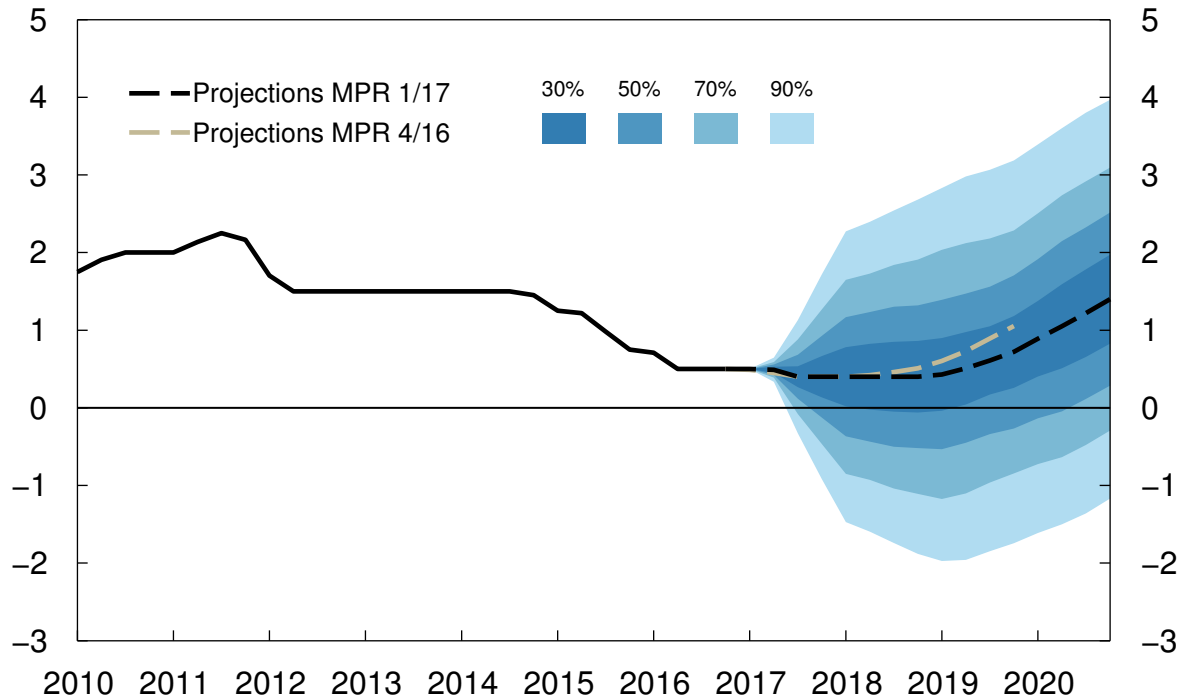


Chart 1.1a Projected key policy rate with fan chart and projected key policy rate from MPR 4/16. ¹⁾ Percent. 2010 Q1 – 2020 Q4 ²⁾

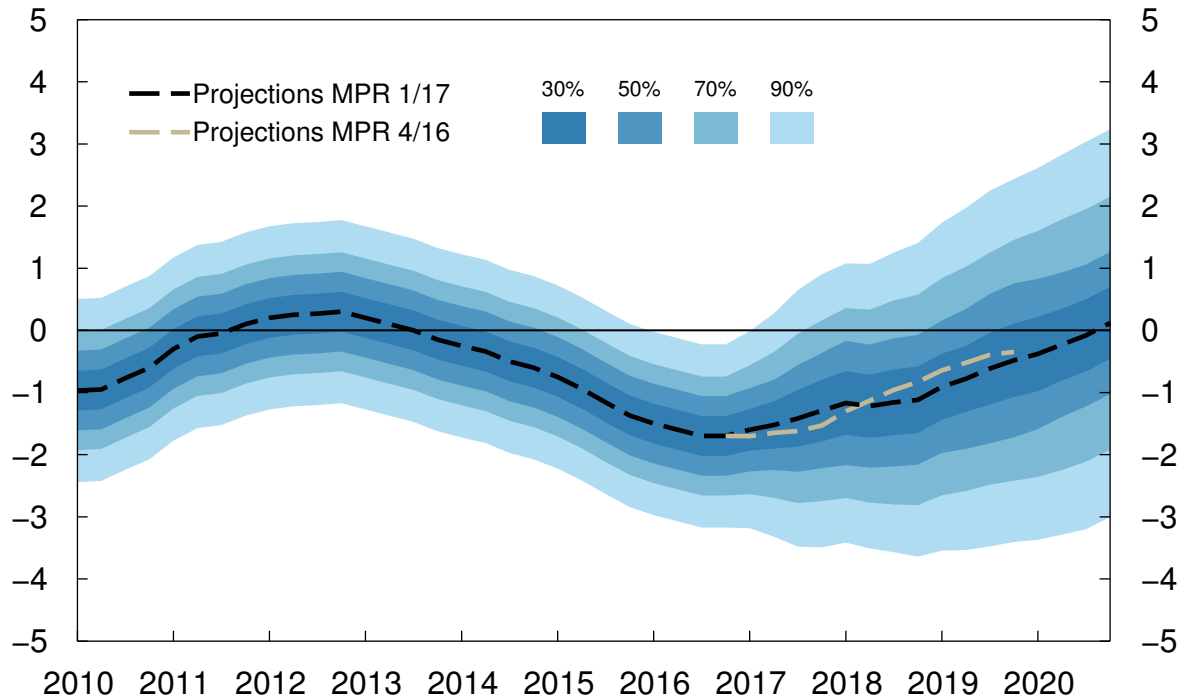


1) The fan charts are based on historical experience and stochastic simulations in our main macroeconomic model, NEMO. The fan chart for the key policy rate does not take into account that a lower bound for the interest rate exists.

2) Projections for 2017 Q1 – 2020 Q4 (broken line).

Source: Norges Bank

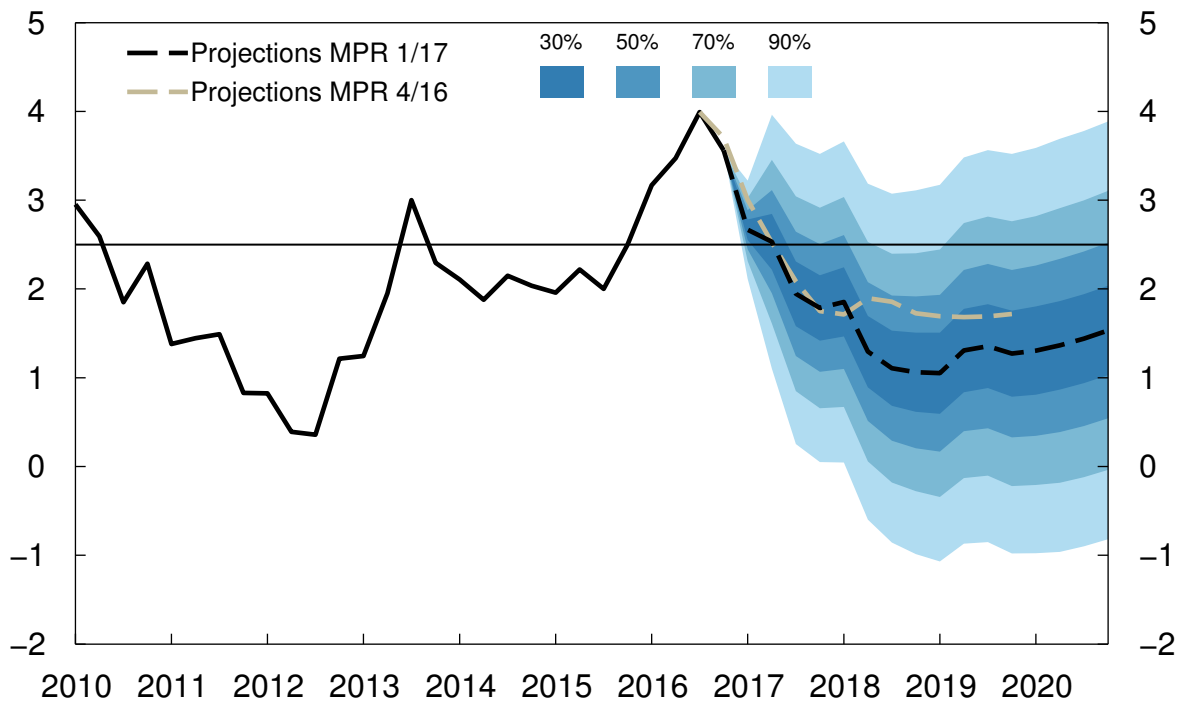
Chart 1.1b Projected output gap¹⁾ with fan chart and projected output gap from MPR 4/16. Percent. 2010 Q1 – 2020 Q4



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

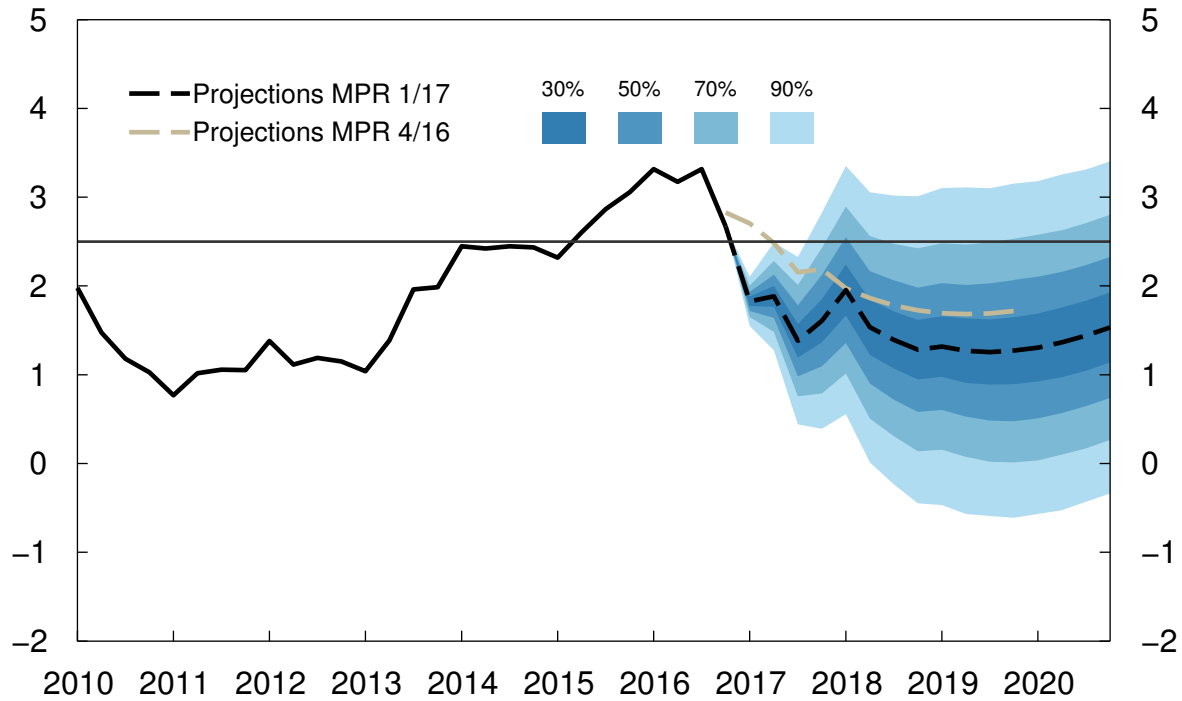
Source: Norges Bank

Chart 1.1c Projected CPI with fan chart and projected CPI from MPR 4/16.
 Four-quarter change. Percent. 2010 Q1 – 2020 Q4¹⁾



1) Projections for 2017 Q1 – 2020 Q4 (broken line).
 Sources: Statistics Norway and Norges Bank

Chart 1.1d Projected CPI-ATE¹⁾ with fan chart and projected CPI-ATE from MPR 4/16. Four-quarter change. Percent. 2010 Q1 – 2020 Q4²⁾

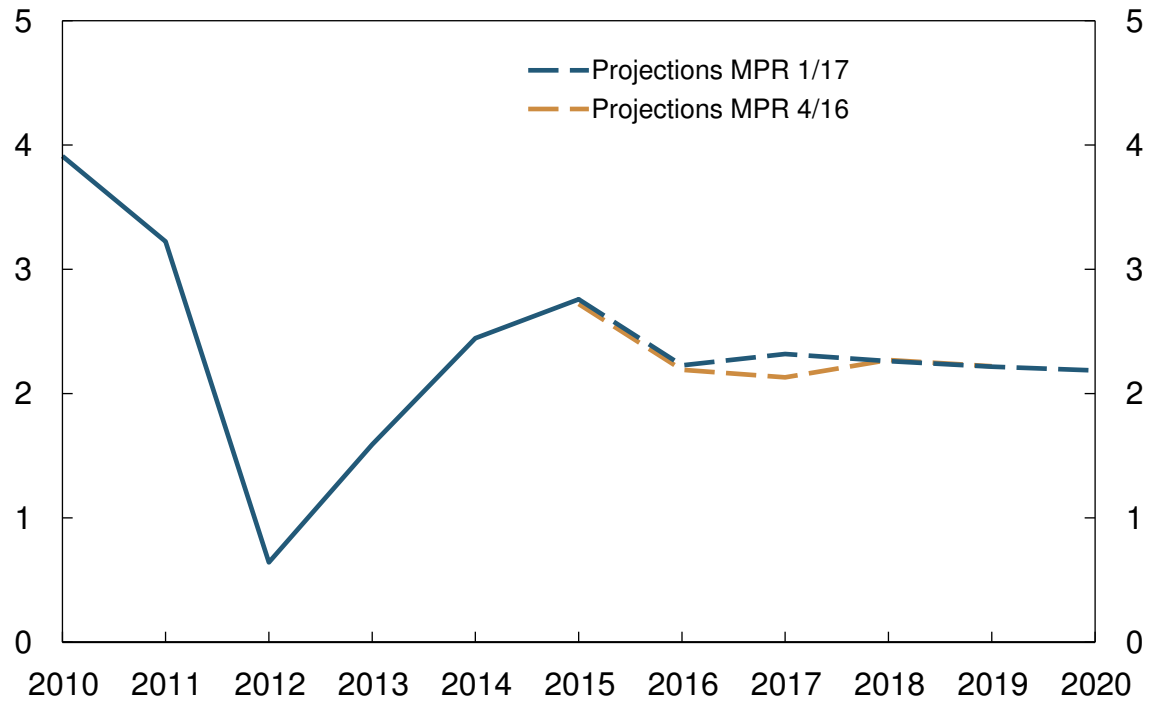


1) CPI adjusted for tax changes and excluding energy products.

2) Projections for 2017 Q1 – 2020 Q4 (broken line).

Sources: Statistics Norway and Norges Bank

Chart 1.2 GDP for trading partners.¹⁾ Annual change. Percent. 2010 – 2020²⁾

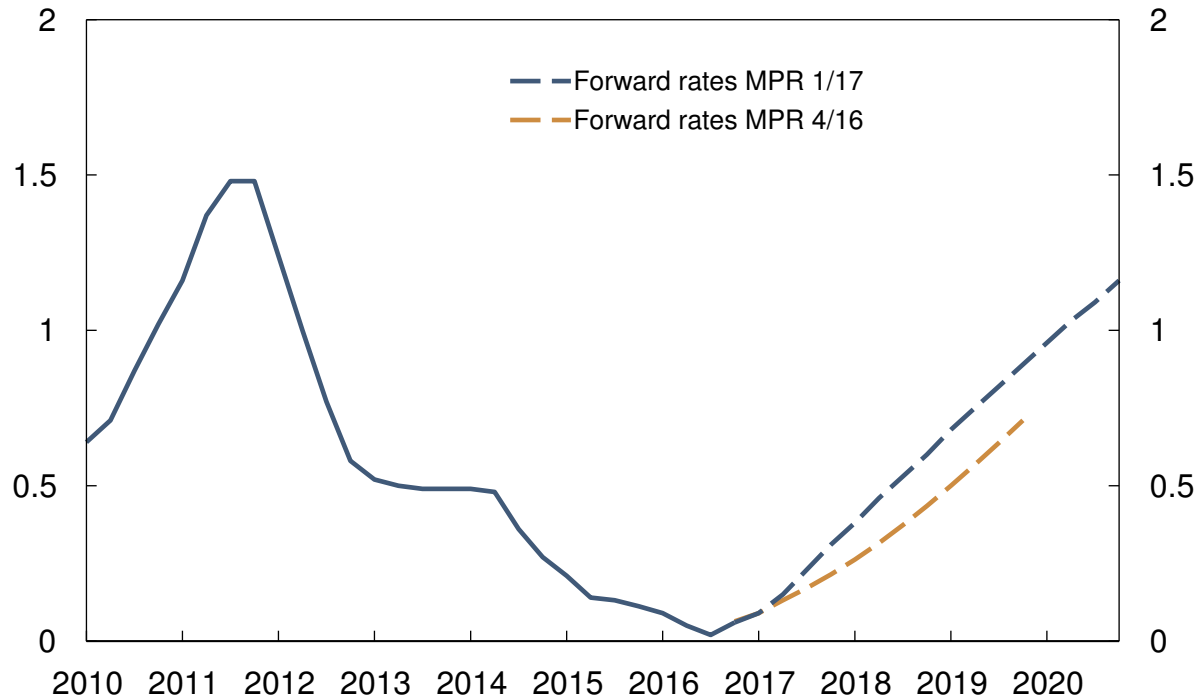


1) Export weights.

2) Projections for 2016 – 2020 (broken line).

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 Q4²⁾

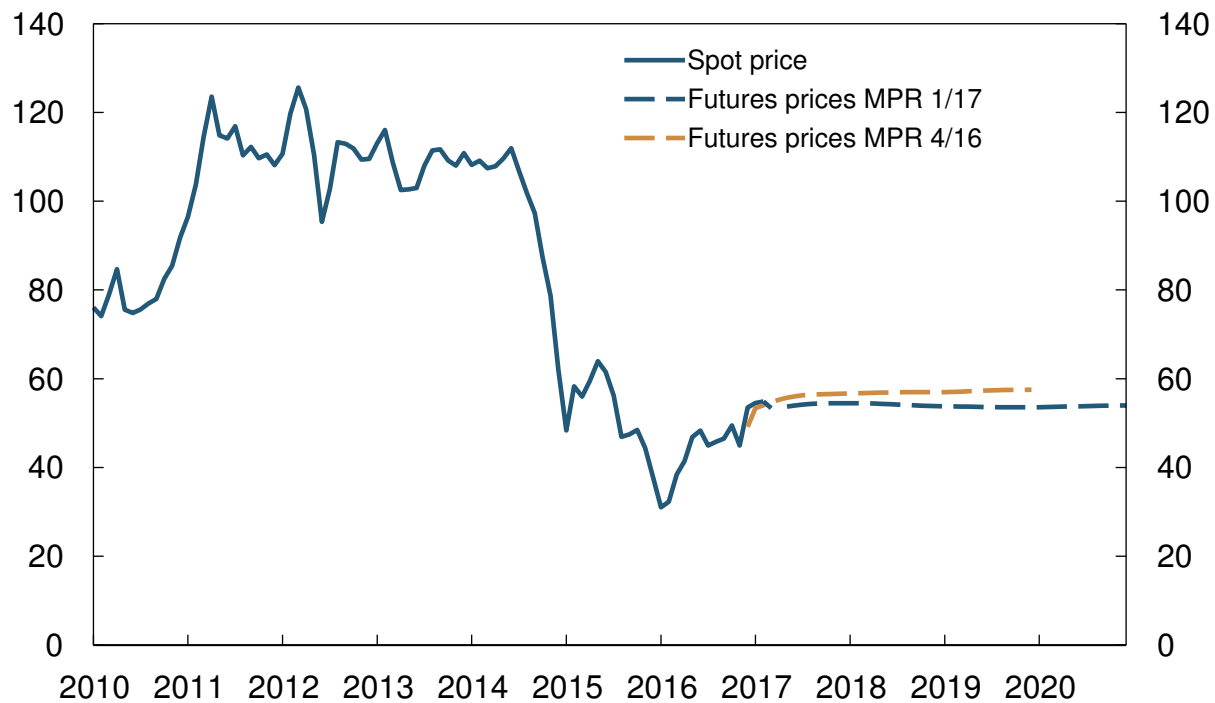


1) Based on money market rates and interest rate swaps. For information about the aggregate for trading partner interest rates, see *Norges Bank Papers 2/2015*.

2) Blue and orange broken lines show forward rates at 10 March 2017 and 9 December 2016 respectively.

Sources: Thomson Reuters and Norges Bank

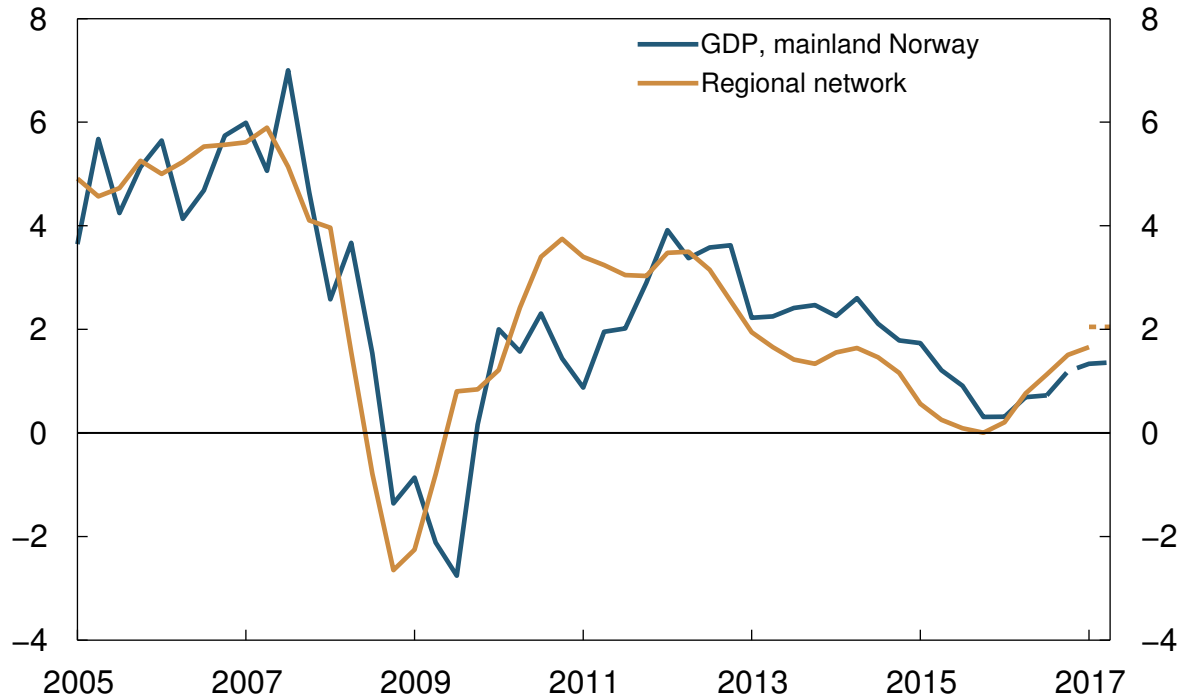
Chart 1.4 Oil price. USD/barrel. January 2010 – December 2020 ¹⁾



1) Futures prices (broken lines) are the averages of futures prices for the period 6 March 2017 – 10 March 2017 for MPR 1/17 and 5 – 9 December 2016 for MPR 4/16.

Sources: Thomson Reuters and Norges Bank

Chart 1.5 GDP for mainland Norway and regional network's indicator of output growth¹⁾. Four-quarter change. Annualised. Percent. 2005 Q1 – 2017 Q2²⁾

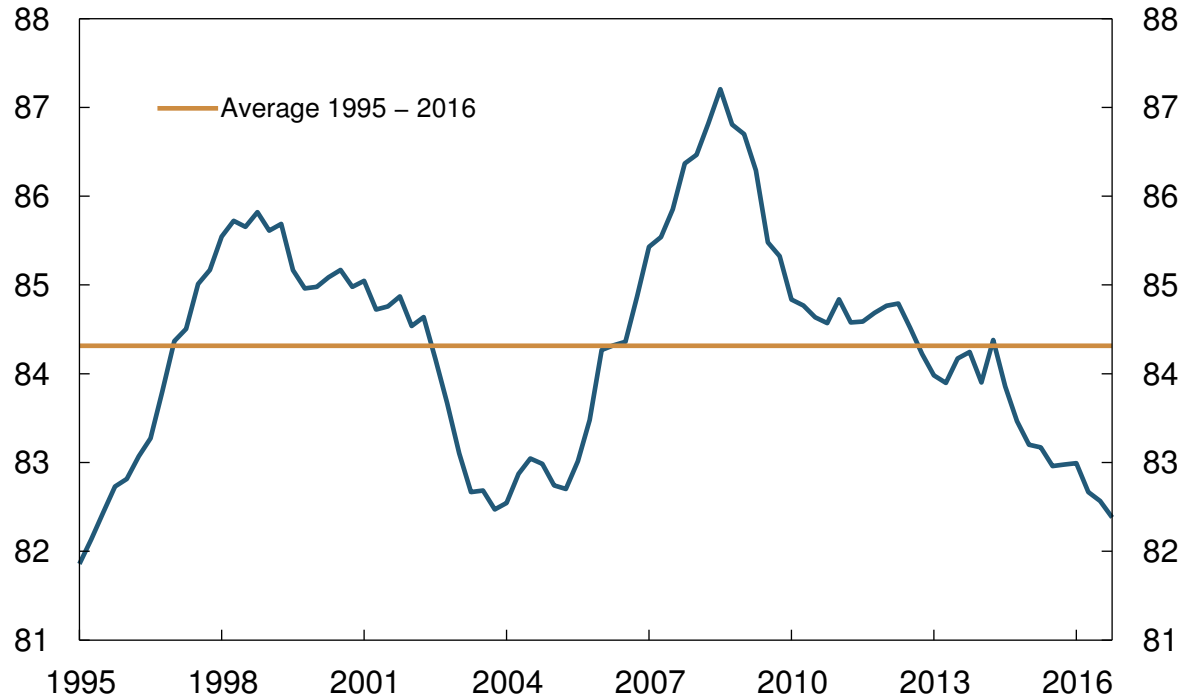


1) Reported output growth past three months (solid line) and expected output growth next six months (broken lines).

2) Projections for 2017 Q1 – 2017 Q2 (broken blue line).

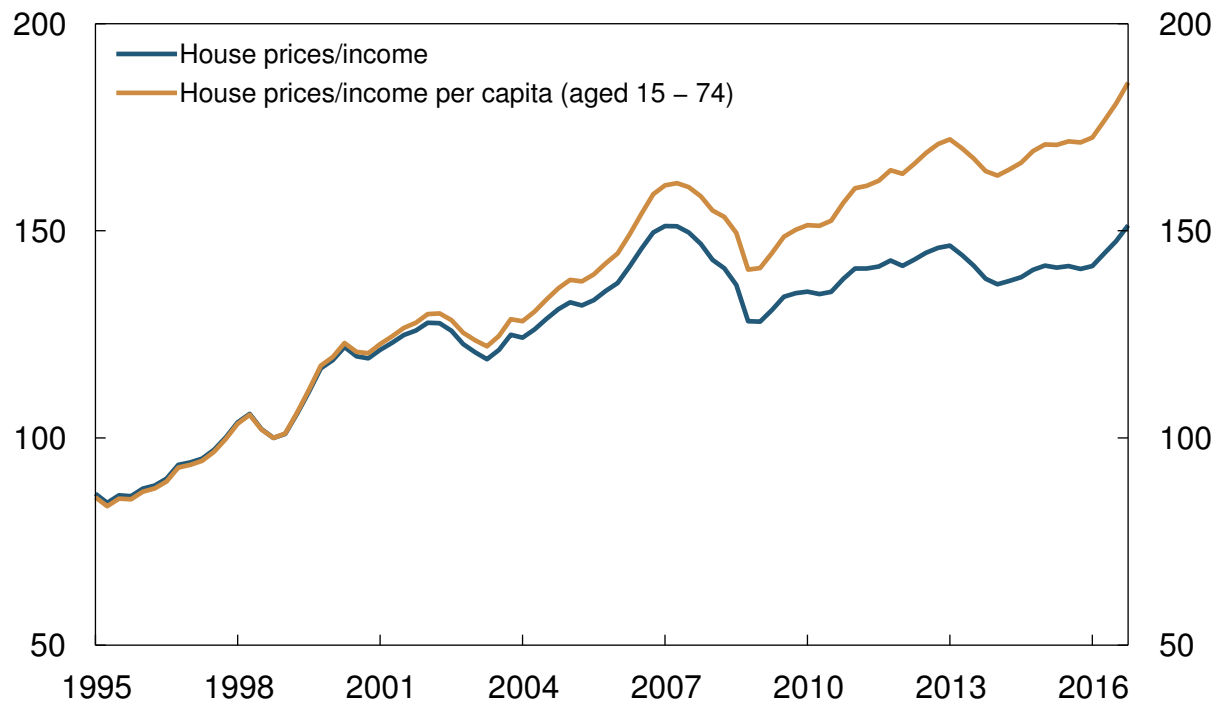
Source: Norges Bank

Chart 1.6 Employment frequency. Employed persons in LFS¹⁾ as a share of population (aged 25 – 54). Seasonally adjusted. Percent. 1995 Q1 – 2016 Q4



1) Labour Force Survey.
Sources: Statistics Norway og Norges Bank

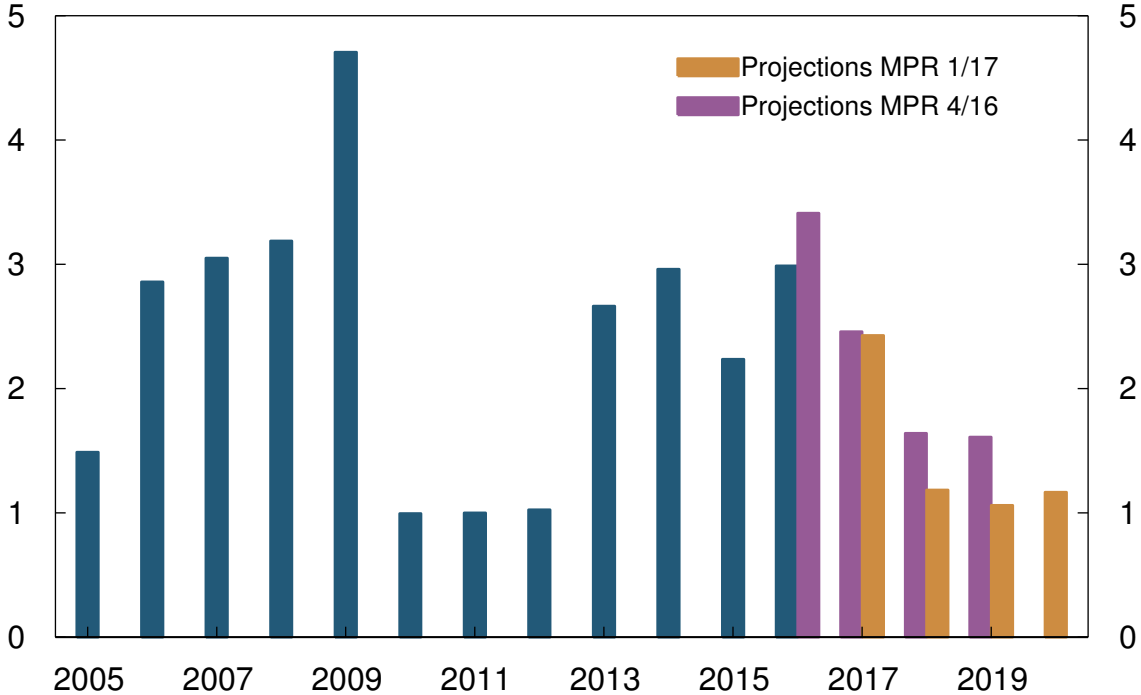
Chart 1.7 House prices relative to disposable income¹⁾.
Index. 1998 Q4 = 100. 1995 Q1 – 2016 Q4



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 2016 Q1 – 2016 Q4.

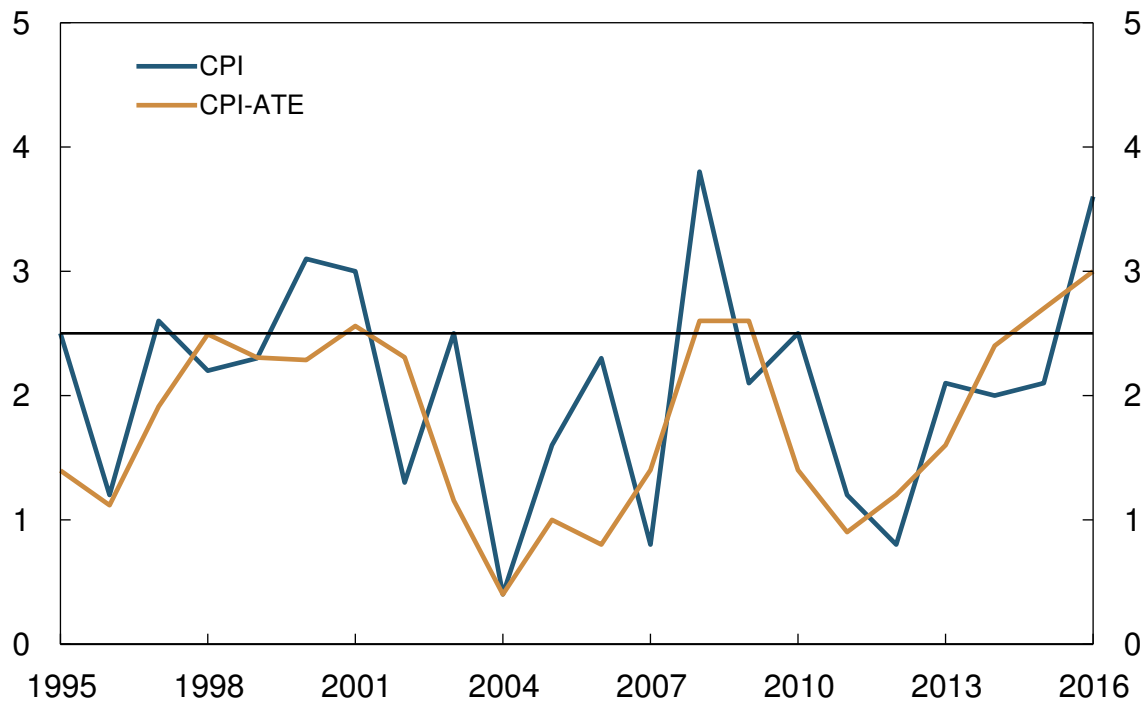
Sources: Eiendomsverdi, Finn.no, Norwegian Association of Real Estate Agents (NEF), Real Estate Norway, Statistics Norway and Norges Bank

Chart 1.8 Public sector demand. Annual growth. Percent. 2005 – 2020¹⁾



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

Chart 1.9 CPI and CPI-ATE^{1).2)} Annual change. Percent. 1995 – 2016

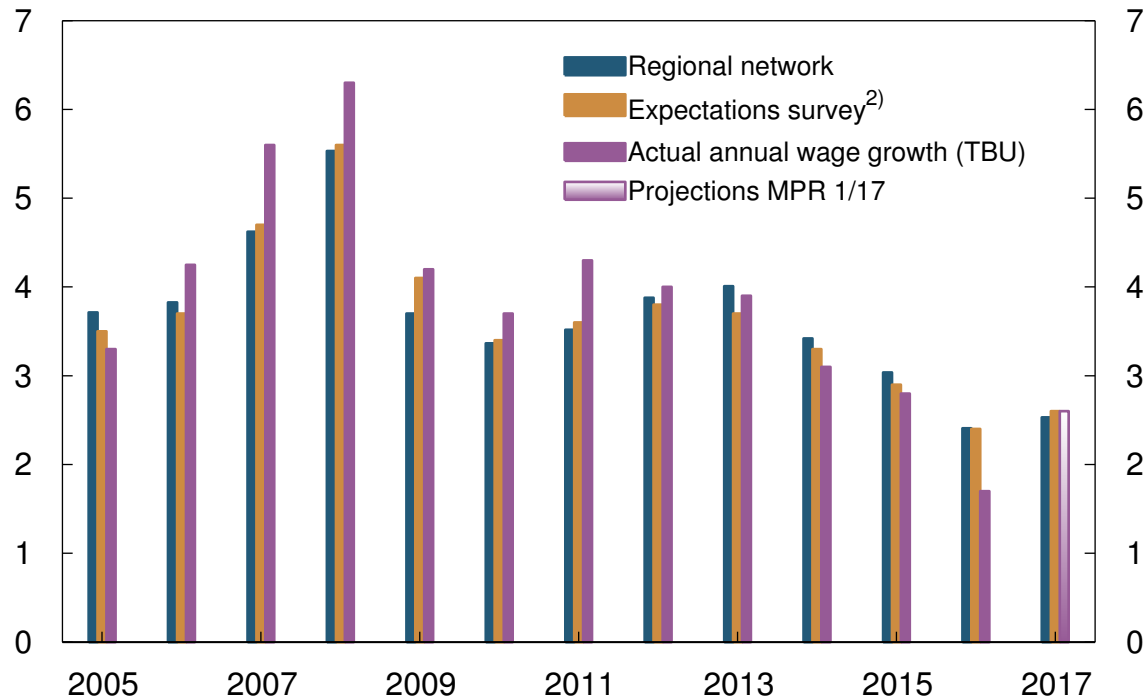


1) CPI adjusted for tax changes and excluding energy products. CPI-ATE calculations by Norges Bank are used for the period 1995 – 2003.

2) Based on annual data for the consumer price index with base year 1998.

Sources: Statistics Norway and Norges Bank

Chart 1.10 Wage and wage expectations.
Annual change.¹⁾ Percent. 2005 – 2017

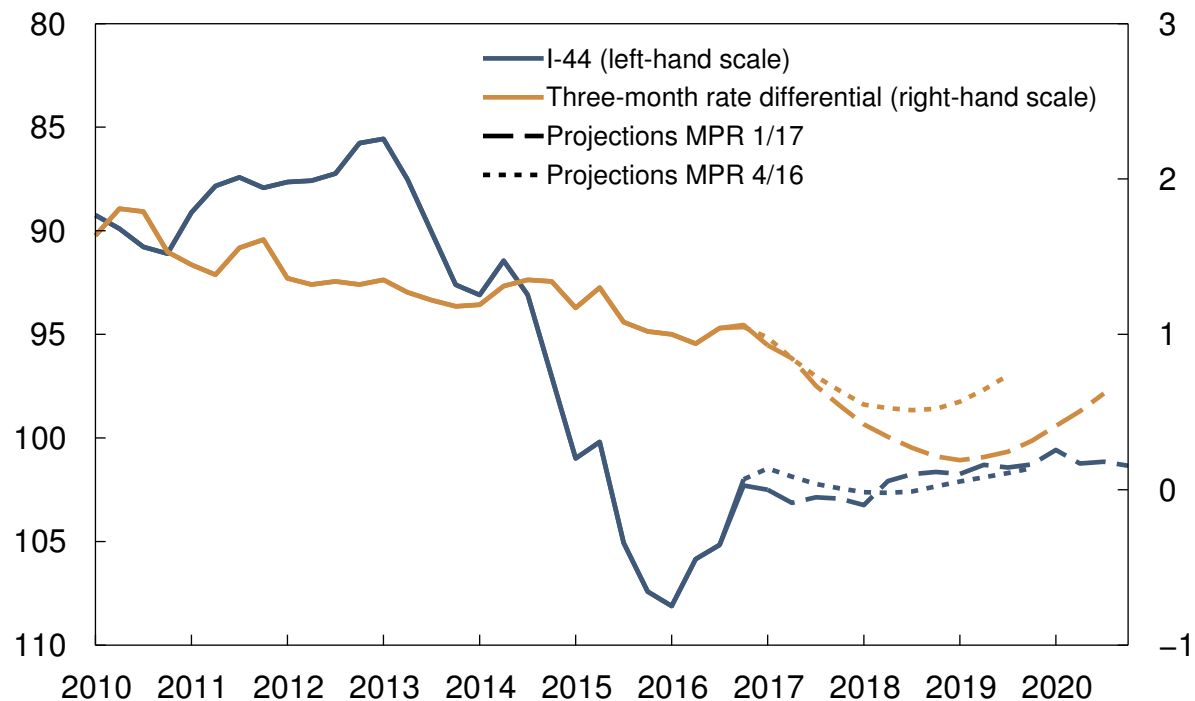


1) Annual wage growth is based on TBU's definitions and calculations. 2016 data are from the quarterly national accounts. The wage expectations from the regional network and Norges Banks' expectations survey show expected wage growth for the current year as measured in Q1.

2) Expected wage growth expectations from the social partners.

Sources: Epinion, Norwegian Technical Calculation Committee for Wage Settlements (TBU), Statistics Norway and Norges Bank

Chart 1.11 Three-month money market rate differential between Norway¹⁾ and trading partners²⁾ and import-weighted exchange rate index (I-44)³⁾.
2010 Q1 – 2020 Q4⁴⁾



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

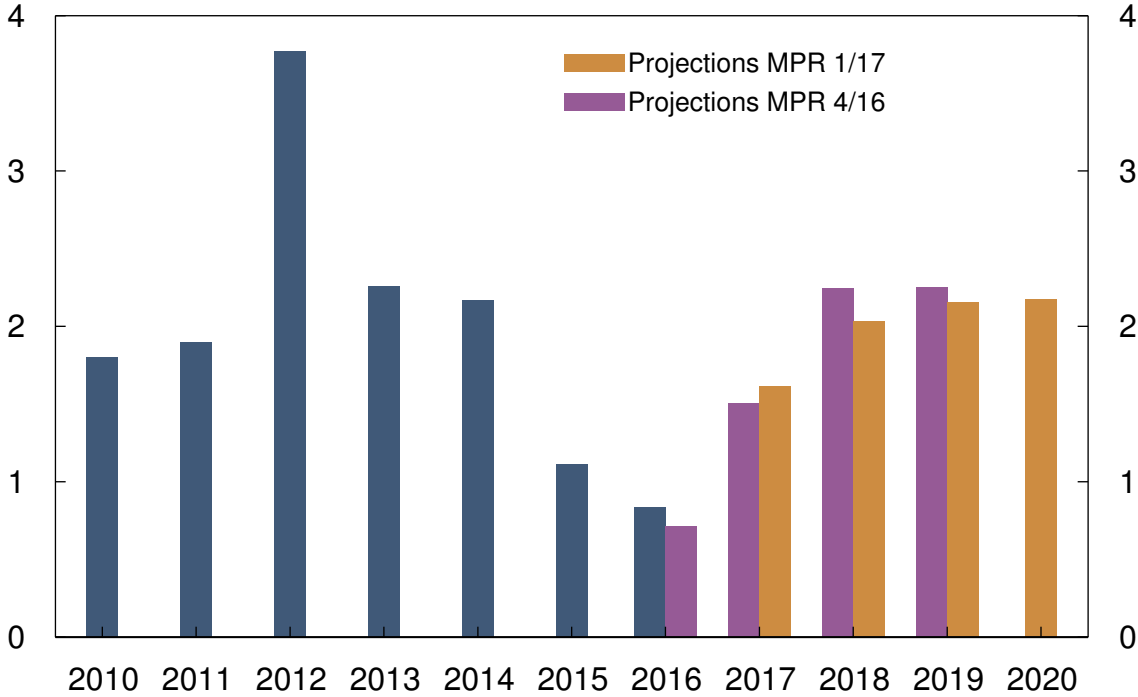
2) Forward rates for trading partners at 10 March 2017 and 9 December 2016. The aggregate for trading partner interest rates is described in *Norges Bank Memo 2/2015*.

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

4) Projections for 2017 Q1 – 2020 Q4 (broken lines).

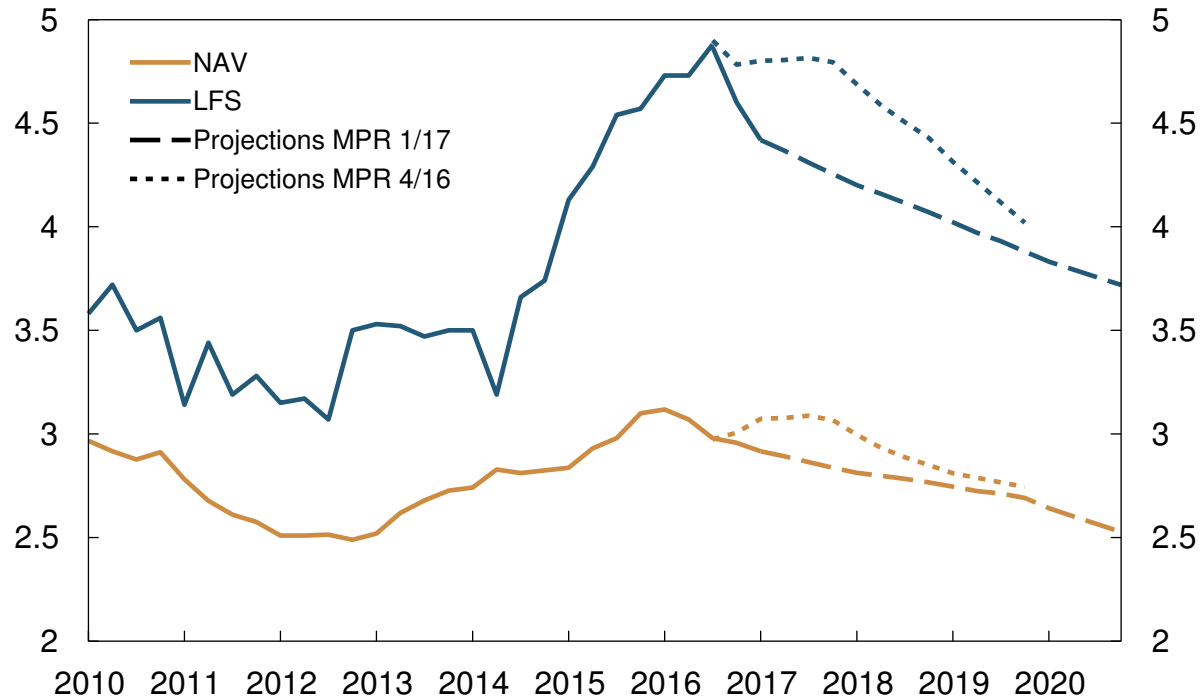
Sources: Thomson Reuters and Norges Bank

Chart 1.12 GDP for mainland Norway. Annual change. Percent. 2010 – 2020¹⁾



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

Chart 1.13 Unemployed as a share of the labour force. LFS¹⁾ and NAV²⁾.
Seasonally adjusted. Percent. 2010 Q1 – 2020 Q4³⁾



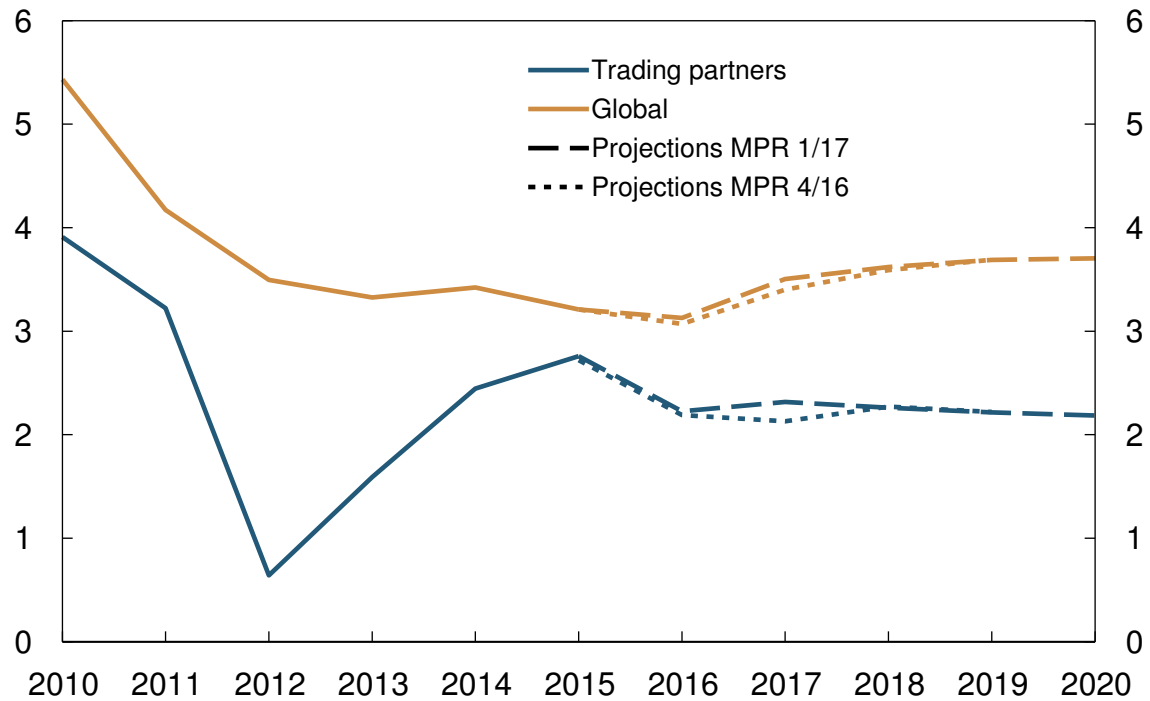
1) Labour Force Survey.

2) Registered unemployment.

3) Projections for 2017 Q1 – 2020 Q4 (broken lines).

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

Chart 2.1 Global GDP¹⁾ and GDP for Norway's trading partners²⁾.
 Volume. Annual change. Percent. 2010 – 2020³⁾



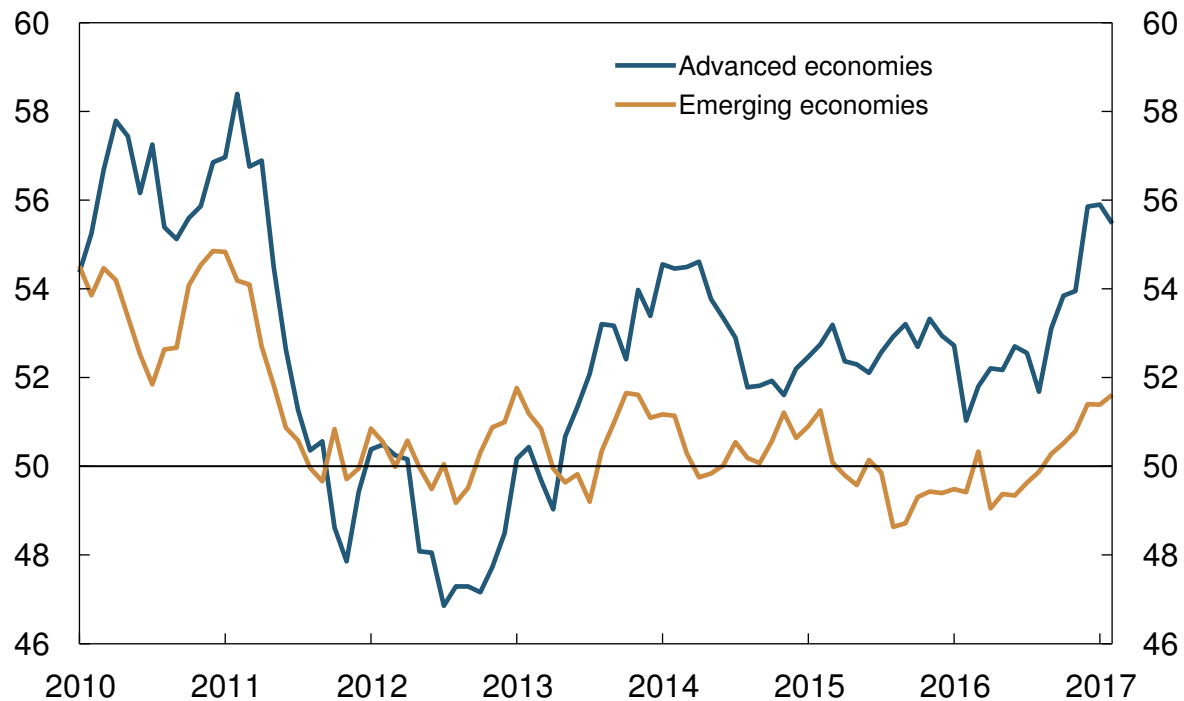
1) Purchasing power parity weights.

2) Export weights.

3) Projections for 2016 – 2020 (broken lines).

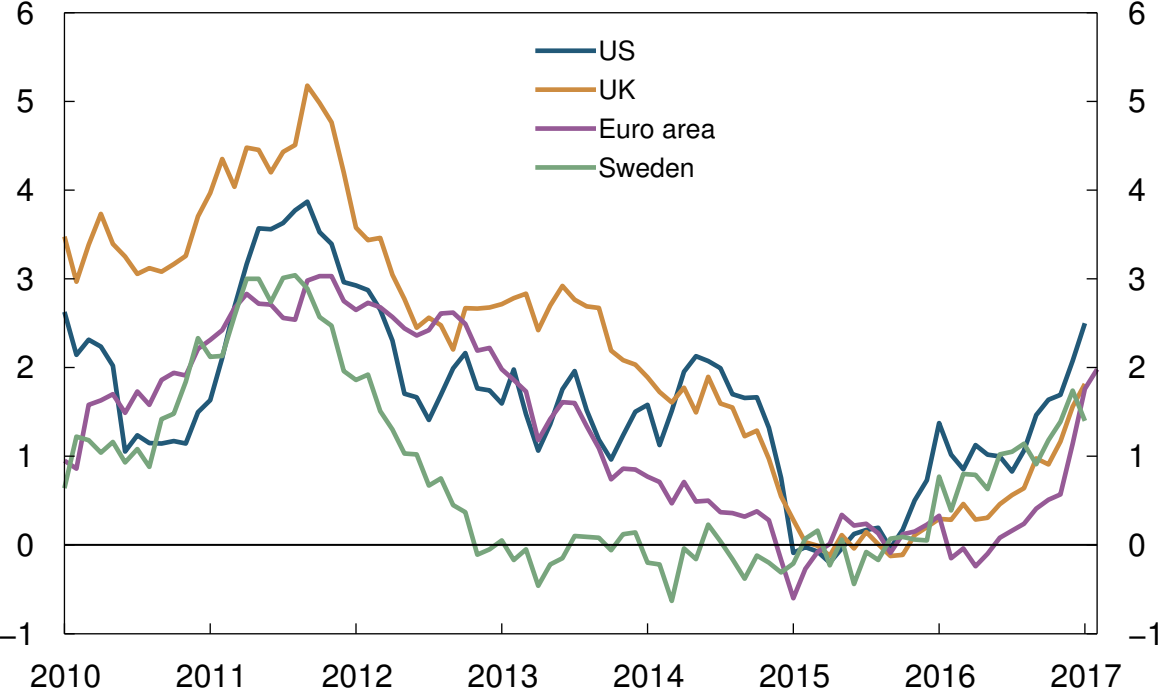
Sources: IMF, Statistics Norway, Thomson Reuters and Norges Bank

Chart 2.2 Manufacturing PMI¹⁾ for Norway's trading partners.
Advanced and emerging economies. January 2010 – February 2017



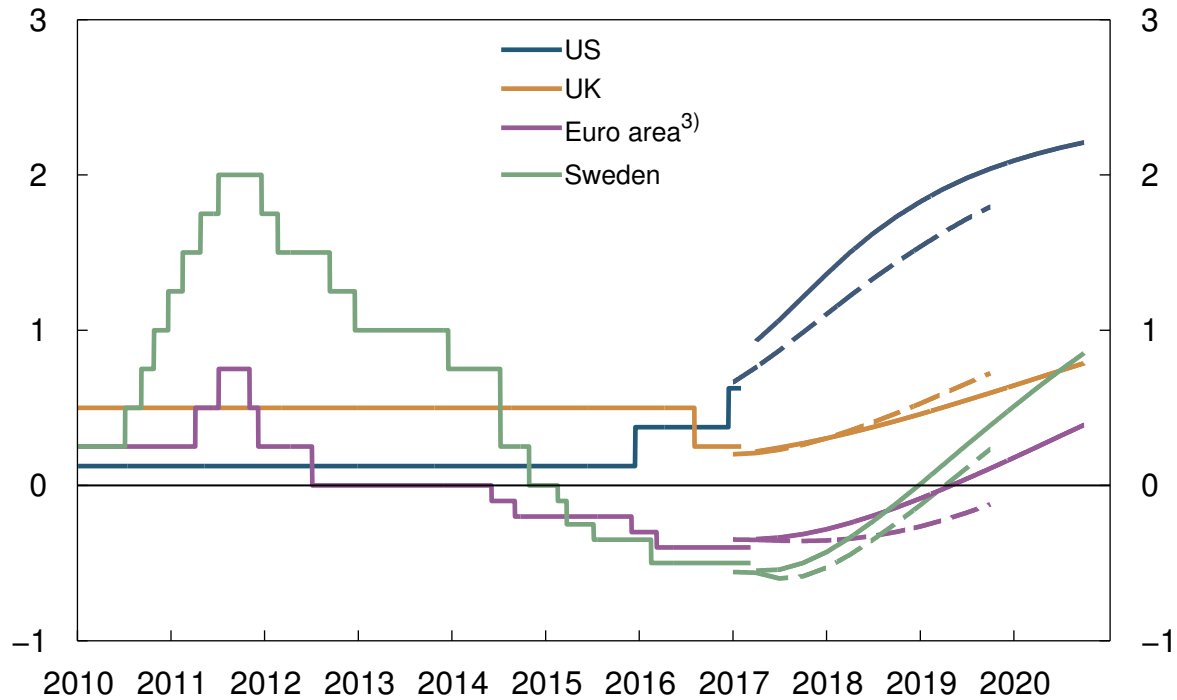
1) Survey of purchasing managers. Diffusion index centred around 50.
Sources: Statistics Norway, Thomson Reuters and Norges Bank

Chart 2.3 CPI in selected advanced economies.
Twelve-month change. Percent. January 2010 – February 2017



Source: Thomson Reuters

Chart 2.4 Policy rates and estimated forward rates¹⁾.
 Percent. 1 January 2010 – 31 December 2020²⁾



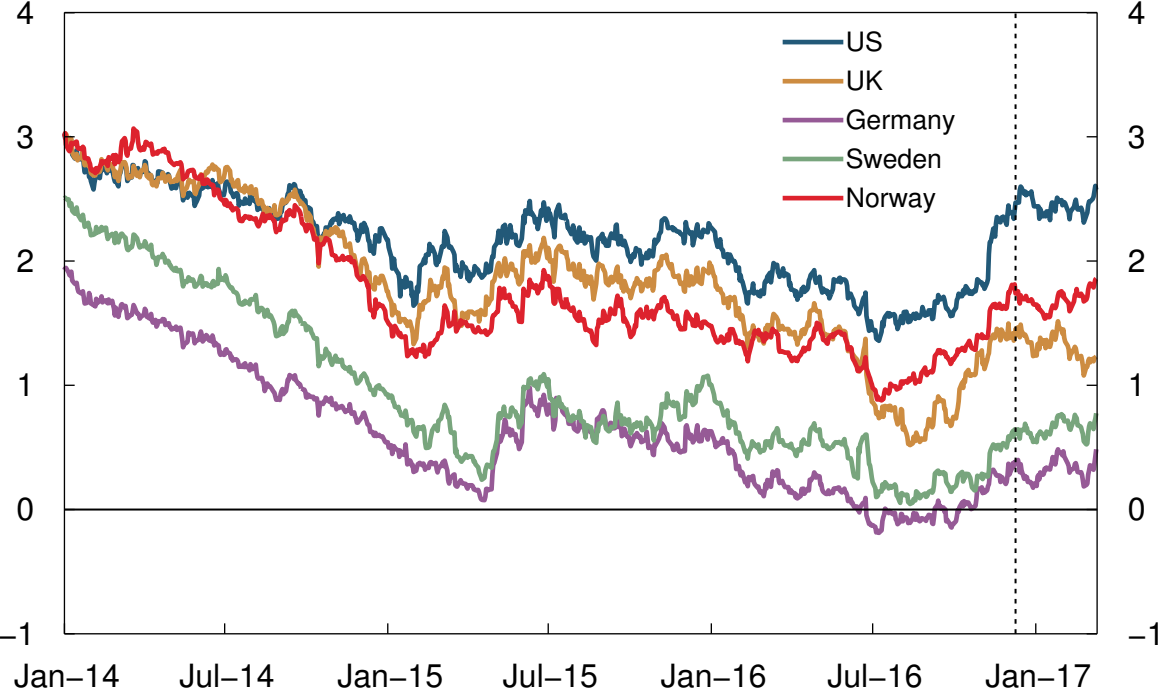
1) Estimated forward rates at 9 December 2016 (broken lines). Forward rates at 10 March 2017 (solid lines). Forward rates are based on Overnight Index Swap (OIS) rates.

2) Daily data from 1 January 2010 and quarterly data from 2017 Q2.

3) ECB's deposit rate. Eonia from 2017 Q2.

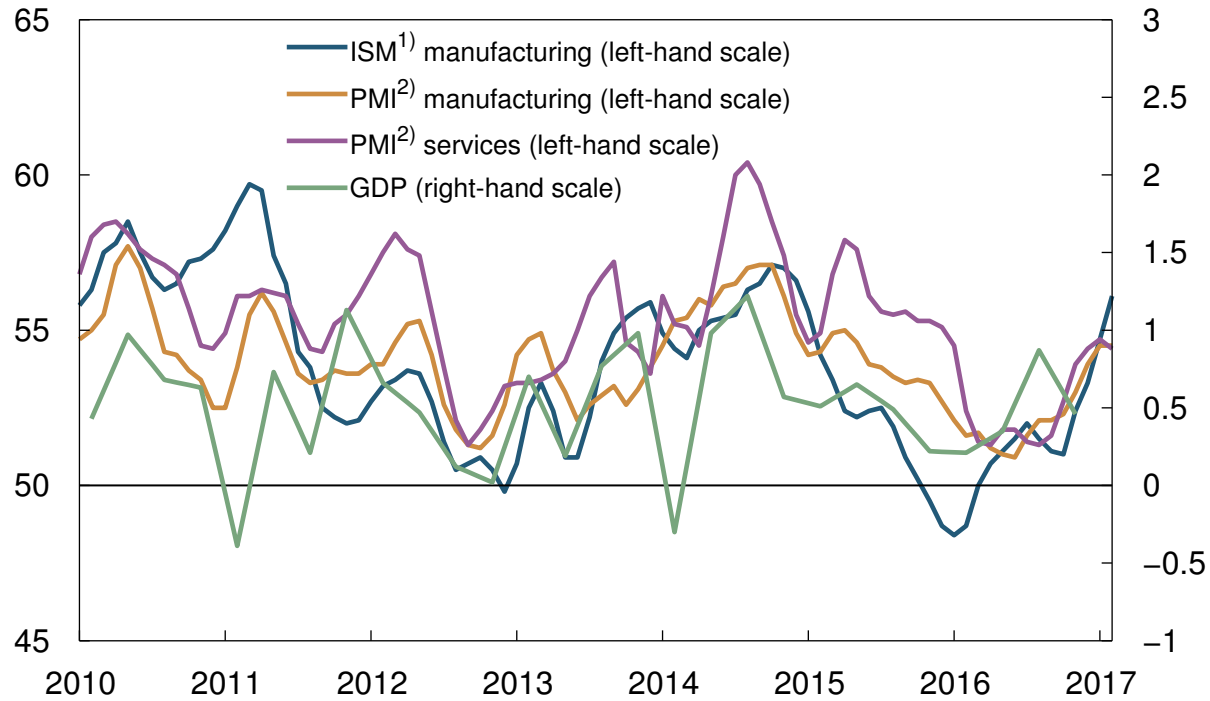
Sources: Bloomberg, Thomson Reuters and Norges Bank

Chart 2.5 Yields on ten-year government bonds.
Percent. 1 January 2014 – 10 March 2017¹⁾



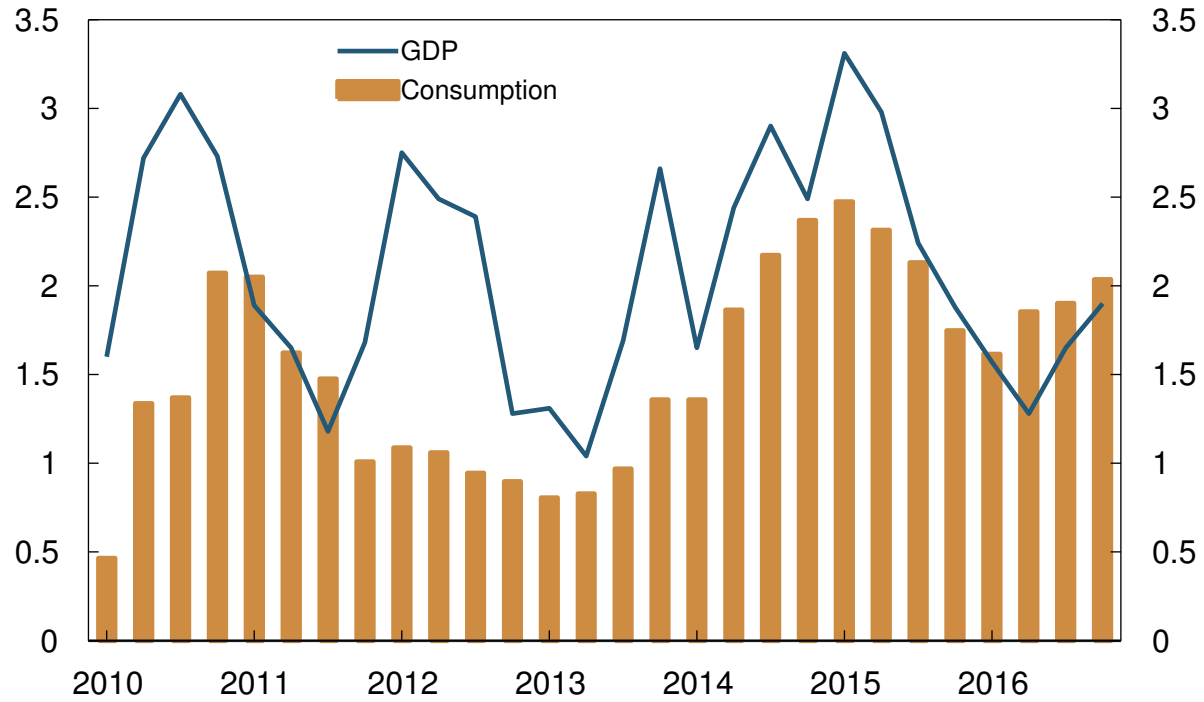
1) MPR 4/16 was based on information in the period to 9 December 2016, marked by the vertical line.
Source: Bloomberg

Chart 2.6 US GDP and selected economic tendency indicators.
 GDP. One-quarter change. 2010 Q1 – 2016 Q4. Economic tendency indicators.
 Three-month moving average. January 2010 – February 2017



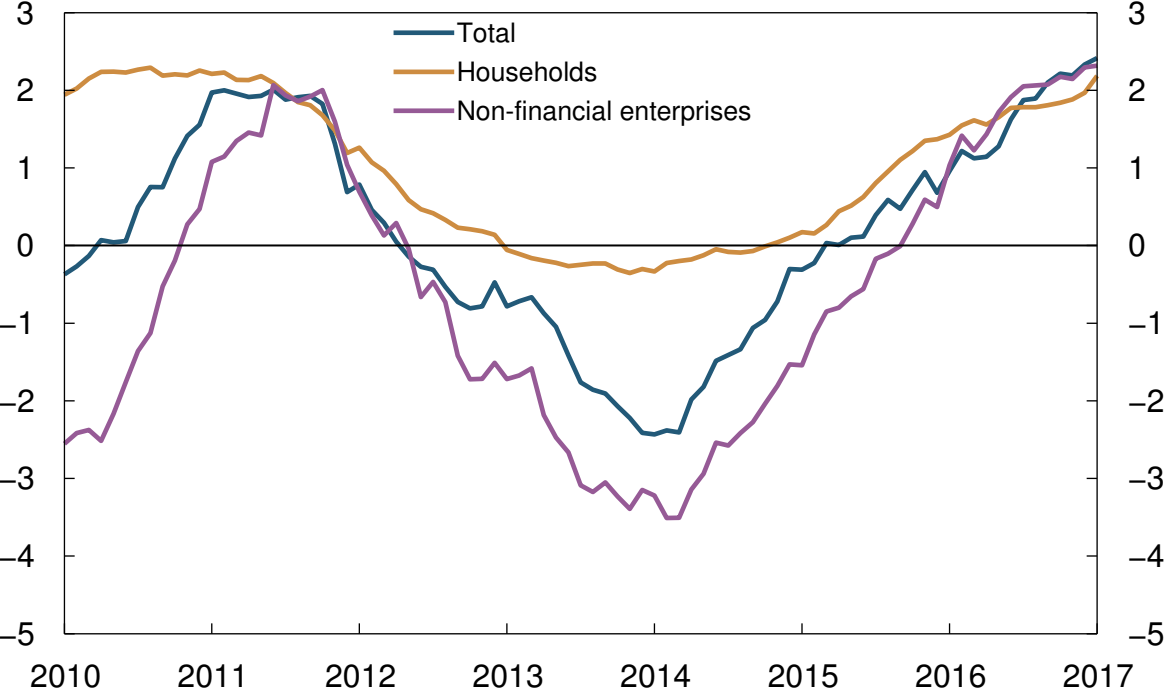
1) Institute for Supply Management.
 2) Survey of purchasing managers. Diffusion index centred around 50.
 Source: Thomson Reuters

Chart 2.7 Four-quarter change in US GDP. Percent.
Contribution from consumption. Percentage points. 2010 Q1 – 2016 Q4



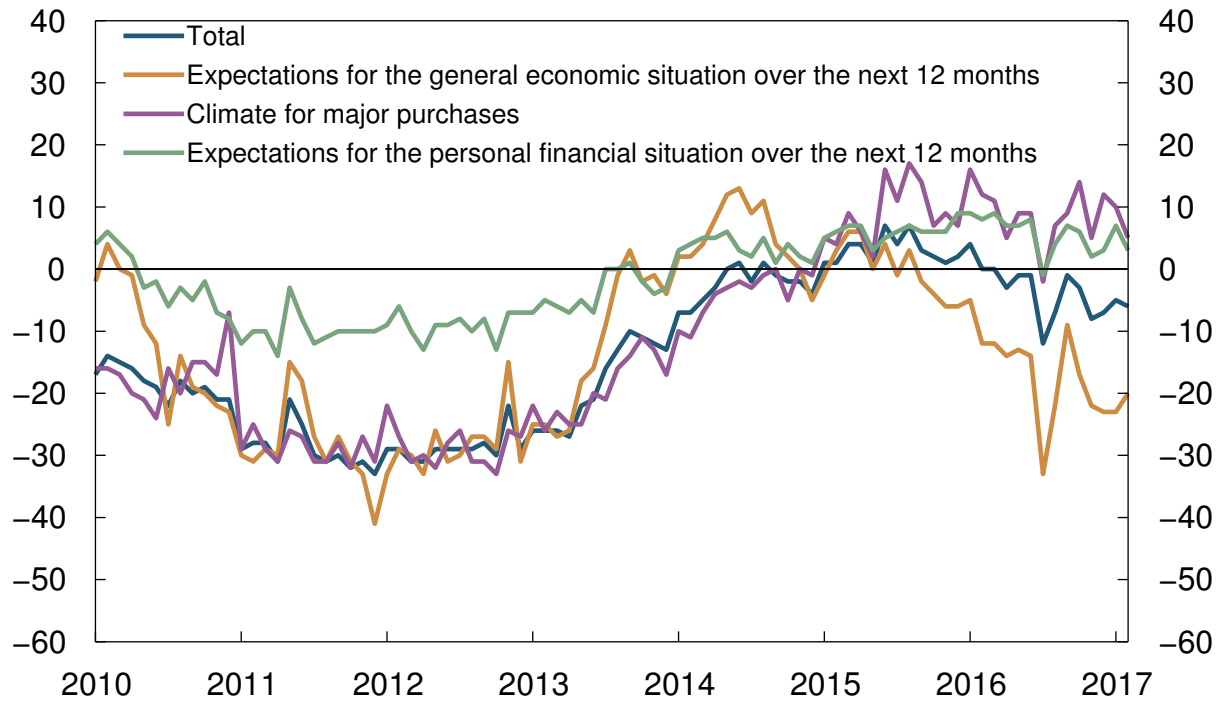
Source: Thomson Reuters

Chart 2.8 Loans to households and non-financial enterprises in the euro area. Twelve-month change. Percent. January 2010 – January 2017



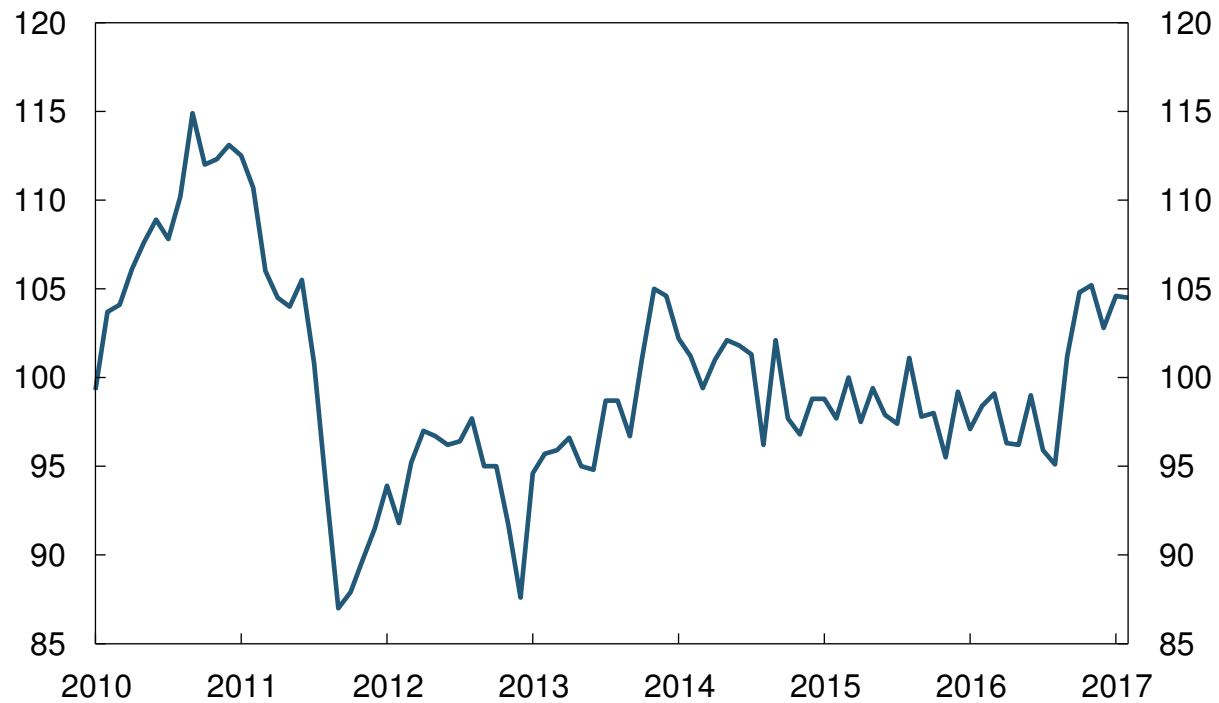
Source: Thomson Reuters

Chart 2.9 UK consumer confidence. Index.¹⁾
Deviations from historical average. January 2010 – February 2017



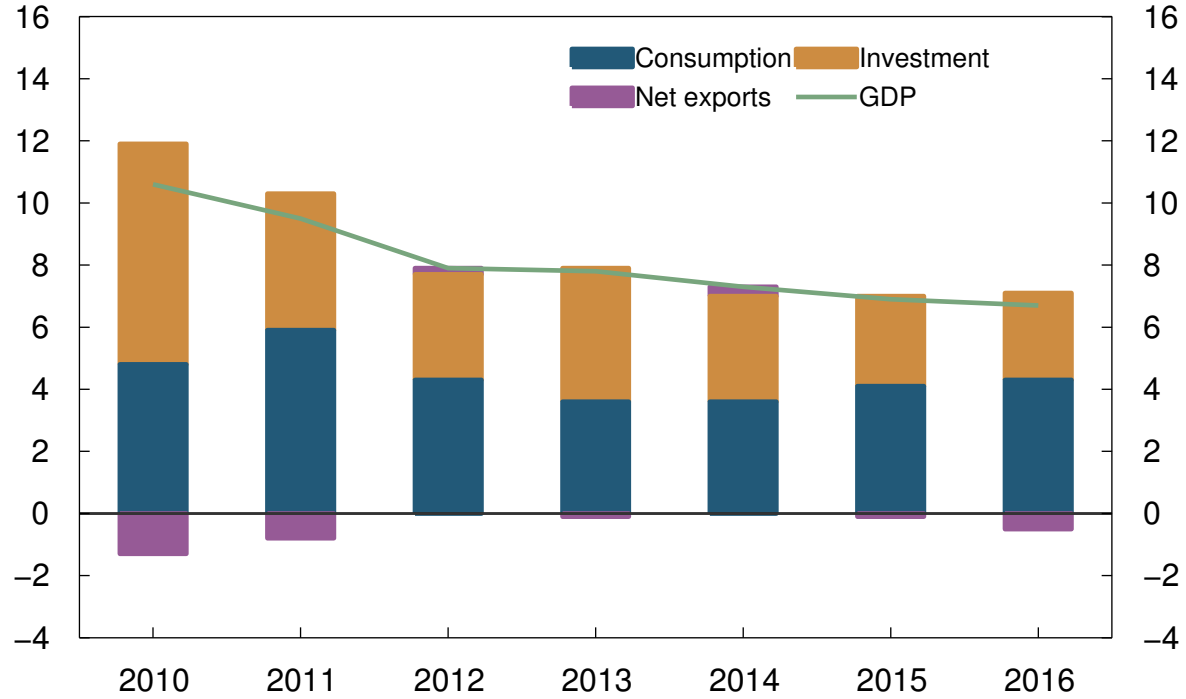
1) GfK Consumer Confidence Index.
Source: Thomson Reuters

Chart 2.10 Consumer confidence in Sweden. Index.¹⁾ January 2010 – February 2017



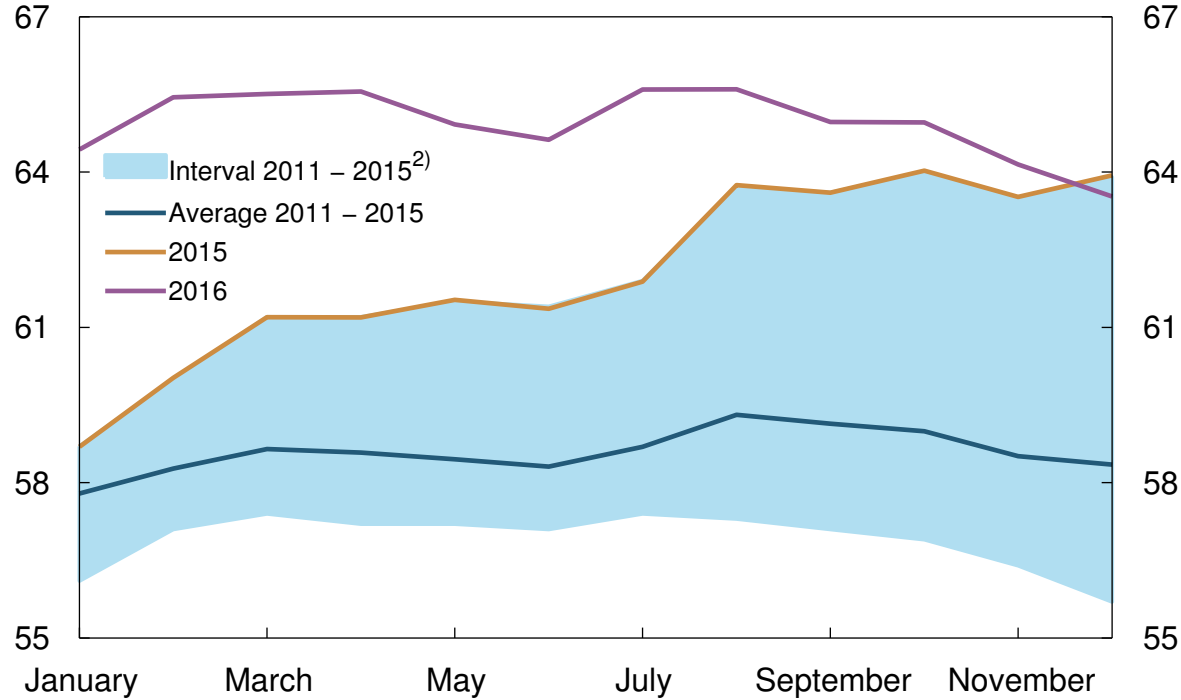
1) NIER's confidence indicator for households.
Source: Thomson Reuters

Chart 2.11 GDP in China. Total annual change. Percent.
Contributions from demand components. Percentage points. 2010 – 2016



Source: CEIC

Chart 2.12 Oil inventories in OECD countries.
 Total oil inventories in days of forward demand.¹⁾ January 2011 – December 2016

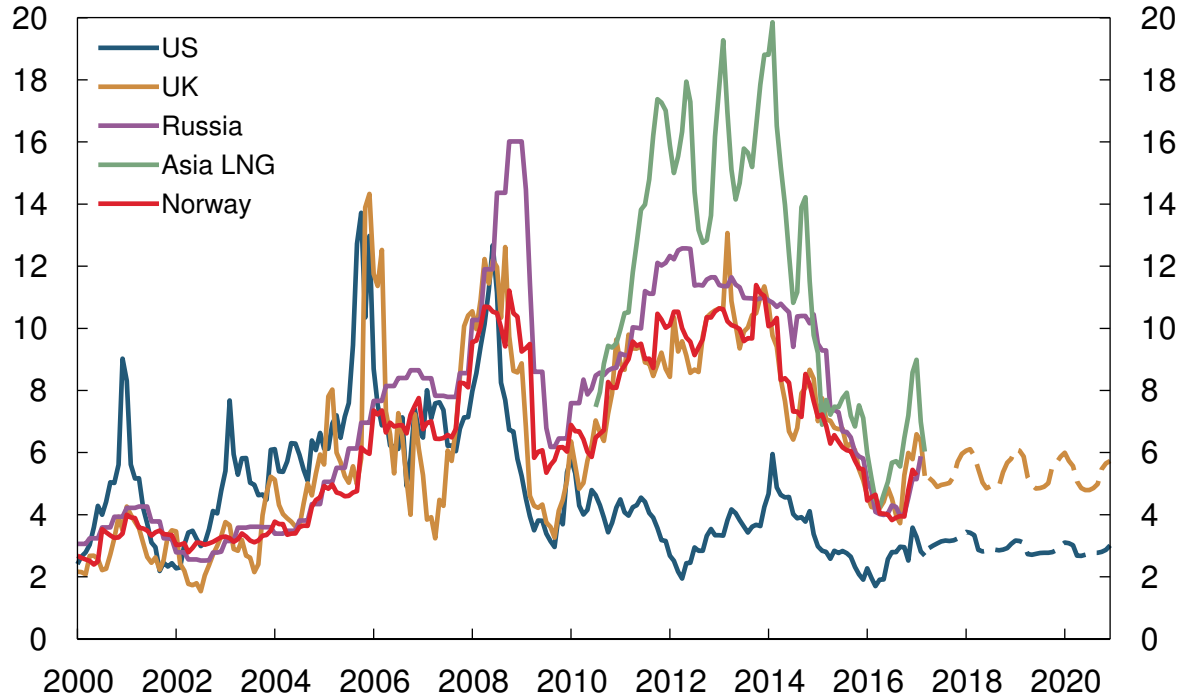


1) Days of forward demand are calculated using average expected demand over the next three months.

2) The blue band is the interval between the highest and lowest levels in the period 2011 – 2015.

Sources: IEA and Norges Bank

Chart 2.13 Spot and futures prices¹⁾ of natural gas.
USD/MMBtu²⁾. January 2000 – December 2020³⁾



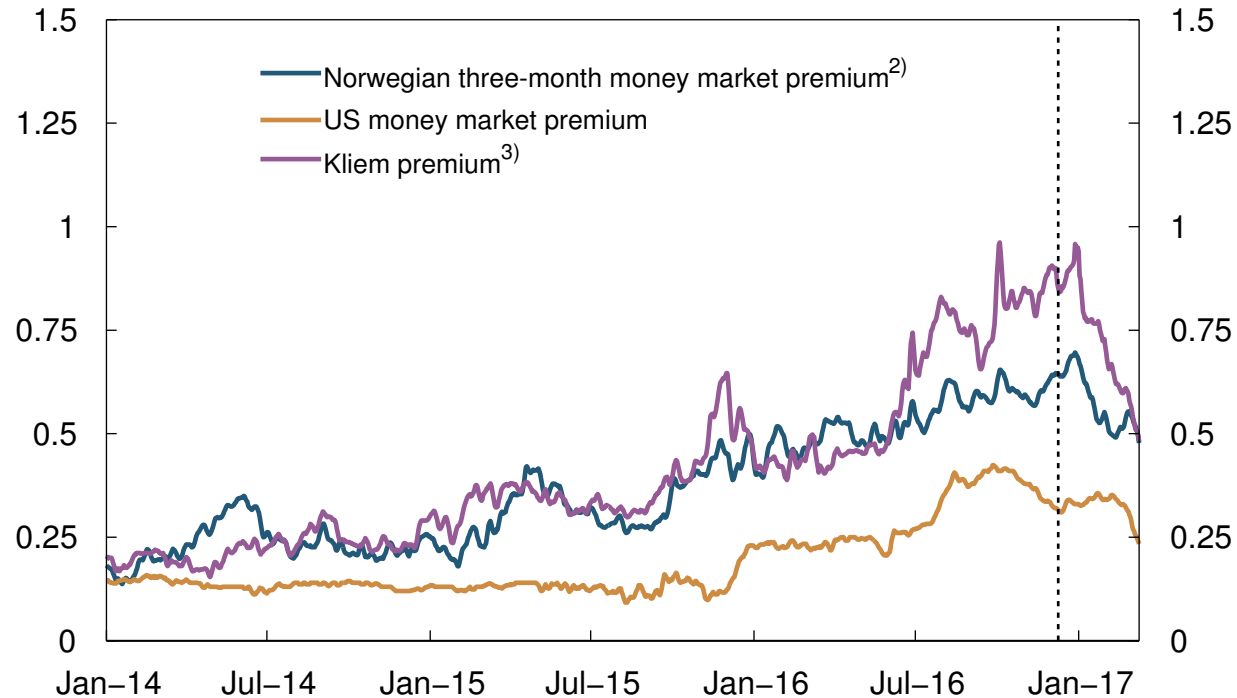
1) Futures prices (broken lines) are averages of futures prices in the period 6 – 10 March 2017.

2) Million British thermal units.

3) US, UK and Asia LNG spot prices for March 2017 are averages in the period 6 – 10 March.

Sources: Statistics Norway, Thomson Reuters and Norges Bank

Chart 3.1 Three-month money market premium. Percentage points.
Five-day moving average. 1 January 2014 – 10 March 2017¹⁾



1) MPR 4/16 was based on information in the period to 9 December 2016, marked by the vertical line.

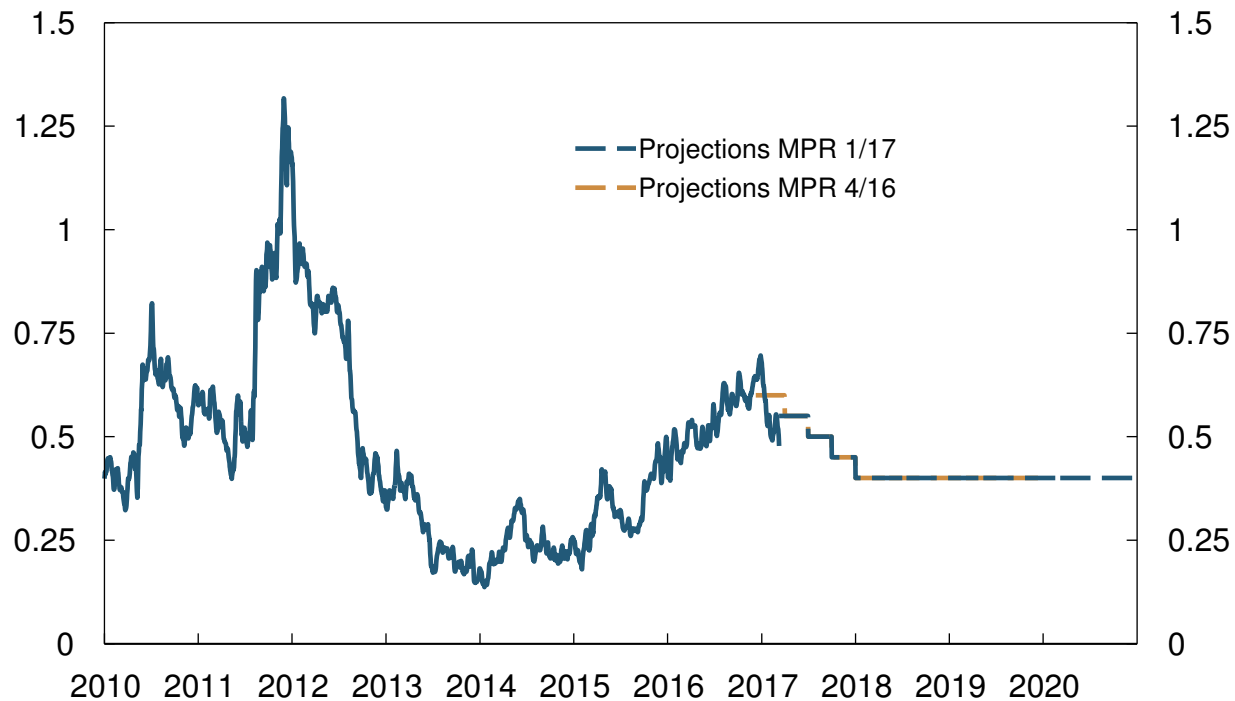
2) Norges Bank estimates of the difference between three-month money market rate and expected key policy rate.

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 and Norges Bank

Chart 3.2 Spread to three-month money market rate.¹⁾ Percentage points.
Five-day moving average. 1 January 2010 – 31 December 2020²⁾

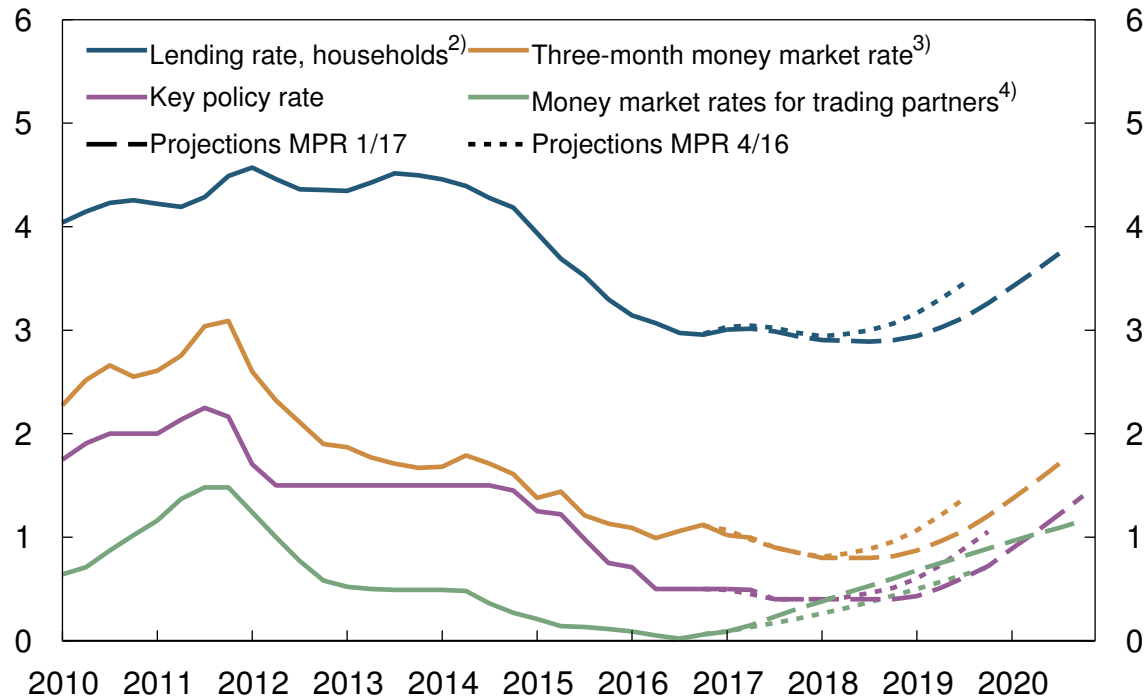


1) Norges Bank estimates of the difference between three-month money market rate and expected key policy rate.

2) Projections for 2017 Q1 – 2020 Q4 (broken lines).

Sources: Thomson Reuters and Norges Bank

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



1) Projections for 2017 Q1 – 2020 Q4 (broken lines).

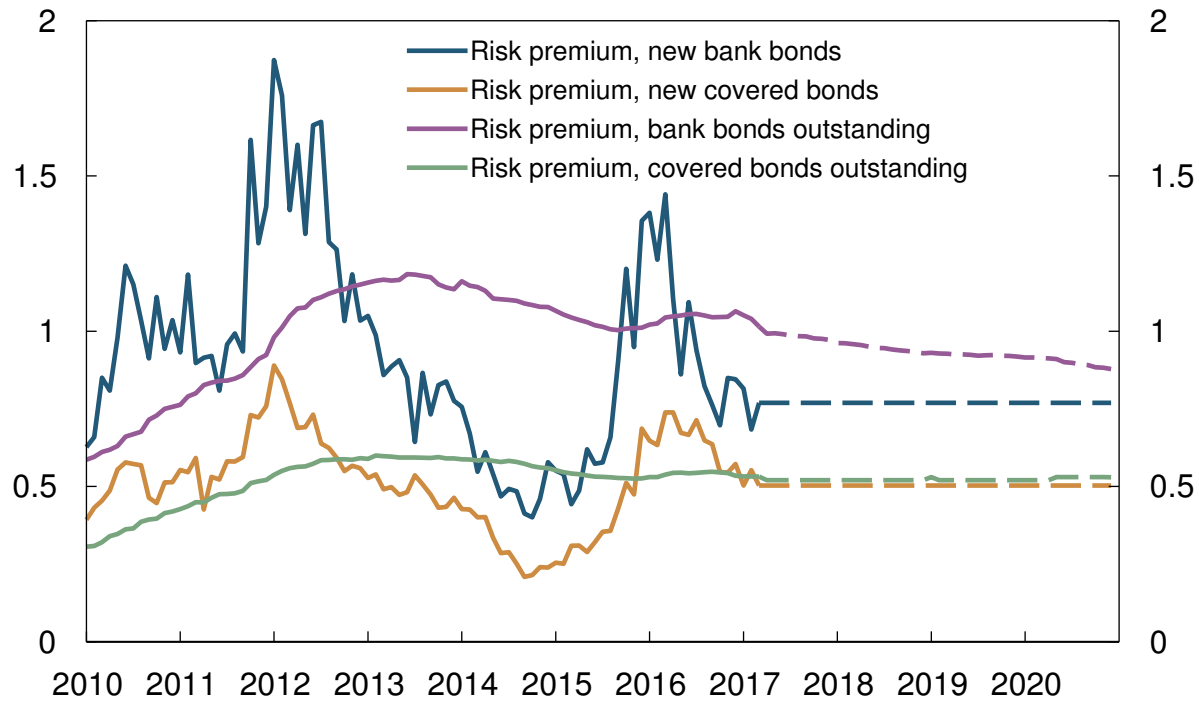
2) Average interest rate on all loans to households from banks and mortgage companies.

3) Key policy rate plus premiums in the Norwegian money market. 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 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 Average risk premiums on new and outstanding bond debt for Norwegian banks¹⁾. Percentage points. January 2010 – December 2020²⁾

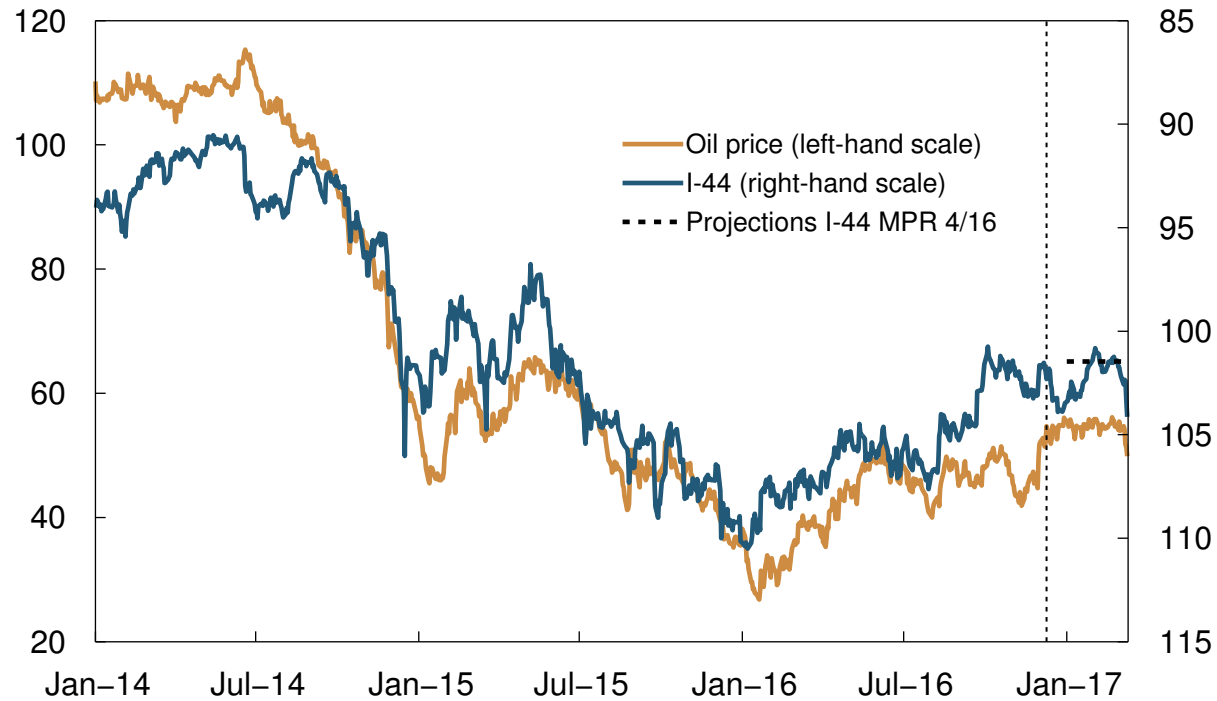


1) Spread to three-month money market rate.

2) Projections for March 2017 – December 2020 (broken lines).

Sources: Bloomberg, DNB Markets, Stamdata and Norges Bank

Chart 3.5 Oil price¹⁾ and import-weighted exchange rate index (I-44)²⁾.
 1 January 2014 – 10 March 2017³⁾



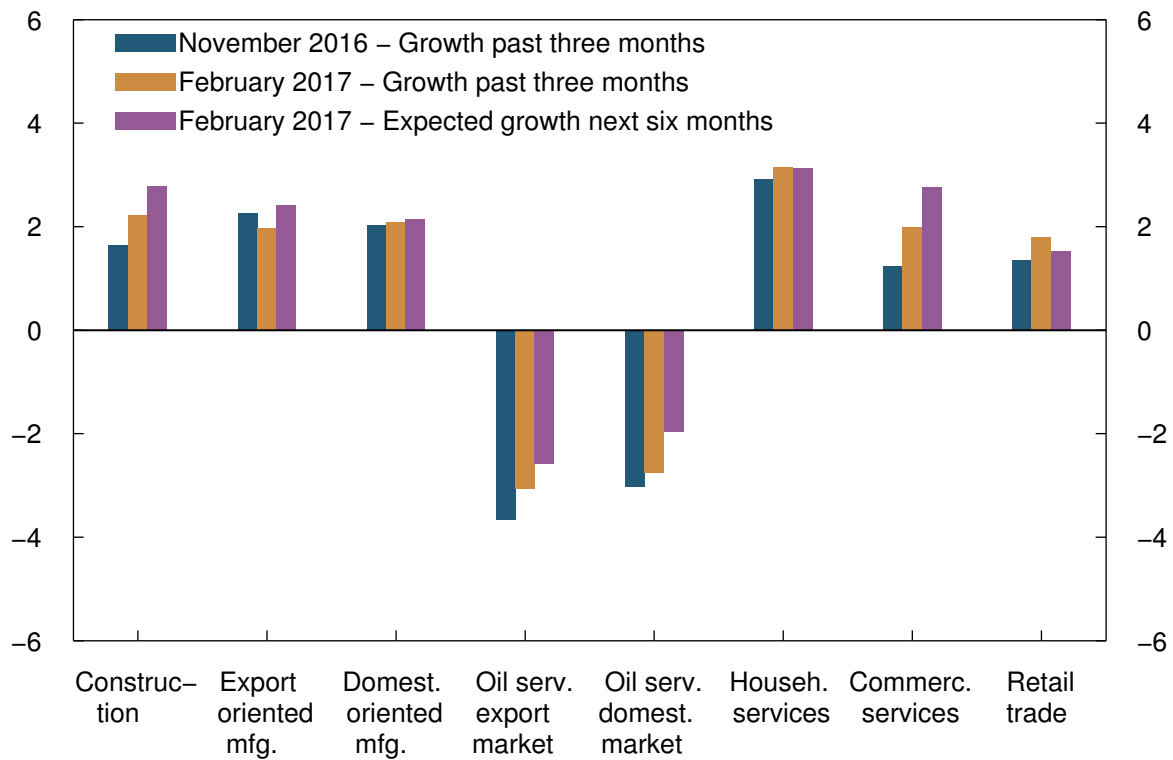
1) Brent blend. USD/barrel.

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

3) MPR 4/16 was based on information in the period to 9 December 2016, marked by the vertical line.

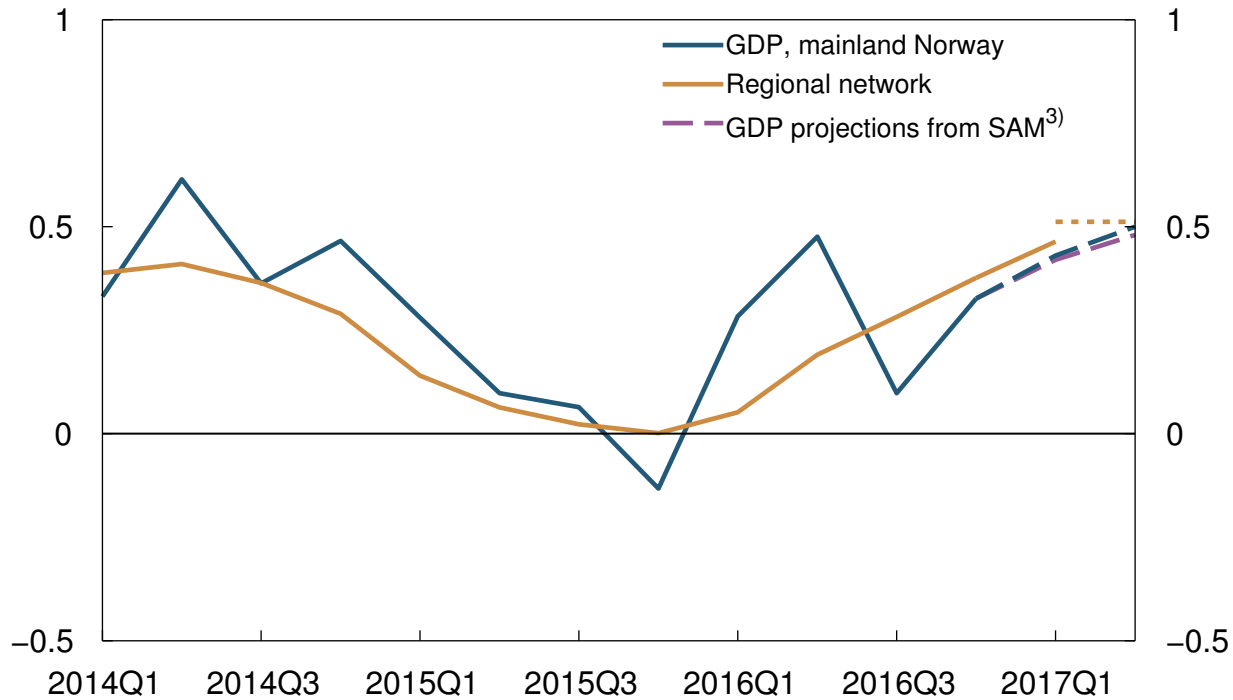
Sources: Thomson Reuters and Norges Bank

Chart 3.6 Output growth as reported by regional network. Annualised. Percent



Source: Norges Bank

Chart 3.7 GDP for mainland Norway and regional network's indicator of output growth¹⁾. Quarterly change. Percent. 2014 Q1 – 2017 Q2²⁾



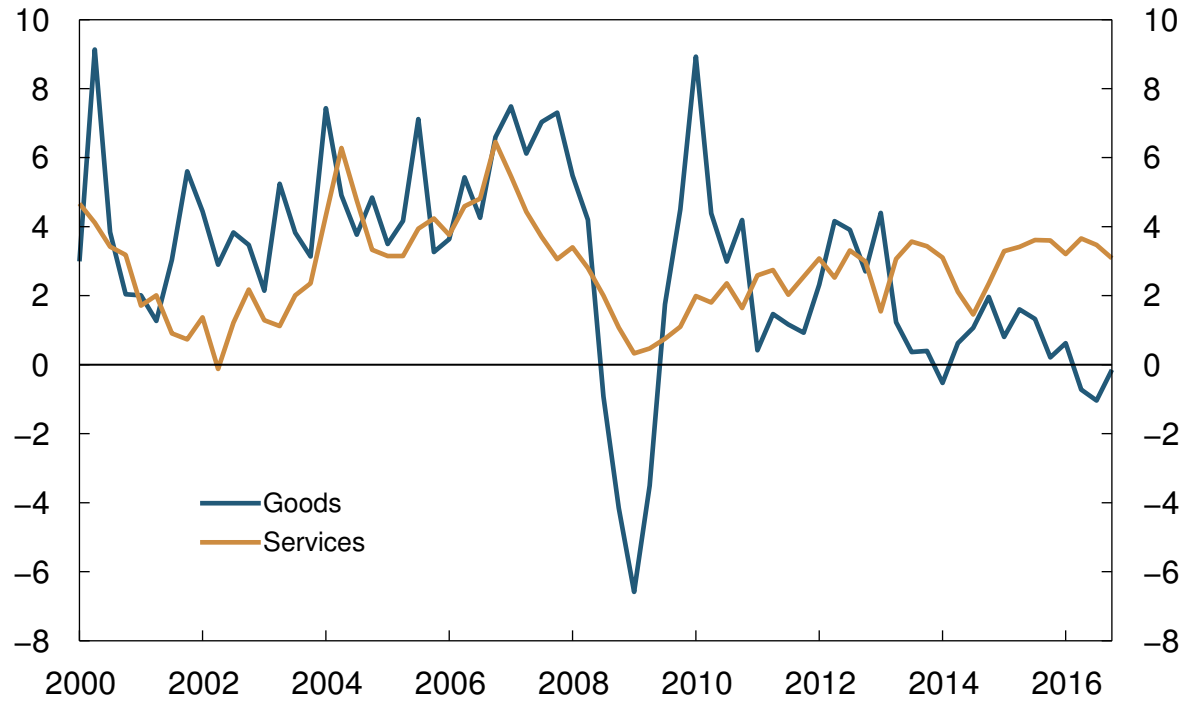
1) Reported output growth past three months (solid lines) and expected output growth next six months (broken lines).

2) Projections for 2017 Q1 – 2017 Q2 (broken lines).

3) System for Averaging short-term Models.

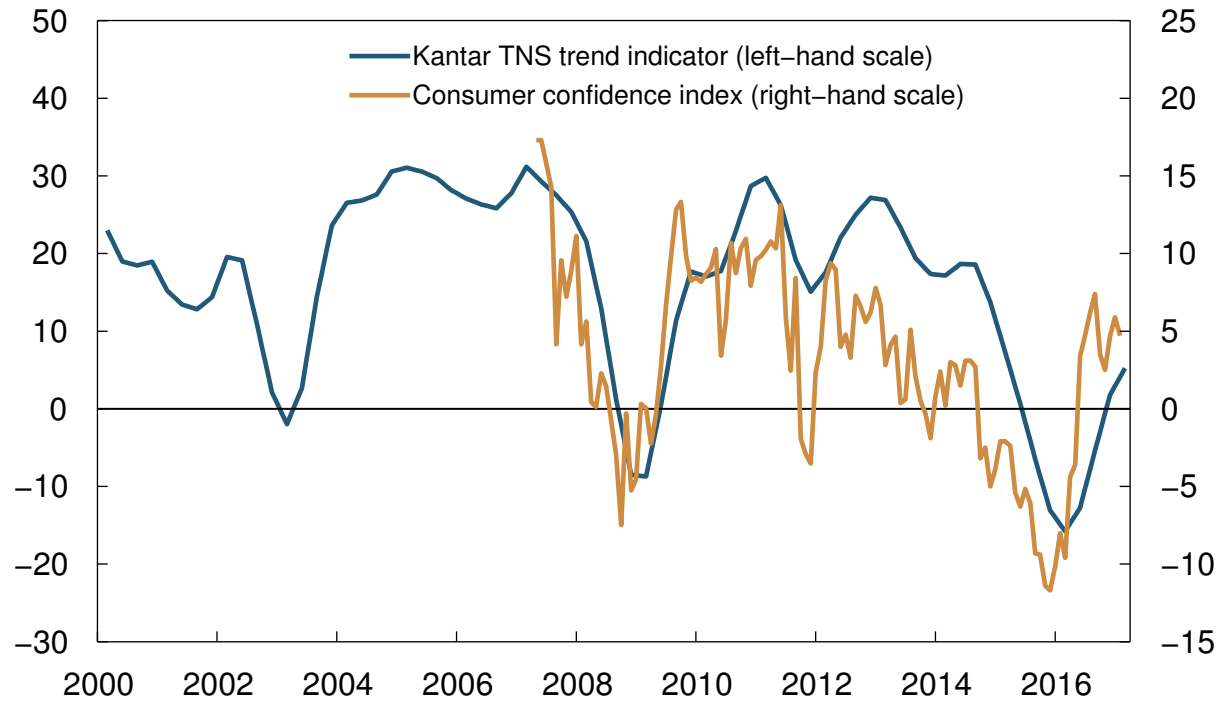
Sources: Statistics Norway and Norges Bank

Chart 3.8 Household consumption of goods and services.
Four-quarter change. Seasonally adjusted. Percent. 2000 Q1 – 2016 Q4



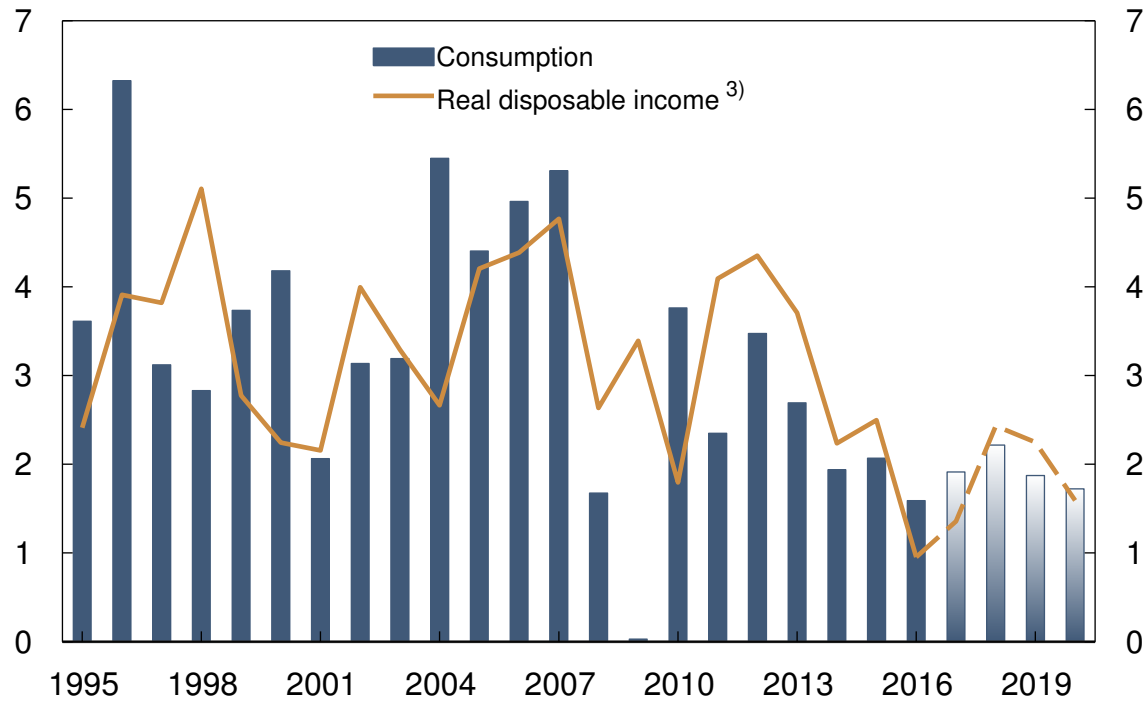
Source: Statistics Norway

Chart 3.9 Consumer confidence. Net values. Kantar TNS trend indicator for households. 2000 Q1 – 2017 Q1. Opinion consumer confidence index (CCI). May 2007 – February 2017



Sources: Kantar TNS and Opinion

Chart 3.10 Household consumption¹⁾ and real disposable income.
Annual change. Percent. 1995 – 2020²⁾



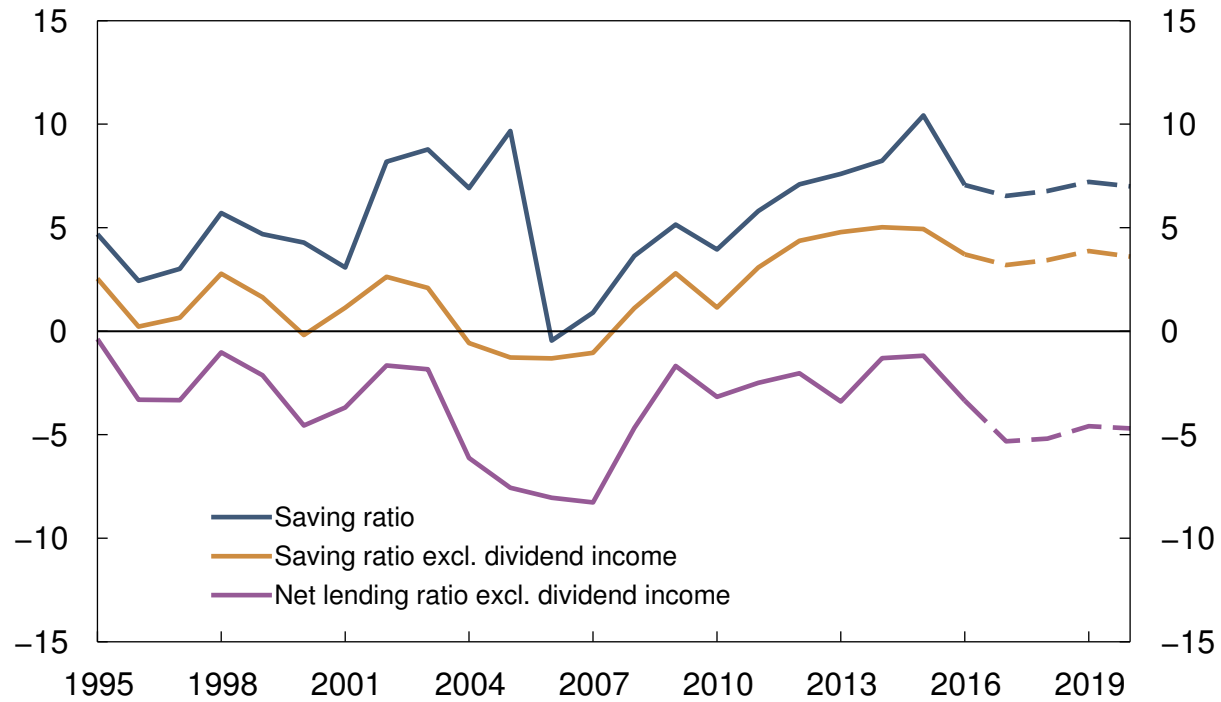
1) Includes consumption for non-profit organisations.

2) Projections for 2017 – 2020 (broken line and shaded bars).

3) Excluding dividend income. Including income for non-profit organisations. Deflated by CPI.

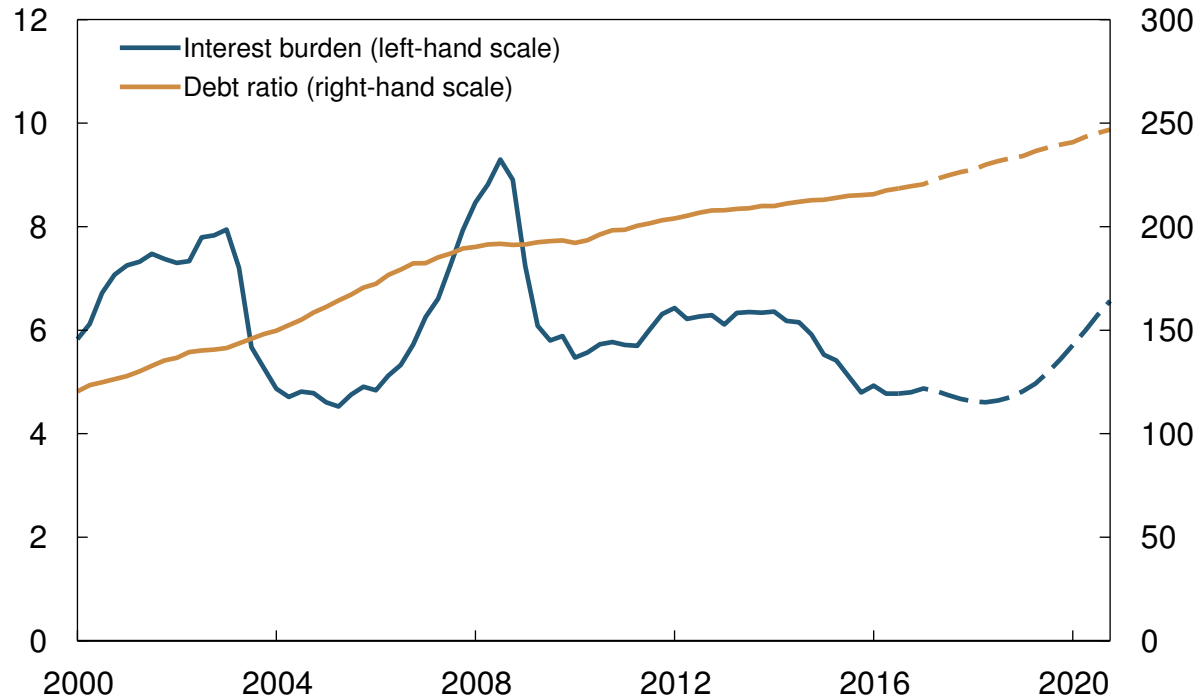
Sources: Statistics Norway and Norges Bank

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 Household interest burden and debt ratio.¹⁾
 Percent. 2000 Q1 – 2020 Q4²⁾

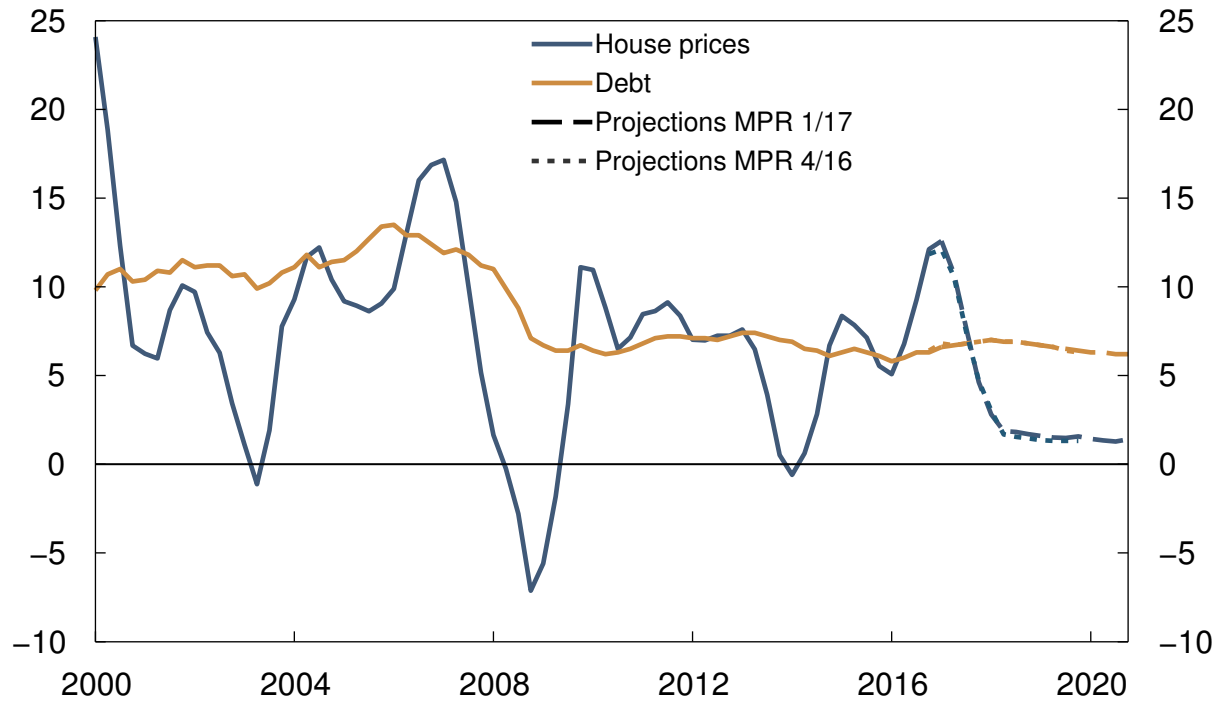


1) Interest expenses as a percentage of disposable income plus interest expenses and loan debt as a percentage of disposable income, respectively. Disposable income is adjusted for estimated reinvested dividend income for 2000 Q1 – 2005 Q5 and reduction of equity capital for 2006 Q1 – 2012 Q4. For 2015 Q1 – 2016 Q4 growth in disposable income is used without dividend.

2) Projections for 2016 Q4 – 2020 Q4 (broken lines).

Sources: Statistics Norway and Norges Bank

Chart 3.13 House prices and household debt¹⁾.
 Four-quarter change. Percent. 2000 Q1 – 2020 Q4²⁾

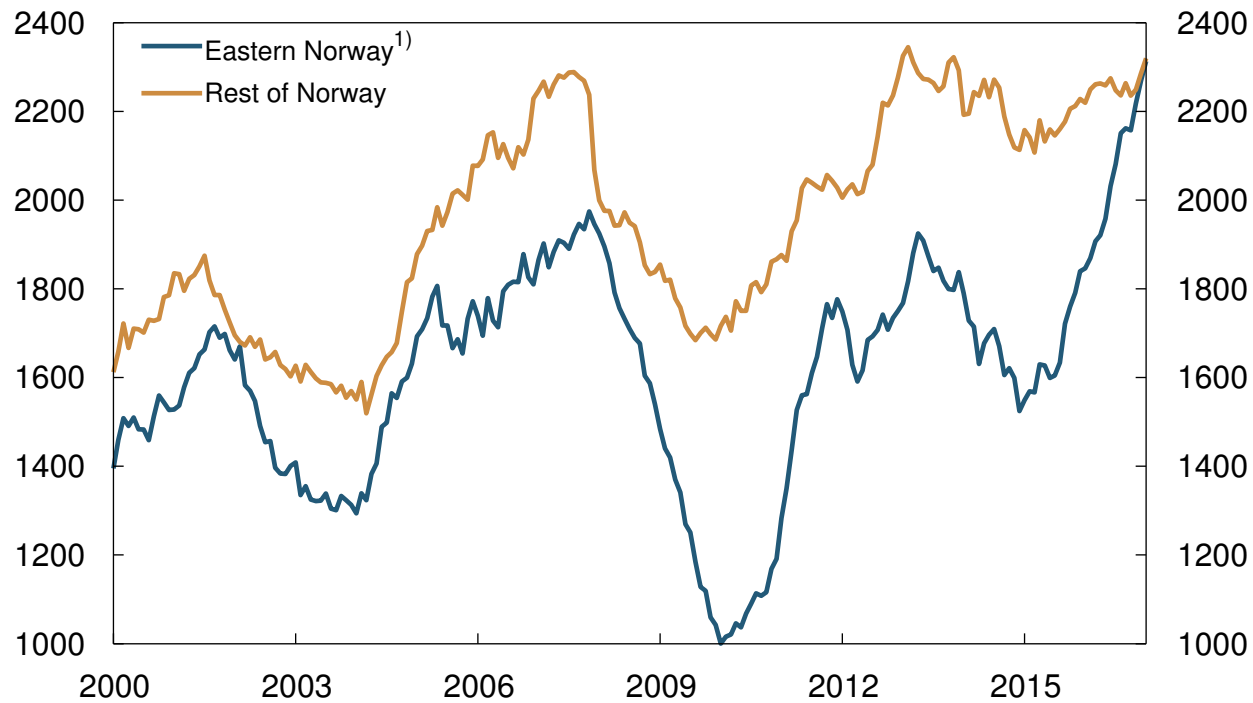


1) Domestic credit to households (C2).

2) Projections for 2017 Q1 – 2020 Q4 (broken lines).

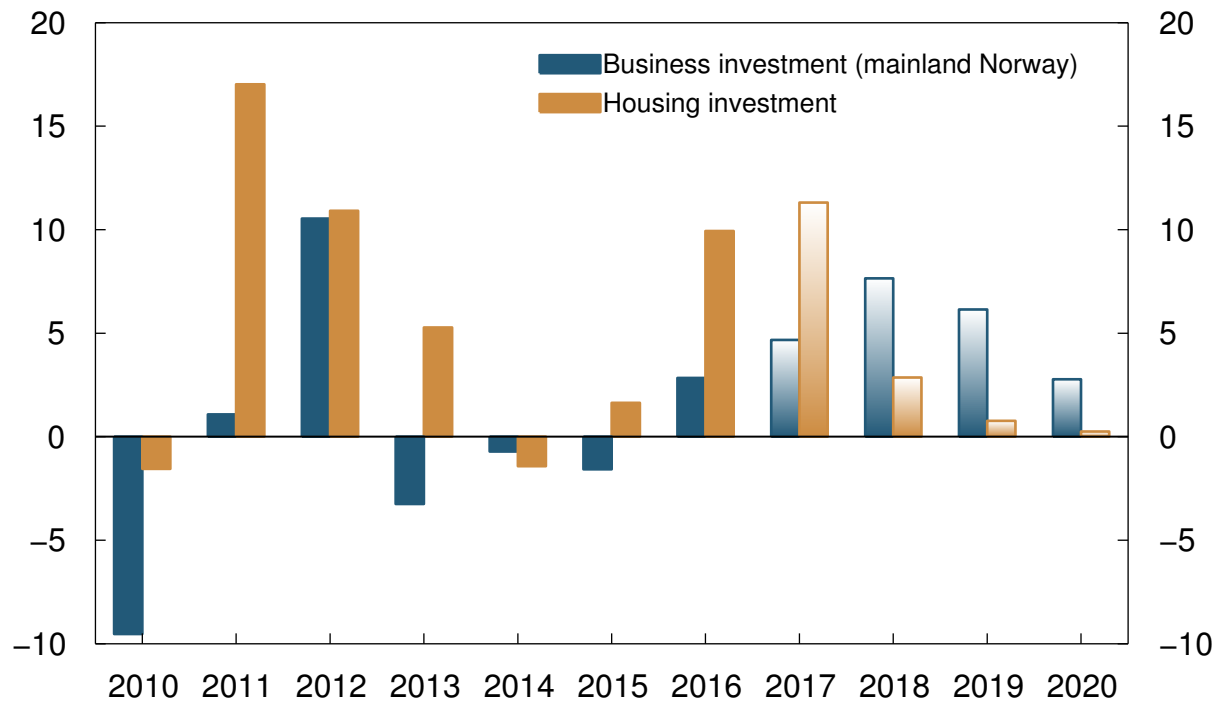
Sources: Eiendomsverdi, Finn.no, Real Estate Norway, Statistics Norway and Norges Bank

Chart 3.14 Housing starts by county. Utility floor space (1000m²).
Cumulative past twelve months. January 2000 – January 2017



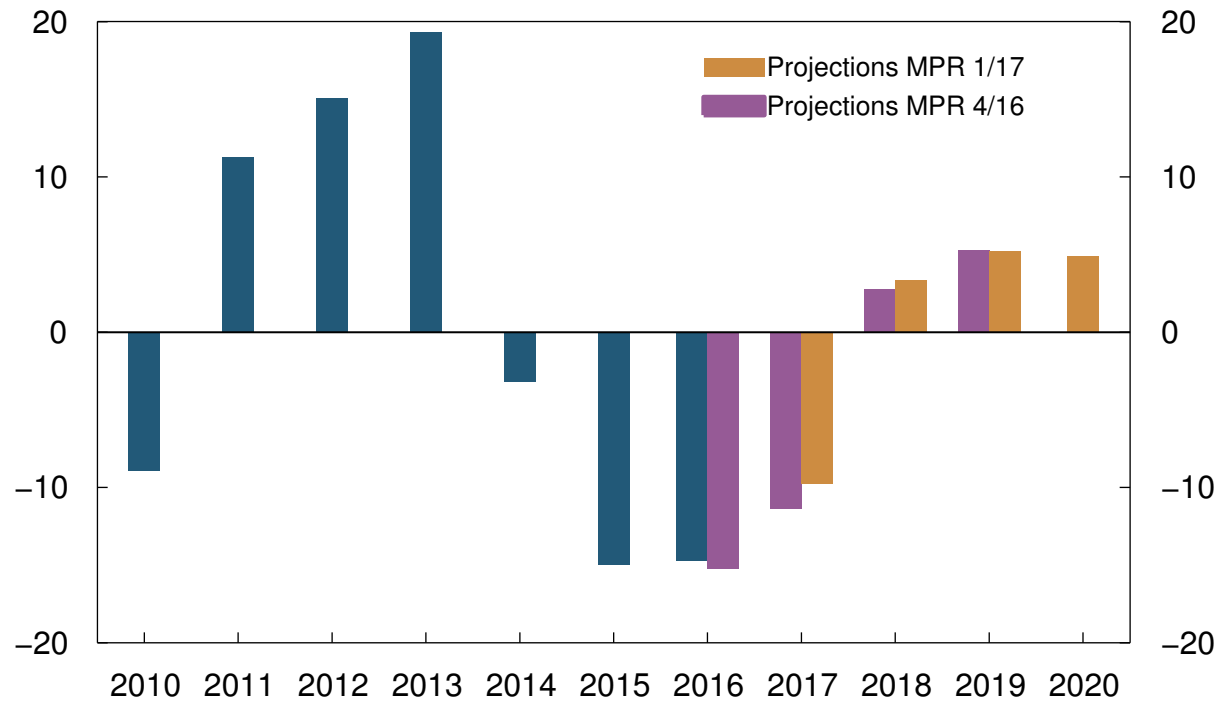
1) Akershus, Buskerud, Hedmark, Oppland, Oslo, Telemark, Vestfold and Østfold.
Sources: Statistics Norway and Norges Bank

Chart 3.15 Private investment. Annual change. Percent. 2010 – 2020¹⁾



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

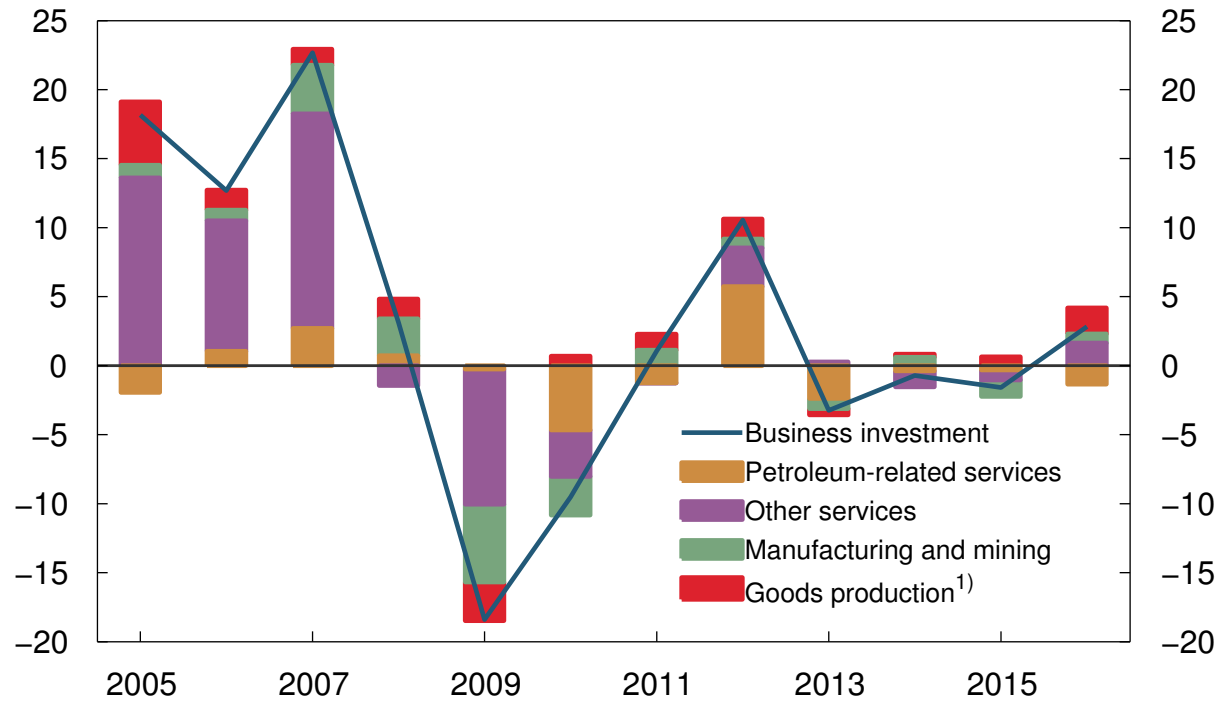
Chart 3.16 Petroleum investment. Volume. Annual change. Percent. 2010 – 2020¹⁾



1) Projections for 2017 – 2020.

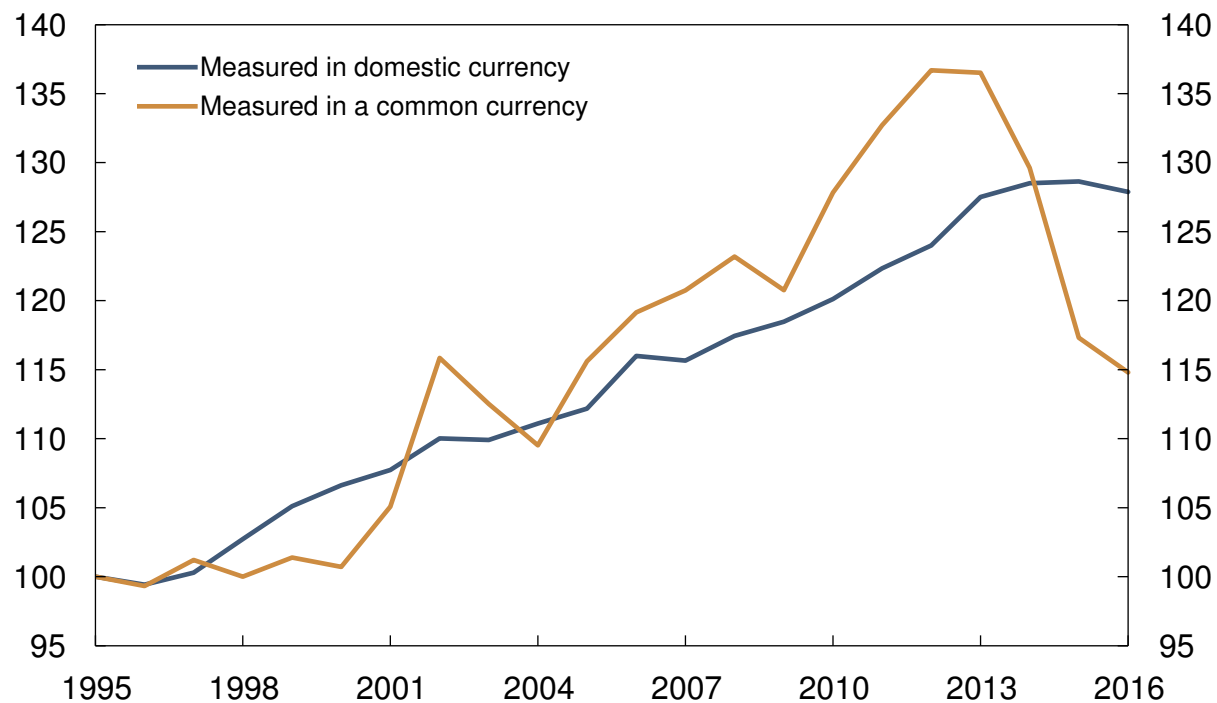
Sources: Statistics Norway and Norges Bank

Chart 3.17 Contributions to growth in business investment in mainland Norway.
Annual change. Percentage points. 2005 – 2016



1) Goods production includes construction and electricity production.
Sources: Statistics Norway and Norges Bank

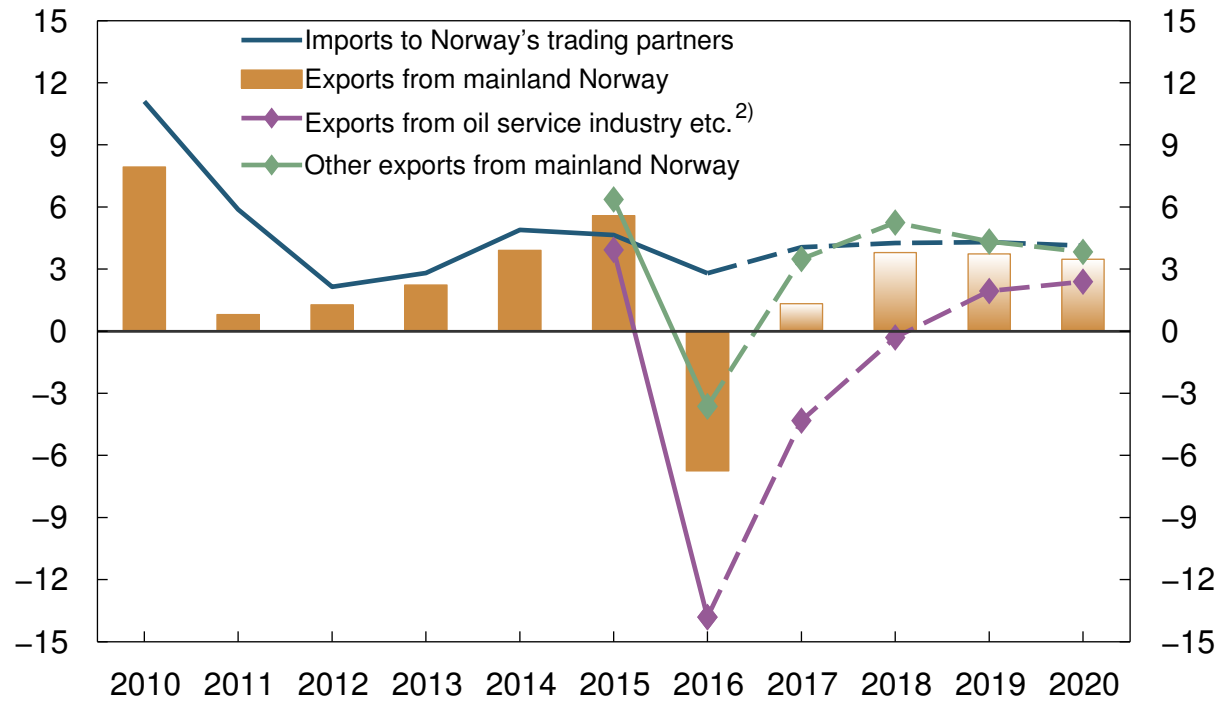
Chart 3.18 Norwegian labour costs relative to trading partners'.¹⁾
Index. 1995 = 100. 1995 – 2016



1) Hourly labour costs in manufacturing.

Sources: Norwegian Technical Calculation Committee for Wage Settlements (TBU), Statistics Norway and Norges Bank

Chart 3.19 Exports from mainland Norway and imports to Norway's trading partners. Annual change. Percent. 2010 – 2020¹⁾

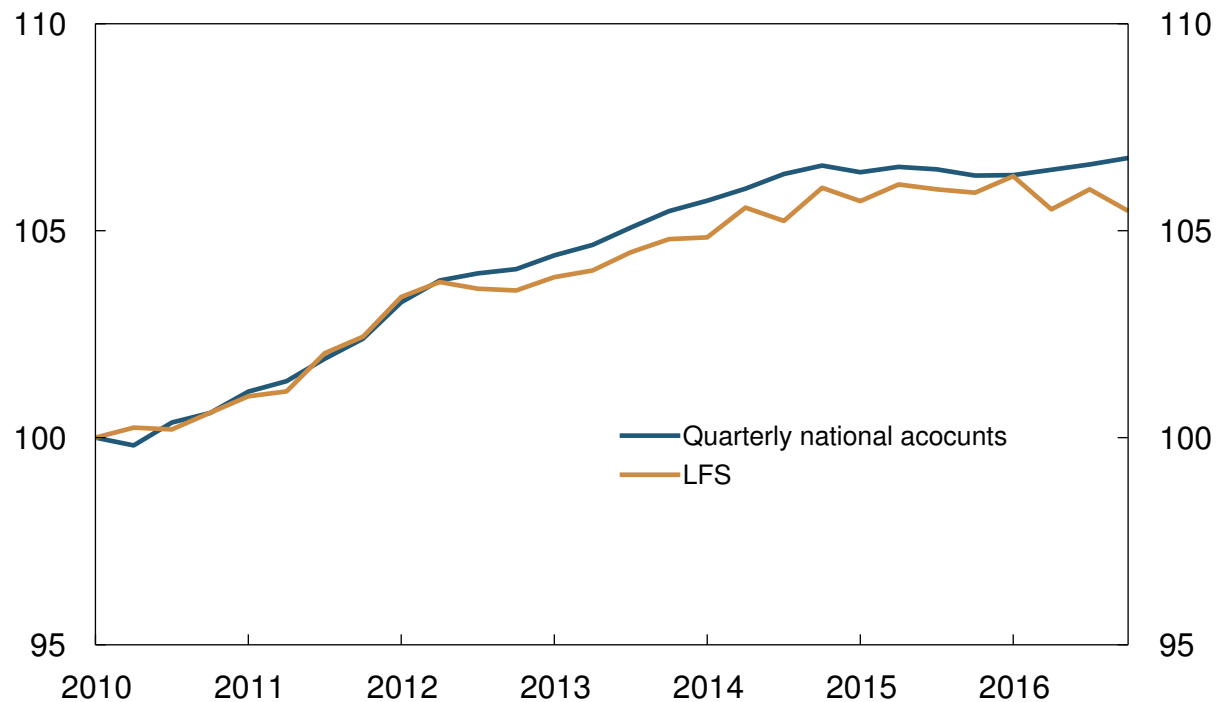


1) Projections for 2017 – 2020 (broken lines and shaded bars).

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 3.20 Employed persons in the quarterly national accounts and the LFS¹⁾ 2)
Seasonally adjusted. Index. 2010 Q1 = 100. 2010 Q1 – 2016 Q4

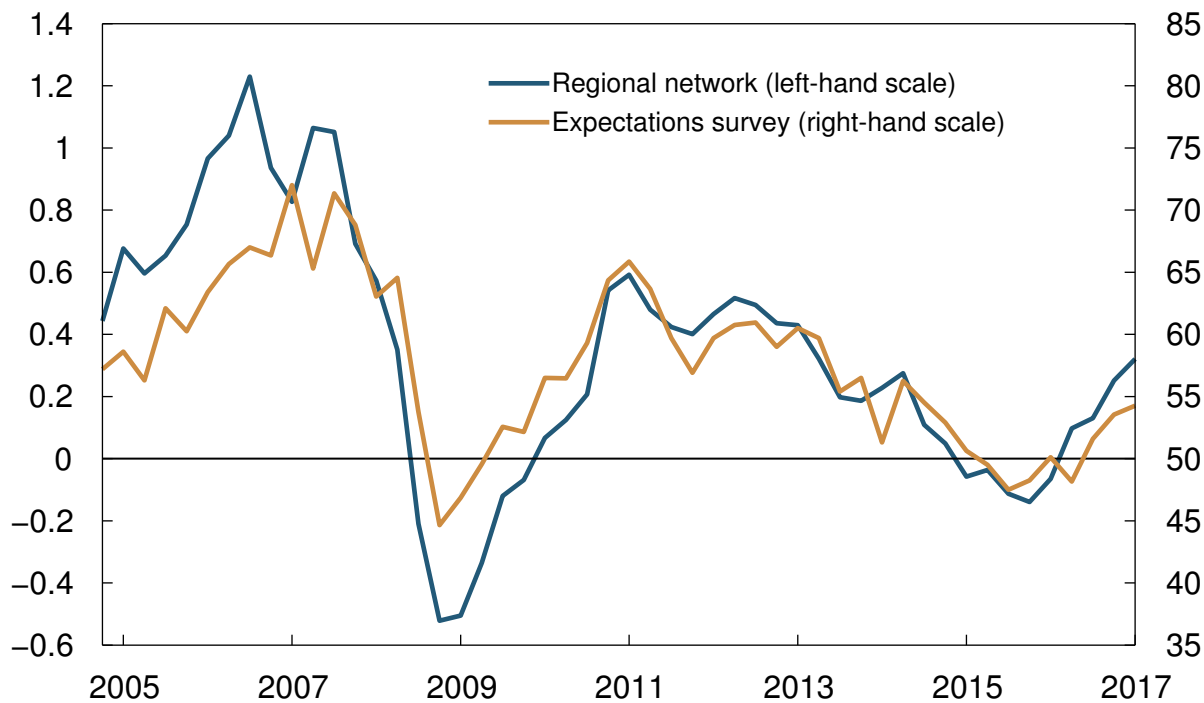


1) Labour Force Survey.

2) LFS and the quarterly national accounts 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

Chart 3.21 Expected change in employment. Regional network.¹⁾ Percent.
Norges Bank's expectations survey. Diffusion index.²⁾ 2004 Q4 – 2017 Q1

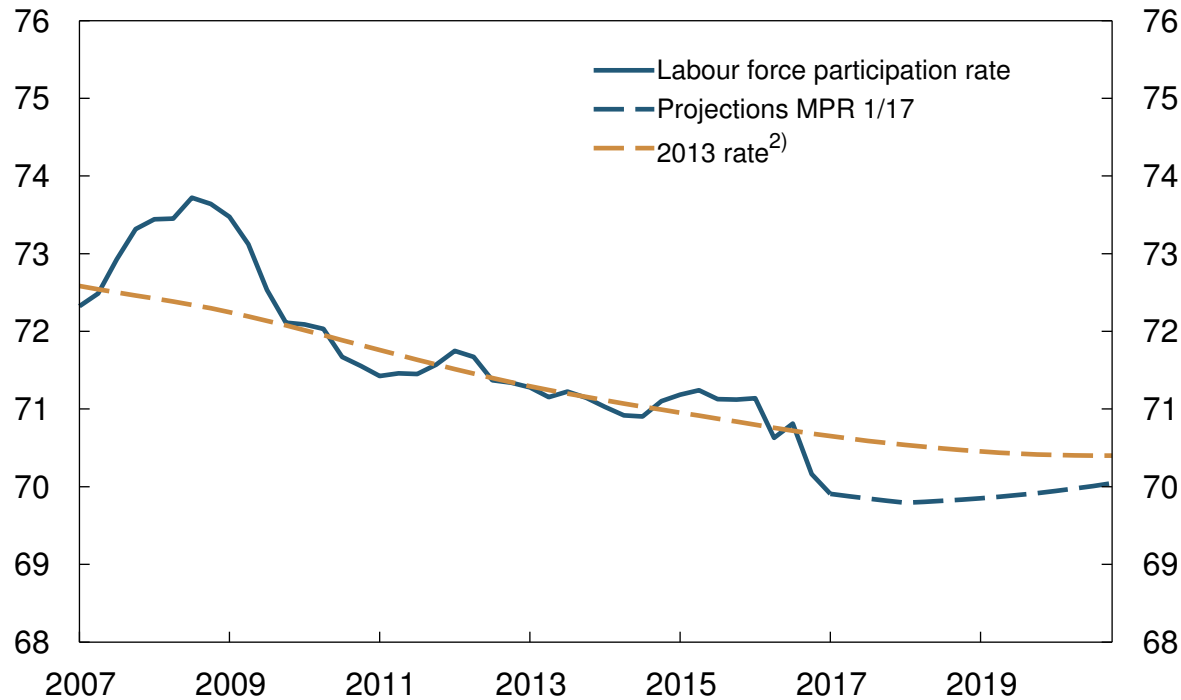


1) Expected change in employment next three months.

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 3.22 Labour force participation rates. Labour force as a share of the population (aged 15 – 74). Seasonally adjusted. Percent. Four-quarter moving average. 2007 Q1 – 2020 Q4 ¹⁾

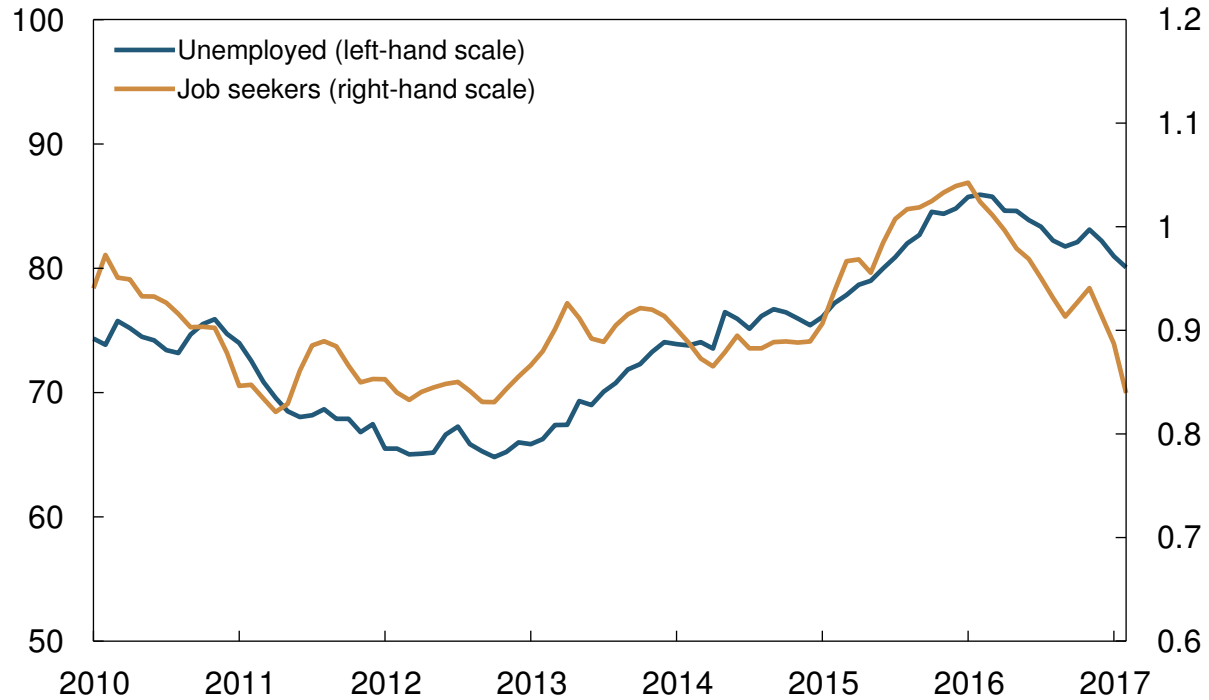


1) Projections from 2017 Q1 – 2020 Q4.

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.

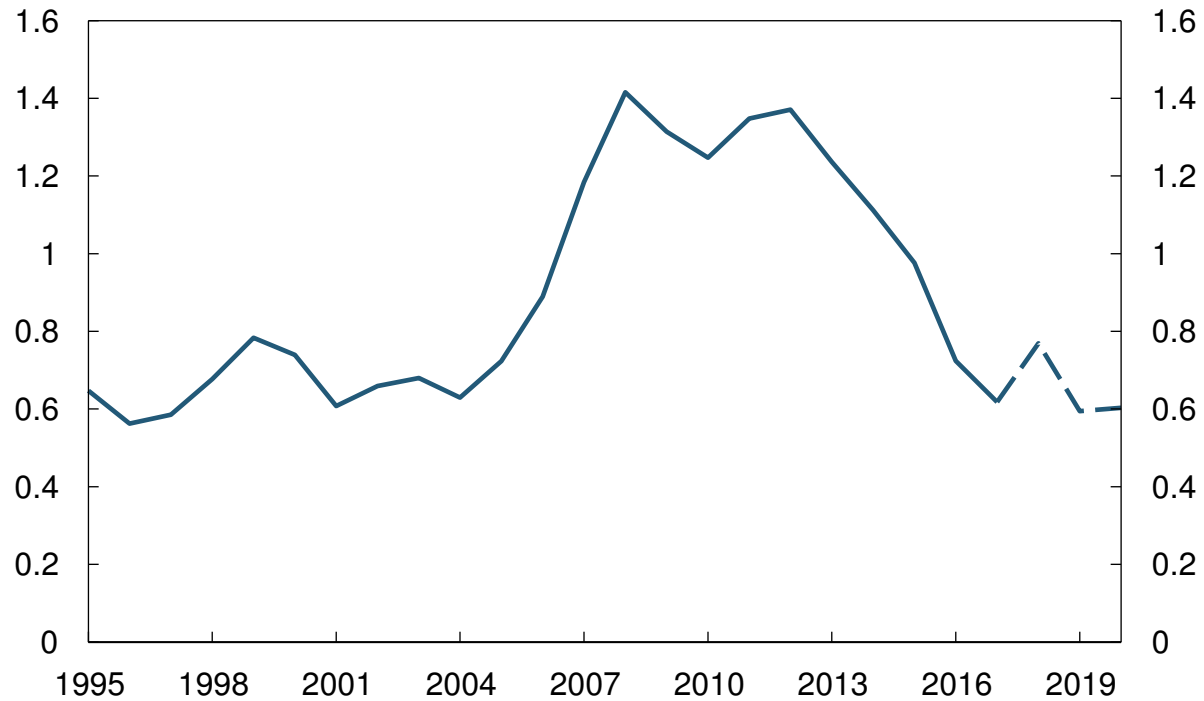
Sources: Statistics Norway and Norges Bank

Chart 3.23 Registered unemployed and new ordinary job seekers per business day. Seasonally adjusted. In thousands. January 2010 – February 2017



Source: Norwegian Labour and Welfare Administration (NAV)

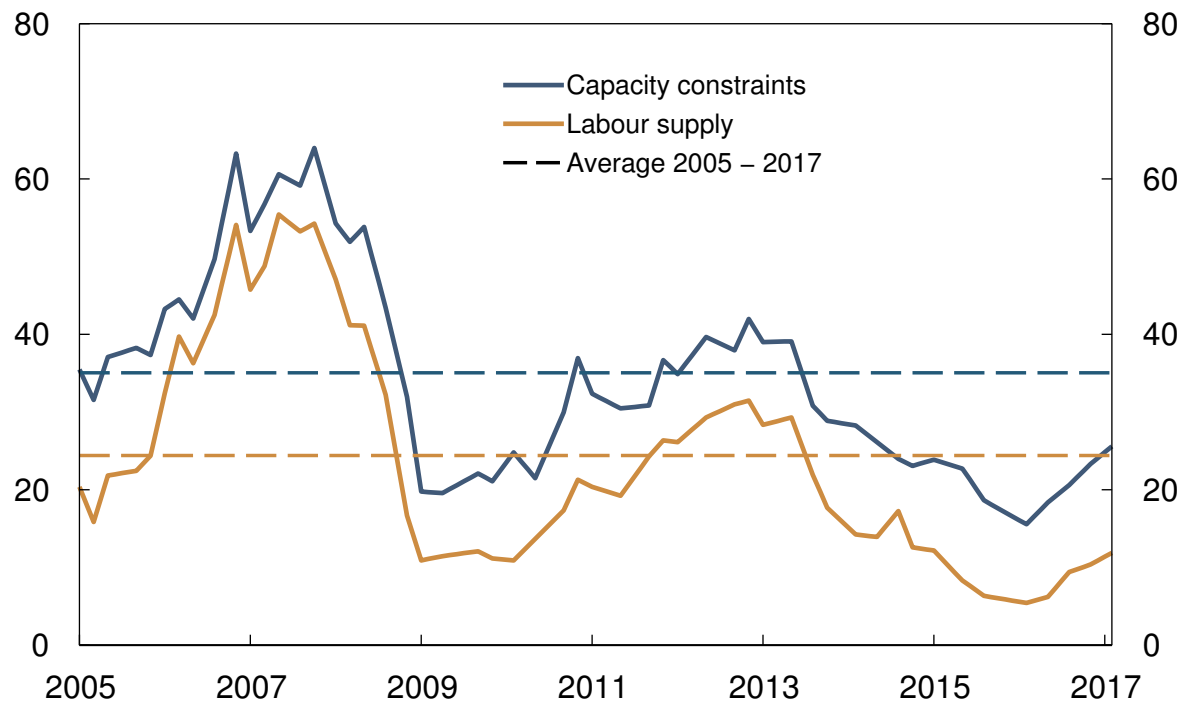
Chart 3.24 Labour force given constant labour supply for each age group.
Annual growth. Percent. 1995 – 2020¹⁾



1) Projections for 2017 – 2020 (broken line). The calculations adjust for the time span before persons coming to Norway as refugees enter the labour force.

Sources: Statistics Norway and Norges Bank

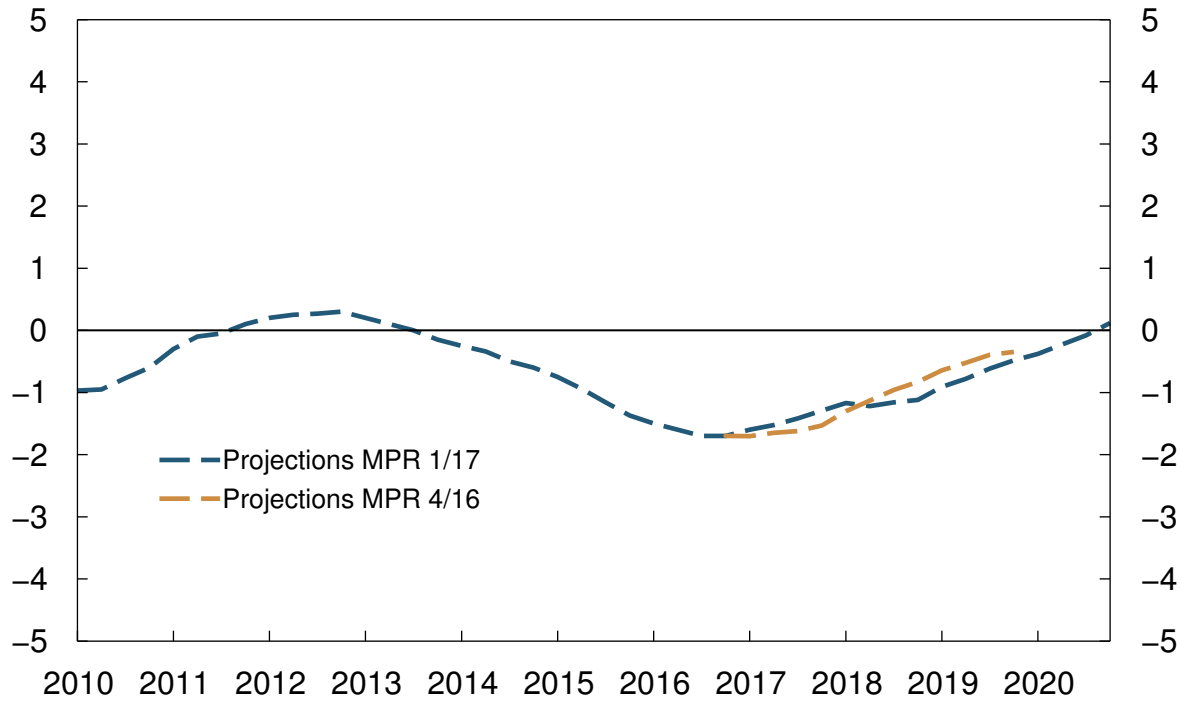
Chart 3.25 Capacity constraints and labour supply as reported by the regional network.¹⁾ Percent. January 2005 – February 2017



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

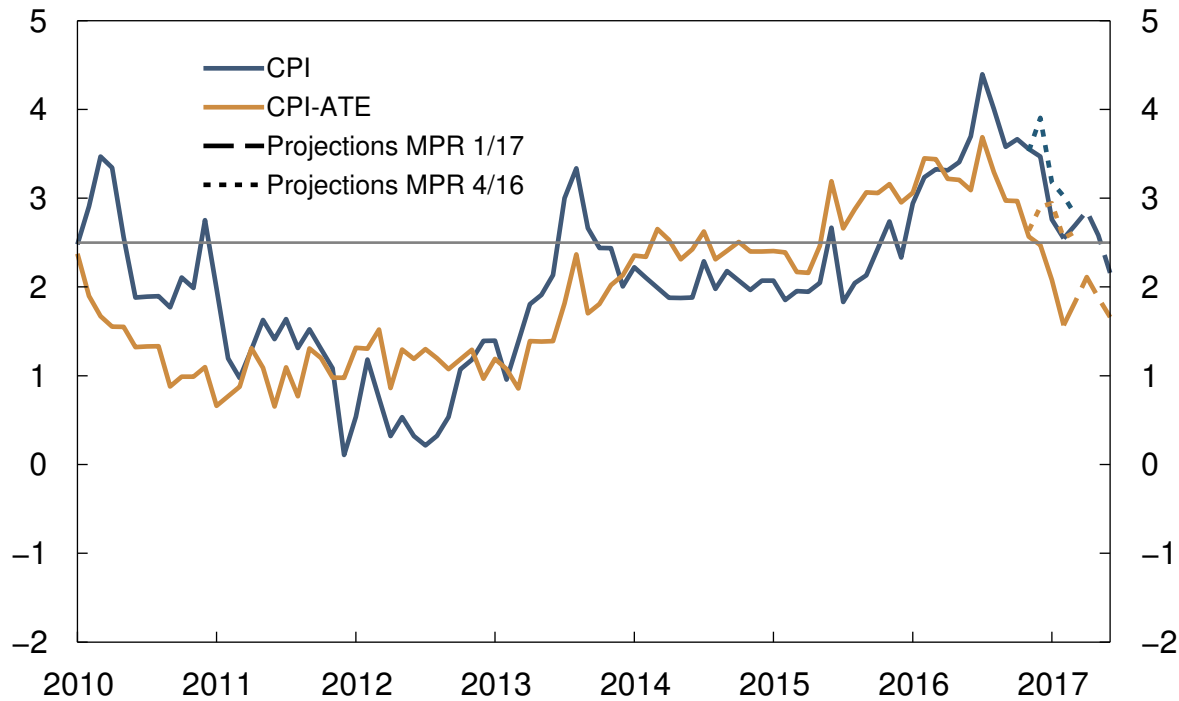
Chart 3.26 Projected output gap¹⁾. Quarterly change. 2010 Q1 – 2020 Q4



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

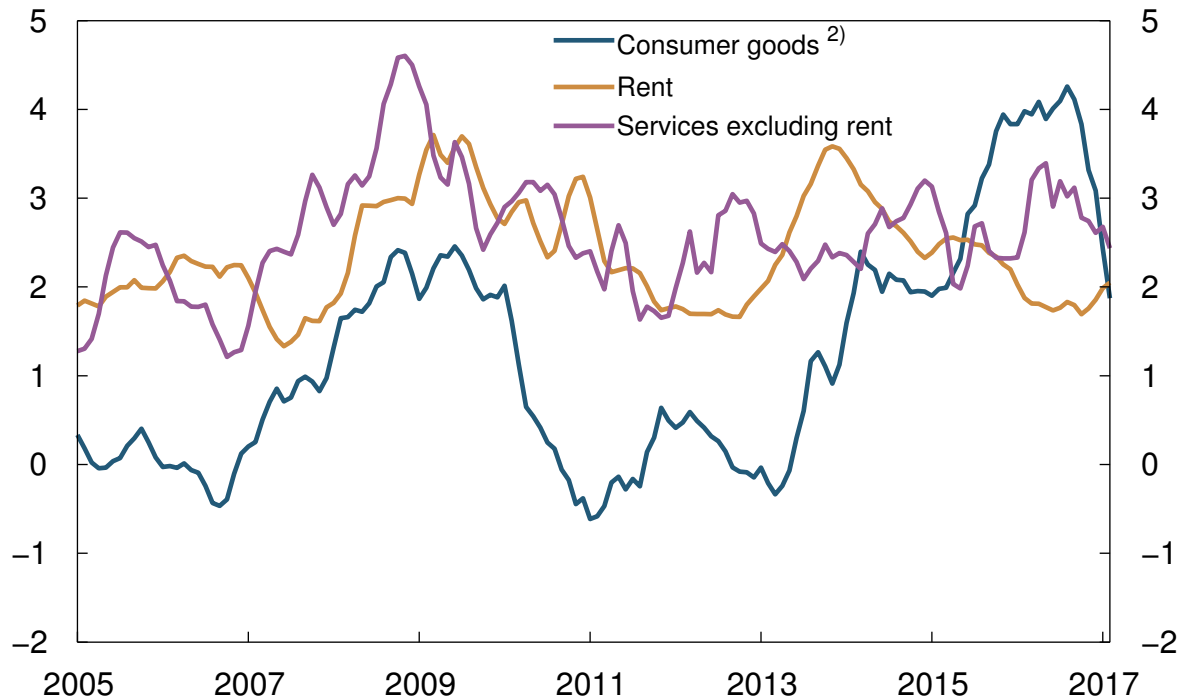
Source: Norges Bank

Chart 3.27 CPI and CPI-ATE¹⁾. Twelve-month change.
Percent. January 2010 – June 2017 ²⁾



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

Chart 3.28 CPI-ATE ¹⁾ by supplier sector. Twelve-month change.
Three-month moving average. Percent. January 2005 – February 2017

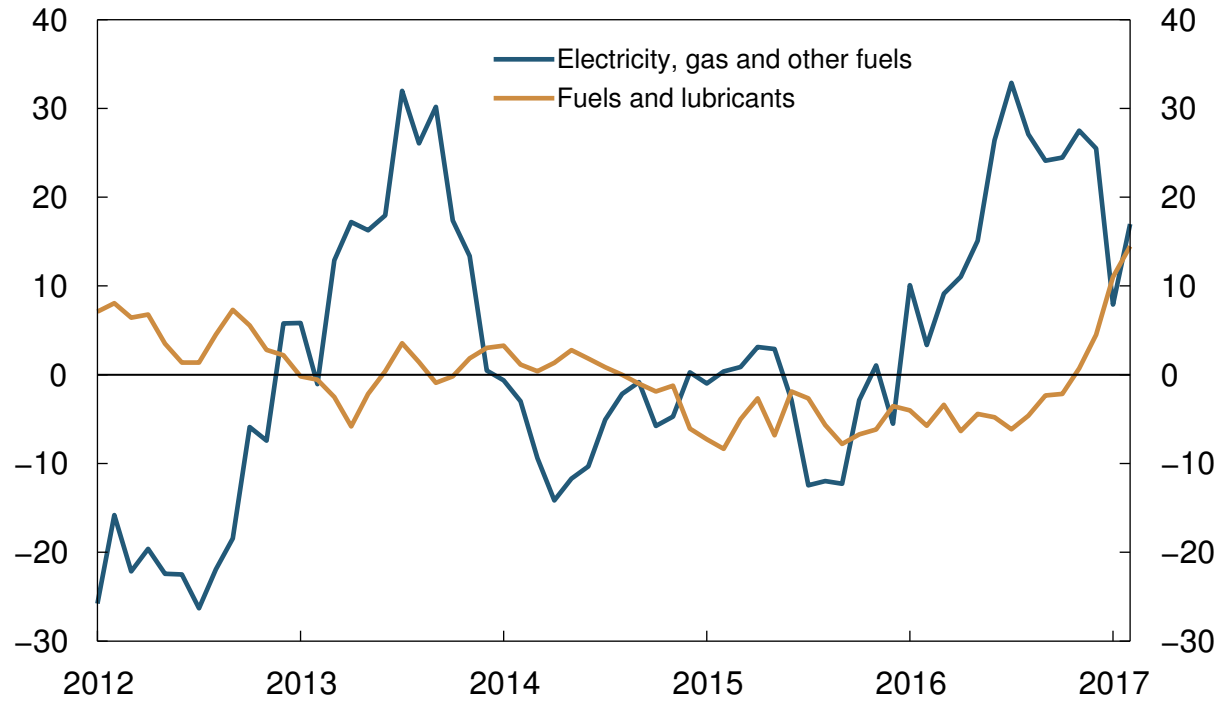


1) CPI adjusted for tax changes and excluding energy products.

2) Norges Bank's computations used until 2016, based on data from Statistics Norway.

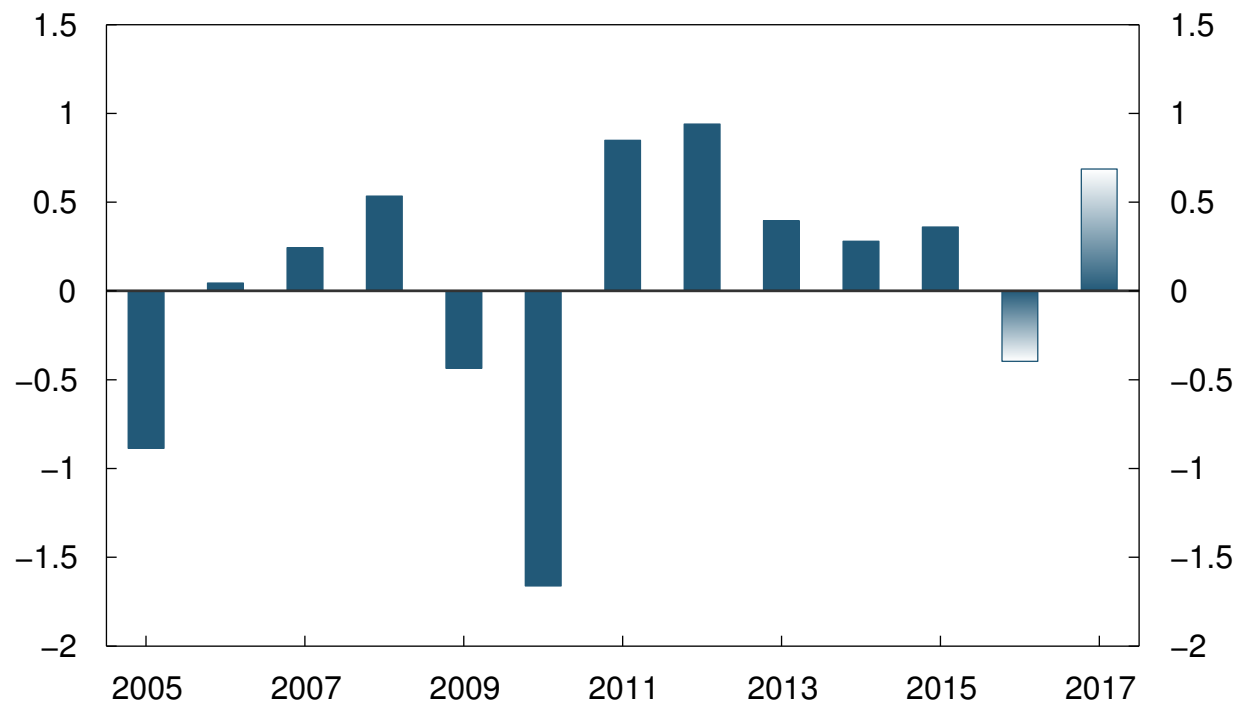
Sources: Statistics Norway and Norges Bank

Chart 3.29 Selected energy products in the CPI.
Twelve-month change. Percent. January 2012 – February 2017



Source: Statistics Norway

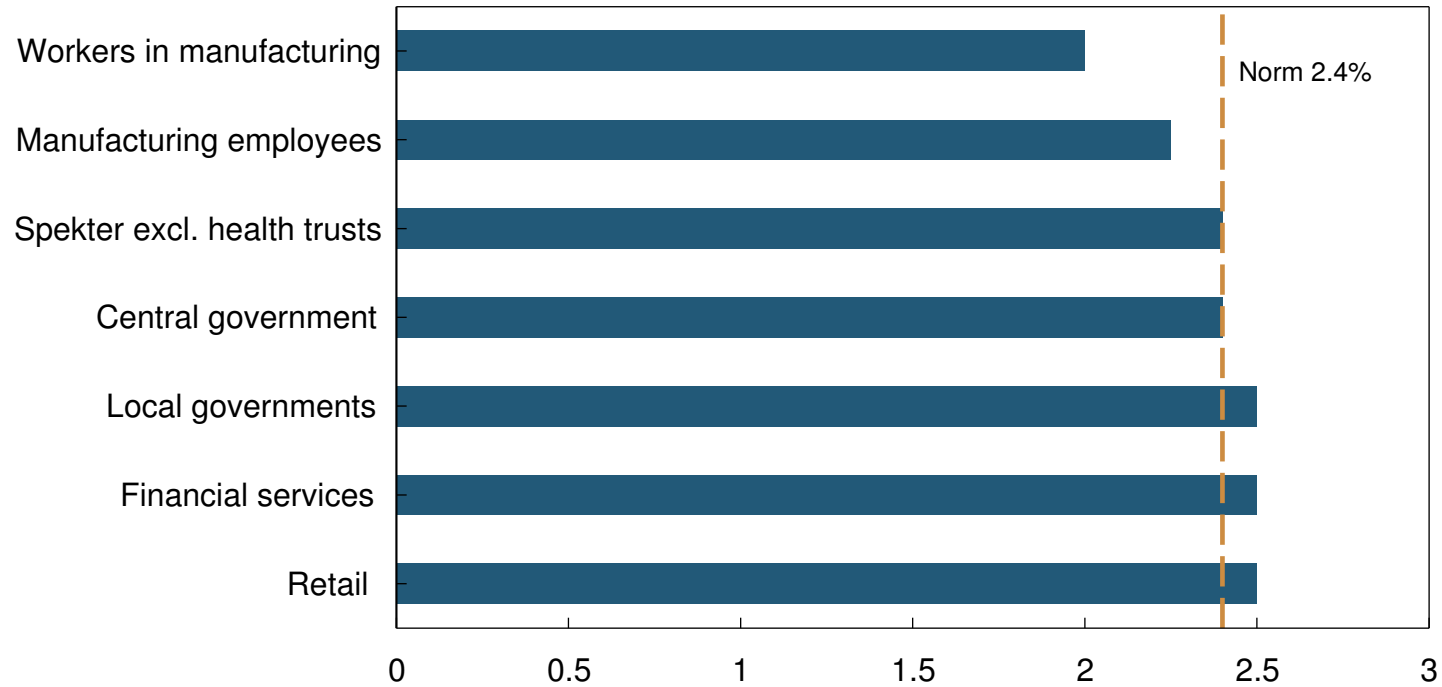
Chart 3.30 Indicator of external price impulses to imported consumer goods measured in a foreign currency. Annual change. Percent. 2005 – 2017¹⁾



1) Projections for 2016 – 2017 (shaded).

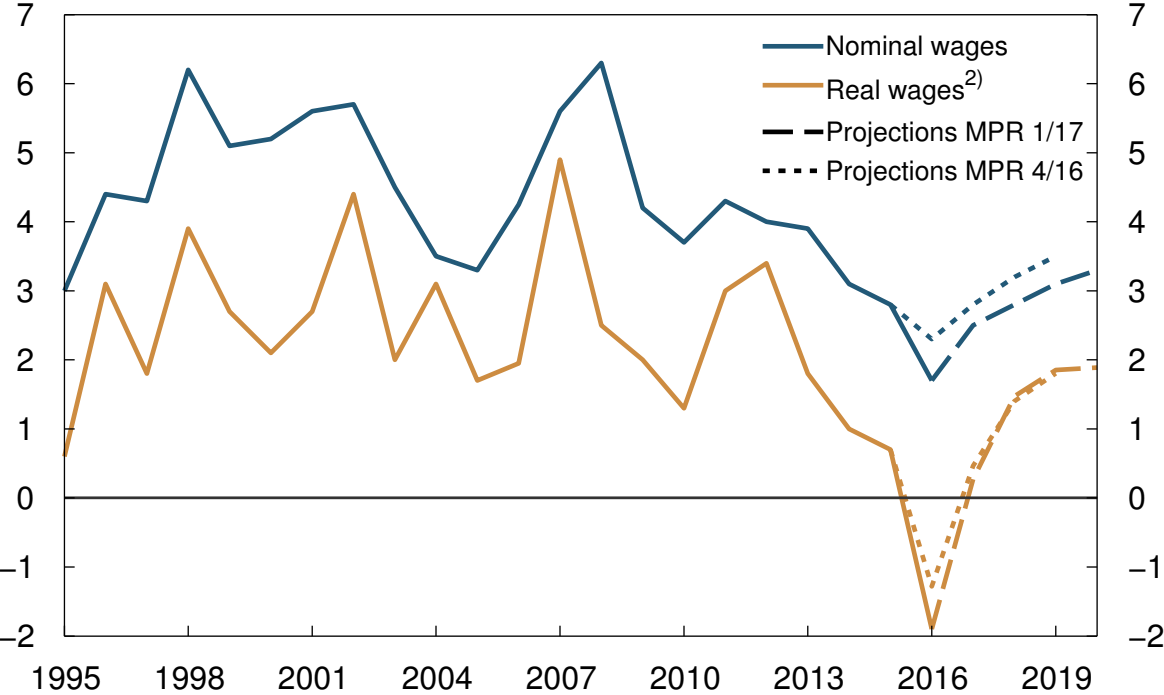
Sources: Statistics Norway, Thomson Reuters and Norges Bank

Chart 3.31 Wage growth in some large bargaining areas in 2016. ¹⁾ Annual change. Percent.



1) Preliminary figures from the Norwegian Technical Calculation Committee for Wage Settlements (TBU).
Sources: Norwegian Technical Calculation Committee for Wage Settlements (TBU) and Norges Bank

Chart 3.32 Wages. Annual change. Percent. 1995 – 2020¹⁾

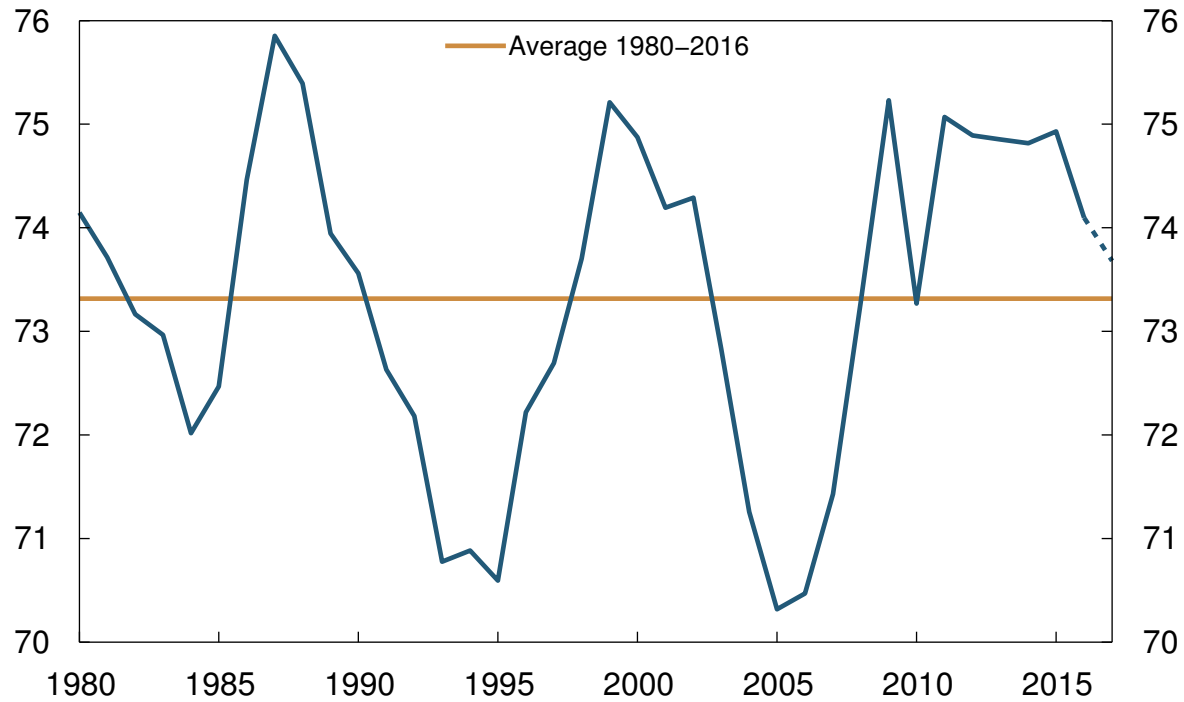


1) Projections for 2017 – 2020 (broken lines).

2) Nominal wage growth deflated by the CPI.

Sources: Norwegian Technical Calculation Committee for Wage Settlements (TBU), Statistics Norway and Norges Bank

Chart 3.33 Labour cost share for mainland Norway.¹⁾ Percent. 1980 – 2017²⁾

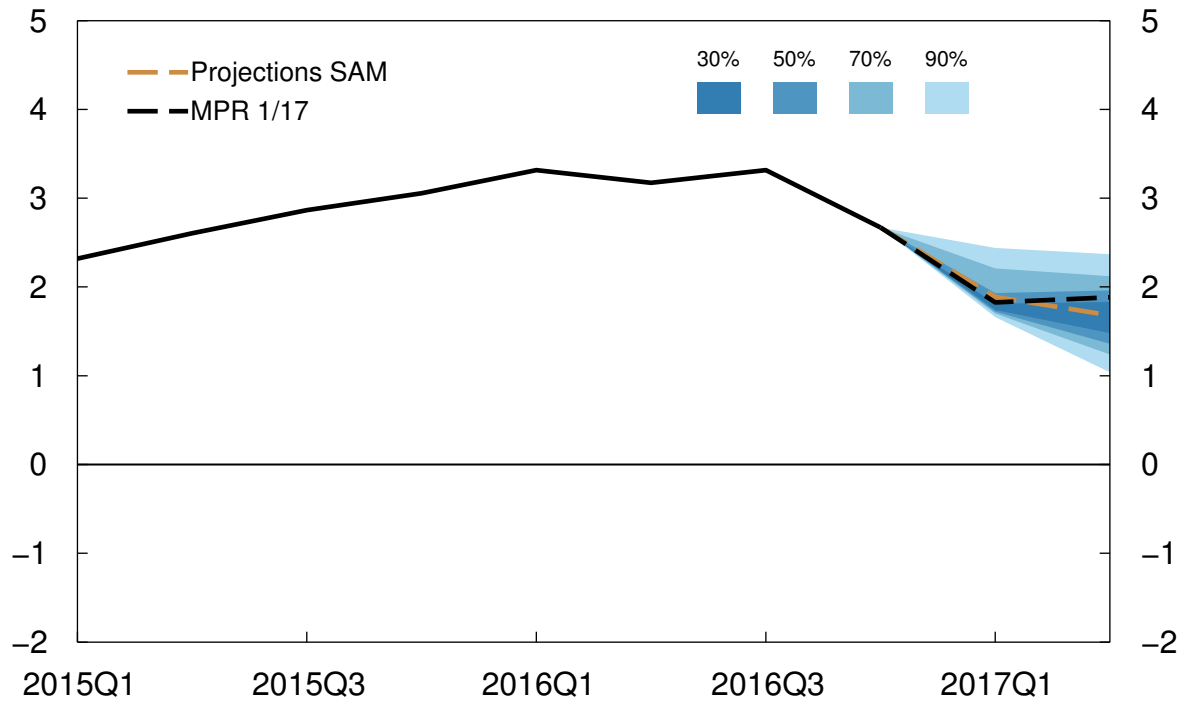


1) Labour cost as a percentage of factor income.

2) Projections for 2017 (broken line).

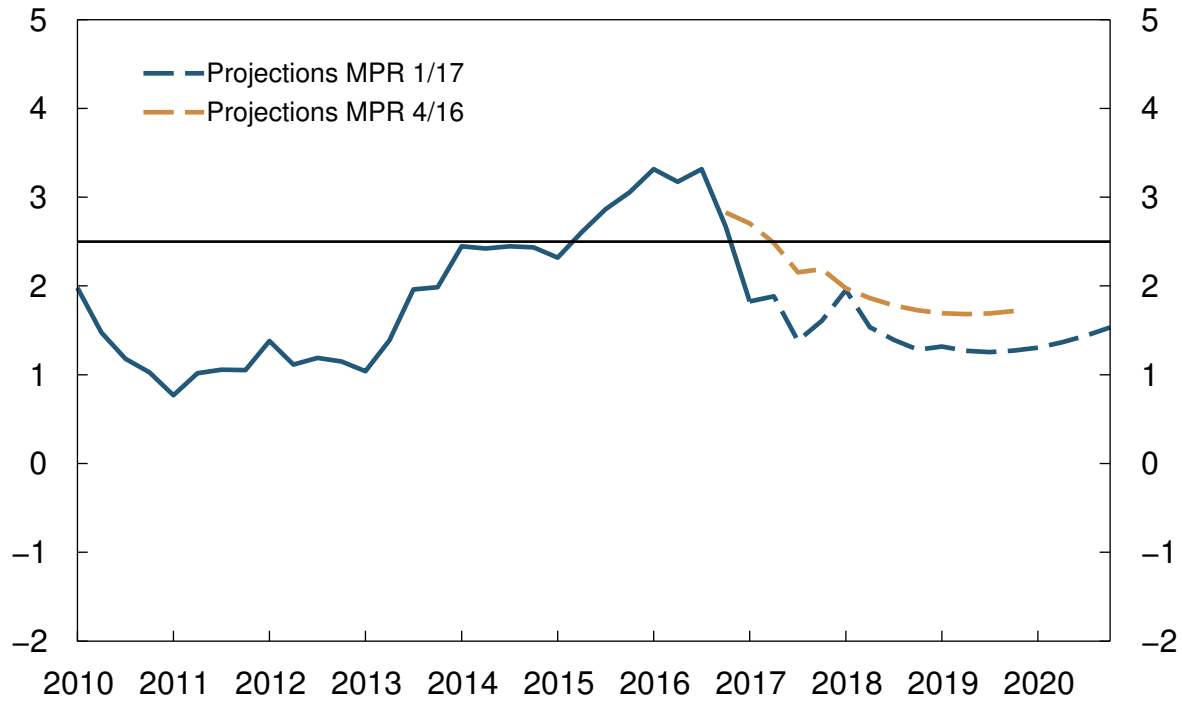
Sources: Statistics Norway and Norges Bank

Chart 3.34 CPI-ATE¹⁾ in MPR 1/17 with fan chart given by SAM²⁾ .
 Four-quarter change. Percent. 2015 Q1 – 2017 Q2 ³⁾



1) CPI adjusted for tax changes and excluding energy products.
 2) System for Averaging short-term Models.
 3) Projections for 2017 Q1 – 2017 Q2 (broken lines).
 Sources: Statistics Norway and Norges Bank

Chart 3.35 CPI-ATE¹⁾. Four-quarter change. Percent. 2010 Q1 – 2020 Q4²⁾

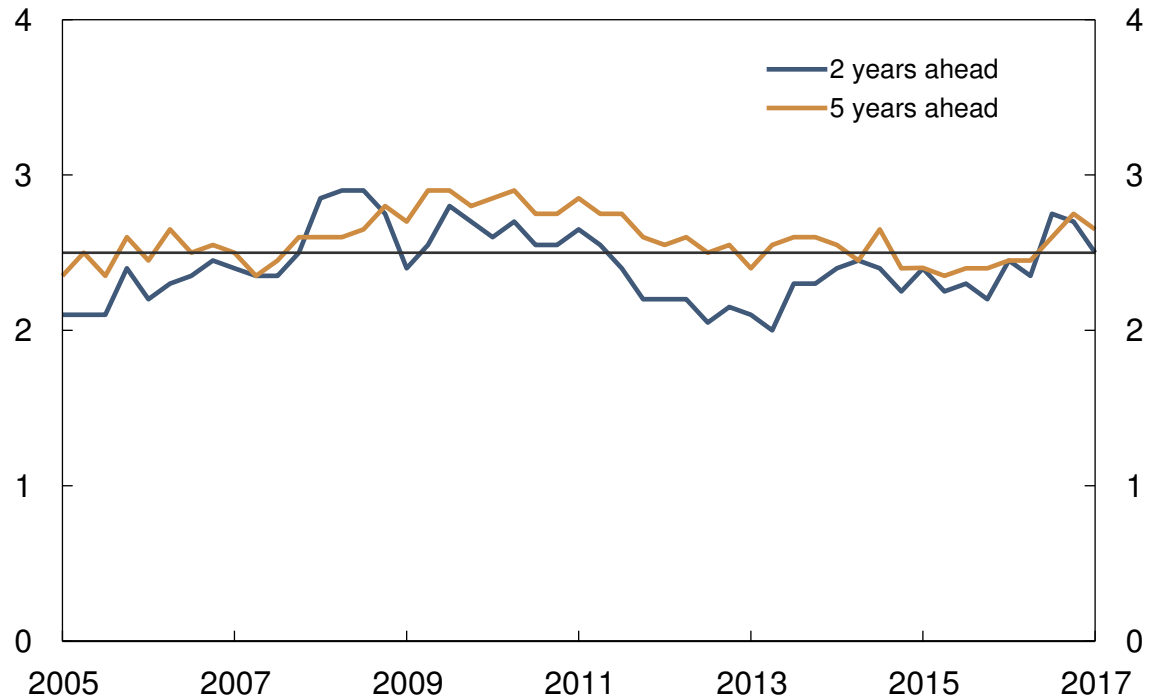


1) CPI adjusted for tax changes and excluding energy products.

2) Projections for 2017 Q1 – 2020 Q4.

Sources: Statistics Norway and Norges Bank

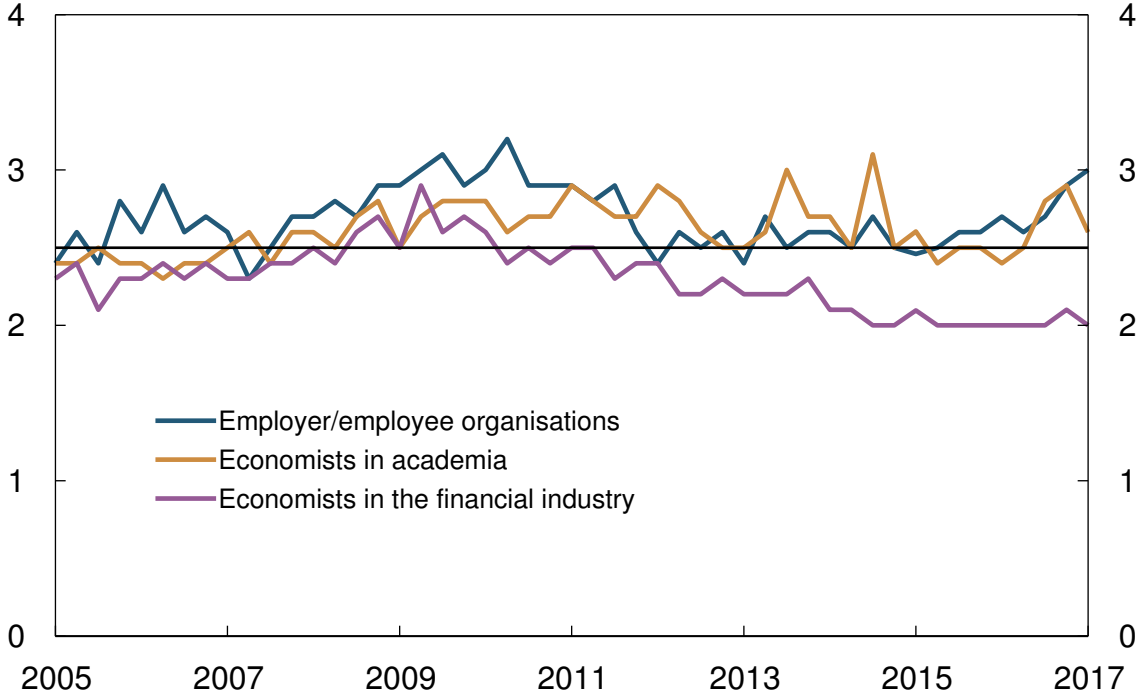
Chart 3.36 Expected consumer price inflation 2 and 5 years ahead.¹⁾
Percent. 2005 Q1 – 2017 Q1



1) Average of expectations of employer/employee organisations and economists in the financial industry and academia.

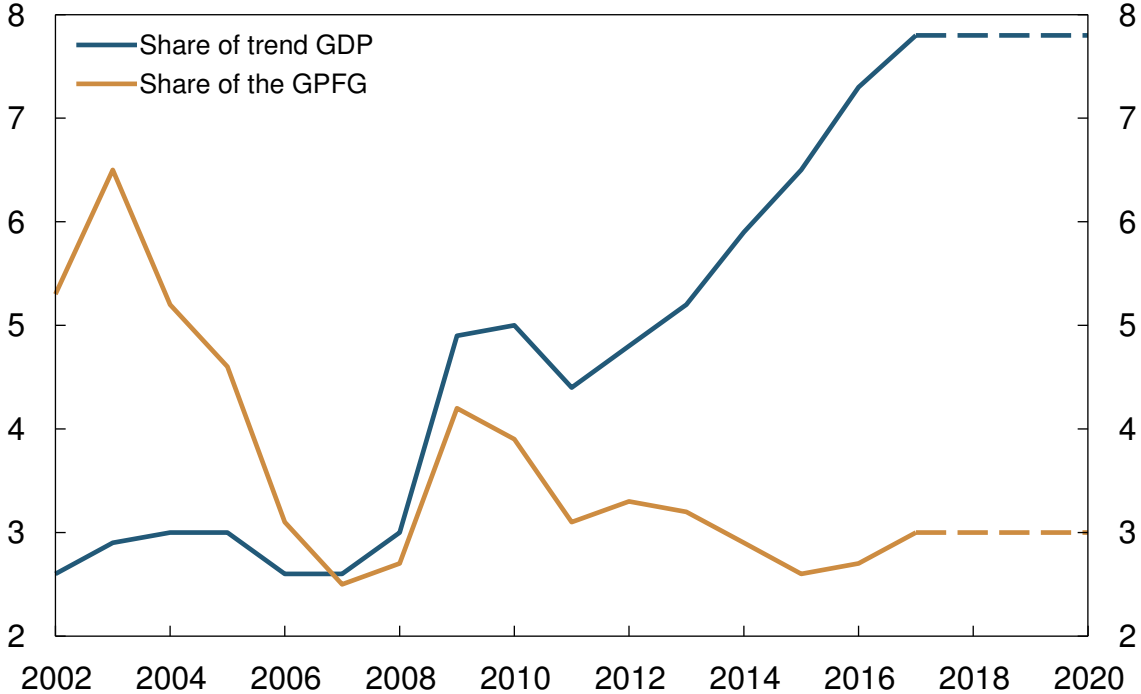
Sources: Epinion and Norges Bank

Chart 3.37 Expected consumer price inflation five years ahead among different economic agents. Percent. 2005 Q1 – 2017 Q1



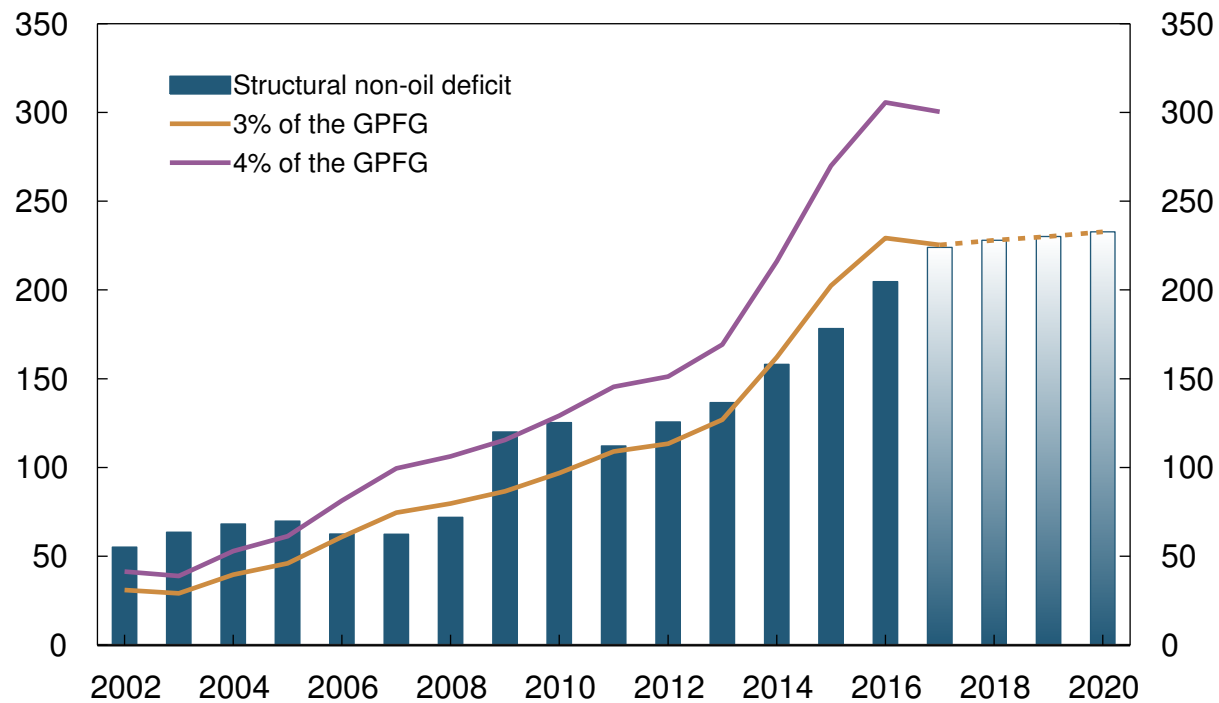
Sources: Epinion and Norges Bank

Chart 3.38 Structural non-oil deficit as a share of trend GDP for mainland Norway and the Government Pension Fund Global (GPFG). Percent. 2002 – 2020¹⁾



1) Projections for 2017 – 2020.
Sources: Ministry of Finance and Norges Bank

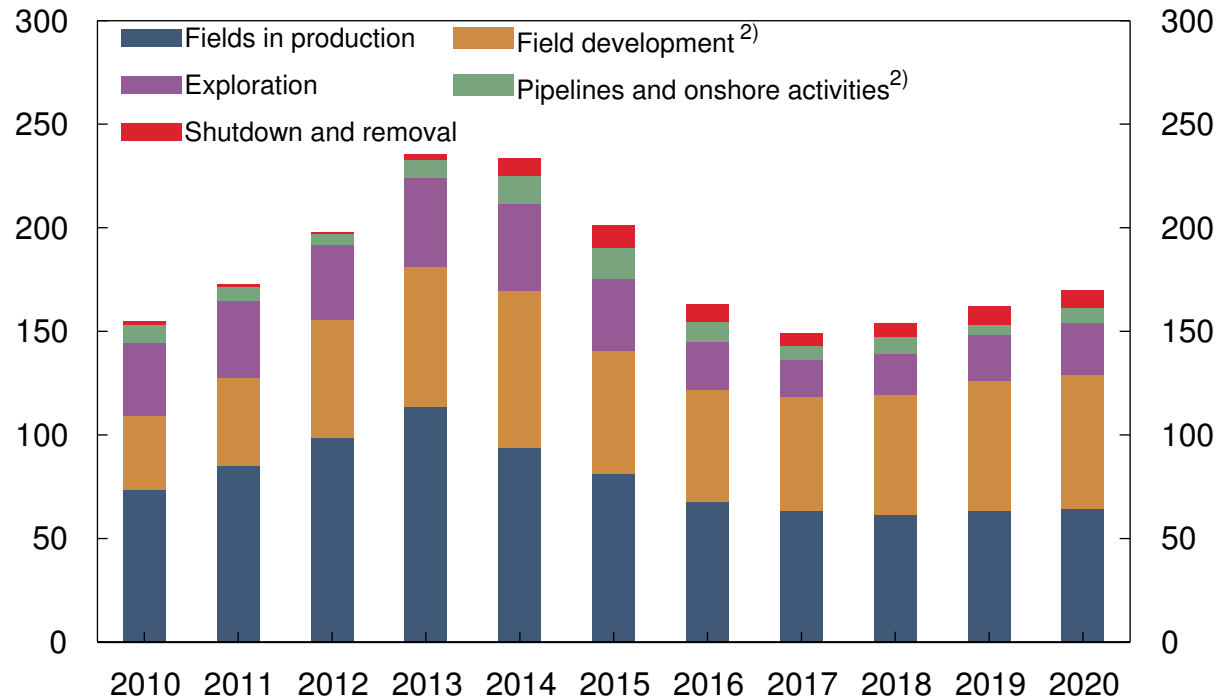
Chart 3.39 Structural non-oil deficit and 3% and 4% of the Government Pension Fund Global (GPFG). Constant 2017 prices. In billions of NOK. 2002 – 2020¹⁾



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

Sources: Ministry of Finance and Norges Bank

Chart 3.40 Petroleum investment.
 Constant 2017 prices. In billions of NOK. 2010 – 2020 ¹⁾



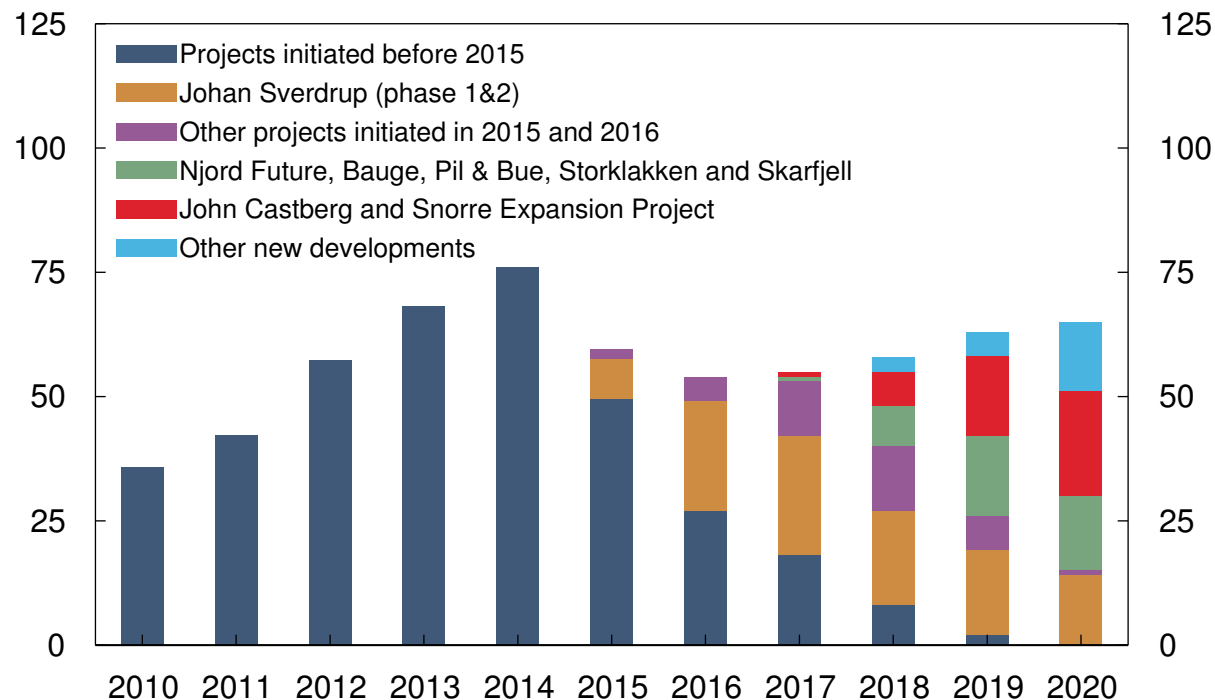
1) Projections for 2017 – 2020. Figures for 2010 – 2016 are from the investment intentions survey by Statistics Norway and deflated by the price index for petroleum investment in the national accounts. The index is projected to be unchanged from 2016 to 2017.

2) Expenses for pipelines for the Johan Sverdrup development are included in the estimates for pipeline transport and onshore activities.

Sources: Statistics Norway and Norges Bank

Chart 3.41 Field development.

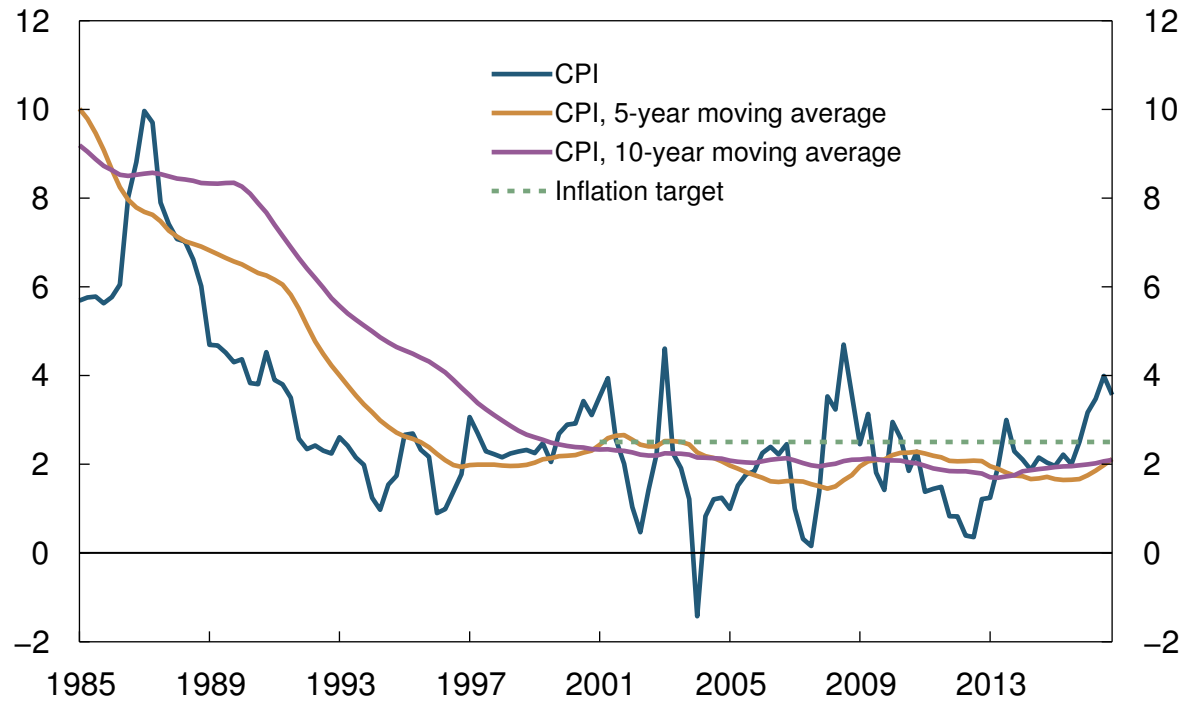
Constant 2017 prices. In billions of NOK. 2010 – 2020 ¹⁾



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. Expenses for pipelines for the Johan Sverdrup development are included in the estimates for pipeline transport and onshore activities.

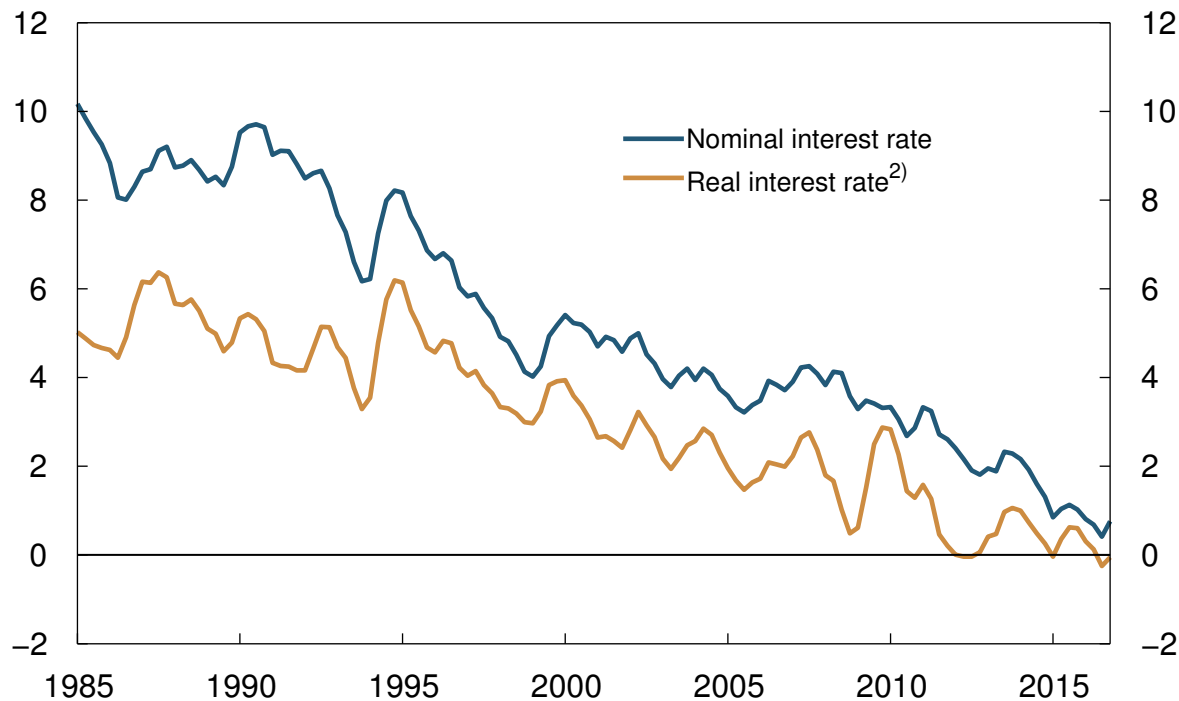
Sources: Statistics Norway and Norges Bank

Chart 4.1 Consumer price index.
Four-quarter change. Percent. 1985 Q1 – 2016 Q4



Sources: Statistics Norway and Norges Bank

Chart 4.2 Yields on 10-year government bonds. 14 OECD countries.¹⁾
Percent. 1985 Q1 – 2016 Q4

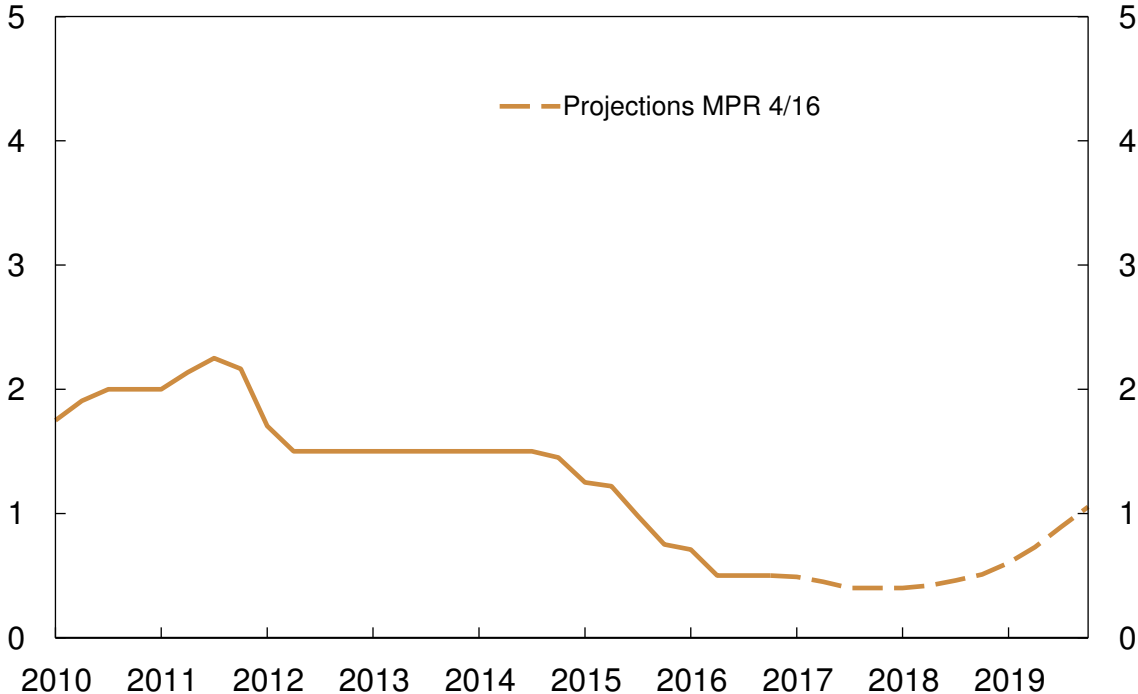


1) US, Germany, France, Italy, UK, Japan, Netherlands, Austria, Belgium, Sweden, Denmark, Canada, Switzerland and Norway. Unweighted average.

2) The real interest rate is calculated using the nominal government bond yield less inflation measured by the consumer price index.

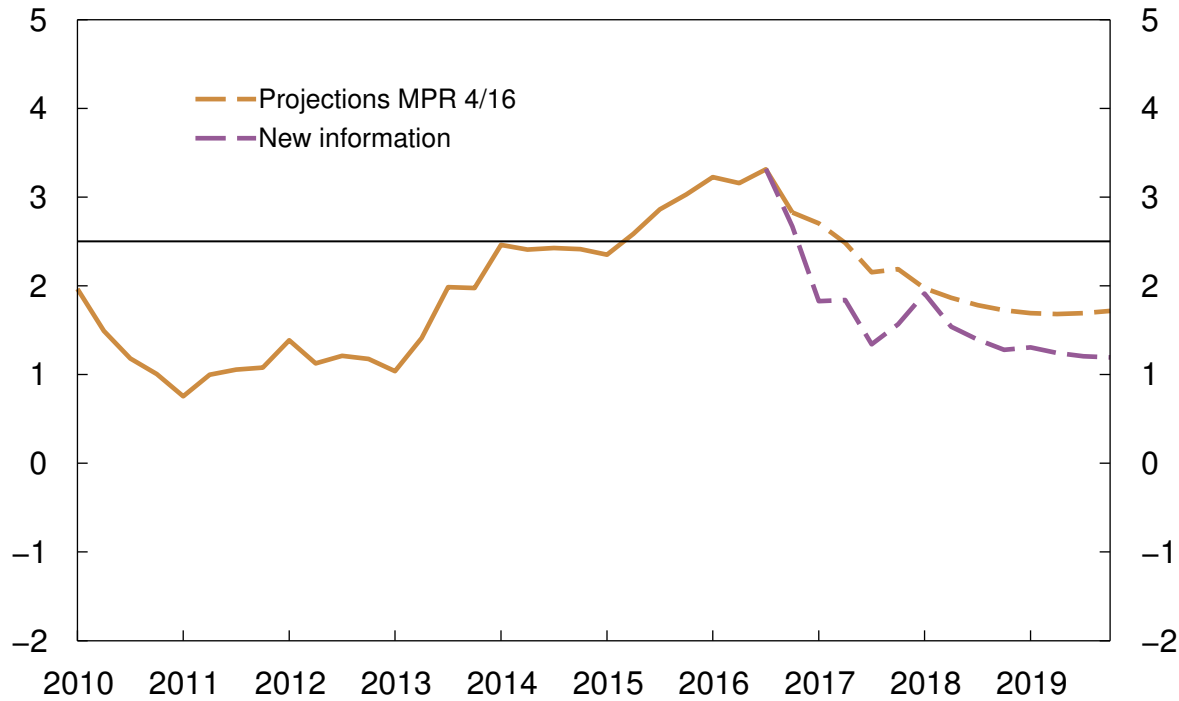
Sources: OECD and Norges Bank

Chart 4.3a Projections for the key policy rate from MPR 4/16.
Percent. 2010 Q1 – 2019 Q4 ¹⁾



1) Projections from 2016 Q4 – 2019 Q4 (broken lines).
Source: Norges Bank

Chart 4.3b CPI-ATE¹⁾. New information conditional on projections for the key policy rate from MPR 4/16. Four-quarter change. Percent. 2010 Q1 – 2019 Q4²⁾

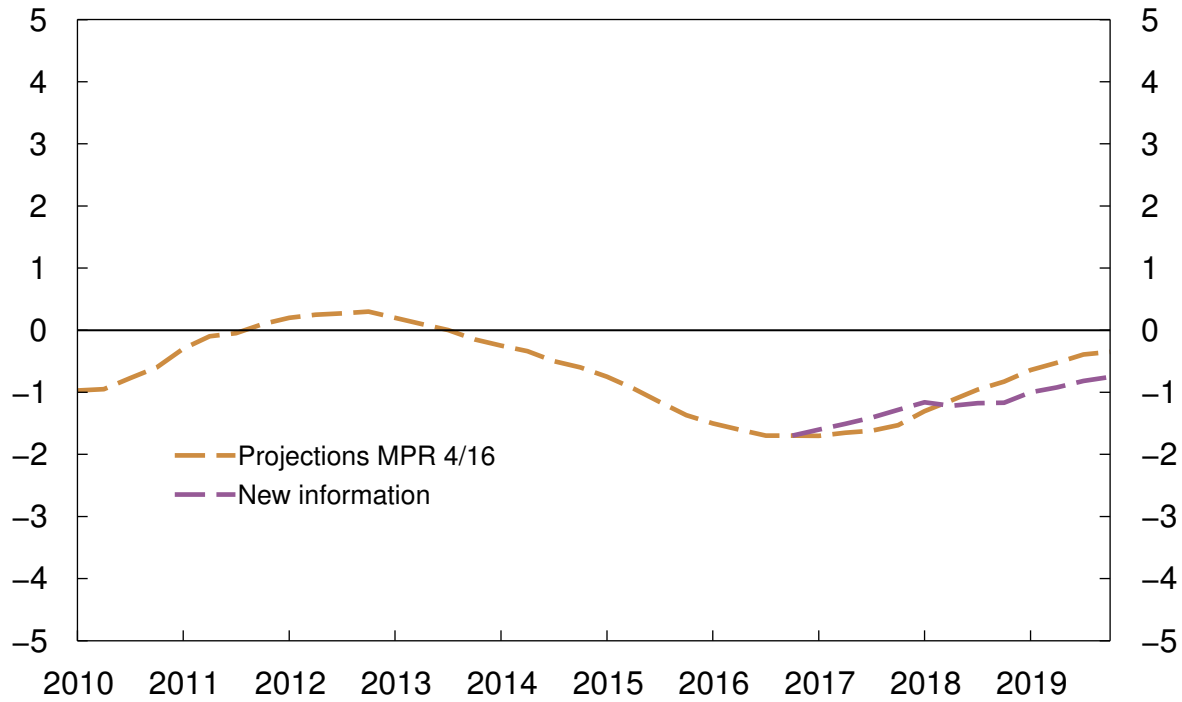


1) CPI adjusted for tax changes and excluding energy products.

2) Projections for 2016 Q4 – 2019 Q4 (broken lines).

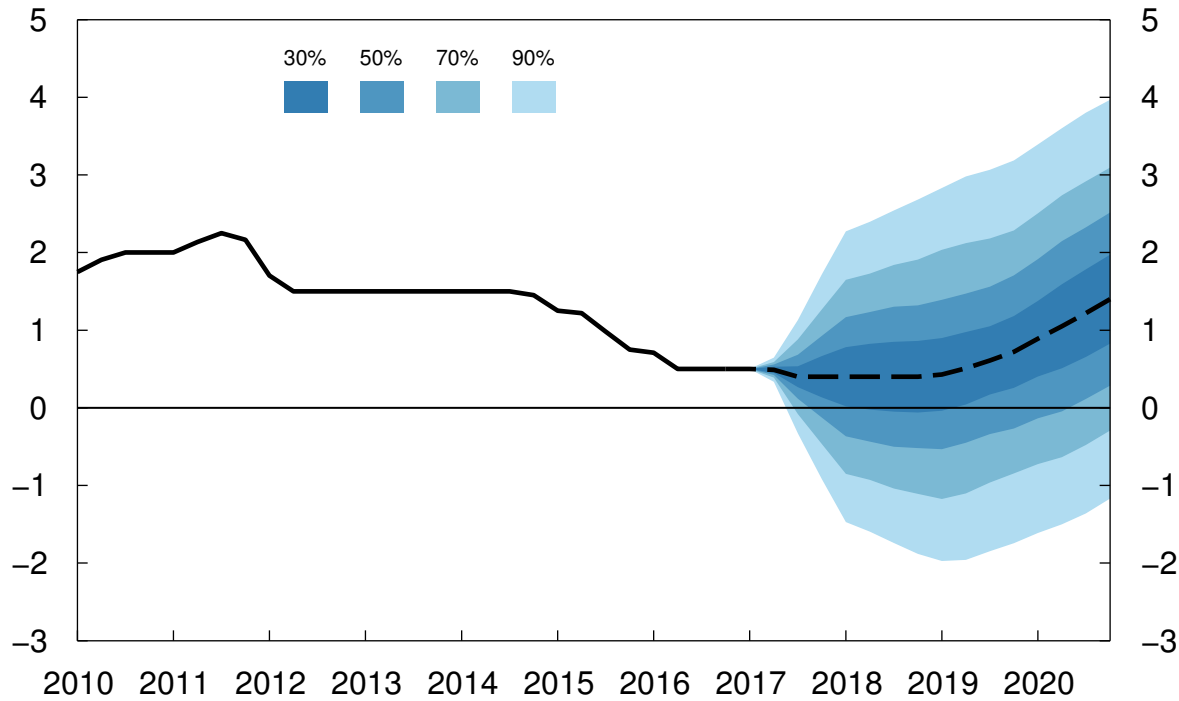
Sources: Statistics Norway and Norges Bank

Chart 4.3c Projected output gap. New information conditional on projections for the key policy rate from MPR 4/16. Percent. 2010 Q1 – 2019 Q4



Source: Norges Bank

Chart 4.4a Projected key policy rate with fan chart.¹⁾
Percent. 2010 Q1 – 2020 Q4²⁾

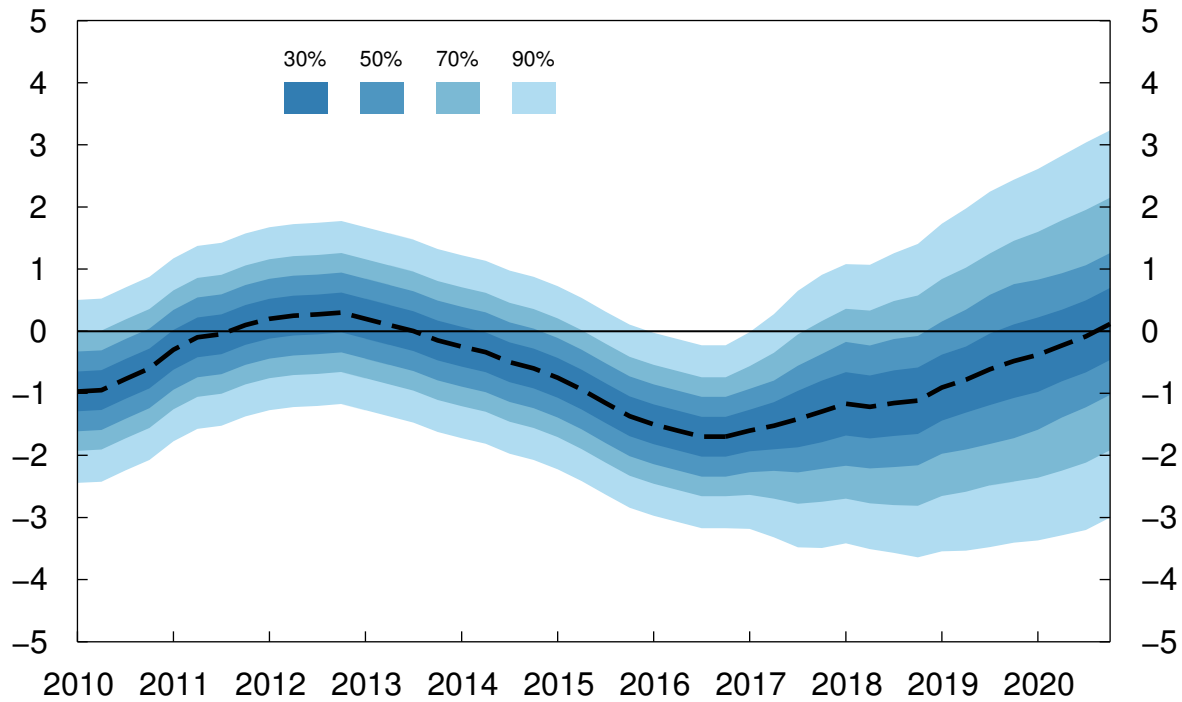


1) The fan charts are based on historical experience and stochastic simulations in our main macroeconomic model, NEMO. The fan chart for the key policy rate does not take into account that a lower bound for the interest rate exists.

2) Projections for 2017 Q1 – 2020 Q4 (broken line).

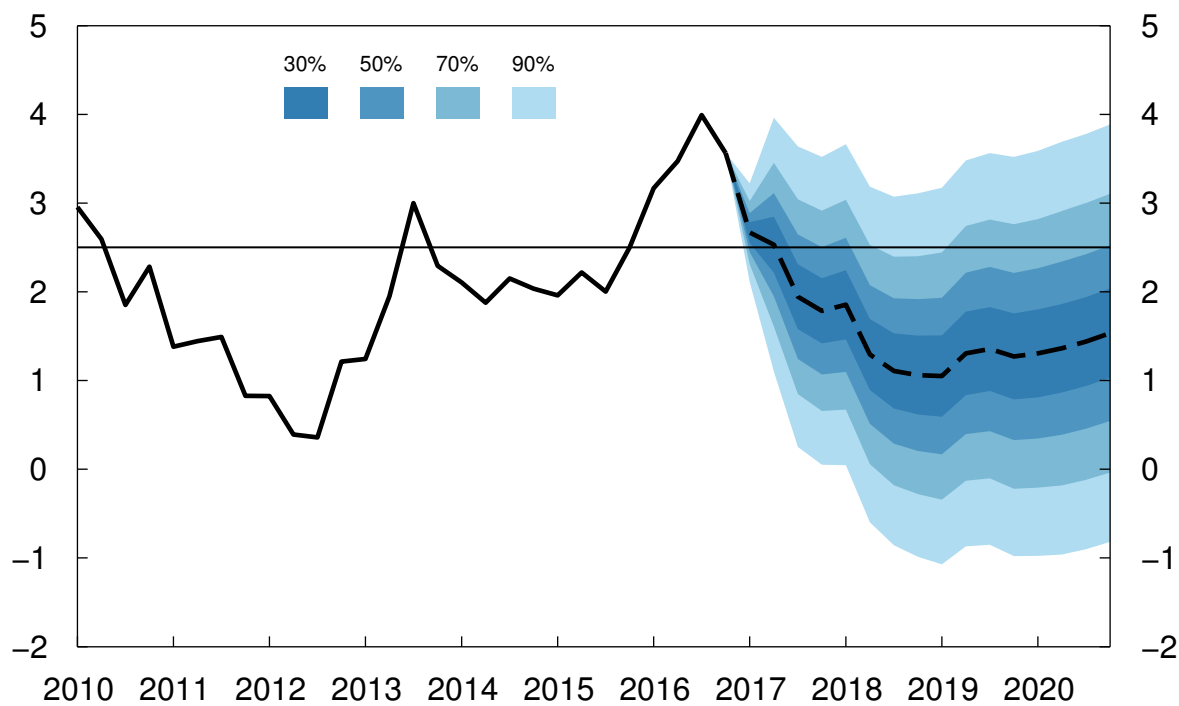
Source: Norges Bank

Chart 4.4b Projected output gap¹⁾ with fan chart.
Percent. 2010 Q1 – 2020 Q4



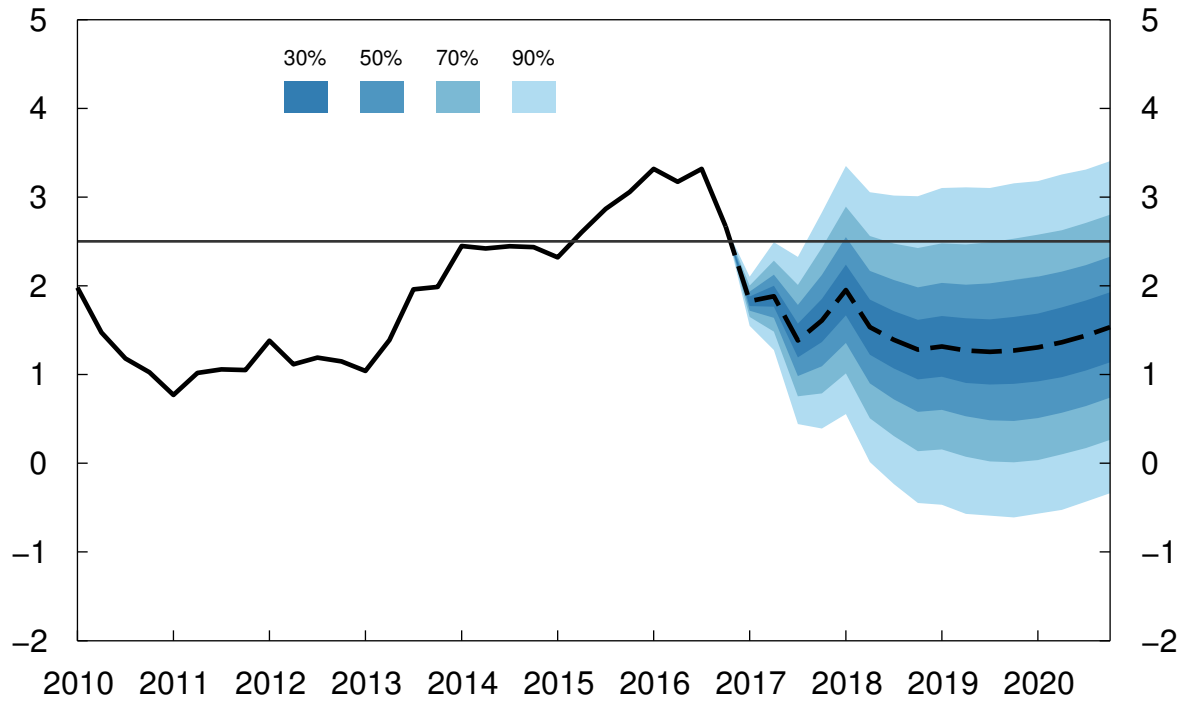
1) The output gap measures the percentage deviation between mainland GDP and projected potential mainland GDP.
Source: Norges Bank

Chart 4.4c Projected CPI with fan chart.
Four-quarter change. Percent. 2010 Q1 – 2020 Q4¹⁾



1) Projections for 2017 Q1 – 2020 Q4 (broken line).
Sources: Statistics Norway and Norges Bank

Chart 4.4d Projected CPI-ATE¹⁾ with fan chart.
Four-quarter change. Percent. 2010 Q1 – 2020 Q4²⁾

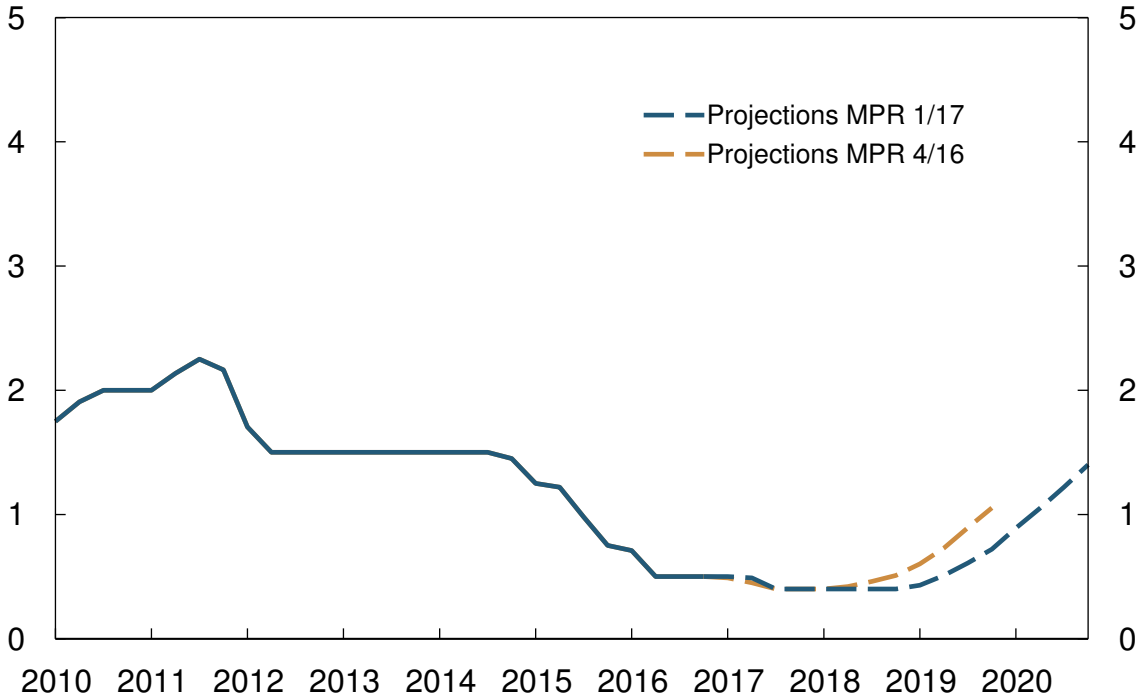


1) CPI adjusted for tax changes and excluding energy products.

2) Projections for 2017 Q1 – 2020 Q4 (broken line).

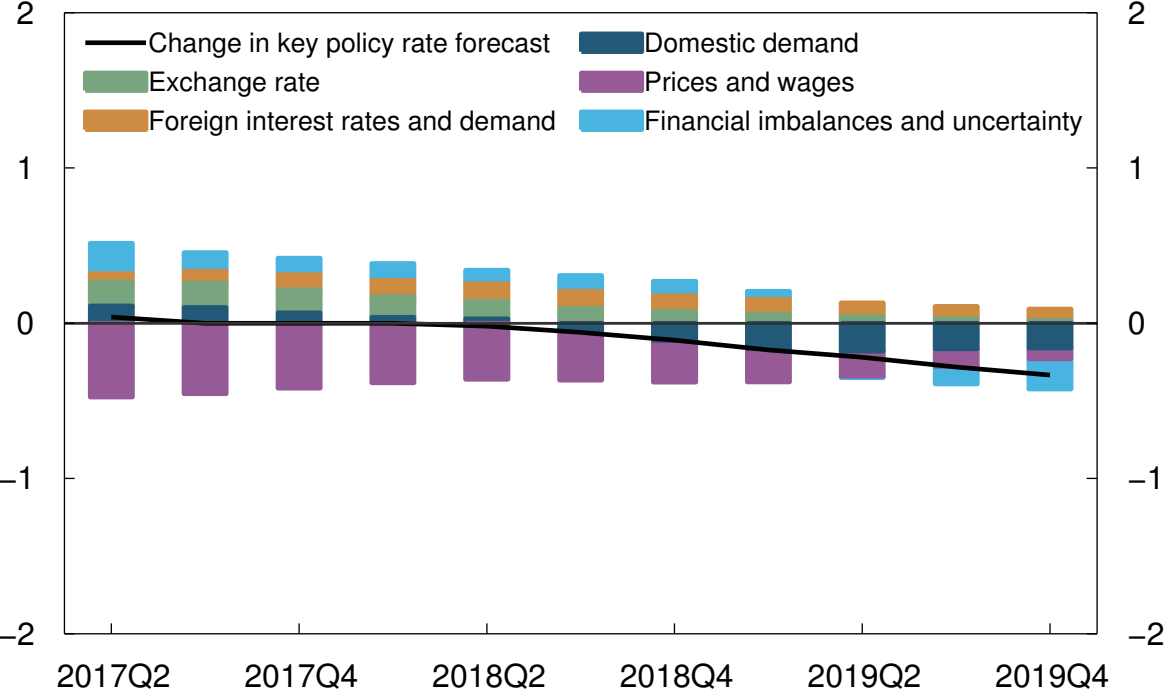
Sources: Statistics Norway and Norges Bank

Chart 4.5 Projections for the key policy rate. Percent. 2010 Q1 – 2020 Q4¹⁾



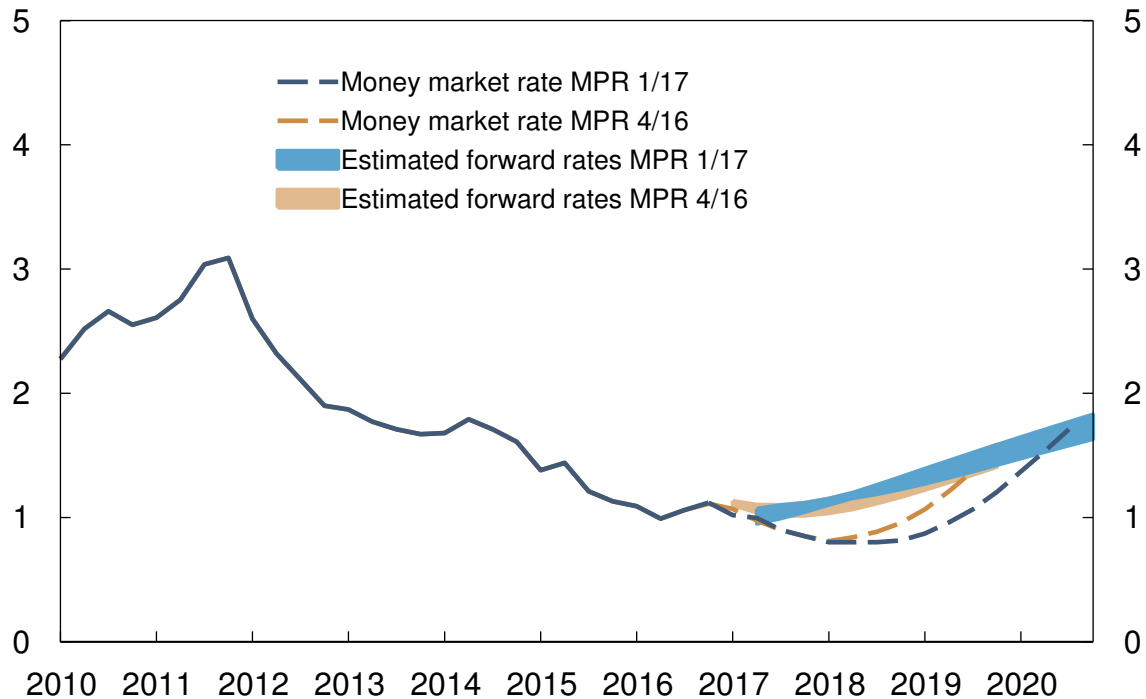
1) Projections for 2017 Q1 – 2020 Q4 (broken lines).
Source: Norges Bank

Chart 4.6 Factors behind changes in key policy rate forecast since MPR 4/16. Cumulative contribution. Percentage points. 2017 Q2 – 2019 Q4



Source: Norges Bank

Chart 4.7 Three-month money market rate¹⁾ and estimated forward rates²⁾.
 Percent. 2010 Q1 – 2020 Q4³⁾



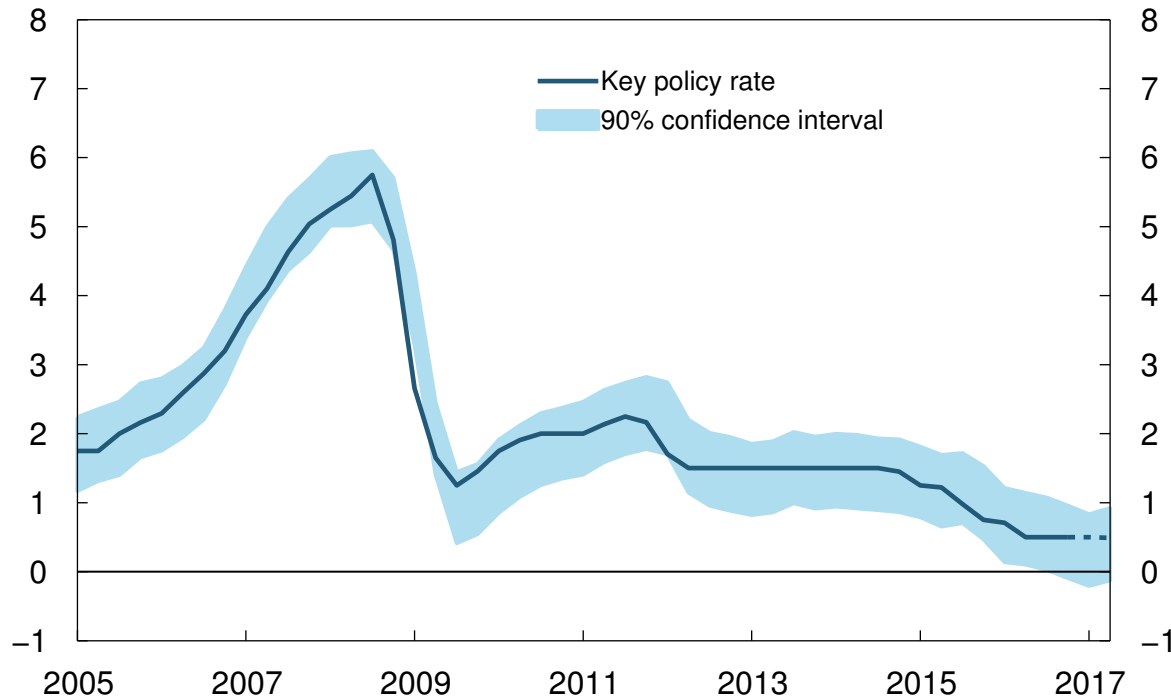
1) Key policy rate plus Norwegian money market premiums. The calculations are based on the assumption that the key policy rate projection is priced into the money market.

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 28 November – 9 December 2016 and 27 February – 10 March 2017 respectively.

3) Projections for 2017 Q1 – 2020 Q3.

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 Q2²⁾

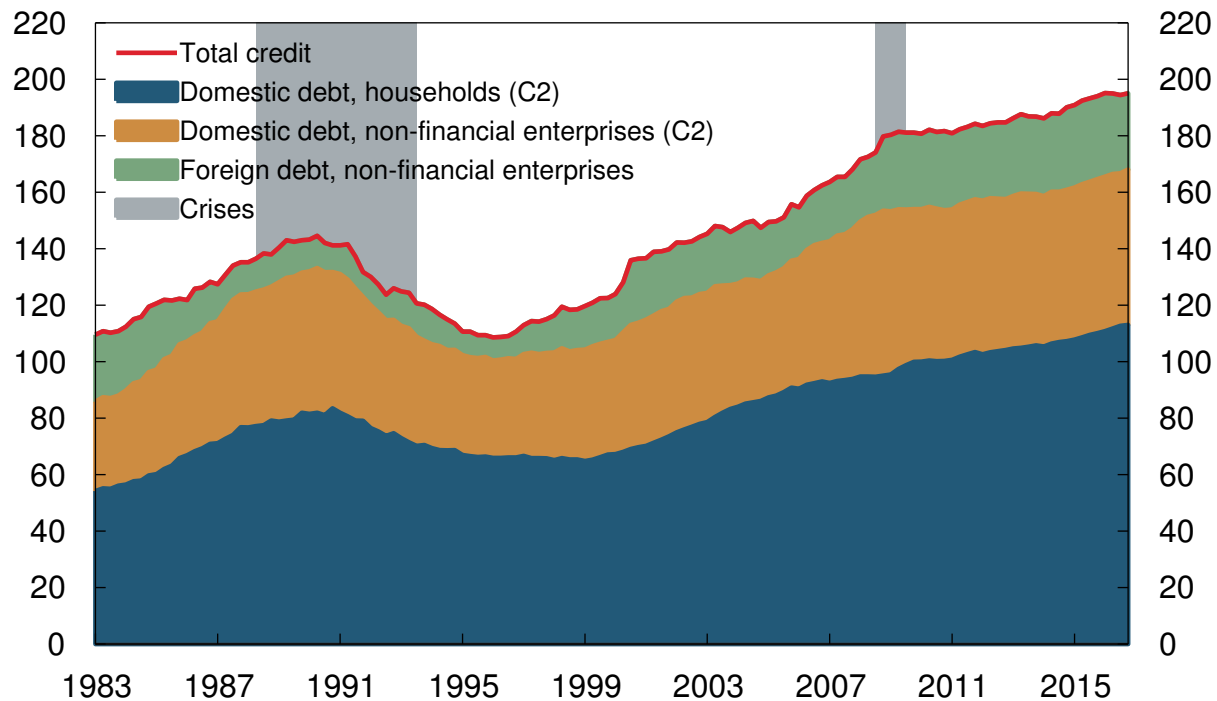


1) Interest rate movements are explained by developments in inflation, mainland GDP growth, wage growth and three-month money market rates among trading partners, as well as the key policy rate in the preceding period. The equation is estimated over the period 1999 Q1 – 2016 Q4. See Norges Bank *Staff Memo* 3/2008 for further discussion.

2) Projections for 2017 Q1 – 2017 Q2 (broken line).

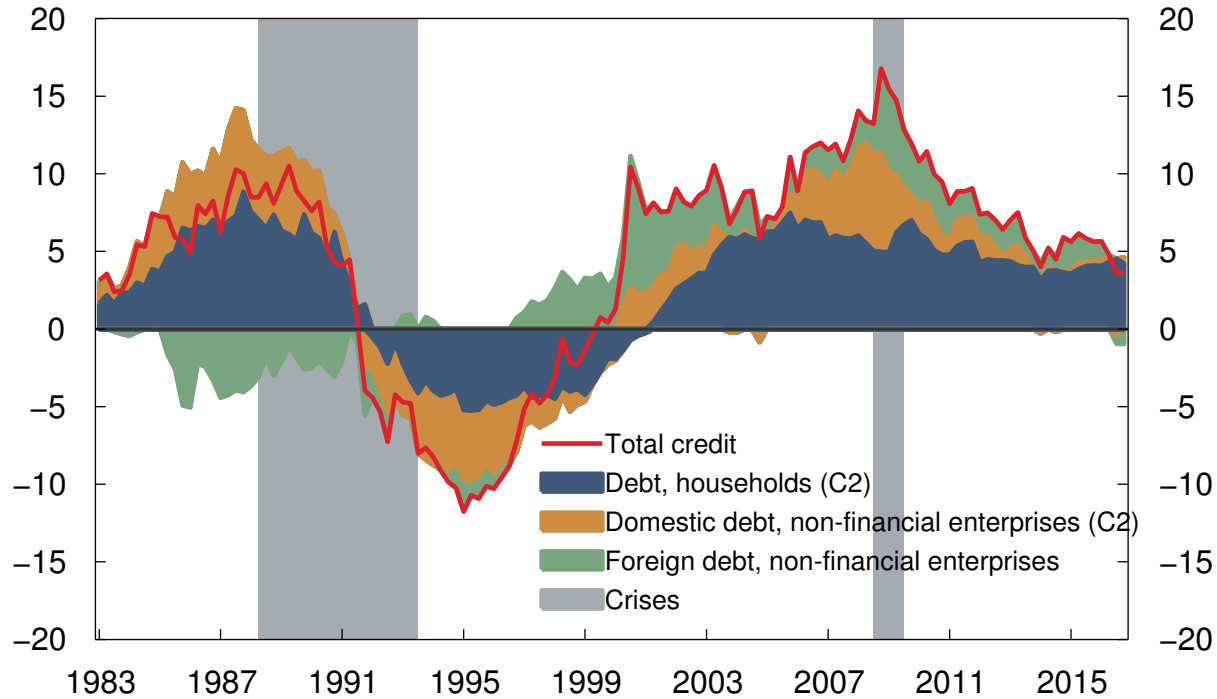
Source: Norges Bank

Chart 5.1 Credit mainland Norway as a share of mainland GDP.
Percent. 1983 Q1 – 2016 Q4



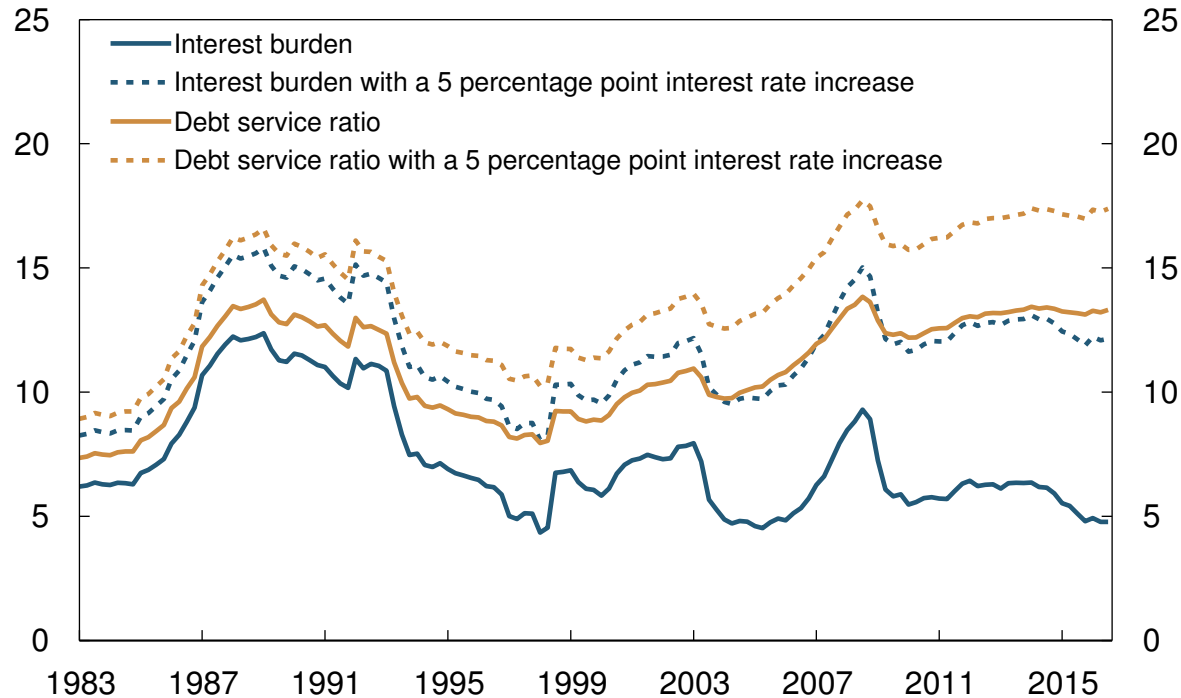
Sources: IMF, Statistics Norway and Norges Bank

Chart 5.2 Decomposed credit gap. Credit mainland Norway as a share of mainland GDP. Deviation from trend with augmented HP-filter.¹⁾
 Percentage points. 1983 Q1 – 2016 Q4



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

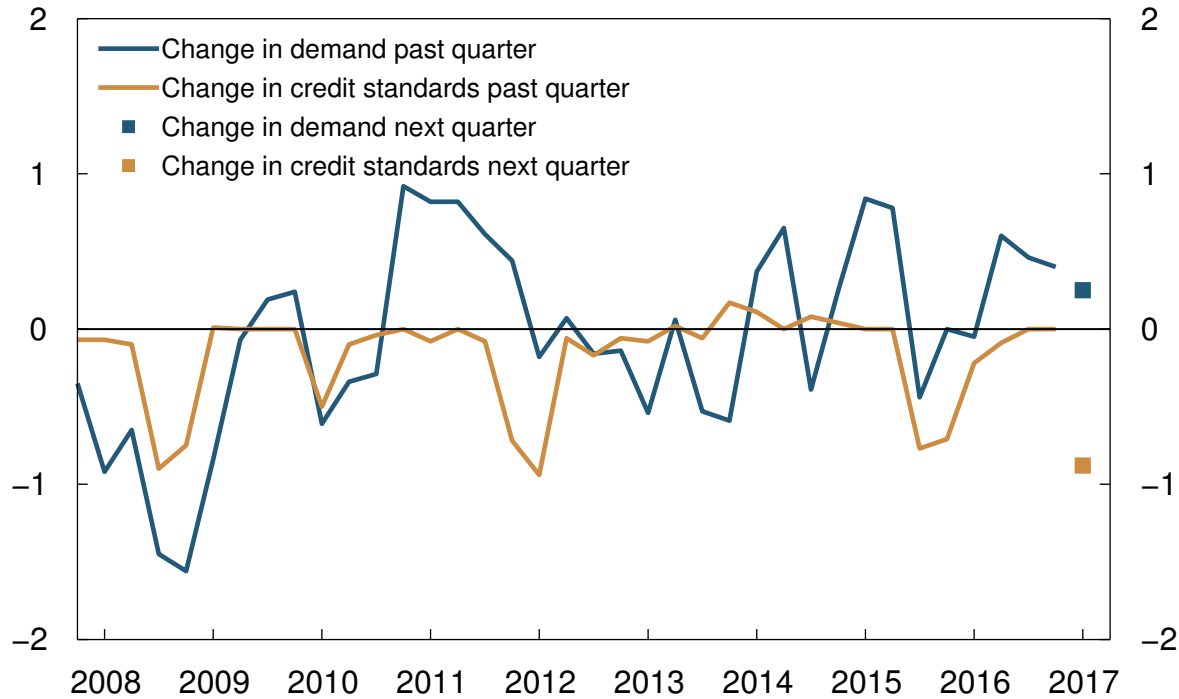
Chart 5.3 Household interest burden and debt service ratio.¹⁾
 Percent. 1983 Q1 – 2016 Q3



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 – 2016 Q3.

Sources: Statistics Norway and Norges Bank

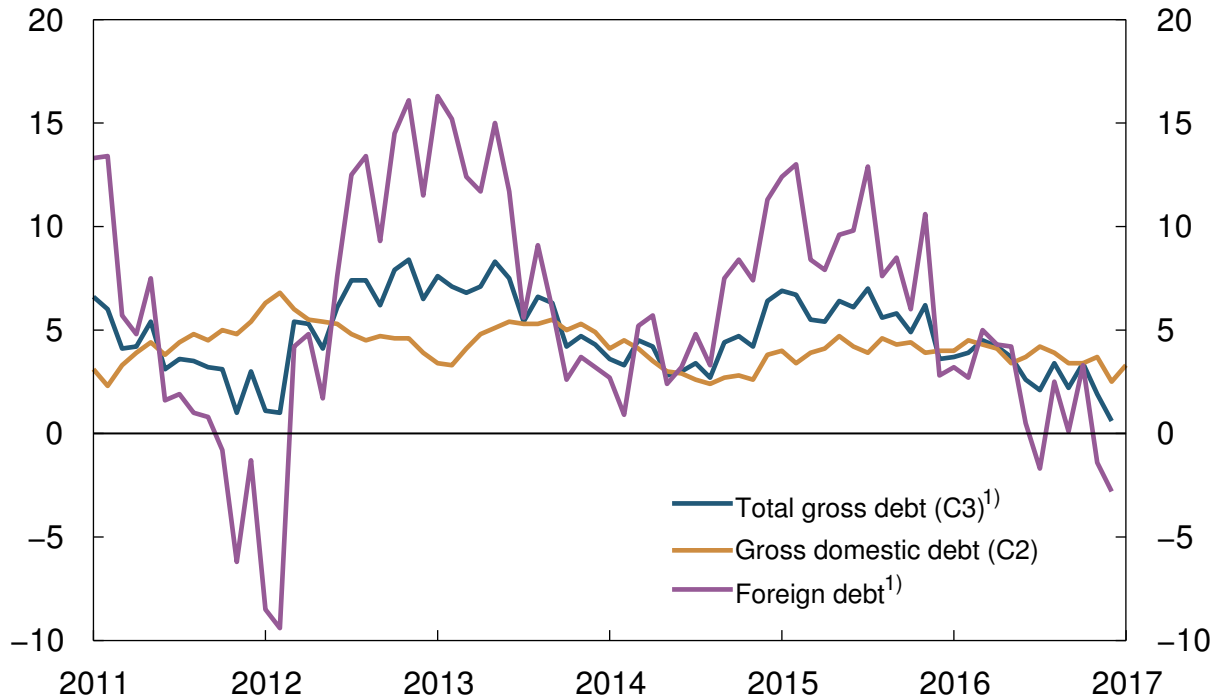
Chart 5.4 Changes in credit demand and banks' credit standards past quarter, and expected change next quarter.¹⁾ Households. 2007 Q4 – 2016 Q4



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.

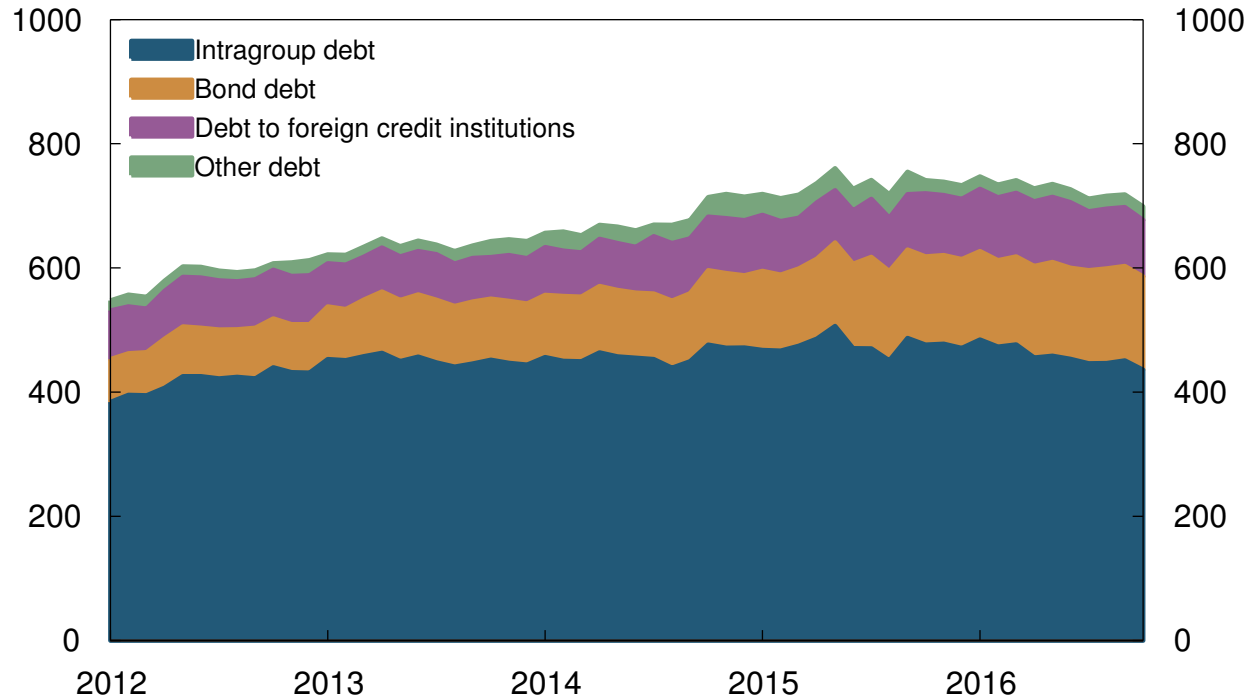
Source: Norges Bank's Survey of Bank Lending

Chart 5.5 Credit to non-financial enterprises. Transactions.
Mainland Norway. Twelve-month change. Percent. January 2011 – January 2017



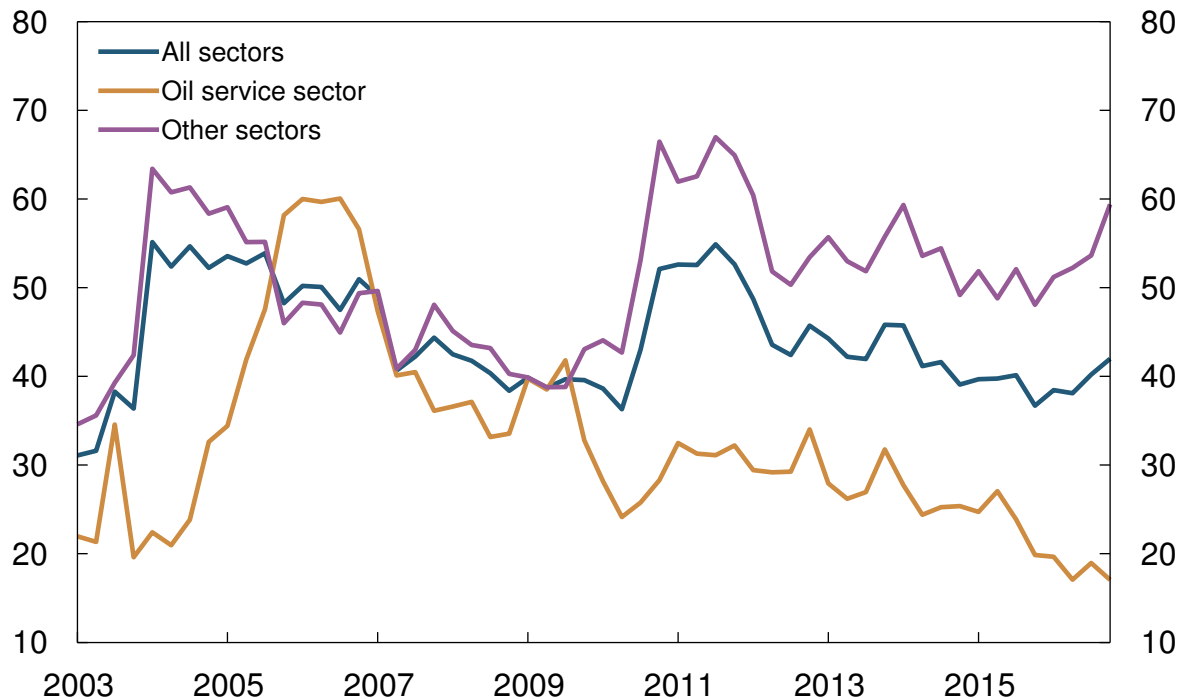
1) To end-December 2016.
Source: Statistics Norway

Chart 5.6 Foreign debt by credit sources. Non-financial enterprises in mainland Norway.
In billions of NOK. March 2012 – December 2016



Source: Statistics Norway

Chart 5.7 Debt-servicing capacity¹⁾ for listed companies²⁾.
 Percent. 2003 Q1 – 2016 Q4

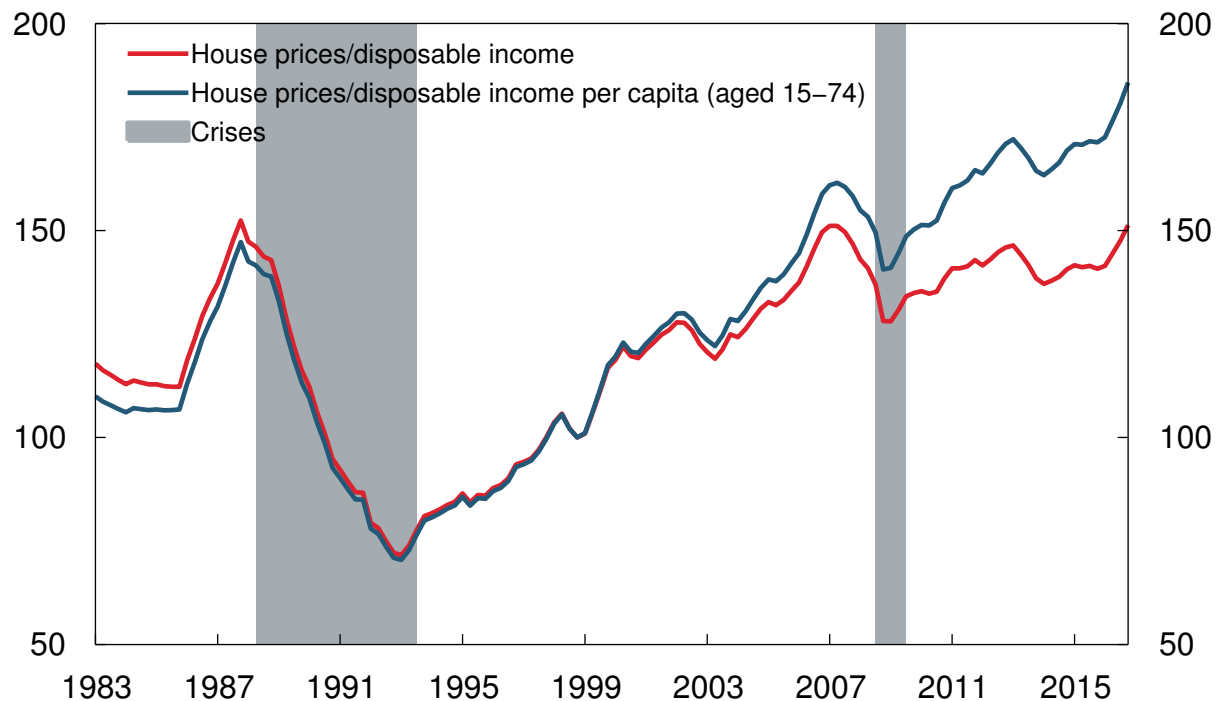


1) Earnings before interest, tax, depreciation and amortisation (EBITDA) for the previous four quarters as a percentage of net-interest bearing debt.

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

Sources: Bloomberg and Norges Bank

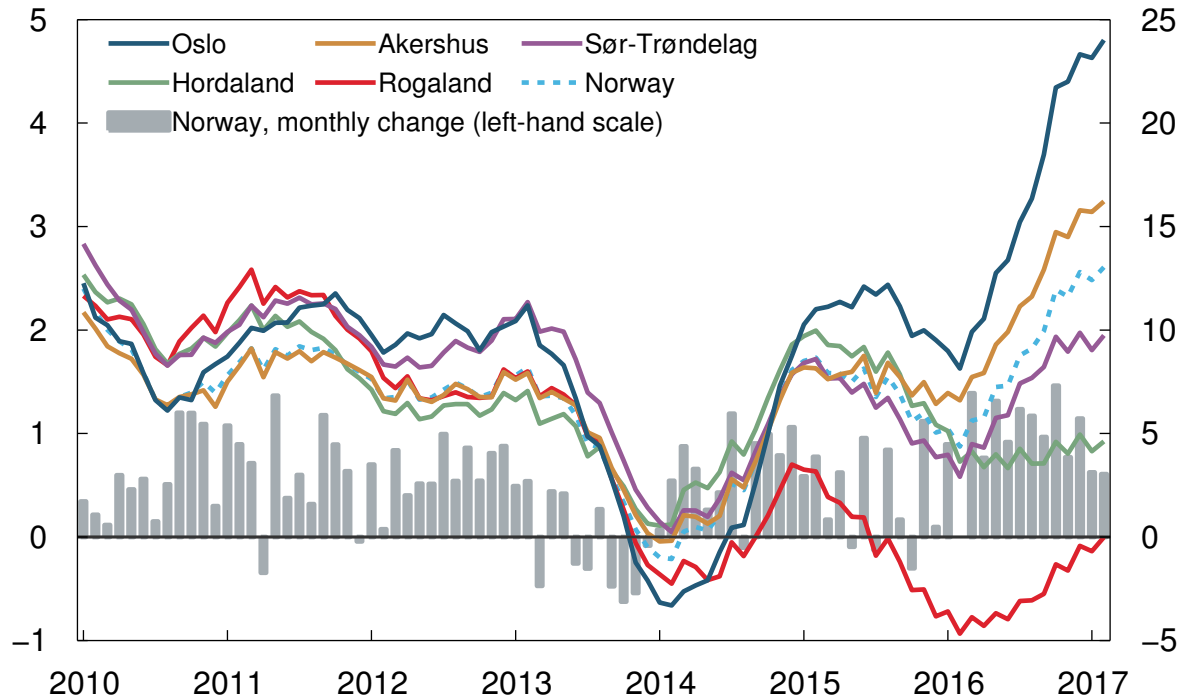
Chart 5.8 House prices relative to disposable income¹⁾.
 Index. 1998 Q4 = 100. 1983 Q1 – 2016 Q4



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 – 2016 Q4.

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

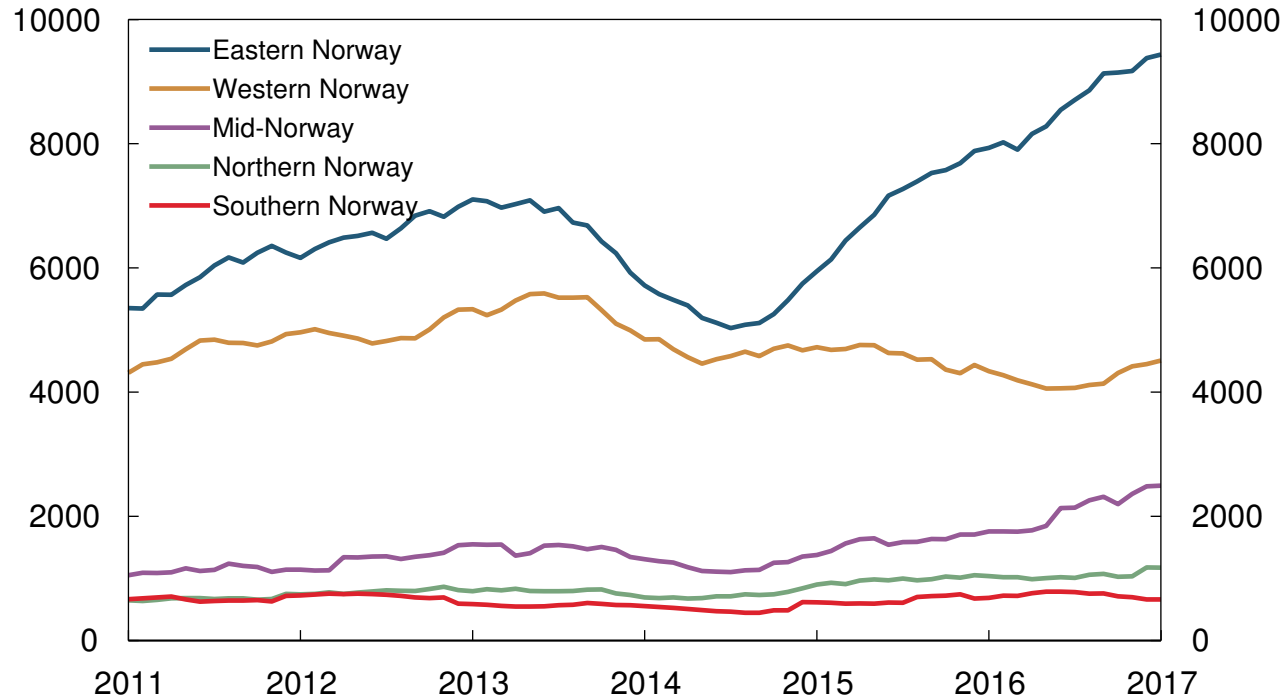
Chart 5.9 House prices. Twelve-month change and seasonally adjusted monthly change.¹⁾ Percent. January 2010 – February 2017



1) Twelve-month change for counties. Twelve-month change and seasonally adjusted monthly change for Norway.

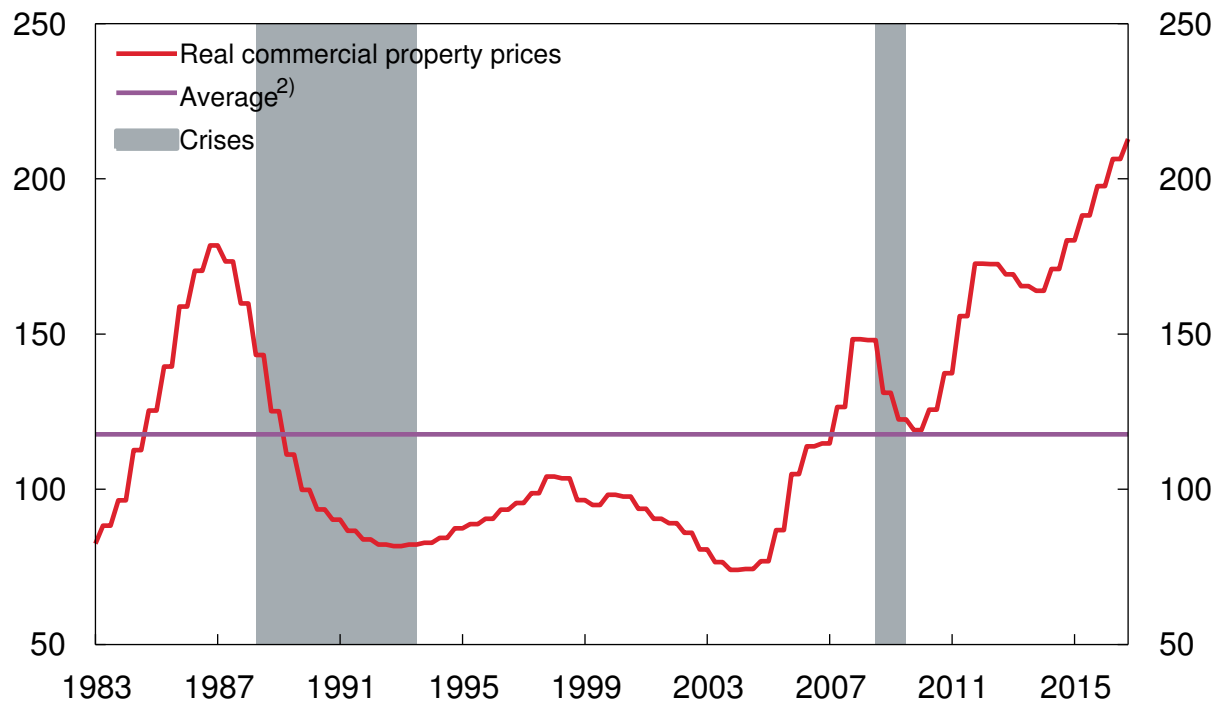
Sources: Eiendomsverdi, Finn.no and Real Estate Norway

Chart 5.10 New home sales. Number of sales. Sum past twelve months.
January 2011 – January 2017



Sources: Norwegian Home Builders' Association, Prognosesenteret and Norges Bank

Chart 5.11 Real commercial property prices.¹⁾
Index. 1998 = 100. 1983 Q1 – 2016 Q4

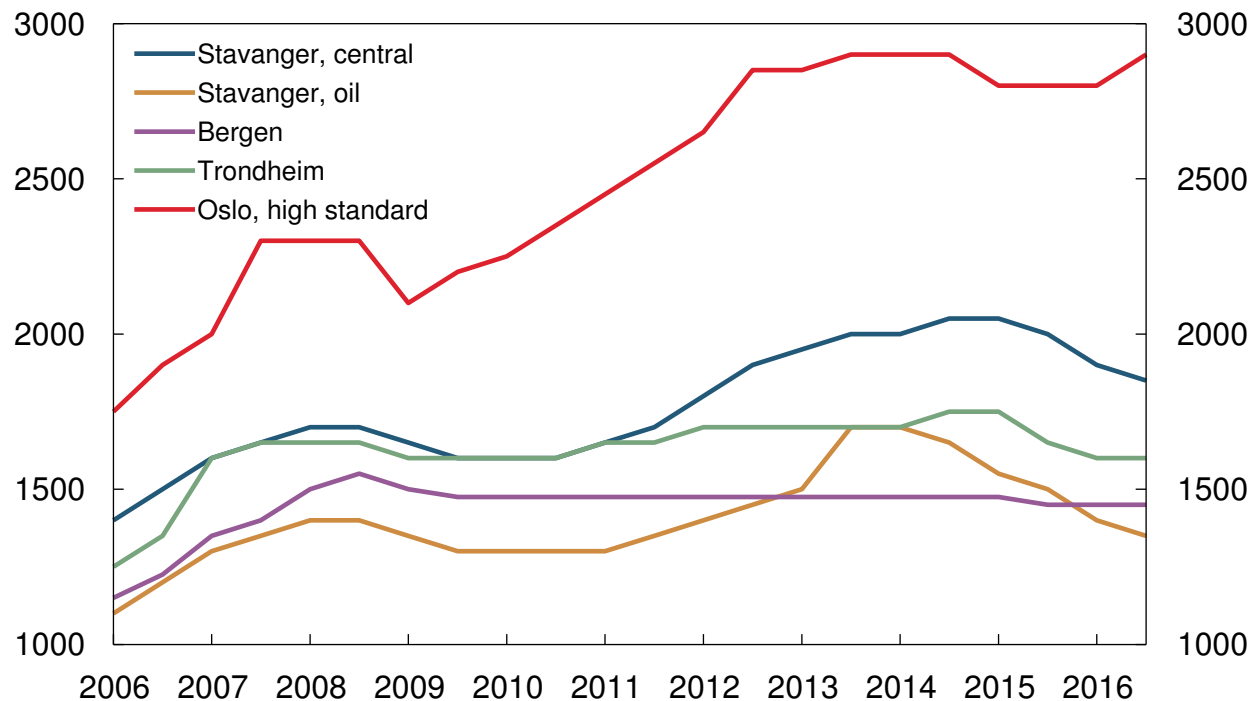


1) Estimated selling prices for centrally located high-standard office space in Oslo deflated by the GDP deflator for mainland Norway.

2) Based on data from 1981 Q2 onwards.

Sources: Dagens Næringsliv, OPAK, Statistics Norway and Norges Bank

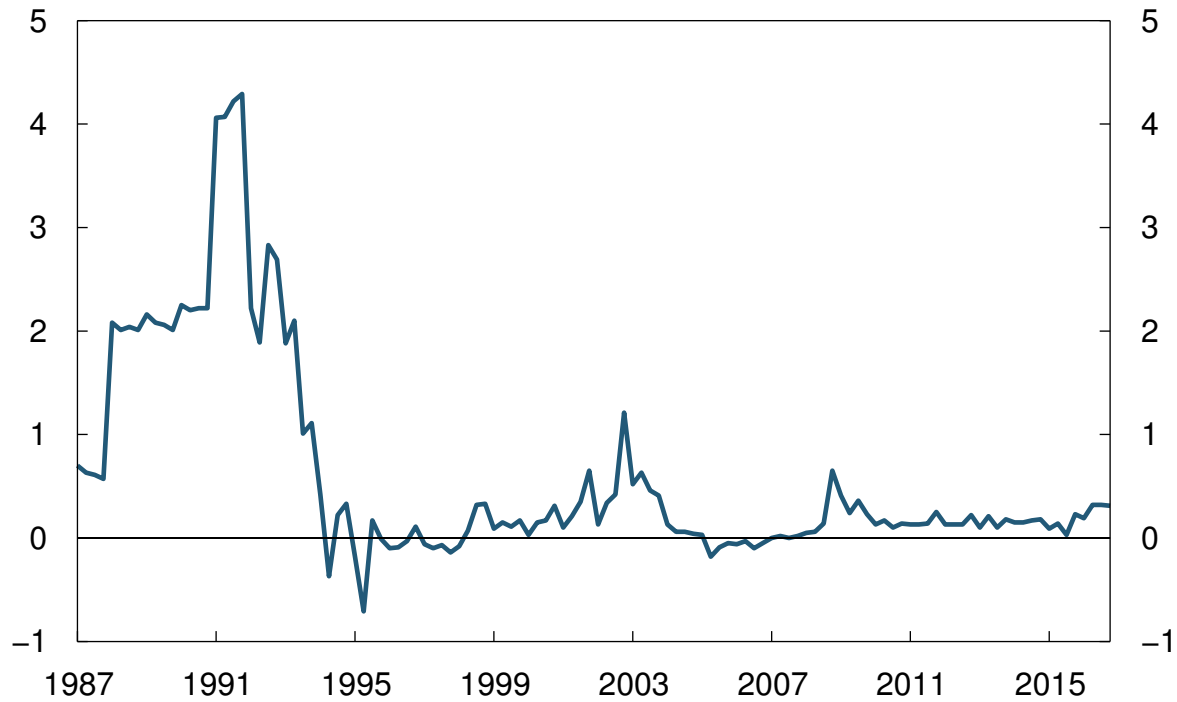
Chart 5.12 Office rents in selected cities.
 NOK per square metre, per year. 2006 H1 – 2016 H2¹⁾



1) For cities other than Oslo, the statistics previously comprised one segment of the rental market. As of the latter half of 2013, the chart shows rents for "high-standard" office premises in Stavanger, while premises in Bergen and Trondheim are "middle standard".

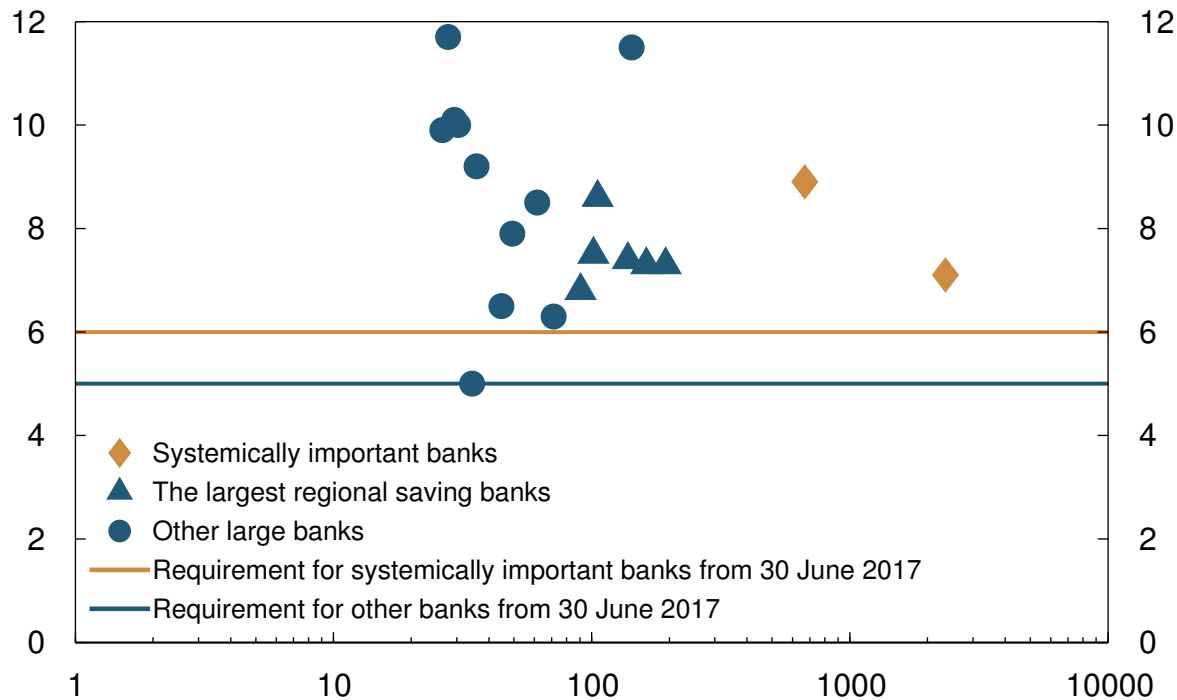
Sources: OPAK and Dagens Næringsliv

Chart 5.13 Banks' ¹⁾ loan losses as a share of gross lending.
Annualised. Percent. 1987 Q1 – 2016 Q4



1) All banks and mortgage companies in Norway.
Source: Norges Bank

Chart 5.14 Banks¹⁾ leverage ratio. Percent. Total assets²⁾ In billions of NOK.
At 31 December 2016

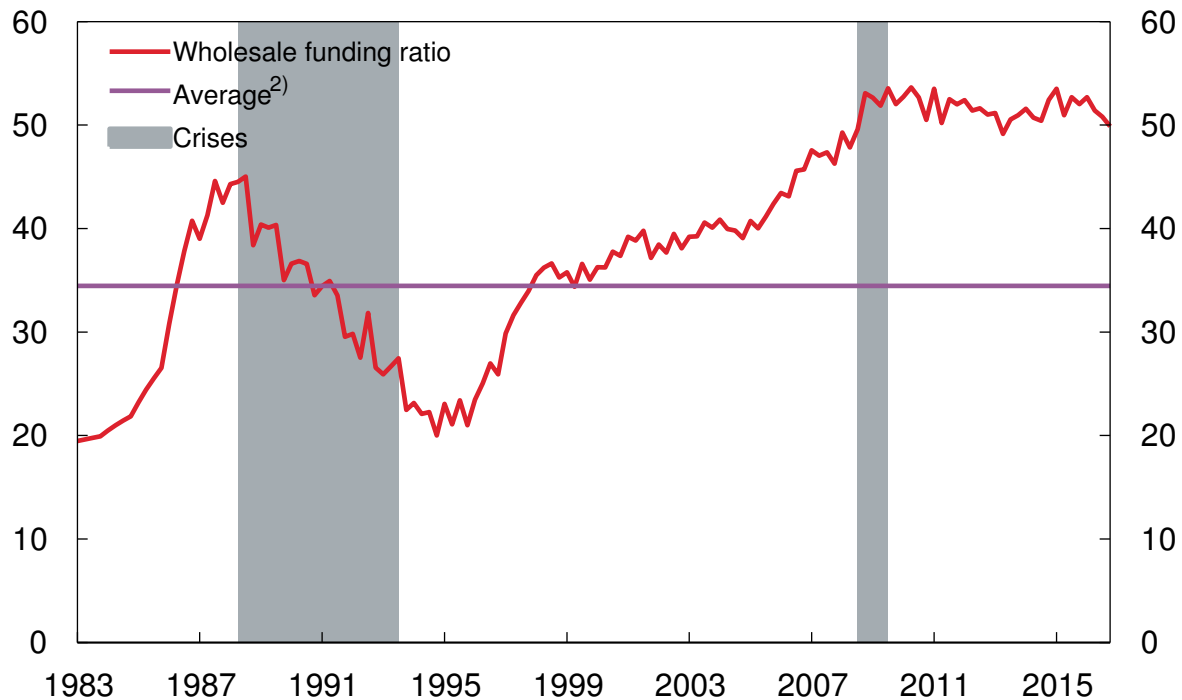


1) Banks with total assets in excess of NOK 25bn.

2) Logarithmic scale.

Sources: Banks' quarterly reports and Norges Bank

Chart 5.15 Banks¹⁾ wholesale funding ratio.
Percent. 1983 Q1 – 2016 Q4

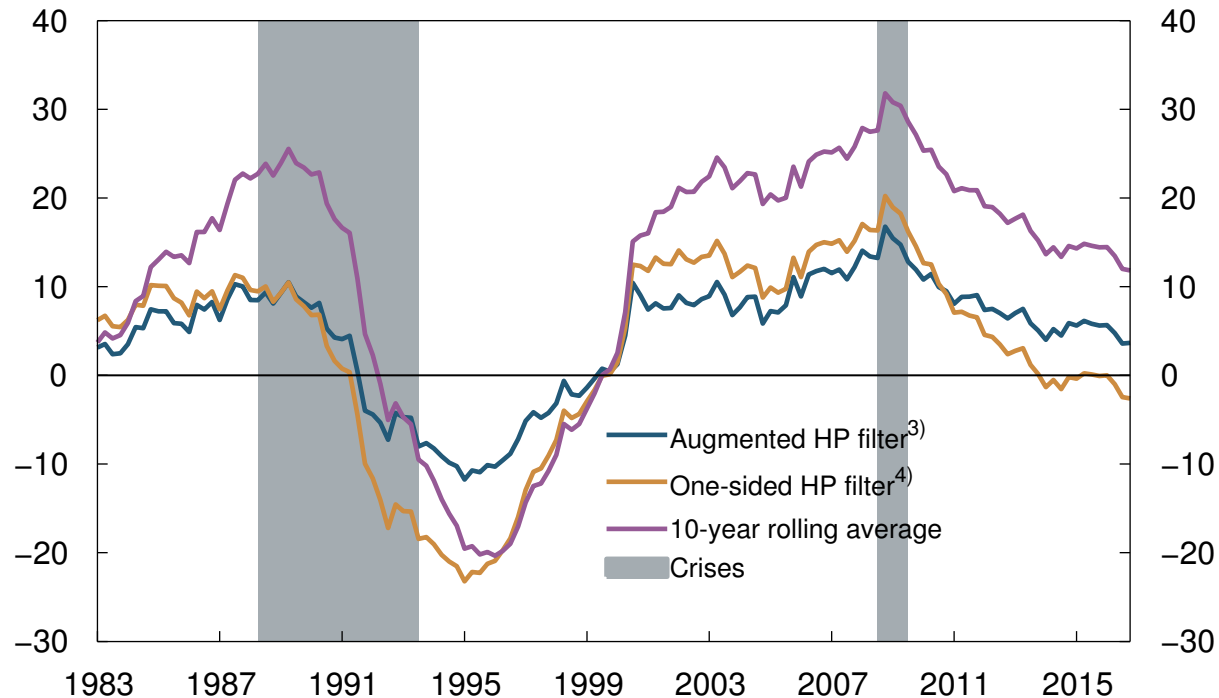


1) All banks and covered bond mortgage companies in Norway, excluding branches and subsidiaries of foreign banks.

2) Based on data from 1975 Q4 onwards.

Source: Norges Bank

Chart 5.16 Credit gap. Total credit¹⁾ mainland Norway as a share of mainland GDP. Deviation from estimated trends.²⁾ Percentage points. 1983 Q1 – 2016 Q4



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.

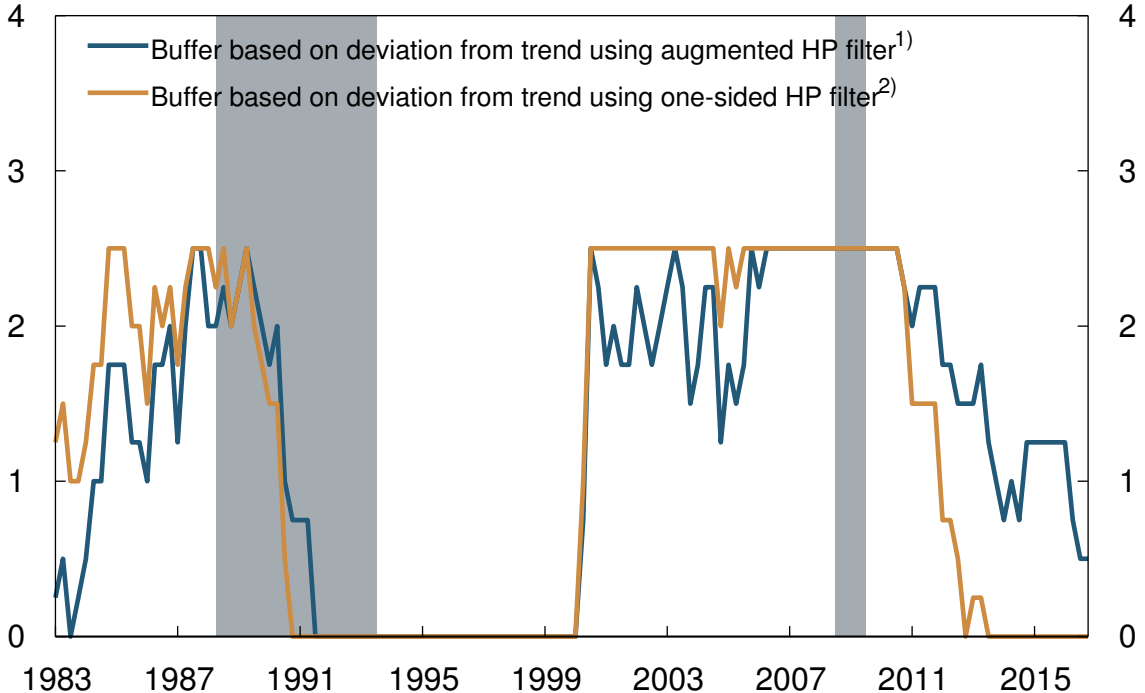
2) The trends are estimated based on data from 1975 Q4 onwards.

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.

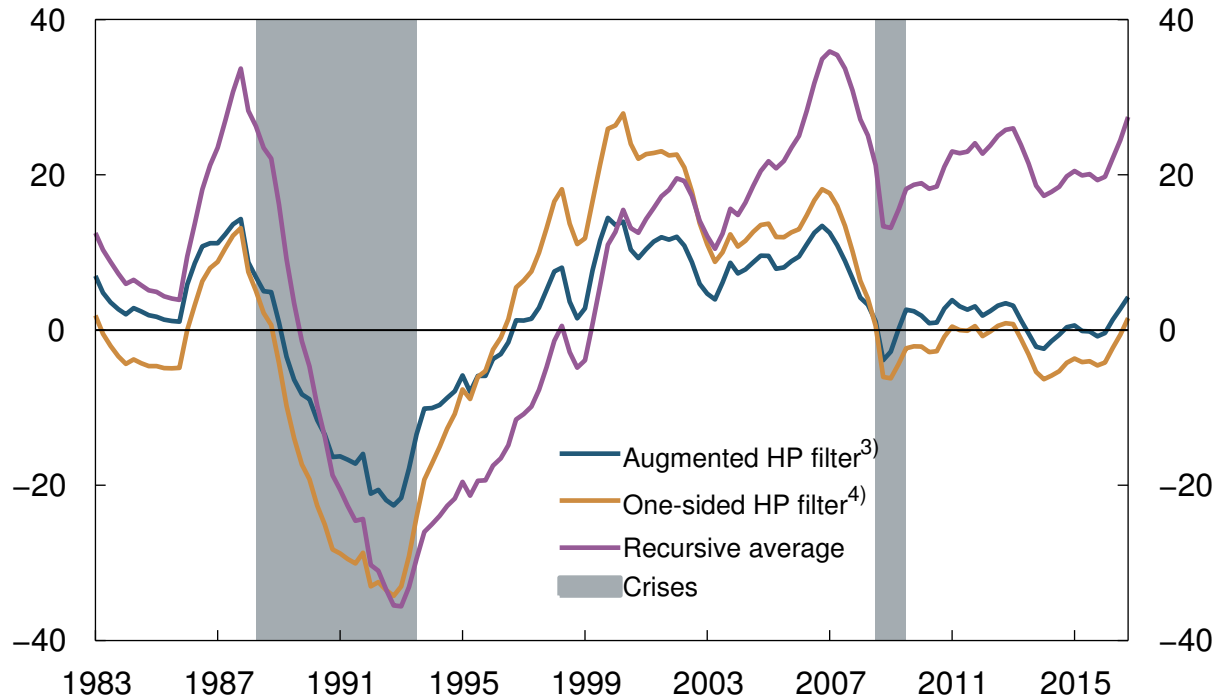
Sources: IMF, Statistics Norway and Norges Bank

Chart 5.17 Reference rates for the countercyclical capital buffer under alternative trend estimates. Percent. 1983 Q1 – 2016 Q4



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 5.18 House price gap. House prices relative to disposable income¹⁾ as deviation from estimated trends.²⁾ Percent. 1983 Q1 – 2016 Q4



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 – 2016 Q4.

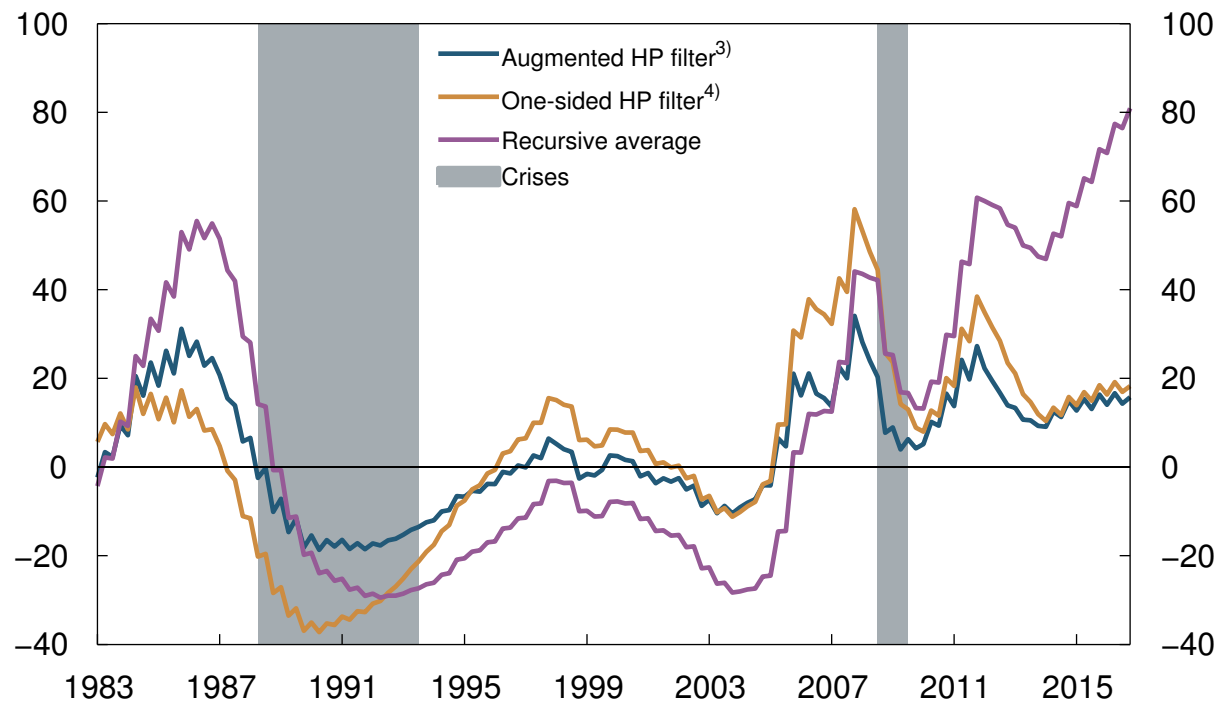
2) The trends are estimated based on data from 1978 Q4 onwards.

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 5.19 Commercial property price gap. Real commercial property prices¹⁾ as deviation from estimated trends.²⁾ Percent. 1983 Q1 – 2016 Q4



1) Estimated selling prices for high-standard office space in Oslo deflated by the GDP deflator for mainland Norway.

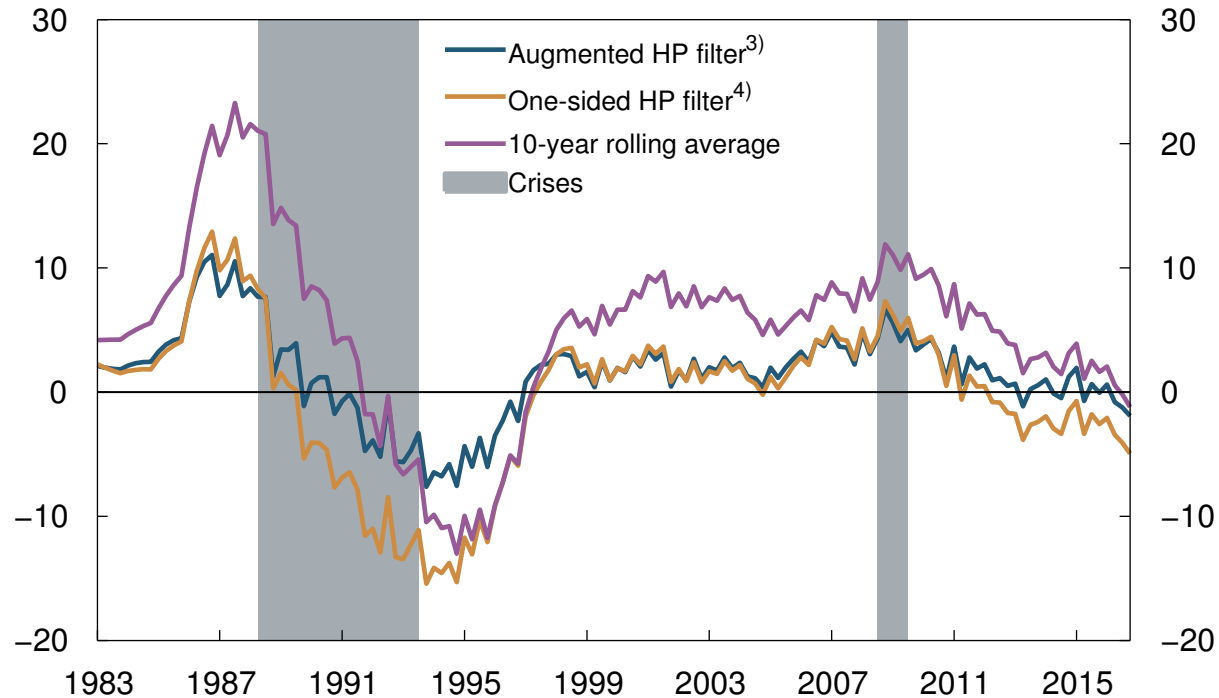
2) The trends are estimated based on data from 1981 Q2 onwards.

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 5.20 Wholesale funding gap. Banks¹⁾ wholesale funding ratio as deviation from estimated trends.²⁾ Percentage points. 1983 Q1 – 2016 Q4



1) All banks and covered bond mortgage companies in Norway excluding branches and subsidiaries of foreign banks.

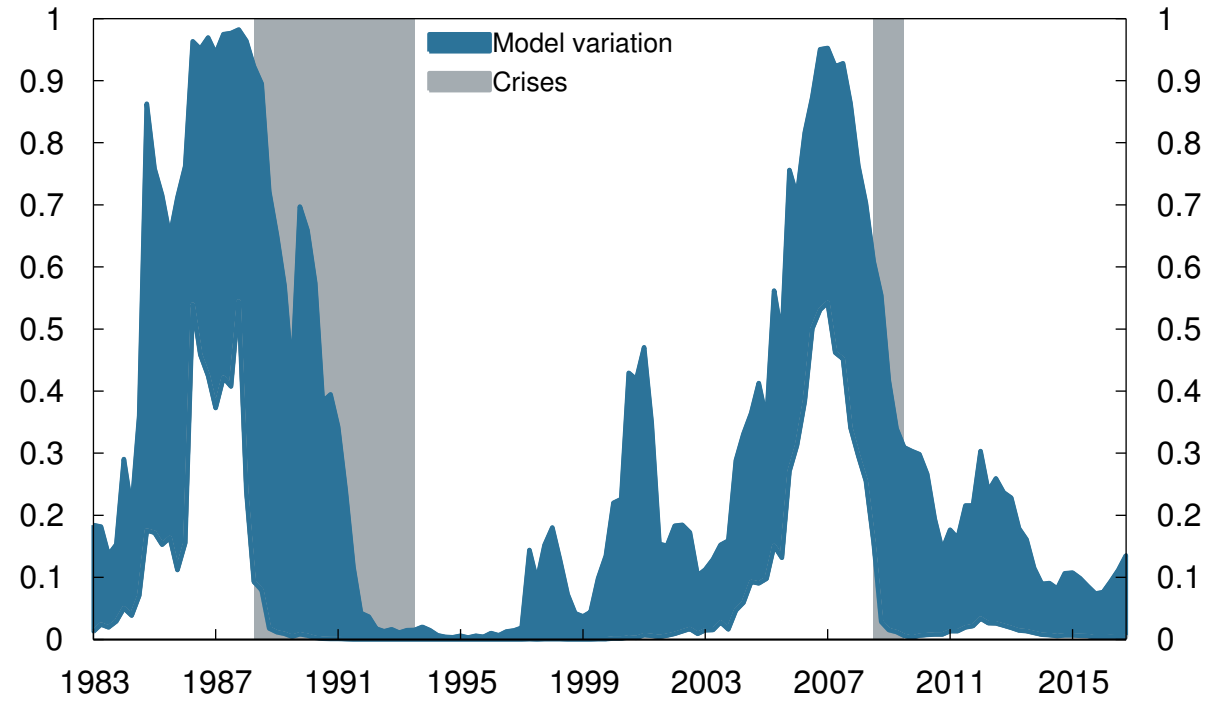
2) The trends are estimated based on data from 1975 Q4 onwards.

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 5.21 Estimated crisis probabilities based on various model specifications.
1983 Q1 – 2016 Q4



Source: Norges Bank