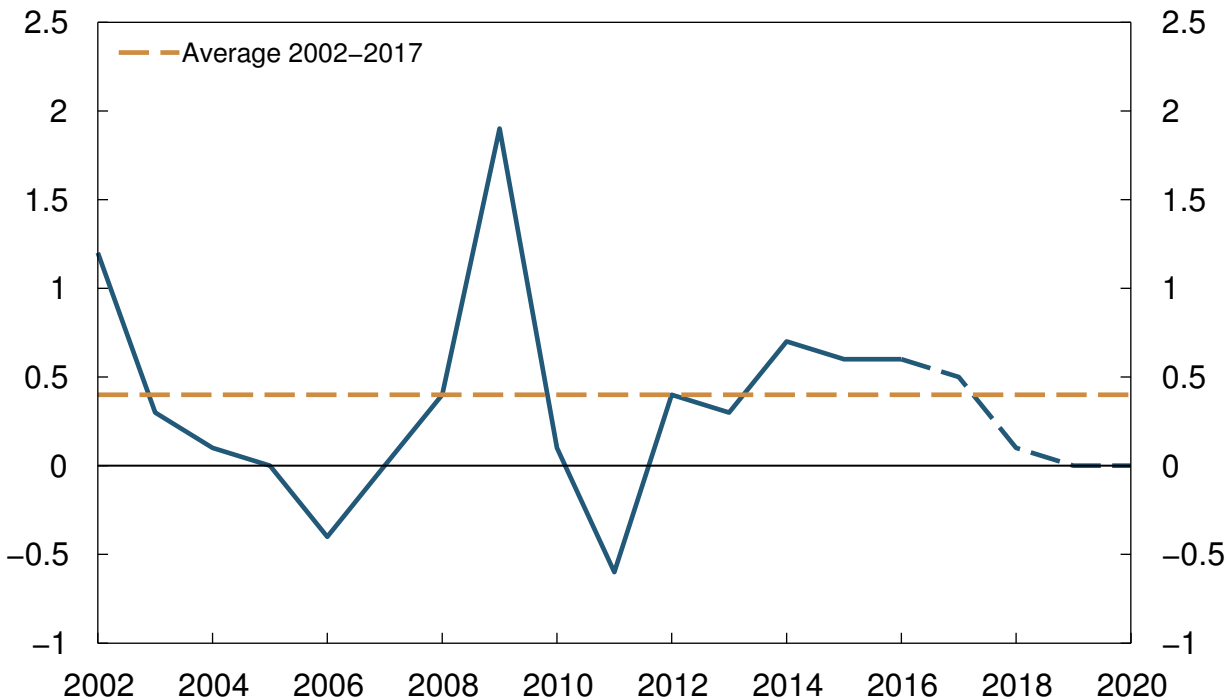
1) Projections for 2017 – 2020 (broken line).
Sources: Ministry of Finance and Norges Bank

Chart 1.12 Unemployed as a share of the labour force. LFS [1] and NAV [2].
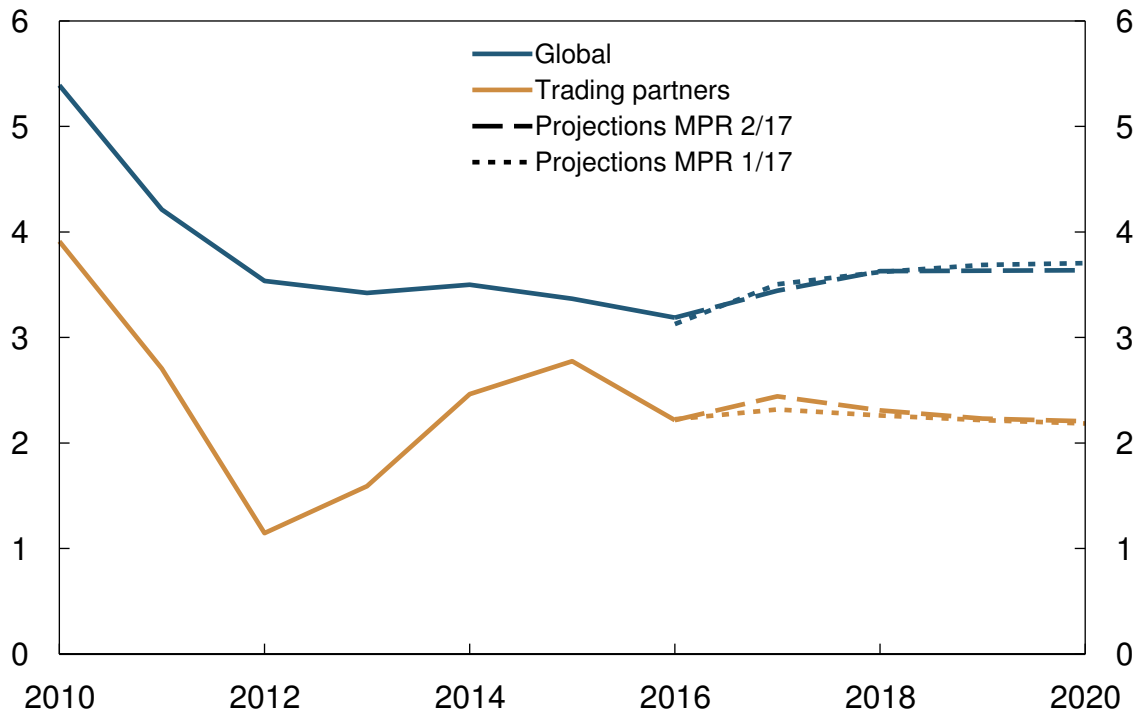Seasonally adjusted. Percent. 2010 Q1 – 2020 Q4 [3]

1) Labour Force Survey.
2) Registered unemployment.
3) Projections for 2017 Q2 – 2020 Q4 (broken lines).
Sources: Norwegian Labour and Welfare Administration (NAV), Statistics Norway and Norges Bank

Chart 2.1 Global GDP[1] and GDP for Norway's trading partners[2].
Annual percentage change. 2010 – 2020 [3]
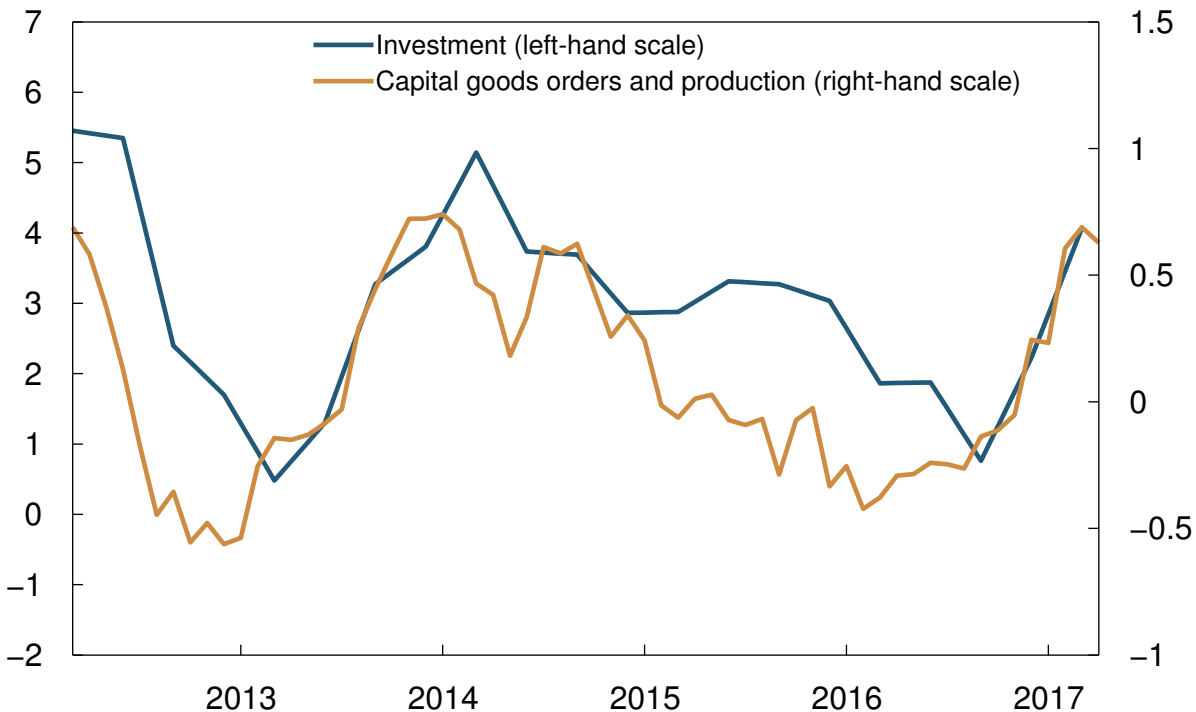

1) Purchasing power parity weights.
2) Export weights.
3) Projections for 2017 – 2020 (broken lines).
Sources: IMF, Statistics Norway, Thomson Reuters and Norges Bank
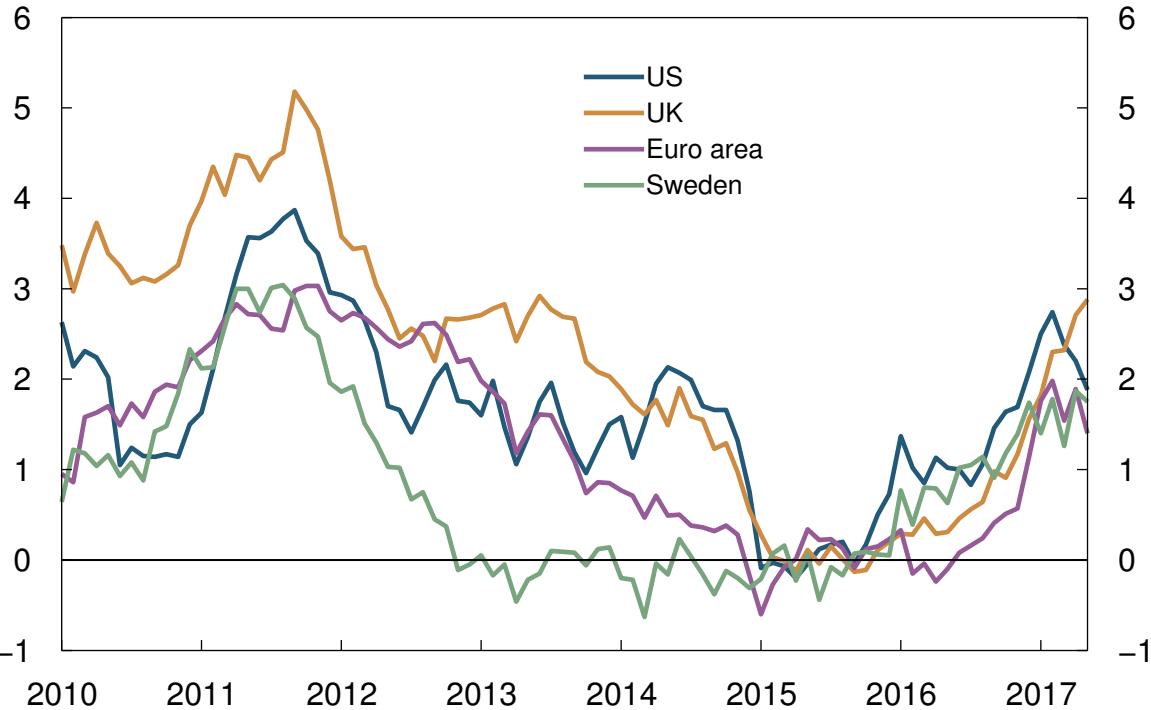
Chart 2.2 Advanced economies.[1] Investment. Four-quarter percentage change.
2012 Q1 – 2017 Q1. Capital goods orders and production. Index.
March 2012 – April 2017

1) US, UK, euro area and Japan. Purchasing power parity weights.
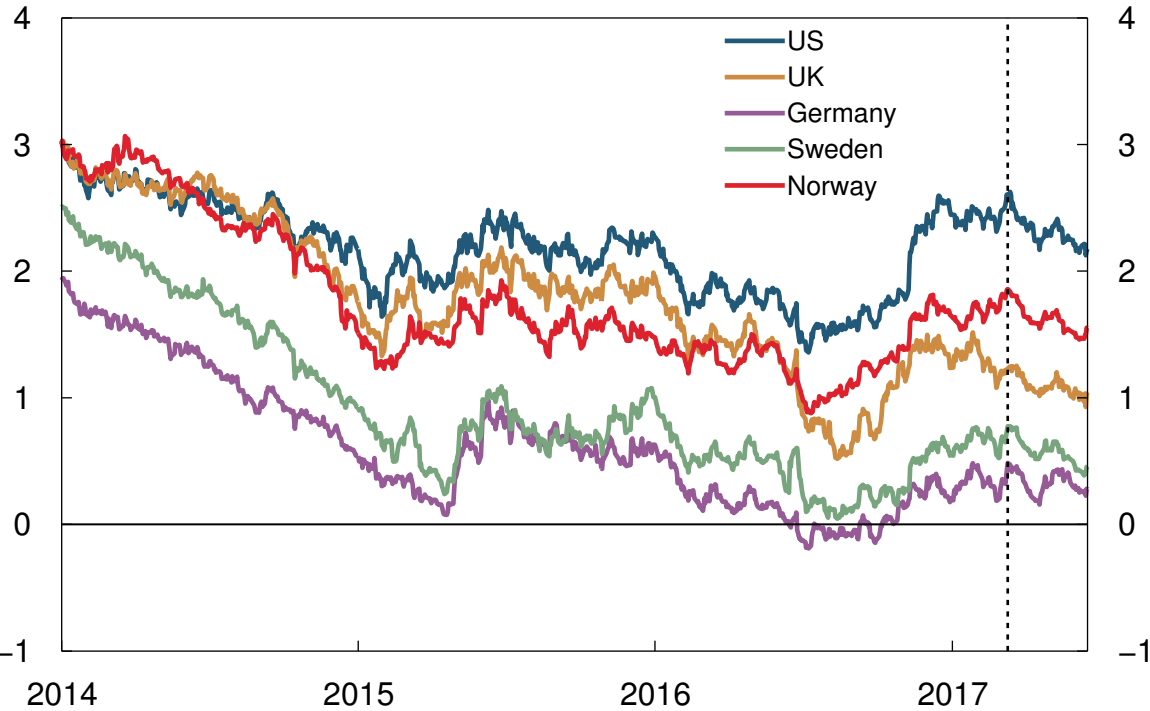Sources: Thomson Reuters and Norges Bank

Chart 2.3 CPI in selected advanced economies.
Twelve-month percentage change. January 2010 – May 2017
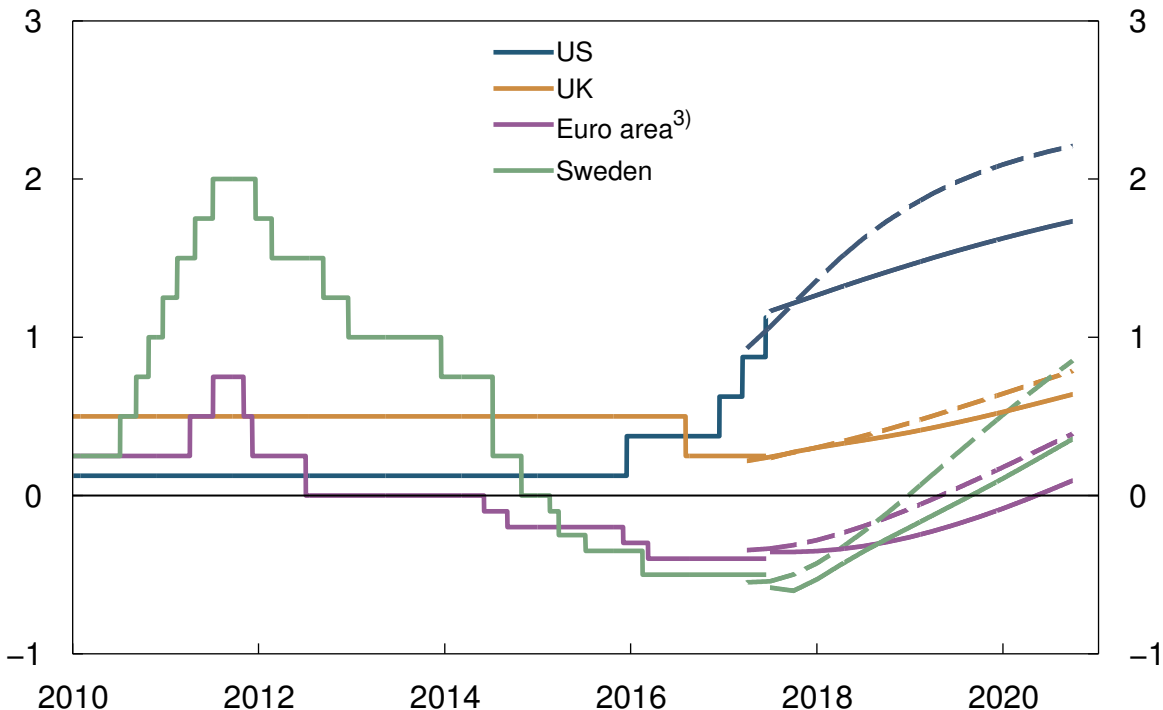
Chart 2.4 Yields on ten-year government bonds.
Percent. 1 January 2014 – 16 June 2017 [1)]

US
UK
Germany
Sweden
Norway

1) MPR 1/17 was based on information through 10 March 2017, indicated by the vertical line.
Source: Bloomberg

Chart 2.5 Policy rates and estimated forward rates[1] in selected advanced economies. Percent. 1 January 2010 – 31 December 2020[2]

1) Forward rates estimated on 10 March 2017 (broken lines) and on 16 June 2017 (solid lines). Forward rates are based on Overnight Index Swap (OIS) rates.
2) Daily data through 16 June 2017. Quarterly data from 2017 Q3.
3) ECB's deposit rate. Eonia from 2017 Q3.
Sources: Bloomberg, Thomson Reuters and Norges Bank

Chart 2.6 Selected equity price indexes. 4 January 2010 = 100.
4 January 2010 – 16 June 2017 [1]

- US [2]
- UK [3]
- Europe [4]
- Norway [5]
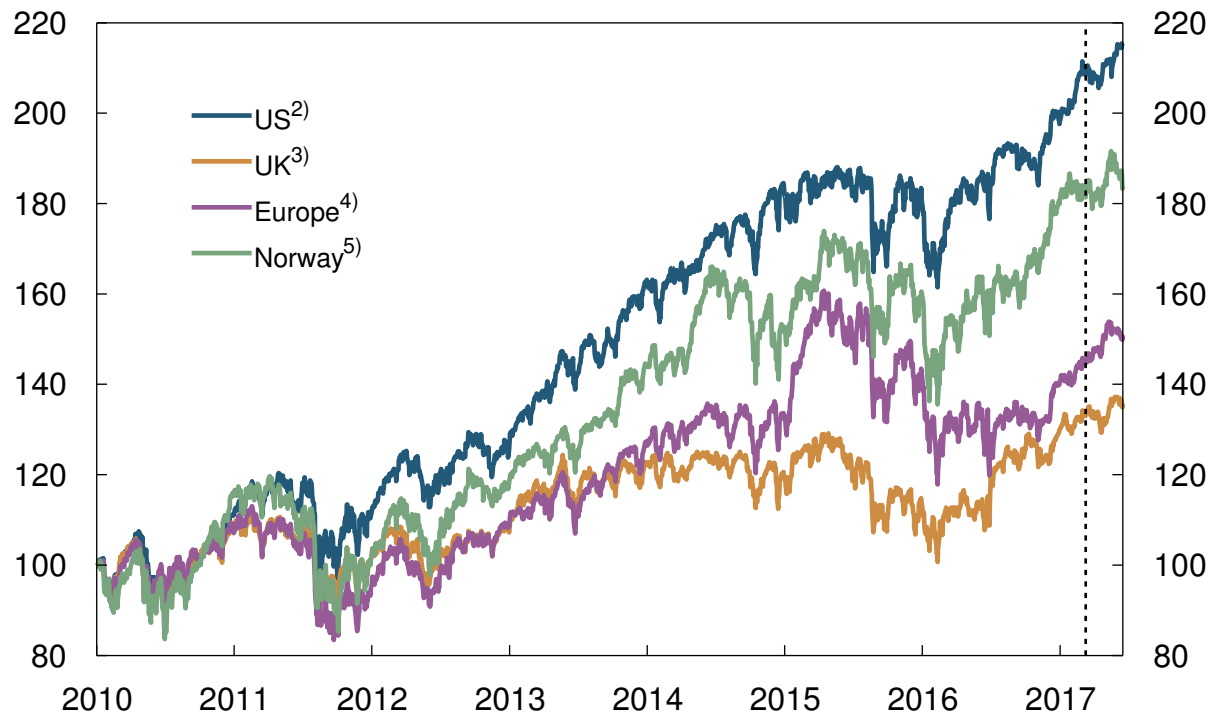
1) MPR 1/17 was based on information through 10 March 2017, indicated by the vertical line.
2) Standard and Poor's 500 Index.
3) Financial Times Stock Exchange 100 Index.
4) Stoxx Europe 600 Index.
5) OSE Benchmark Index.
Source: Bloomberg

Chart 2.7 US. Actual investment. Four-quarter percentage change.
2000 Q1 – 2017 Q1. Planned investment. Index.
Three-month moving average. March 2000 – May 2017
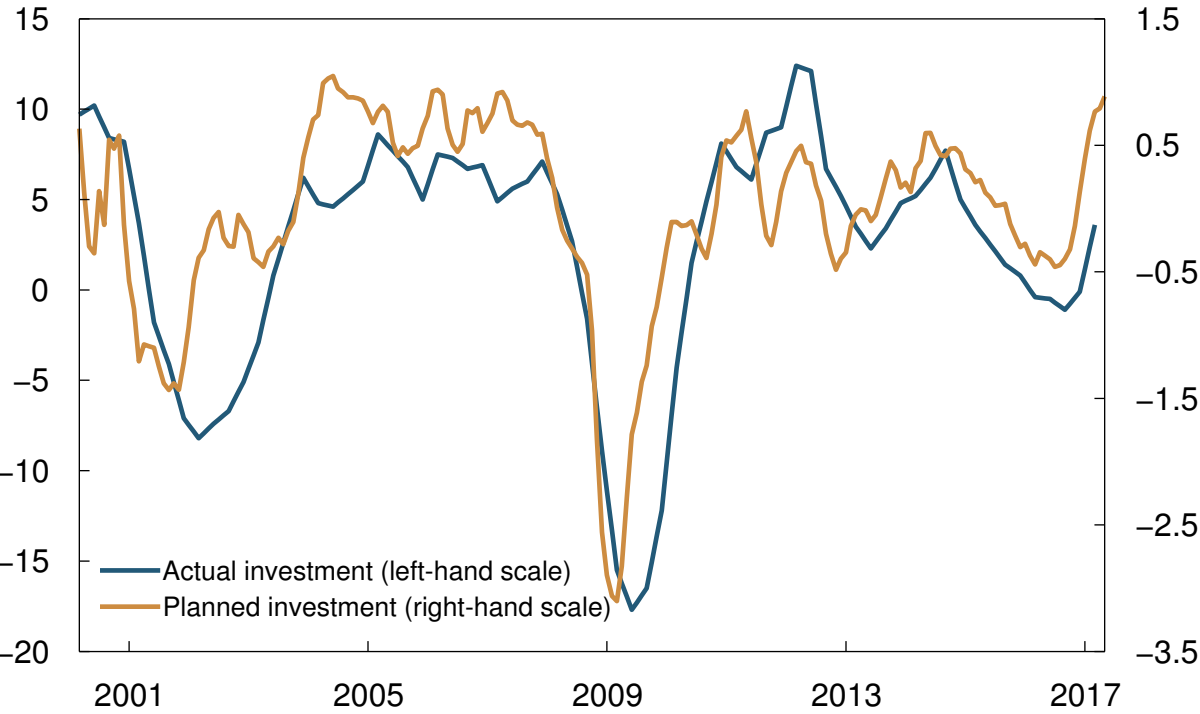
Sources: Thomson Reuters and Norges Bank

Chart 2.8 Unemployment in selected advanced economies.
Percent of the labour force. January 2005 – May 2017[1]

US
UK
Euro area
Sweden
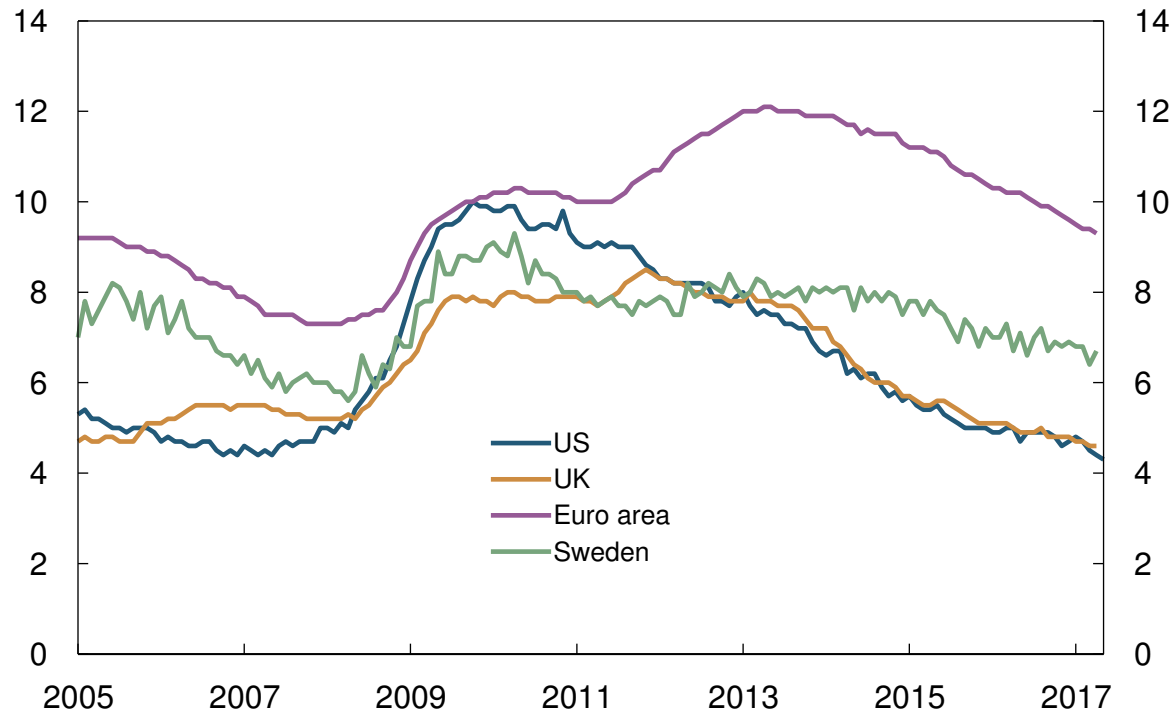
1) The last observation is April 2017 for the UK, the euro area and Sweden.
Source: Thomson Reuters

Chart 2.9 GDP and activity indicators in the euro area.
Quarterly percentage change. 2010 Q1 – 2017 Q2[1][2]
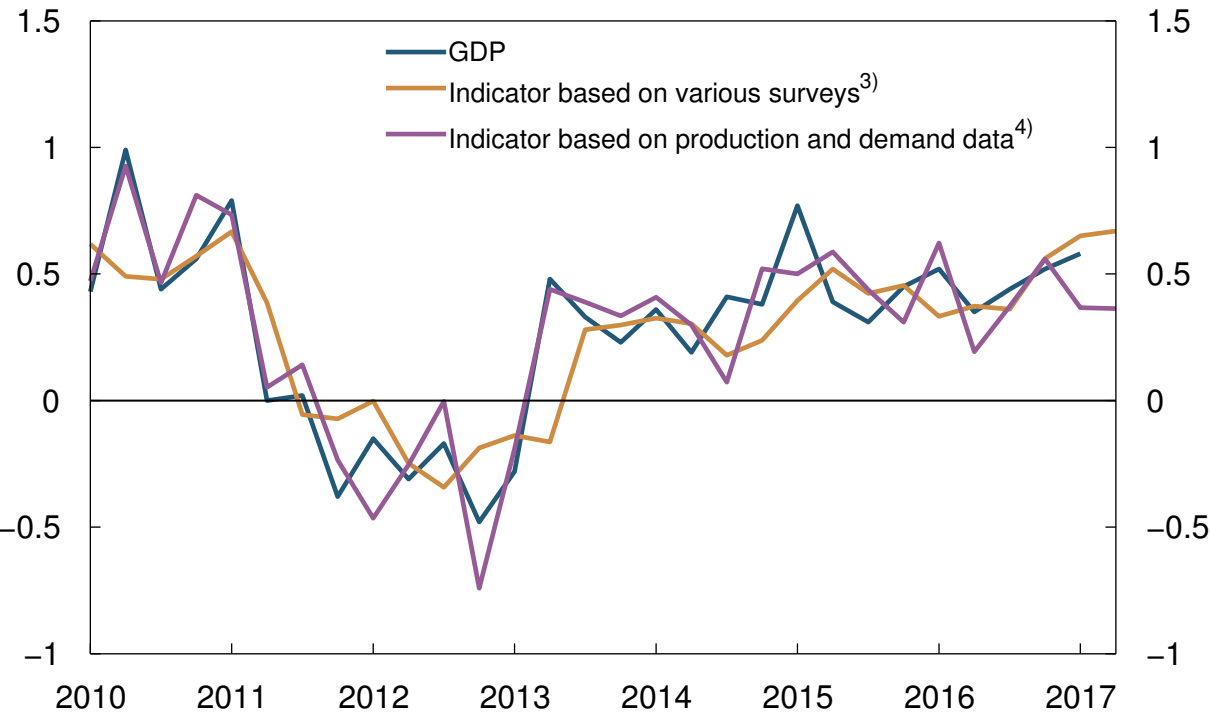
1) The last observation for GDP is 2017 Q1.
2) For 2017 Q2 the indicators are based on preliminary observations.
3) Based on monthly data for PMI, the European Commision's Economic Sentiment Indicator (ESI) and Eurocoin.
4) Based on monthly data for the manufacturing sector, the construction sector, car sales and retail sales.
Sources: Thomson Reuters and Norges Bank

Chart 2.10 Labour force participation and unemployment in Sweden. Three-month moving average. Labour force participation. Percent of working-age population (15-74 years). Unemployment. Percent of labour force. January 2010 – April 2017
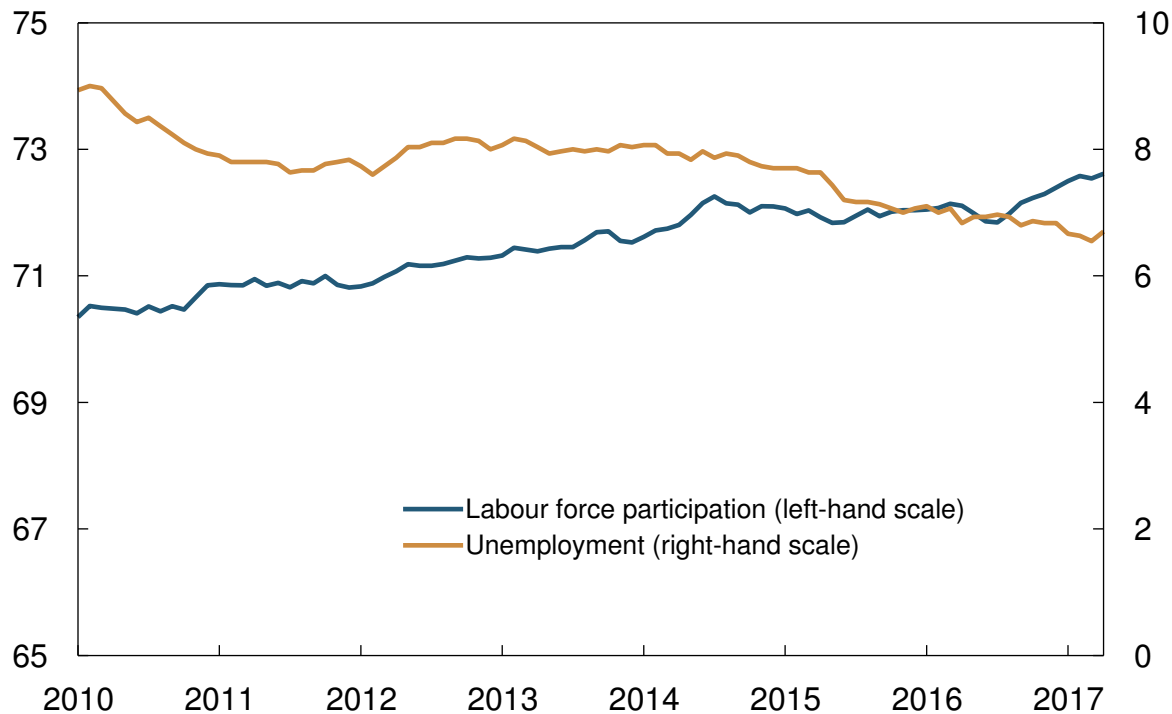

Labour force participation (left-hand scale)
Unemployment (right-hand scale)

Chart 2.11 Investment in China. Twelve-month percentage change.
Three-month moving average. January 2013 – April 2017
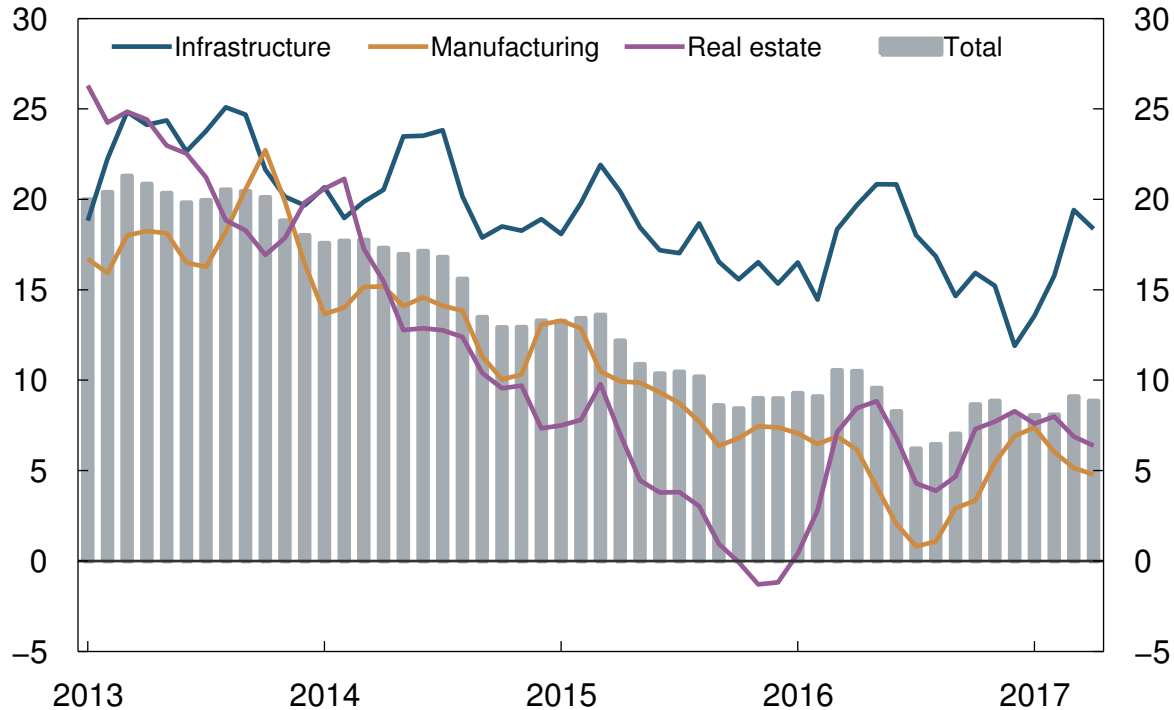
Chart 2.12 Wage growth in selected advanced economies.[1]
Annual percentage change. 2000 – 2016 [2]
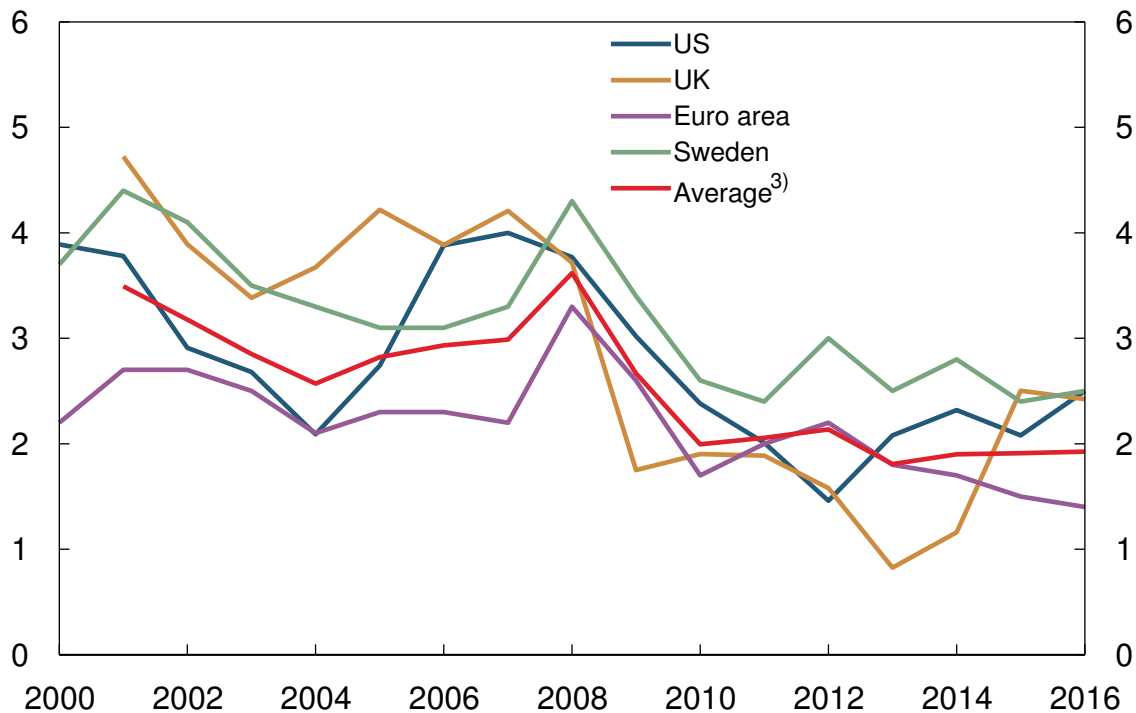
1) US: average hourly earnings, total private nonfarm. UK: average weekly earnings in the whole economy, excluding bonuses. Euro area: indicator of negotiated wages. Sweden: hourly wages according to NIER.
2) The first observation for the UK and the first calculated average is 2001.
3) Export weights.
Sources: NIER, Thomson Reuters and Norges Bank

Chart 2.13 Unit labour cost in selected advanced economies.
Four-quarter percentage change. Three-quarter moving average.
2000 Q1 – 2017 Q1[1]
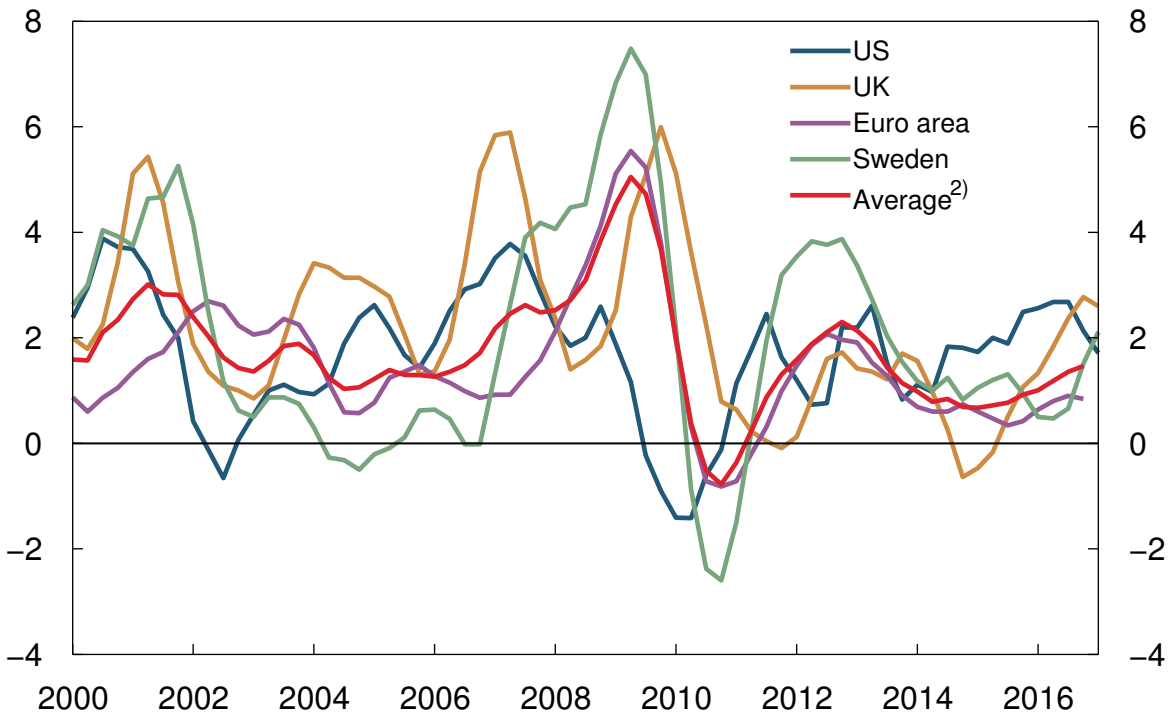
1) The last observation for the euro area and the last calculated average is 2016 Q4.
2) Export weights.
Sources: OECD, Thomson Reuters and Norges Bank

Chart 2.14 Total OECD oil inventories.
In billions of barrels. January 2012 – April 2017

Interval 2012 – 2016[1]
Average 2012 – 2016
2017
2016
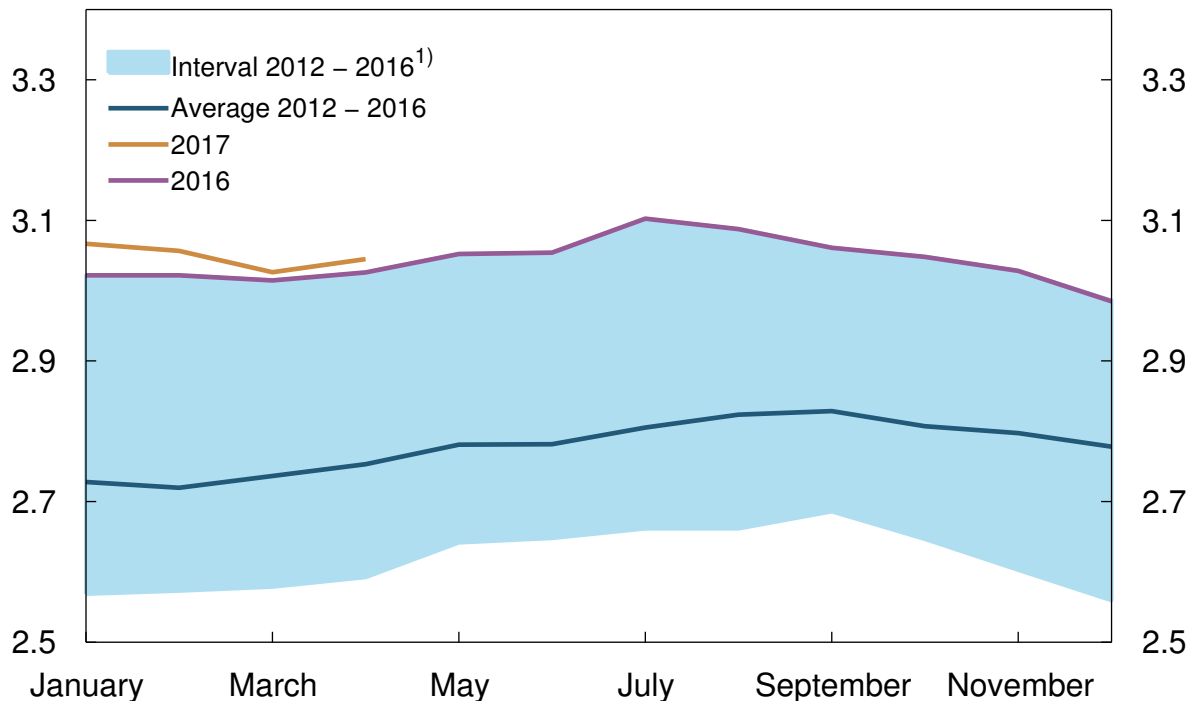
1) The difference between the highest and lowest levels in the period 2012 – 2016.
Sources: IEA and Norges Bank

Chart 2.15 Active rigs and crude oil production in the US.
Production. In millions of barrels per day. Week 1 2013 – week 24 2017
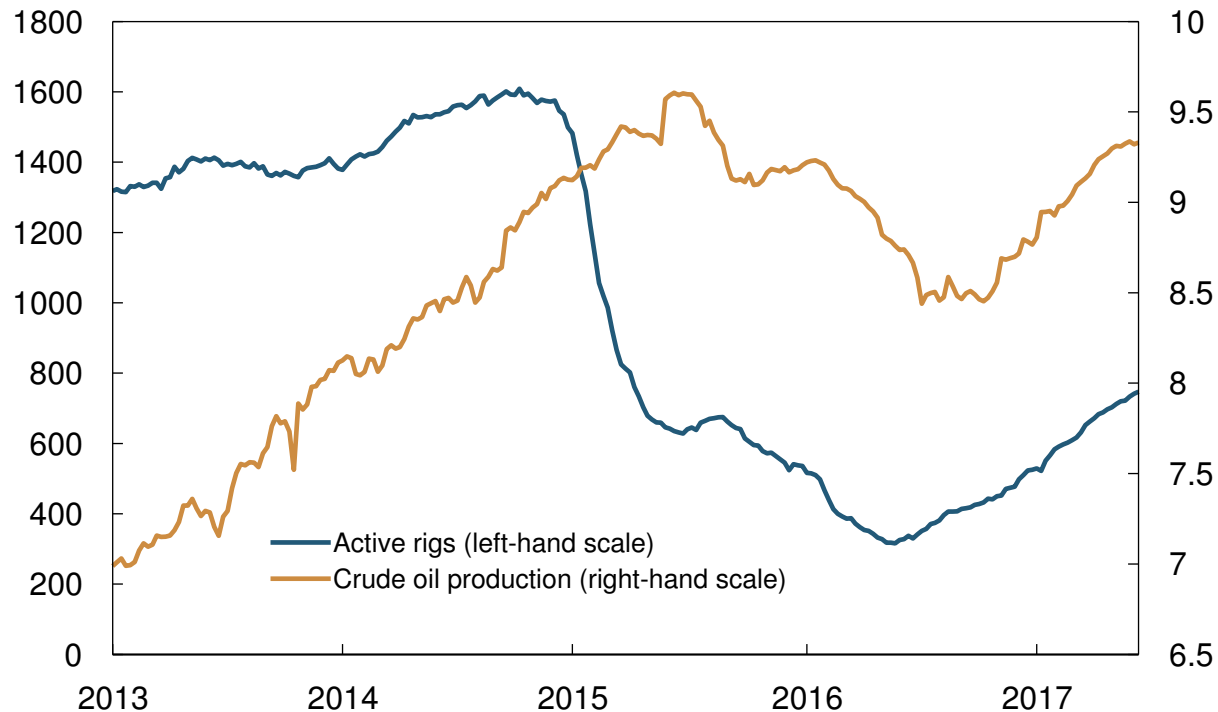
Chart 3.1 Three-month money market premium. Percentage points.
Five-day moving average. 1 January 2014 – 31 December 2020 [1]

Norwegian three month money market premium [2]

Kliem premium [3]

Projections MPR 2/17

Projections MPR 1/17
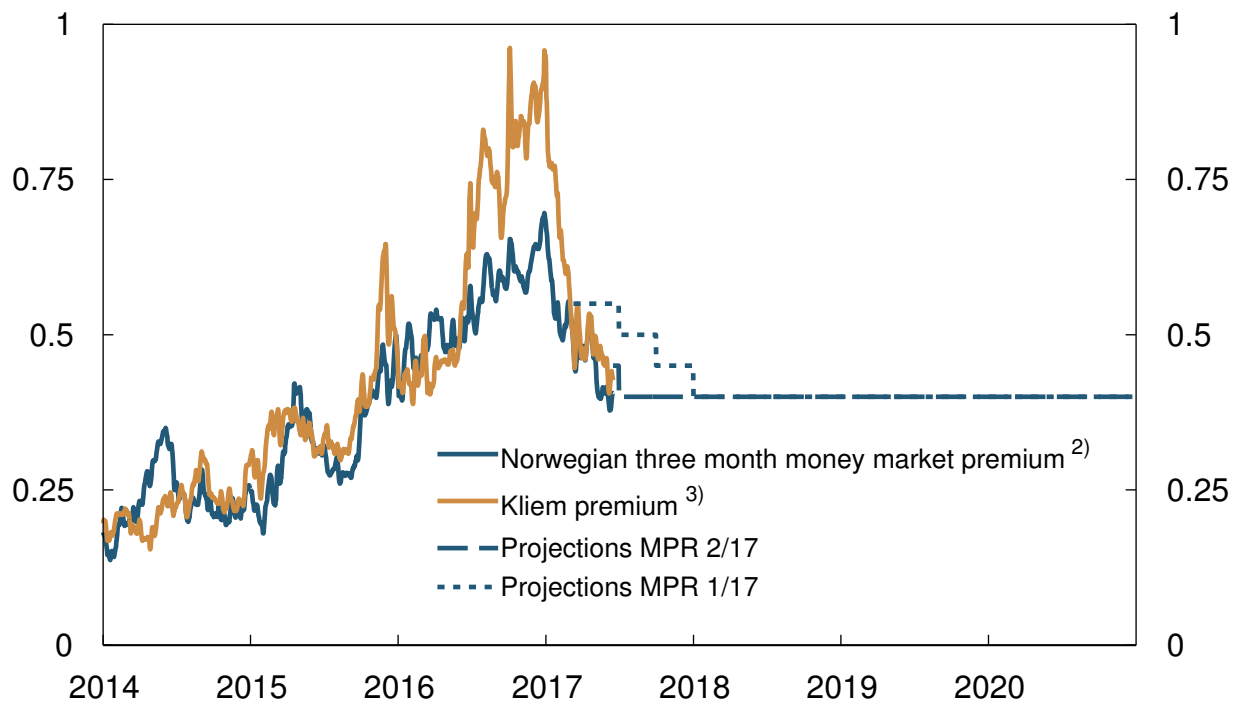
1) Projections for 2017 Q1 – 2020 Q4 in MPR 1/17 and projections for 2017 Q2 – 2020 Q4 in MPR 2/17.
2) Norges Bank estimates of the difference between the three-month money market rate and the expected
key policy rate.
3) The Kliem premium is intended to reflect European banks' cost of USD interbank borrowing.
In practice, the Kliem rate is the European money market rate, Euribor, swapped into USD.
Sources: Bloomberg, Thomson Reuters and Norges Bank

Chart 3.2 Average risk premiums on new and outstanding bond debt for Norwegian banks.[1] Percentage points. January 2010 – December 2020[2]

Legend:
- Risk premium, new bank bonds
- Risk premium, new covered bonds
- Risk premium, bank bonds outstanding
- Risk premium, covered bonds outstanding
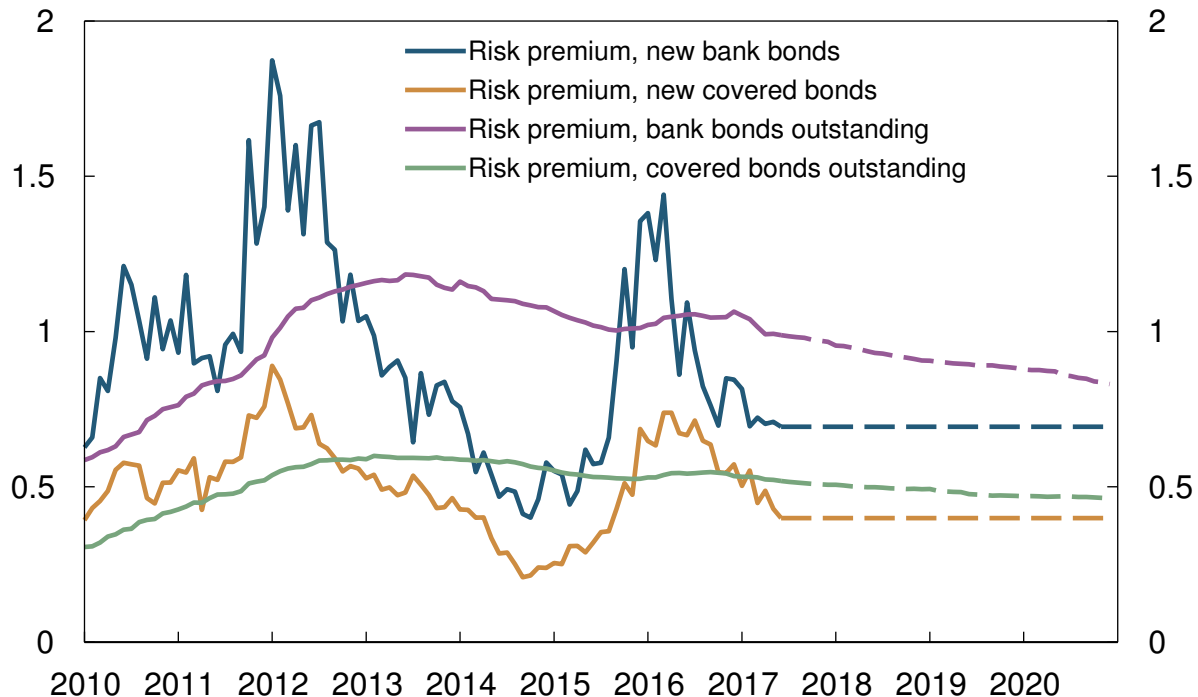
1) Spread to three-month money market rate.
2) Projections for June 2017 – December 2020 (broken lines).
Sources: Bloomberg, DNB Markets, Stamdata and Norges Bank

Chart 3.3 Interest rates. Percent. 2010 Q1 – 2020 Q4 [1]

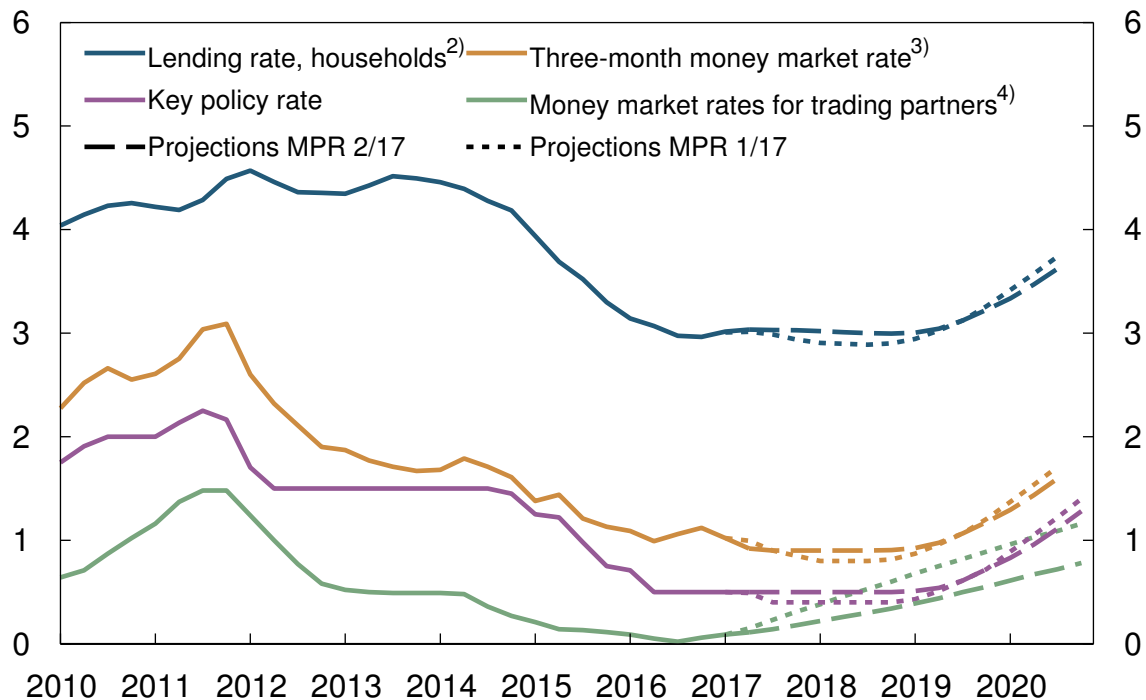1) Projections for 2017 Q2 – 2020 Q4 (broken lines).
2) Average interest rate on all loans to households from banks and mortgage companies.
3) Key policy rate plus Norwegian money market premium. The calculations are based on the assumption that the key policy rate forecast is priced into the money market.
4) Based on money market rates and and interest rate swaps. The aggregate for trading partner three-month interest rates is described in *Norges Bank Memo* 2/2015.
Sources: Statistics Norway, Thomson Reuters and Norges Bank

Chart 3.4 Oil price[1] and import-weighted exchange rate index (I-44)[2].
1 January 2014 – 16 June 2017 [3]

- Oil price (left-hand scale)
- I-44 (right-hand scale)
- Projections I-44 MPR 1/17
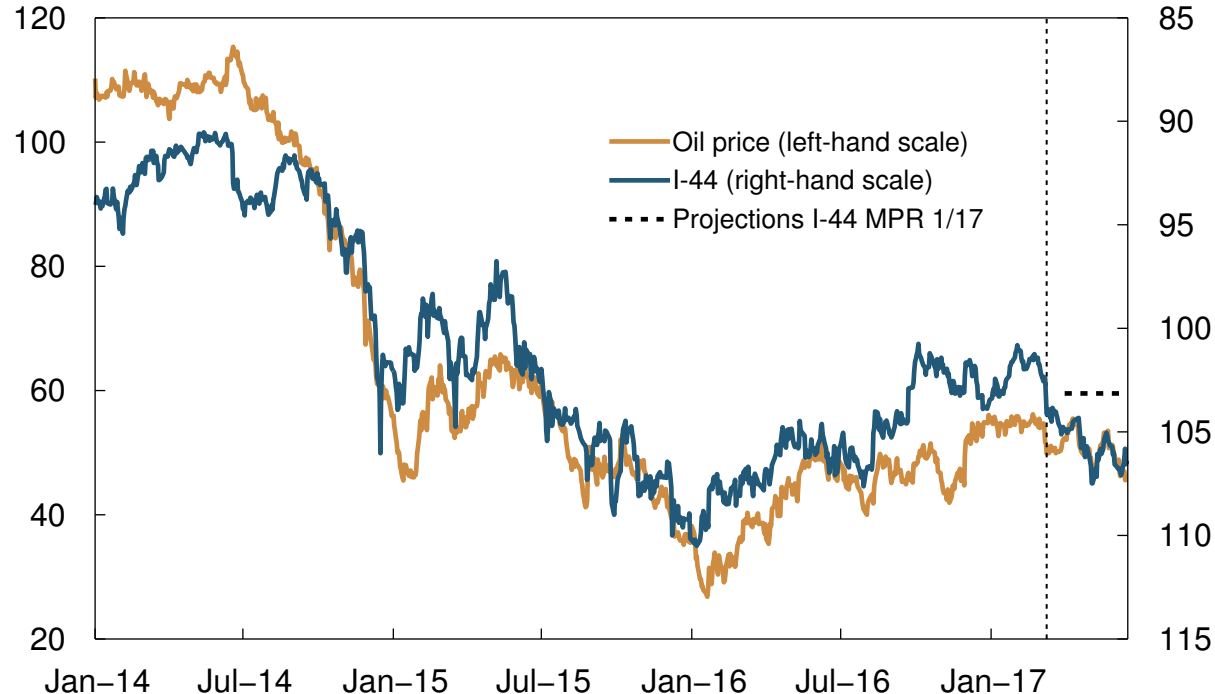
1) Brent Blend. USD/barrel.
2) A positive slope denotes a stronger krone exchange rate.
3) MPR 1/17 was based on information in the period to 10 March 2017, marked by the vertical line.
Sources: Thomson Reuters and Norges Bank

Chart 3.5 Output growth as reported by regional network. Annualised. Percent

Legend:
- February – Growth past three months
- May – Growth past three months
- May – Expected growth next six months

Categories:
- Construc–tion
- Export oriented mfg.
- Domest. oriented mfg.
- Oil serv. export market
- Oil serv. domest. market
- Househ. services
- Commerc. services
- Retail trade
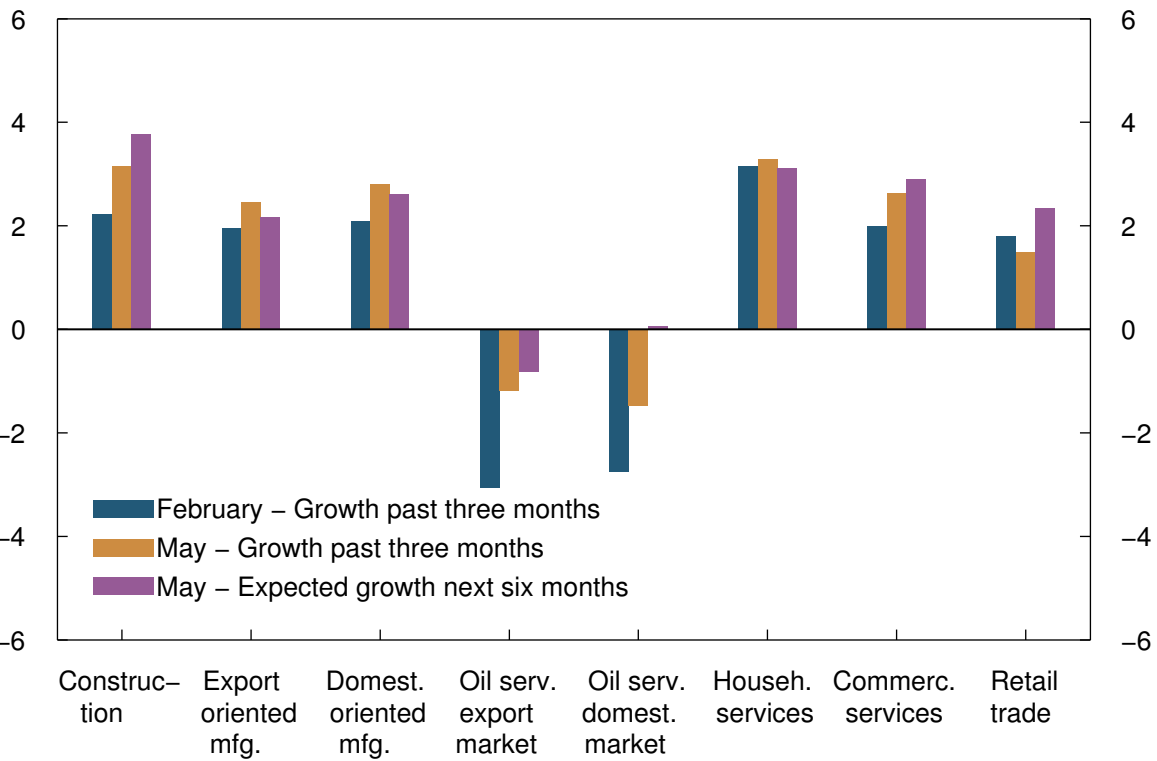
Source: Norges Bank

Chart 3.6 GDP for mainland Norway and regional network's indicator of output growth[1]. Quarterly growth. Percent. 2014 Q1 – 2017 Q3[2]
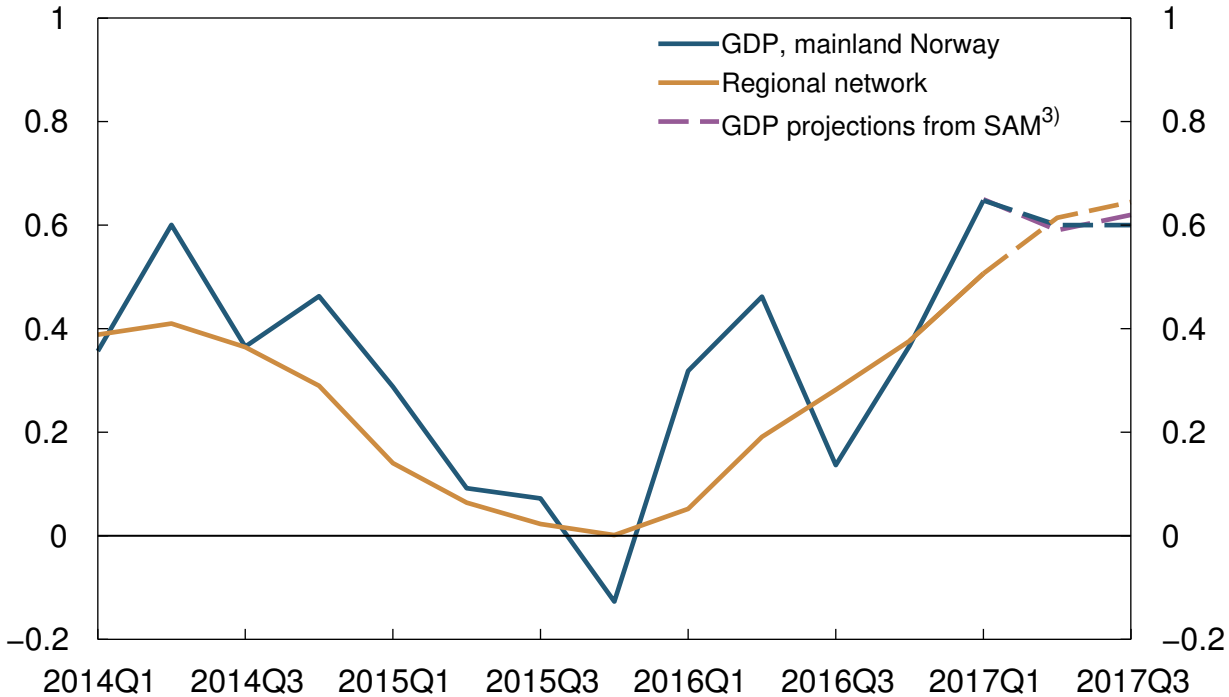
1) Reported output growth past three months converted to quarterly figures (solid line). The quarterly figures are calculated by weighting together three-monthly figures based on when the survey was carried out. For 2017 Q2, expected output growth is estimated by weighting together reported growth over the past three months and expected growth in the next six months. 2017 Q3 is expected growth in the next six months reported in May (broken orange line).
2) Projections for 2017 Q2 – 2017 Q3 (broken lines).
3) System for Averaging short-term Models.
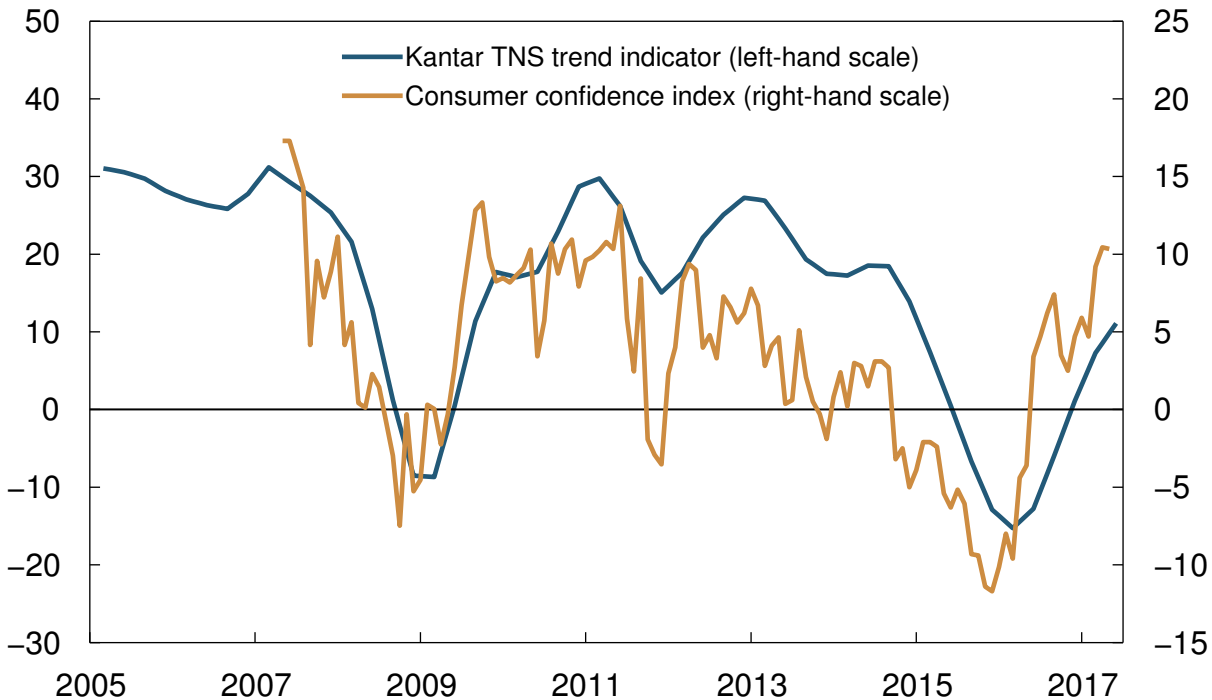Sources: Statistics Norway and Norges Bank

Chart 3.7 Household consumption of goods and services.
Four-quarter change. Seasonally adjusted. Percent. 2005 Q1 – 2017 Q1
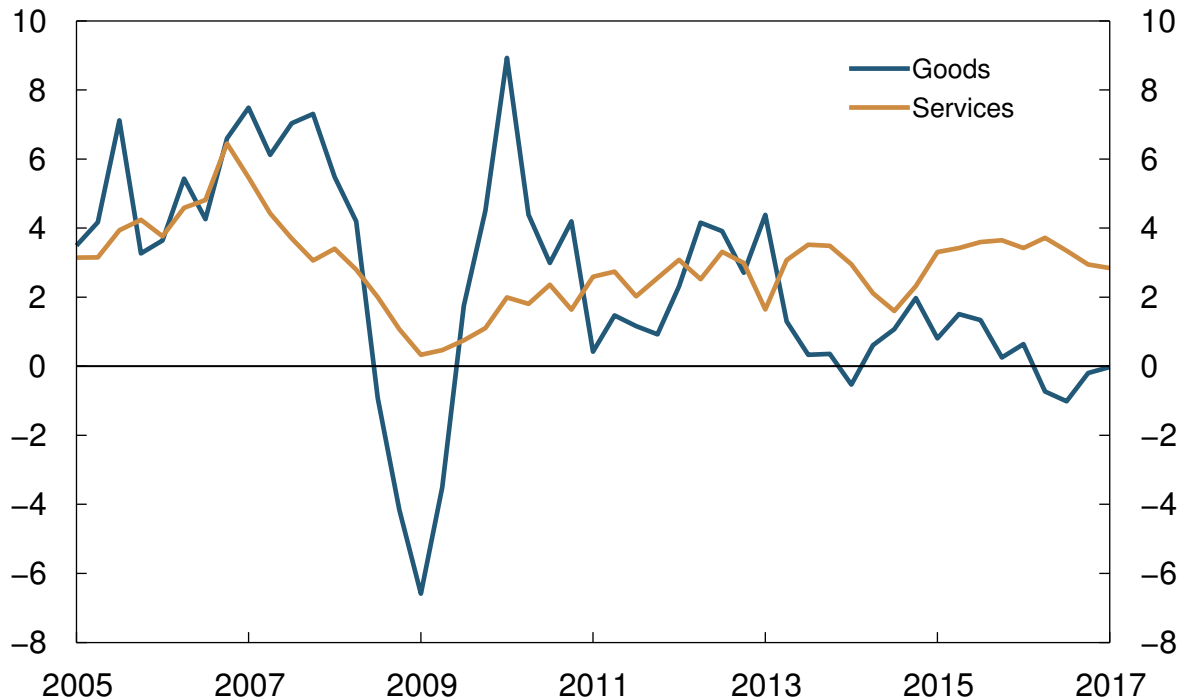
Source: Statistics Norway

Chart 3.8 Consumer confidence. Net values. Kantar TNS trend indicator for households. 2005 Q1 – 2017 Q2. Opinion consumer confidence index (CCI). May 2007 – May 2017

Sources: Kantar TNS and Opinion

Chart 3.9 Household debt ratio, interest burden and debt service ratio.[1]
Percent. 1983 Q1 – 2020 Q4 [2]

- Interest burden (left-hand scale)
- Debt service ratio (left-hand scale)
- Debt ratio (right-hand scale)
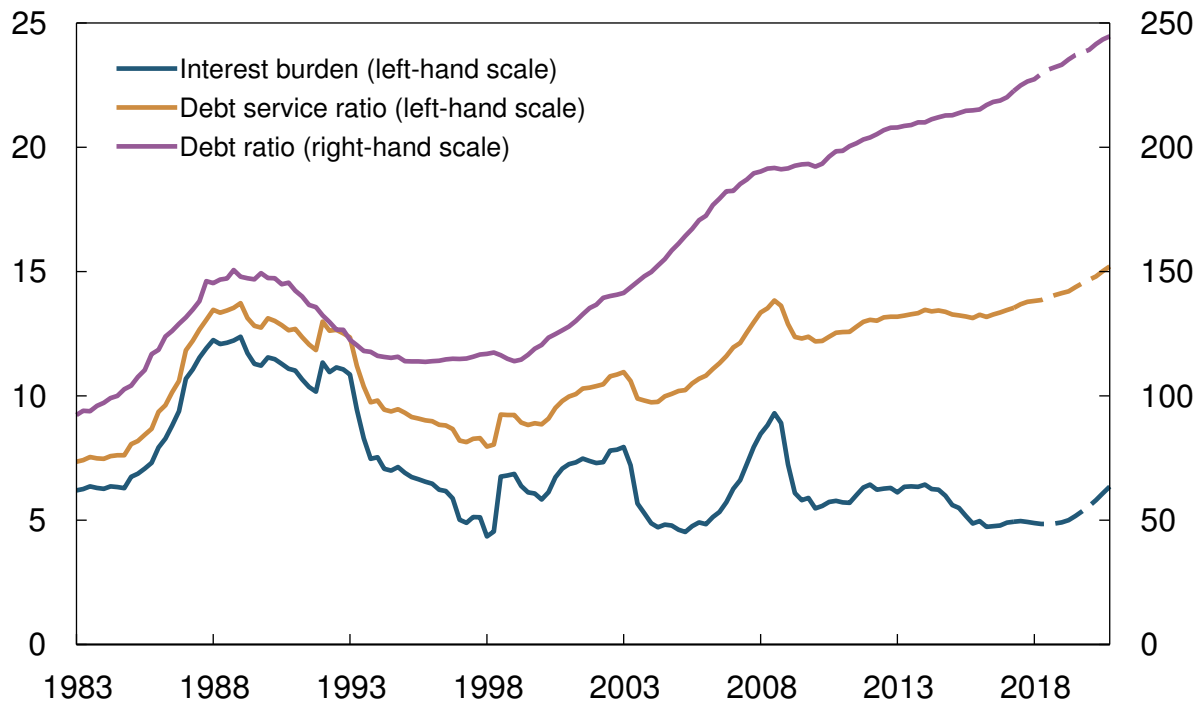
1) The debt ratio is loan debt as a percentage of disposable income. The interest burden is calculated as interest expenses as a percentage of disposable income plus interest expenses. The debt service ratio also includes estimated principal payments on an 18–year mortgage. Disposable income is adjusted for estimated reinvested dividend income for 2000 Q1 – 2005 Q4 and reduction of equity capital for 2006 Q1 – 2012 Q3. For 2015 Q1 – 2017 Q1 growth in disposable income excluding dividends is used.
2) Projections for 2017 Q2 – 2020 Q4 (broken lines).
Sources: Statistics Norway and Norges Bank

Chart 3.10 Household consumption[1] and real disposable income[2].
Annual change. Percent. 2005 – 2020[3]
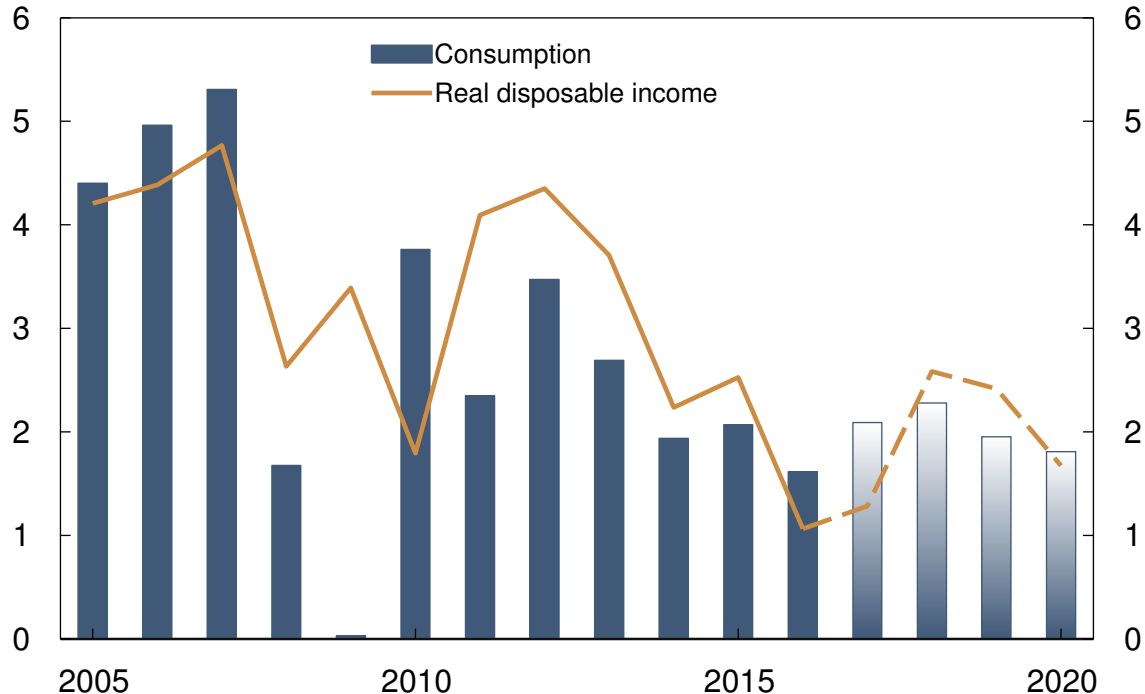
1) Includes consumption for non-profit organisations.
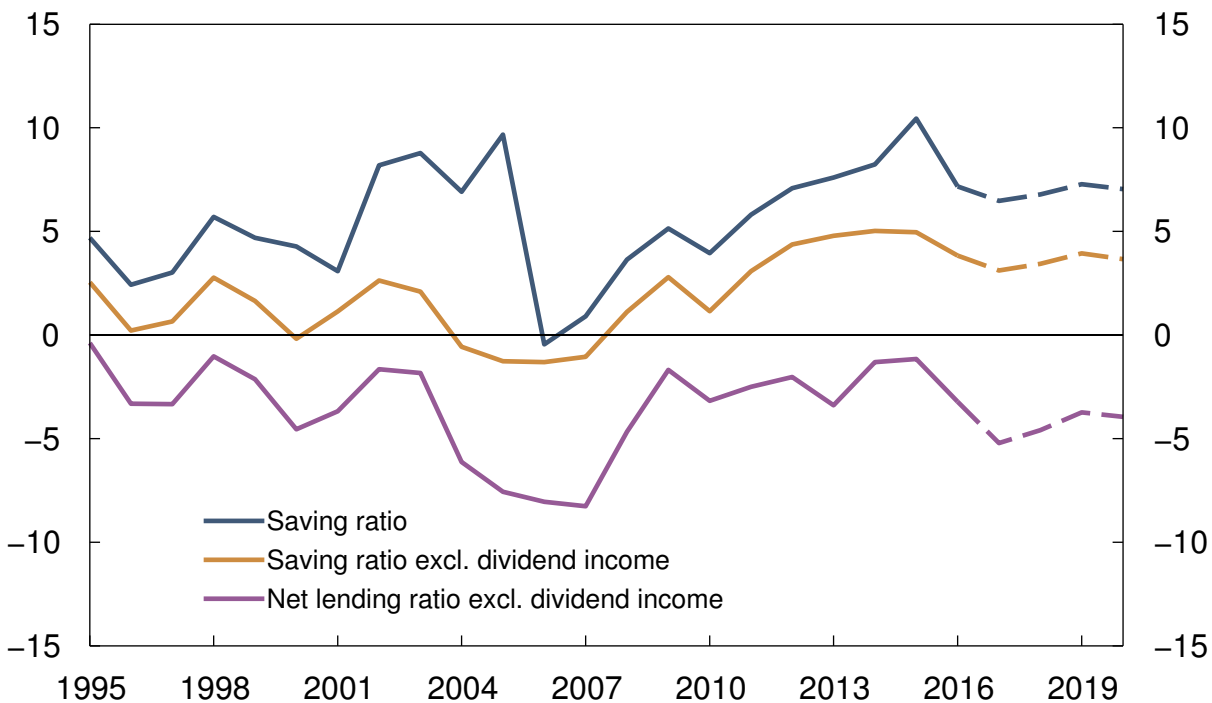2) Excluding dividend income. Including income for non-profit organisations. Deflated by the CPI.
3) Projections for 2017 – 2020 (broken line and shaded bars).
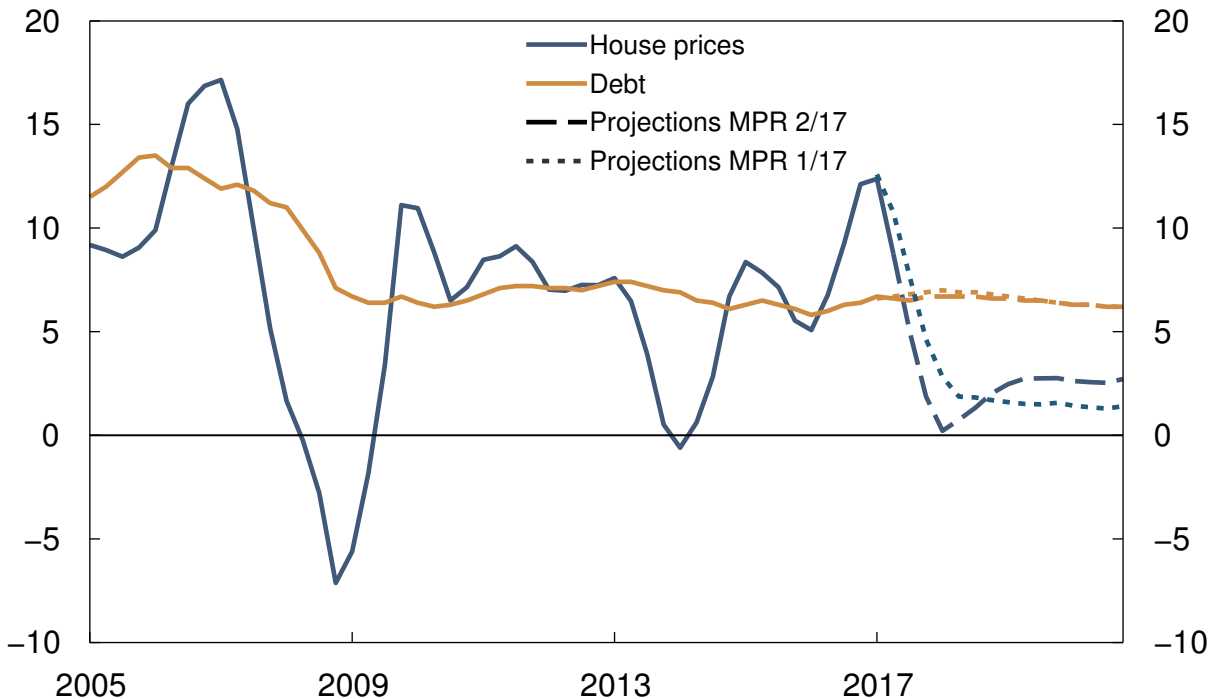Sources: Statistics Norway and Norges Bank

Chart 3.11 Household saving and net lending as a share of disposable income.
Percent. 1995 – 2020 [1]

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

Chart 3.12 House prices and household debt[1].
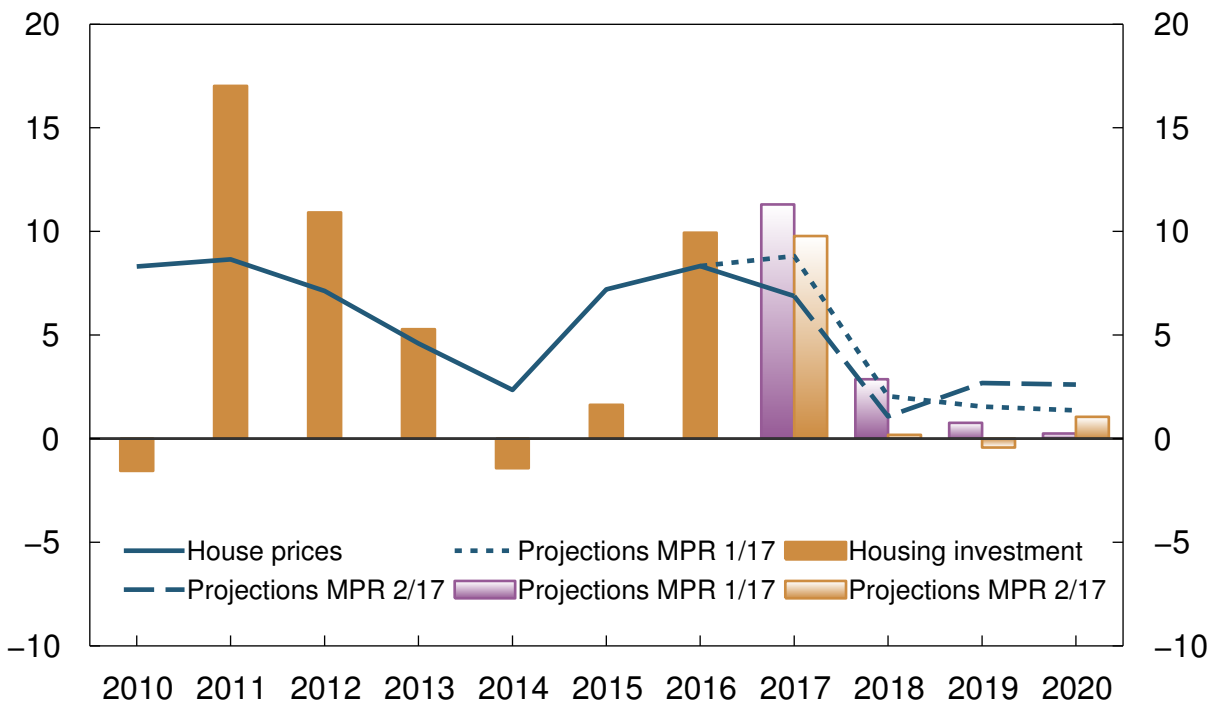Four-quarter change. Percent. 2005 Q1 – 2020 Q4[2]

1) Domestic credit to households (C2).
2) Projections for 2017 Q2 – 2020 Q4 (broken lines).
Sources: Eiendomsverdi, Finn.no, Real Estate Norway, Statistics Norway and Norges Bank

Chart 3.13 Housing investment and house prices. Annual change. Percent. 2010 – 2020 [1]

Legend:
- House prices
- Projections MPR 2/17
- Projections MPR 1/17
- Projections MPR 1/17
- Housing investment
- Projections MPR 2/17
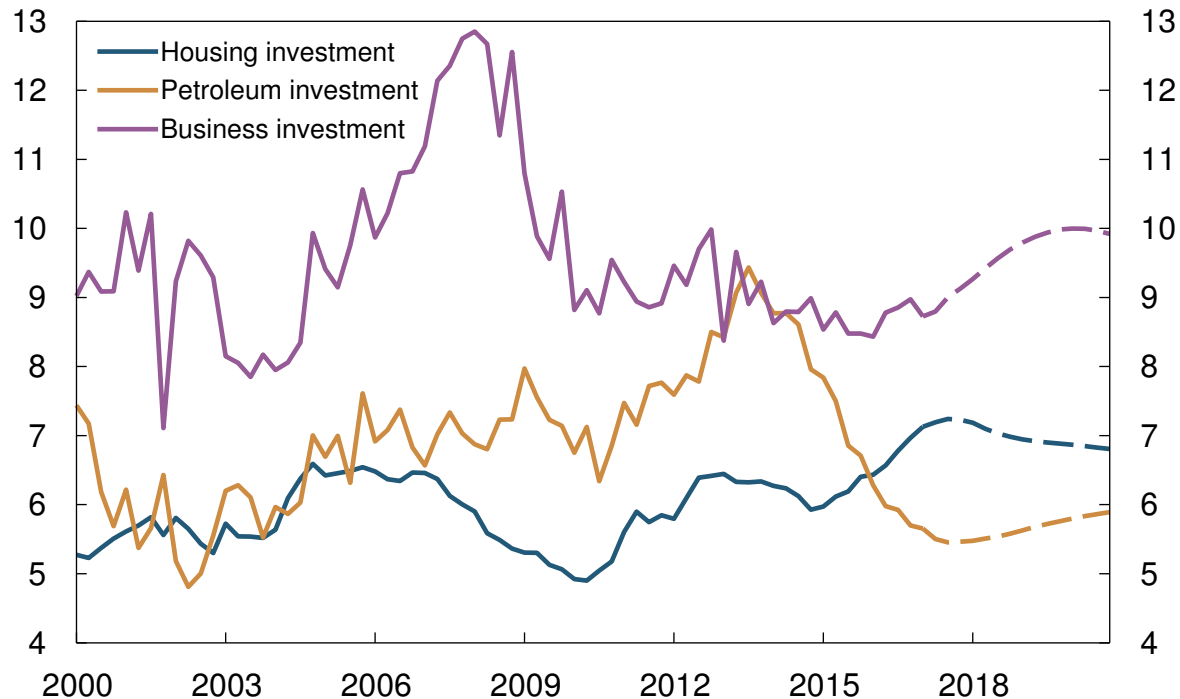
1) Projections for 2017 – 2020 (broken lines and shaded bars).
Sources: Eiendomsverdi, Finn.no, Real Estate Norway, Statistics Norway and Norges Bank

Chart 3.14 Housing, petroleum and business investment as a share of GDP for mainland Norway. Seasonally adjusted. Percent. 2000 Q1 – 2020 Q4 [1]

- Housing investment
- Petroleum investment
- Business investment

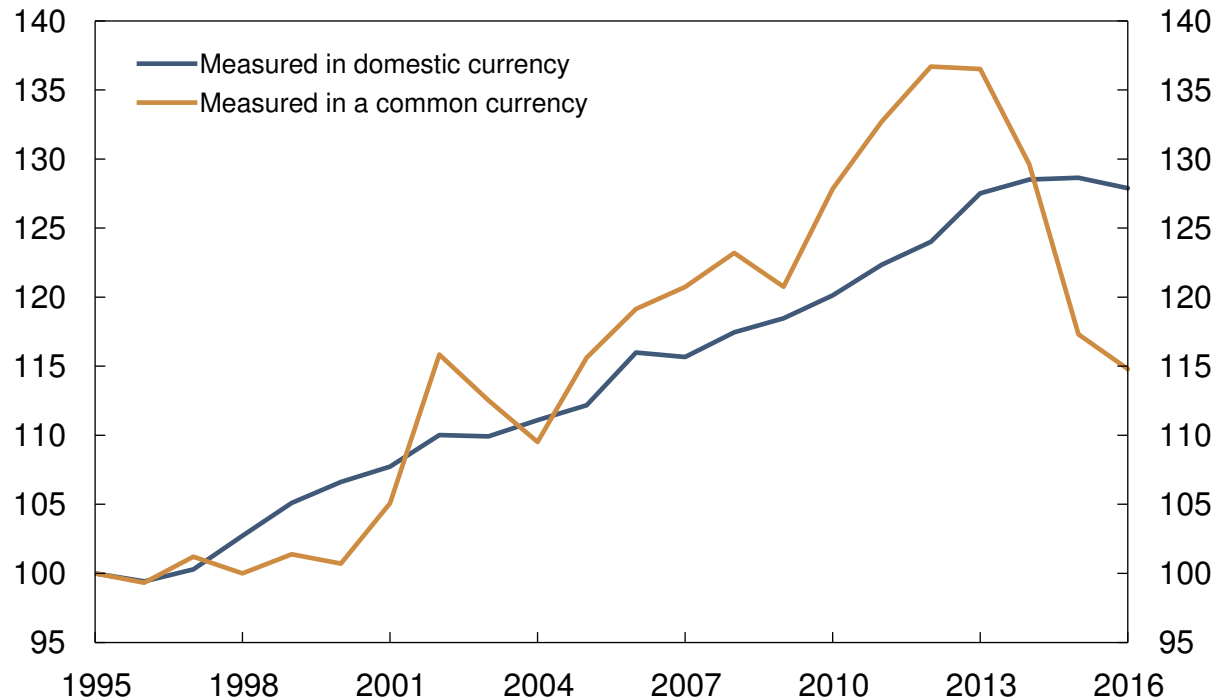1) Projections for 2017 Q2 – 2020 Q4 (broken lines).
Sources: Statistics Norway and Norges Bank

Chart 3.15 Norwegian labour costs relative to trading partners'.[1]
Index. 1995 = 100. 1995 – 2016

- 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 3.16 Exports from mainland Norway and imports among Norway's trading partners. Annual change. Percent. 2010 – 2020[1]

Legend:
- Imports among Norway's trading partners
- Exports from mainland Norway
- Exports from oil service industry etc. [2]
- Other exports from mainland Norway
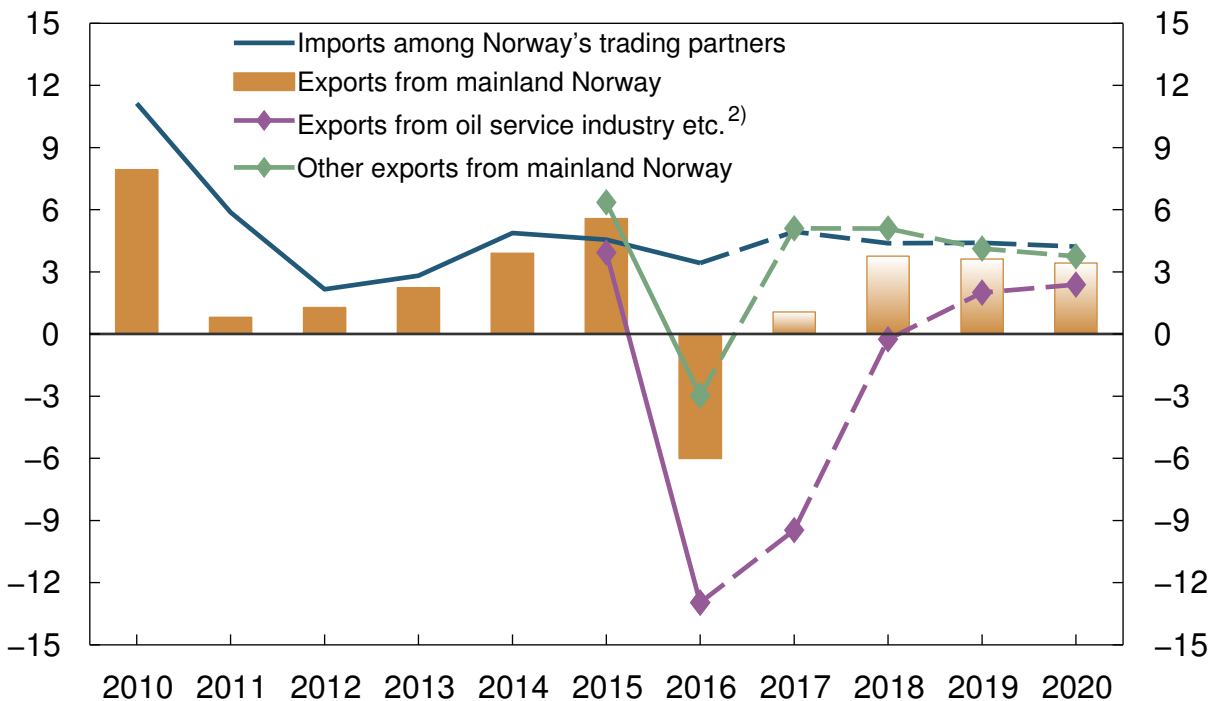
1) Projections for 2017 – 2020 (broken lines and shaded bars).
2) Groups of goods and services in the national accounts where the oil service industry accounts for a considerable share of exports.
Sources: Statistics Norway, Thomson Reuters and Norges Bank

Chart 3.17 Employment in the quarterly national accounts and the LFS.[1]
Seasonally adjusted. Index. 2010 Q1 = 100. 2010 Q1 – 2017 Q1
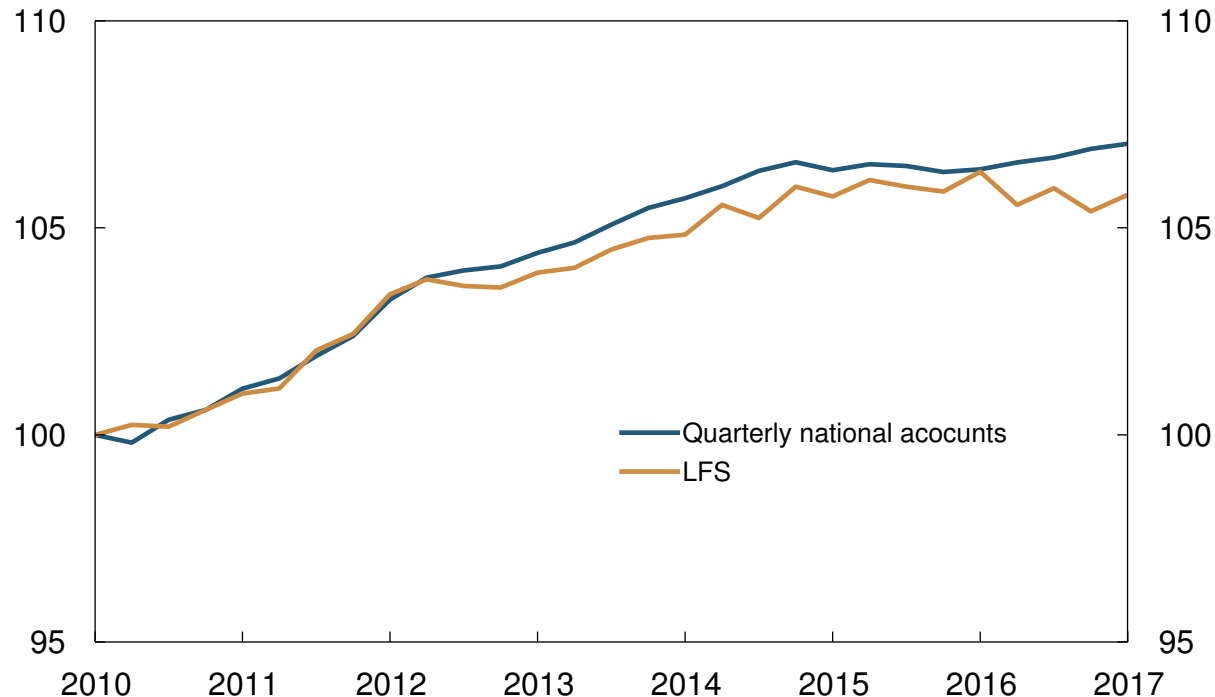
1) The quarterly national accounts and the LFS (Labour Force Survey) normally show different levels of employment. This is because the LFS only counts permanent residents, while the national accounts also include temporary residents.
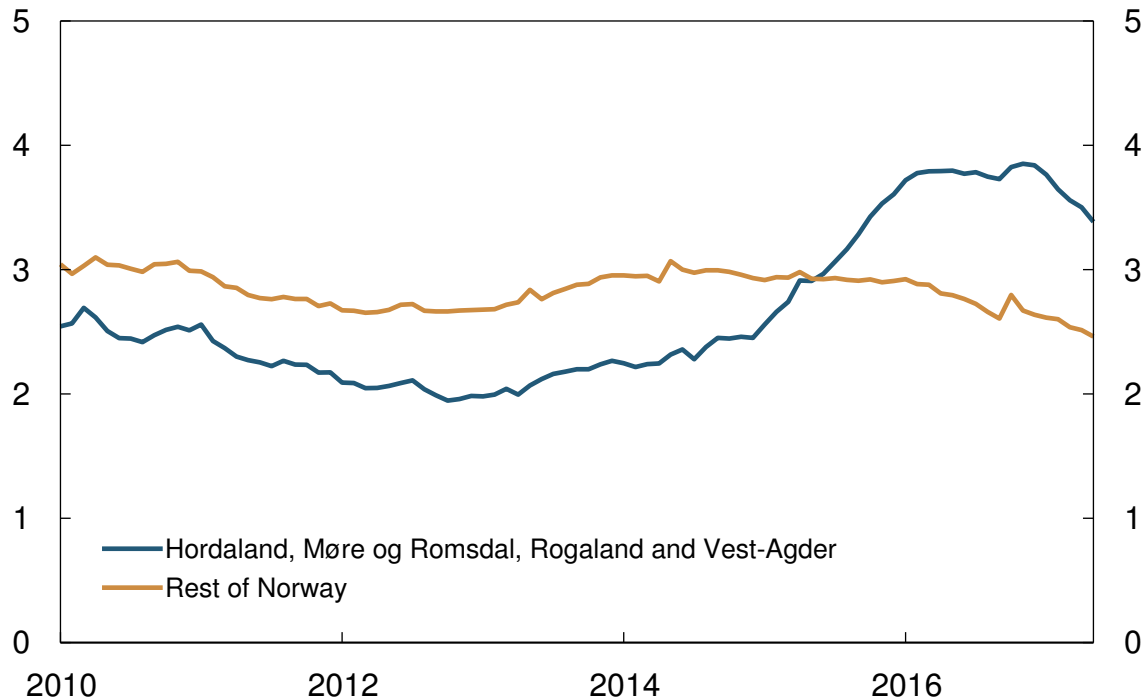Source: Statistics Norway and Norges Bank

Chart 3.18 Employment by sector in the quarterly national accounts and the LFS[1]. In thousands. Change from 2016 Q1 – 2017 Q2.
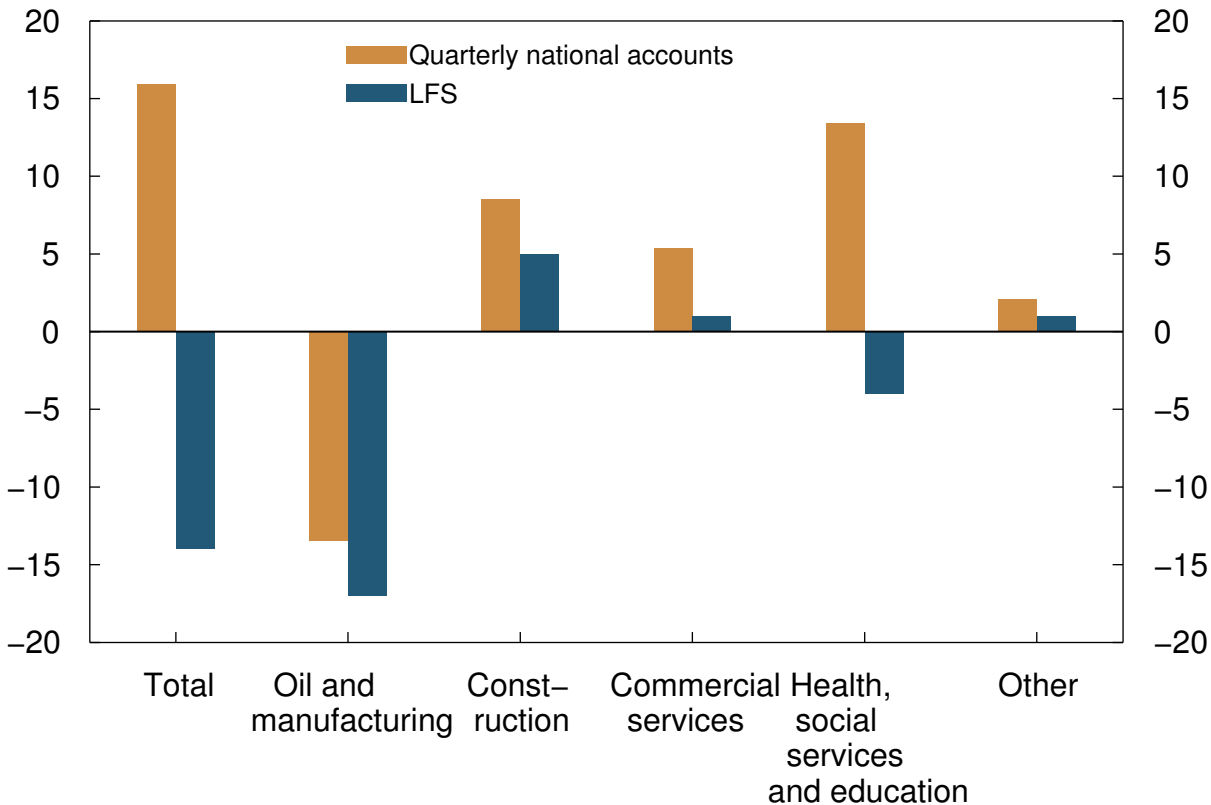
Chart 3.19 Registered unemployment by county.
Share of labour force. Seasonally adjusted. Percent. January 2010 – May 2017

Hordaland, Møre og Romsdal, Rogaland and Vest-Agder
Rest of Norway

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

Chart 3.20 Expected change in employment. Regional network.[1] Percent.
Norges Bank's expectations survey. Diffusion index.[2] 2010 Q1 – 2017 Q2

Regional network (left-hand scale)
Expectations survey (right-hand scale)
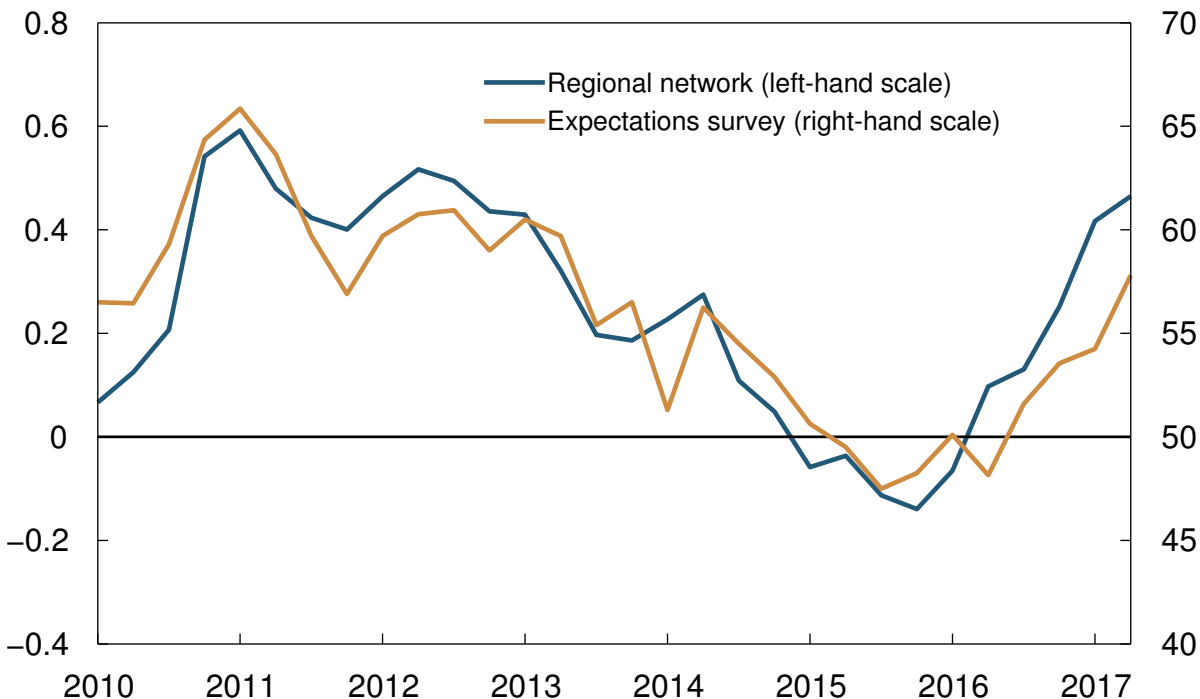
1) Expected change in employment next three months.
2) Share of business leaders who expect "more employees" in their own company the following 12 months
+ (1/2 * share who expect "unchanged number of employees").
Sources: Epinion and Norges Bank

Chart 3.21 Announced downsizing by county.[1]
Three-month moving average. In thousands. March 2014 – April 2017

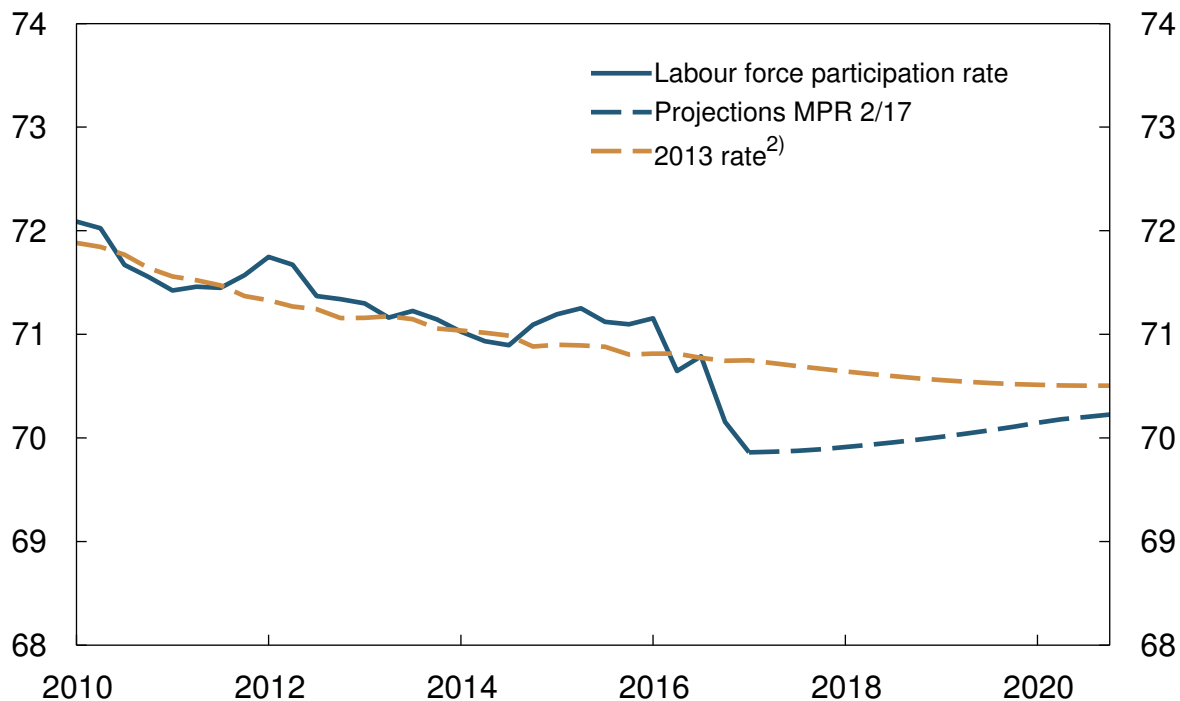- Hordaland, Møre og Romsdal, Rogaland and Vest-Agder
- Rest of Norway
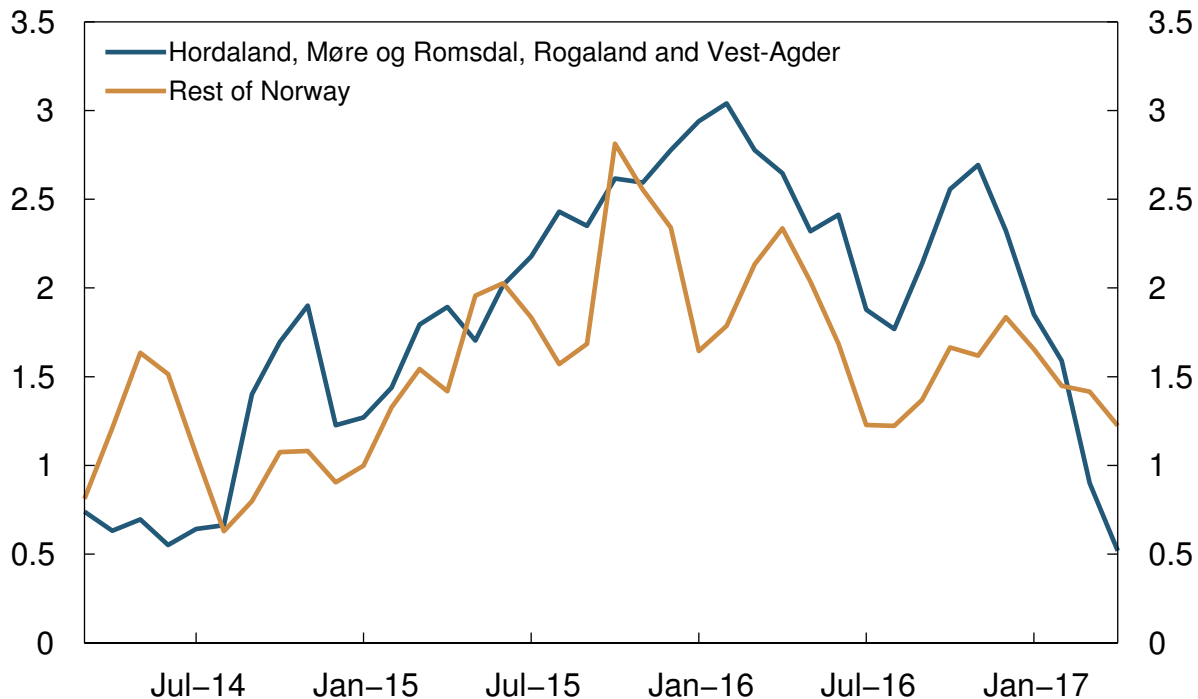
1) Number of persons affected by layoff or redundancy.
Sources: Norwegian Labour and Welfare Administration (NAV) and Norges Bank

Chart 3.22 Labour force participation rates. Labour force as a share
of the population (aged 15 – 74). Seasonally adjusted.
Percent. 2010 Q1 – 2020 Q4 [1]

1) Projections 2017 Q2 – 2020 Q4.
2) Developments in the labour force participation rate for the population (aged 15 – 74) at constant
2013 rates for each age cohort. The line slopes downward because a growing number of persons
are entering age groups with lower labour force participation rates, owing to the ageing of the population.
2013 was chosen because capacity utilisation was close to a normal level that year.
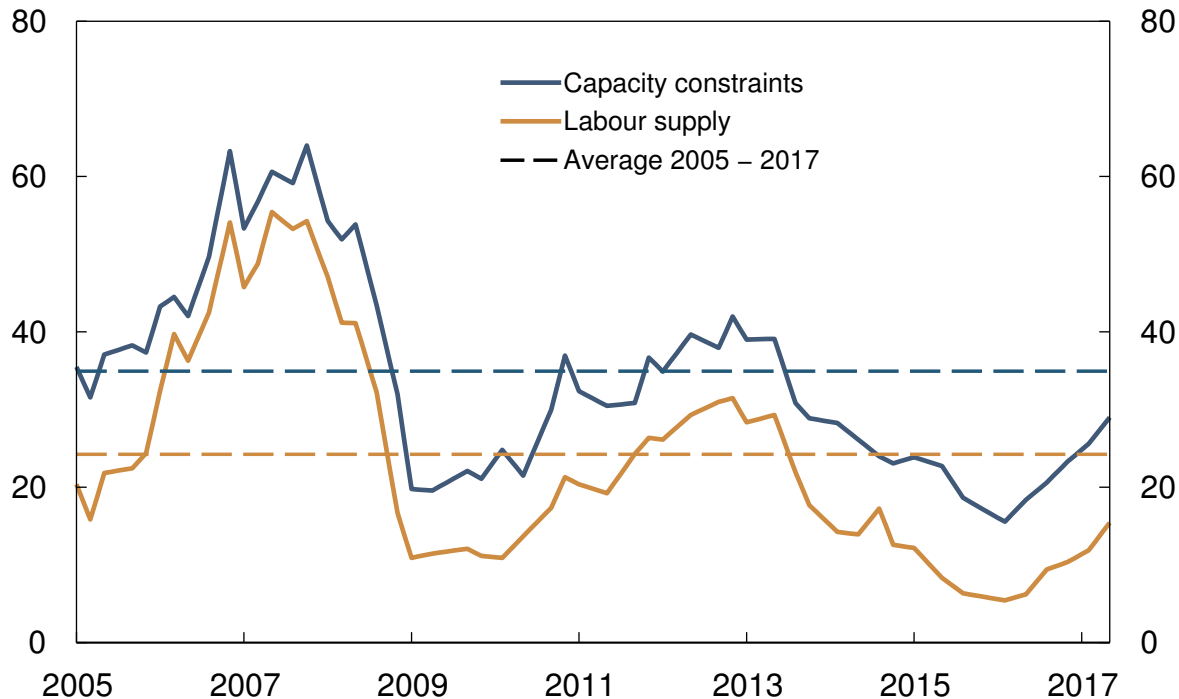Sources: Statistics Norway and Norges Bank

Chart 3.23 Net immigration by country of origin. In thousands. 2005 – 2016
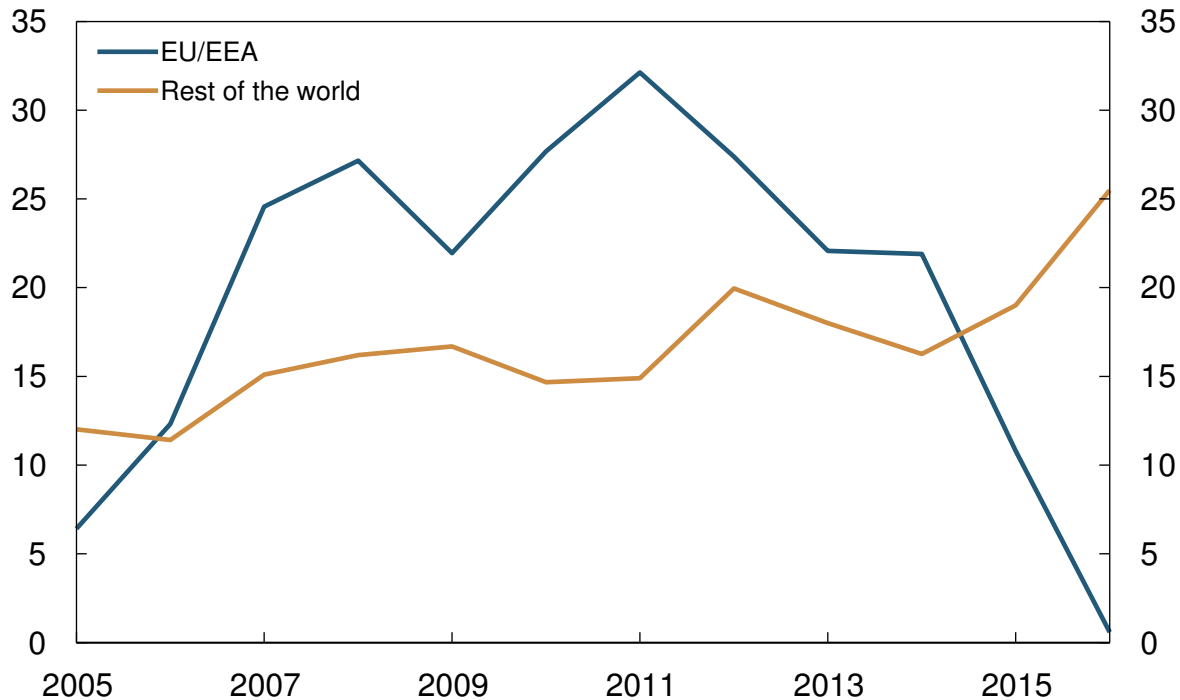
Chart 3.24 Capacity constraints and labour supply as reported by the regional network.[1] Percent. January 2005 – May 2017

- Capacity constraints
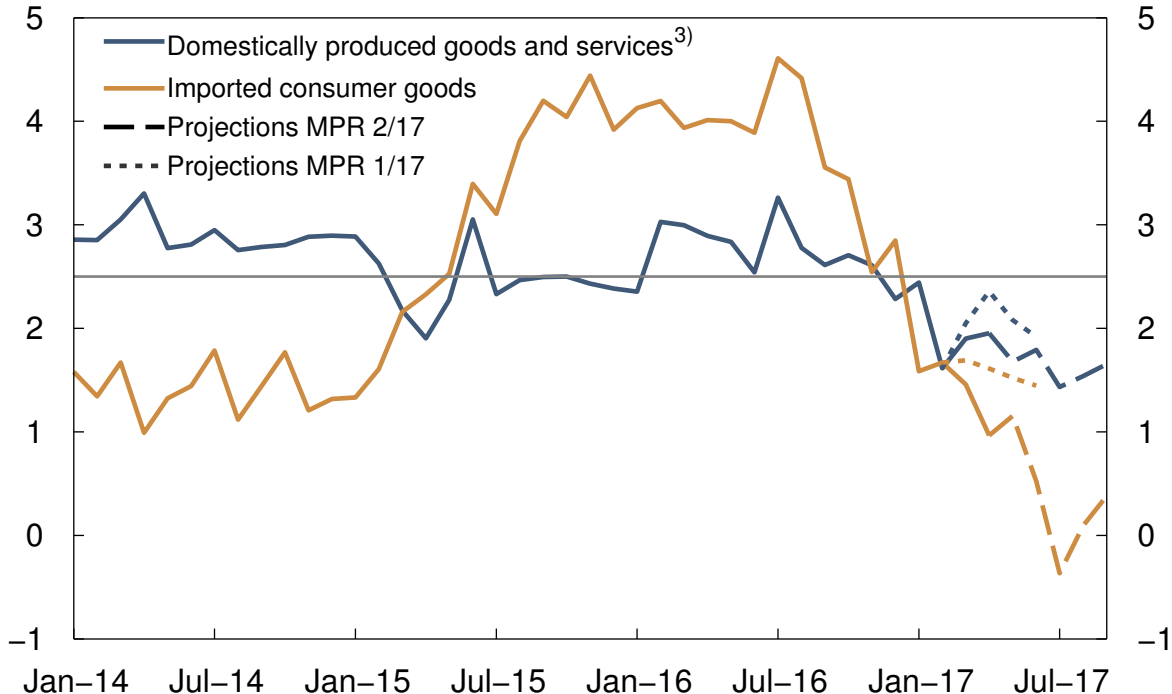- Labour supply
- Average 2005 – 2017

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

Chart 3.25 CPI-ATE[1] by supplier sector.
Twelve-month change. Percent. January 2014 – September 2017 [2]

1) CPI adjusted for tax changes and excluding energy products.
2) Projections for June 2017 – September 2017 (broken lines).
3) Norges Bank's estimates.
Sources: Statistics Norway and Norges Bank

Chart 3.26 Indicator of external price impulses to imported consumer goods measured in a foreign currency. Annual change. Percent. 2005 – 2017[1]
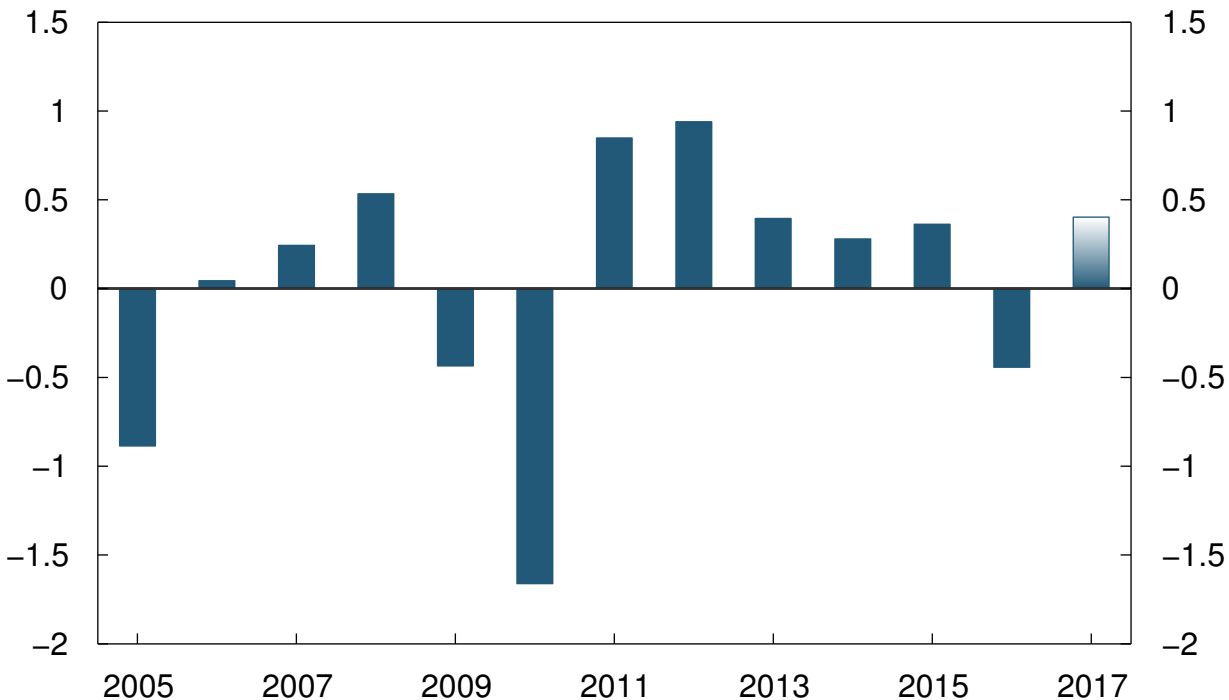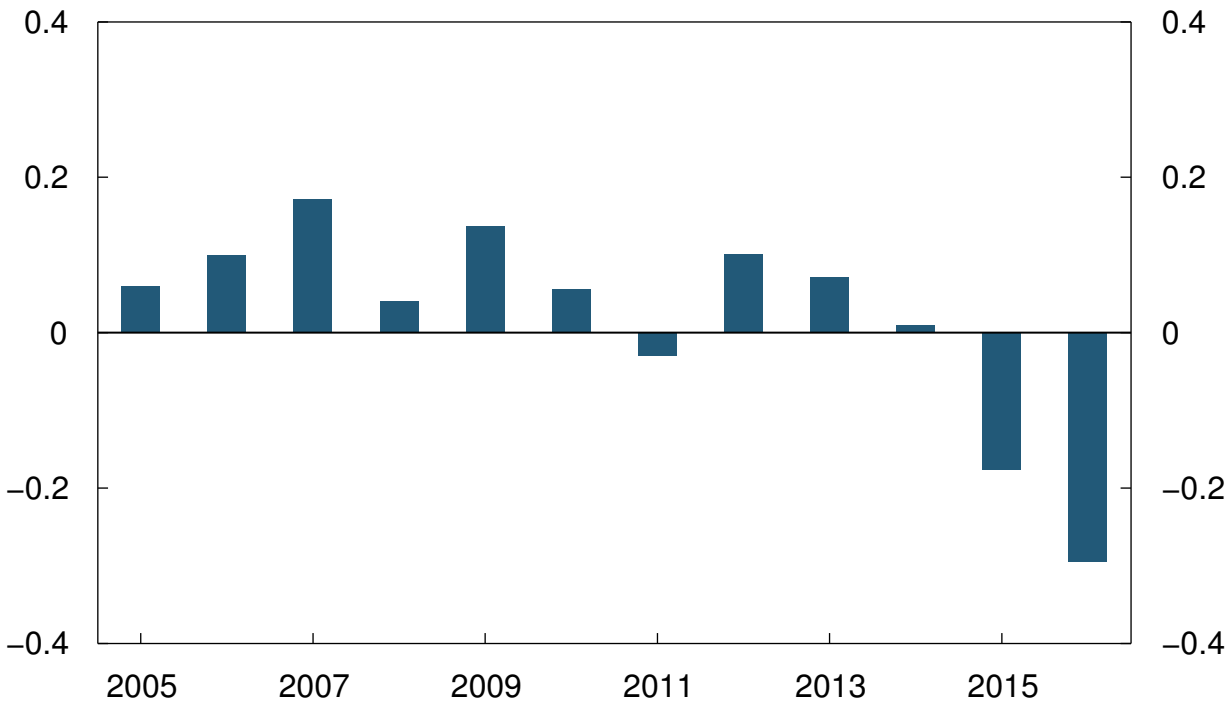

1) Projections for 2017 (shaded).
Sources: Statistics Norway, Thomson Reuters and Norges Bank

Chart 3.27 Contribution to annual wage growth from compositional effects.[1]
Percentage points. 2005 – 2016


1) Changes in annual wage growth due to changes in the composition of employment across industries.
The compositional effect is given by the difference between actual annual wage growth and annual
wage growth given the same employment share as in the previous year. The calculations were made with
an aggregation level of 19 industries.
Sources: Statistics Norway and Norges Bank

Chart 3.28 Wage, wage norm and wage expectations.
Annual change. Percent. 2005 – 2017

- Annual wage growth[1]
- Expectations survey[2]
- Regional network[3]
- Wage norm
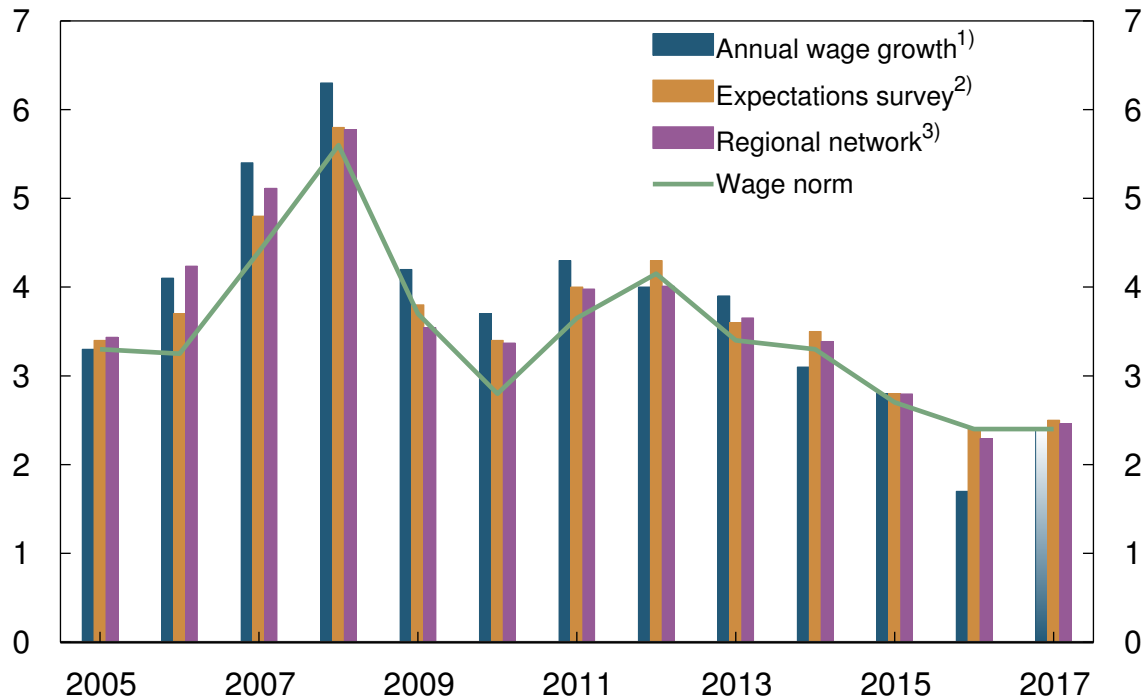
1) Historical annual wage growth from Statistics Norway and Norwegian Technical Calculation
Committee for Wage Settlements. Norges Banks' projections for 2017 (shaded).
2) Wage growth expectations for the current year from the social partners as measured in Q2 each year.
3) Expected wage growth for the current year from the regional network in May/June each year.
Sources: Epinion, Norwegian Technical Calculation Committee for Wage Settlements (TBU),
Statistics Norway and Norges Bank.

Chart 3.29 Wages. Annual change. Percent. 2005 – 2020[1]
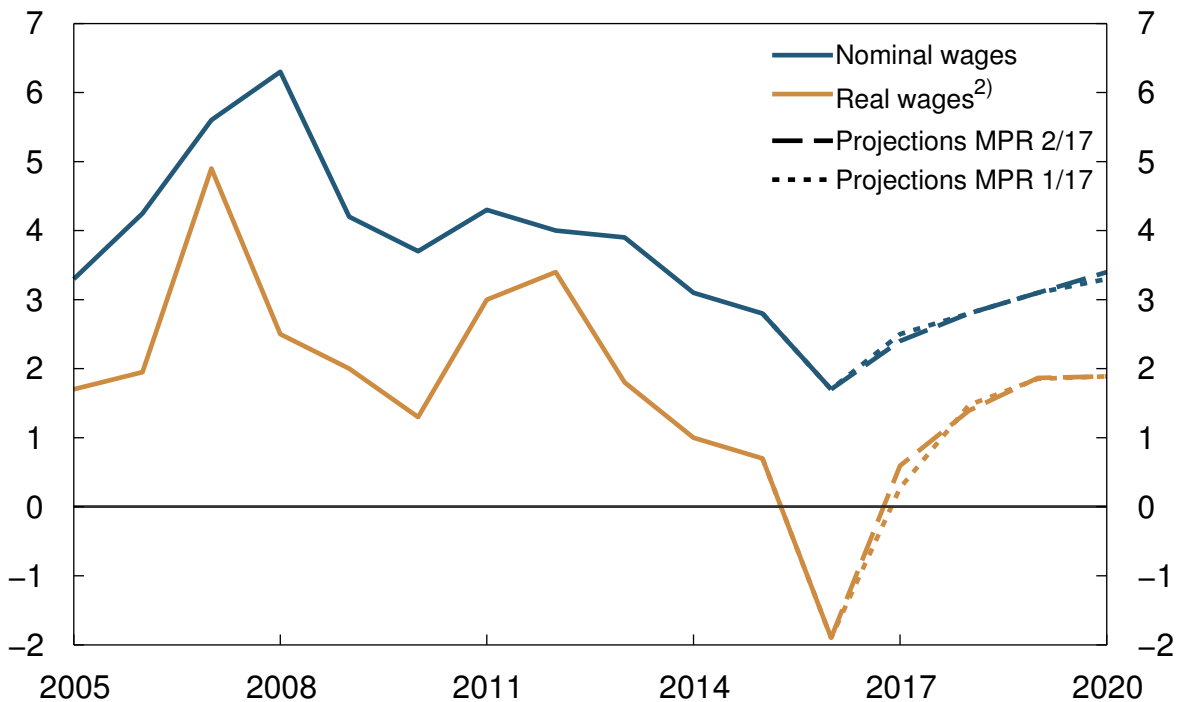
1) Projections for 2017 – 2020 (broken lines).
2) Nominal wage growth deflated by the CPI.
Sources: Norwegian Technical Calculation Committee for Wage Settlements (TBU), Statistics Norway and Norges Bank

Chart 3.30 Operating profit for mainland Norway.[1] Percent. 1980 − 2017[2]
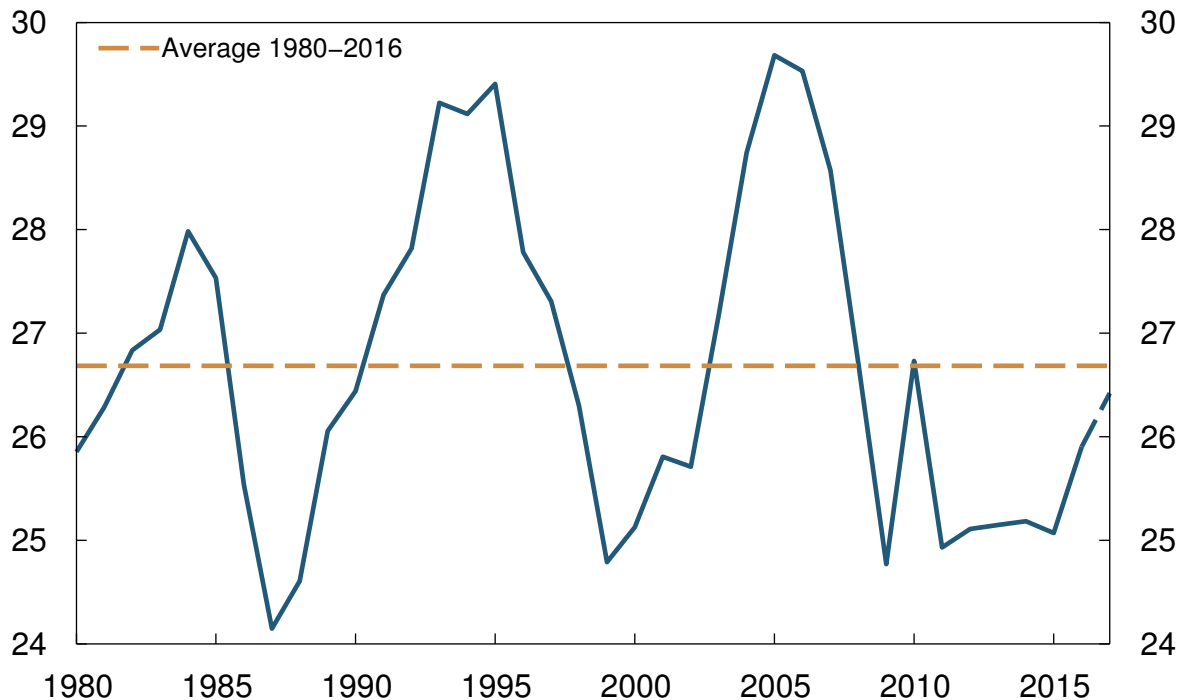
1) Operating profit as a percentage of factor income. Factor income is the sum of labour costs and operating profit.
2) Projections for 2017 (broken line).
Sources: Statistics Norway and Norges Bank

Chart 3.31 CPI-ATE[1] in MPR 2/17 with fan chart given by SAM[2].
Four-quarter change. Percent. 2015 Q1 – 2017 Q3 [3]
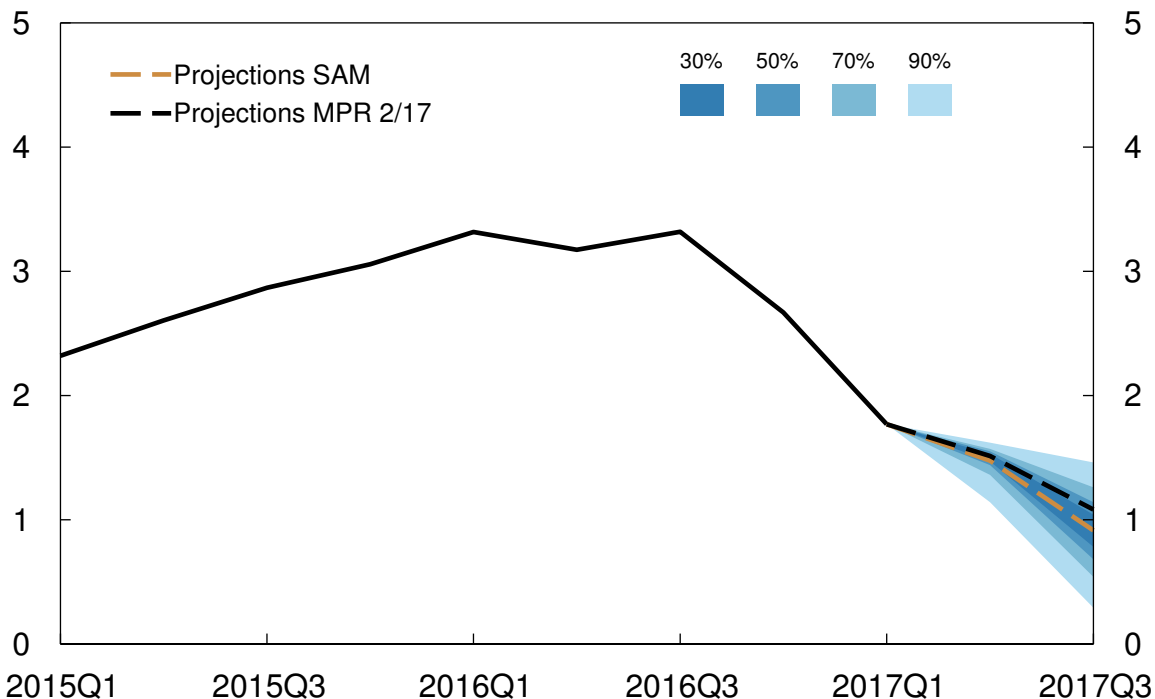
1) CPI adjusted for tax changes and excluding energy products.
2) System for Averaging short-term Models.
3) Projections for 2017 Q2 – 2017 Q3 (broken lines).
Sources: Statistics Norway and Norges Bank

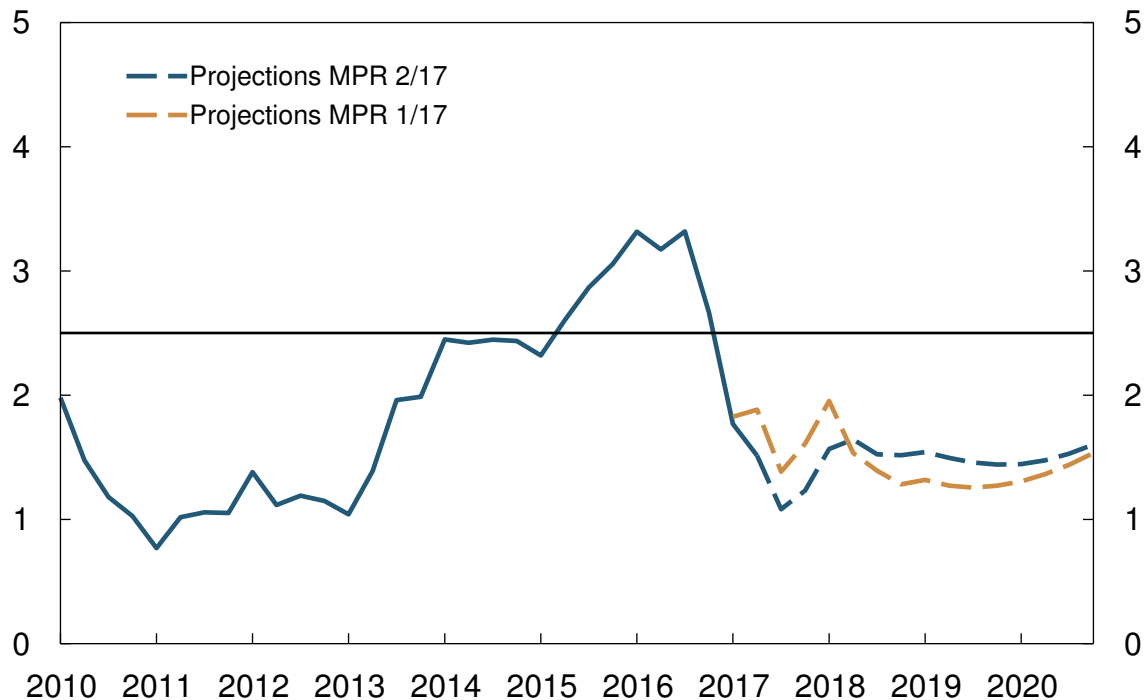Chart 3.32 CPI-ATE[1]. Four-quarter change. Percent. 2010 Q1 – 2020 Q4[2]

1) CPI adjusted for tax changes and excluding energy products.
2) Projections for 2017 Q2 – 2020 Q4 (broken line).
Sources: Statistics Norway and Norges Bank

Chart 3.33 Expected inflation five years ahead.
Twelve-month change. Percent. 2002 Q1 – 2017 Q2

Employee organizations
Employers' organizations
Economists in academia
Economists in financial industry
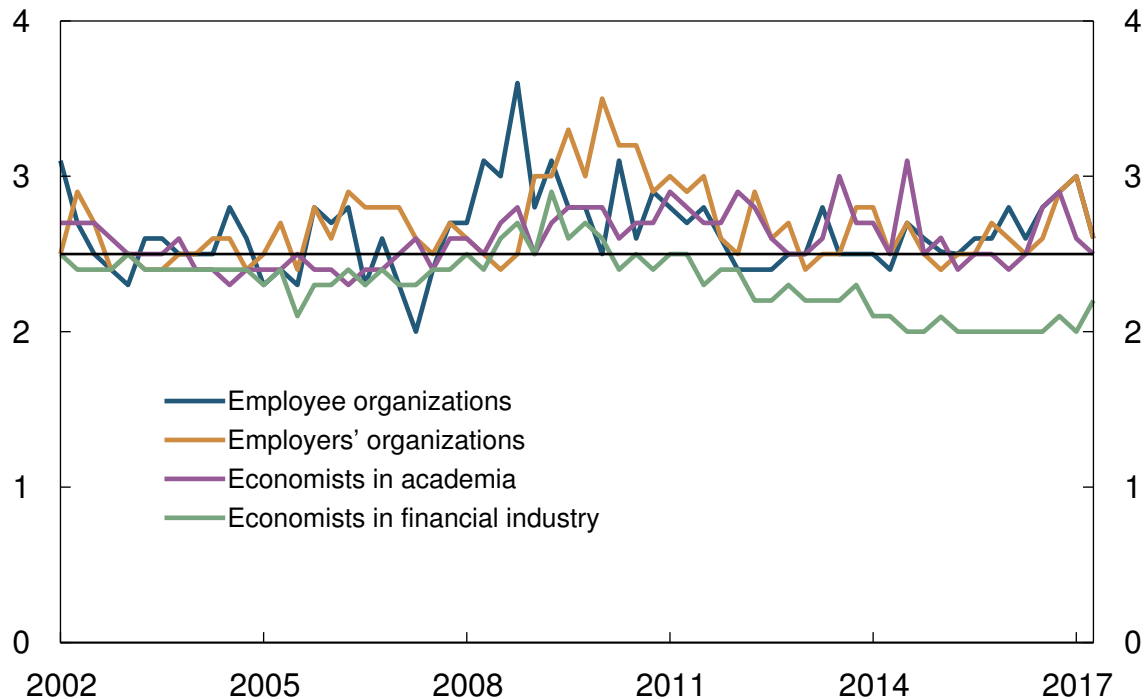
Chart 3.34 Structural non-oil deficit and 3% of the GPFG[1].
Share of trend GDP for mainland Norway. 2002 – 2020[2]
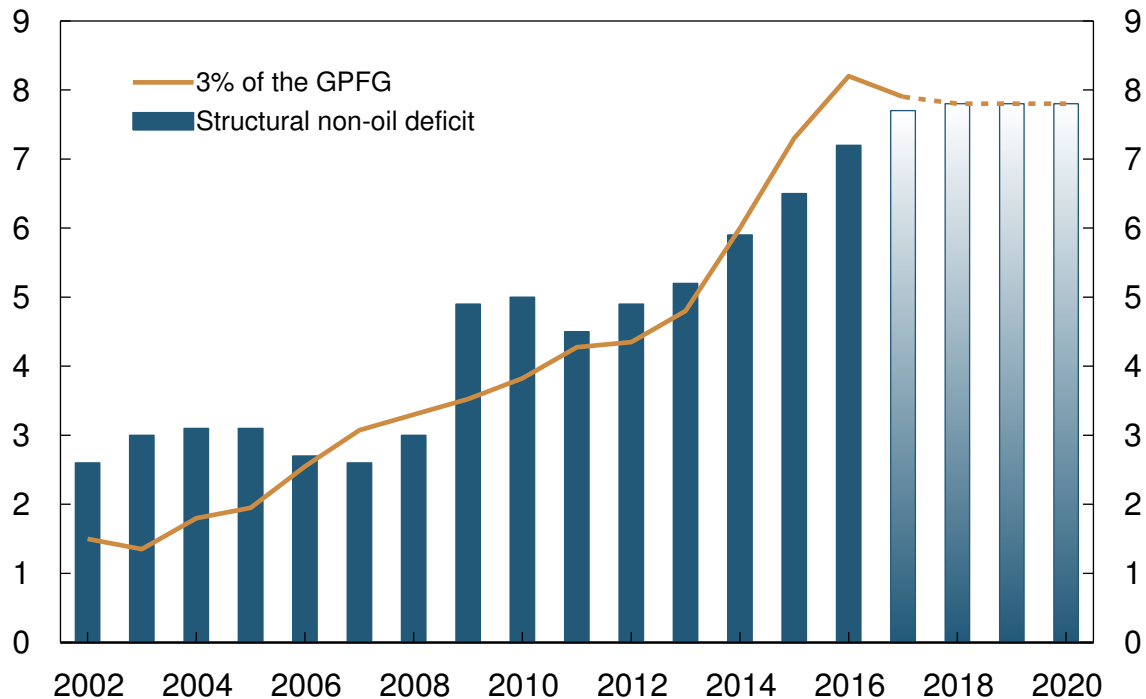
1) Government Pension Fund Global.
2) Projections for 2017 – 2020 (broken line and shaded).
Sources: Ministry of Finance and Norges Bank

Chart 3.35 Public sector demand and GDP for mainland Norway.
Annual growth. Percent. 2010 – 2020[1]

- GDP mainland Norway
- Public demand
- Projections MPR 2/17
- Projections MPR 1/17

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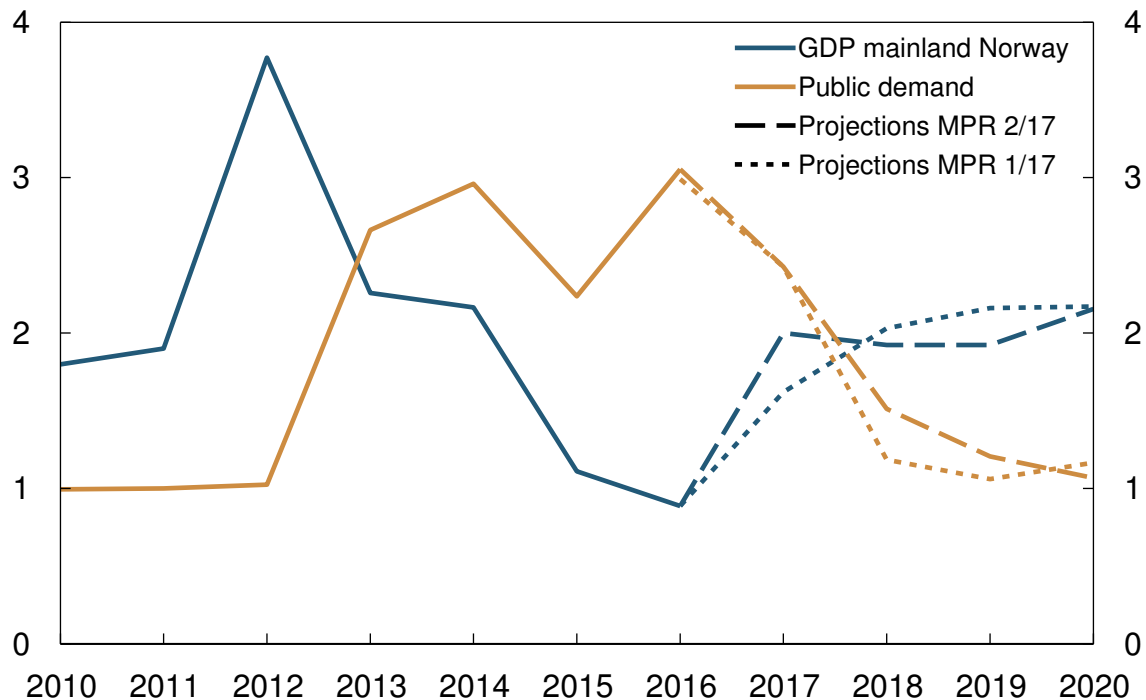Sources: Statistics Norway and Norges Bank

Chart 3.36 Petroleum investment.
Constant 2017 prices. In billions of NOK. 2010 – 2020 [1]
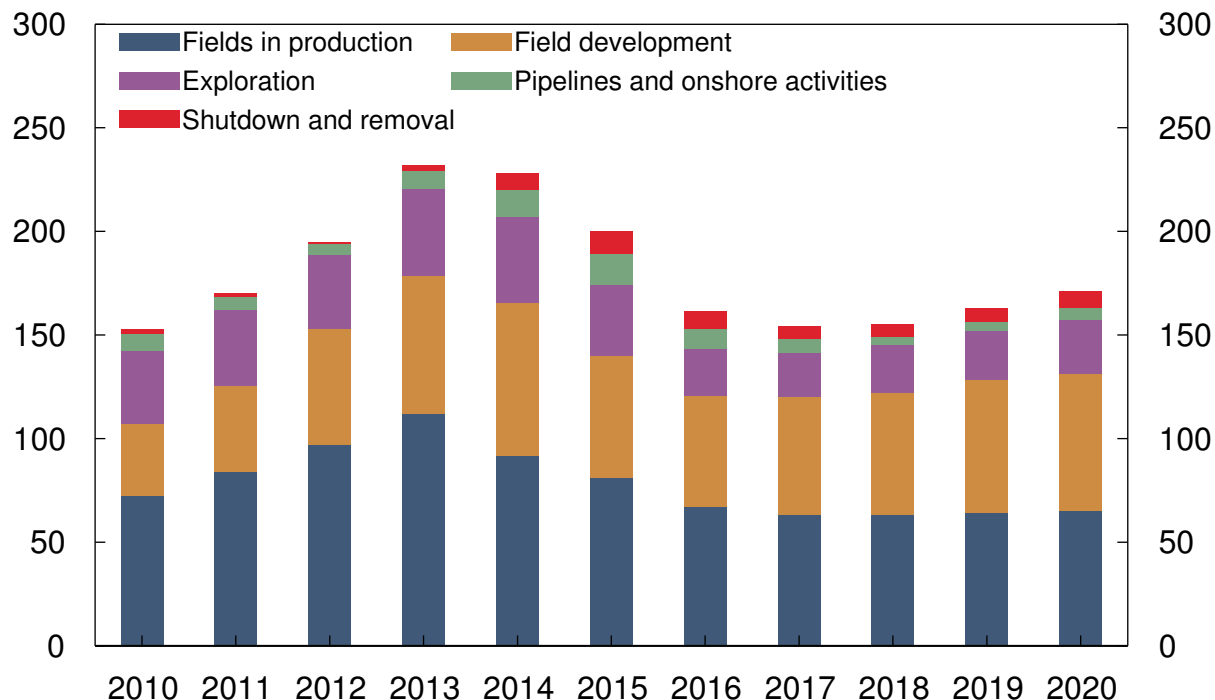
1) Projections for 2017 – 2020. Figures for 2010 – 2016 are from the investment intentions survey by Statistics Norway and deflated by the price index for petroleum investment in the national accounts. The index is projected to fall by 1% between 2016 and 2017 and to be unchanged between 2016 and 2017.
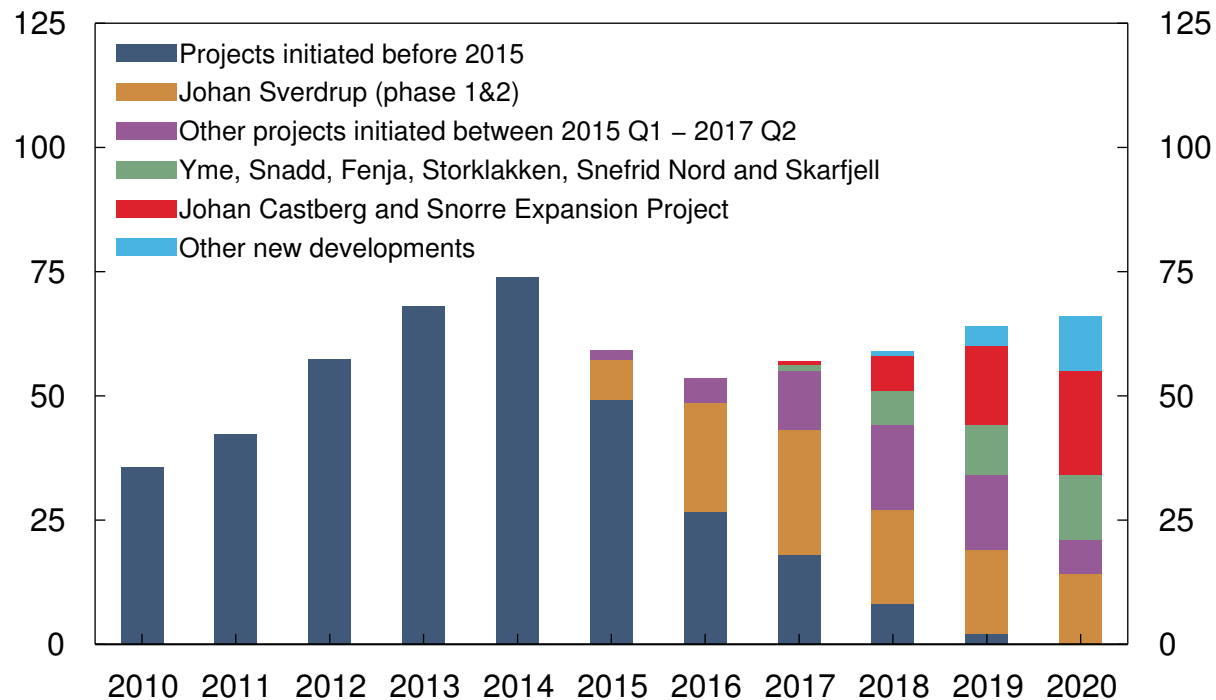Sources: Statistics Norway and Norges Bank

Chart 3.37 Field development.
Constant 2017 prices. In billions of NOK. 2010 – 2020[1]

1) Projections for 2017 – 2020 and for the breakdown of investment in 2015 and 2016. Figures for total development investment for 2010 – 2016 are from the investment intentions survey by Statistics Norway 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, the investment intentions survey by Statistics Norway and current information about development investments.
Sources: Statistics Norway and Norges Bank

Chart 4.1 Consumer price index.
Four-quarter change. Percent. 1985 Q1 – 2017 Q1
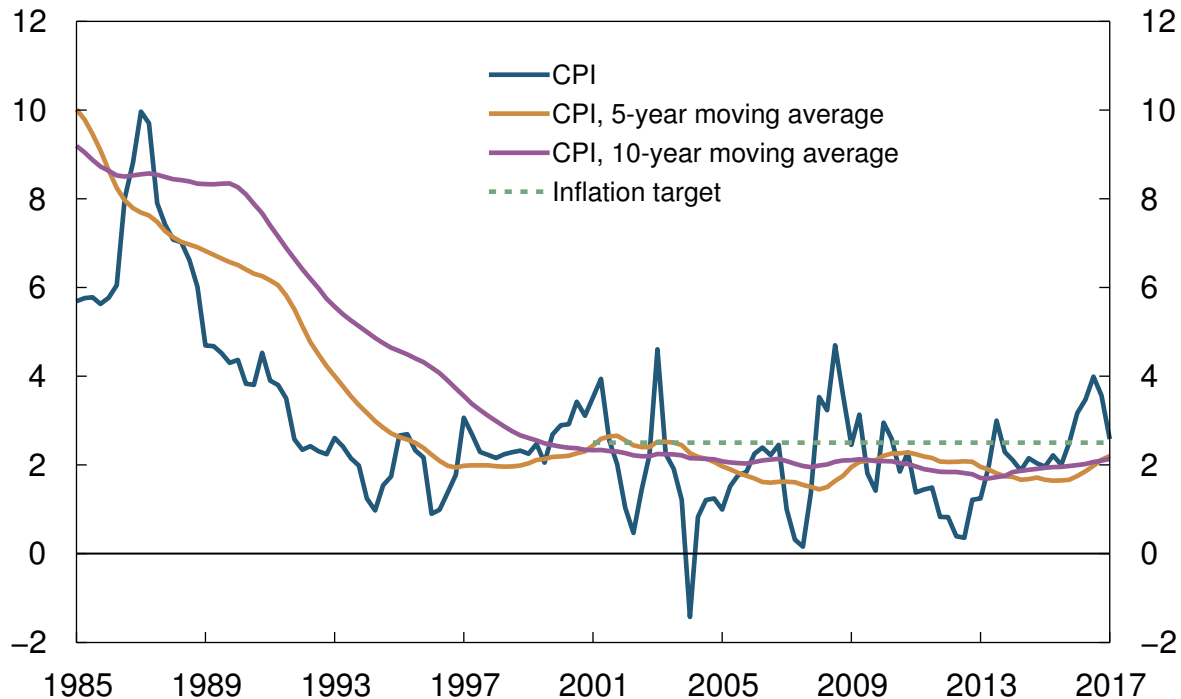
Sources: Statistics Norway and Norges Bank

Chart 4.2 Yields on 10-year government bonds. 14 OECD countries.[1)]
Percent. 1985 Q1 – 2017 Q1
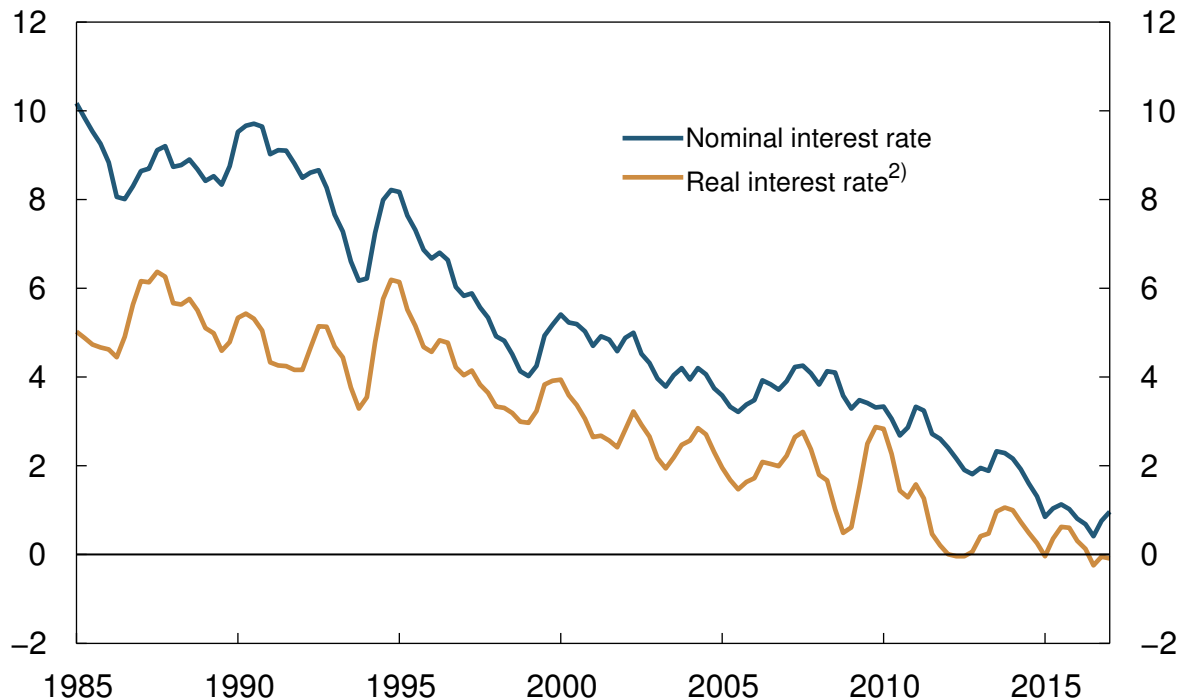
1) Austria, Belgium, Canada, Denmark, France, Germany, Italy, Japan, Netherlands, Sweden,
Switzerland, UK, US and Norway. Unweighted average.
2) The real interest rate is calculated using the nominal government bond yield less average inflation
by the consumer price index over the past year.
Sources: OECD and Norges Bank

Chart 4.3a Projections for the key policy rate in MPR 1/17.
Percent. 2010 Q1 – 2020 Q4 [1]

Projections MPR 1/17

Chart 4.3b CPI-ATE[1]. Projection conditional on new information and key policy forecast in MPR 1/17. Four-quarter change. Percent. 2010 Q1 – 2020 Q4[2]
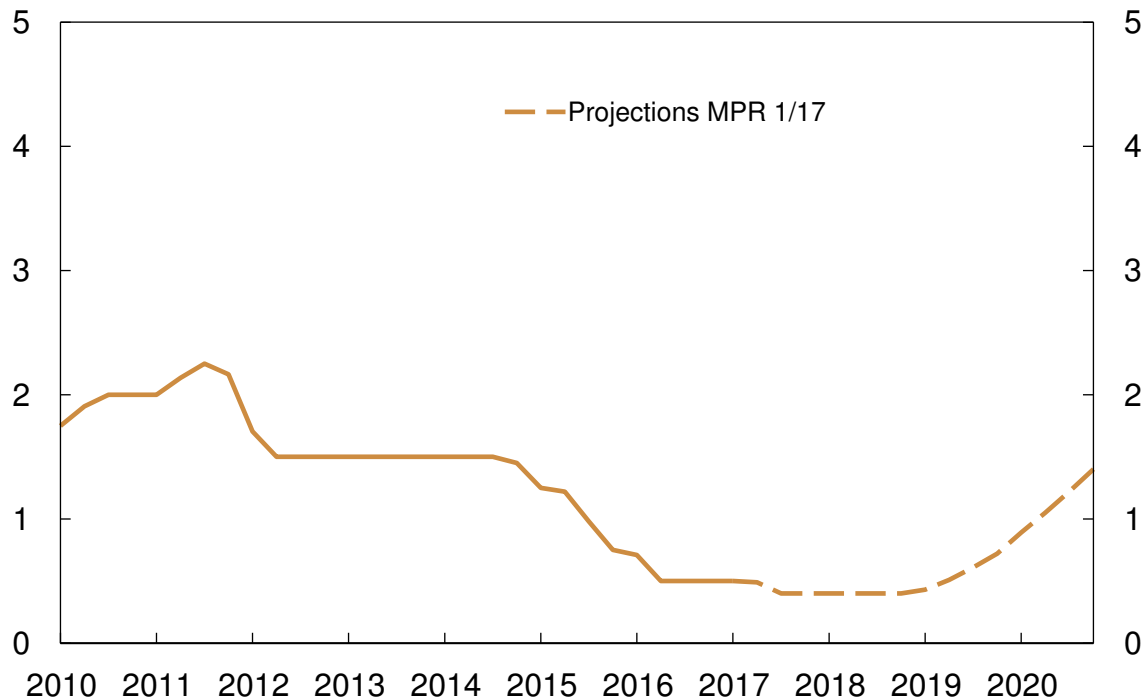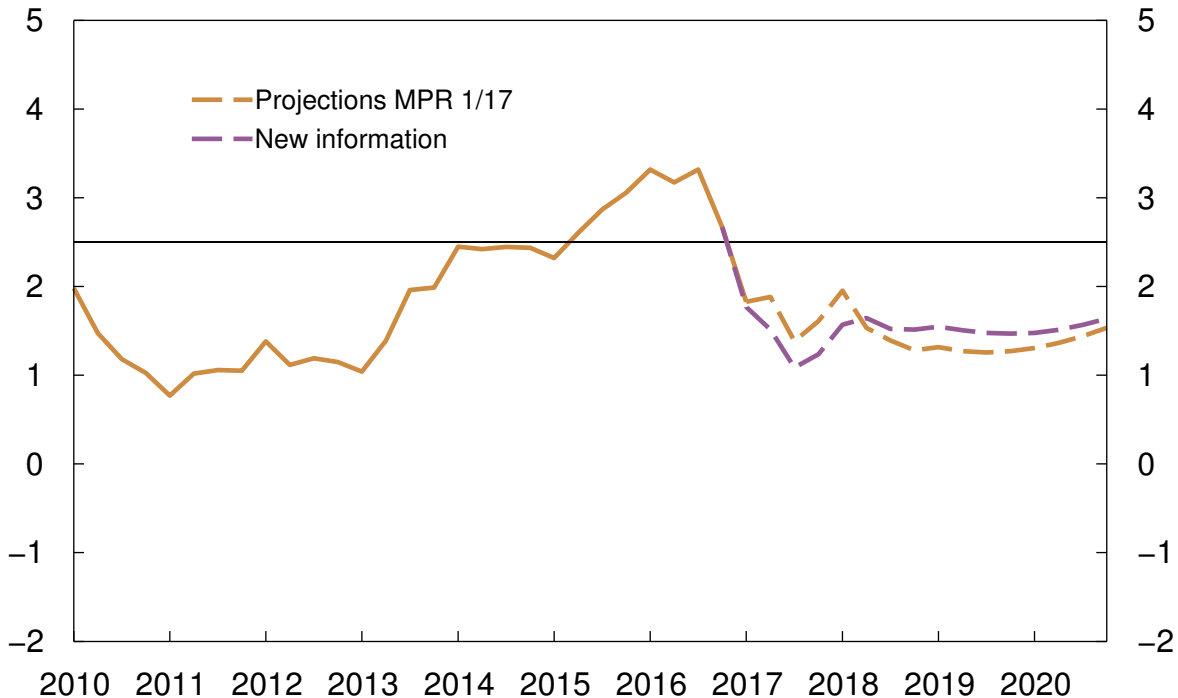
1) CPI adjusted for tax changes and excluding energy products.
2) Projections for 2017 Q1 – 2020 Q4 (broken lines).
Sources: Statistics Norway and Norges Bank

Chart 4.3c Projected output gap. Projection conditional on new information and key policy rate forecast in MPR 1/17. Percent. 2010 Q1 – 2020 Q4

Projections MPR 1/17
New information
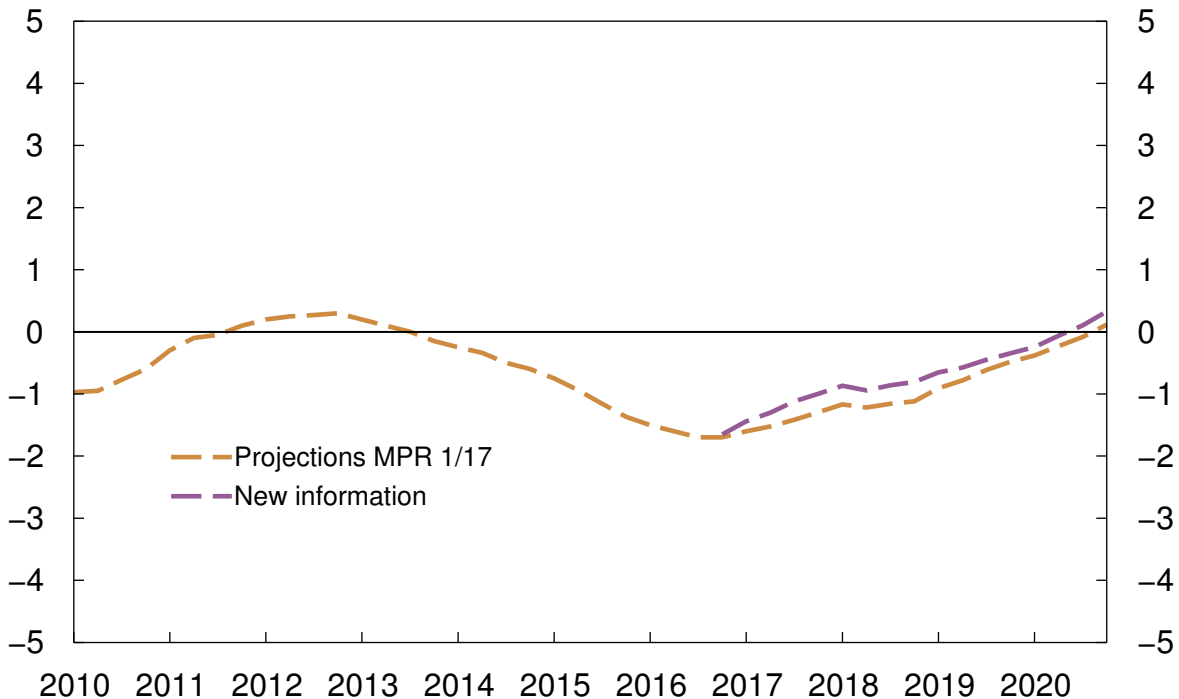
Chart 4.4a Projected key policy rate with fan chart.[1]
Percent. 2010 Q1 – 2020 Q4 [2]
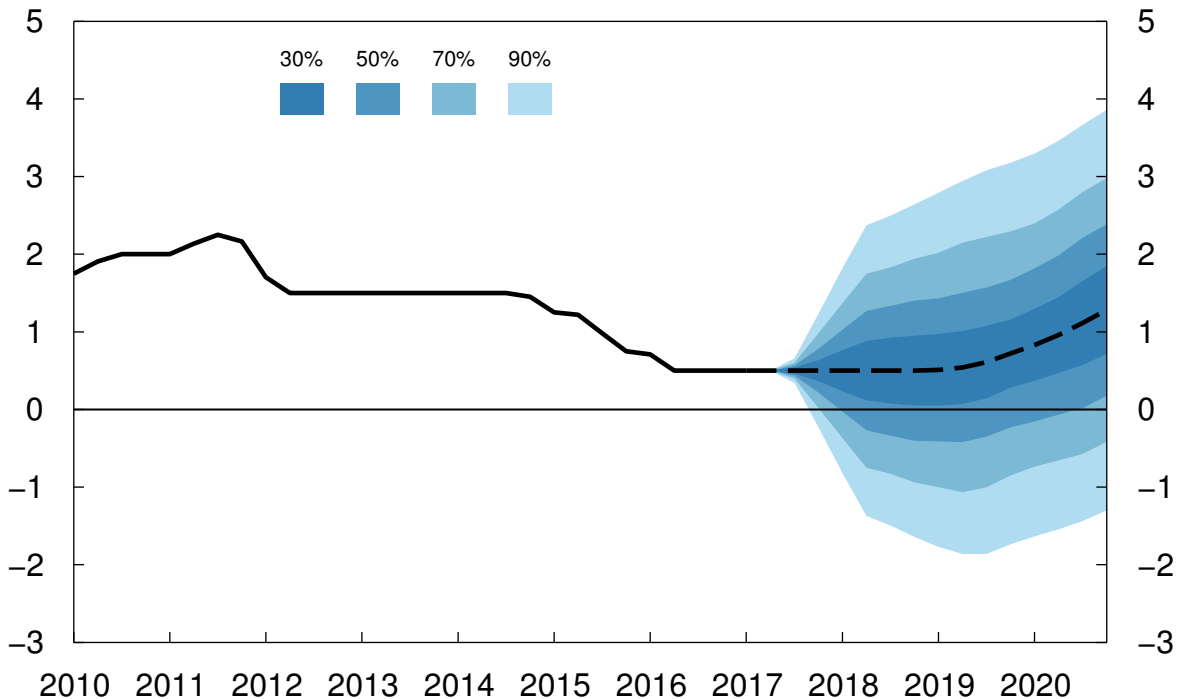
1) The fan charts are based on historical experience and stochastic simulations in Norges Bank's main
macroeconomic model, NEMO. The fan chart for the key policy rate does not take into account
that a lower bound for the interest rate exists.
2) Projections for 2017 Q2 – 2020 Q4 (broken line).
Source: Norges Bank

Chart 4.4b Projected output gap[1] with fan chart.
Percent. 2010 Q1 – 2020 Q4
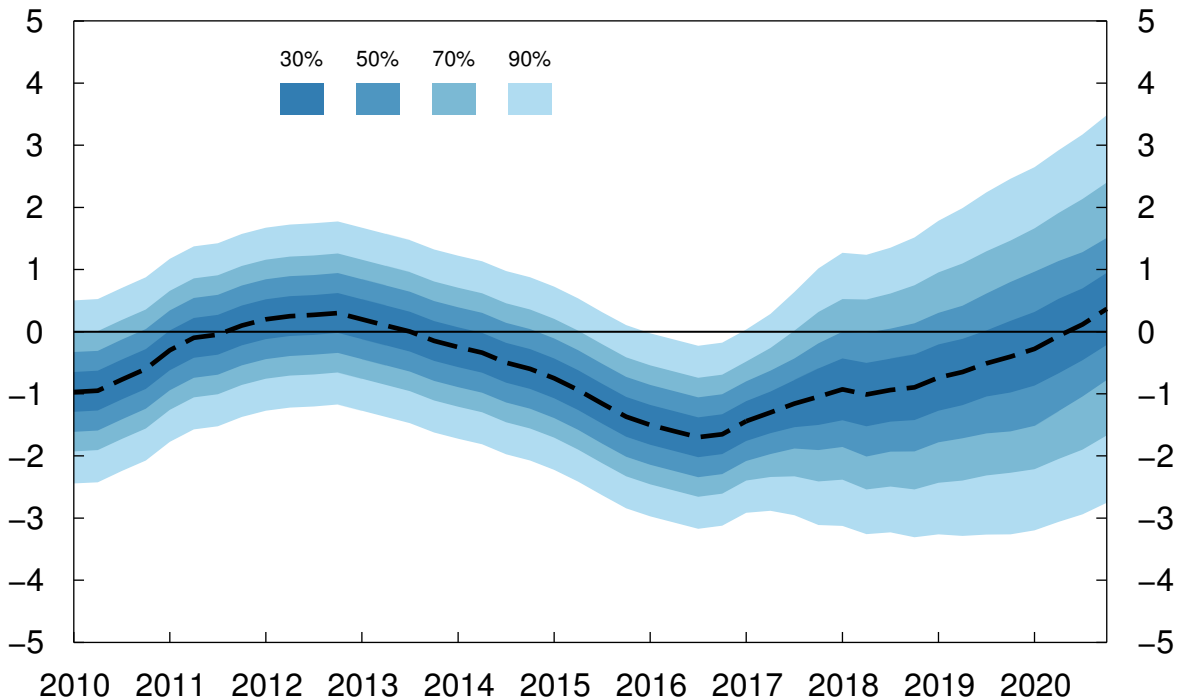
1) The output gap measures the percentage deviation between mainland GDP and projected
potential mainland GDP.
Source: Norges Bank

Chart 4.4c Projected CPI with fan chart.
Four-quarter change. Percent. 2010 Q1 – 2020 Q4[1]
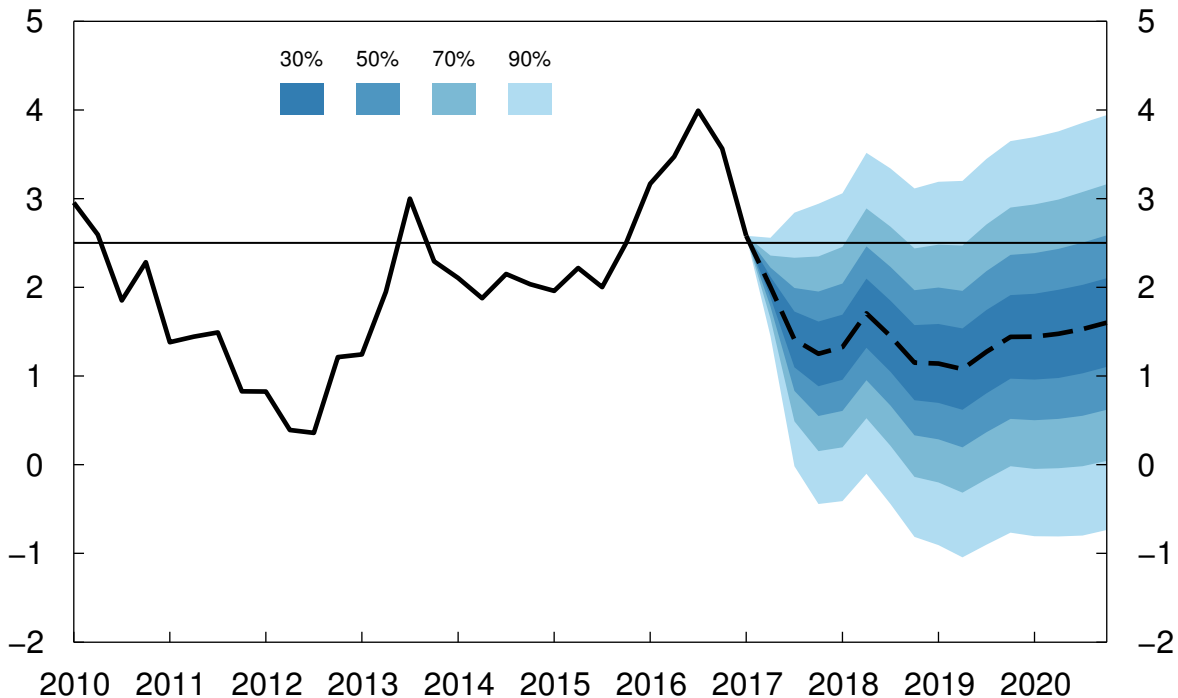
1) Projections for 2017 Q2 – 2020 Q4 (broken line).
Sources: Statistics Norway and Norges Bank

Chart 4.4d Projected CPI-ATE[1] with fan chart.
Four-quarter change. Percent. 2010 Q1 – 2020 Q4[2]
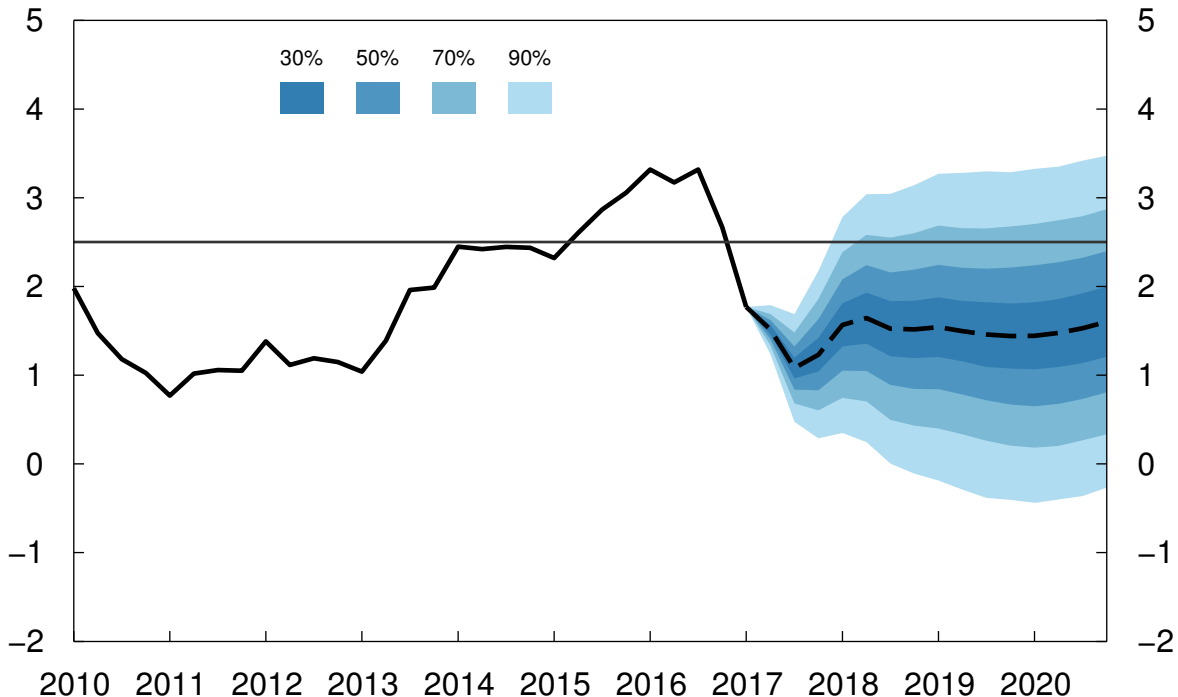
1) CPI adjusted for tax changes and excluding energy products.
2) Projections for 2017 Q2 – 2020 Q4 (broken line).
Sources: Statistics Norway and Norges Bank

Chart 4.5 Projections for the key policy rate. Percent. 2010 Q1 – 2020 Q4[1]

- – – Projections MPR 2/17
- – – Projections MPR 1/17
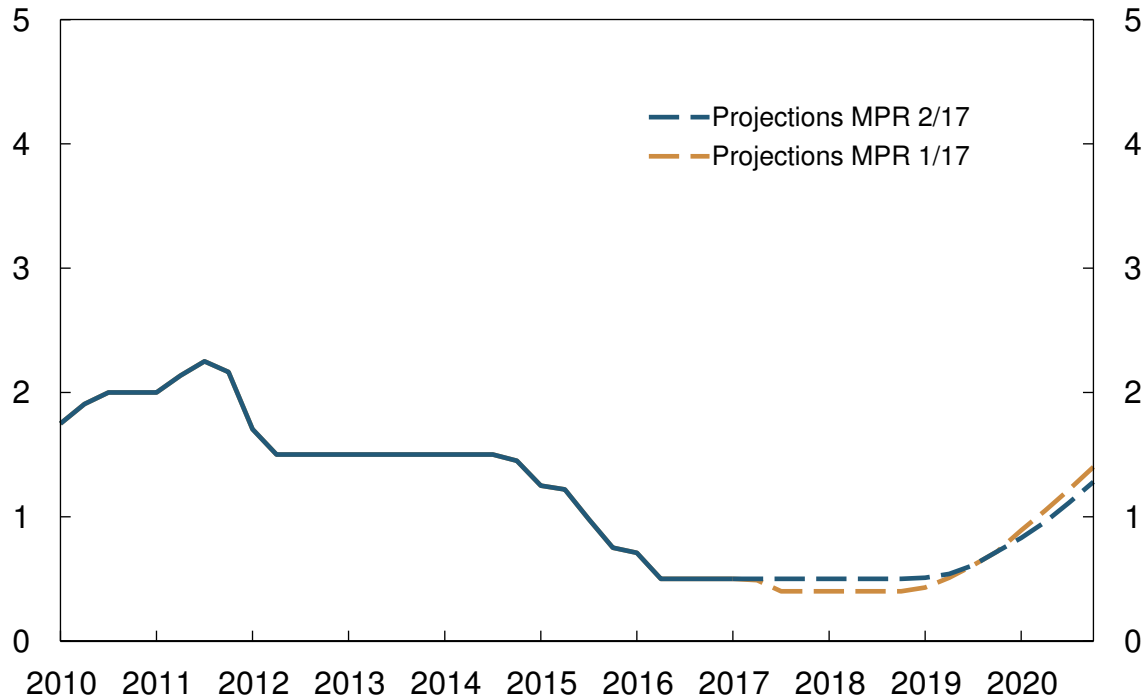
1) Projections for 2017 Q2 – 2020 Q4 (broken lines).
Source: Norges Bank

Chart 4.6 Factors behind changes in key policy rate forecast since PPR 1/17.
Cumulative contribution. Percentage points. 2017 Q3 – 2020 Q4

Legend:
- Change in key policy rate forecast
- Domestic demand
- Exchange rate
- Foreign factors
- Money market spread
- Prices and wages
- Financial imbalances and uncertainty
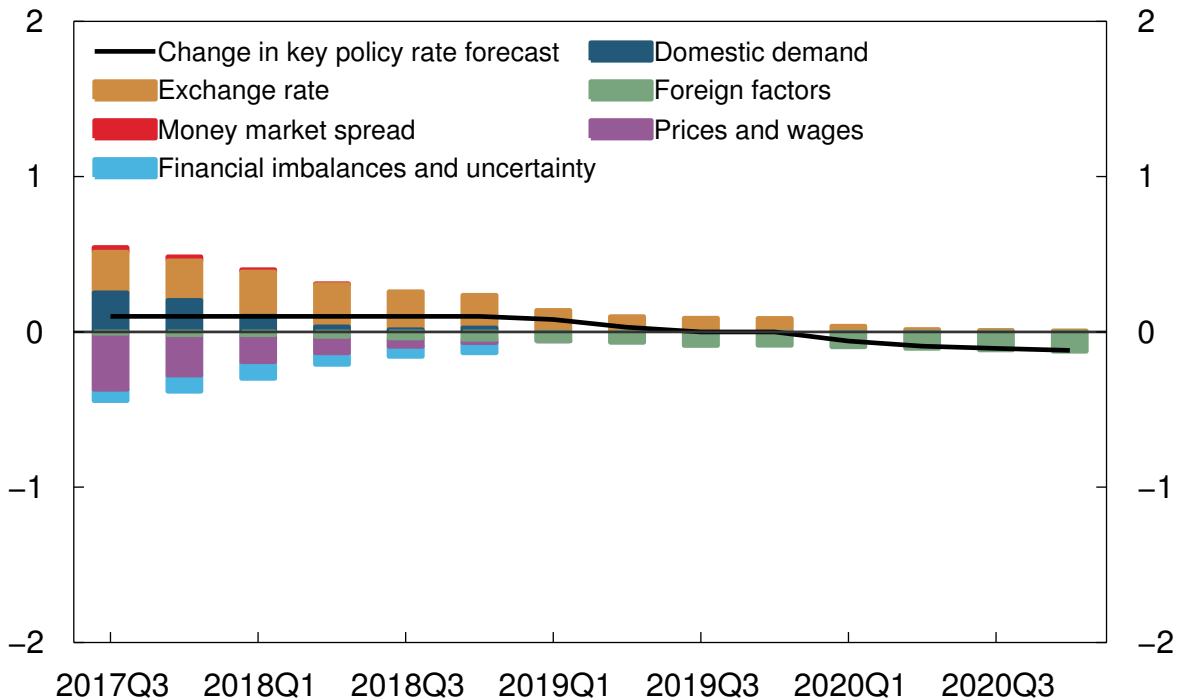
Source: Norges Bank

Chart 4.7 Three-month money market rate in the baseline scenario[1] and estimated forward rates[2]. Percent. 2010 Q1 – 2020 Q4 [3]

Legend:
- – – Money market rate in the baseline scenario, MPR 2/17
- – – Money market rate in the baseline scenario, MPR 1/17
- Estimated forward rates, MPR 2/17
- Estimated forward rates, MPR 1/17
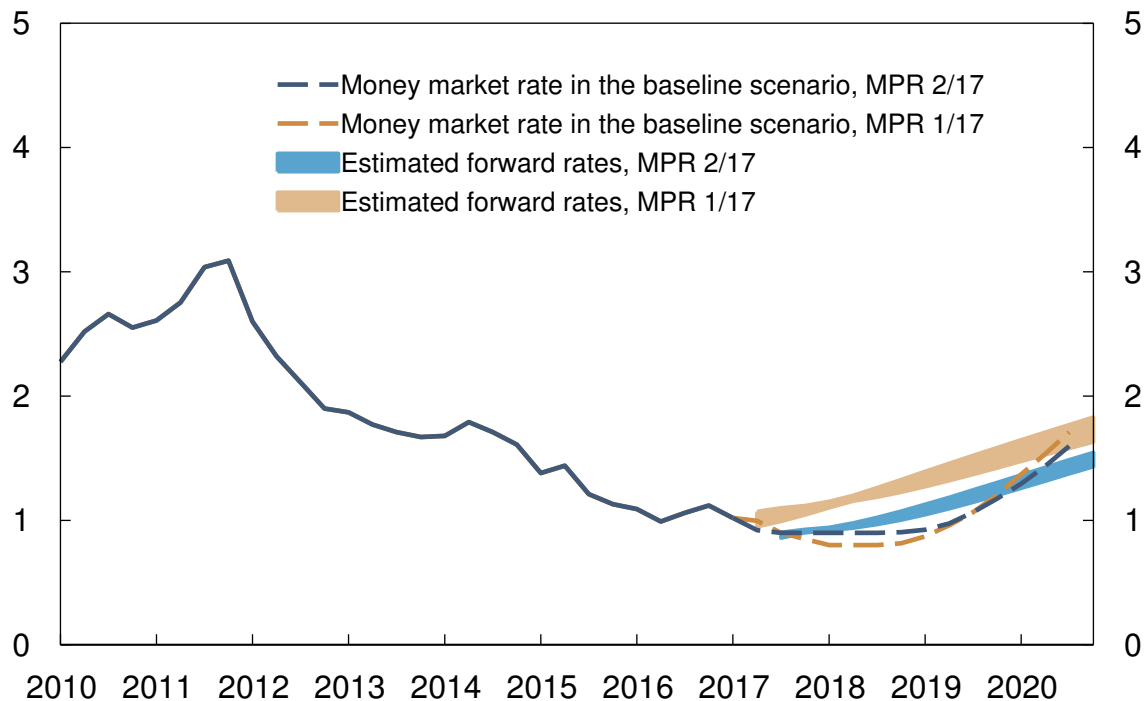
1) Key policy rate in the baseline scenario plus Norwegian money market premiums. The calculations are based on the assumption that the key policy rate forecast is priced into the money market.
2) Forward rates are based on money market rates and interest rate swaps. The orange and blue bands show the highest and lowest rates in the period 27 February – 10 March 2017 and 2 – 16 June 2017, respectively.
3) Projections for 2017 Q2 – 2020 Q3 (broken lines).
Sources: Thomson Reuters and Norges Bank

Chart 4.8 Key policy rate and interest rate path that follows from Norges Bank's average pattern of interest rate setting.[1] Percent. 2005 Q1 – 2017 Q3 [2]

Key policy rate
90% confidence interval
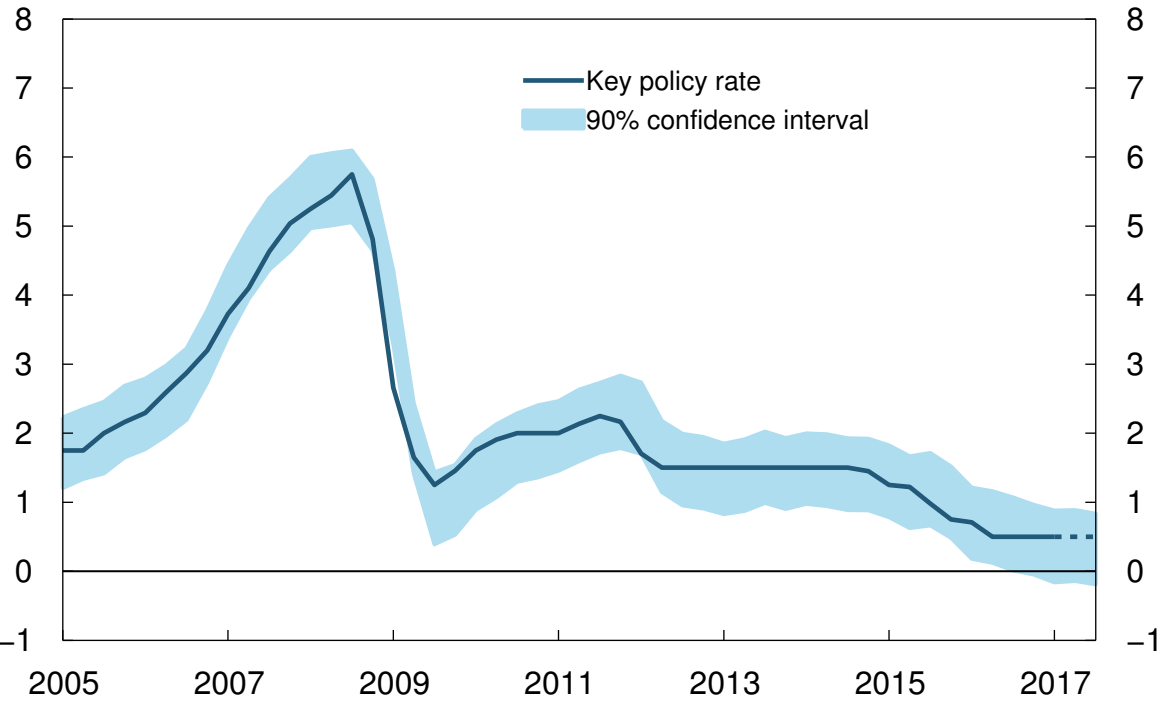
1) Interest rate movements are explained by developments in inflation, mainland GDP growth, wage growth and three-month money market rates among trading partners, as well as key policy rate in the preceding period. The equation is estimated over the period 1999 Q1 – 2017 Q1. See Norges Bank *Staff Memo* 3/2008 for further discussion.
2) Projections for 2017 Q2 – 2017 Q3 (broken line).
Source: Norges Bank

Chart 1 Unemployment as a share of the labour force. Various HP trends.
Precent. January 1972 – May 2017

- NAV unemployment
- Lambda 10 000
- Lambda 100 000
- Lambda 1 000 000
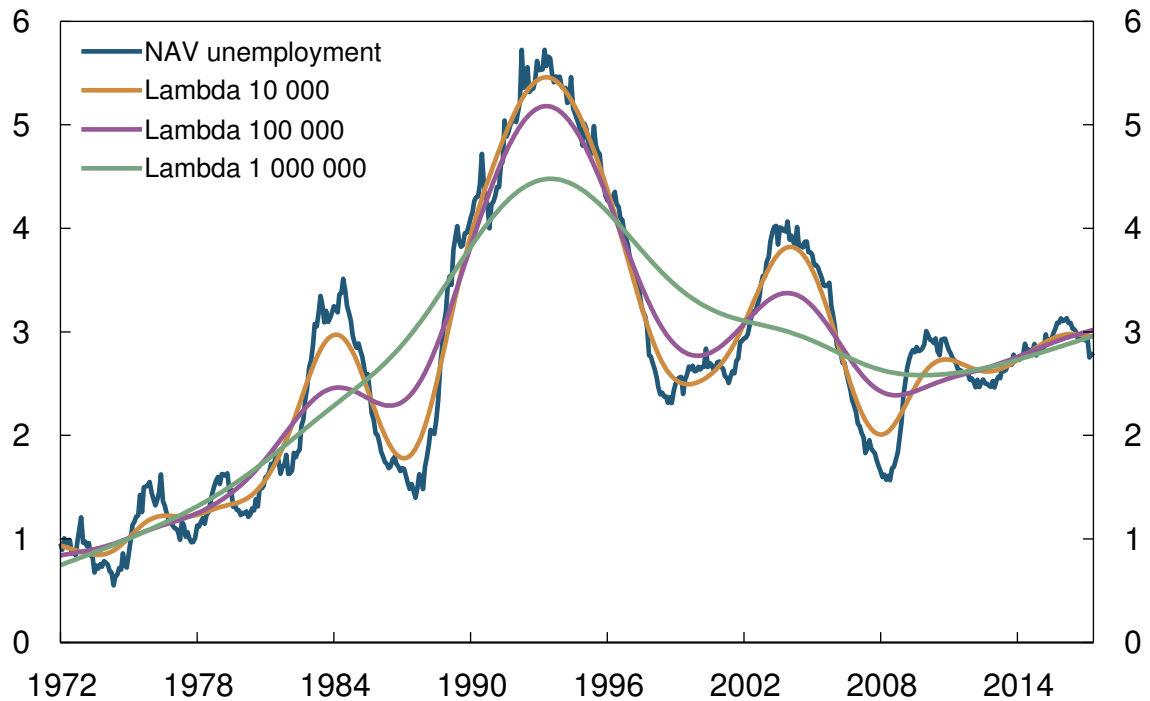
Sources: Norwegian Labour and Welfare Administration (NAV) and Norges Bank

Chart 2 Kalman filters with GDP and wages. Percent. 1990 Q1 – 2017 Q1
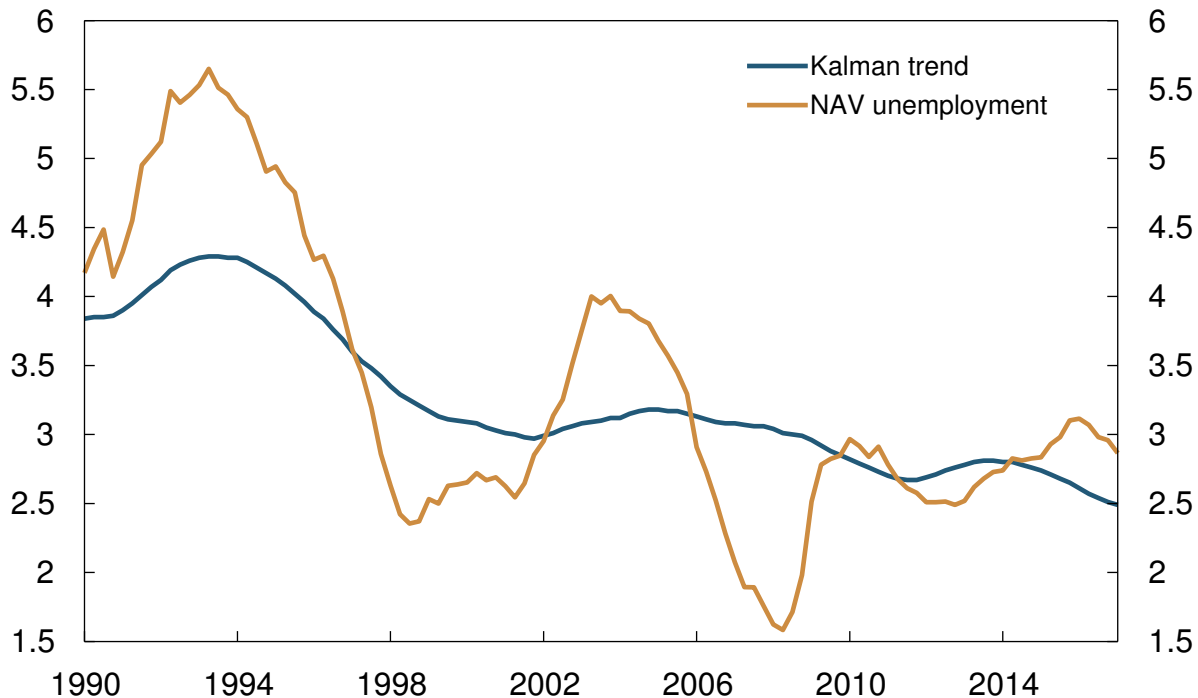
Legend:
- Kalman trend
- NAV unemployment

Chart 3 Beveridge curve. Percent. January 2004 – December 2016

Legend:
- 2004–2006
- 2007–2008
- 2009–2011
- 2012–2013
- 2014–2015
- 2016

Y-axis: **Vacancy rate[1]**

X-axis: **Unemployment rate**
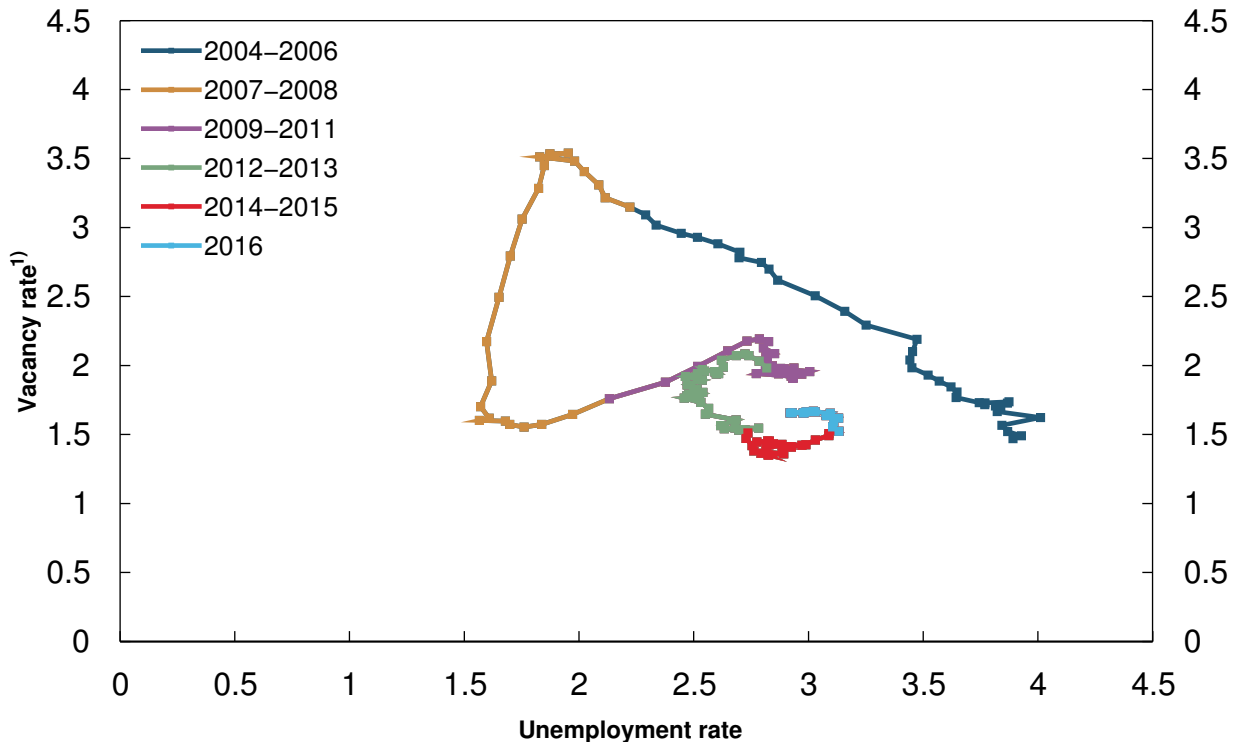
1) Availability of vacancies as a percentage of the workforce.
Sources: Finn.no, Norwegian Labour and Welfare Administration (NAV) and Norges Bank

Chart 4 Share of registered unemployed receiving unemployment benefits from NAV. Percent. August 1987 – May 2017
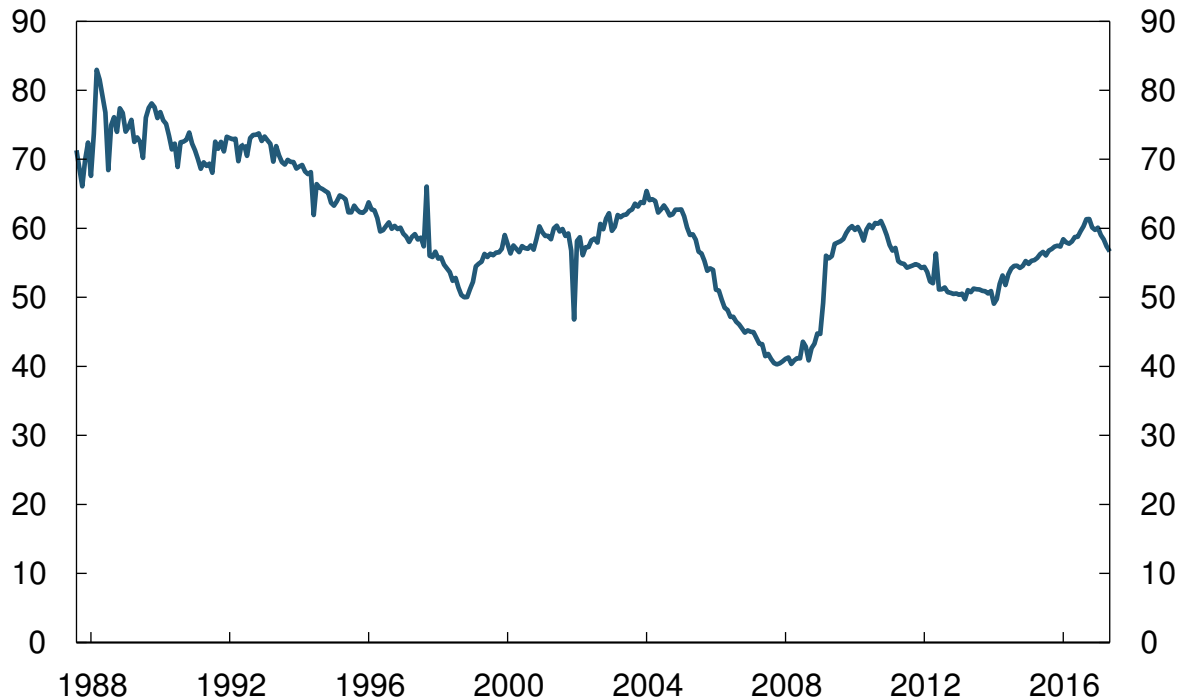
Chart 5.1 Non-performing loans as a share of gross loans. Percent. 2016 Q4[1]
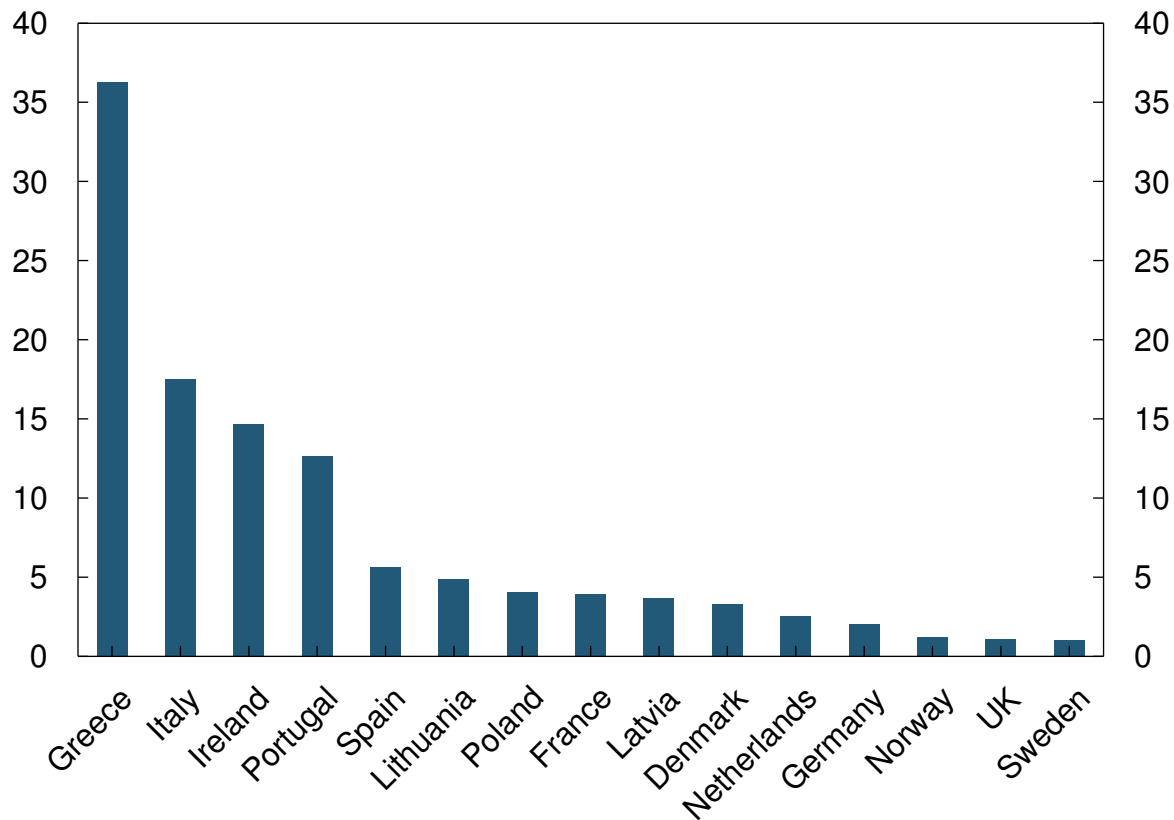
1) 2016 Q3 figures for Denmark, Ireland, Portugal, UK and Lithuania; 2016 Q2 figures for Italy and France; 2015 Q4 figures for Germany.
Source: IMF

Chart 5.2 Credit mainland Norway as a share of mainland GDP. Percent. 1983 Q1 – 2017 Q1

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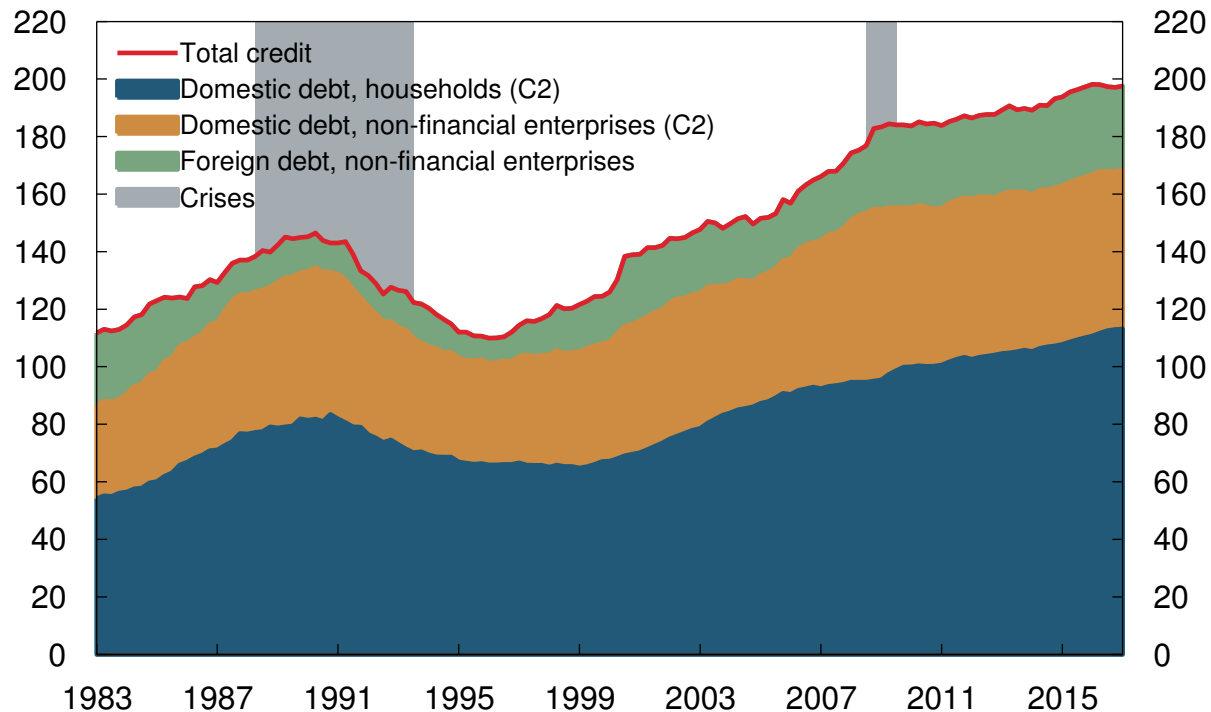
Sources: IMF, Statistics Norway and Norges Bank

Chart 5.3 Decomposed credit gap. Credit mainland Norway as a share of mainland GDP. Deviation from trend with augmented HP filter.[1] Percentage points. 1983 Q1 – 2017 Q1
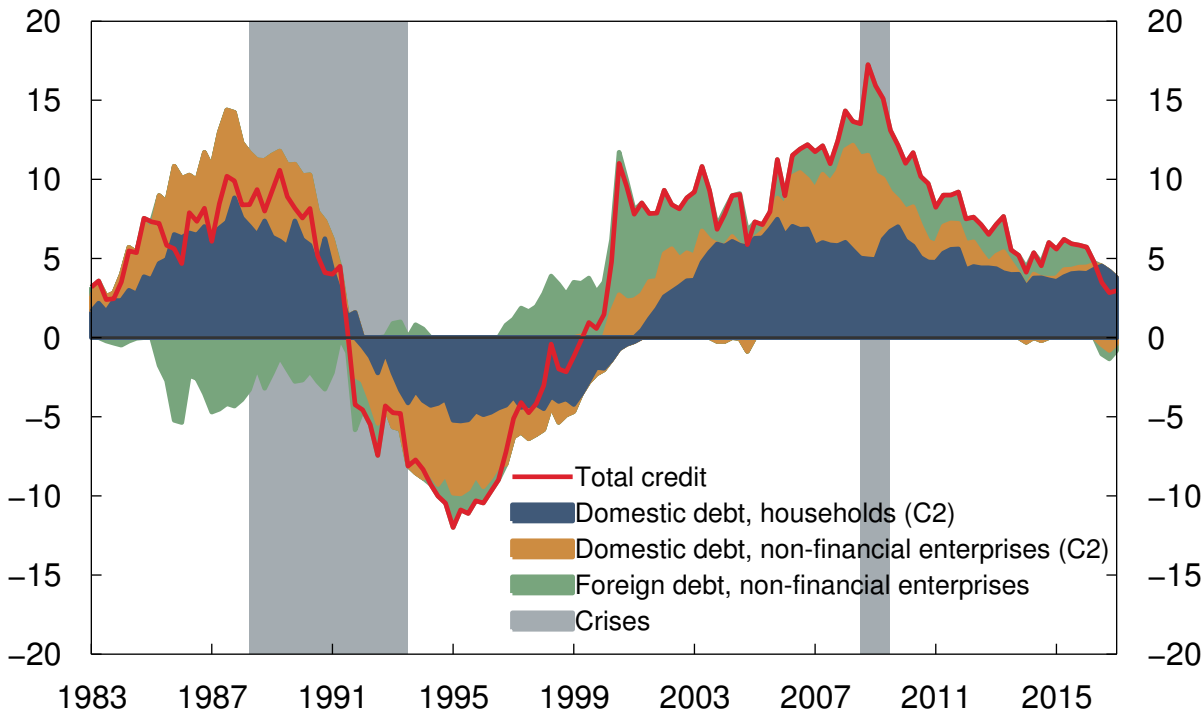
Total credit
Domestic debt, households (C2)
Domestic debt, non-financial enterprises (C2)
Foreign debt, non-financial enterprises
Crises

1) One-sided Hodrick-Prescott filter estimated on data augmented with a simple projection. Lambda = 400 000.
Sources: IMF, Statistics Norway and Norges Bank

Chart 5.4 Household interest burden and debt service ratio.[1]
Percent. 1983 Q1 – 2017 Q1
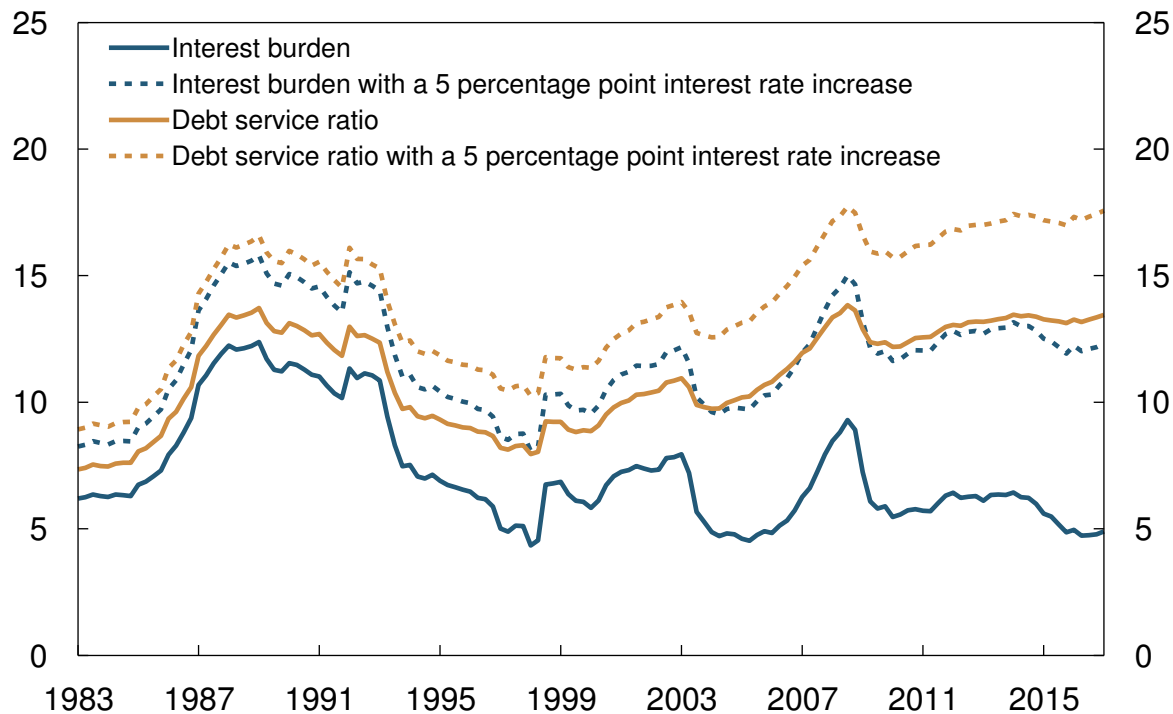
1) The interest burden is calculated as interest expenses as a percentage of disposable income plus
interest expenses. The debt service ratio also includes estimated principal payments on an 18-year mortgage.
Disposable income is adjusted for estimated reinvested dividend income for 2003 – 2005 and reduction
of equity capital for 2006 Q1 – 2012 Q3. Growth in disposable income excluding dividend income
is used for the period 2015 Q1 – 2017 Q1.
Sources: Statistics Norway and Norges Bank

Chart 5.5 Credit demand and banks' credit standards.[1]
Change from previous quarter. Households. 2007 Q4 – 2017 Q2
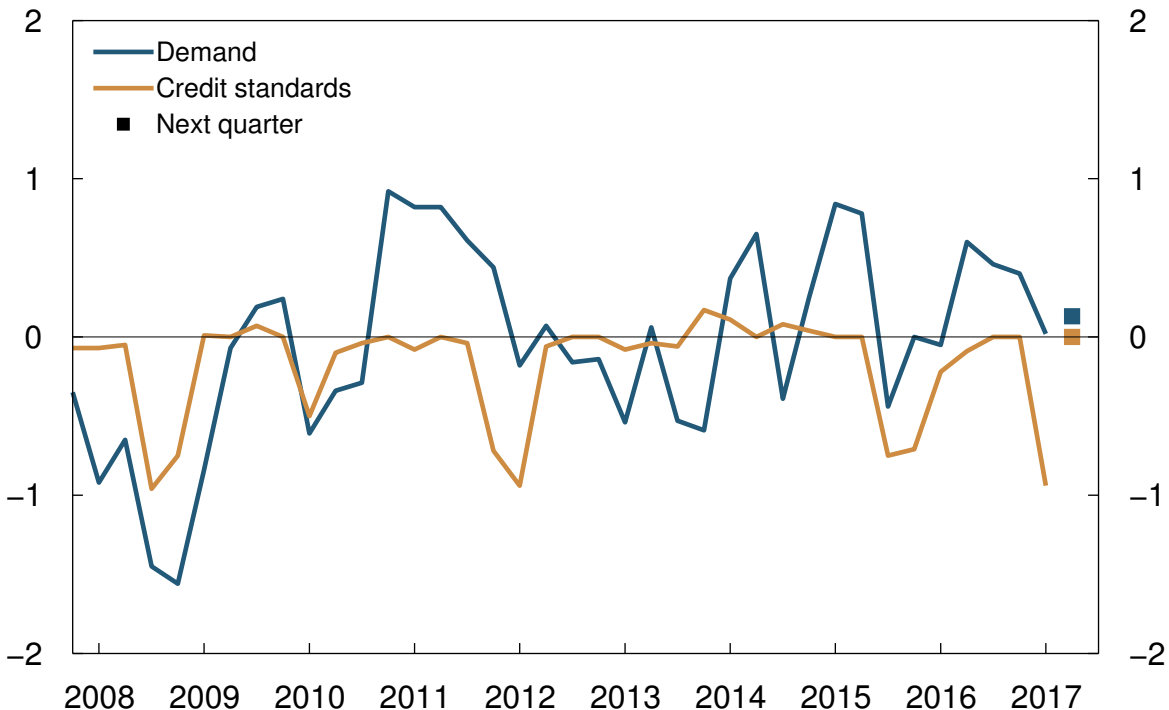
1) The banks respond on a scale of +/−2. In the aggregated figures, banks are weighted by the size of their balance sheets. Negative values denote lower demand or tighter credit standards.
Source: Norges Bank's Survey of Bank Lending

Chart 5.6 Share of households with debt exceeding five times gross annual income. By age of primary wage earner. Percent. 1987 – 2015
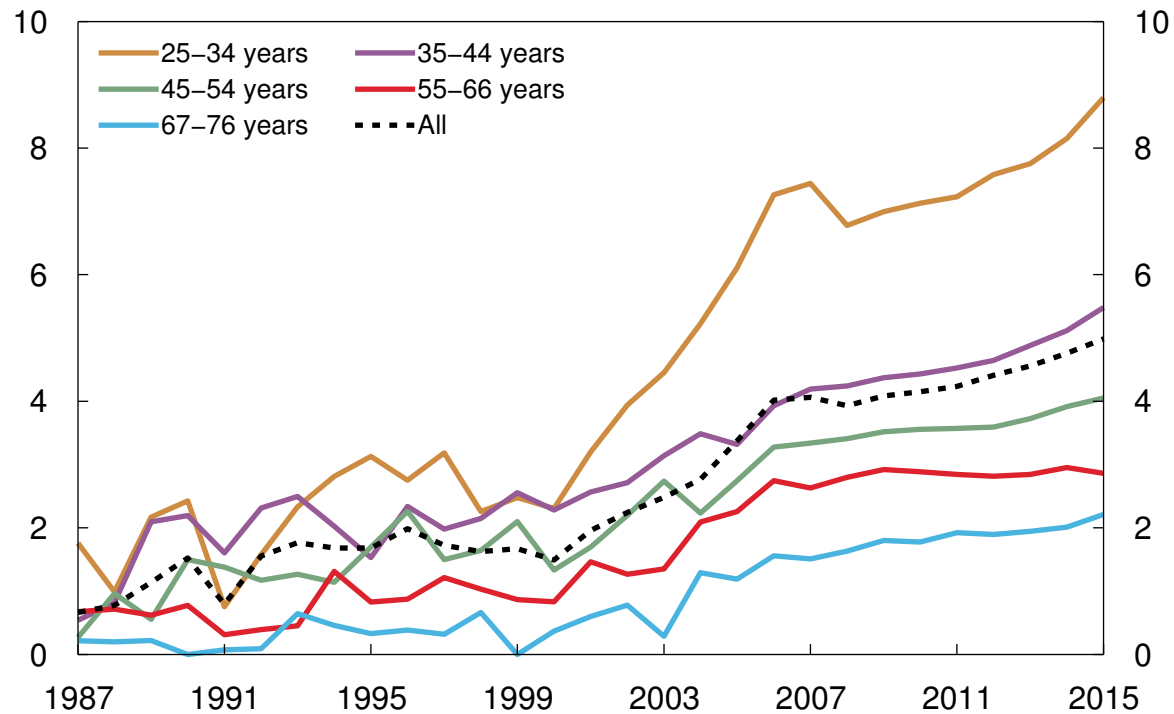
Sources: Statistics Norway and Norges Bank

Chart 5.7 Credit to non-financial enterprises. Transactions.
Mainland Norway. Twelve-month change. Percent. January 2014 – April 2017

Legend:
- Total gross debt (C3)[1]
- Gross domestic debt (C2)
- Foreign debt[1]
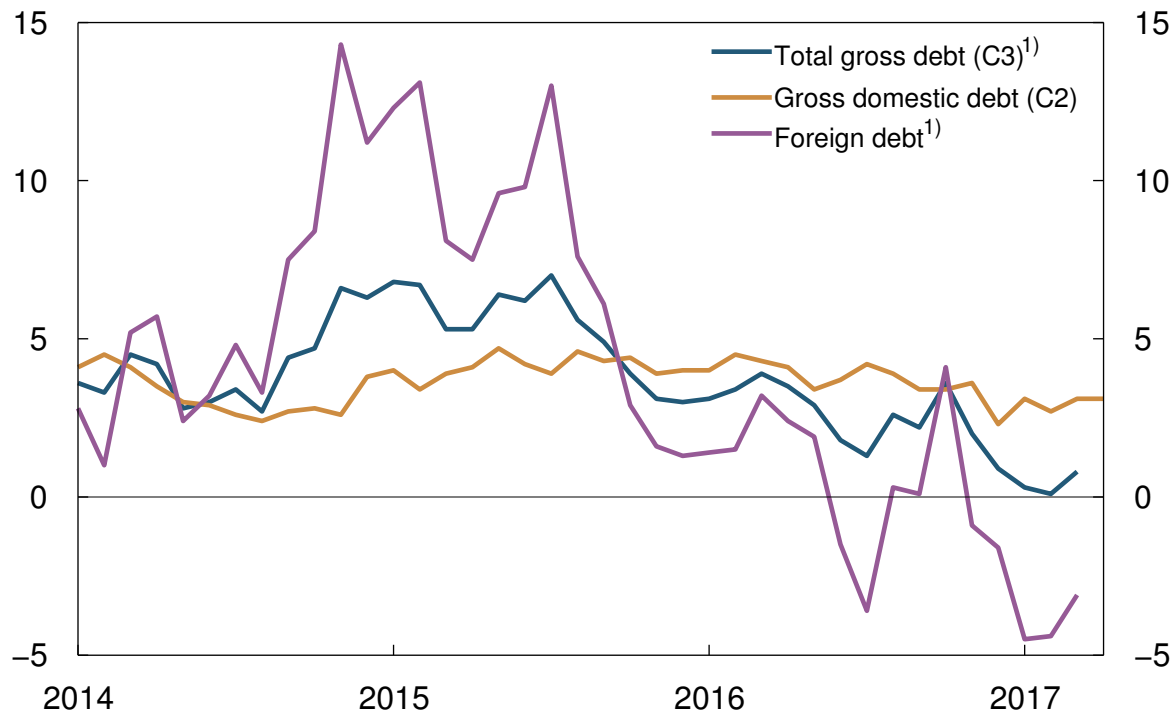
1) To end-March 2017.
Source: Statistics Norway

Chart 5.8 Credit to non-financial enterprises, by source.
Stock. Twelve-month change. Percent. January 2014 – April 2017

Legend:
- Banks and mortgage companies
- Bonds and short-term paper
- Life insurance companies
- Other
- Total
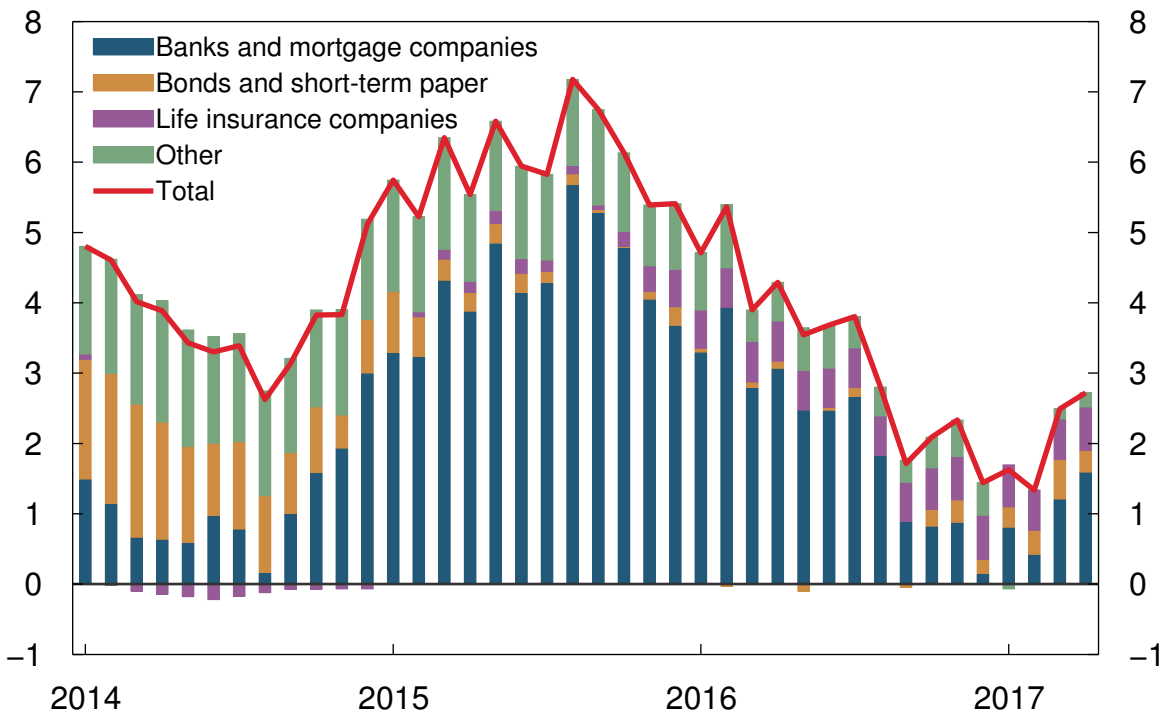
Chart 5.9 Credit from banks and mortgage companies, bonds and short-term paper, by sector. Stock. Four-quarter change. Percent. 2014 Q1 – 2017 Q1

Legend:
- Commercial property
- Construction
- Manufacturing
- Services
- Other
- Total
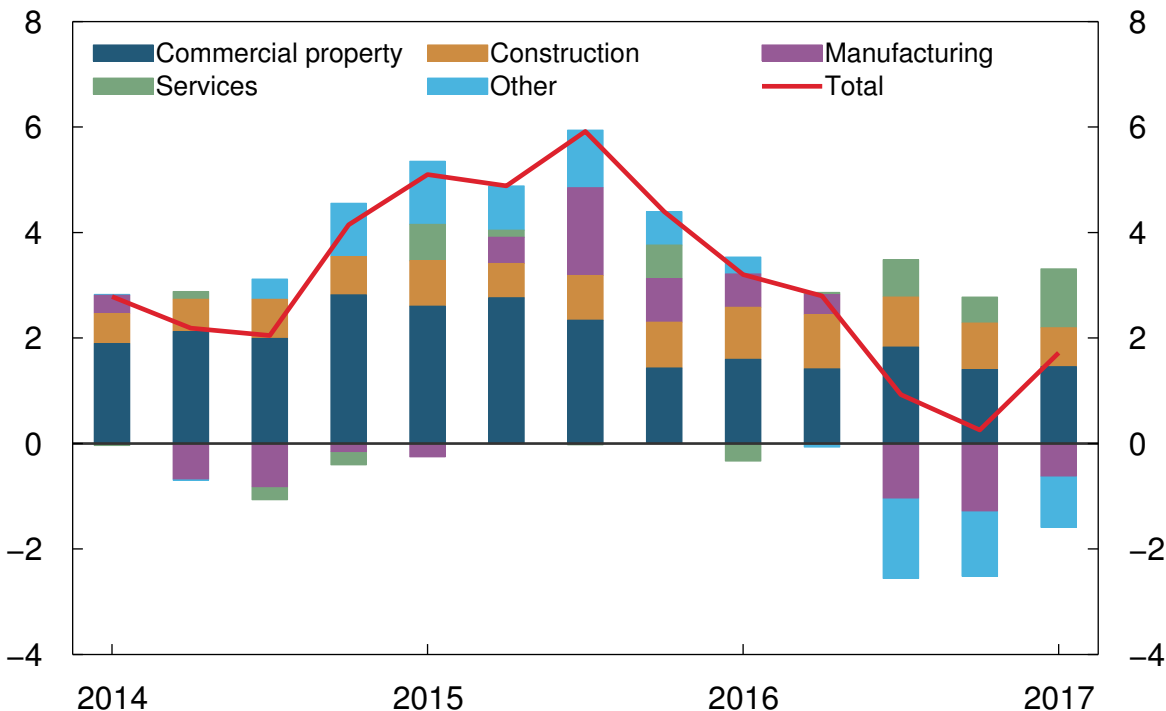
Chart 5.10 Net debt ratio.[1] Listed companies.[2]
Percent. 2003 Q1 – 2017 Q1

- All industries
- Other industries
- Oil service industry
- Period average
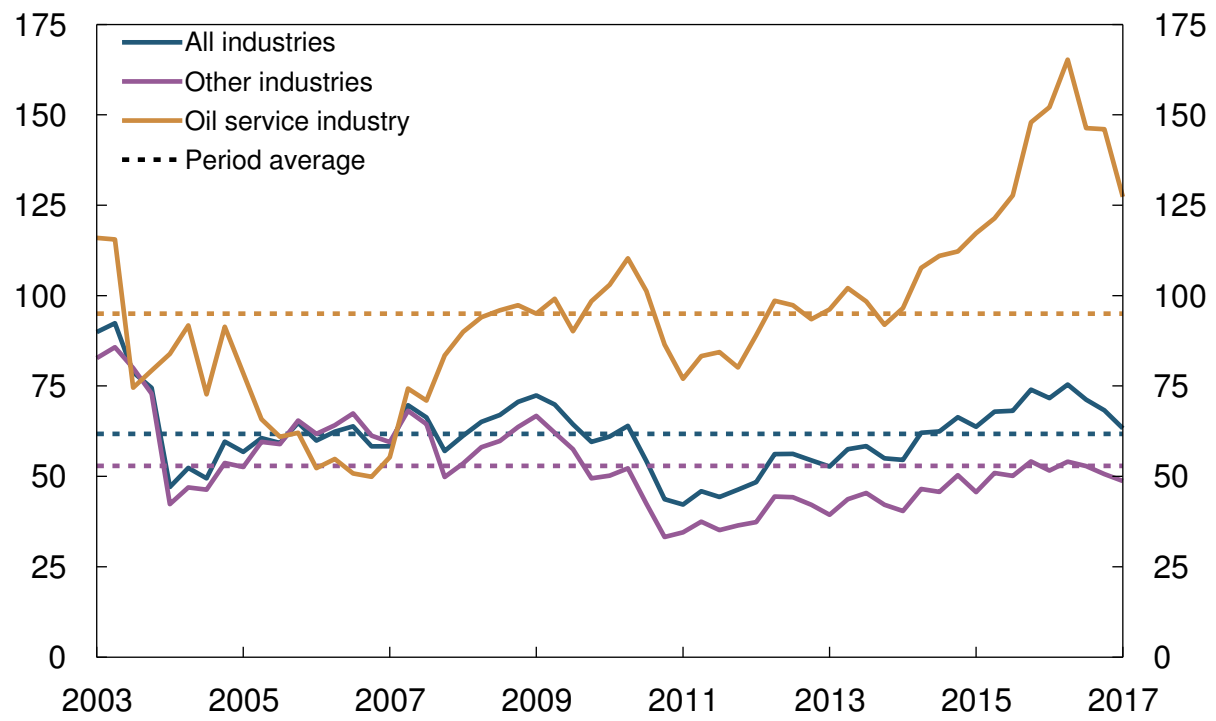
1) Net interest-bearing debt as a share of equity.
2) Norwegian non-financial enterprises listed on Oslo Børs, excluding oil and gas extraction. Norsk Hydro is excluded to end-2007 Q3.
Sources: Bloomberg and Norges Bank

Chart 5.11 House prices relative to disposable income.[1]
Index. 1998 Q4 = 100. 1983 Q1 – 2017 Q1
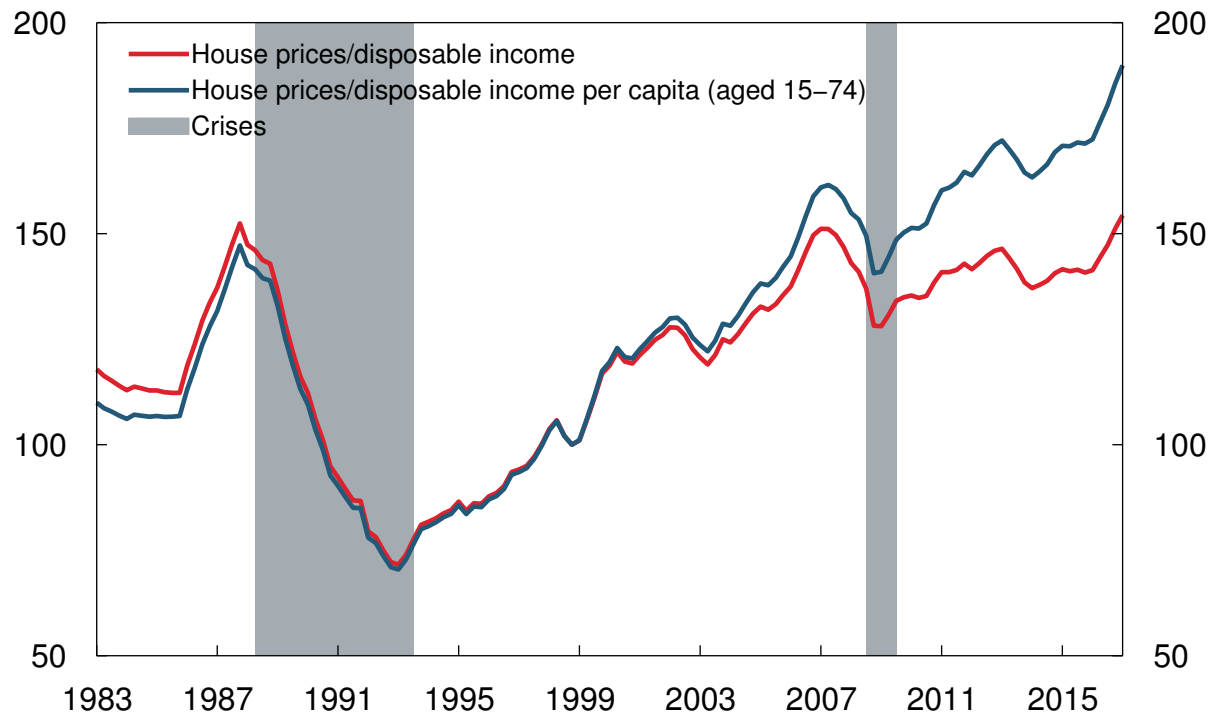
Legend:
- House prices/disposable income
- House prices/disposable income per capita (aged 15–74)
- Crises

1) Disposable income adjusted for estimated reinvested dividend income for 2003 – 2005 and reduction of equity capital for 2006 Q1 – 2012 Q3. Growth in disposable income excluding dividend income is used for 2015 Q1 – 2017 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.[1] Percent. January 2012 – May 2017
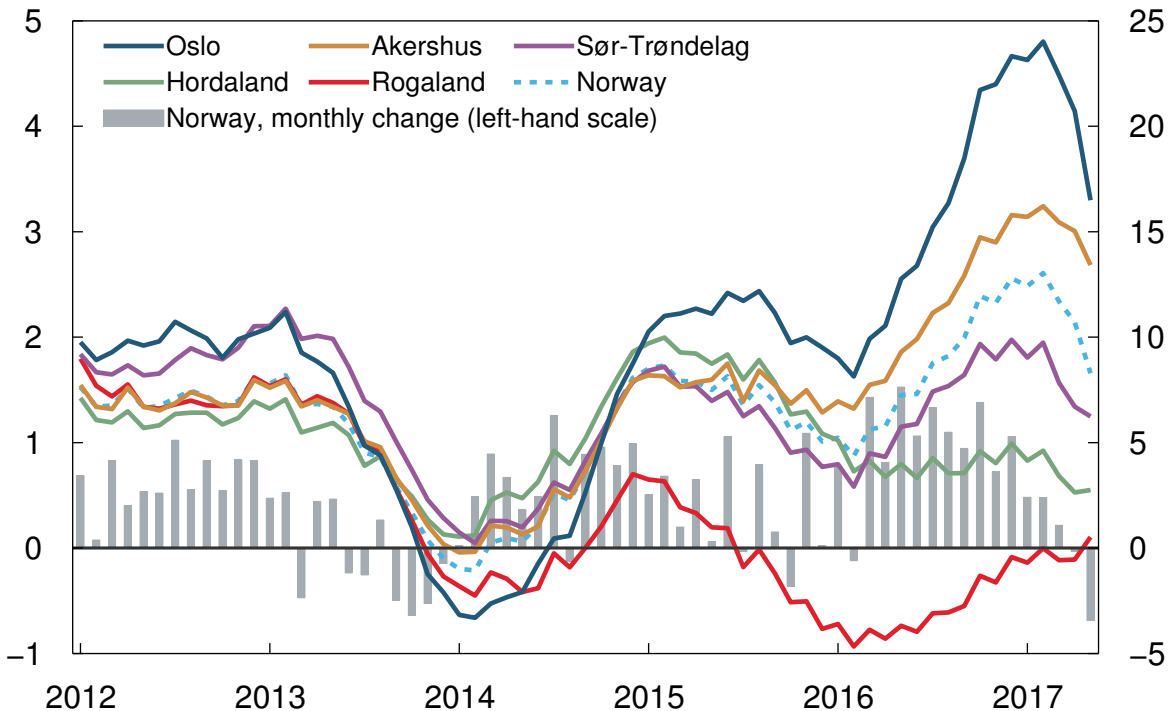
1) Twelve-month change for counties. Twelve-month change and seasonally adjusted monthly change for Norway.
Sources: Eiendomsverdi, Finn.no and Real Estate Norway

Chart 5.13 Housing rental prices. Four-quarter change.
Percent. 2012 Q1 – 2017 Q1

Chart 5.14 New home sales. Number of dwellings. Sum past twelve months.
January 2012 – May 2017
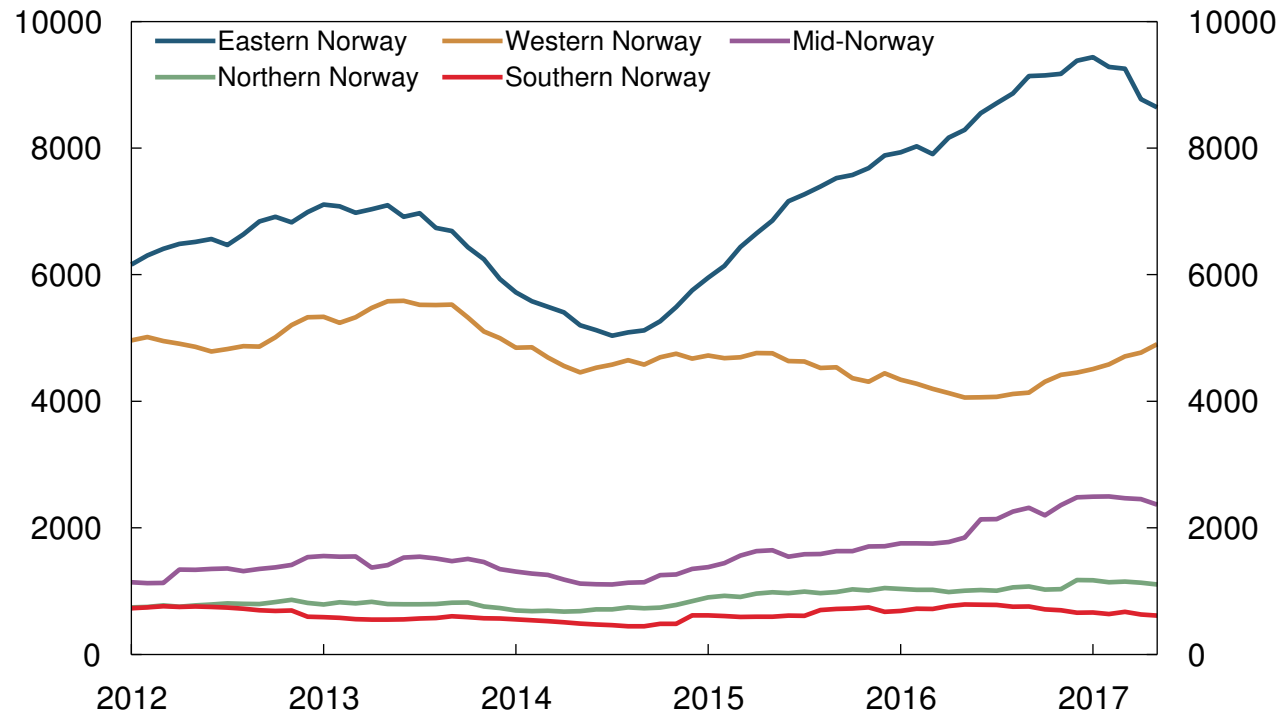
Sources: Norwegian Home Builders' Association, Prognosesenteret and Norges Bank

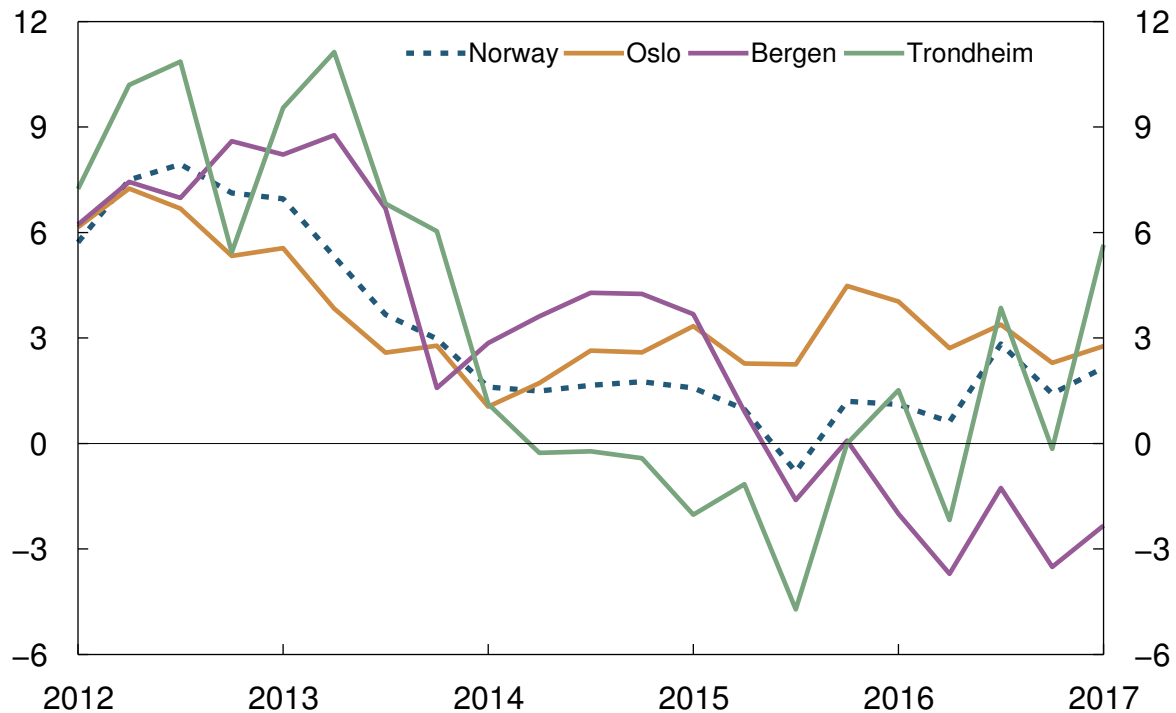Chart 5.15 Common Equity Tier 1 (CET1) capital ratios and targets for large Norwegian banks at 2017 Q1. Percent

Legend:
- CET1 capital ratio[1]
- Last published target

Bank	CET1 capital ratio	Last published target
DNB Bank	16.0	16.0
SpareBank 1 SR-Bank	14.9	15.0
Sparebanken Vest	14.8	14.5
SpareBank 1 SMN	15.0	15.0
Sparebanken Sør	14.7	14.5
SpareBank 1 Østlandet	17.1	16.0
SpareBank 1 Nord-Norge	15.6	14.5
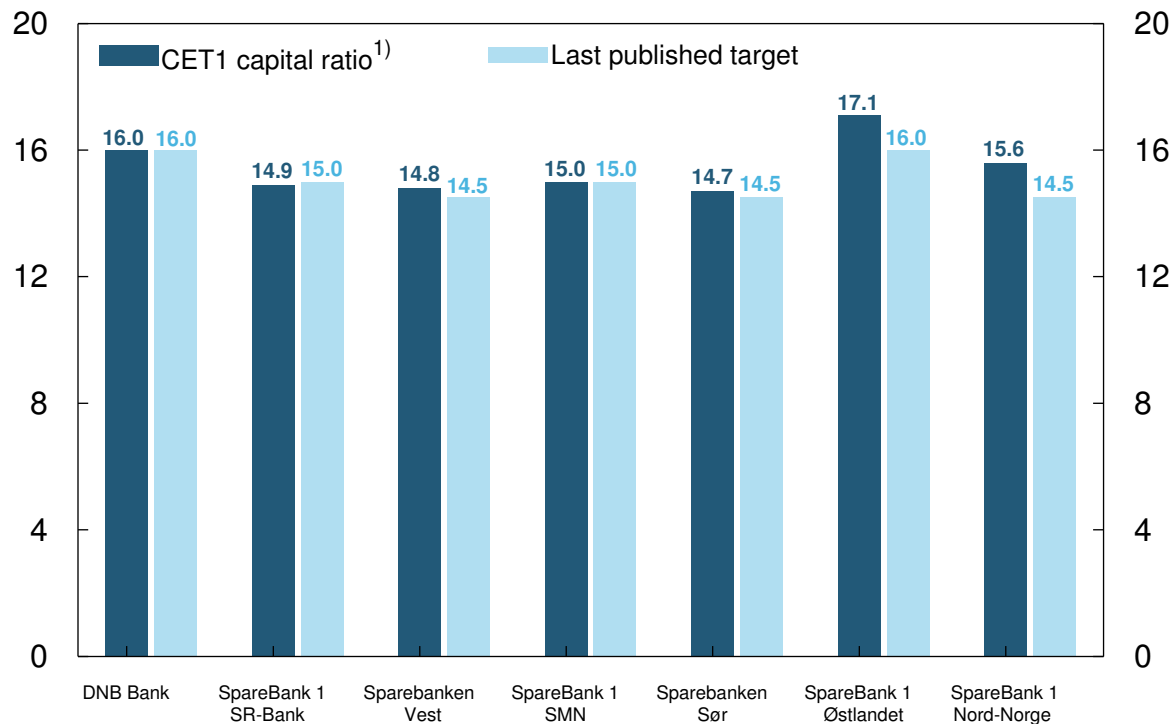
1) Includes complete quarterly results for 2017 Q1.
Sources: Banks' quarterly reports and Norges Bank

Chart 5.16 Office property values. Index. December 2005 = 100.
December 2005 – December 2016

Legend:
- Oslo CBD (Central Business District)
- Central Oslo
- Bergen
- Trondheim
- Stavanger
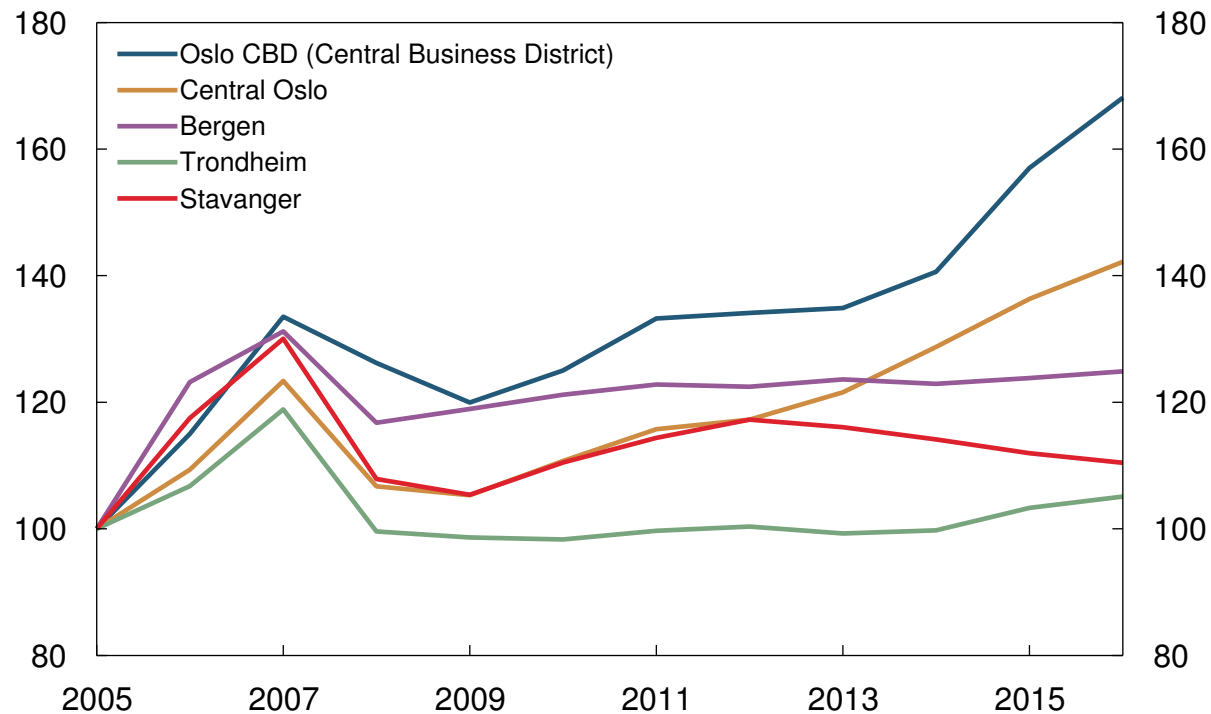
Chart 5.17 Corporate lending by banks and mortgage companies.
Stock. Twelve-month change. Percent. January 2014 – April 2017

Legend:
- DNB
- Other Norwegian
- Nordea
- Other foreign
- Total
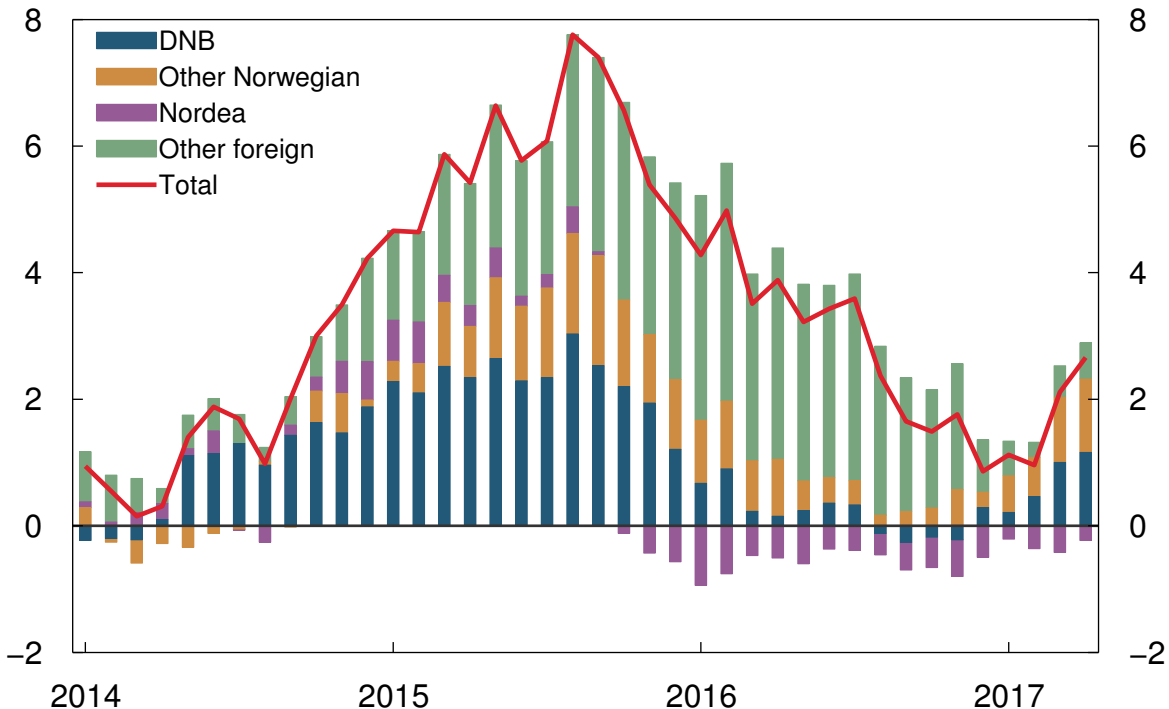
Chart 5.18 Addition of dwellings in Norway. Number of dwellings.
Sum past four quarters. 2013 Q1 – 2017 Q1

- Loss of housing stock
- Conversion to dwellings
- Housing starts
- Net addition[1]
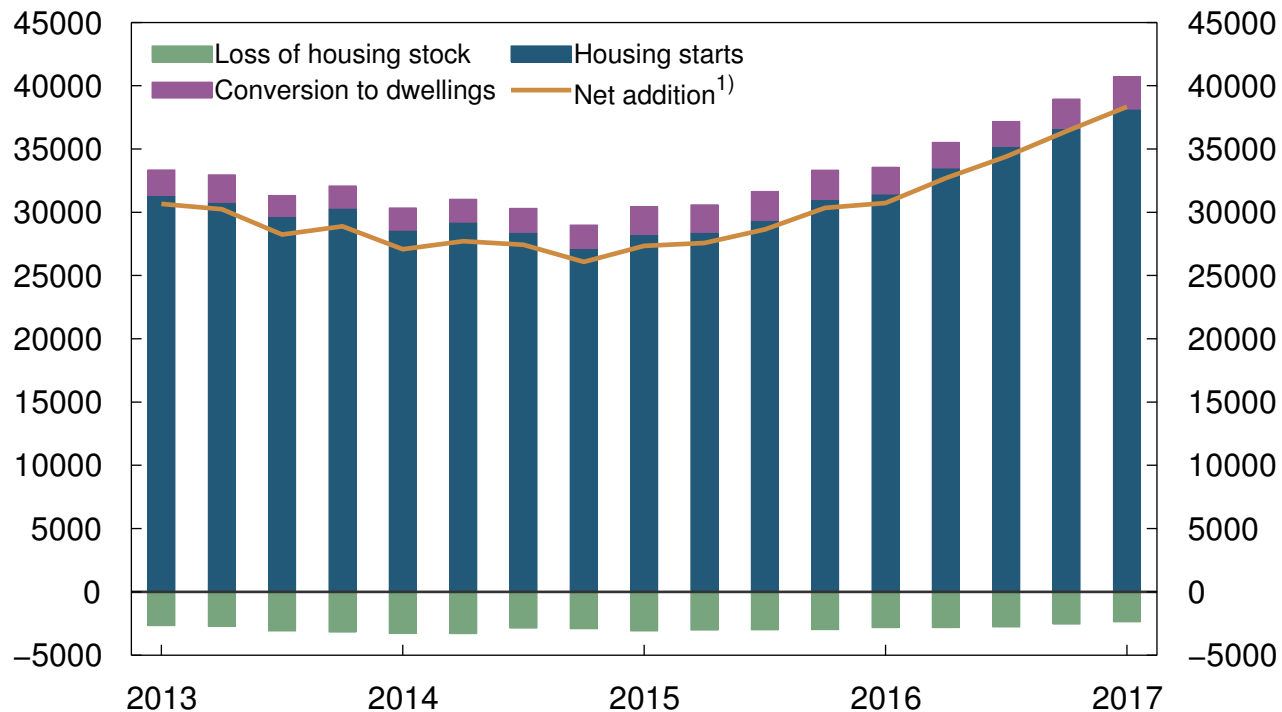
1) Housing starts plus conversion to dwellings minus loss of housing stock.
Sources: Statistics Norway and Norges Bank

Chart 5.19 Addition of dwellings and increase in number of households. Number of dwellings and change in number of households. Sum past three years. 2014 – 2016[1]

Legend:
- Net addition of dwellings[2]
- Change in number of households
- Housing starts

Categories: Akershus, Oslo, Hordaland, Sør-Trøndelag, Rogaland, Buskerud, Vestfold, Østfold, Møre og Romsdal, Vest-Agder, Nordland, Troms, Hedmark, Nord-Trøndelag, Oppland, Aust-Agder, Sogn og Fjordane, Telemark, Finnmark
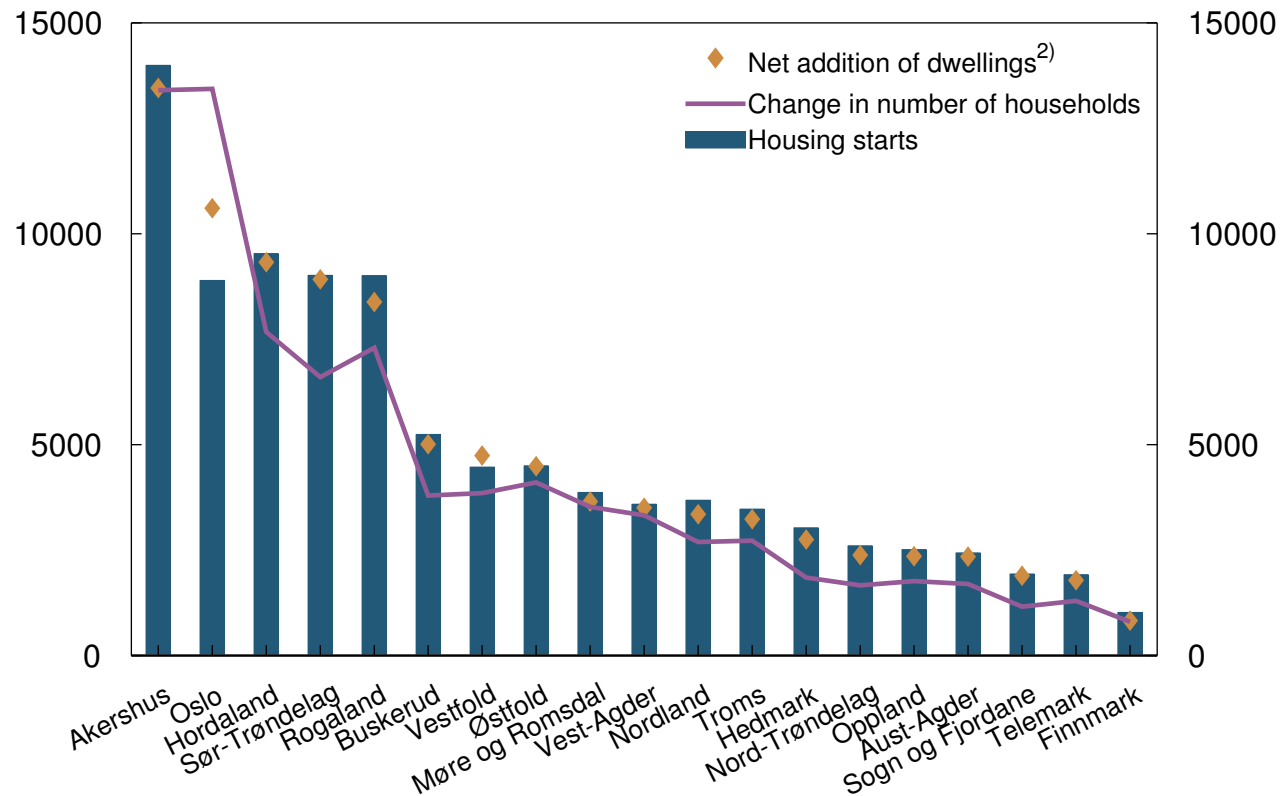
1) For 2016, change in number of households is estimated based on population growth.
2) Housing starts plus conversion to dwellings minus loss of housing stock.
Sources: Statistics Norway and Norges Bank

Chart 5.20 Housing starts and completions.
Sum past twelve months. January 2000 – April 2017

Legend:
- Housing starts – Eastern Norway[1]
- Housing starts – Rest of Norway
- Completions – Eastern Norway[1]
- Completions – Rest of Norway
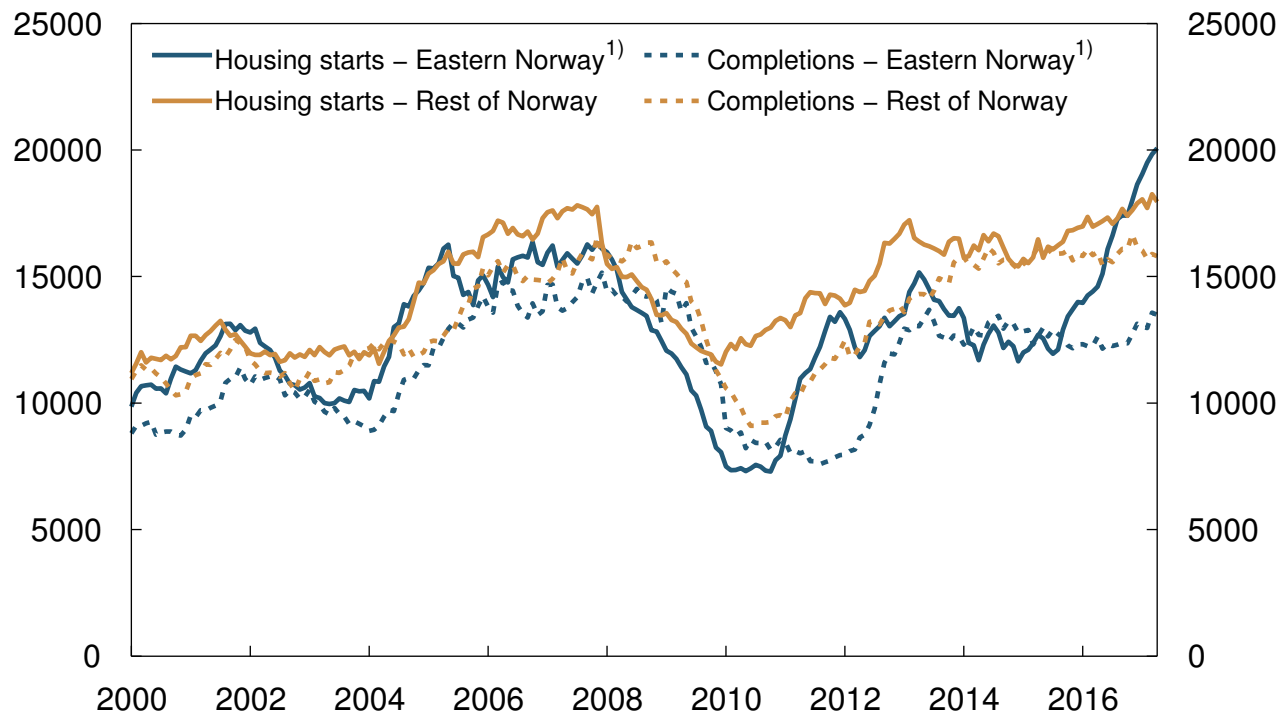
1) Akershus, Buskerud, Hedmark, Oppland, Oslo, Telemark, Vestfold and Østfold.
Sources: Statistics Norway and Norges Bank

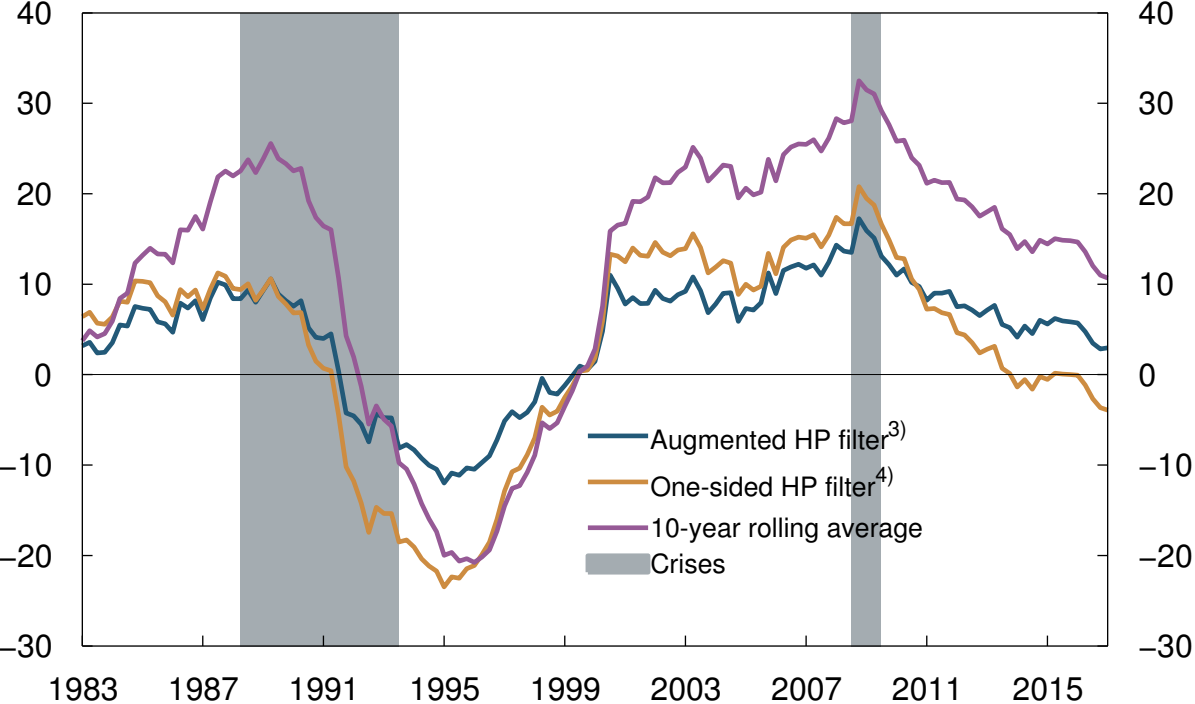Chart 5.21 Credit gap. Total credit mainland Norway[1] as a share of mainland GDP. Deviation from estimated trends.[2] Percentage points. 1983 Q1 – 2017 Q1

Augmented HP filter[3]
One-sided HP filter[4]
10-year rolling average
Crises

1) The sum of C2 households and C3 non-financial enterprises for mainland Norway (all non-financial enterprises pre-1995). C3 non-financial enterprises comprises C2 non-financial enterprises and foreign debt for mainland Norway.
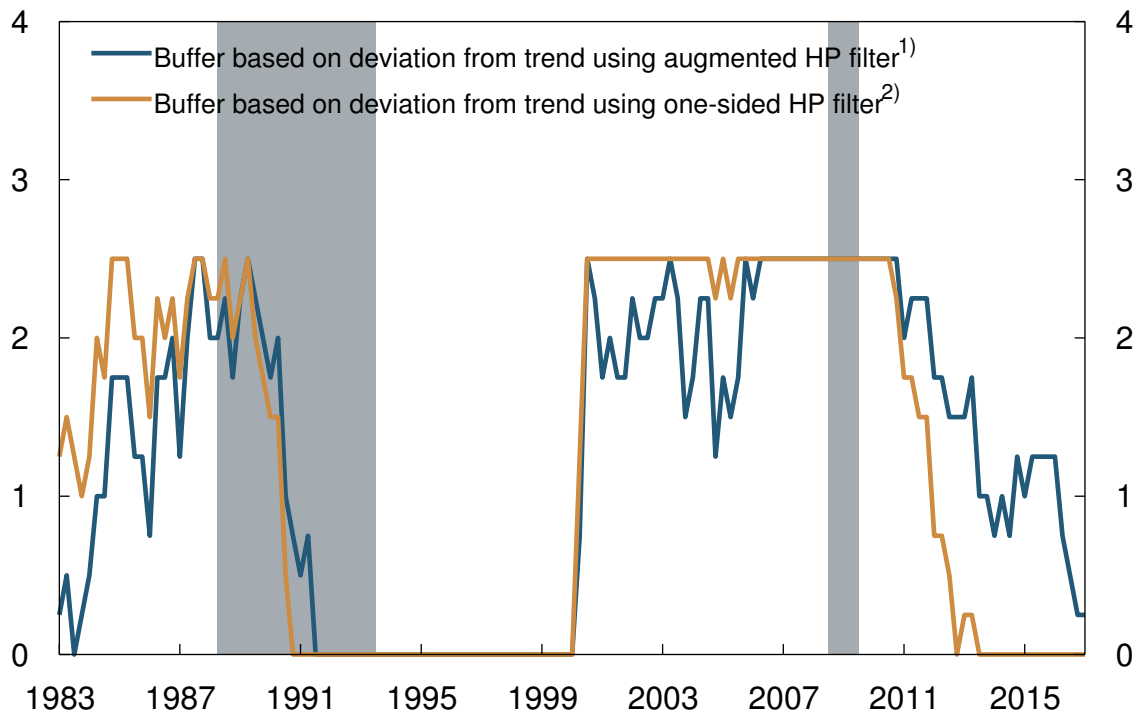2) The trends are estimated based on data from 1975 Q4 onwards.
3) One-sided Hodrick-Prescott filter estimated on data augmented with a simple projection. Lambda = 400 000.
4) One-sided Hodrick-Prescott filter. Lambda = 400 000.
Sources: IMF, Statistics Norway and Norges Bank

Chart 5.22 Reference rates for the countercyclical capital buffer under alternative trend estimates. Percent. 1983 Q1 – 2017 Q1

Buffer based on deviation from trend using augmented HP filter[1]

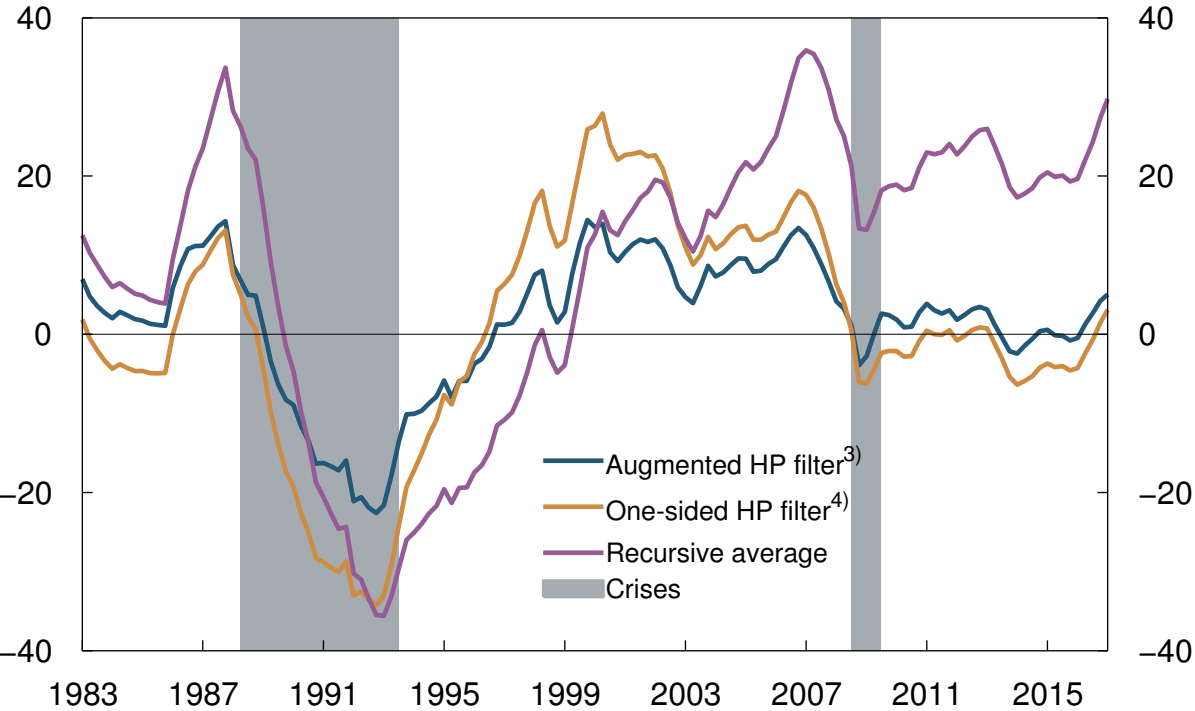Buffer based on deviation from trend using one-sided HP filter[2]

1) One-sided Hodrick-Prescott filter estimated on data augmented with a simple projection. Lambda = 400 000.
2) One-sided Hodrick-Prescott filter. Lambda = 400 000.
Sources: IMF, Statistics Norway and Norges Bank

Chart 5.23 House price gap. House prices relative to disposable income[1] as deviation from estimated trends.[2] Percent. 1983 Q1 – 2017 Q1

Legend:
- Augmented HP filter[3]
- One-sided HP filter[4]
- Recursive average
- Crises

1) Disposable income adjusted for estimated reinvested dividend income for 2003 – 2005 and reduction of equity capital for 2006 Q1 – 2012 Q3. Growth in disposable income excluding dividend income is used for 2015 Q1 – 2017 Q1.
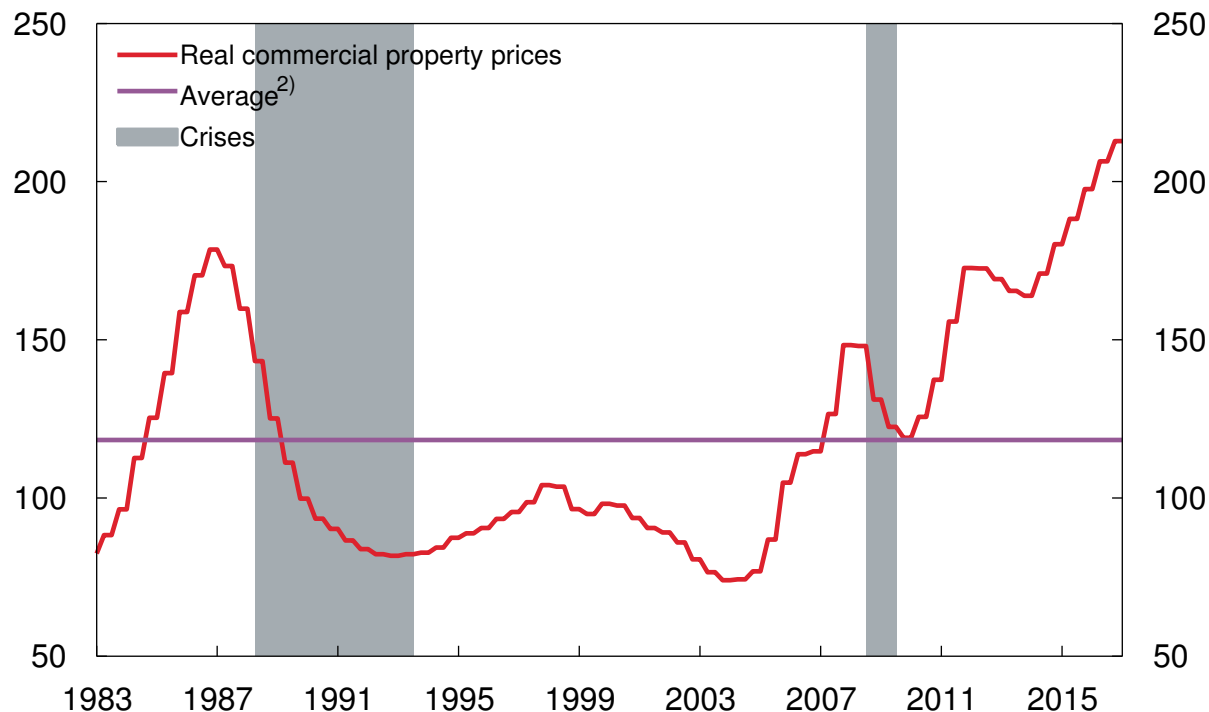
2) The trends are estimated based on data from 1978 Q4 onwards.

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

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

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

Chart 5.24 Real commercial property prices.[1]
Index. 1998 = 100. 1983 Q1 – 2017 Q1

Legend:
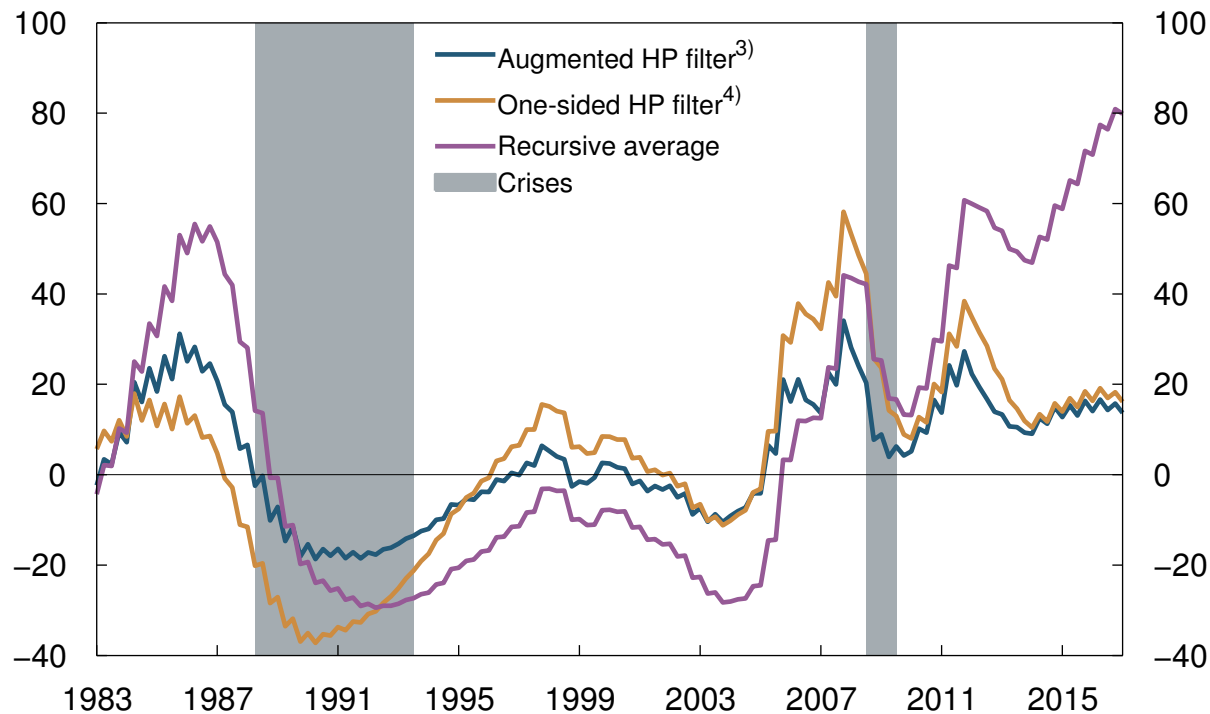- Real commercial property prices
- Average[2]
- Crises

1) Estimated selling prices for centrally located high-standard office space in Oslo. Deflated by the GDP deflator for mainland Norway.
2) Based on data from 1981 Q2 onwards.
Sources: Dagens Næringsliv, OPAK, Statistics Norway and Norges Bank

Chart 5.25 Commercial property price gap. Real commercial property prices[1] as deviation from estimated trends.[2] Percent. 1983 Q1 – 2017 Q1

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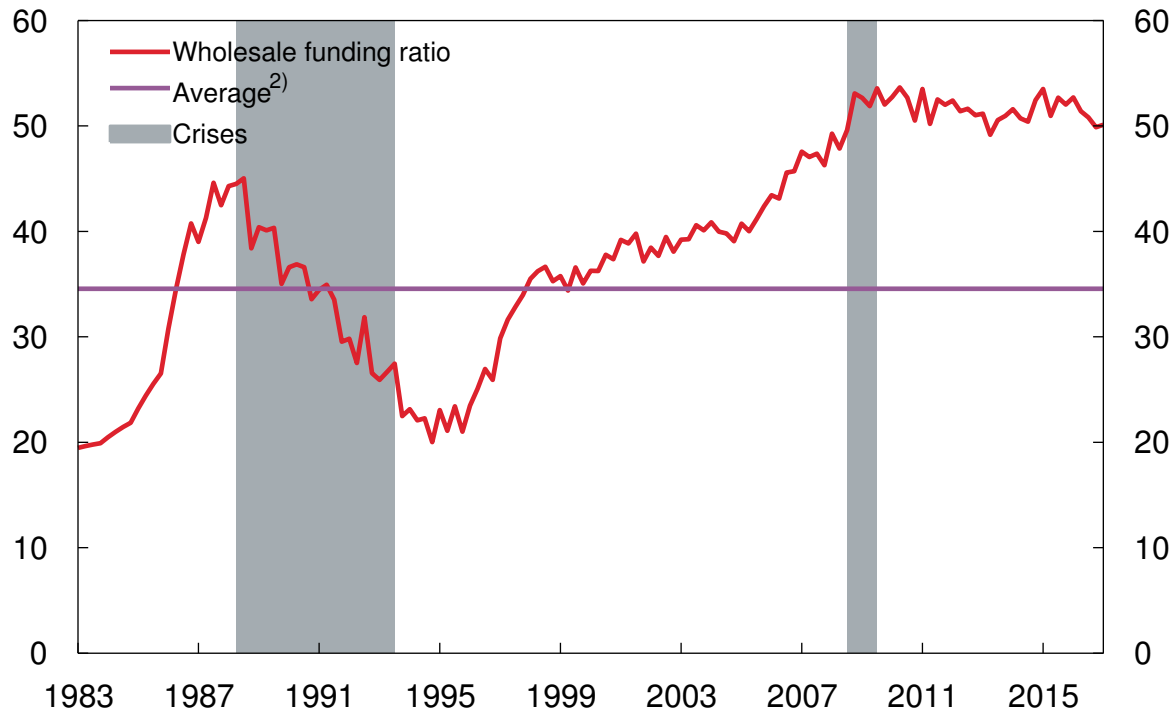2) The trends are estimated based on data from 1981 Q2 onwards.
3) One-sided Hodrick-Prescott filter estimated on data augmented with a simple projection. Lambda = 400 000.
4) One-sided Hodrick-Prescott filter. Lambda = 400 000.
Sources: Dagens Næringsliv, OPAK, Statistics Norway and Norges Bank

Chart 5.26 Banks'[1] wholesale funding ratio.
Percent. 1983 Q1 – 2017 Q1

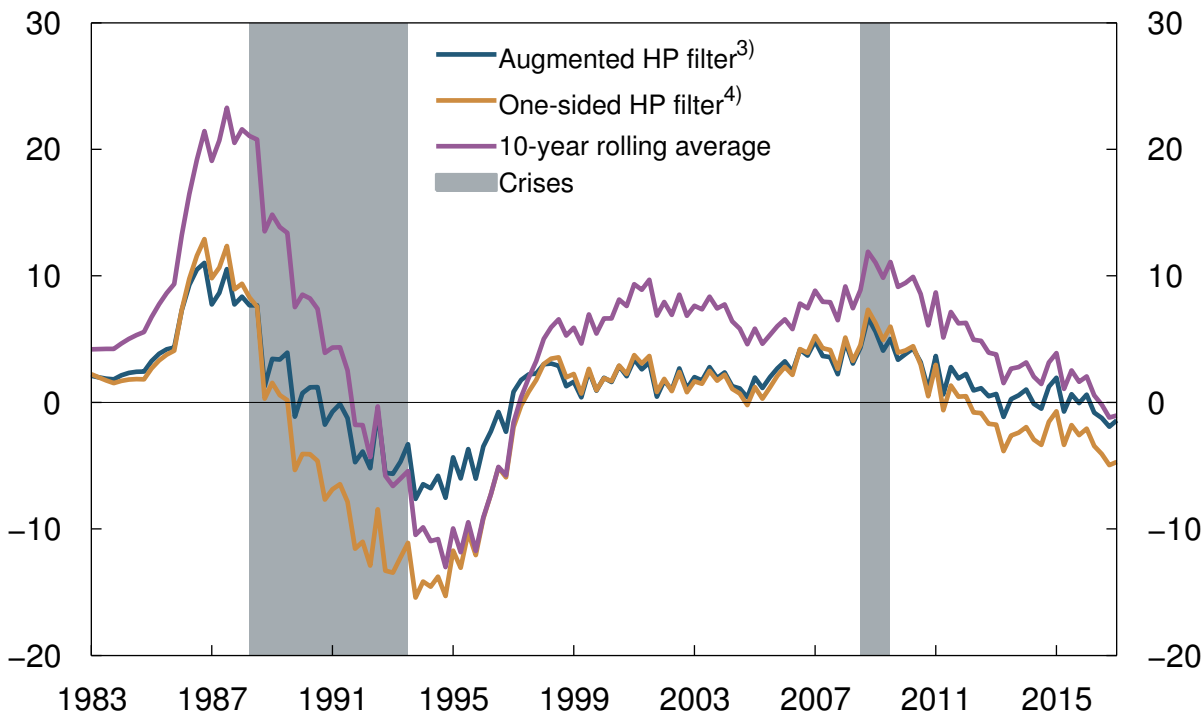- Wholesale funding ratio
- Average[2]
- Crises

1) All banks and covered bond mortgage companies in Norway except branches and subsidiaries of foreign banks.
2) Based on data from 1975 Q4 onwards.
Source: Norges Bank

Chart 5.27 Wholesale funding gap. Banks'[1] wholesale funding ratio as deviation from estimated trends.[2] Percentage points. 1983 Q1 – 2017 Q1

Legend:
- Augmented HP filter[3]
- One-sided HP filter[4]
- 10-year rolling average
- Crises

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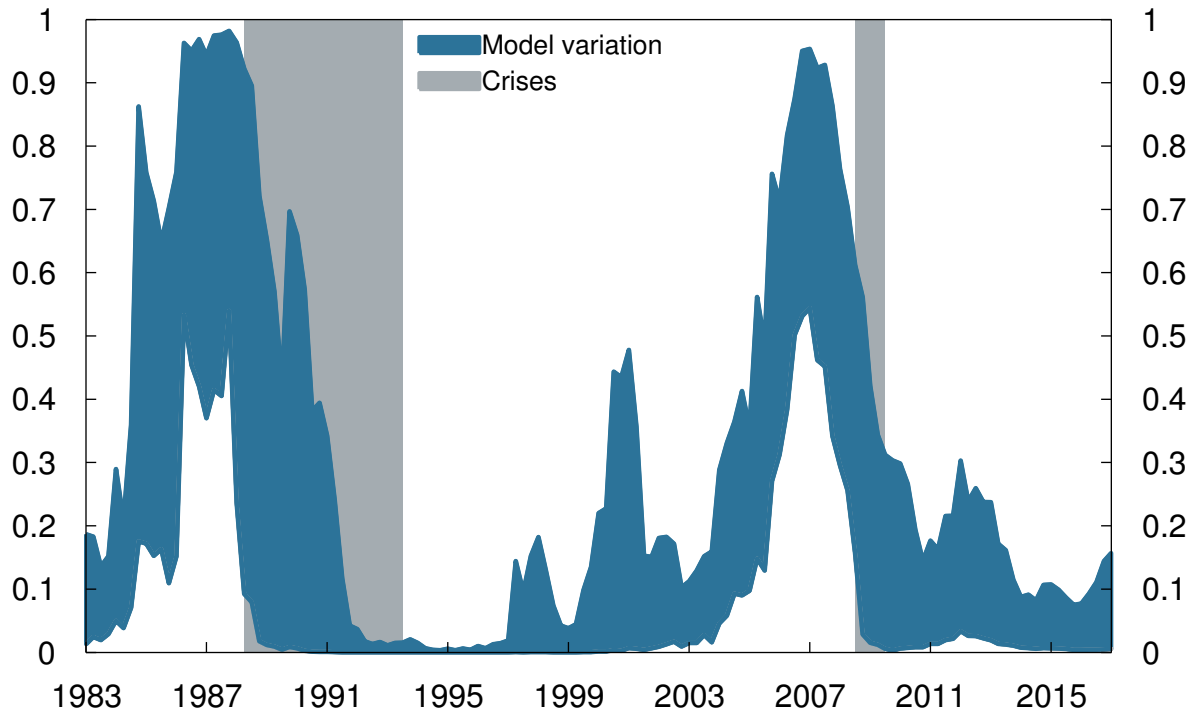2) The trends are estimated based on data from 1975 Q4 onwards.
3) One-sided Hodrick-Prescott filter estimated on data augmented with a simple projection. Lambda = 400 000.
4) One-sided Hodrick-Prescott filter. Lambda = 400 000.
Source: Norges Bank

Chart 5.28 Estimated crisis probabilities based on various model specifications. 1983 Q1 – 2017 Q1

Legend:
- Model variation
- Crises