



Monetary Policy Report December 2016

S V E R I G E S R I K S B A N K

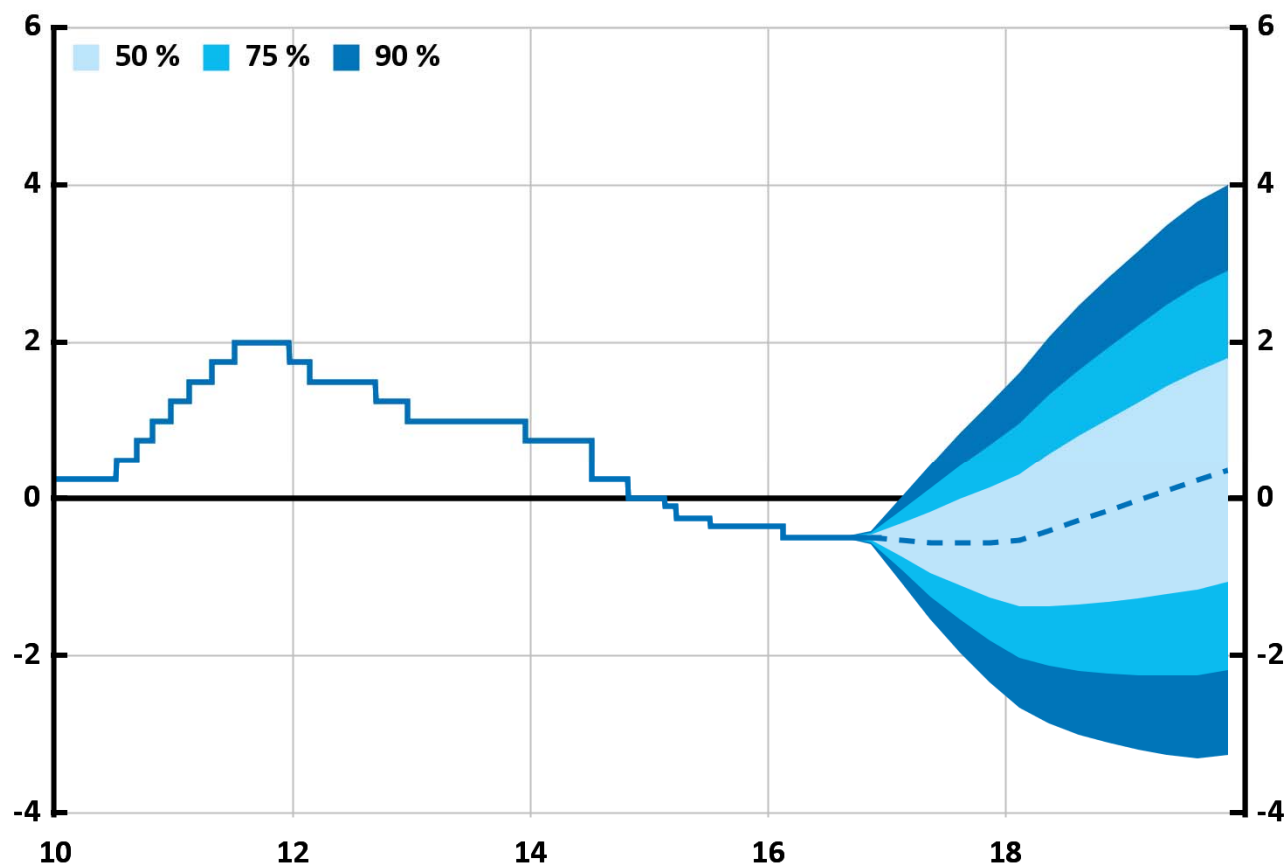
Chapter 1



S V E R I G E S R I K S B A N K

Figure 1.1. Repo rate with uncertainty bands

Per cent

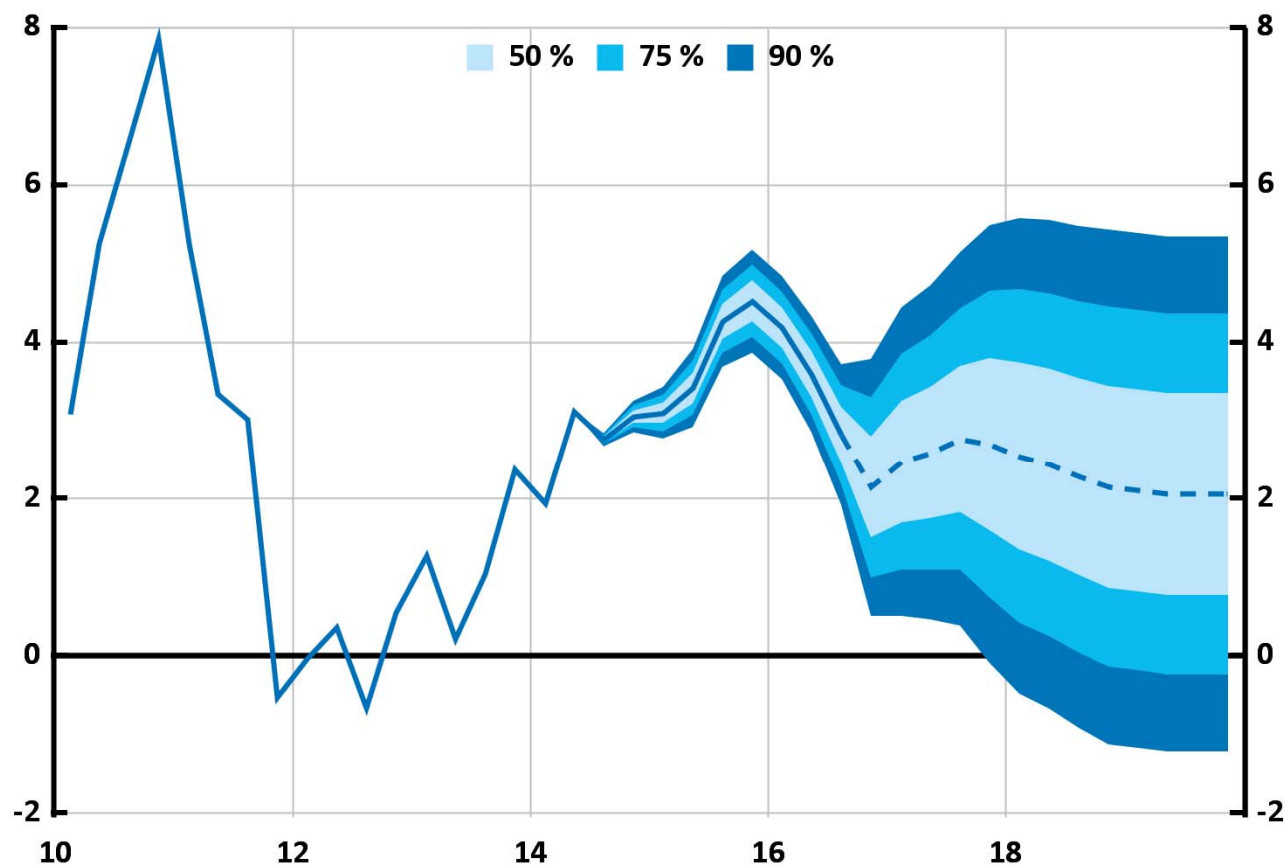


Note. The uncertainty bands for the repo rate are based on the Riksbank's historical forecasting errors and the ability of risk-premium adjusted forward rates to forecast the future repo rate for the period 1999 up to the point when the Riksbank started to publish forecasts for the repo rate during 2007. The uncertainty bands do not take into account the fact that there may be a lower bound for the repo rate. Outcomes are daily rates and forecasts refer to quarterly averages.

Source: The Riksbank

Figure 1.2. GDP with uncertainty bands

Annual percentage change, seasonally-adjusted data

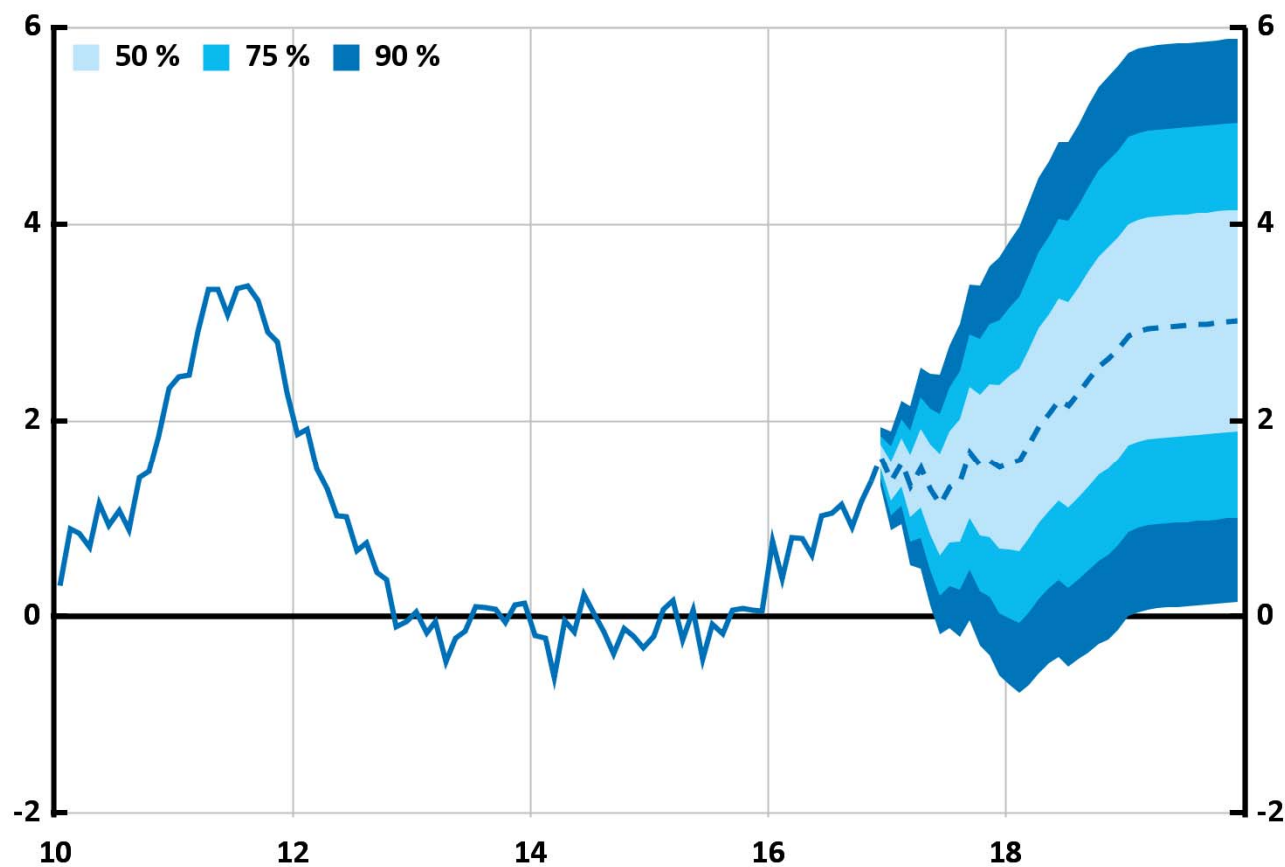


Note. The uncertainty bands are based on the Riksbank's historical forecasting errors. There is also uncertainty for the outcomes for GDP, as the figures in the National Accounts are revised several years after the preliminary publication.

Sources: Statistics Sweden and the Riksbank

Figure 1.3. CPI with uncertainty bands

Annual percentage change

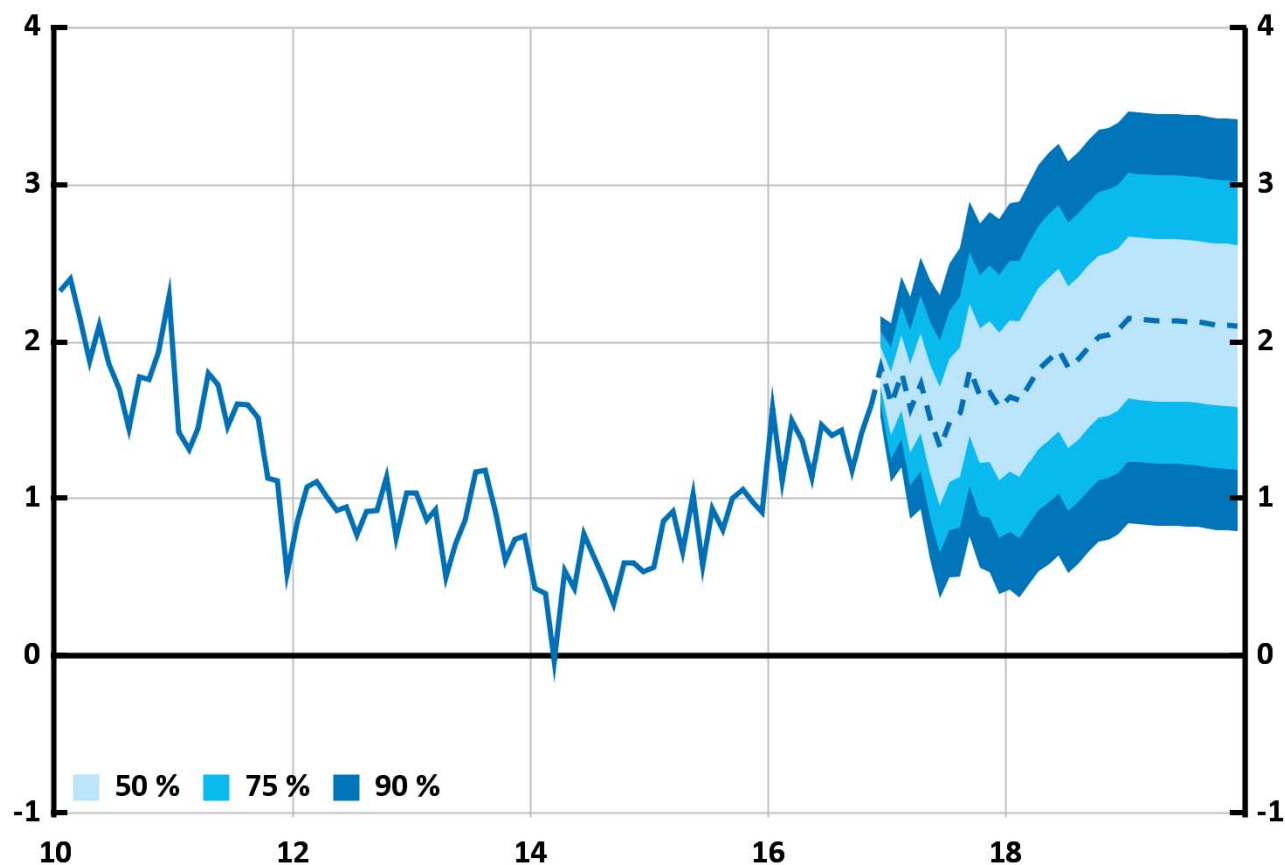


Note. The uncertainty bands are based on the Riksbank's historical forecasting errors.

Sources: Statistics Sweden and the Riksbank

Figure 1.4. CPIF with uncertainty bands

Annual percentage change

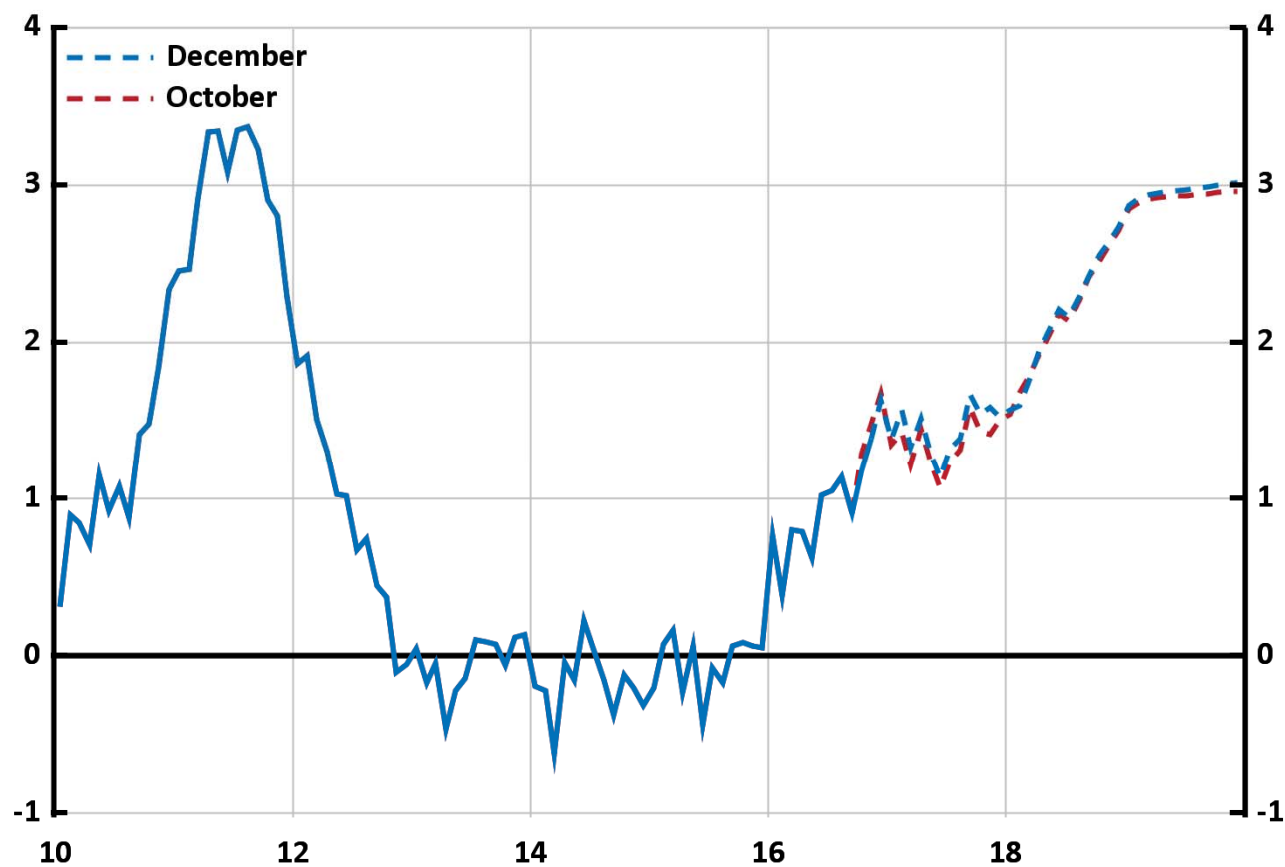


Note. The uncertainty bands are based on the Riksbank's historical forecasting errors. The CPIF is the CPI with a fixed mortgage rate.

Sources: Statistics Sweden and the Riksbank

Figure 1.5. CPI

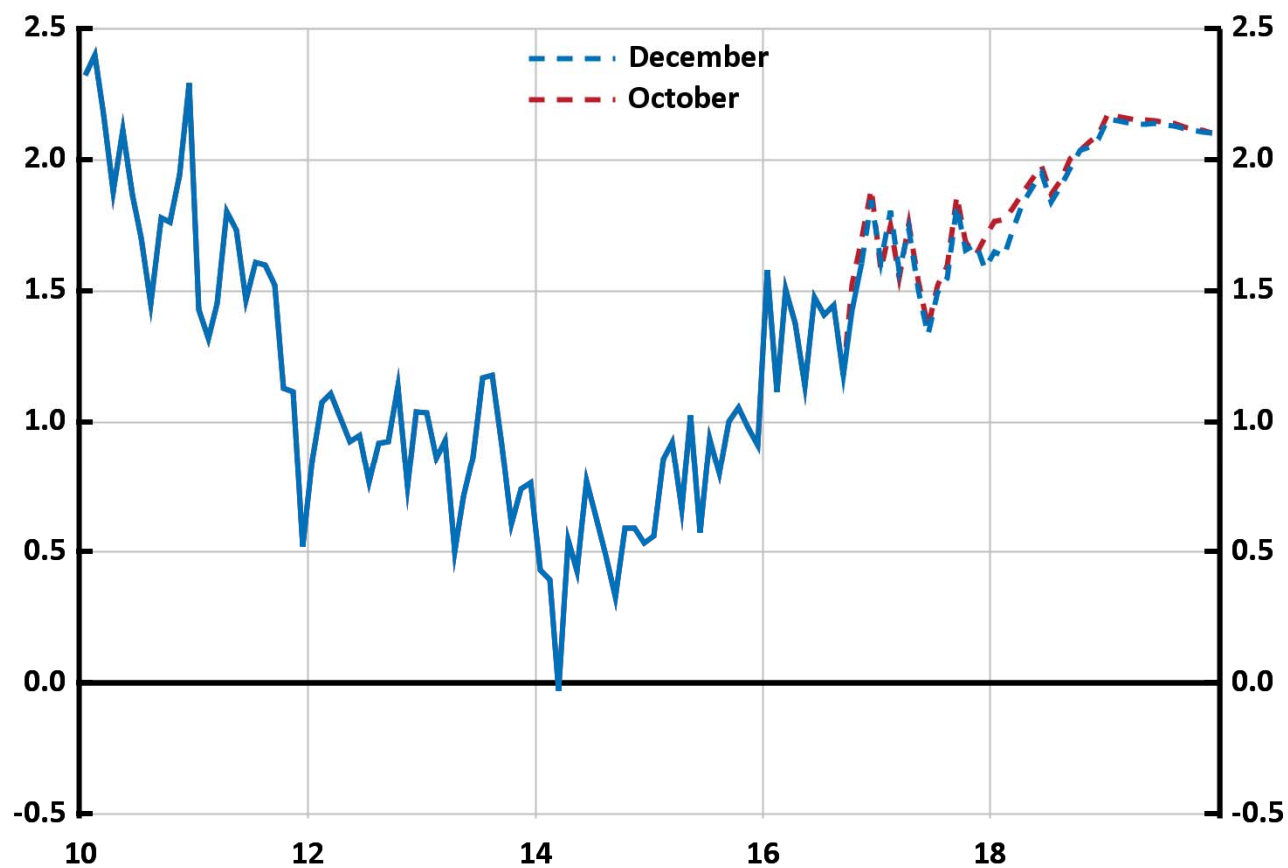
Annual percentage change



Sources: Statistics Sweden and the Riksbank

Figure 1.6. CPIF

Annual percentage change

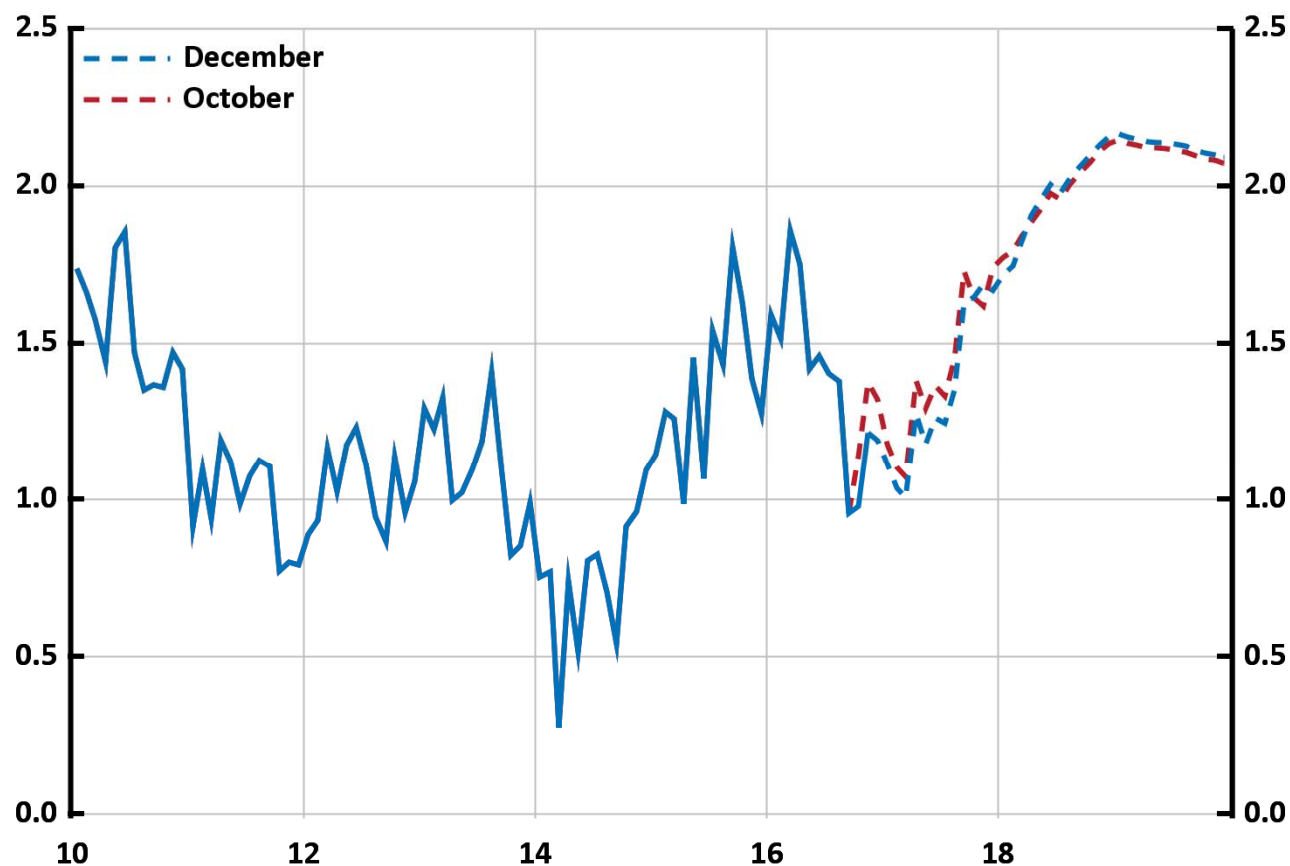


Note. The CPIF is the CPI with a fixed mortgage rate.

Sources: Statistics Sweden and the Riksbank

Figure 1.7. CPIF excluding energy

Annual percentage change

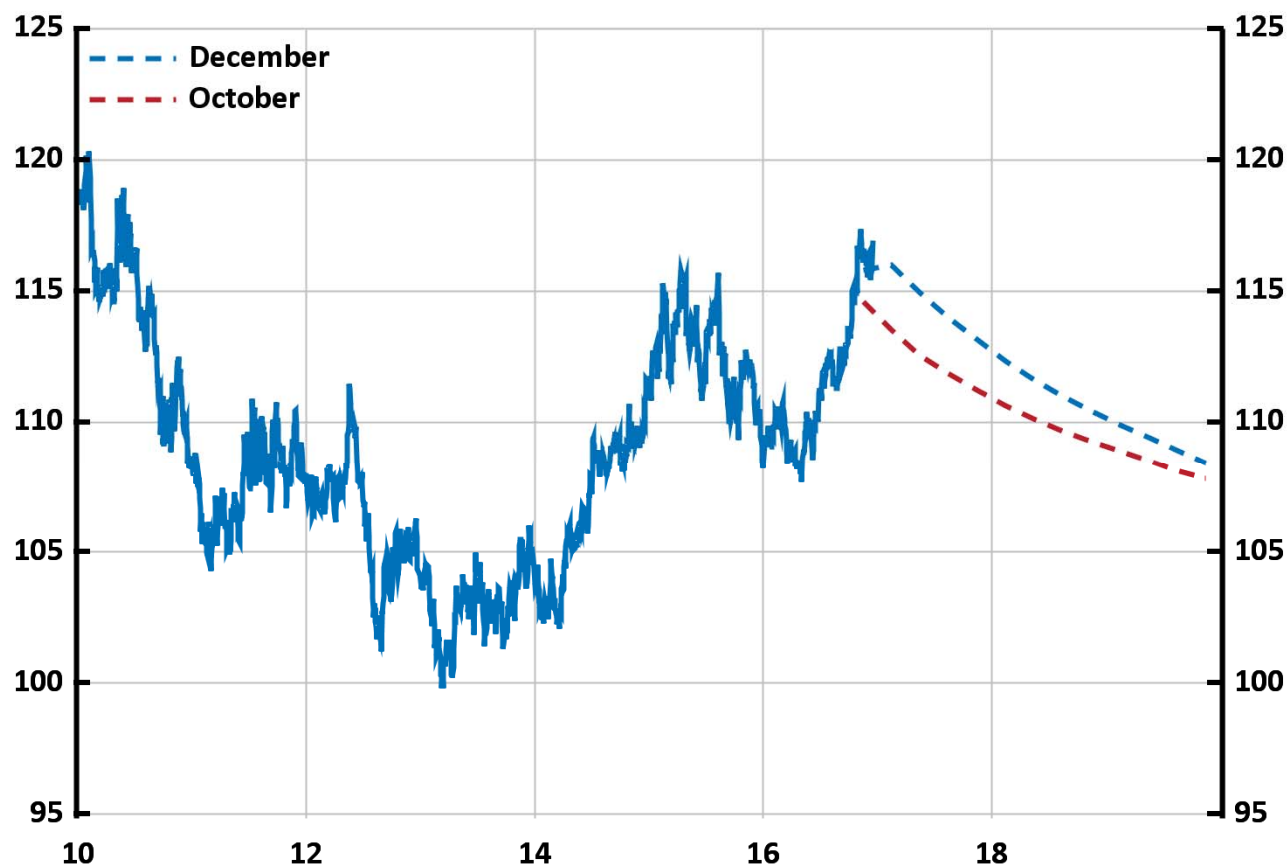


Note. The CPIF is the CPI with a fixed mortgage rate.

Sources: Statistics Sweden and the Riksbank

Figure 1.8. KIX-weighted nominal exchange rate

Index, 1992-11-18 = 100

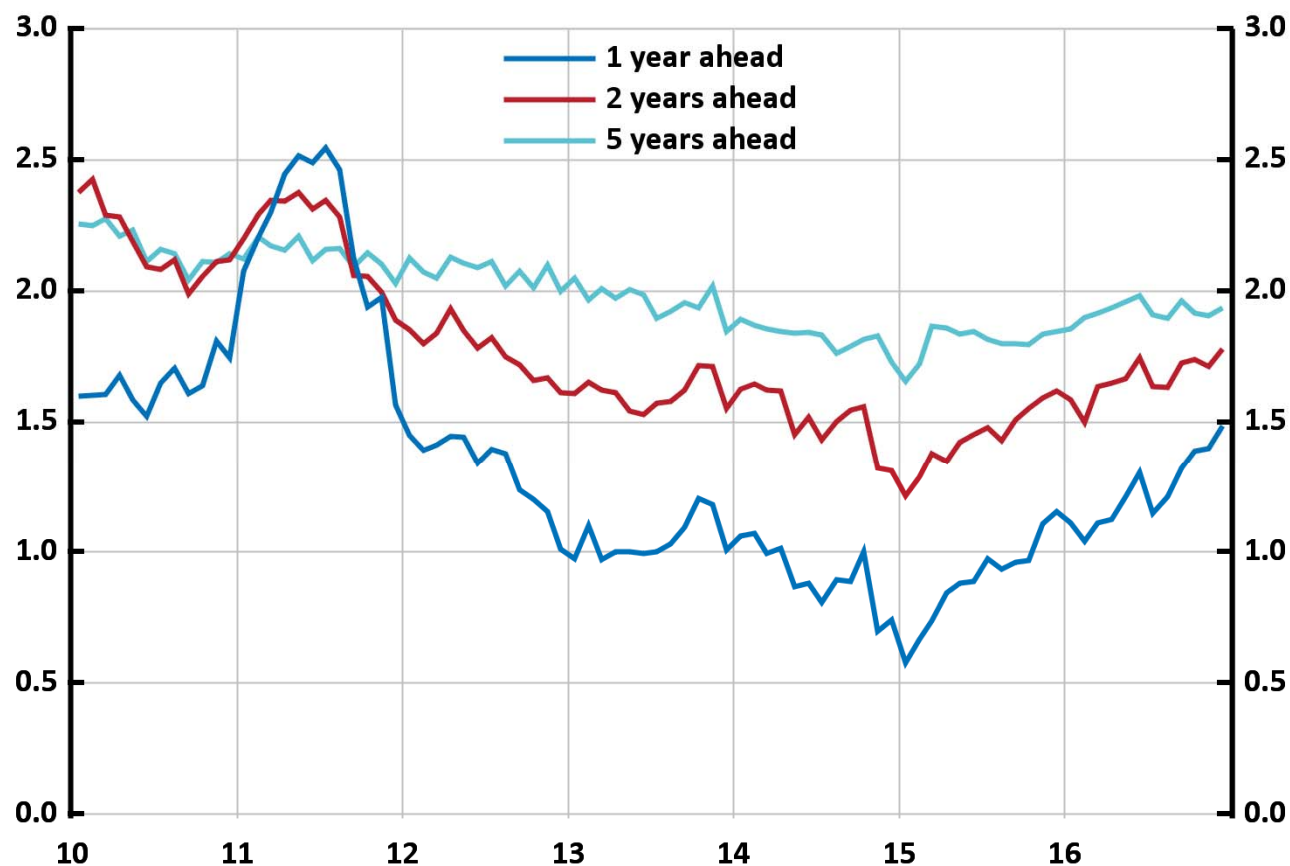


Note. Outcomes are daily rates and forecasts refer to quarterly averages. KIX refers to an aggregate of countries that are important for Sweden's international transactions.

Sources: National sources and the Riksbank

Figure 1.9. Inflation expectations among money market participants

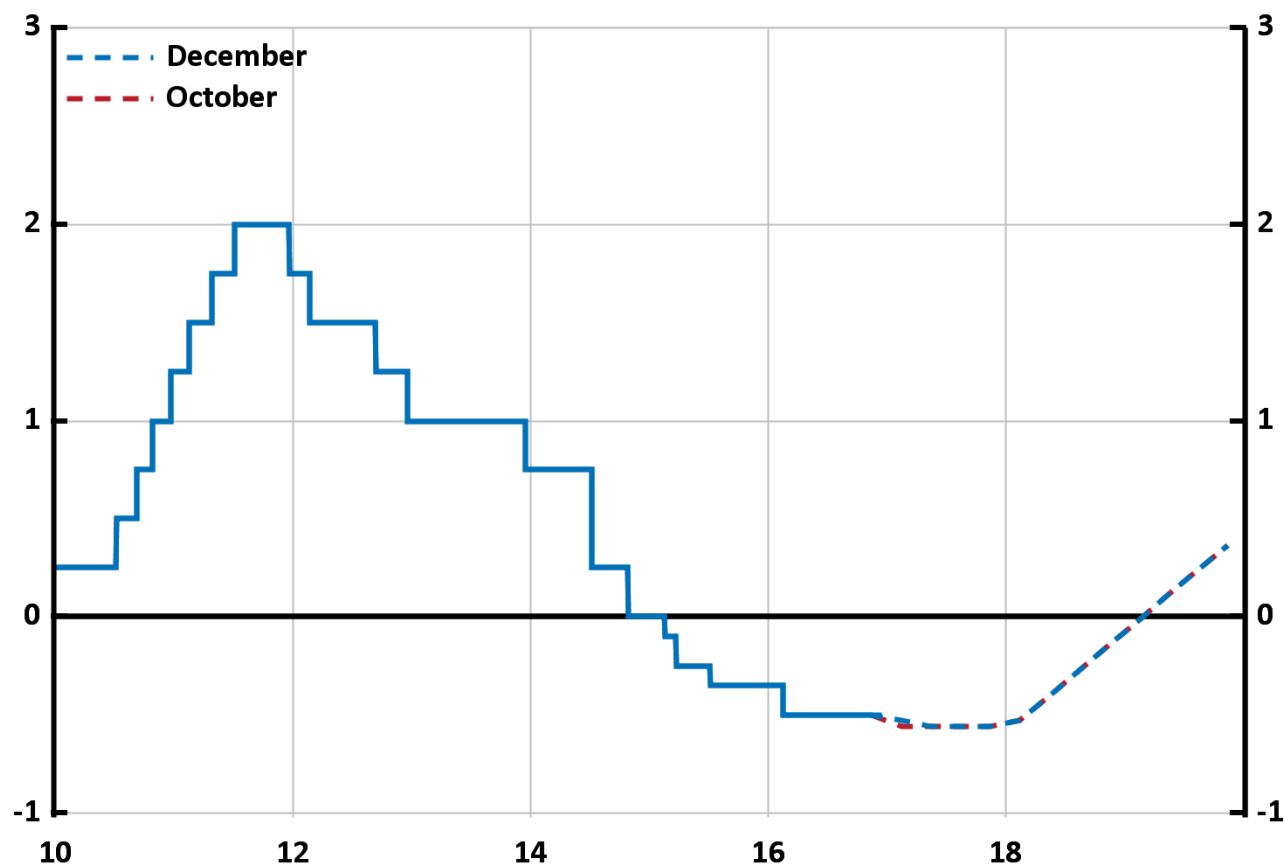
Per cent, mean value



Source: TNS Sifo Prospera

Figure 1.10. Repo rate

Per cent

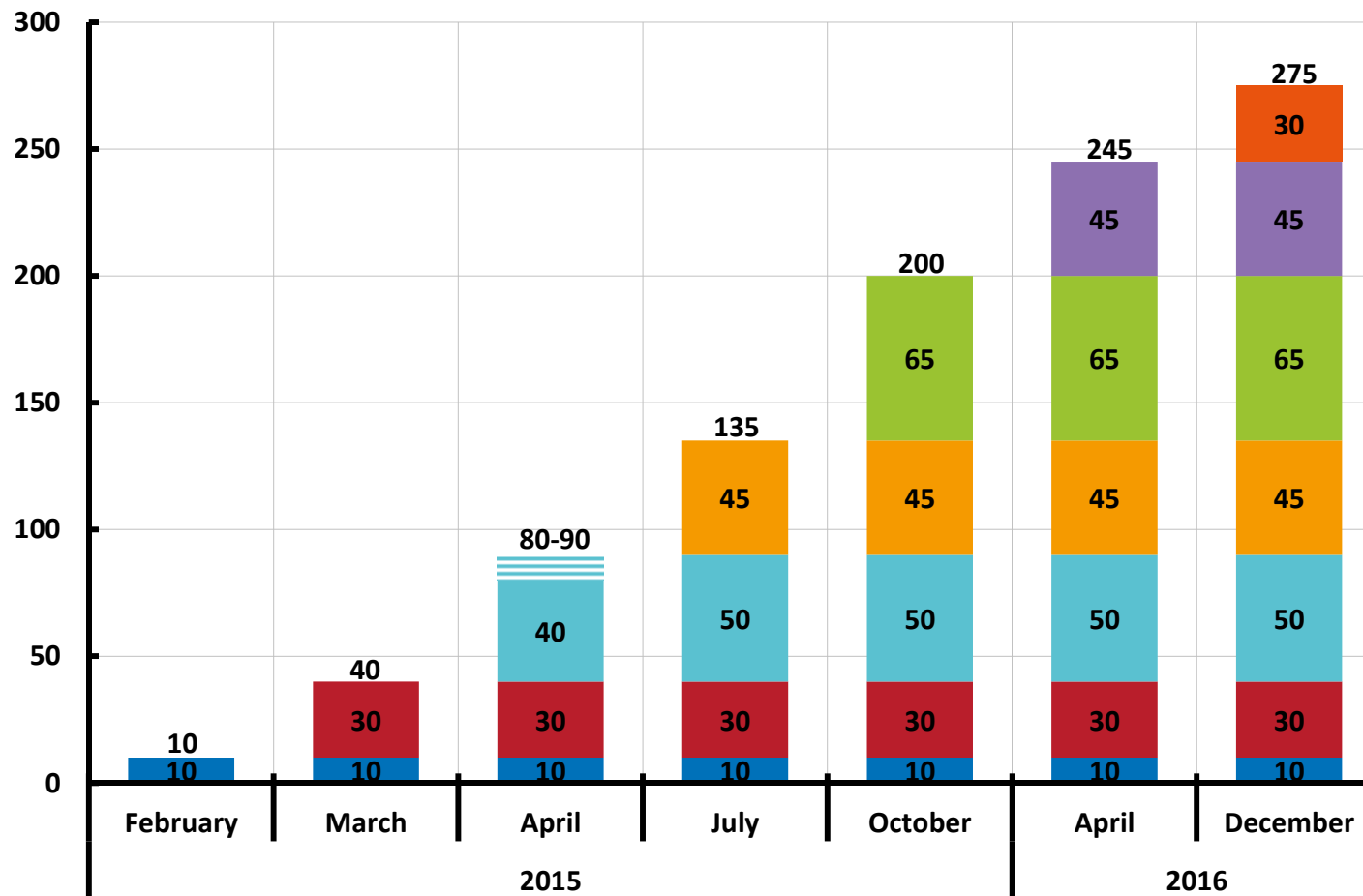


Note. Outcomes are daily data and the forecasts refer to quarterly averages.

Source: The Riksbank

Figure 1.11. Purchases of government bonds decided by the Riksbank, excluding reinvestments

SEK billion

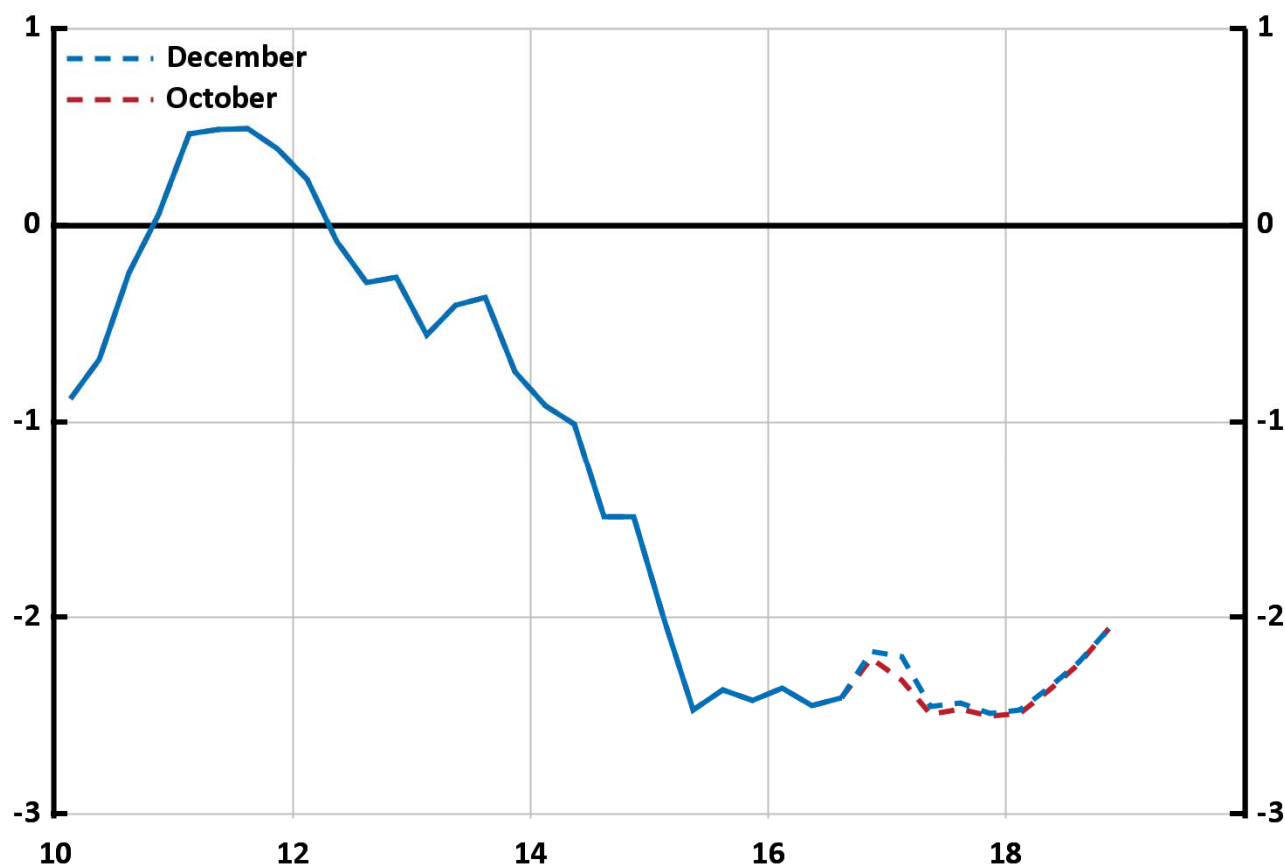


Note. Purchases of government bonds, excluding reinvestments, will continue until mid-2017.

Source: The Riksbank

Figure 1.12. Real repo rate

Per cent, quarterly averages

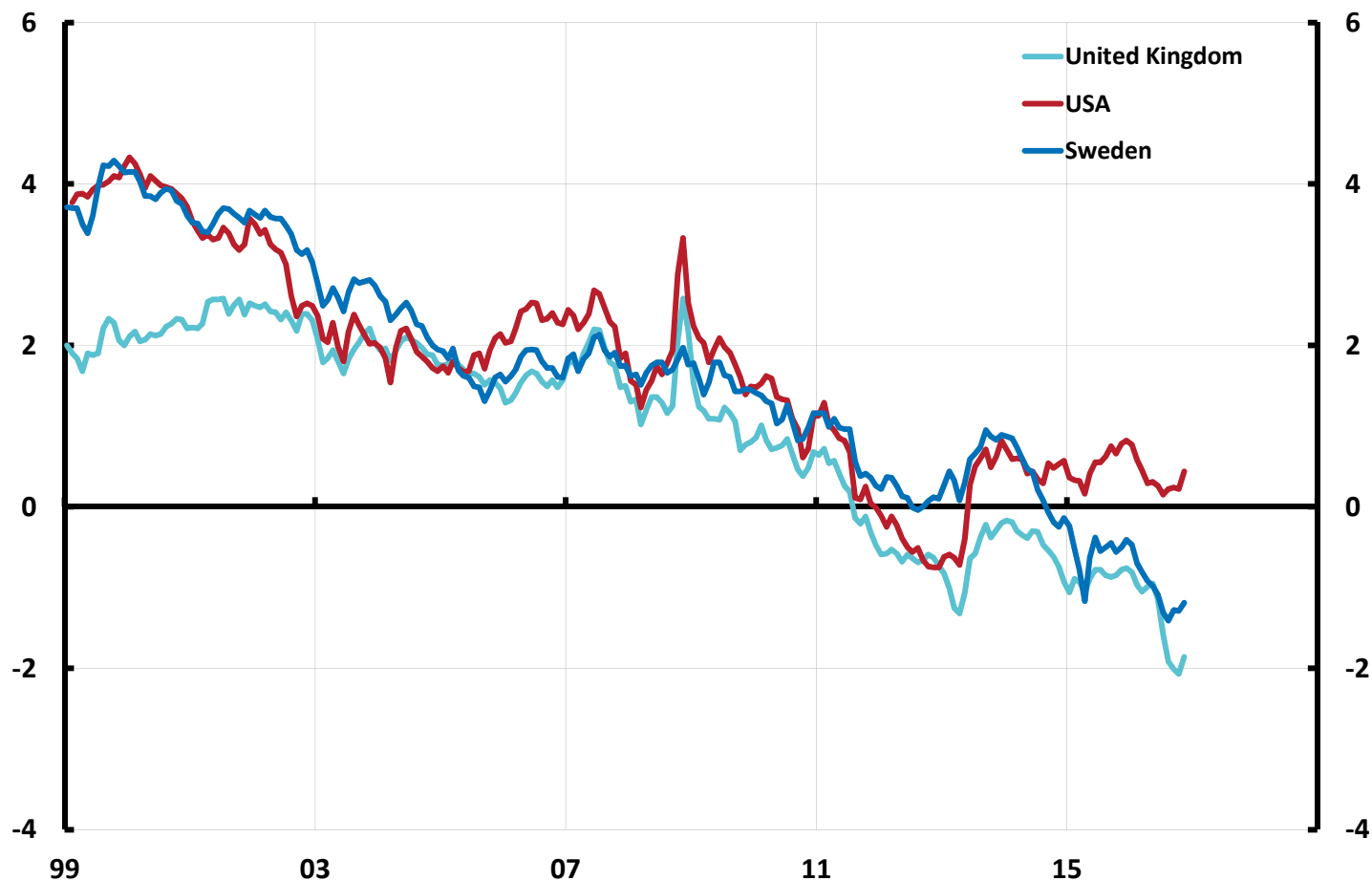


Note. The real repo rate is a mean value of the Riksbank's repo rate forecast for the year ahead minus the inflation forecast (CPIF) for the corresponding period.

Sources: Statistics Sweden and the Riksbank

Figure 1.13. Real interest rates

Per cent

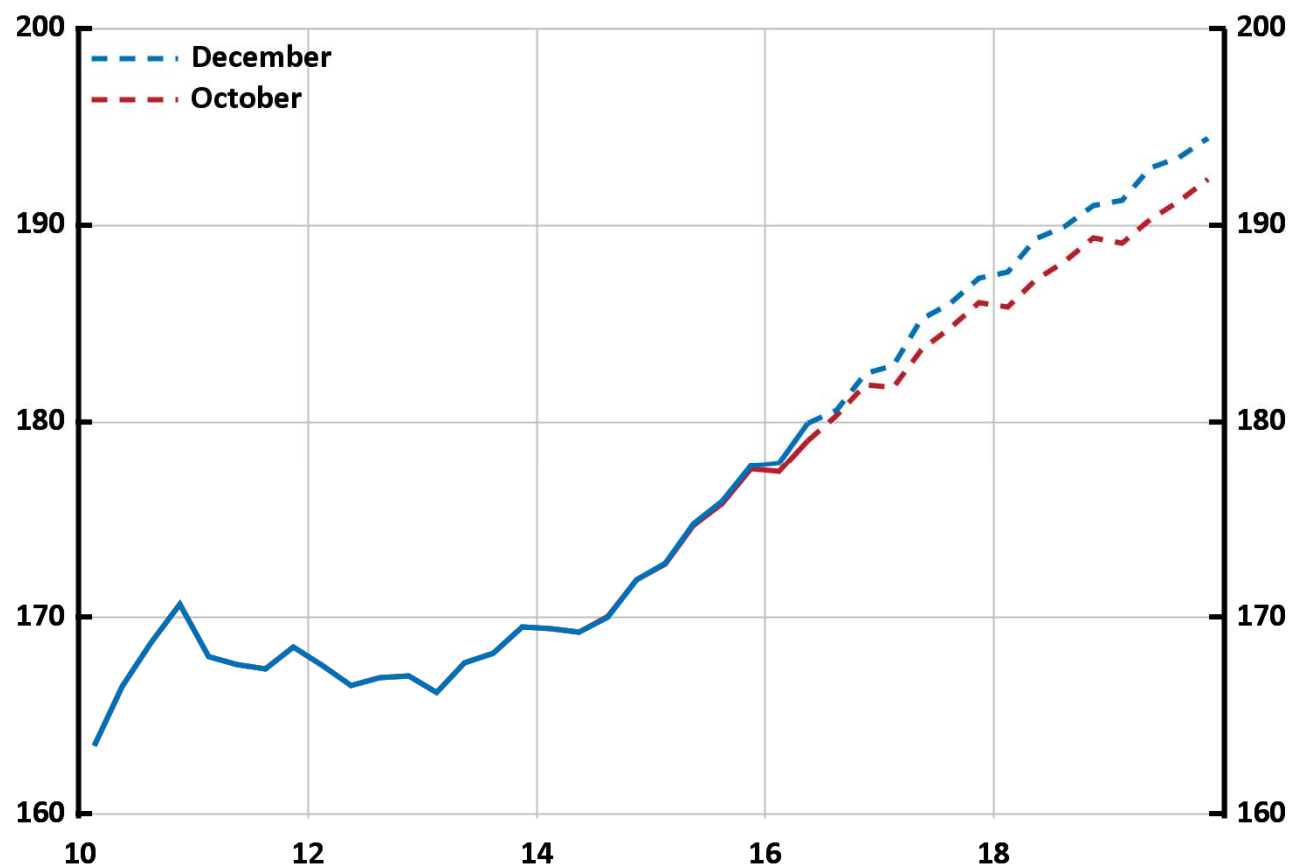


Note. 10-year yield on real government bonds in Sweden, the United Kingdom and the United States. Swedish real interest rate is zero coupon yields interpolated from bond prices using the Nelson-Siegel method.

Sources: Bank of England, Federal Reserve, Thomson Reuters and the Riksbank

Figure 1.14. Household debt ratio

Per cent of disposable income

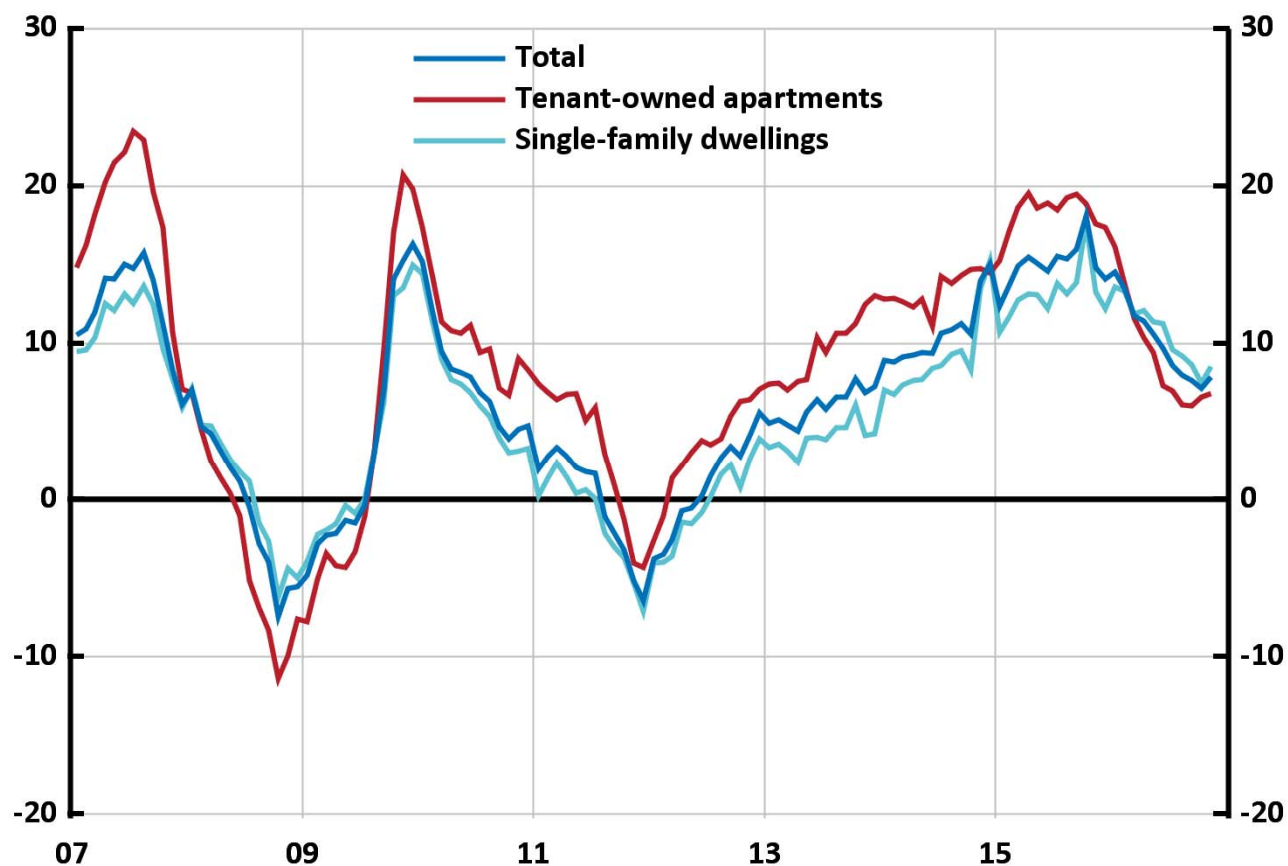


Note. Households' total debts as a share of their disposable incomes totalled over the past four quarters.

Sources: Statistics Sweden and the Riksbank

Figure 1.15. Housing prices

Annual percentage change



Source: Valueguard

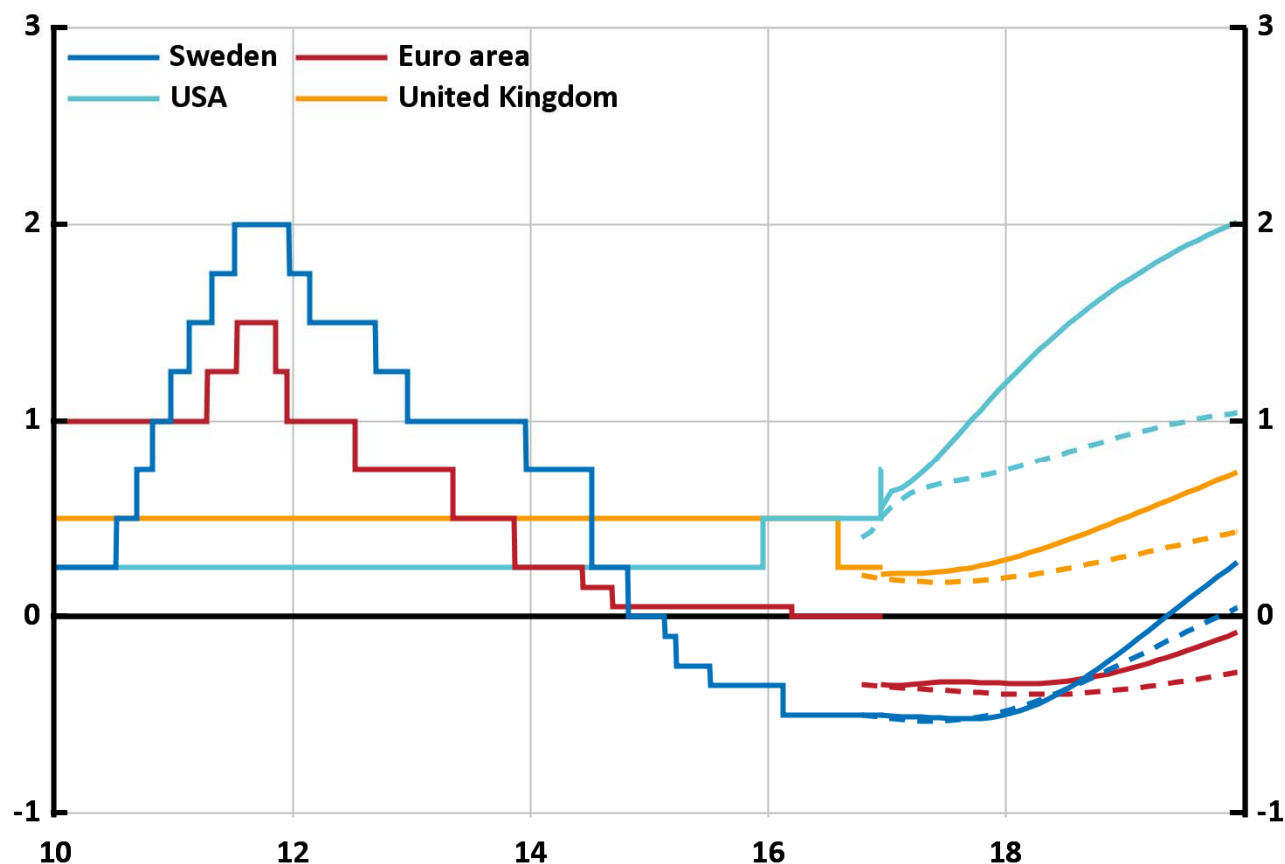
Chapter 2



S V E R I G E S R I K S B A N K

Figure 2.1. Policy rates and rate expectations according to forward rates

Per cent

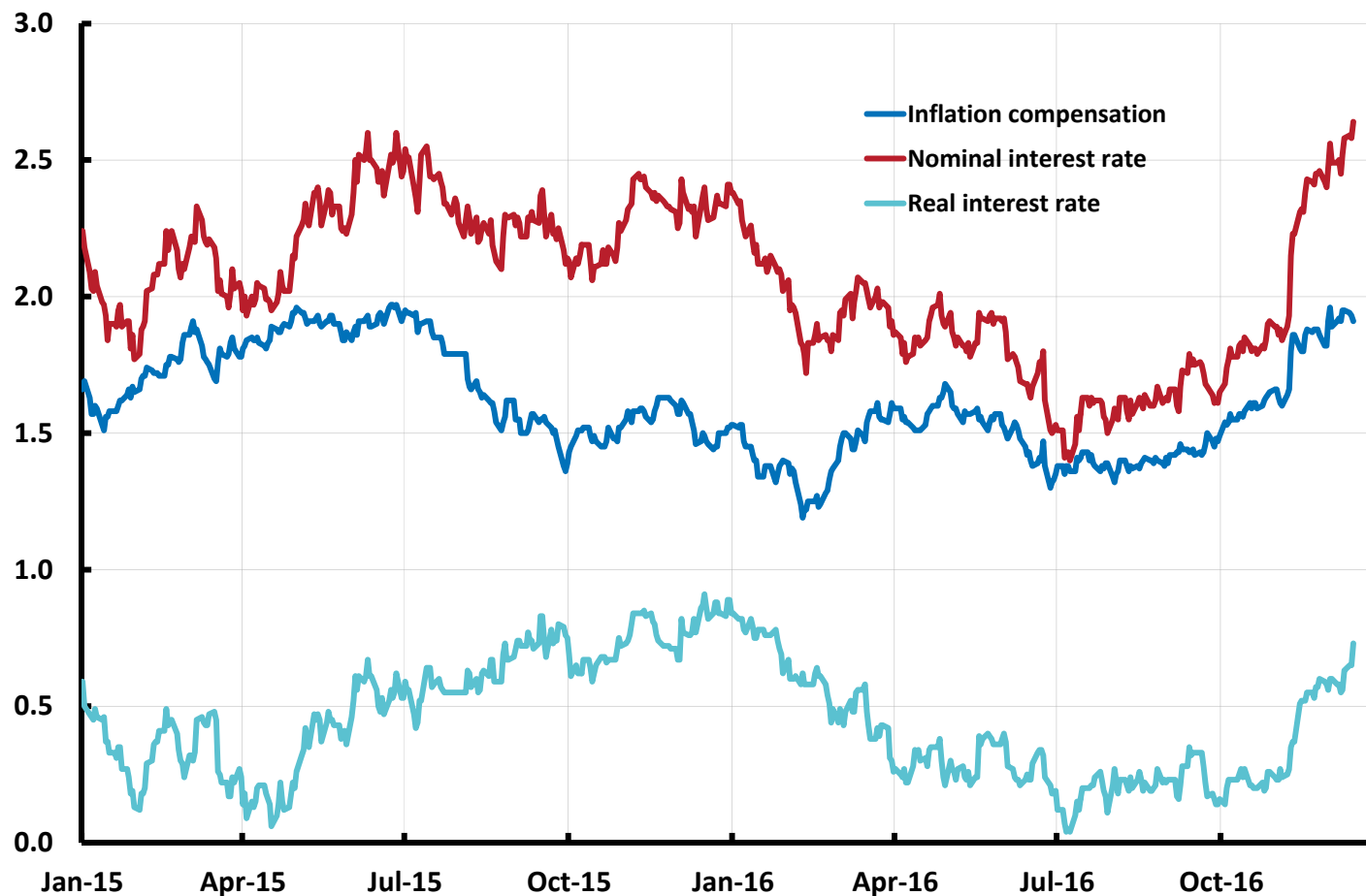


Note. Forward rates describe the expected overnight rate, which does not always correspond to the policy rate. There is no published overnight rate in Sweden, but it normally follows the repo rate closely. Unbroken lines are estimated on 16 December 2016, broken lines are estimated on 25 October 2016.

Sources: Macrobond and the Riksbank

Figure 2.2. Interest rates and inflation compensation in the USA, 10-year maturity

Per cent

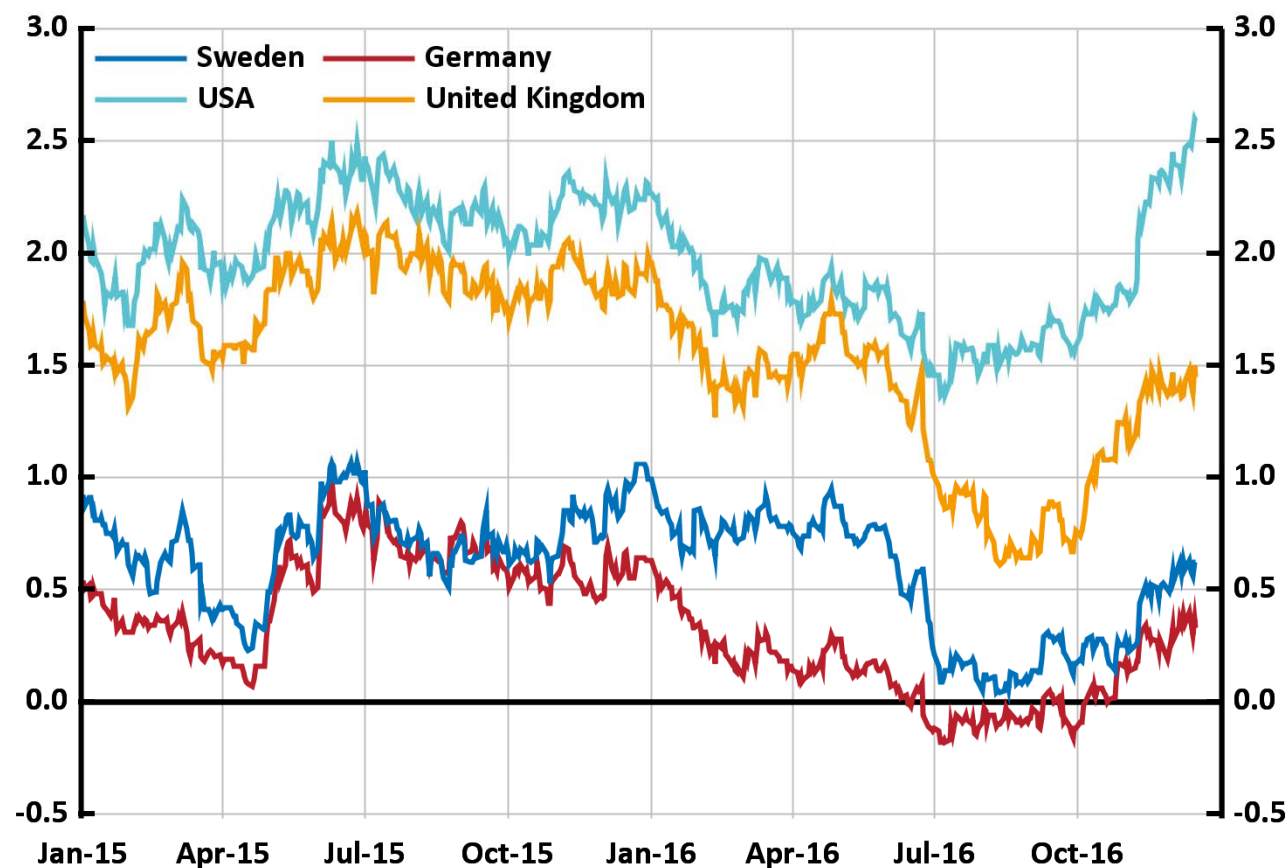


Note. Inflation compensation is calculated as the difference between real and nominal government bond yields.

Source: Macrobond

Figure 2.3. Government bond rates with 10 years left to maturity

Per cent

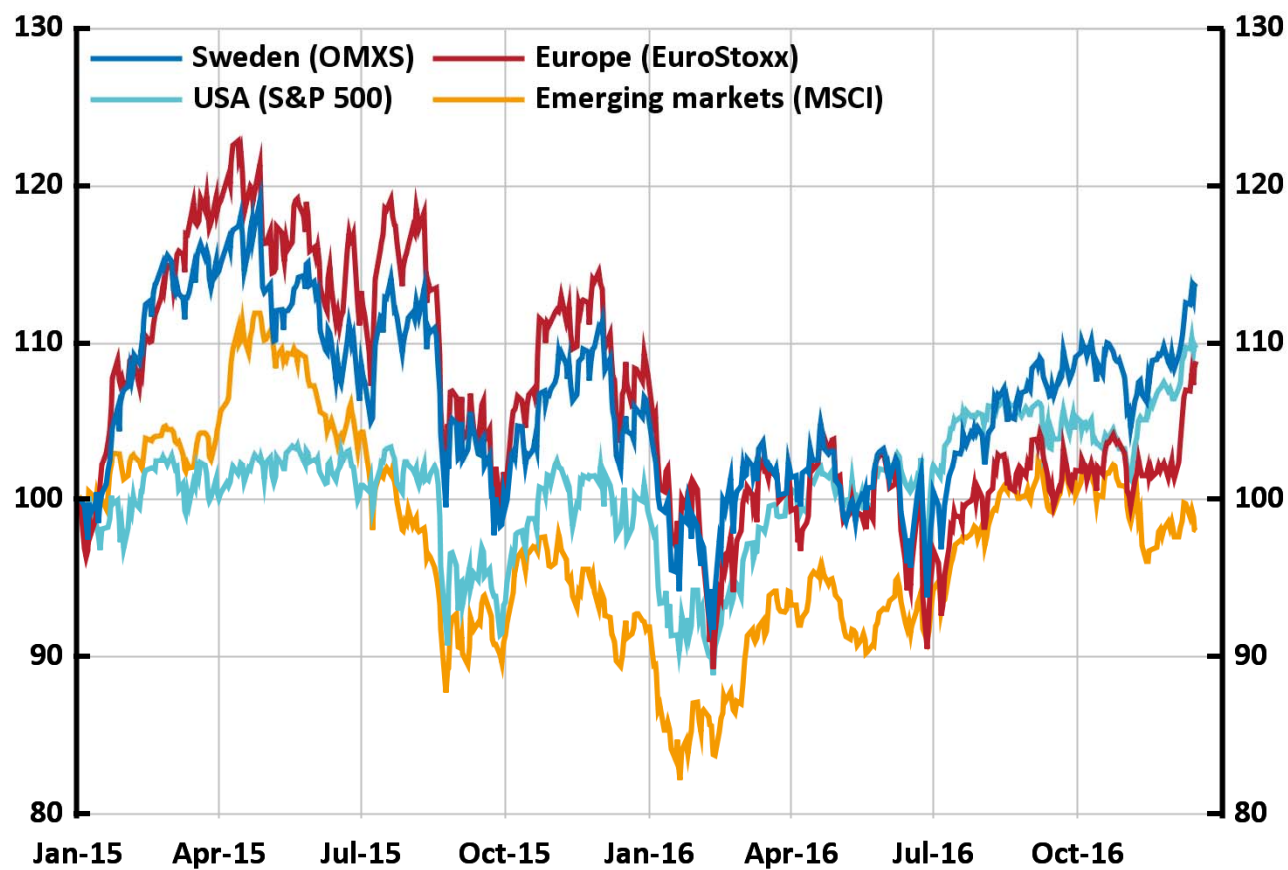


Note. Zero-coupon rates interpolated from bond prices using the Nelson-Siegel method.

Sources: Macrobond and the Riksbank

Figure 2.4. Stock market movements

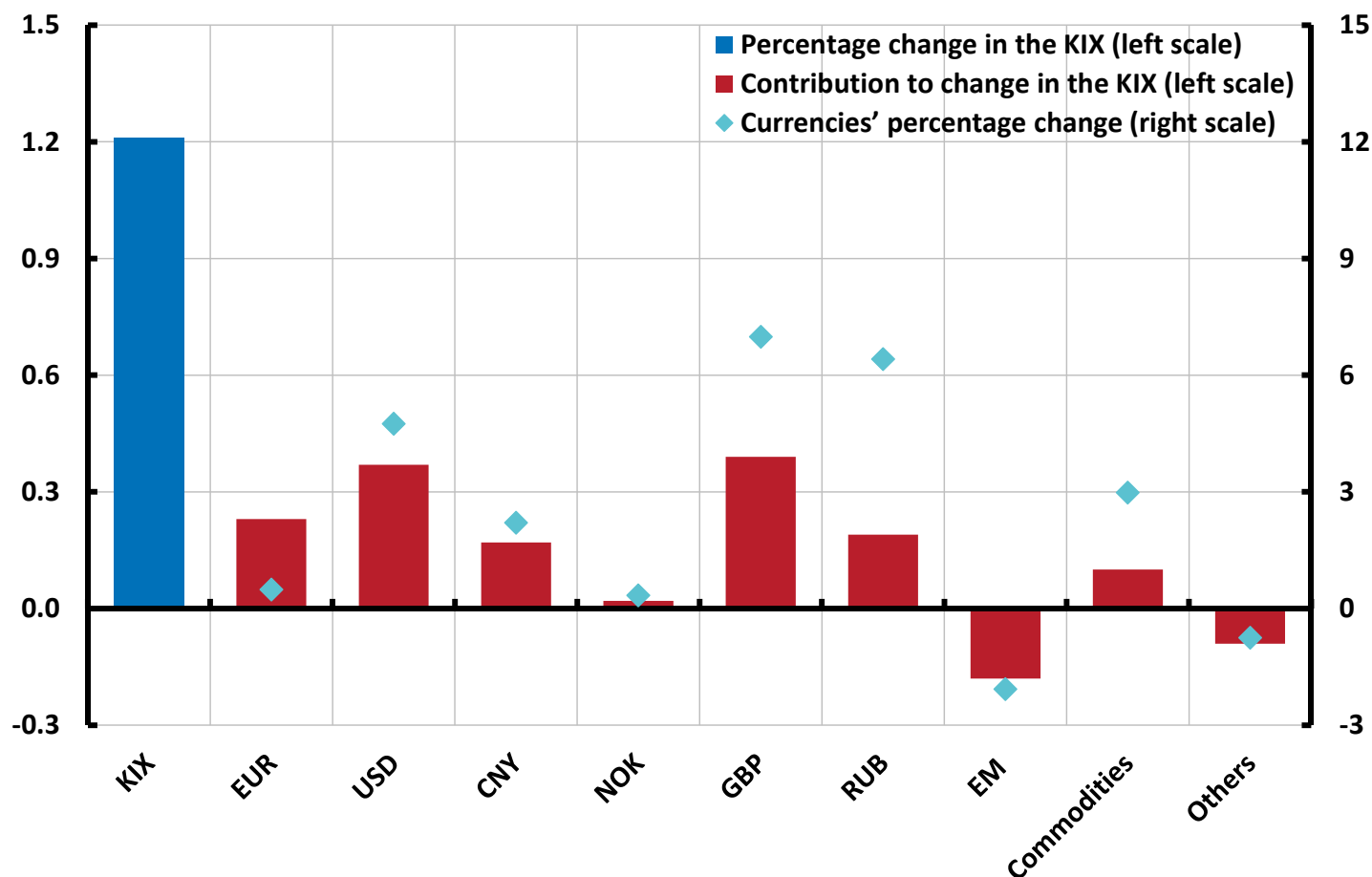
Index, 2 January 2015 = 100



Sources: Macrobond and Thomson Reuters

Figure 2.5. Contributions and changes to KIX exchange rates

Per cent and percentage points

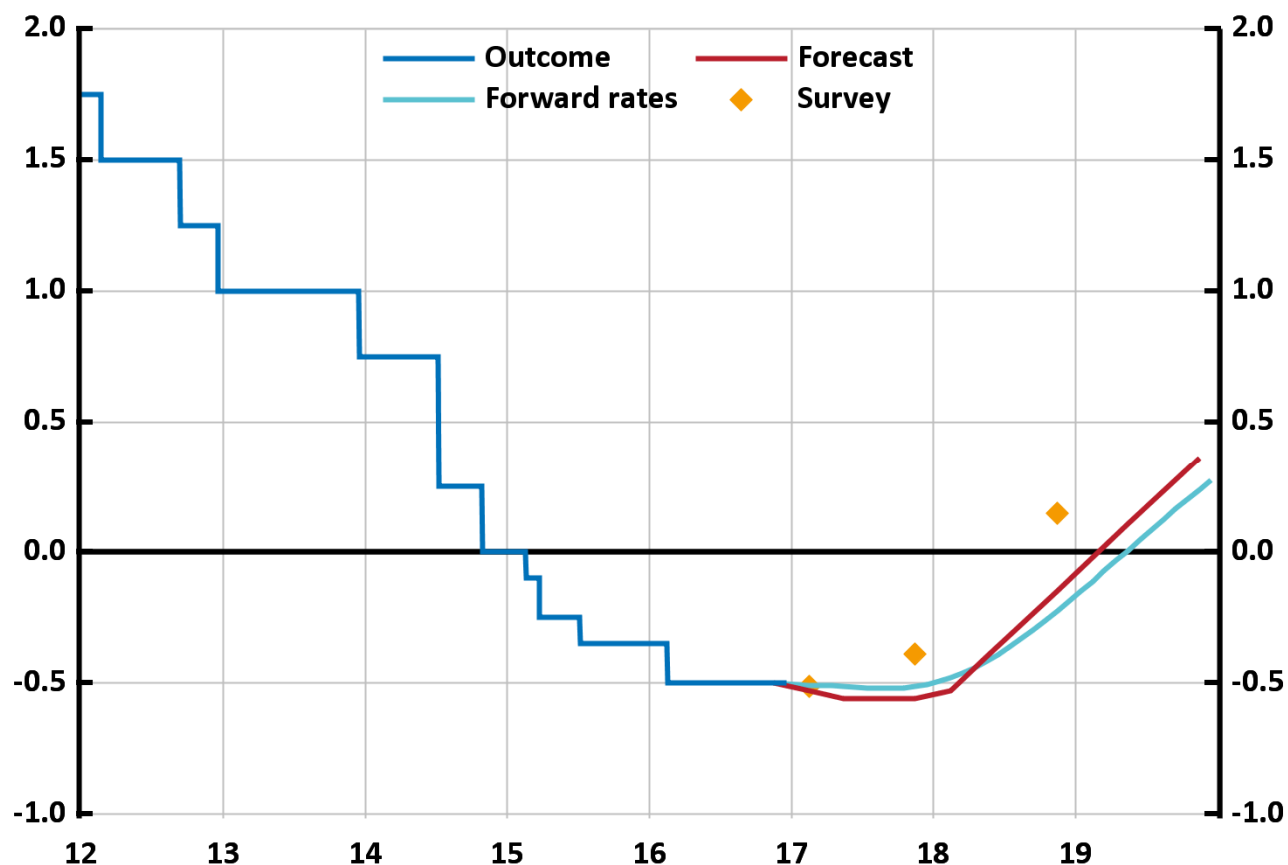


Note. The figure shows change in KIX and contributions from different currencies between 27 October 2016 and 19 December 2016. EM refers to Brazil, Hungary, India, Mexico, Poland and Turkey. Commodities refer to Australia, Canada and New Zealand. Others refers to Czech Republic, Denmark, Iceland, Japan, South Korea and Switzerland.

Sources: Thomson Reuters and the Riksbank

Figure 2.6. Repo rate and market expectations

Per cent, average

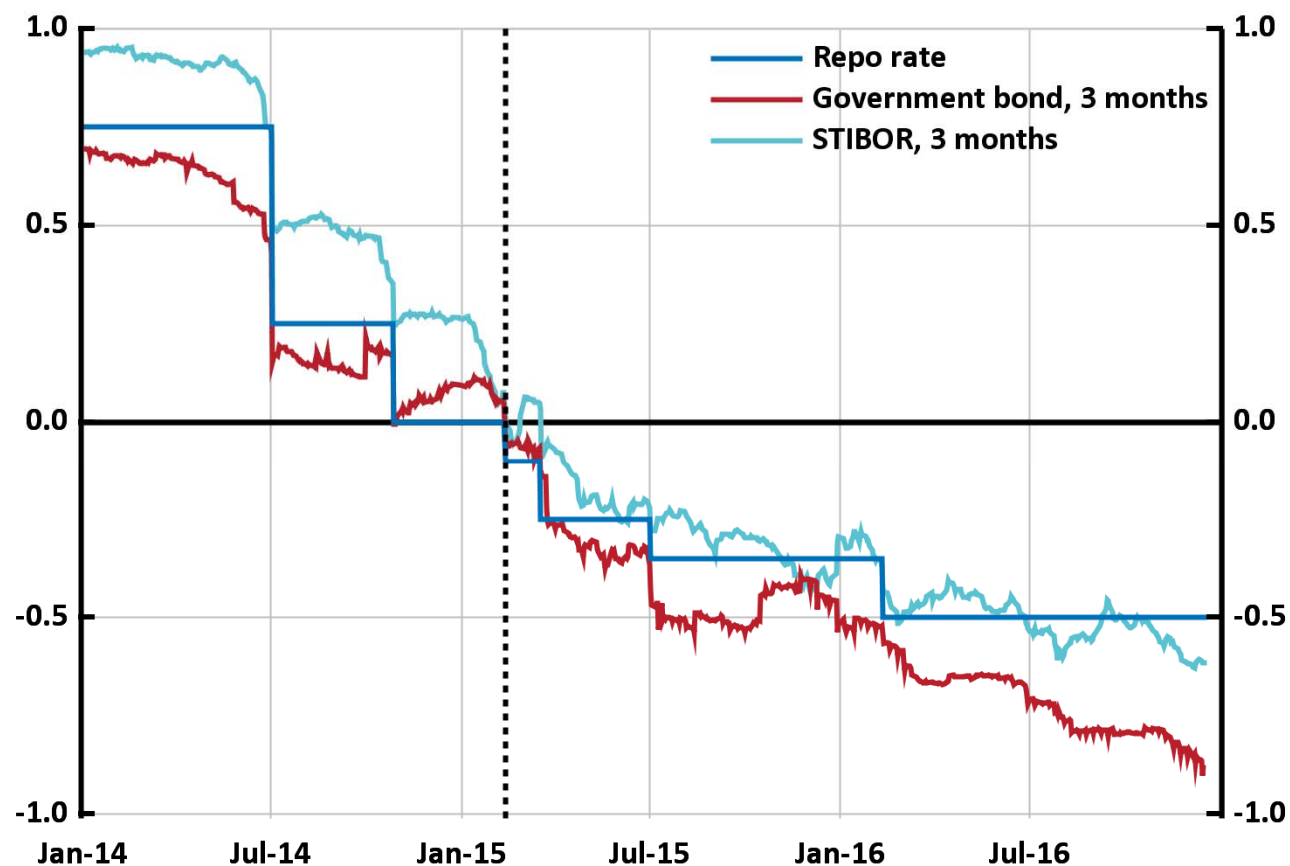


Note. The forward rates are estimated as of 16 December 2016 and measure the expected repo rate. The survey responses show the average for money market participants on 30 November 2016.

Sources: Macrobond, TNS Sifo Prospera and the Riksbank

Figure 2.7. Short market rates and the repo rate

Per cent

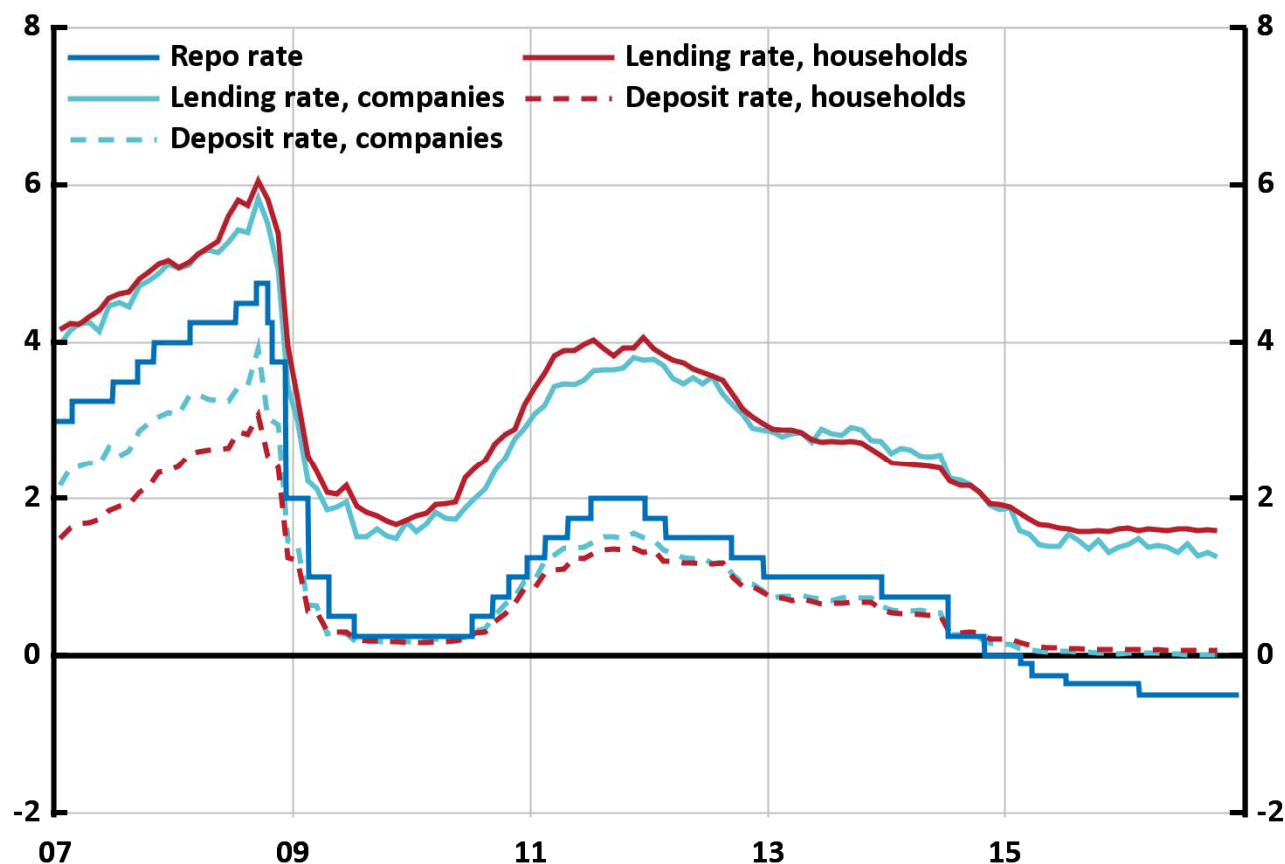


Note. The broken line refer to the start of the bond purchases.

Sources: Macrobond and the Riksbank

Figure 2.8. Repo rate together with the deposit and lending rate to households and companies, new contracts

Per cent

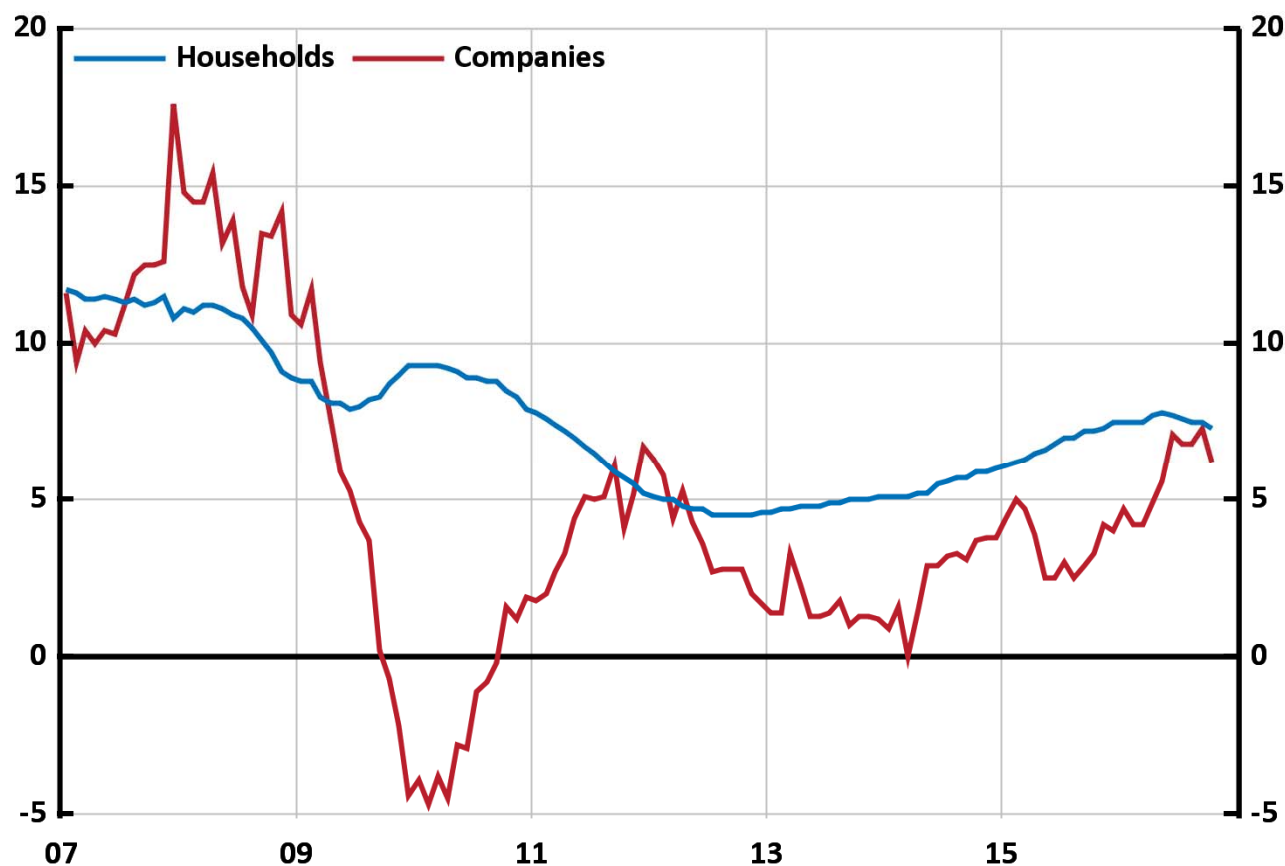


Note. MFIs' average deposit and lending rates for households and companies.

Sources: Statistics Sweden and the Riksbank

Figure 2.9. Bank lending to households and companies

Annual percentage change



Note. MFIs' lending to households and non-financial companies according to financial market statistics adjusted for reclassifications and traded loans since 2006.

Source: Statistics Sweden

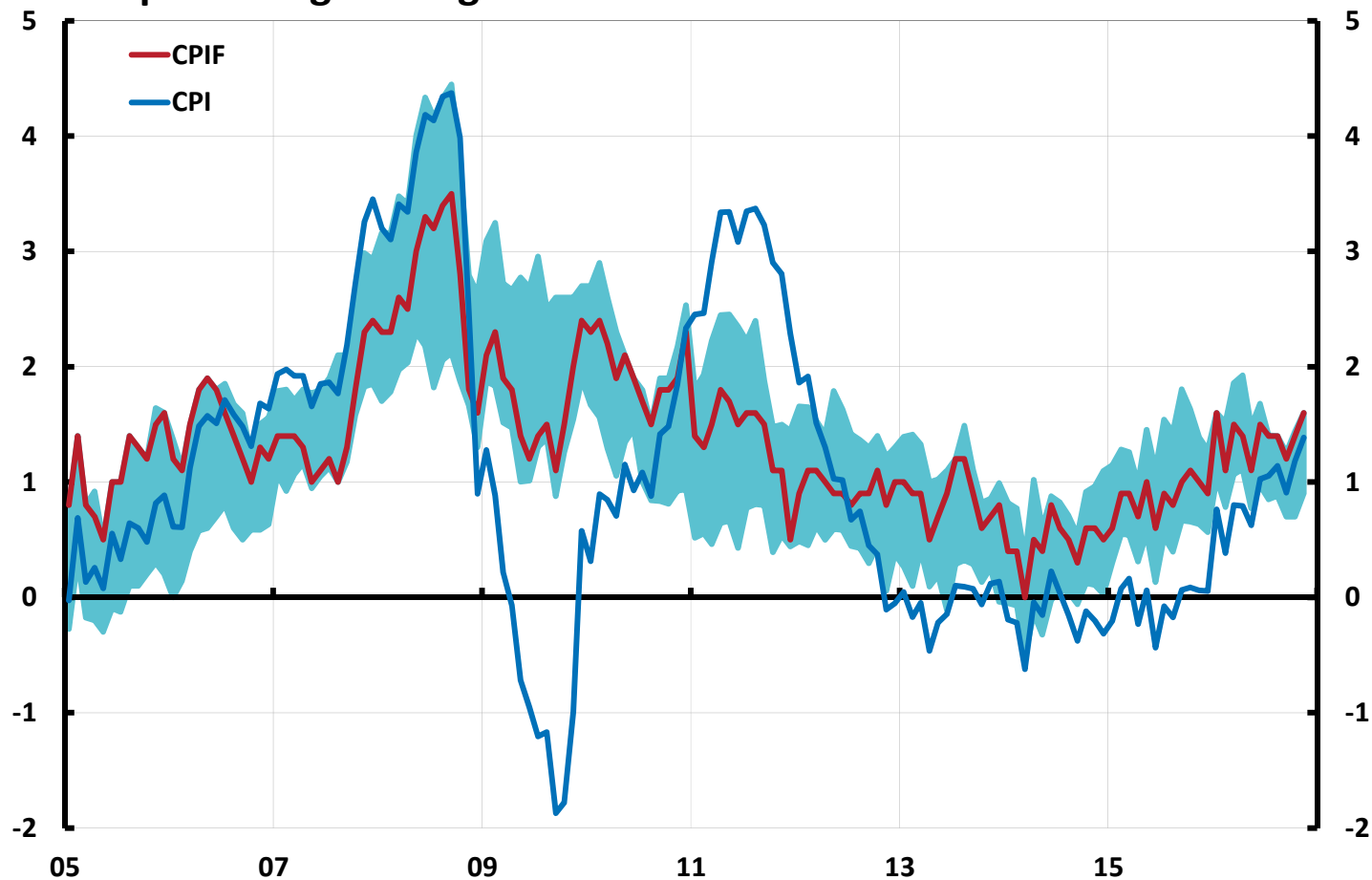
Chapter 3



S V E R I G E S R I K S B A N K

Figure 3.1. The CPI and different measures of underlying inflation

Annual percentage change

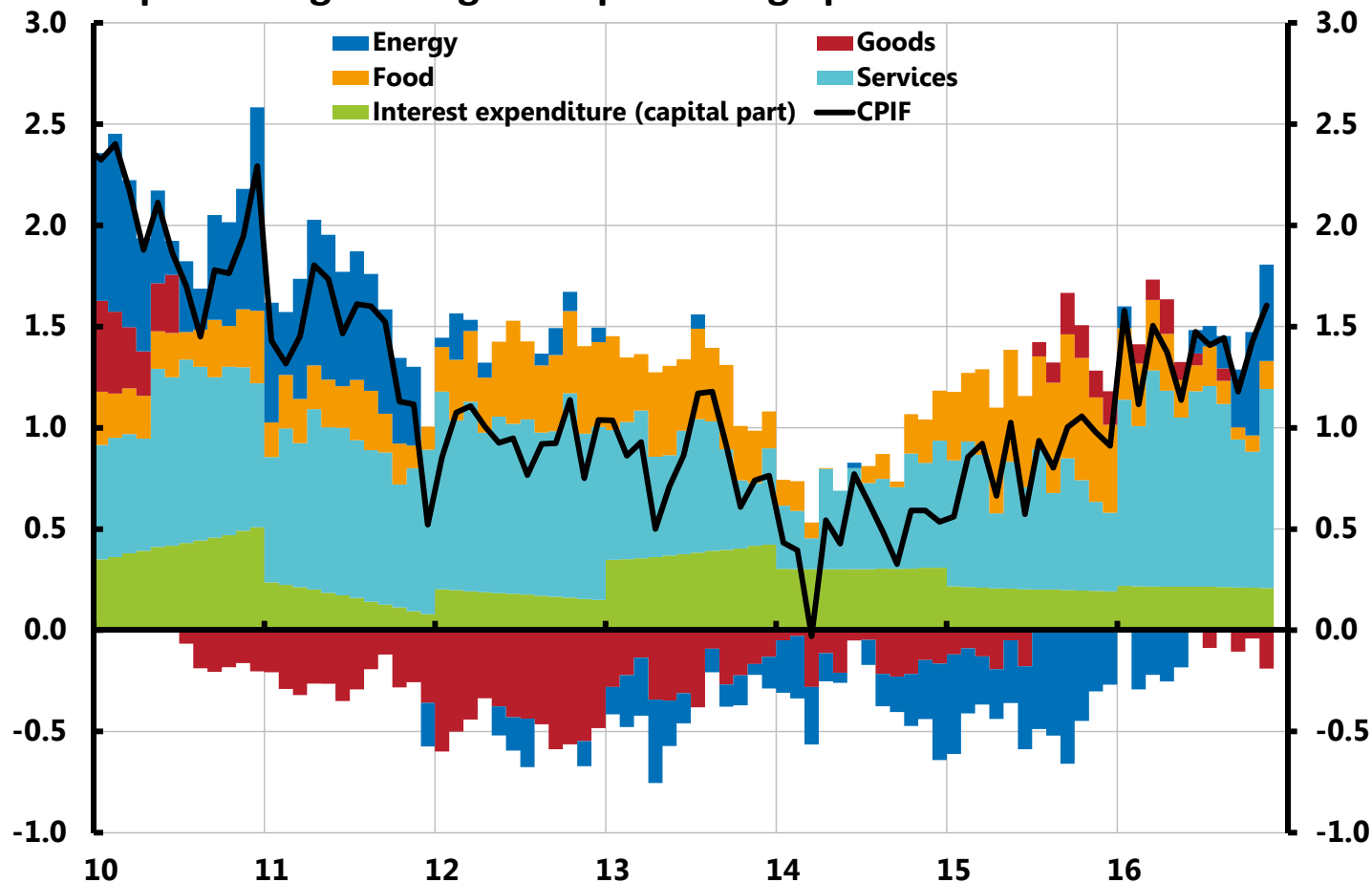


Note. The field shows the highest and lowest outcomes among different measures of underlying inflation. The measures included are the CPIF, the CPIF excluding energy, the CPIF with constant tax, UND24, Trim85, HICP excluding energy and unprocessed food, persistence-weighted inflation, factors from principal component analysis and weighted mean inflation.

Sources: Eurostat, Statistics Sweden and the Riksbank

Figure 3.2. The CPIF and contributions to CPIF inflation

Annual percentage change and percentage points

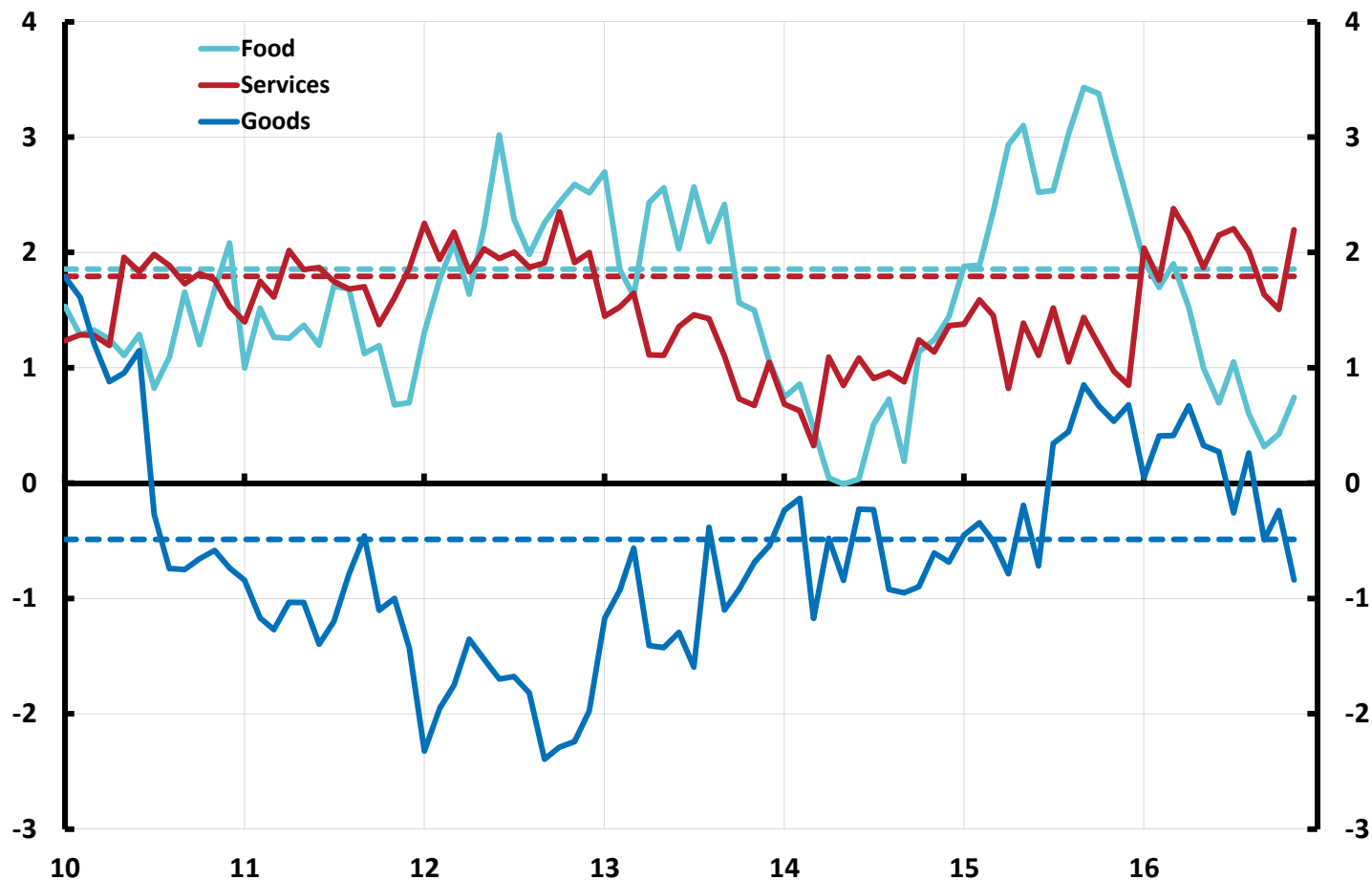


Note. The CPIF is the CPI with a fixed mortgage rate. Energy constitutes 8 per cent, goods 26 per cent, services 45 per cent, food 18 per cent and interest expenditure 4 per cent of the total CPI basket.

Sources: Statistics Sweden and the Riksbank

Figure 3.3. Goods, services and food in the CPI

Annual percentage change

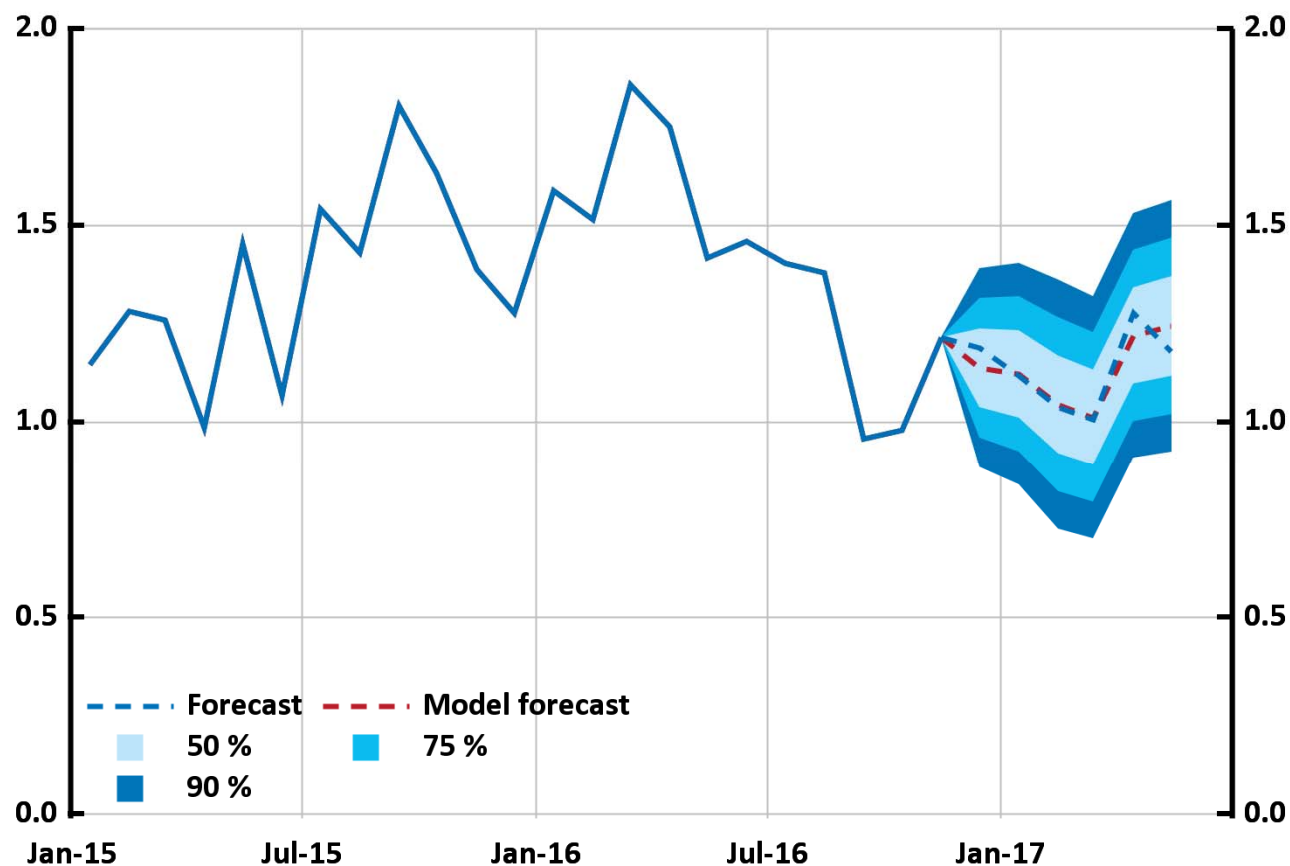


Note. Broken lines refer to average rate of increase since the year 2000.

Sources: Statistics Sweden and the Riksbank

Figure 3.4. Model forecast CPIF excluding energy with uncertainty bands

Annual percentage change

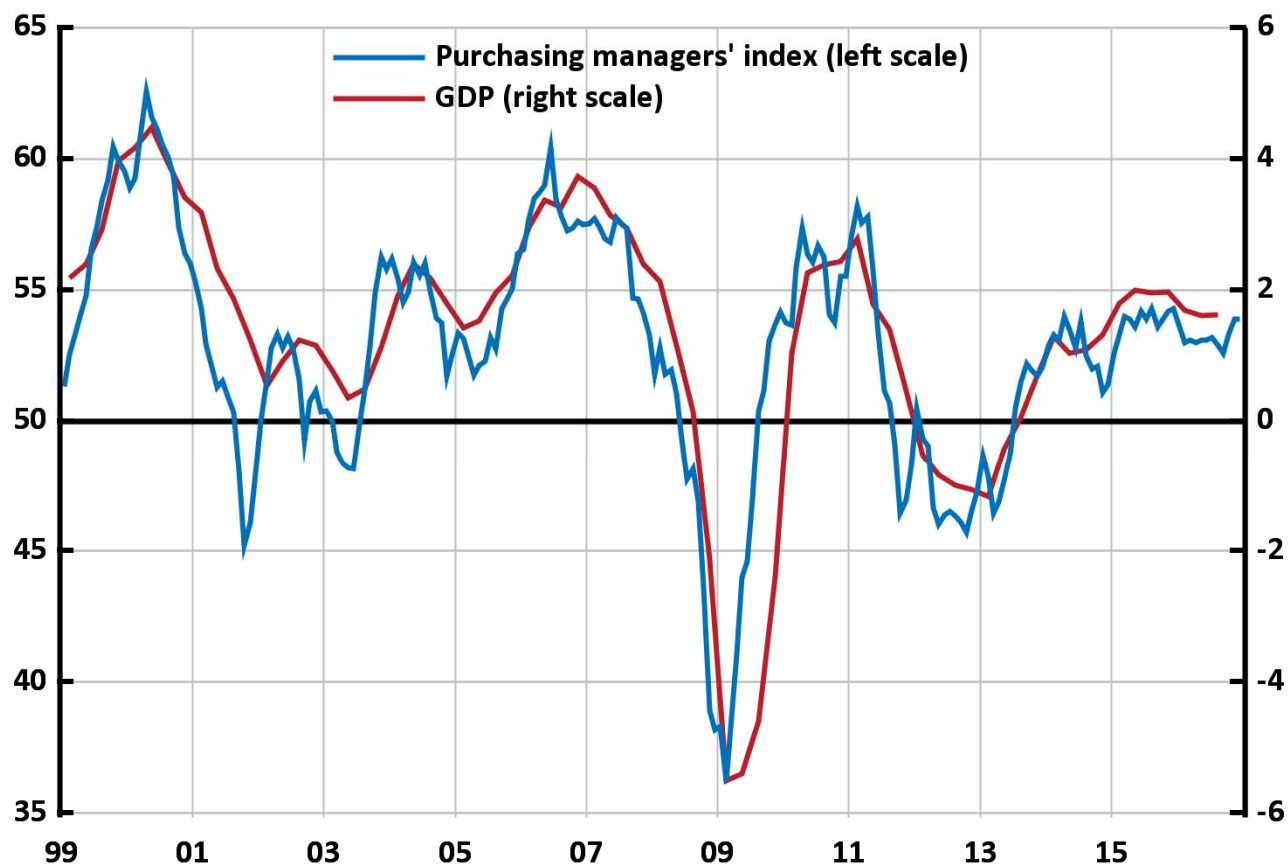


Note. The uncertainty bands are based on the standard error in the model estimate. The CPIF is the CPI with a fixed mortgage rate.

Sources: Statistics Sweden and the Riksbank

Figure 3.5. Purchasing managers' index and GDP for the euro area

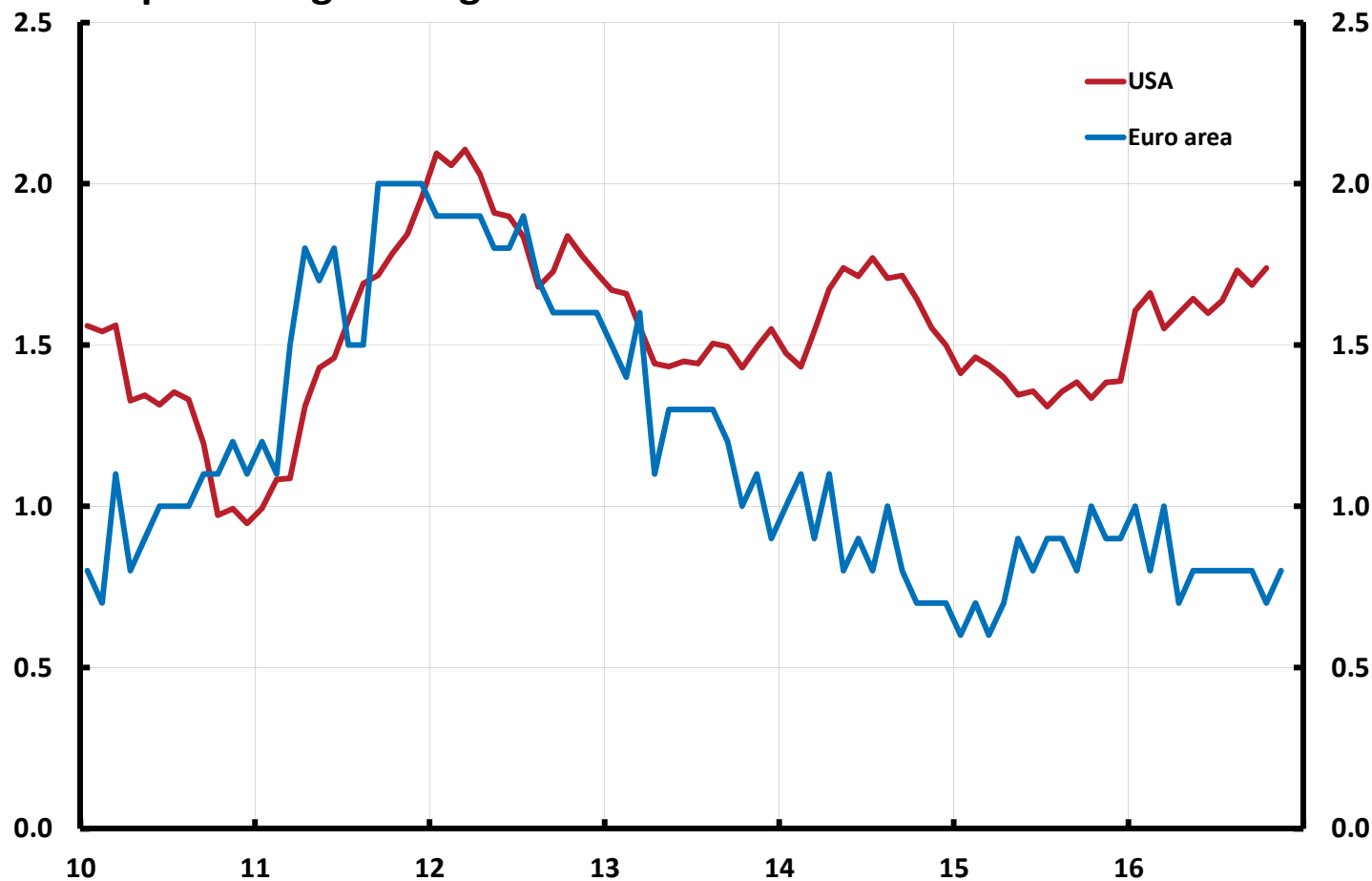
Index and annual percentage change



Sources: Markit and Eurostat

Figure 3.6. Underlying inflation abroad

Annual percentage change

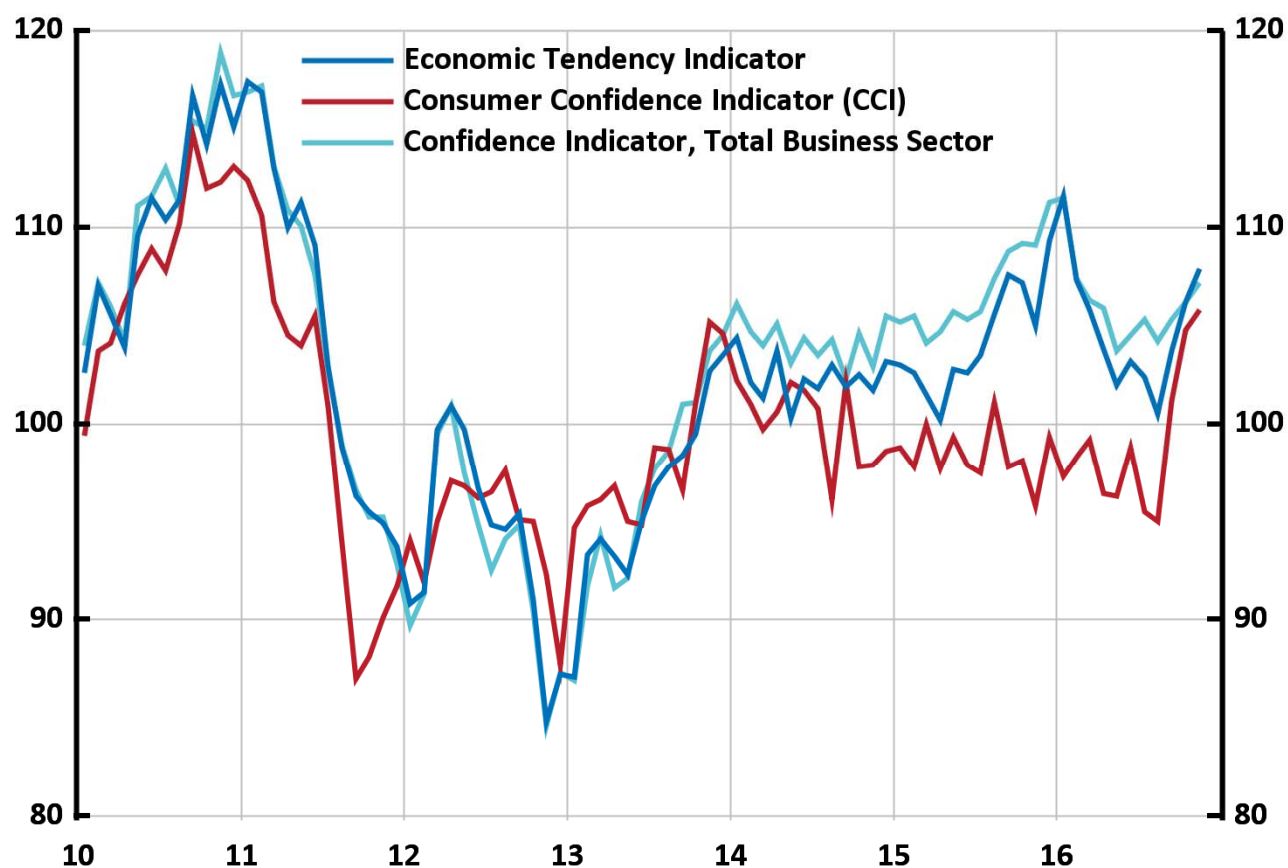


Note. HICP excluding energy and unprocessed food is shown for the euro area and PCE excluding energy and food is shown for the United States.

Sources: Bureau of Economic Analysis and Eurostat

Figure 3.7. Confidence indicators

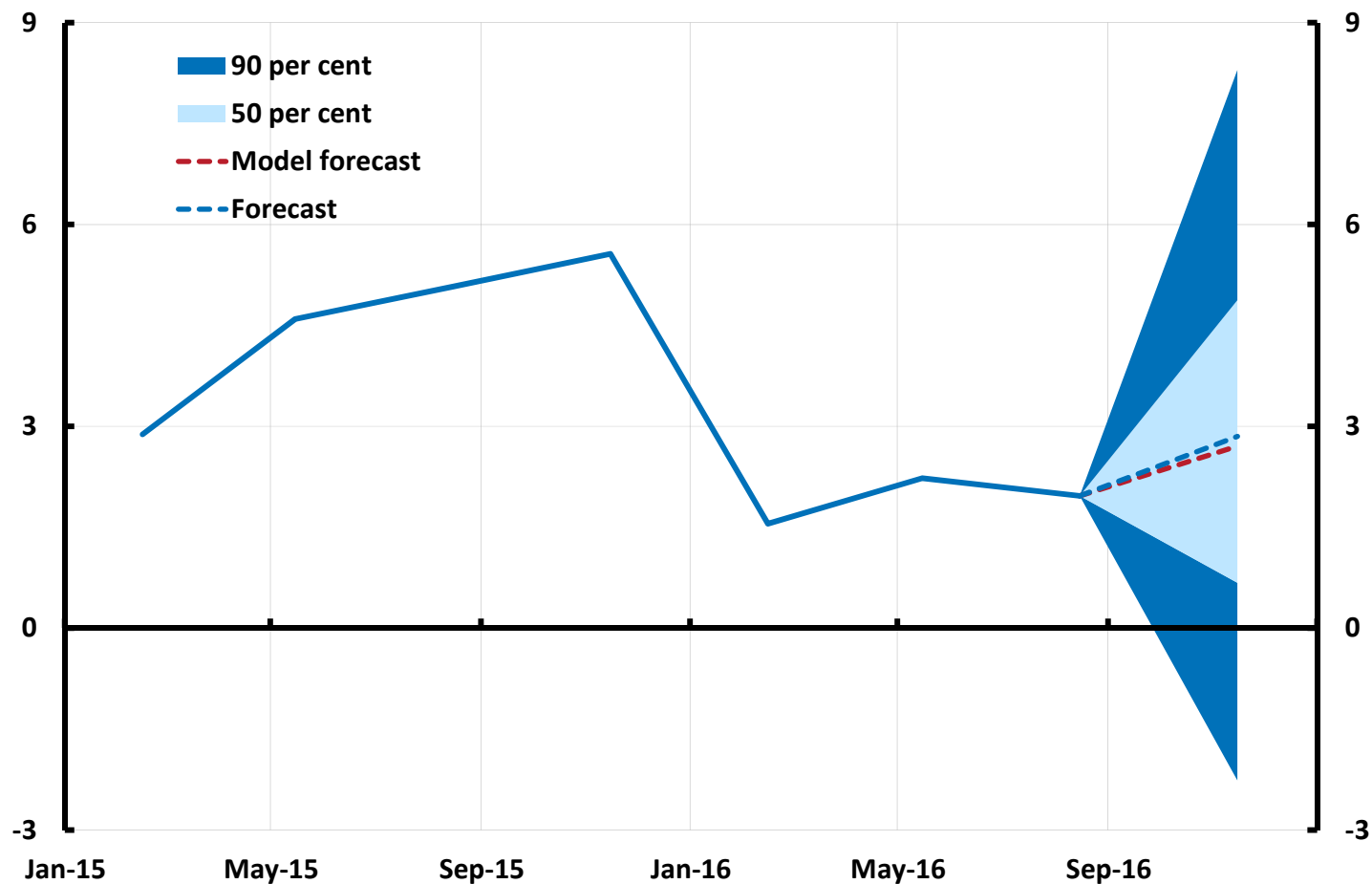
Index, average = 100, standard deviation = 10, seasonally-adjusted data



Source: National Institute of Economic Research

Figure 3.8. Model forecast GDP with uncertainty bands

Quarterly change in per cent, calculated as an annual percentage change, seasonally-adjusted data

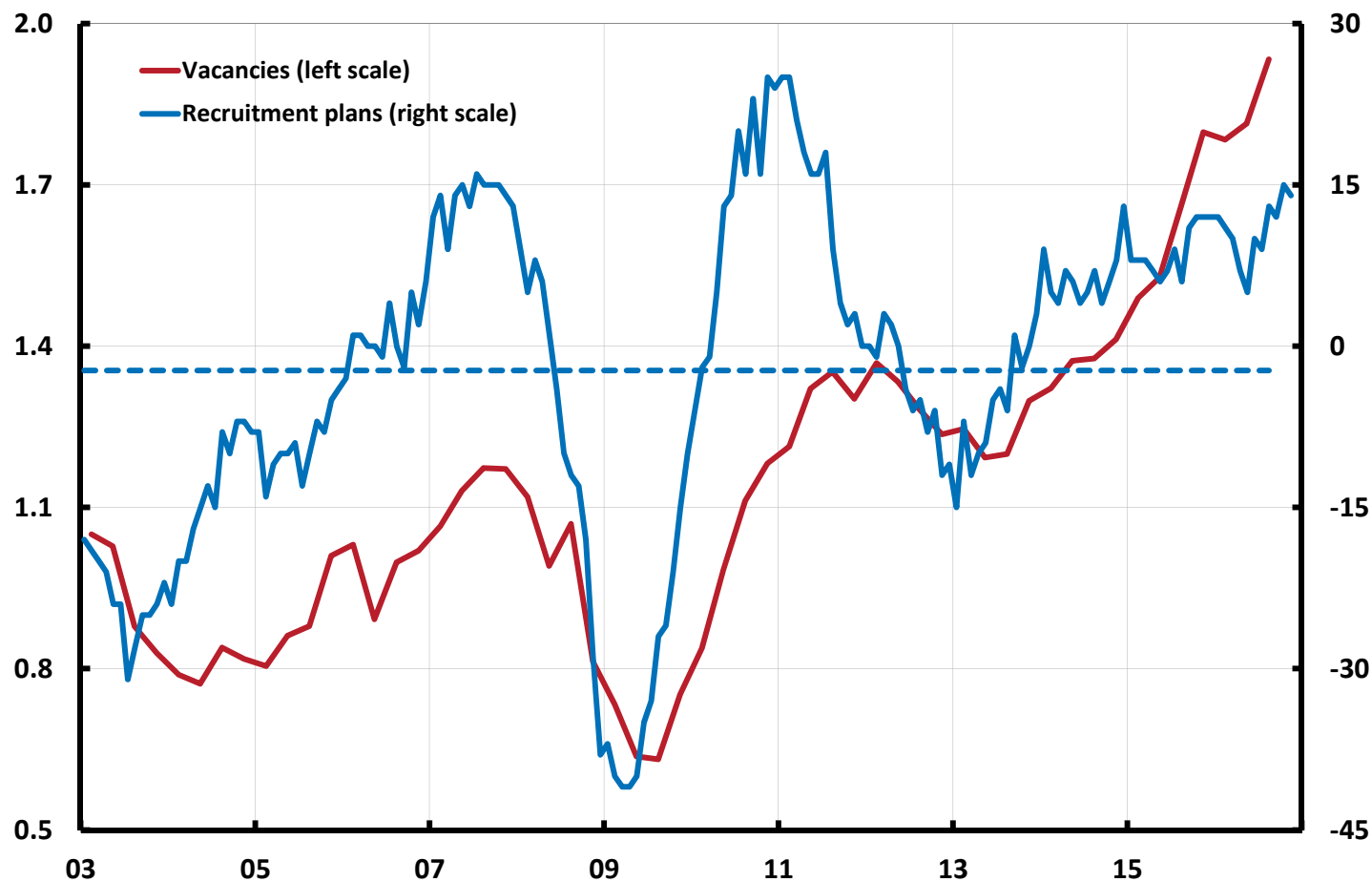


Note. The model forecast is an average forecasts from different statistical models. The uncertainty bands are based on the models' historical forecasting errors.

Sources: Statistics Sweden and the Riksbank

Figure 3.9. Vacancies and recruitment plans

Per cent of the labour force and net figures, respectively, seasonally-adjusted data

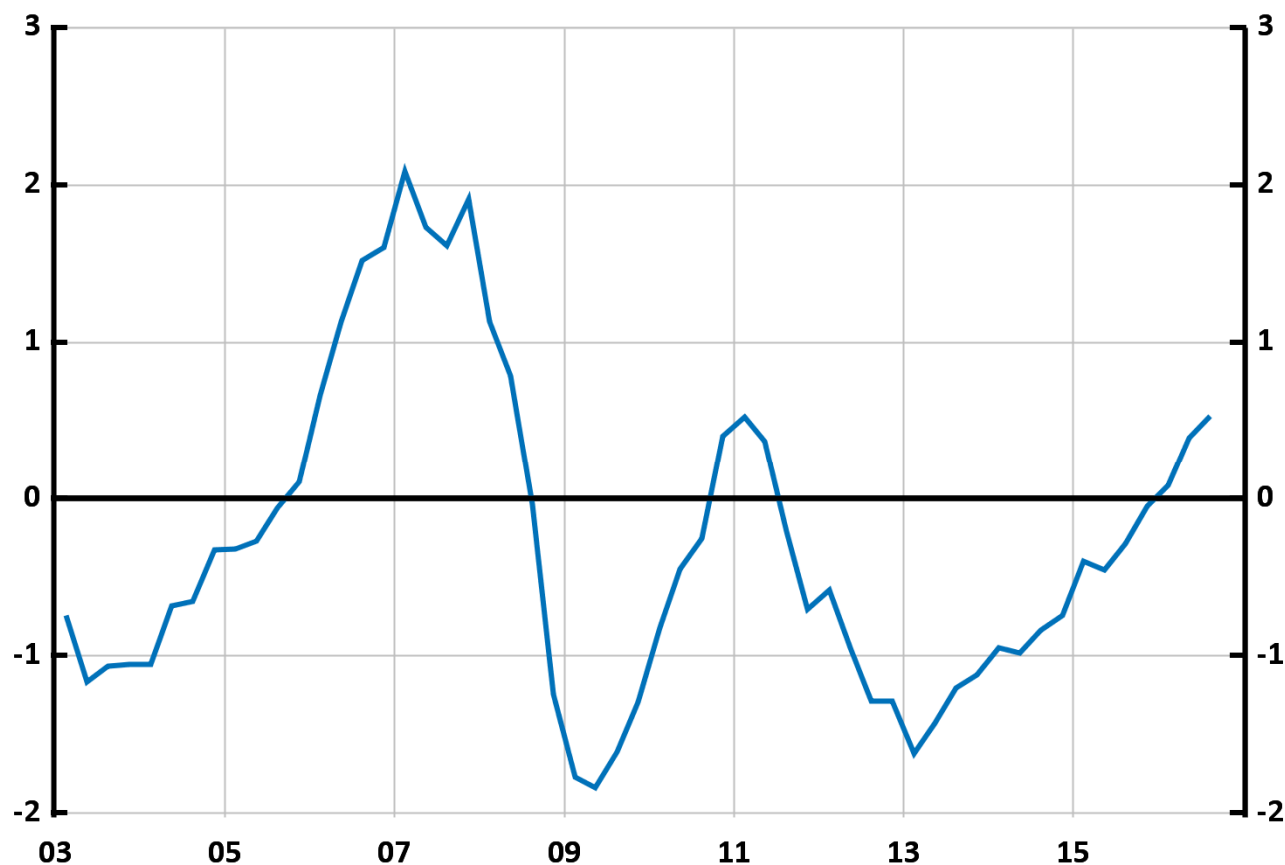


Note. Recruitment plans refer to expectations of the number of employed in the business sector three months ahead. The broken line represents the mean value since 2003.

Sources: The National Institute of Economic Research, Statistics Sweden and the Riksbank

Figure 3.10. RU indicator

Standard deviation



Note. The RU indicator is a measure of resource utilisation. It is normalised so that the mean value is 0 and the standard deviation is 1.

Source: The Riksbank

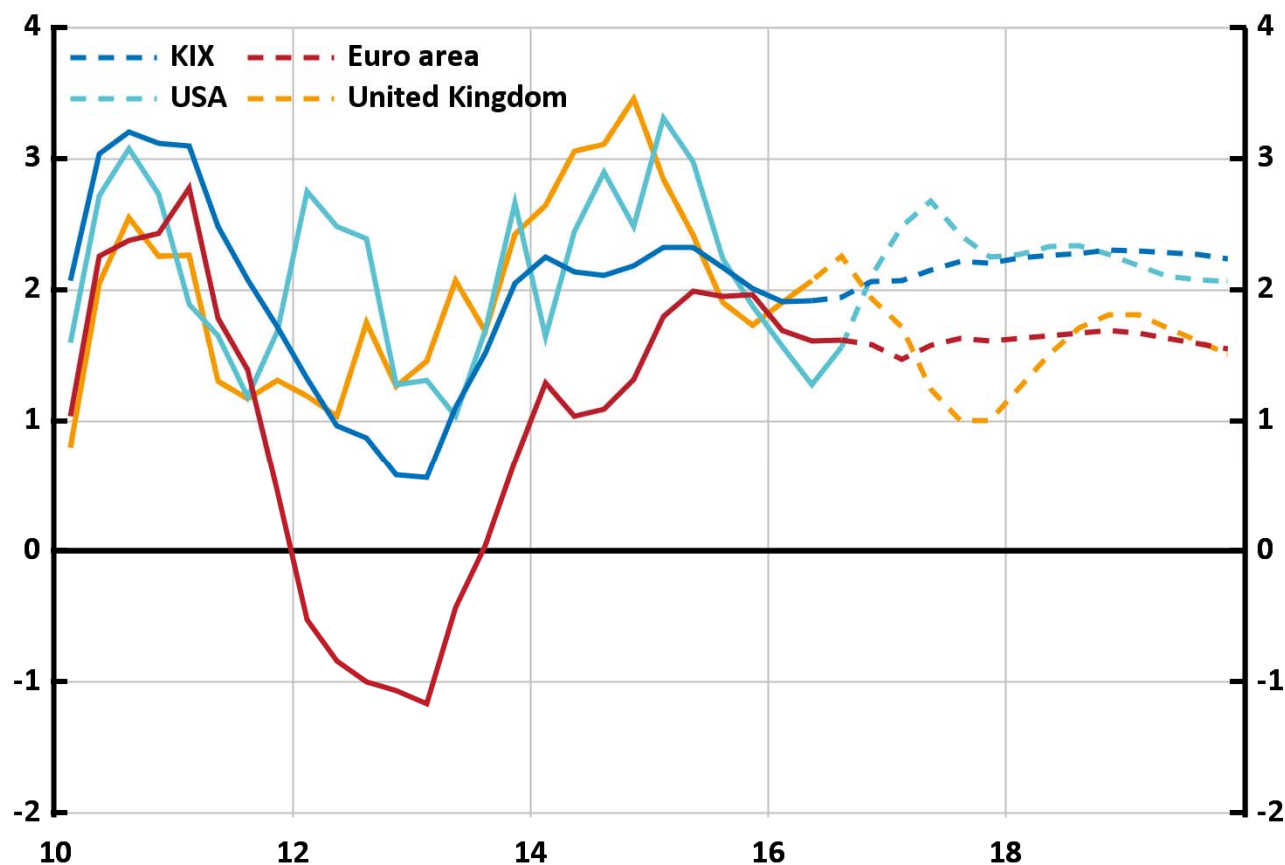
Chapter 4



S V E R I G E S R I K S B A N K

Figure 4.1. Growth in various countries and regions

Annual percentage change



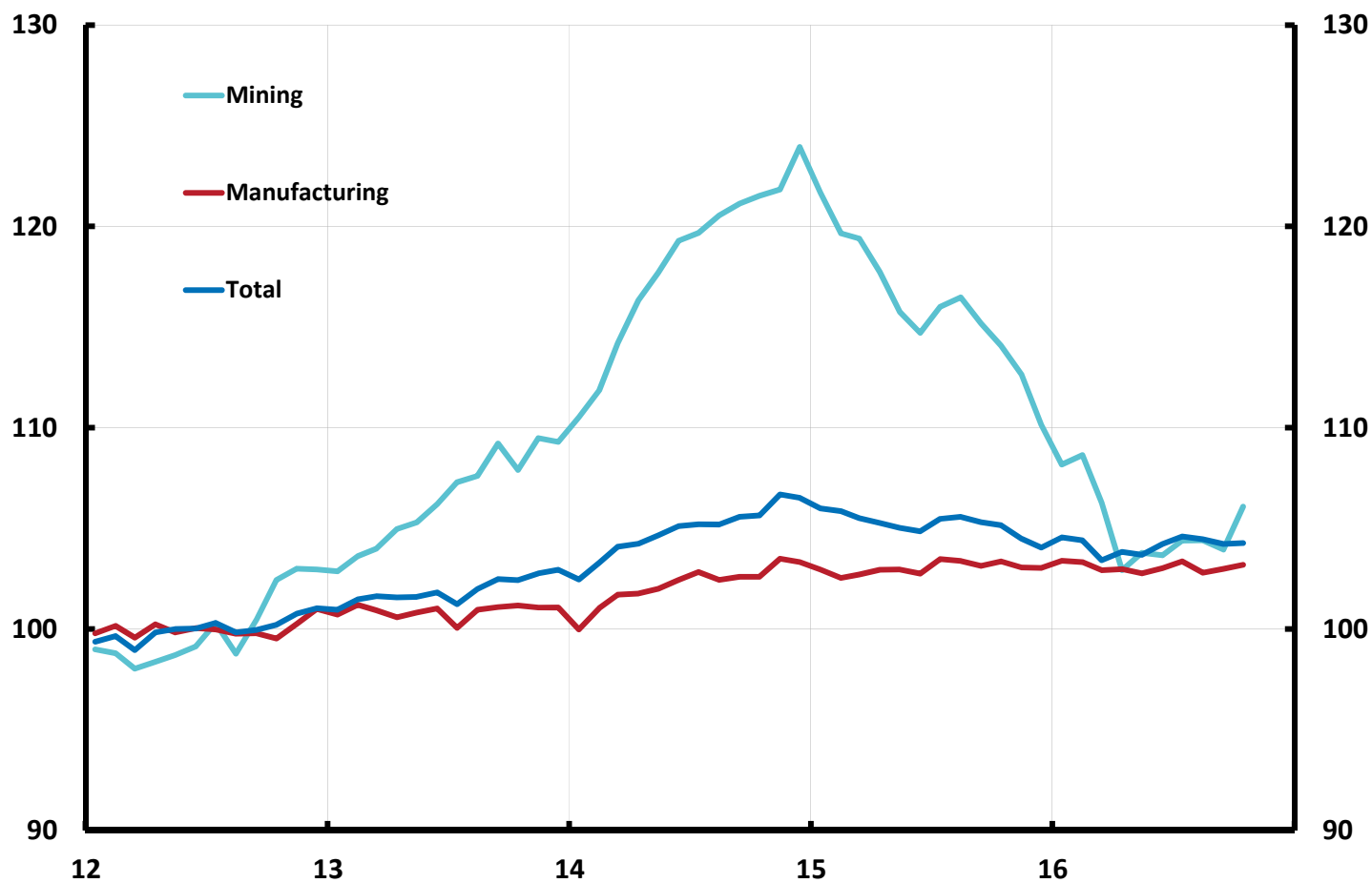
Note. KIX is an aggregate of the countries that are important to Sweden's international transactions.

Sources: Bureau of Economic Analysis, Eurostat, national sources, Office for National Statistics and the Riksbank

Figure 4.2. Industrial production in USA



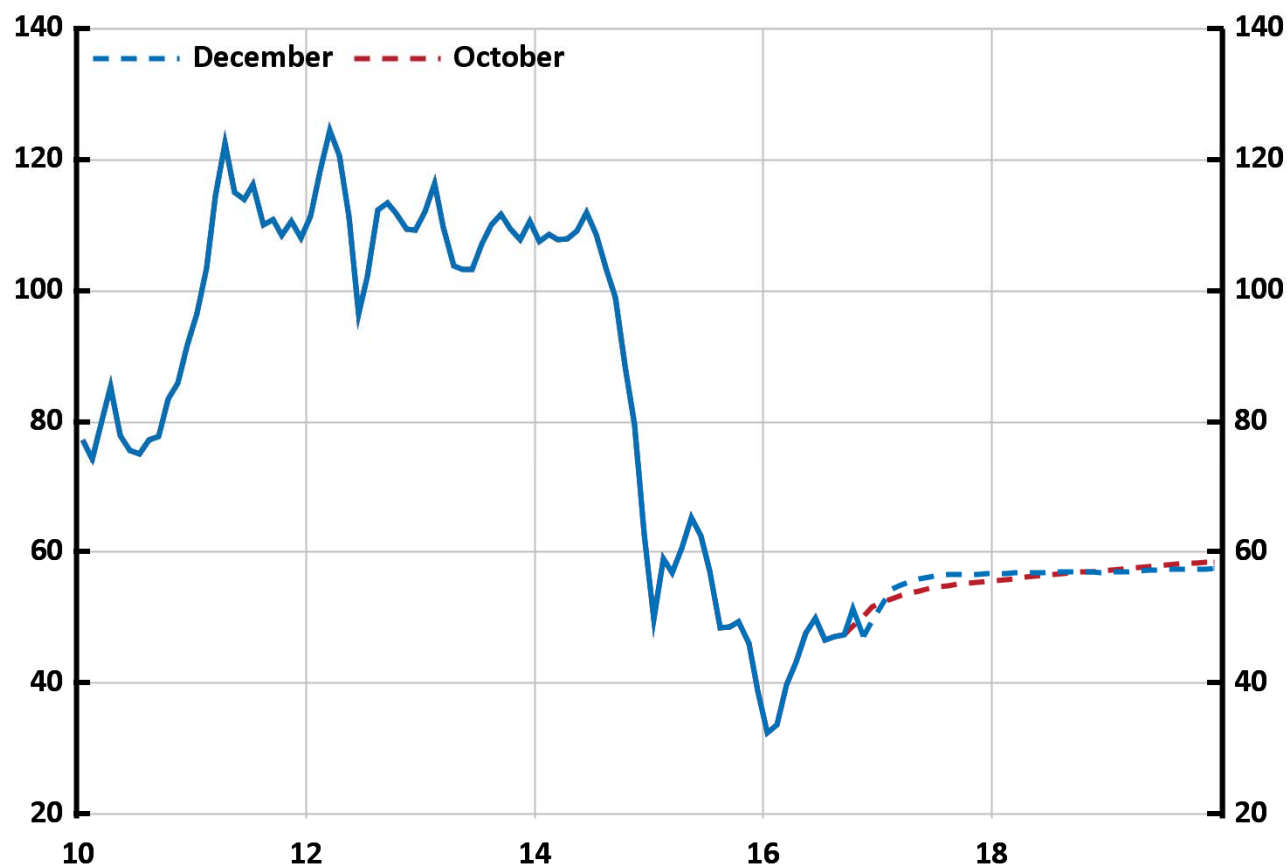
Index, 2012 = 100



Source: Federal Reserve

Figure 4.3. Crude Oil Price

USD per barrel

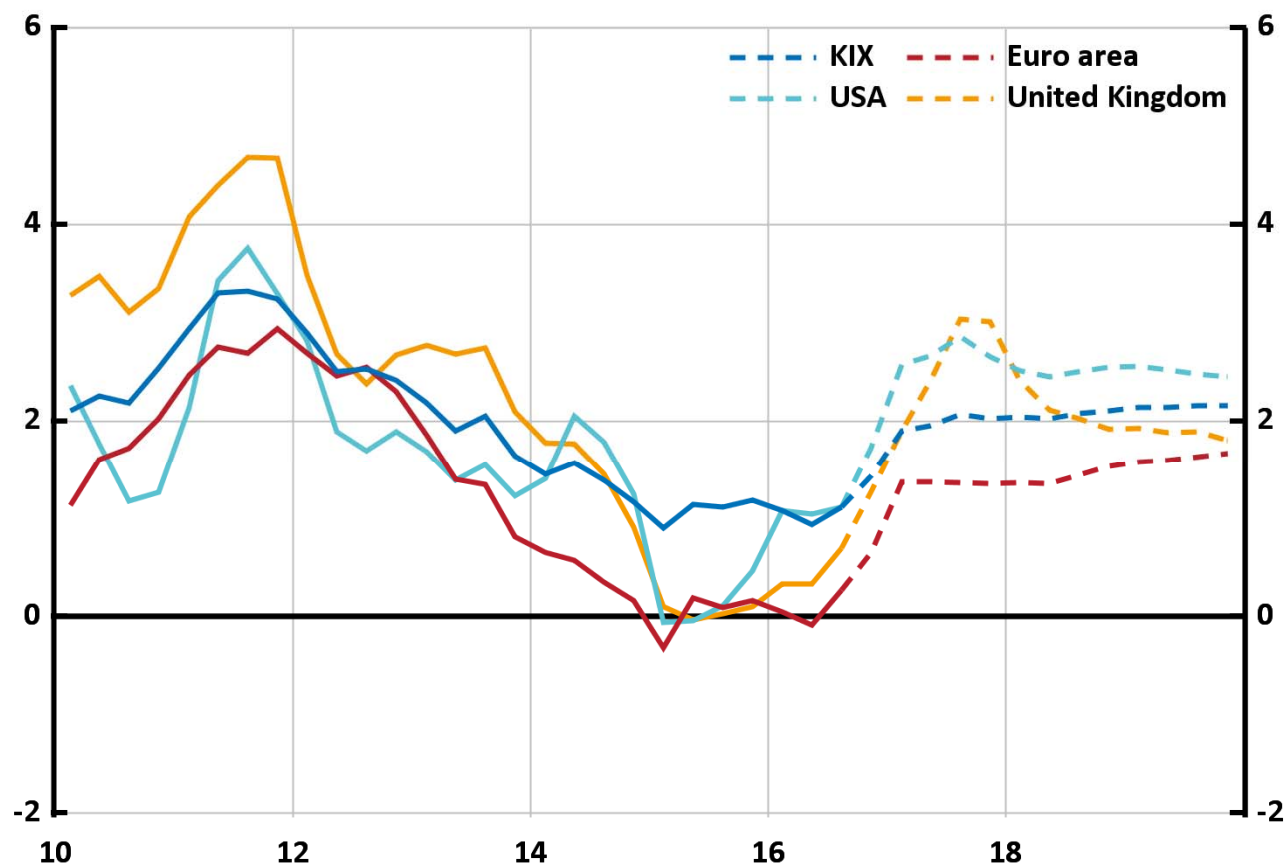


Note. Brent oil, futures are calculated as a 8-day average. Outcomes represent monthly averages of spot prices.

Sources: Macrobond and the Riksbank

Figure 4.4. Inflation in various countries and regions

Annual percentage change

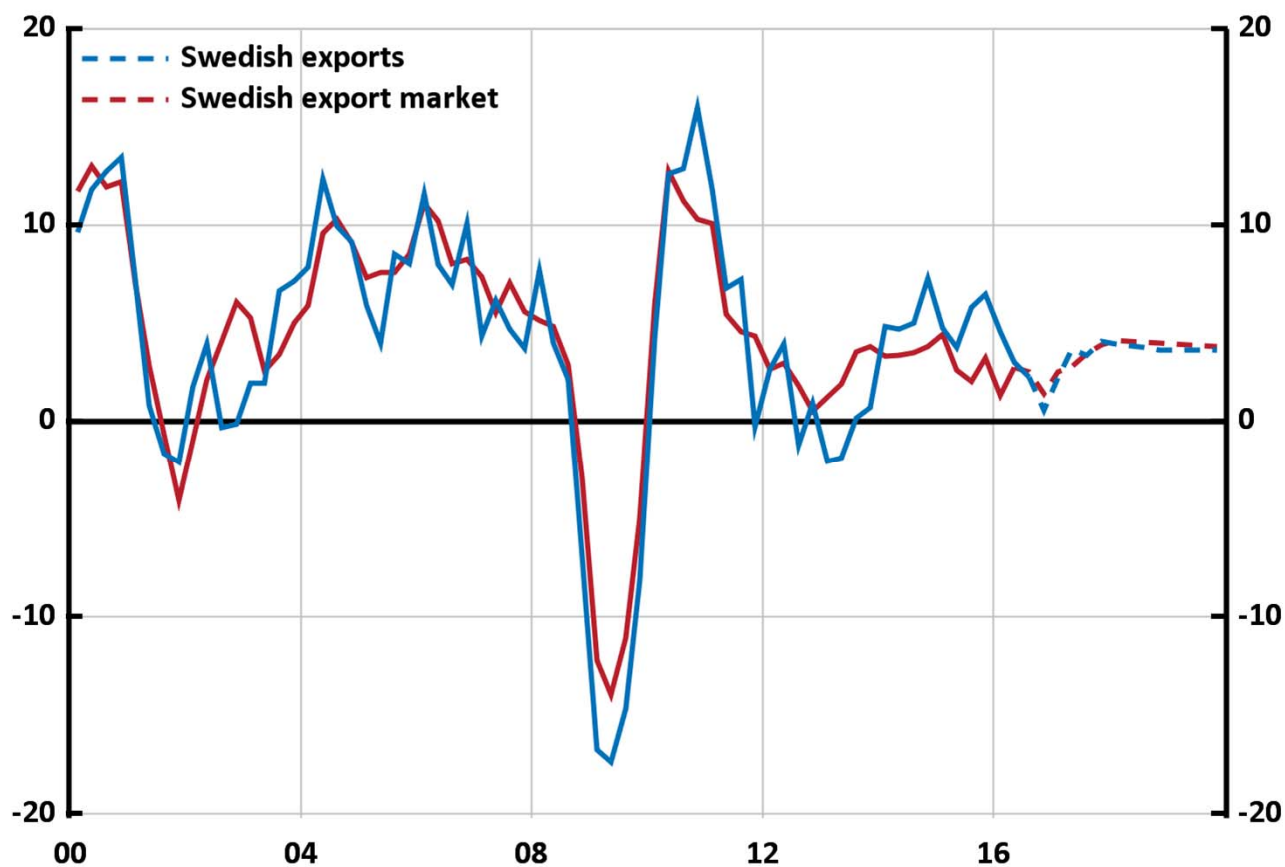


Note. KIX is an aggregate of the countries that are important to Sweden's international transactions. When calculating KIX-weighted inflation, the HICP is used for the euro area and the CPI for other countries. Inflation for the euro area is shown measured using the HICP and for the United States and the United Kingdom measured using the CPI.

Sources: The Bureau of Labor Statistics, Eurostat, national sources, Office for National Statistics and the Riksbank

Figure 4.5. Exports and the Swedish export market

Annual percentage change, calendar-adjusted data

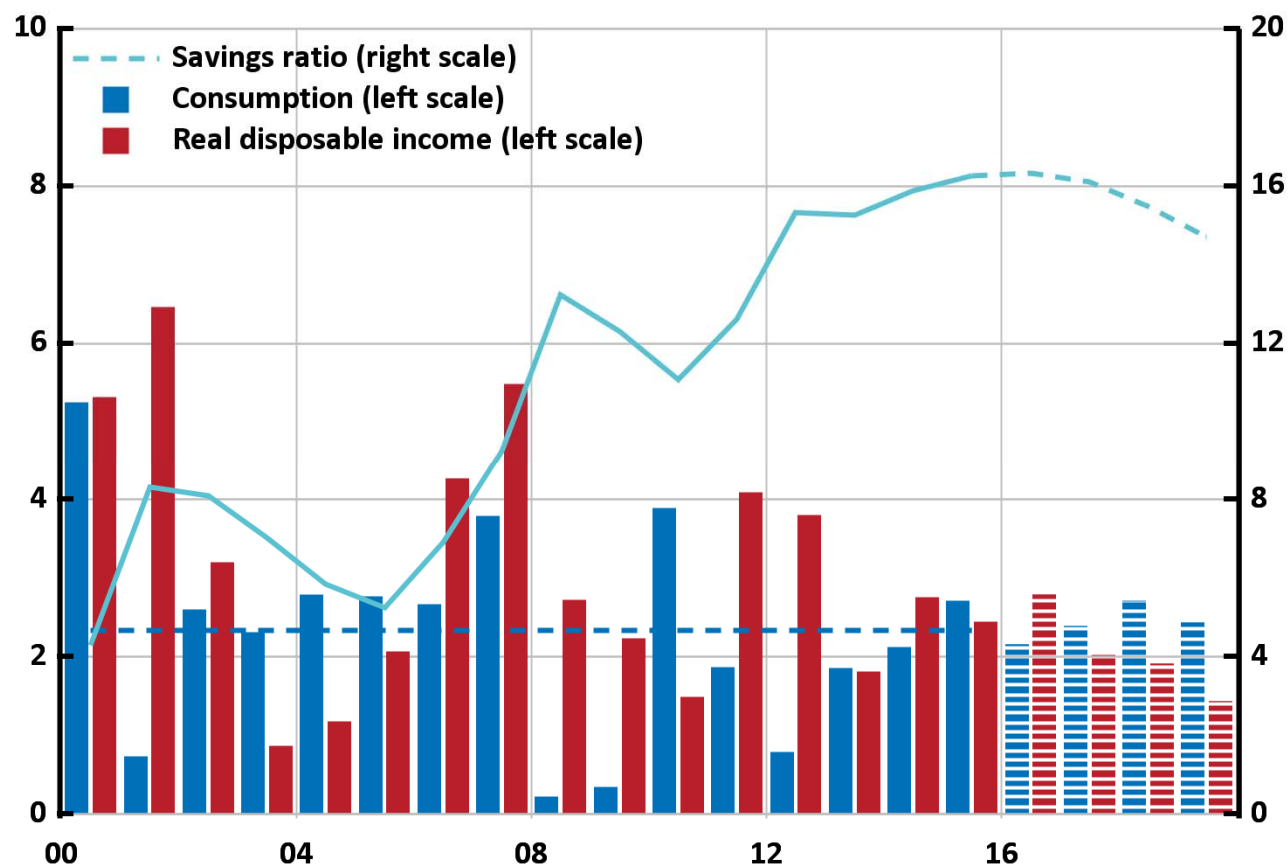


Note. The Swedish export market index measure import demand in the countries to which Sweden exports. This is calculated by aggregating 32 countries and covers around 85 per cent of the Swedish export market.

Sources: Statistics Sweden and the Riksbank

Figure 4.6. Households' income, consumption and savings ratio

Annual percentage change and per cent of disposable income

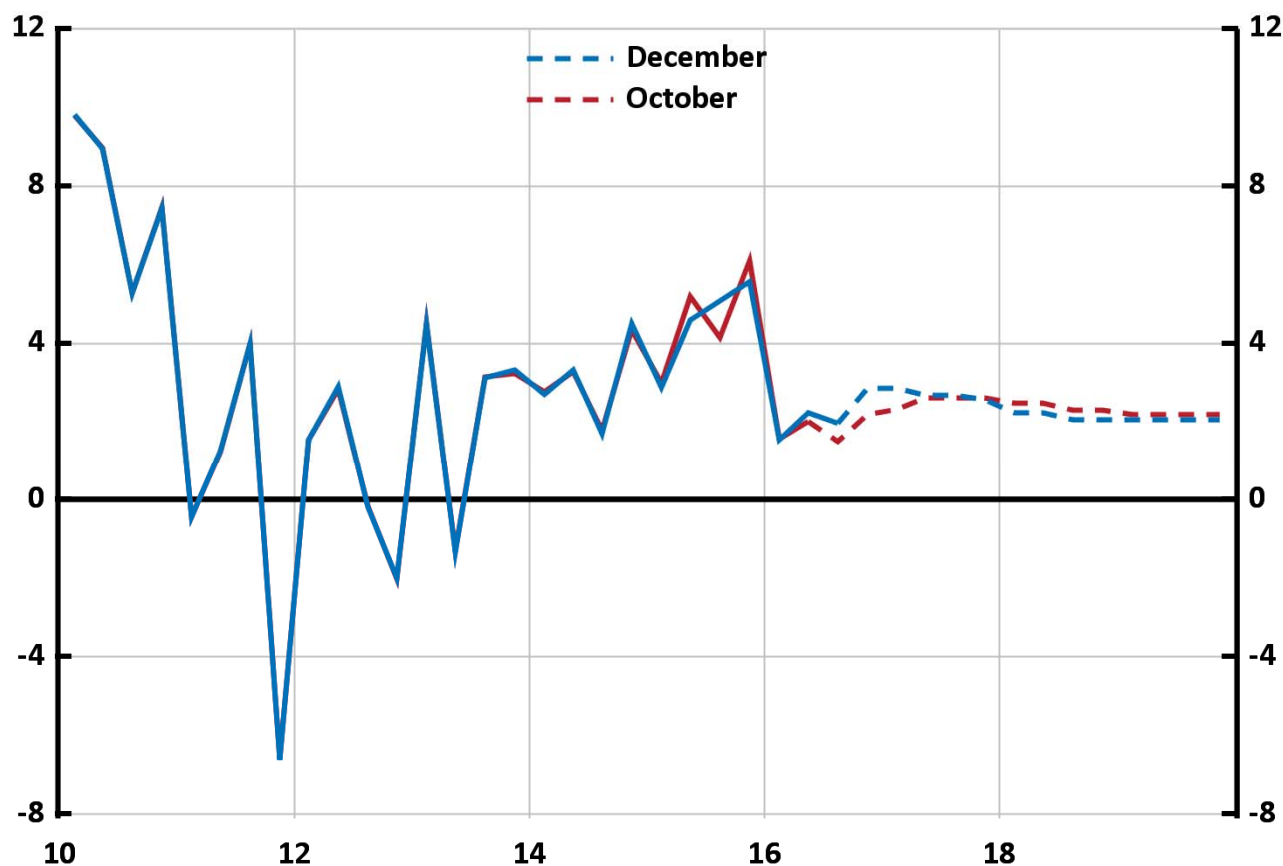


Note. The savings ratio includes collective insurance schemes. Disposable income has been deflated using the household consumption deflator. Broken line is the average of consumption between 1994 and 2015.

Sources: Statistics Sweden and the Riksbank

Figure 4.7. GDP in Sweden

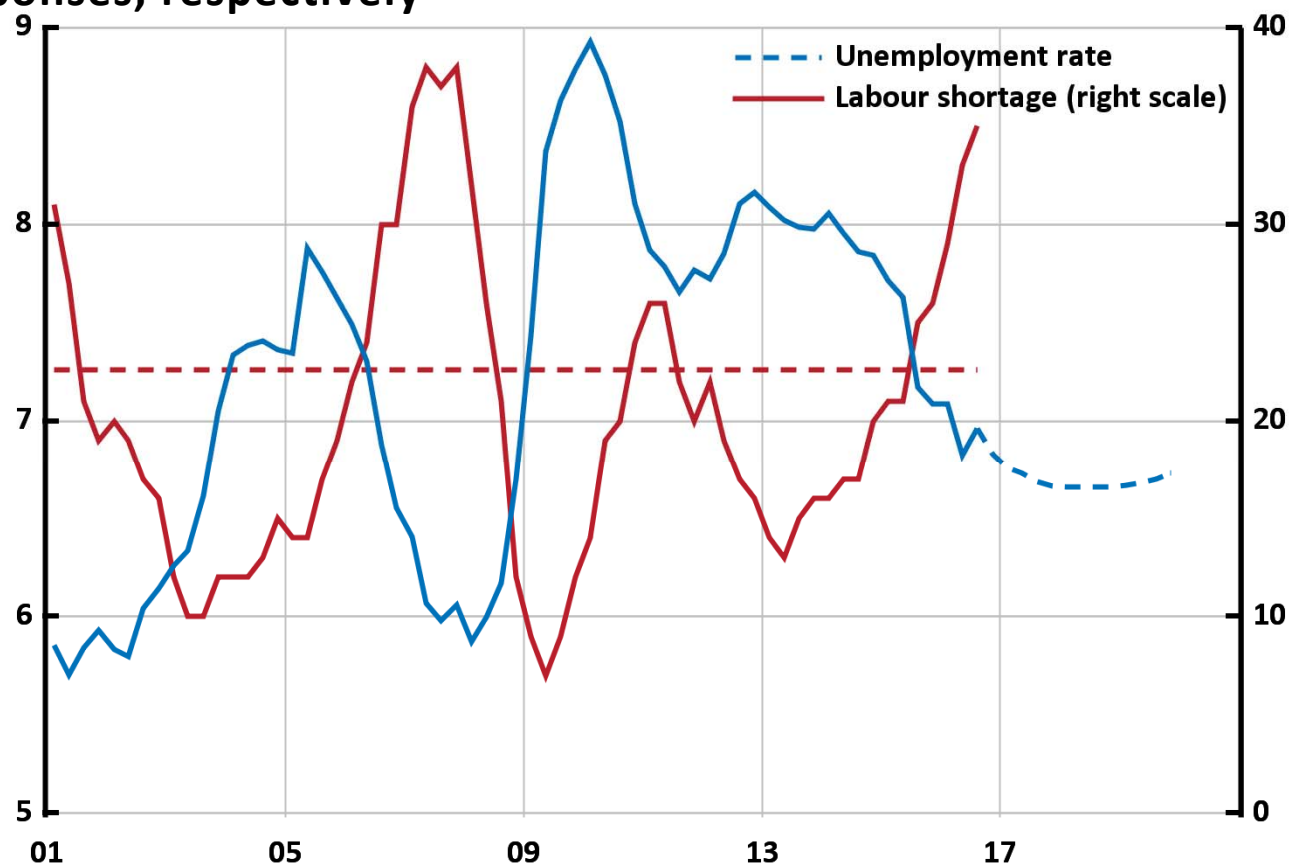
Quarterly change in per cent, calculated as an annual percentage change, seasonally-adjusted data



Sources: Statistics Sweden and the Riksbank

Figure 4.8. Unemployment and labour shortage

Per cent of labour force, 15–74 years, and percentage of positive responses, respectively

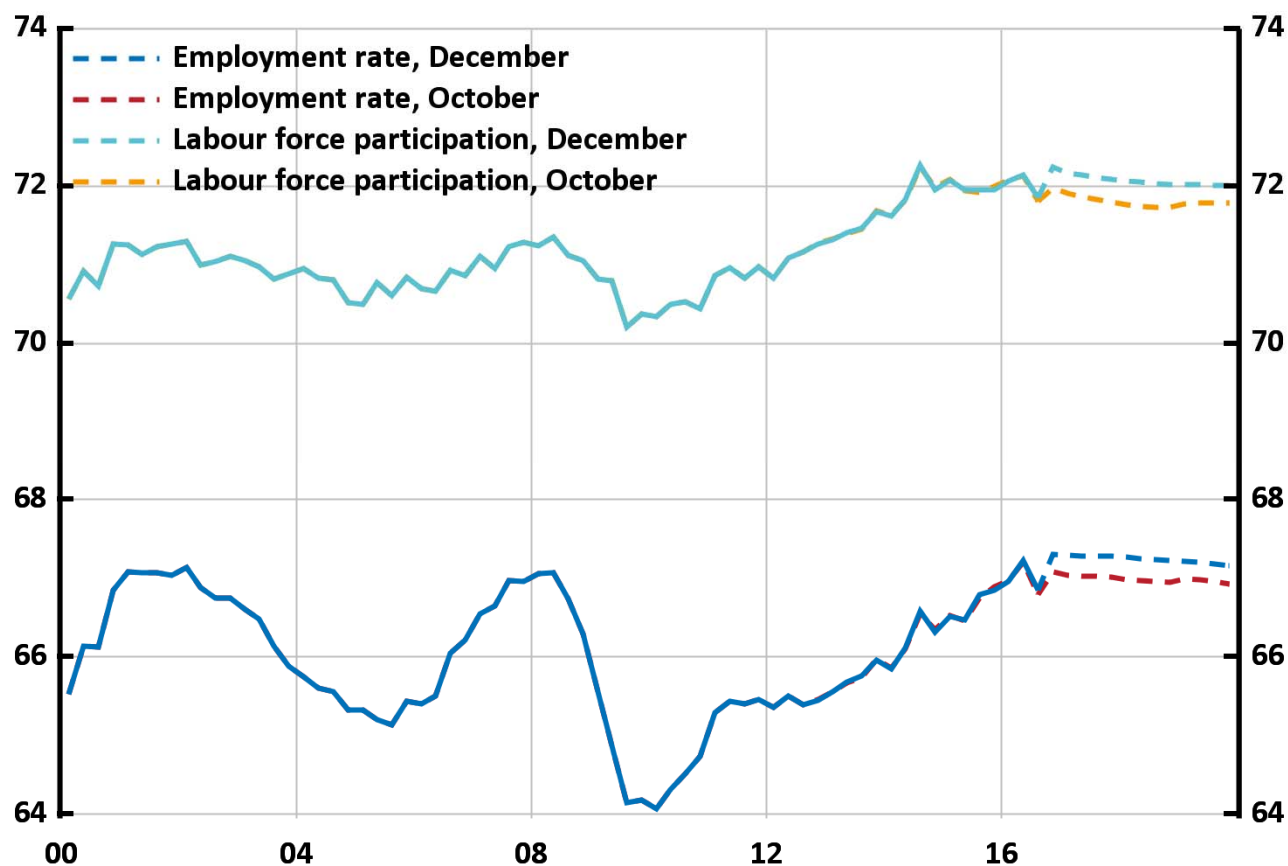


Note. Red broken lines refer to average between 1996 and the latest outcome.

Sources: The National Institute of Economic Research, Statistics Sweden and the Riksbank

Figure 4.9. Employment rate and labour force participation

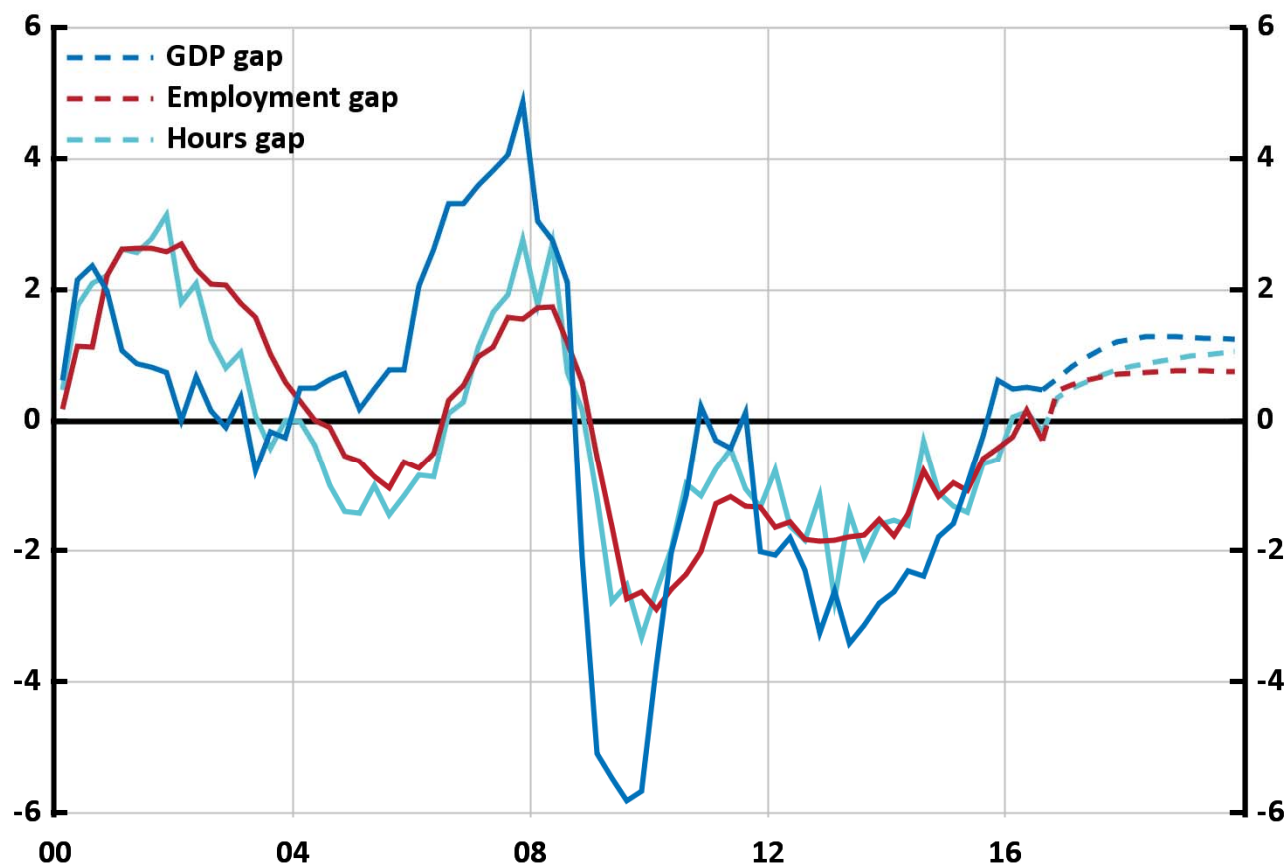
Employment and labour force as percentage of the population, aged 15–74, seasonally-adjusted data



Sources: Statistics Sweden and the Riksbank

Figure 4.10. GDP gap, employment gap and hours gap

Per cent

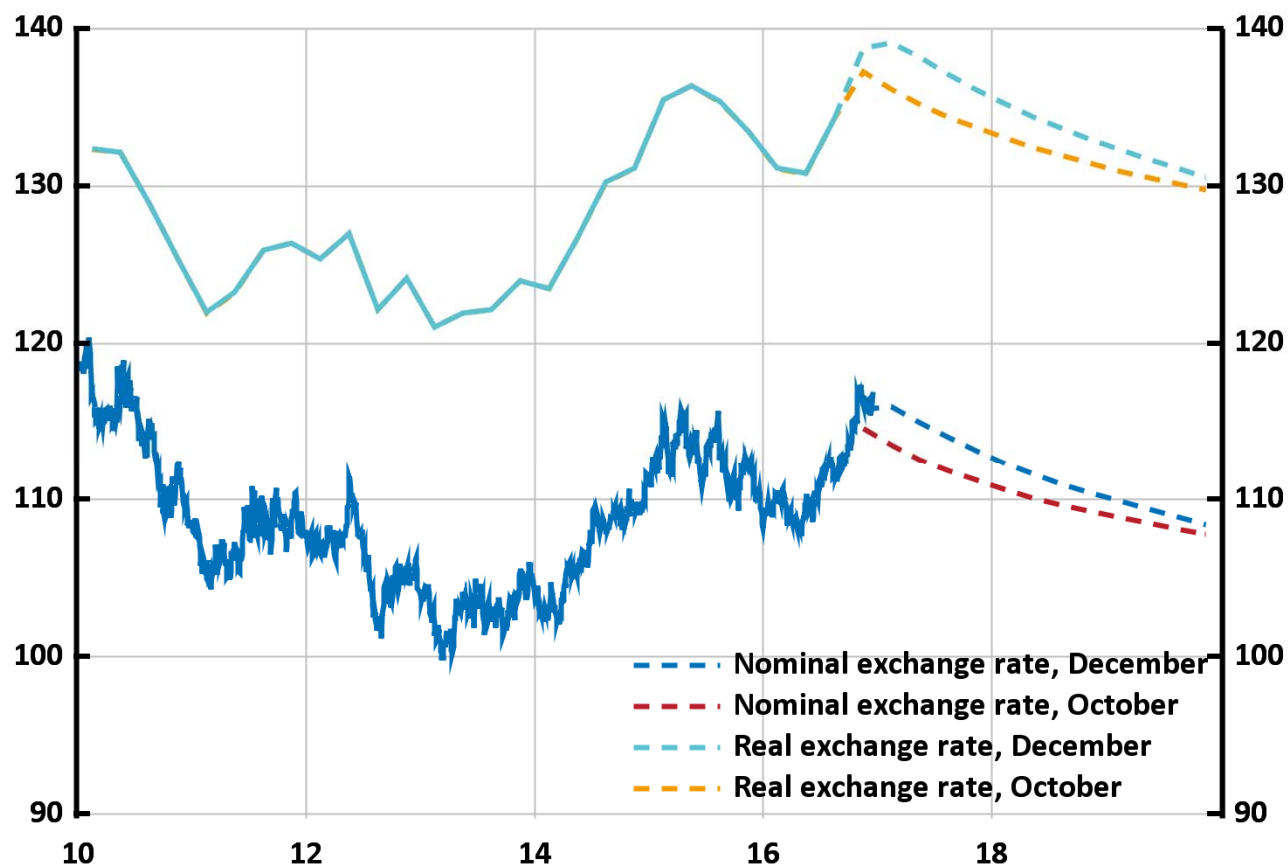


Note. The gaps refer to the deviation in GDP, the number of hours worked and the number of those employed from the Riksbank's assessed trends.

Sources: Statistics Sweden and the Riksbank

Figure 4.11. Real and nominal exchange rate, KIX

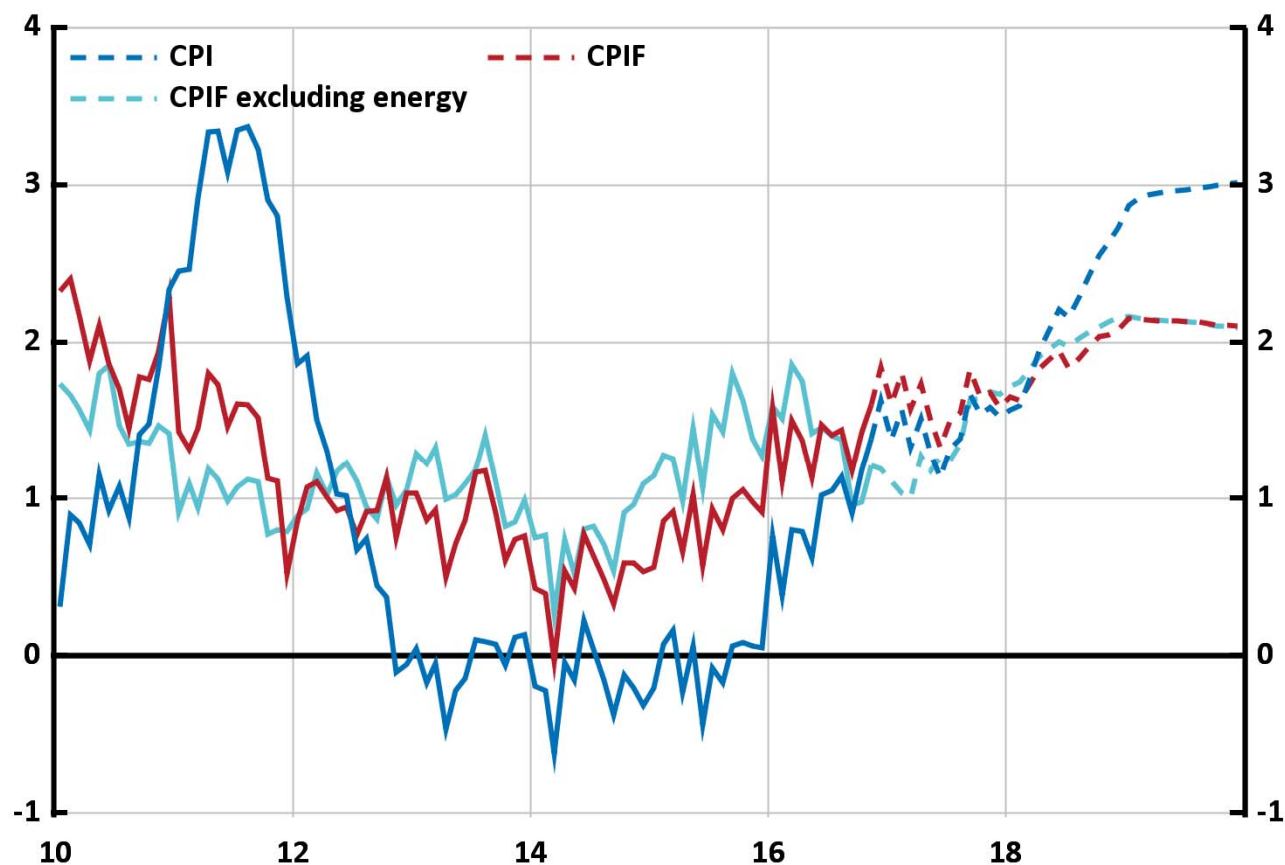
Index, 18 November 1992 = 100



Sources: National sources, Statistics Sweden and the Riksbank

Figure 4.12. CPI, CPIF and CPIF excluding energy

Annual percentage change

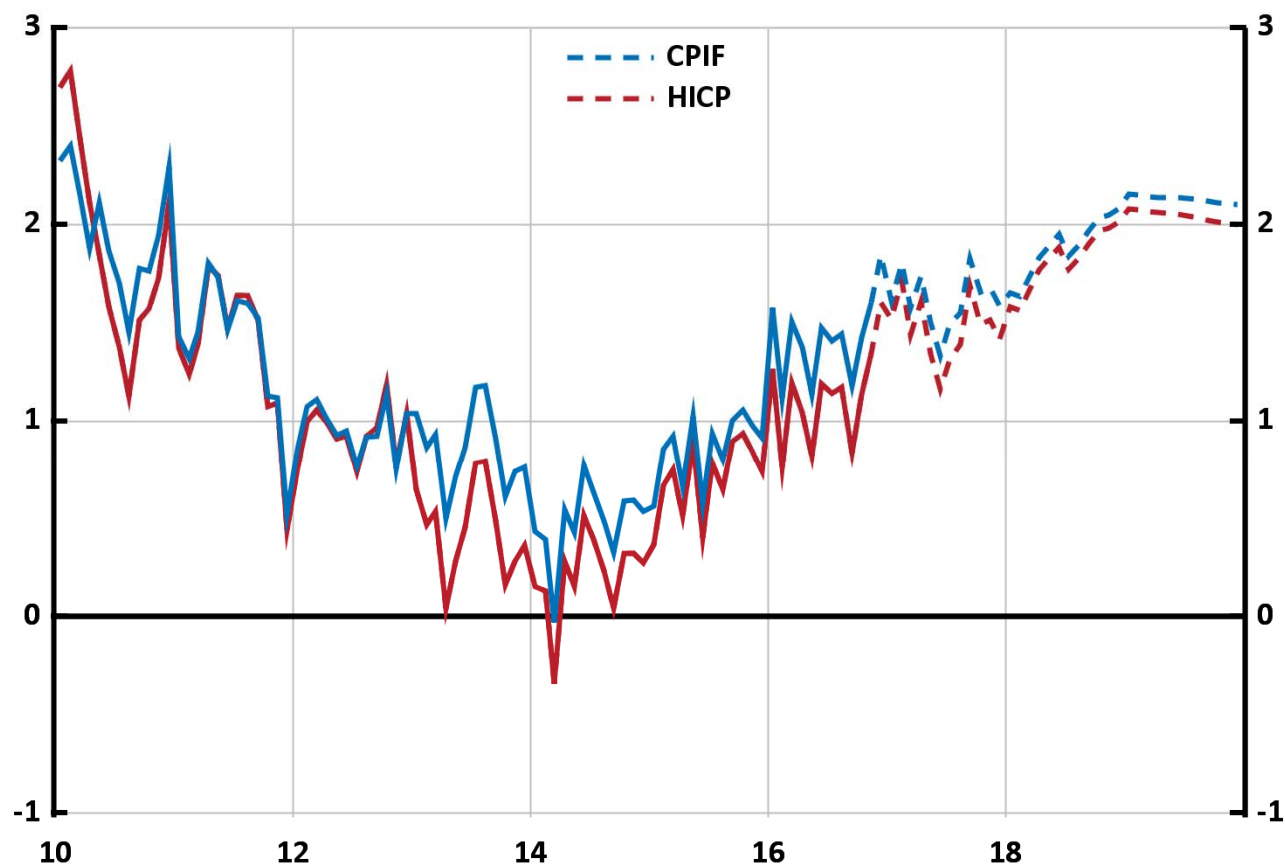


Note. The CPIF is the CPI with a fixed mortgage rate.

Sources: Statistics Sweden and the Riksbank

Figure 4.13. CPIF and HICP

Annual percentage change

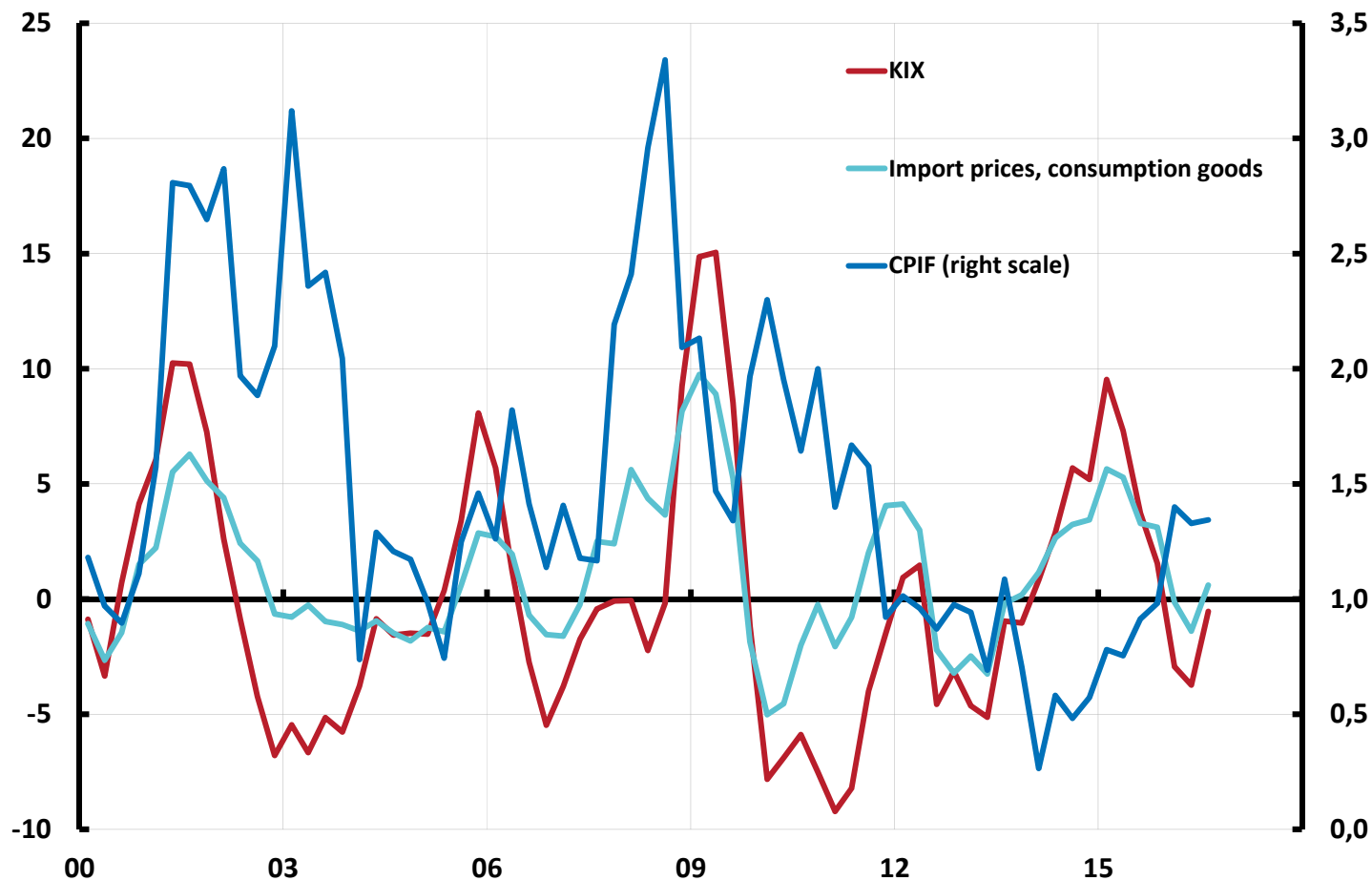


Note. The CPIF is the CPI with a fixed mortgage rate.

Sources: Statistics Sweden and the Riksbank

Figure 4.14. Nominal exchange rate (KIX), import prices for consumer goods in the producer sector and consumer prices (CPIF)

Annual percentage change



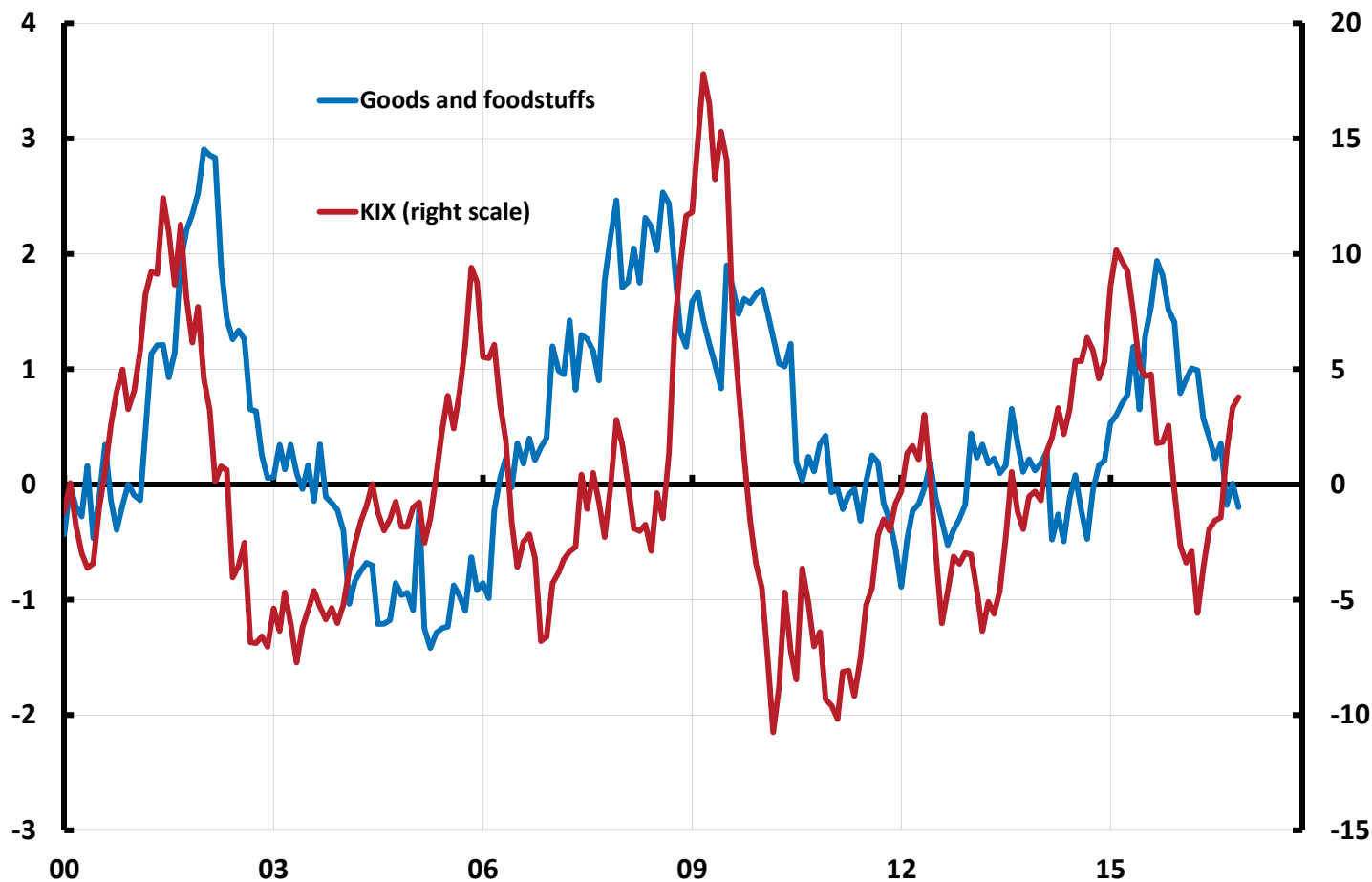
Note. The import prices refer to consumer goods in the producer sector. The CPIF is the CPI with a fixed interest rate.

Sources: Statistics Sweden and the Riksbank

Figure 4.15. Nominal exchange rate (KIX) and goods and foodstuffs in the CPI



Annual percentage change



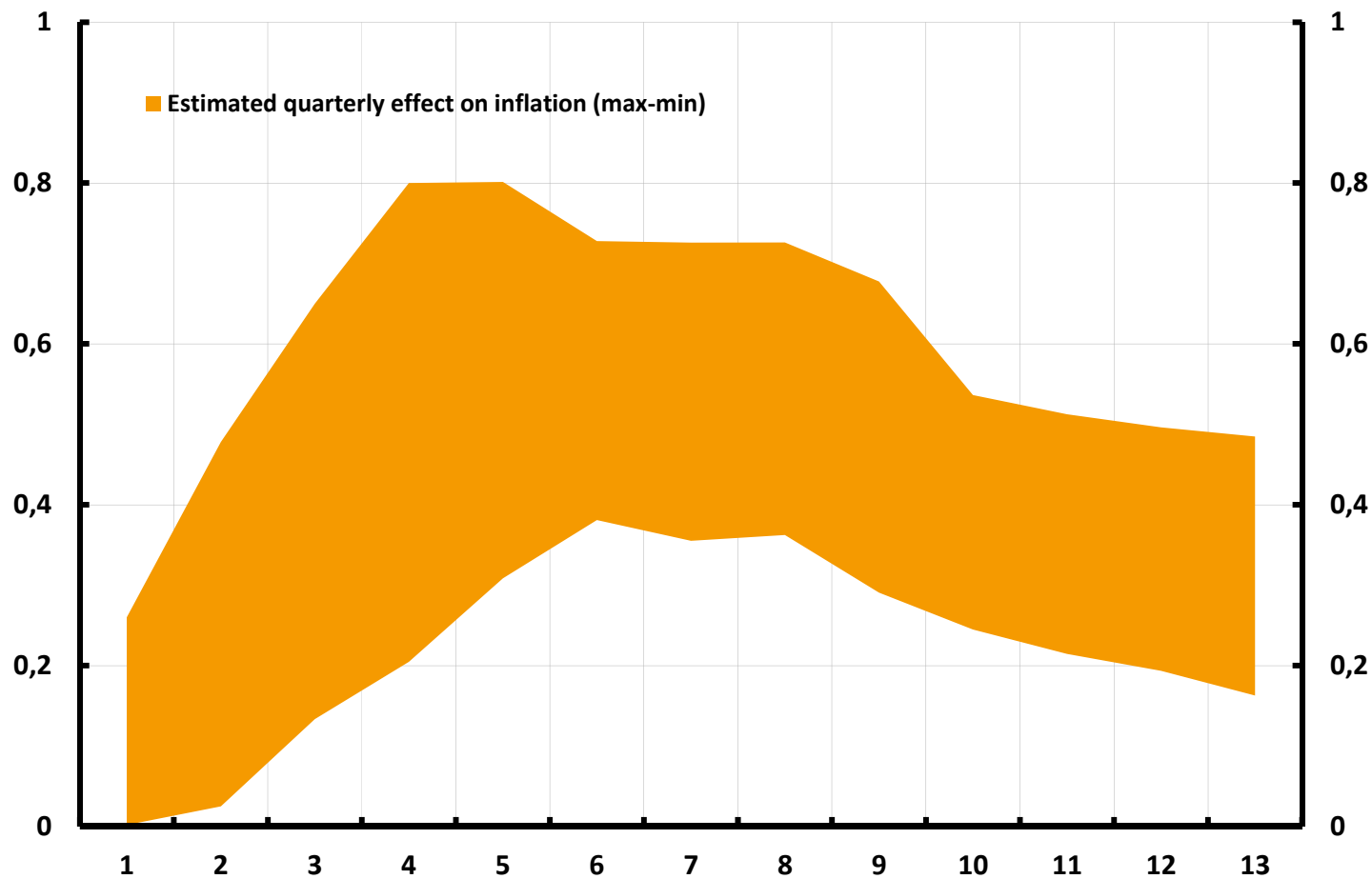
Note. Goods and foodstuffs is a combination of the aggregate goods and foodstuffs in the CPI. Together, these account for 43 per cent of the CPI.

Sources: Statistics Sweden and the Riksbank

Figure 4.16. Effect of CPIF inflation when the exchange rate is weakened by 10 per cent



Percentage points

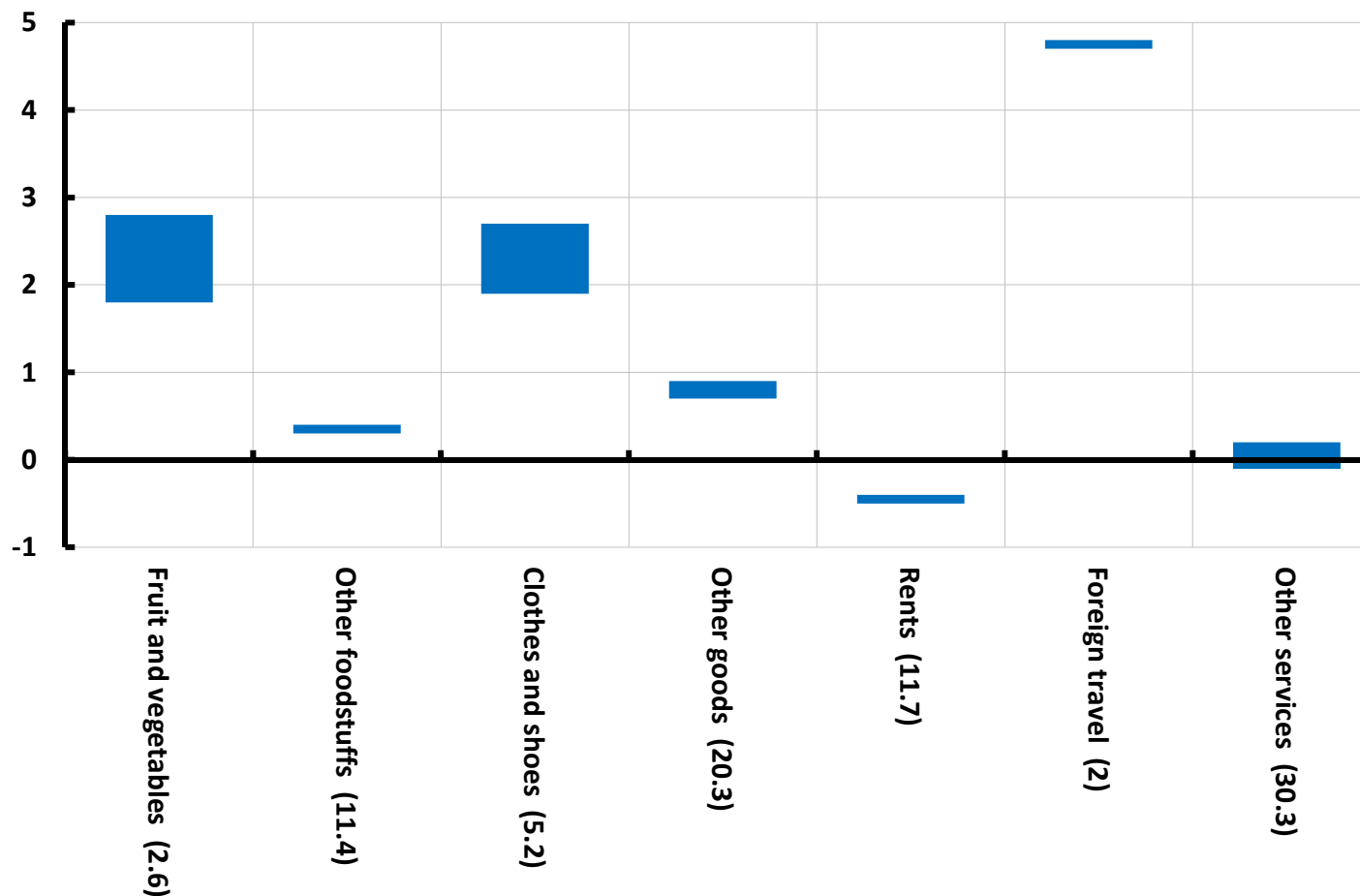


Note. The figure does not consider uncertainty around the estimated parameters.

Sources: Statistics Sweden and the Riksbank

Figure 4.17. Maximum effect on the rate of price increase when the exchange rate is weakened by 10 per cent

Percentage points



Note. The figures in brackets refer to the weight in the CPI.

Sources: Statistics Sweden and the Riksbank

Tables



S V E R I G E S R I K S B A N K

The forecast in the previous Monetary Policy Report is shown in brackets unless otherwise stated.

Table 1. Repo rate forecast

Per cent, quarterly averages

	Q3 2016	Q4 2016	Q1 2017	Q4 2017	Q4 2018	Q4 2019
Repo rate	-0.5	-0.5 (-0.5)	-0.5 (-0.6)	-0.6 (-0.6)	-0.1 (-0.1)	0.4 (0.4)

Source: The Riksbank

Table 2. Inflation

Annual percentage change, annual average

	2015	2016	2017	2018	2019
CPI	0.0	1.0 (1.0)	1.4 (1.4)	2.2 (2.2)	3.0 (2.9)
CPIF	0.9	1.4 (1.4)	1.6 (1.6)	1.9 (1.9)	2.1 (2.1)
CPIF excl. energy	1.4	1.4 (1.4)	1.3 (1.4)	2.0 (2.0)	2.1 (2.1)
HICP	0.7	1.1 (1.1)	1.5 (1.5)	1.8 (1.9)	2.0 (2.1)

Note. The CPIF is the CPI with a fixed mortgage rate. HICP is an EU harmonised index of consumer prices.

Sources: Statistics Sweden and the Riksbank

Table 3. Summary of financial forecasts

Per cent, unless otherwise stated, annual average

	2015	2016	2017	2018	2019
Repo rate	-0.3	-0.5 (-0.5)	-0.6 (-0.6)	-0.3 (-0.3)	0.2 (0.2)
10-year rate	0.8	0.5 (0.5)	1.1 (0.7)	2.0 (1.7)	2.8 (2.5)
Exchange rate, KIX, 18 November 1992 = 100	112.6	111.7 (111.4)	114.5 (112.3)	111.3 (109.9)	109.2 (108.3)
General government net lending*	0.2	0.4 (0.1)	0.1 (0.0)	0.3 (0.2)	0.6 (0.6)

* Per cent of GDP

Sources: Statistics Sweden and the Riksbank

Table 4. International conditions

Annual percentage change, unless otherwise stated

GDP	PPP-weights	KIX-weights	2015	2016	2017	2018	2019
Euro area	0.14	0.46	1.9	1.6 (1.6)	1.6 (1.4)	1.7 (1.7)	1.6 (1.6)
USA	0.16	0.09	2.6	1.6 (1.6)	2.5 (2.4)	2.3 (2.1)	2.1 (2.0)
Japan	0.05	0.03	1.2	1.0 (0.6)	1.0 (0.9)	0.8 (0.9)	0.8 (0.8)
China	0.15	0.08	6.9	6.7 (6.7)	6.2 (6.2)	5.8 (5.9)	5.7 (5.7)
KIX-weighted	0.75	1.00	2.2	2.0 (2.0)	2.2 (2.1)	2.3 (2.3)	2.3 (2.3)
World (PPP-weighted)	1.00	—	3.2	3.2 (3.1)	3.5 (3.5)	3.6 (3.6)	3.7 (3.7)

Note. Calendar-adjusted growth rates. The PPP-weights refer to the global purchasing-power adjusted GDP-weights, according to the IMF. The Riksbank updates the weights for the KIX krona index at the start of every year with a time lag of three years. The figures in the table are based on the new KIX weights for 2012 that are used for 2015, and on an assumption that the weights will develop according to the trend of the past five years in the coming forecast years.

CPI	2015	2016	2017	2018	2019
Euro area (HICP)	0.0	0.2 (0.2)	1.4 (1.3)	1.4 (1.5)	1.6 (1.7)
USA	0.1	1.2 (1.2)	2.7 (2.5)	2.5 (2.4)	2.5 (2.3)
Japan	0.8	-0.1 (-0.1)	0.7 (0.8)	1.5 (1.6)	1.8 (1.9)
KIX-weighted	1.1	1.1 (1.1)	2.0 (2.0)	2.1 (2.1)	2.1 (2.2)

	2015	2016	2017	2018	2019
Policy rates in the rest of the world, per cent	0.1	-0.1 (-0.1)	-0.1 (-0.2)	0.0 (-0.2)	0.2 (0.1)
Crude oil price, USD/barrel Brent	53.5	44.6 (44.9)	55.7 (54.3)	56.9 (56.5)	57.3 (57.9)
Swedish export market	3.1	2.0 (1.9)	3.2 (3.1)	4.0 (4.0)	3.9 (3.8)

Note. Policy rates in the rest of the world refer to a weighted average of USA, the euro area, Norway and the United Kingdom.

Sources: Eurostat, IMF, Intercontinental Exchange, national sources, OECD and the Riksbank

Table 5. GDP by expenditure

Annual percentage change, unless otherwise stated

	2015	2016	2017	2018	2019
Private consumption	2.7	2.2 (2.4)	2.4 (2.3)	2.7 (2.7)	2.4 (2.4)
Public consumption	2.5	3.6 (3.8)	2.0 (2.3)	1.4 (1.4)	1.2 (1.2)
Gross fixed capital formation	7.0	7.1 (7.4)	3.5 (3.2)	2.8 (4.1)	2.8 (4.2)
Inventory investment*	0.3	0.3 (0.2)	0.0 (−0.1)	0.0 (0.0)	0.0 (0.0)
Exports	5.6	2.9 (2.3)	2.9 (2.2)	3.6 (3.6)	3.6 (3.6)
Imports	5.5	4.4 (4.4)	3.5 (3.3)	4.0 (4.4)	4.0 (4.5)
GDP	4.1	3.4 (3.3)	2.4 (2.0)	2.2 (2.4)	2.1 (2.2)
GDP, calendar-adjusted	3.8	3.2 (3.0)	2.6 (2.3)	2.4 (2.5)	2.1 (2.2)
Final figure for domestic demand*	3.5	3.6 (3.8)	2.4 (2.4)	2.3 (2.6)	2.1 (2.5)
Net exports*	0.3	−0.5 (−0.7)	−0.1 (−0.4)	0.0 (−0.2)	0.0 (−0.2)
Current account (NA), per cent of GDP	4.7	4.2 (4.6)	3.9 (4.0)	3.7 (3.7)	3.5 (3.3)

*Contribution to GDP growth, percentage points

Note. The figures show actual growth rates that have not been calendar-adjusted, unless otherwise stated. NA is the National Accounts.

Sources: Statistics Sweden and the Riksbank

Table 6. Production and employment

Annual percentage change, unless otherwise stated

	2015	2016	2017	2018	2019
Population, aged 15–74	0.7	0.9 (0.9)	1.0 (1.1)	0.7 (0.9)	0.6 (0.6)
Potential hours worked	0.8	0.7 (0.8)	0.6 (0.7)	0.5 (0.6)	0.5 (0.5)
GDP, calendar-adjusted	3.8	3.2 (3.0)	2.6 (2.3)	2.4 (2.5)	2.1 (2.2)
Number of hours worked, calendar-adjusted	1.0	1.9 (2.0)	1.2 (1.1)	0.8 (0.8)	0.6 (0.7)
Employed, aged 15–74	1.4	1.5 (1.4)	1.3 (1.1)	0.7 (0.8)	0.5 (0.6)
Labour force, aged 15–74	0.8	1.0 (0.9)	1.0 (0.9)	0.6 (0.8)	0.6 (0.7)
Unemployment, aged 15–74 *	7.4	6.9 (6.9)	6.7 (6.7)	6.7 (6.7)	6.7 (6.7)

* Per cent of the labour force

Note. Potential hours refer to the long-term sustainable level for the number of hours worked according to the Riksbank's assessment.

Sources: Statistics Sweden and the Riksbank

Table 7. Wages and labour costs for the economy as a whole

Annual percentage change, calendar-adjusted data unless otherwise stated

	2015	2016	2017	2018	2019
Hourly wage, NMO	2.4	2.5 (2.6)	3.1 (3.2)	3.4 (3.5)	3.6 (3.6)
Hourly wage, NA	3.5	2.8 (2.7)	3.4 (3.5)	3.6 (3.8)	3.7 (3.8)
Employers' contribution*	0.9	0.6 (0.6)	0.0 (0.0)	0.0 (–0.1)	0.0 (–0.1)
Hourly labour cost, NA	4.4	3.4 (3.3)	3.4 (3.5)	3.6 (3.7)	3.7 (3.7)
Productivity	2.8	1.3 (1.0)	1.4 (1.2)	1.5 (1.6)	1.4 (1.6)
Unit labour cost	1.5	2.0 (2.3)	1.9 (2.3)	2.0 (2.0)	2.3 (2.1)

* Contribution to the increase in labour costs, percentage points

Note. NMO is the National Mediation Office's short-term wage statistics and NA is the National Accounts. Labour cost per hour is defined as the sum of actual wages, social-security charges and wage taxes divided by the seasonally adjusted total number of hours worked. Unit labour cost is defined as labour cost divided by seasonally-adjusted value added at constant prices.

Sources: National Mediation Office, Statistics Sweden and the Riksbank