



# Monetary Policy Report July 2017

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



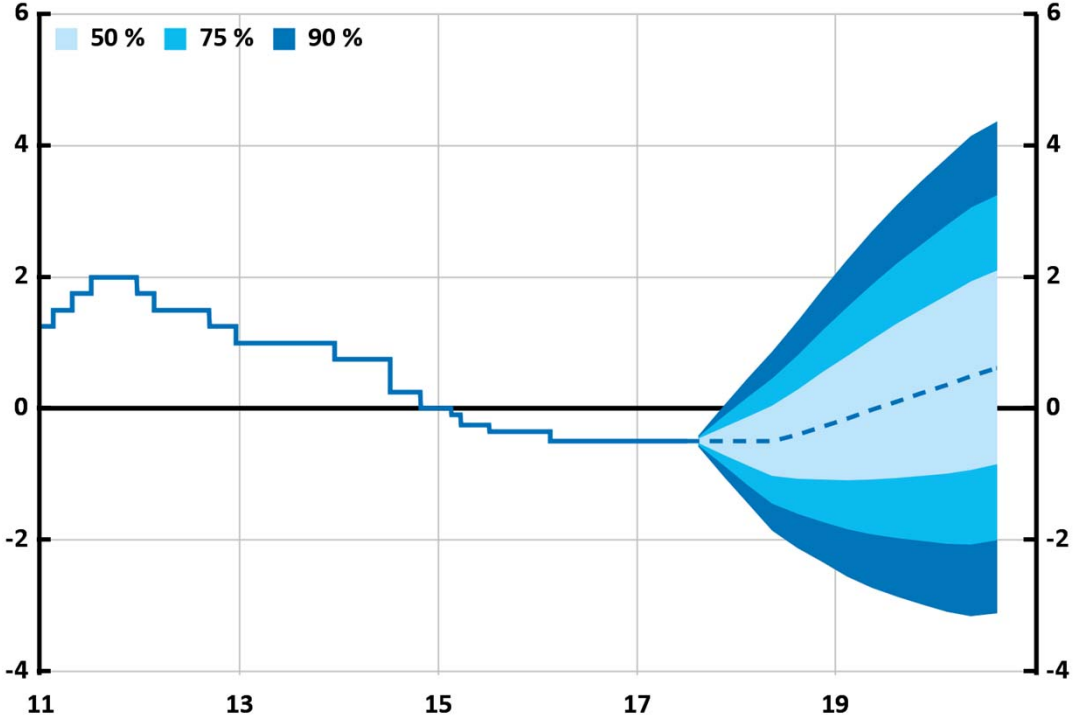
# Chapter 1

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



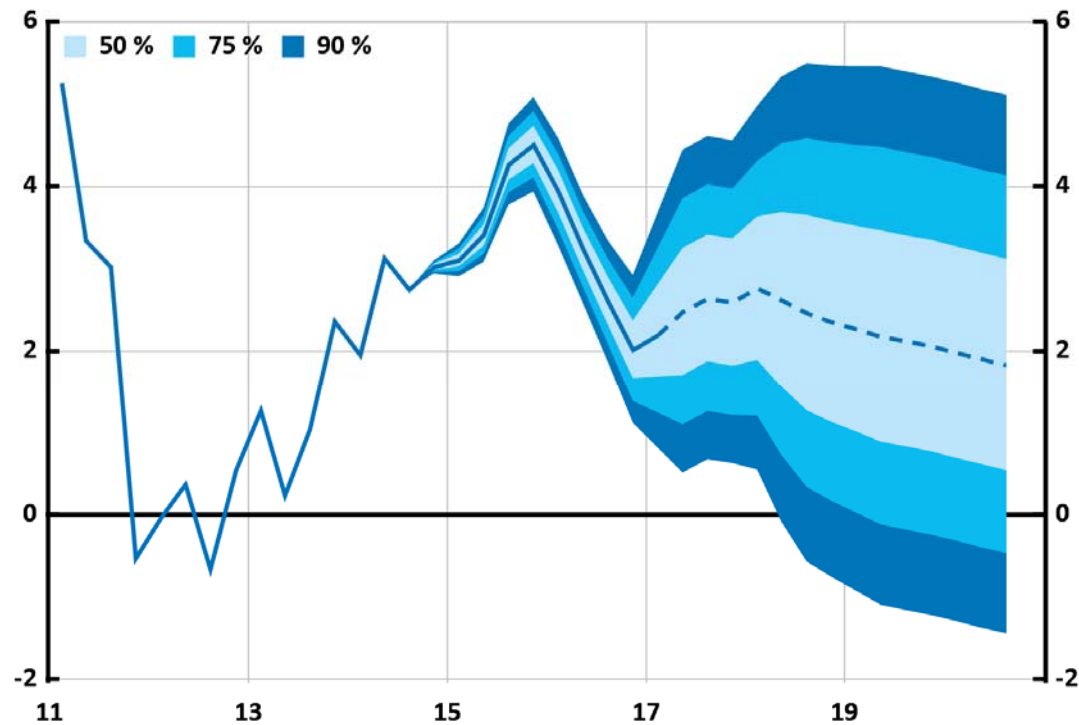
Note. The uncertainty bands for the repo rate are based on the Riksbank's historical forecasting errors and the ability of risk-premium adjusted forward rates to forecast the future repo rate for the period 1999 up to the point when the Riksbank started to publish forecasts for the repo rate during 2007. 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

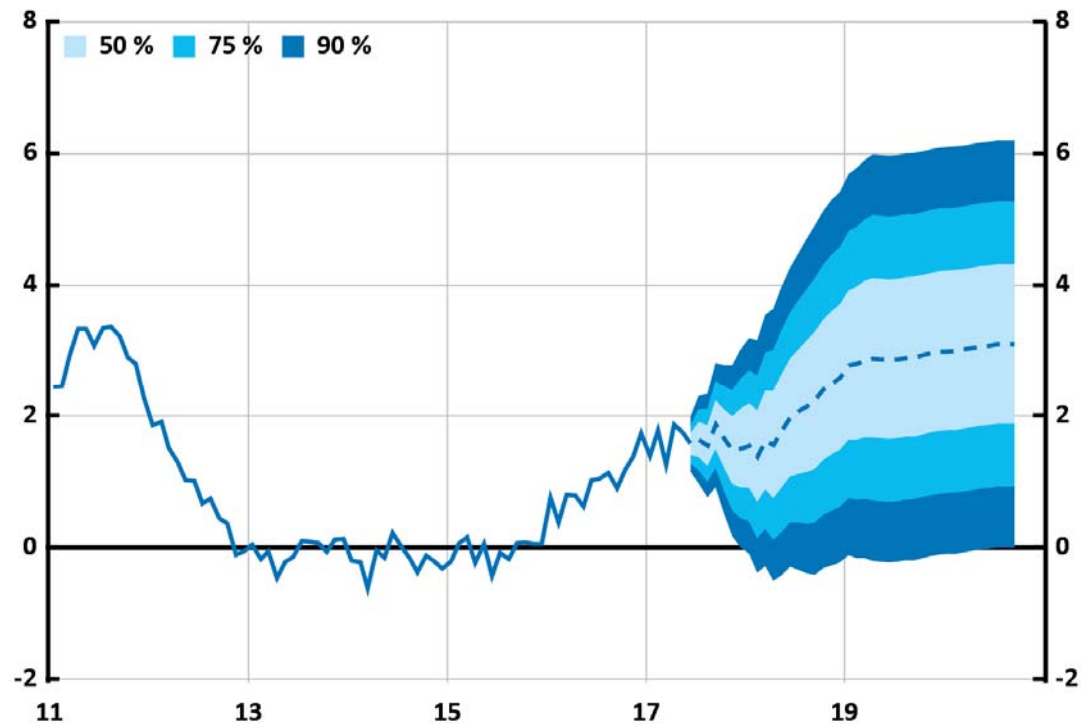


Note. The uncertainty bands are based on the Riksbank's historical forecasting errors. There is also uncertainty for the outcomes for GDP, as the figures in the National Accounts are revised several years after the preliminary publication.

Sources: Statistics Sweden and the Riksbank

# Figure 1.3. CPI with uncertainty bands

Annual percentage change

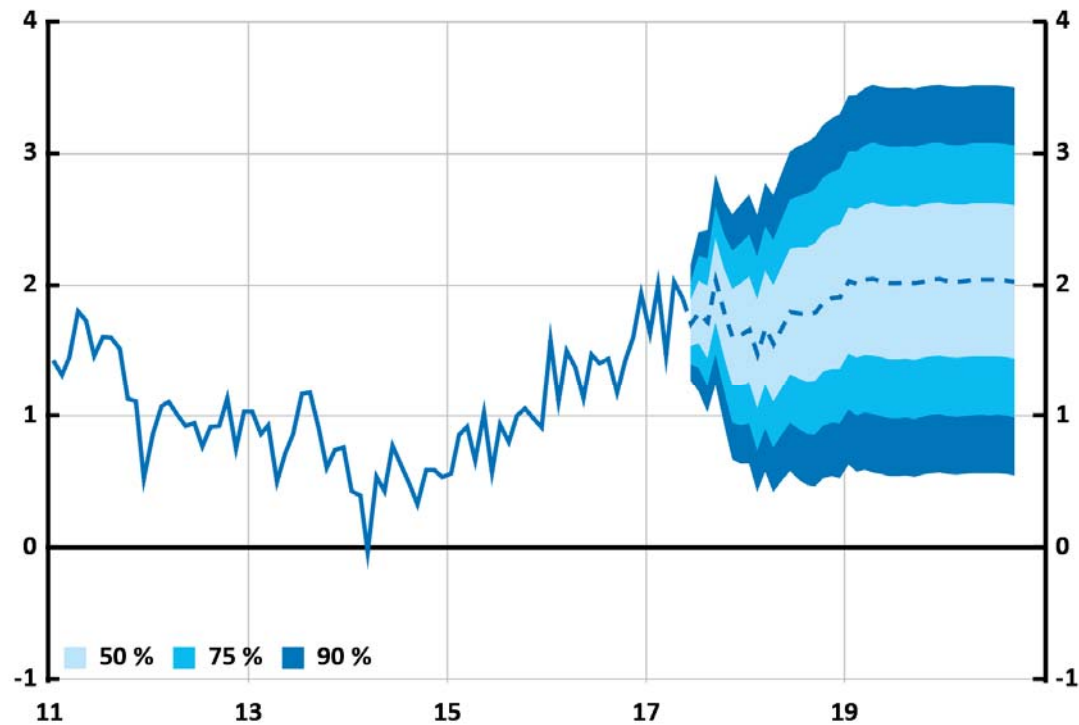


Note. The uncertainty bands are based on the Riksbank's historical forecasting errors.

Sources: Statistics Sweden and the Riksbank

# Figure 1.4. CPIF with uncertainty bands

Annual percentage change

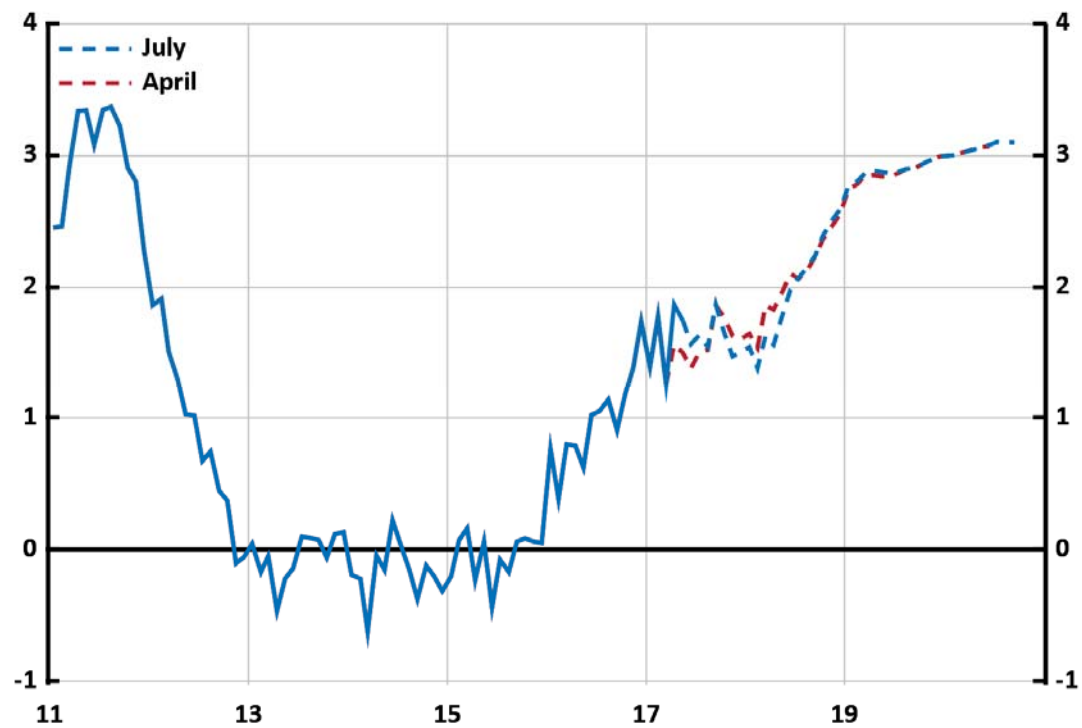


Note. The uncertainty bands are based on the Riksbank's historical forecasting errors. The CPIF is the CPI with a fixed mortgage rate.

Sources: Statistics Sweden and the Riksbank

# Figure 1.5. CPI

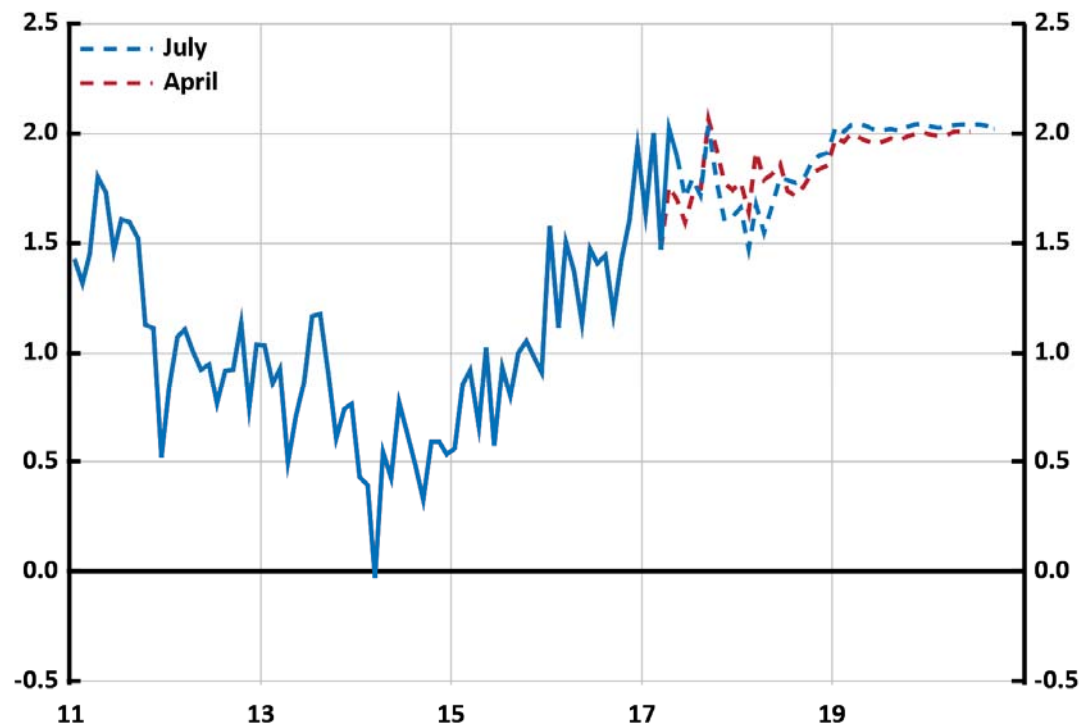
Annual percentage change



Sources: Statistics Sweden and the Riksbank

# Figure 1.6. CPIF

Annual percentage change



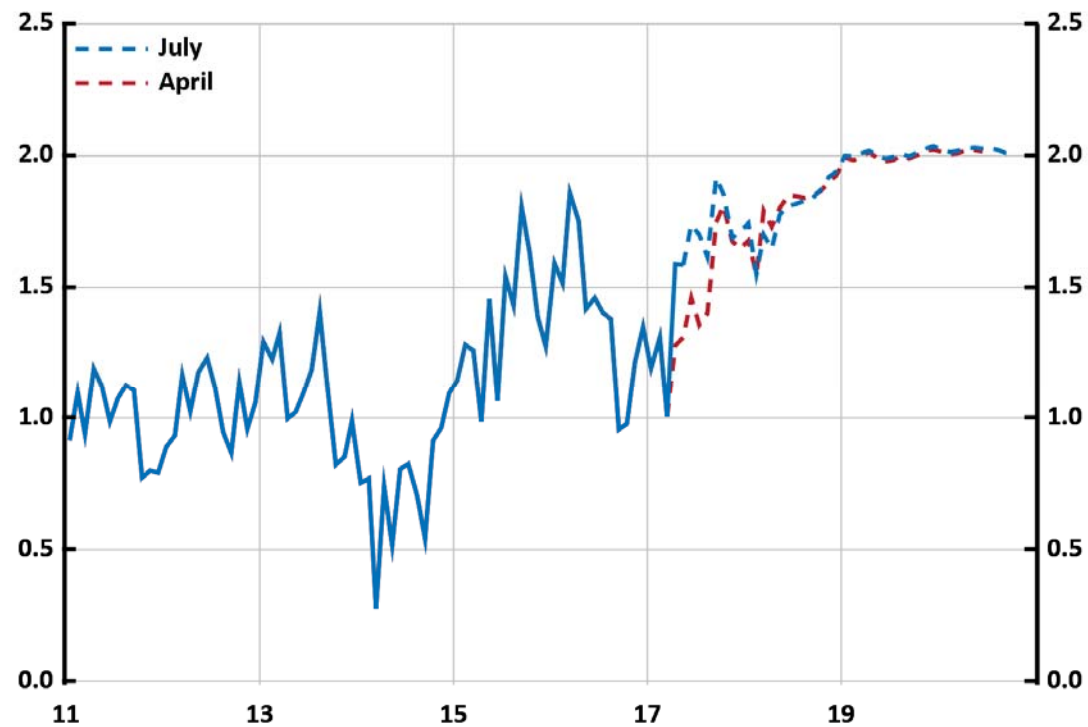
Note. The CPIF is the CPI with a fixed mortgage rate.

Sources: Statistics Sweden and the Riksbank



# Figure 1.7. CPIF excluding energy

Annual percentage change

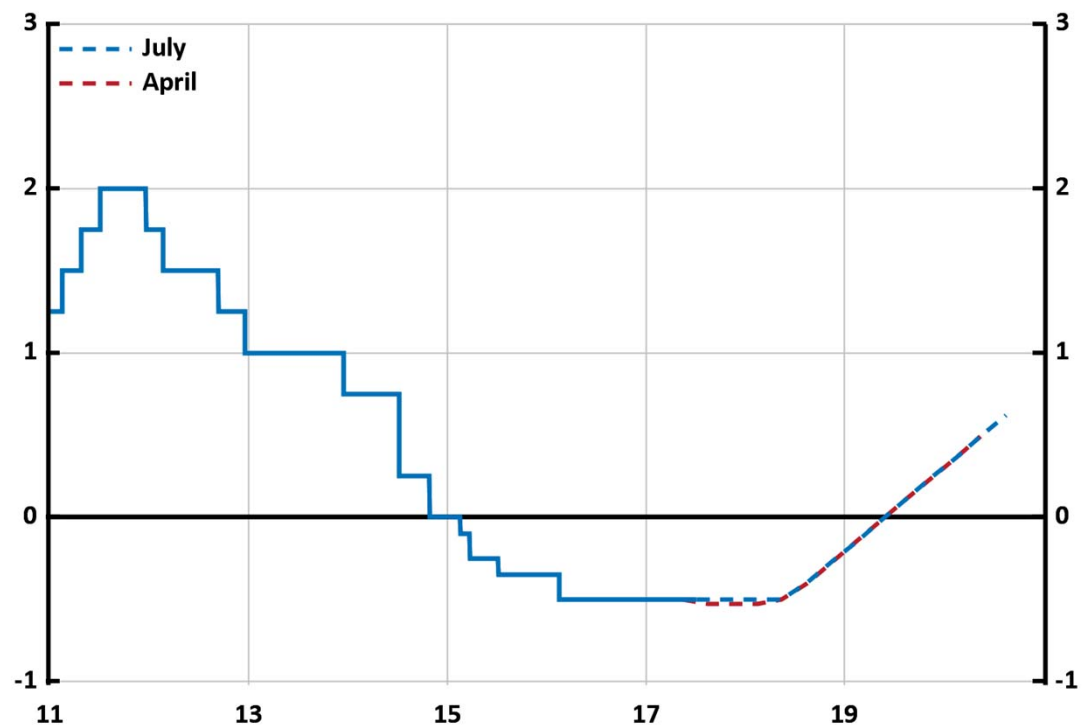


Note. The CPIF is the CPI with a fixed mortgage rate.

Sources: Statistics Sweden and the Riksbank

# Figure 1.8. Repo rate

Per cent

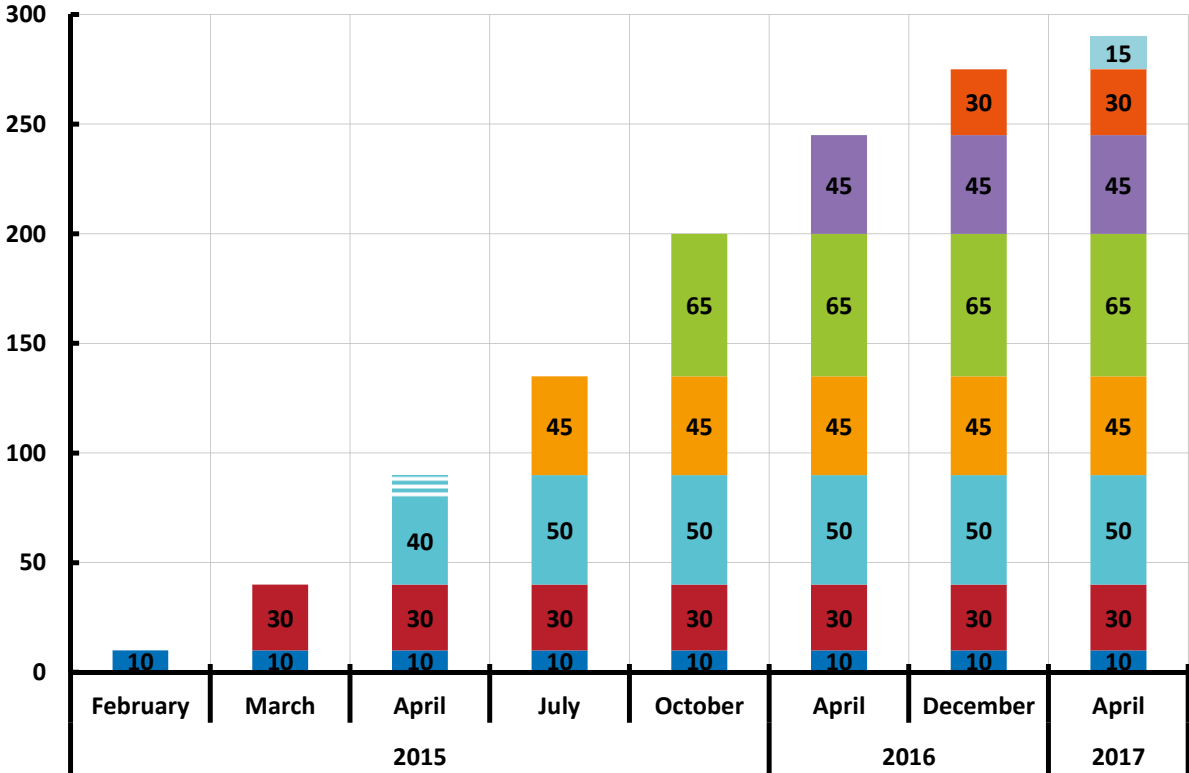


Note. Outcomes are daily data and the forecasts refer to quarterly averages.

Source: The Riksbank

# Figure 1.9. Purchases of government bonds decided by the Riksbank

SEK billion

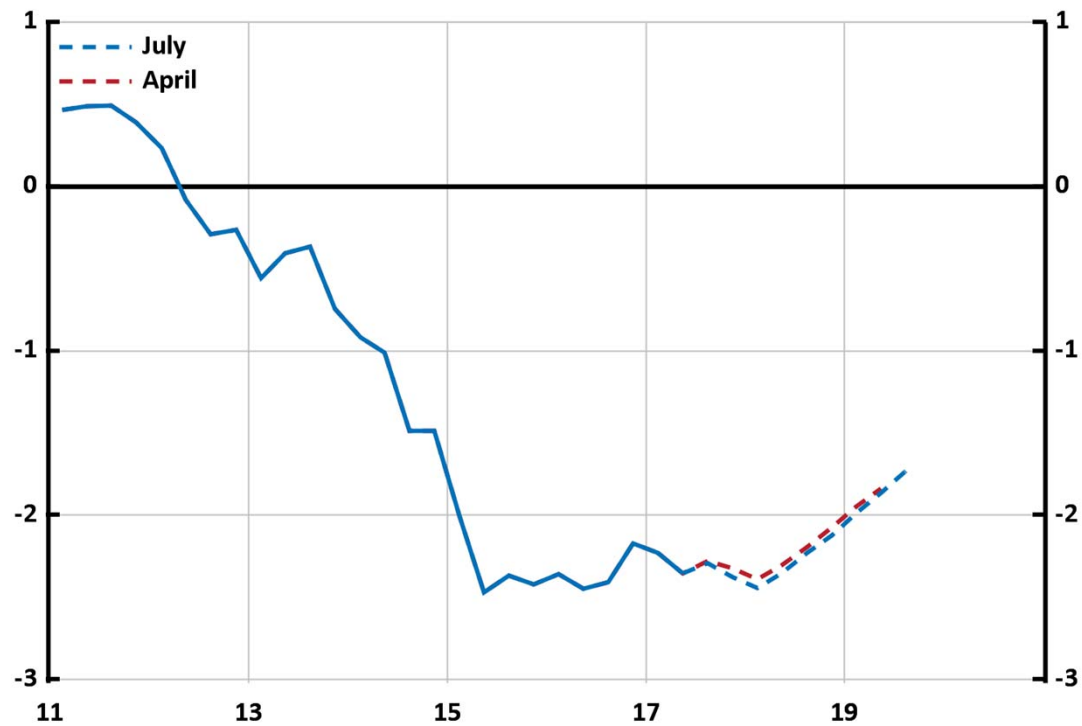


Note. Purchases of government bonds, excluding reinvestments, will continue until the end of-2017.

Source: The Riksbank

# Figure 1.10. Real repo rate

Per cent, quarterly averages

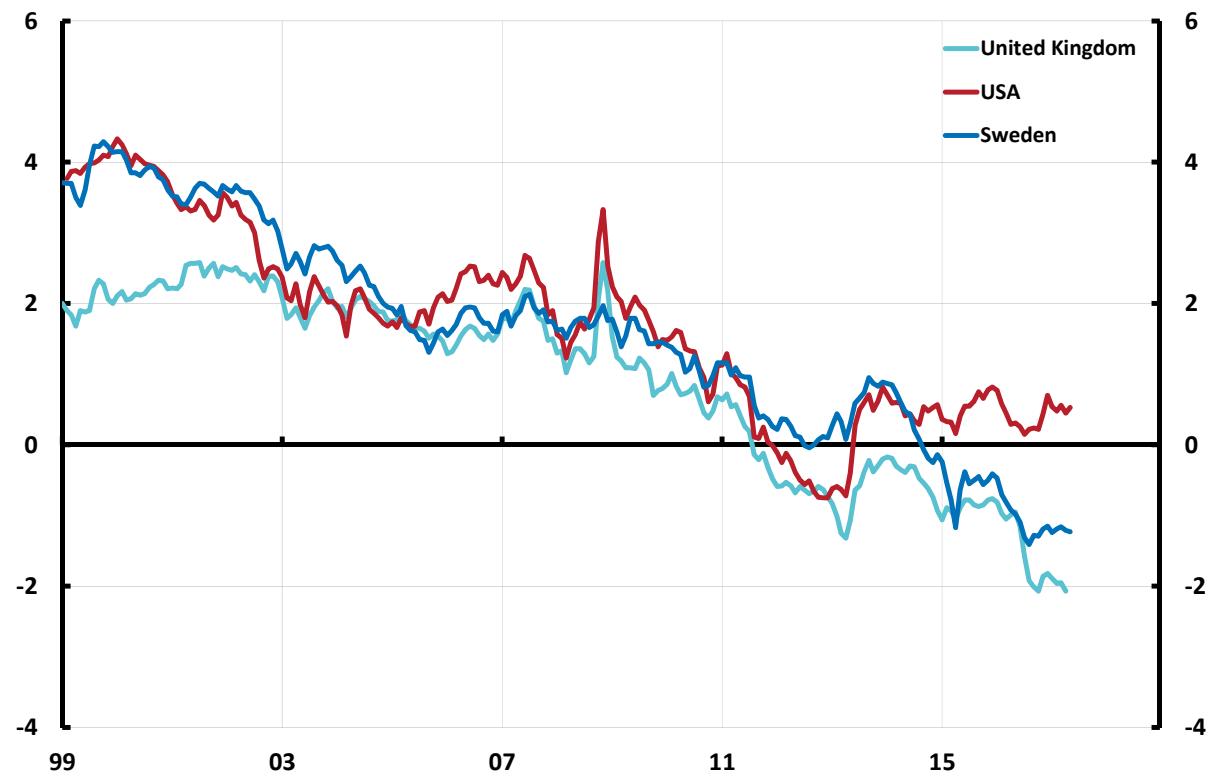


Note. The real repo rate is a mean value of the Riksbank's repo rate forecast for the year ahead minus the inflation forecast (CPIF) for the corresponding period.

Sources: Statistics Sweden and the Riksbank

# Figure 1.11. Real interest rate

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 1.12. Housing prices

Annual percentage change

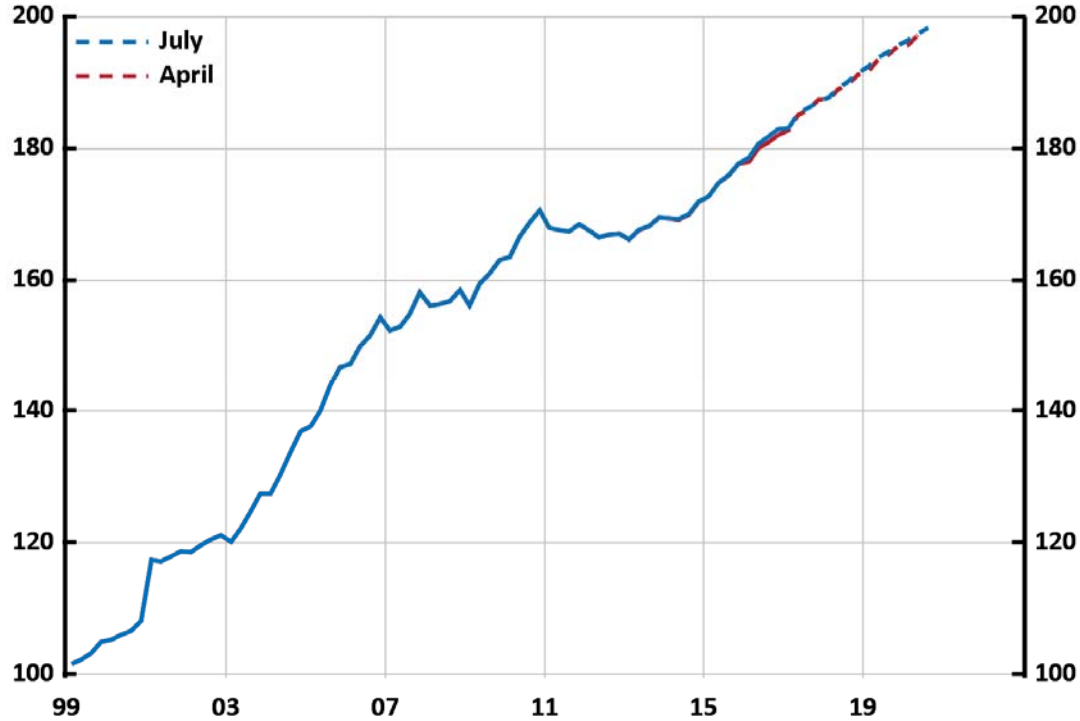


Source: Valueguard



# Figure 1.13. 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

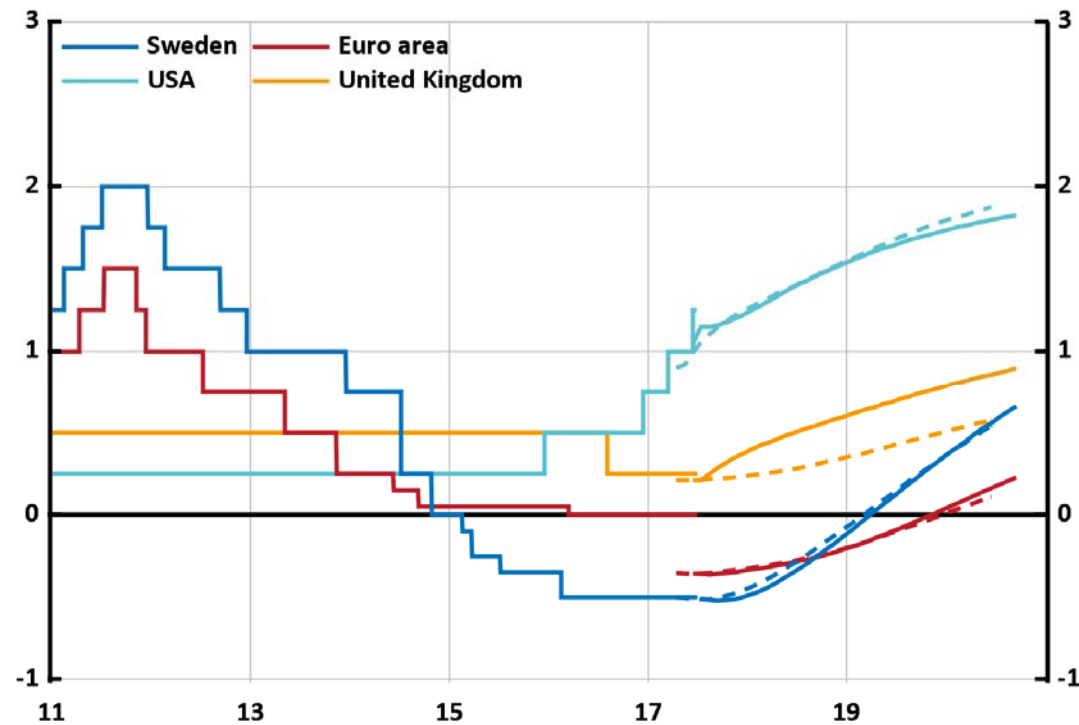
# Chapter 2

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

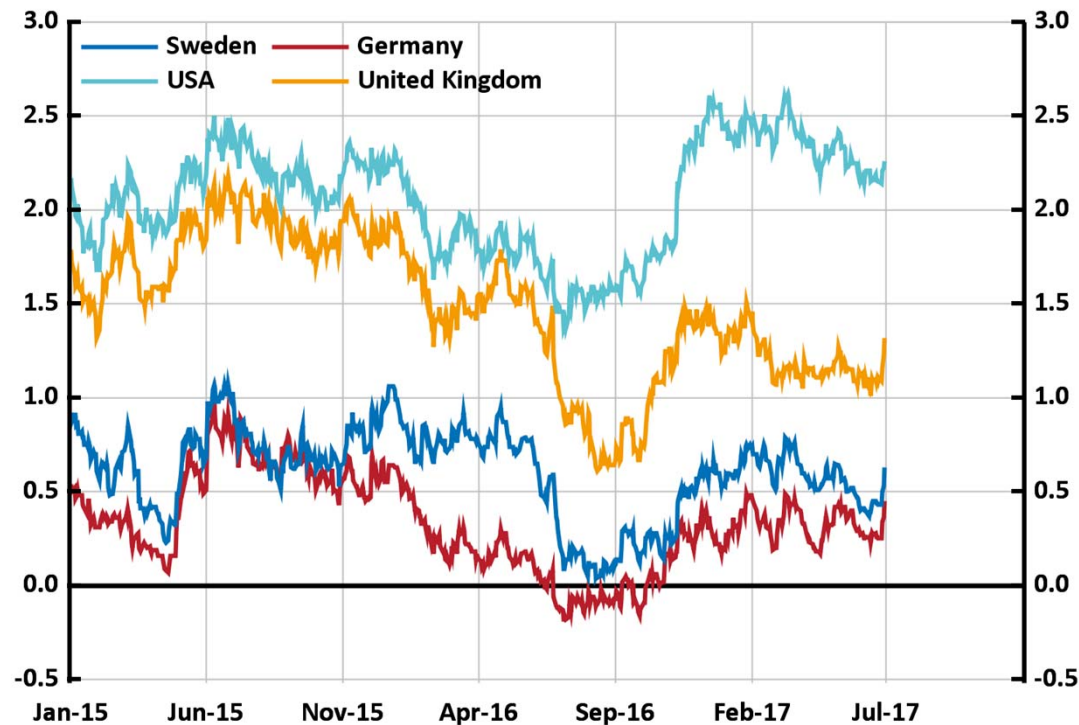


Note. Forward rates describe the expected overnight rate, which does not always correspond to the policy rate. There is no published overnight rate in Sweden, but it normally follows the repo rate closely. Unbroken lines are estimated on 29 June 2017, broken lines are estimated on 26 April 2017.

Sources: Macrobond and the Riksbank

# Figure 2.2. Government bond rates with 10 years left to maturity

Per cent

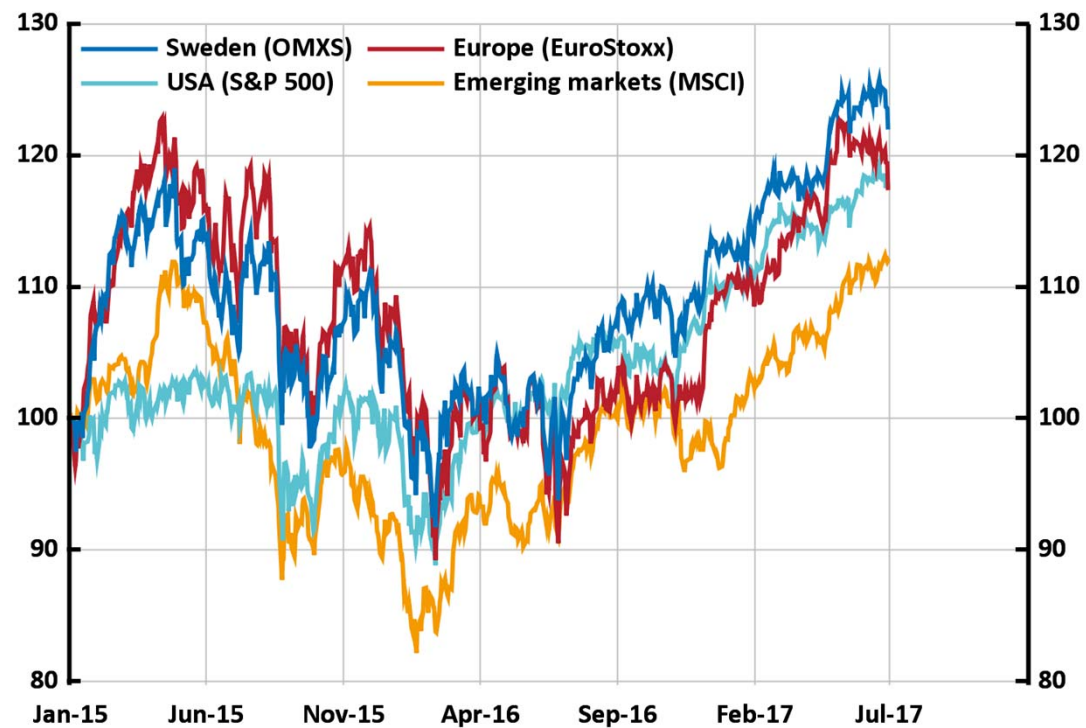


Note. Zero-coupon rates interpolated from bond prices using the Nelson-Siegel method.

Sources: Macrobond and the Riksbank

## Figure 2.3. Stock market movements

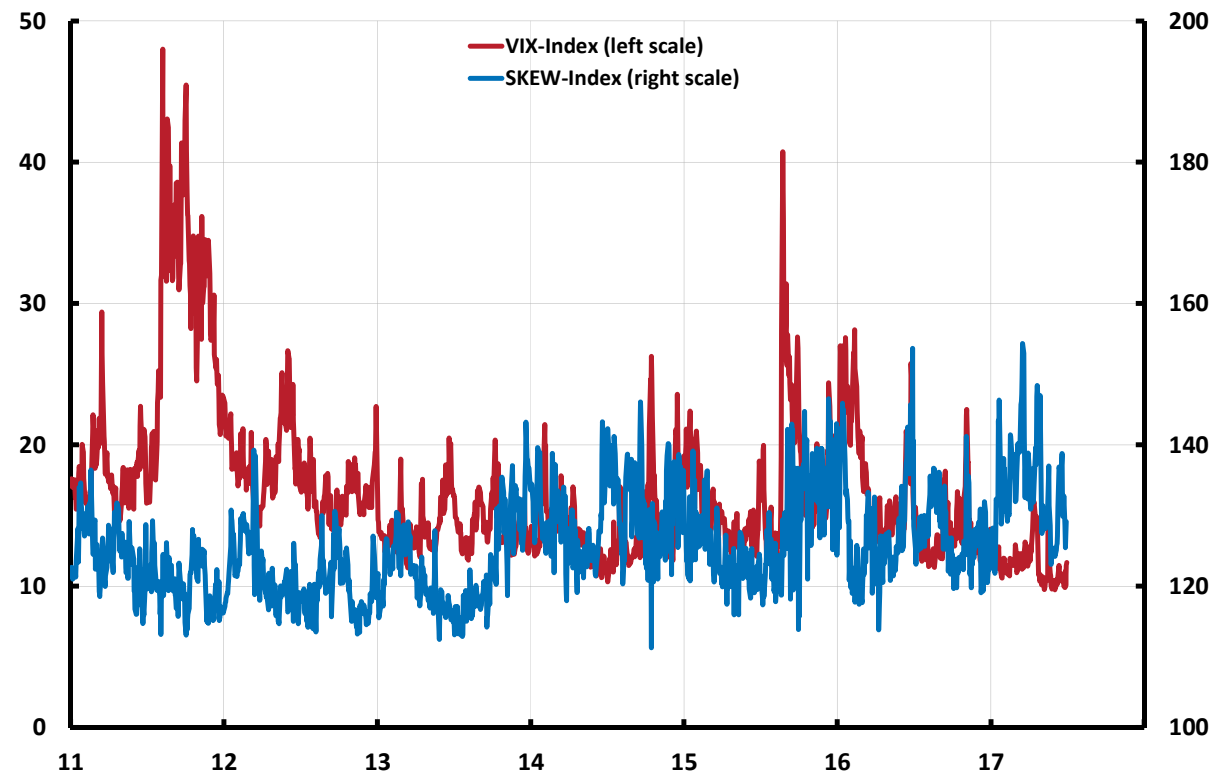
Index, 2 January 2015 = 100



Sources: Macrobond and Thomson Reuters

# Figure 2.4 Volatility and risk of large falls on the stock market

VIX- and SKEW-index



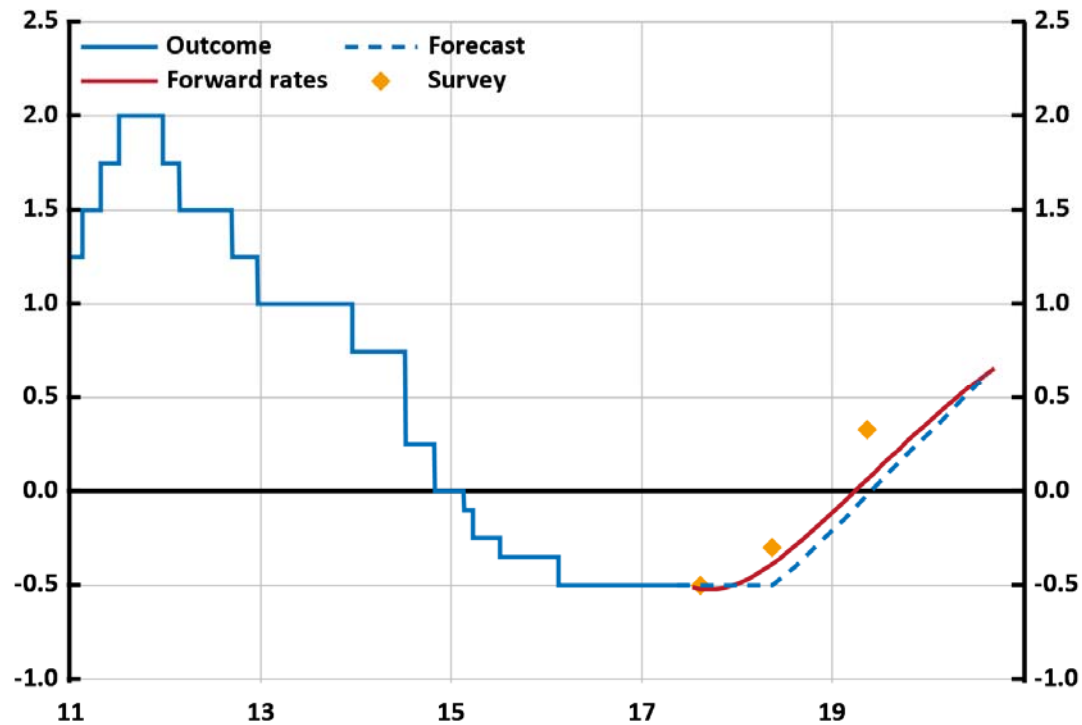
Note. Both VIX and SKEW are calculated on the basis of option on the S&P 500 share index. The VIX-index matches the expected volatility of the stock market, while the SKEW-index shows how expensive it is to purchase protection against large stock exchange falls.

Source: Thomson Reuters



# Figure 2.5. Repo rate and market expectations

Per cent, average

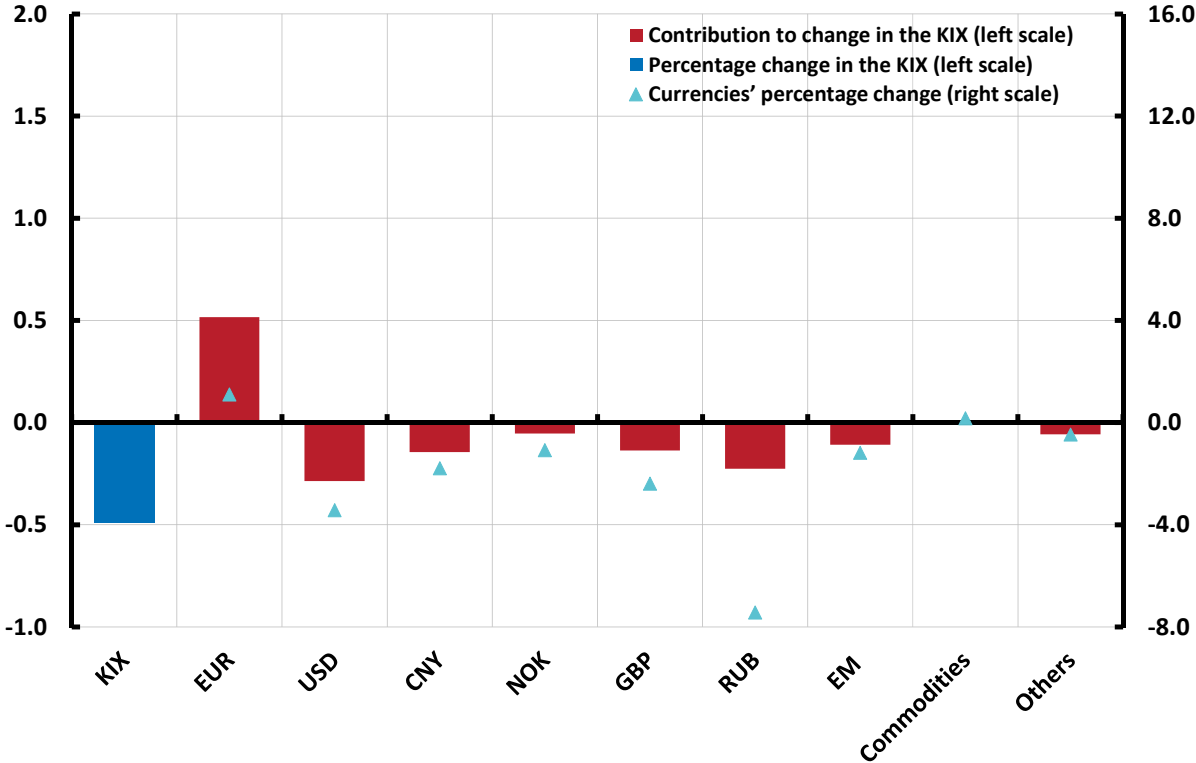


Note. The forward rates are estimated as of 29 June 2017 and measure the expected repo rate. The survey responses show the average for money market participants on 24 May 2017.

Sources: Macrobond, TNS Sifo Prospera and the Riksbank

# Figure 2.6. Contributions and changes to KIX and exchange rate

Per cent and percentage points

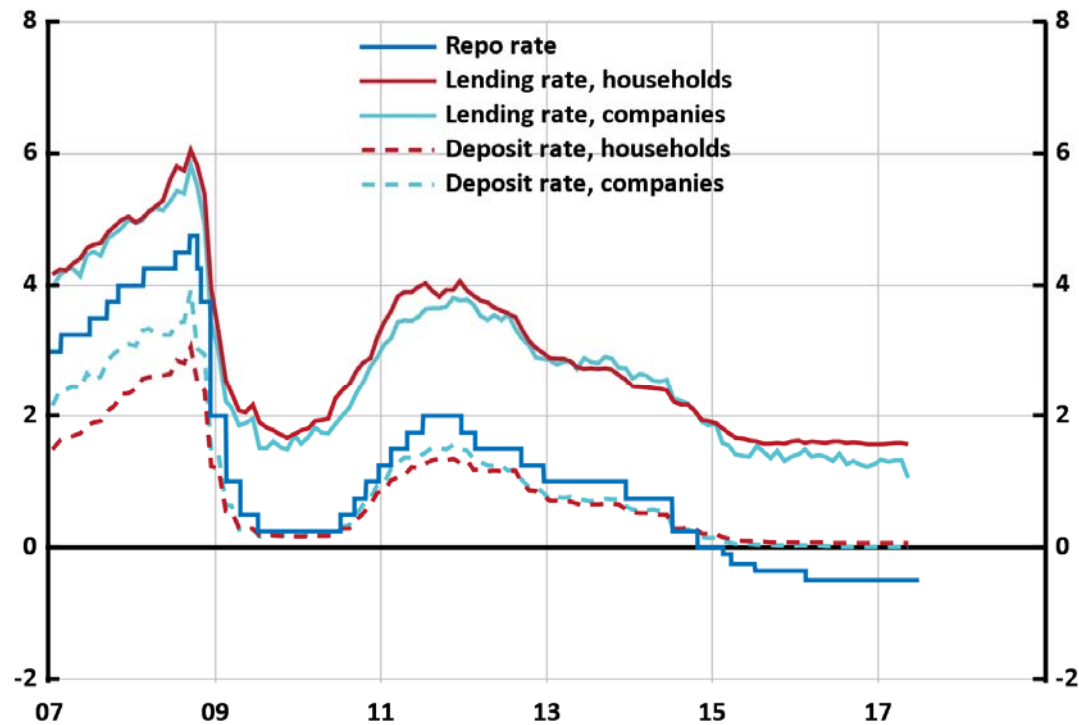


Note. The figure shows change in KIX and contributions from different currencies between 8 a.m. 27 April 2017 and 10 a.m. 30 June 2017. EM refers to Brazil, Hungary, India, Mexico, Poland and Turkey. Commodities refer to Australia, Canada and New Zealand. Other refers to Czech Republic, Denmark, Iceland, Japan, South Korea and Switzerland.

Source: Thomson Reuters and the Riksbank

## Figure 2.7. Repo rate together with the deposit and lending rate to households and companies, new contracts

Per cent

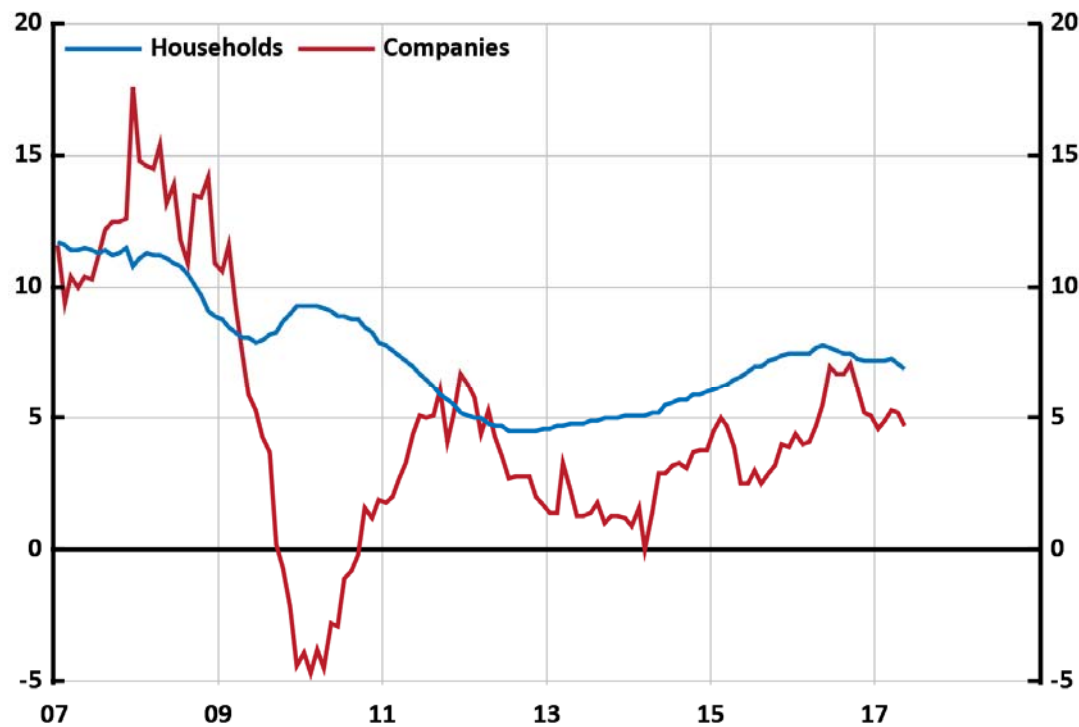


Note. MFIs' average deposit and lending rates for households and companies.

Sources: Statistics Sweden and the Riksbank

# Figure 2.8. Bank lending to households and companies

Annual percentage change

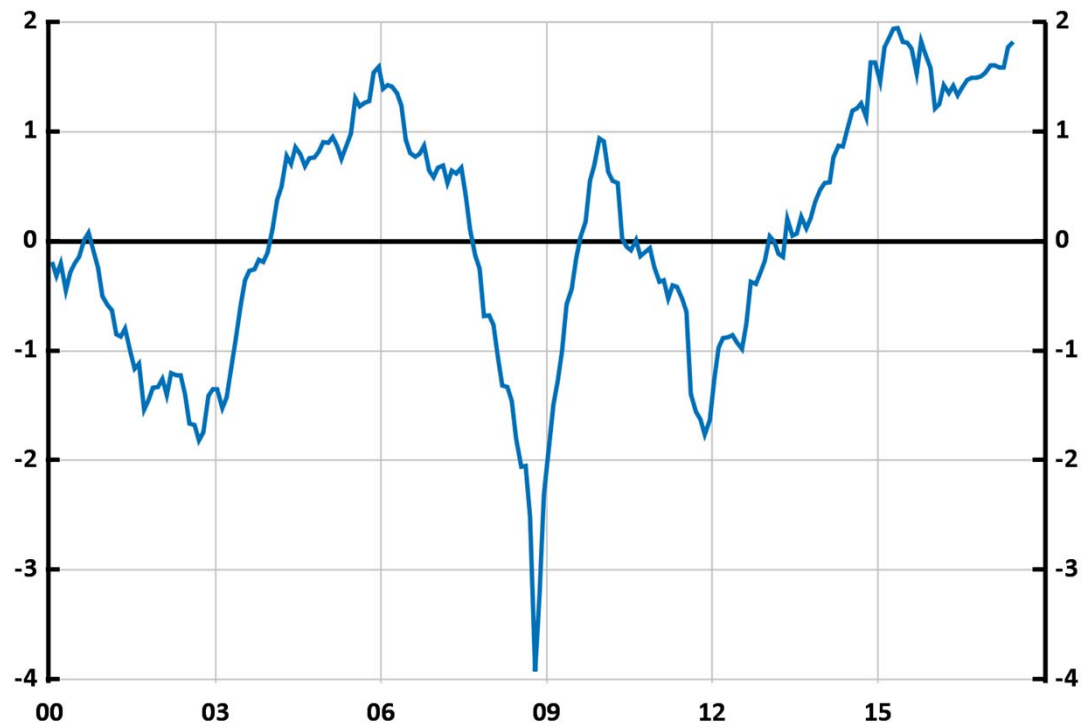


Note. MFIs' lending to households and non-financial companies according to financial market statistics adjusted for reclassifications and traded loans since 2006.

Source: Statistics Sweden

# Figure 2.9. Financial index for Sweden

Standard deviations



Note. The index is based on a principal component analysis of twelve different financial variables. A higher value indicates more favourable financial conditions.

Sources: Thomson Reuters and the Riksbank

# Chapter 3

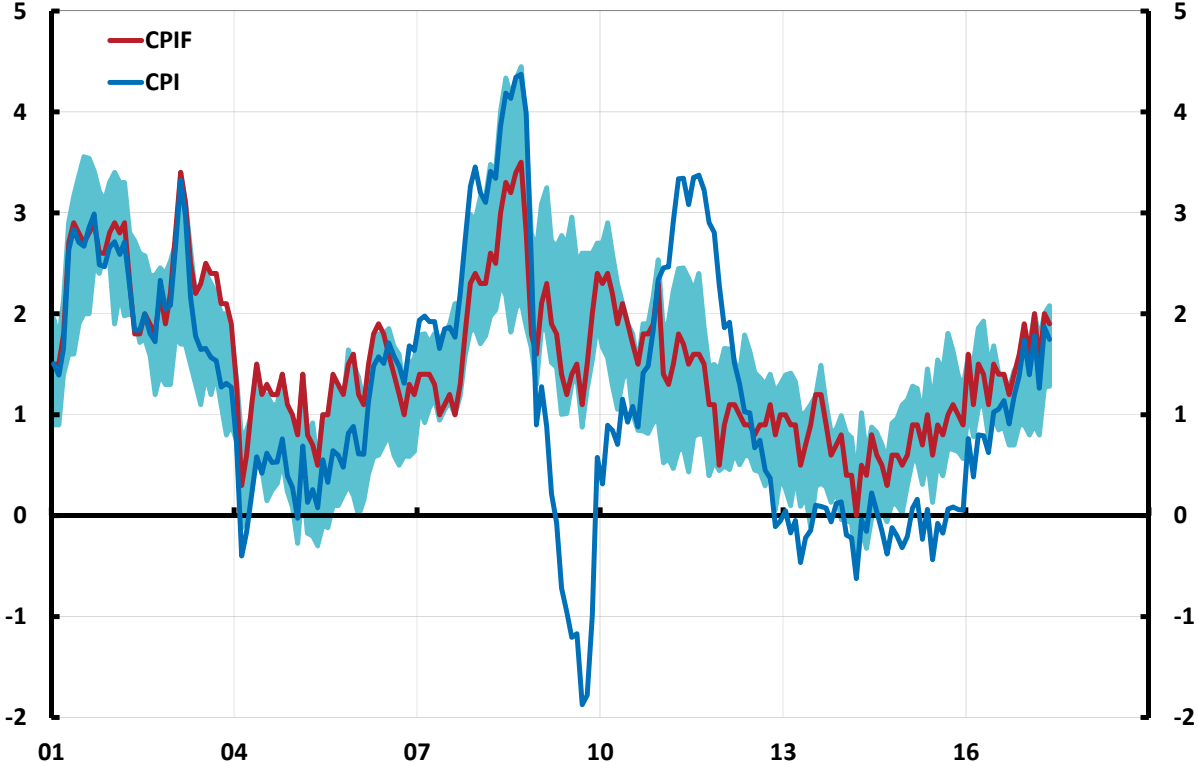
S V E R I G E S R I K S B A N K





# Figure 3.1. The CPI, CPIF and different measures of underlying inflation

Annual percentage change

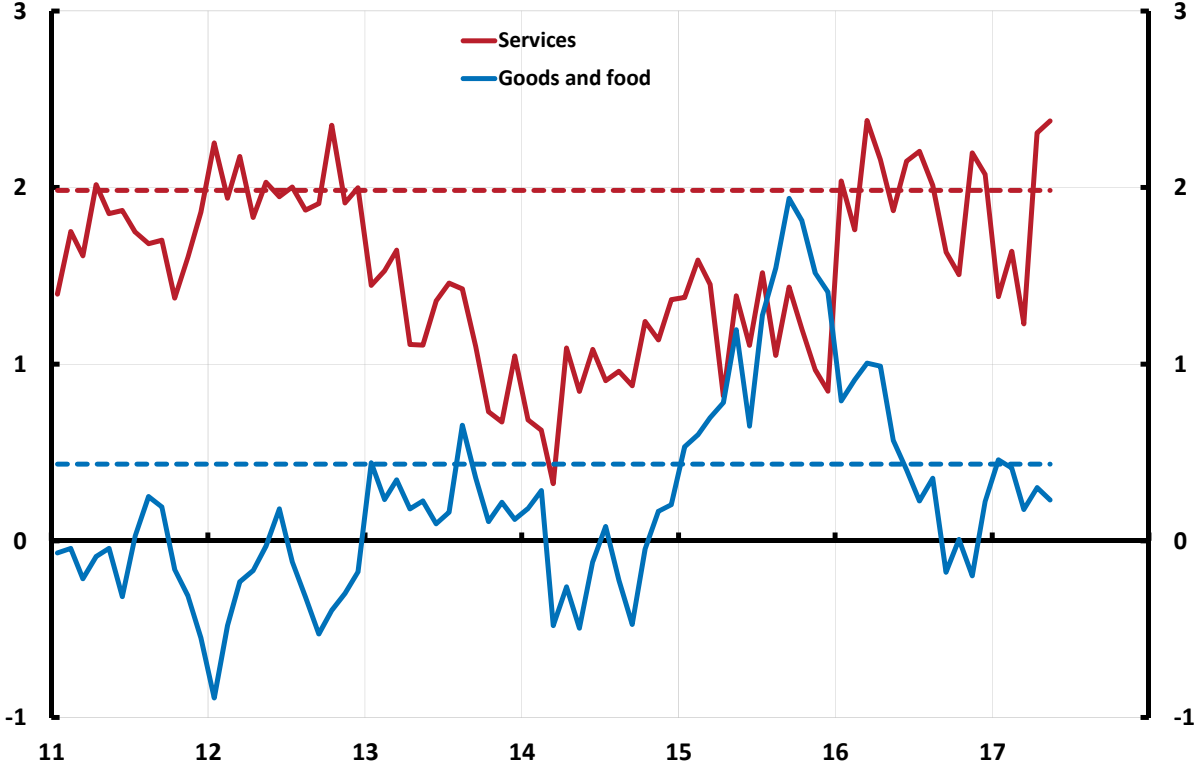


Note. The field shows the highest and lowest outcomes among different measures of underlying inflation. The measures included are the CPIF excluding energy, the CPIF with constant tax, UND24, Trim85, HICP excluding energy and unprocessed food, persistence-weighted inflation, factors from principal component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

Sources: Statistics Sweden and the Riksbank

# Figure 3.2. Prices of goods and services in the CPI

Annual percentage change

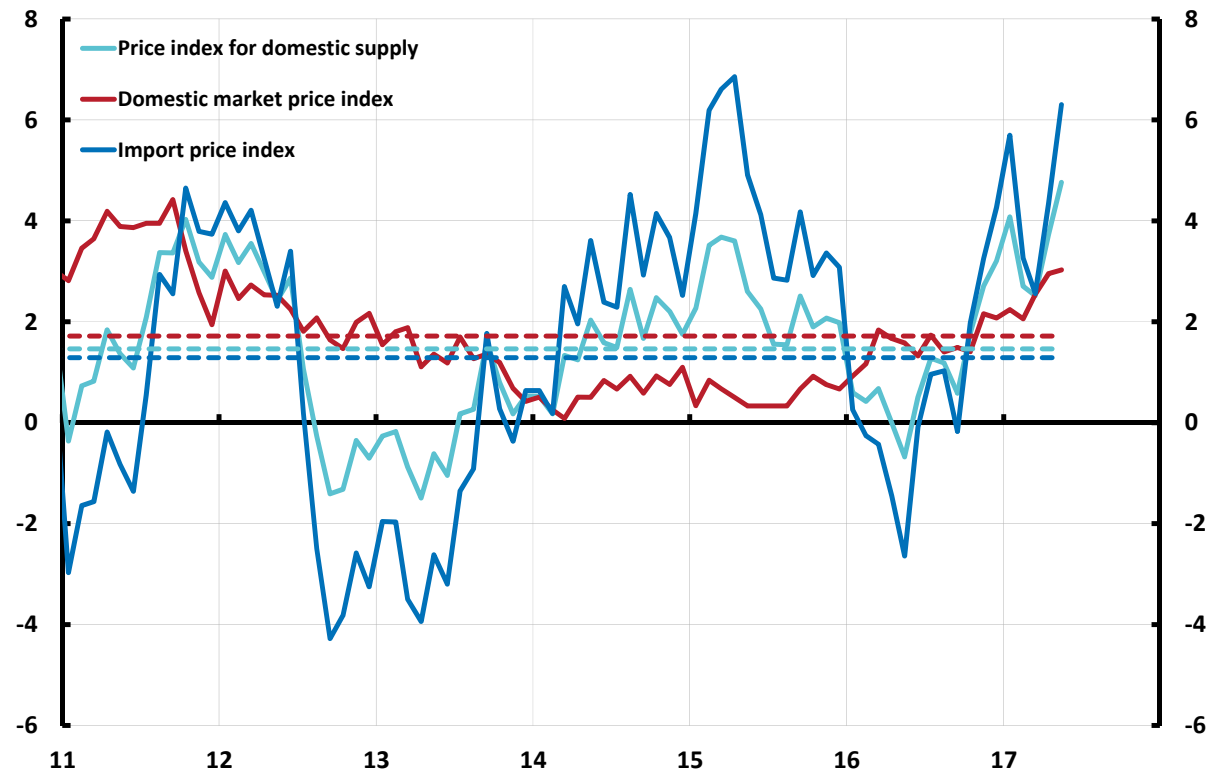


Note. Goods and food is a combination of the aggregate goods and food in the CPI. Together, these account for 43 per cent of the CPI. Service prices account for 45 per cent of the CPI. The broken lines represents the mean value since January 1995.

Sources: Statistics Sweden and the Riksbank

# Figure 3.3. Producer prices for consumer goods

Annual percentage change

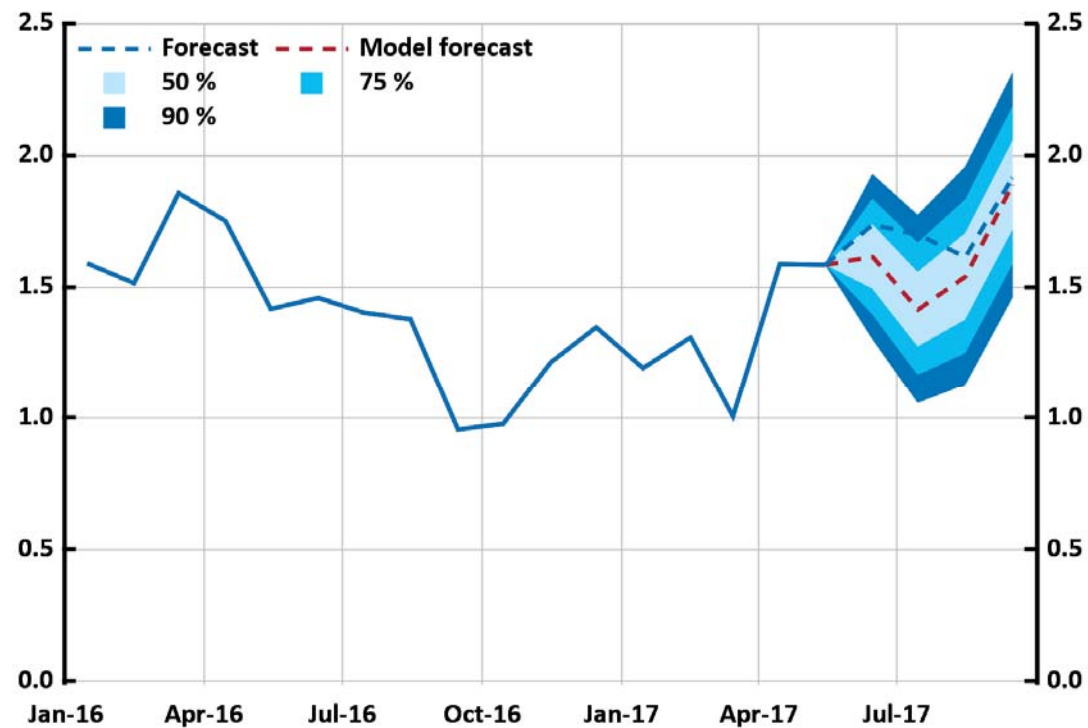


Note. The import price index measures how much Swedish importers pay for their goods at the border. Domestic market prices measure how much Swedish producers are paid for their goods when sale takes place in Sweden. The price index for domestic supply is an aggregate of the import price index and home market price index, which thereby measures changes in the prices of those goods sold in Sweden. Broken lines refer to average rate of increase since January 2000.

Sources: Statistics Sweden and the Riksbank

# Figure 3.4. CPIF excluding energy, model forecast with uncertainty bands

Annual percentage change

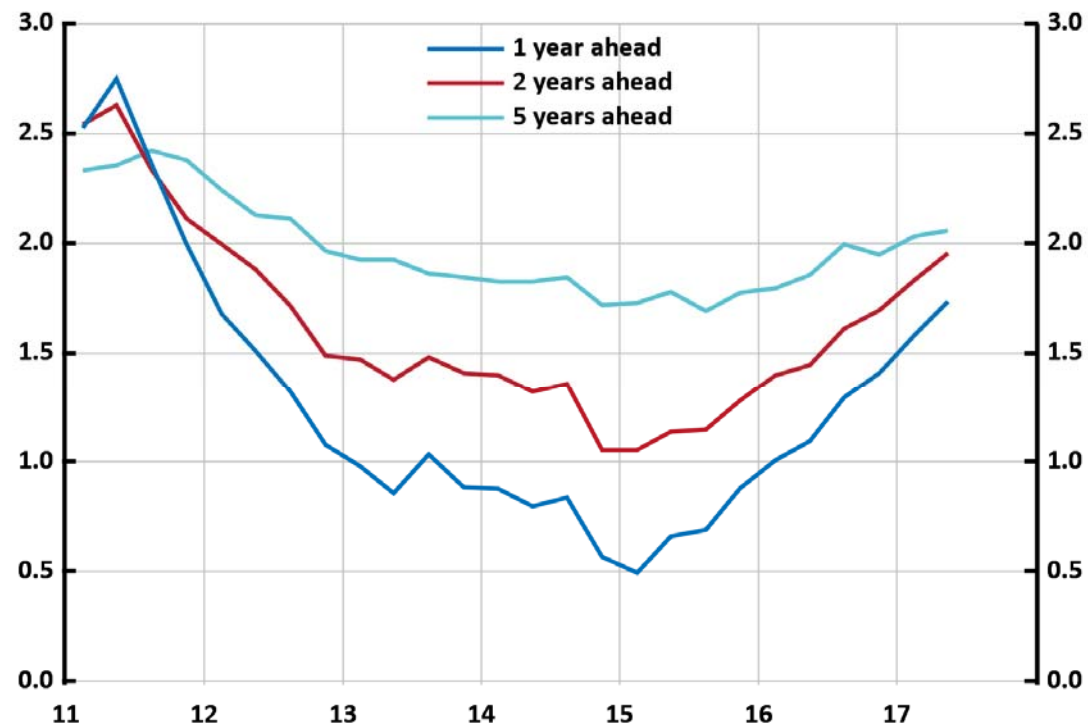


Note. The uncertainty bands are based on the models' historical forecast errors. The CPIF is the CPI with a fixed mortgage rate.

Sources: Statistics Sweden and the Riksbank

# Figure 3.5. Inflation expectations among all participants

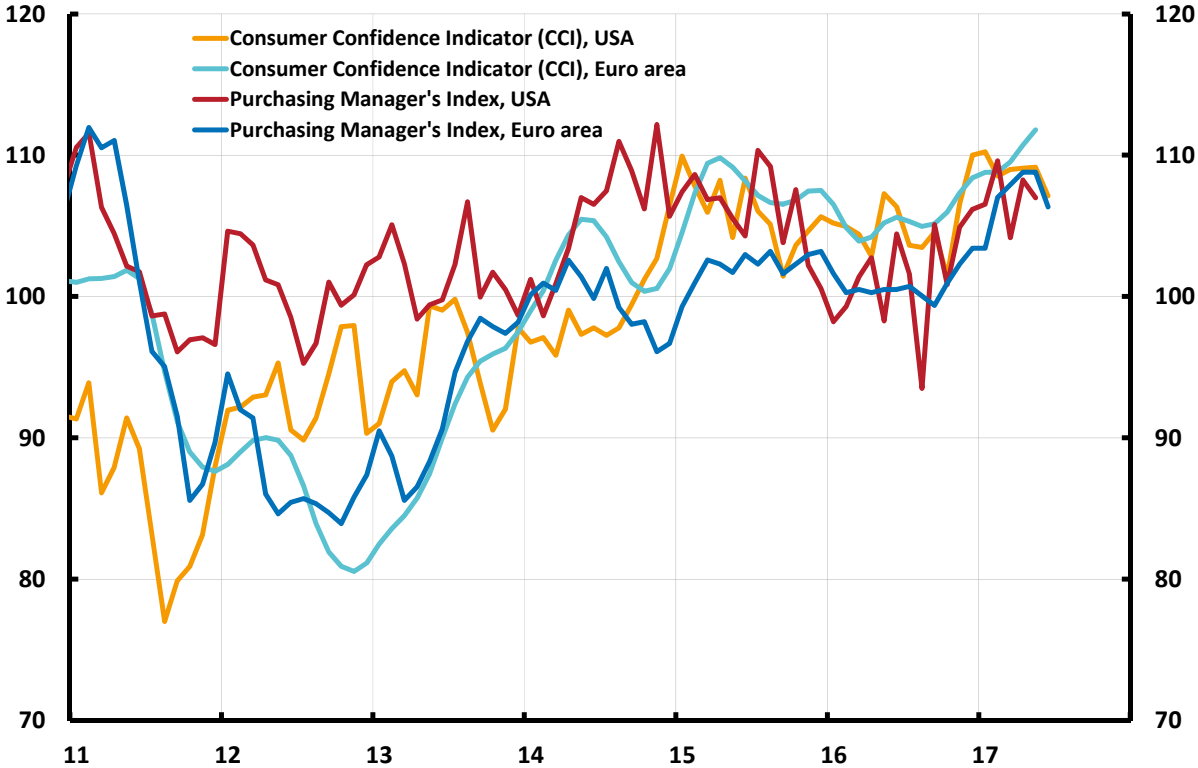
Per cent



Source: TNS Sifo Prospera

# Figure 3.6. Confidence indicators abroad

Index, average = 100, standard deviation = 10



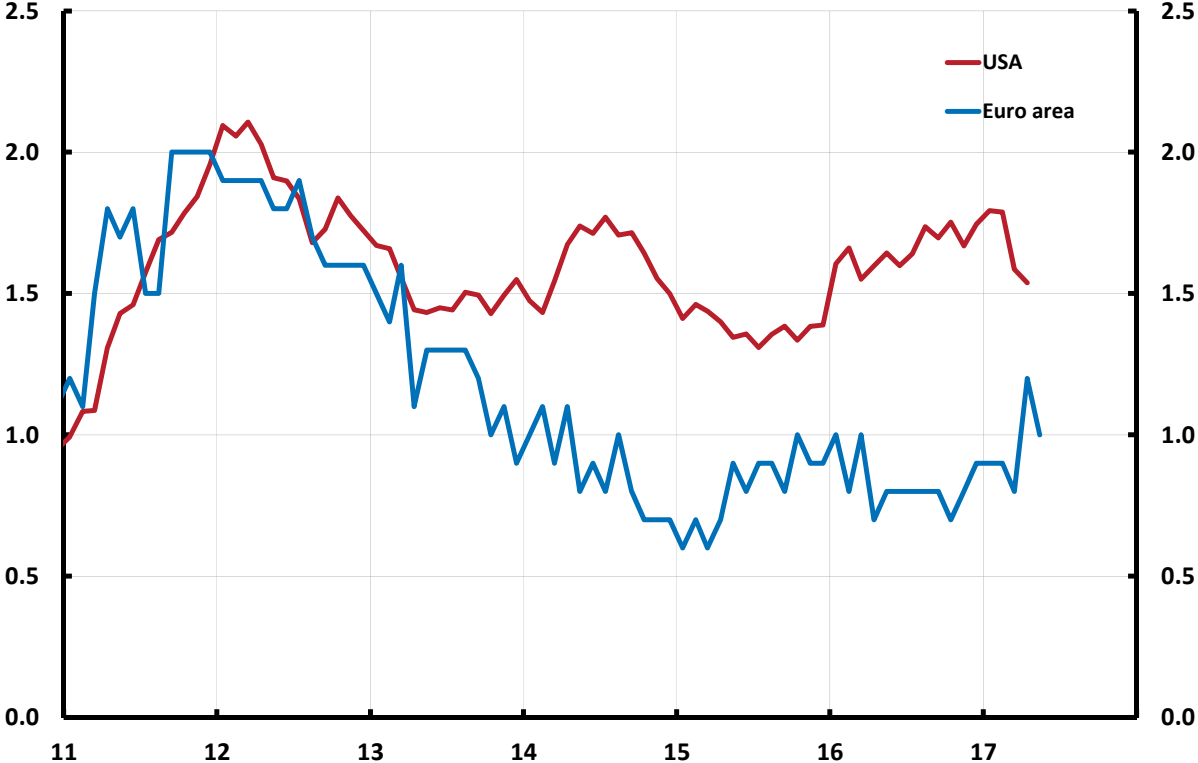
Note. The series have been normalised from January 1999.

Sources: Institute for Supply Management (ISM), Markit Economics, OECD, University of Michigan and the Riksbank



# Figure 3.7. Underlying inflation abroad

Annual percentage change

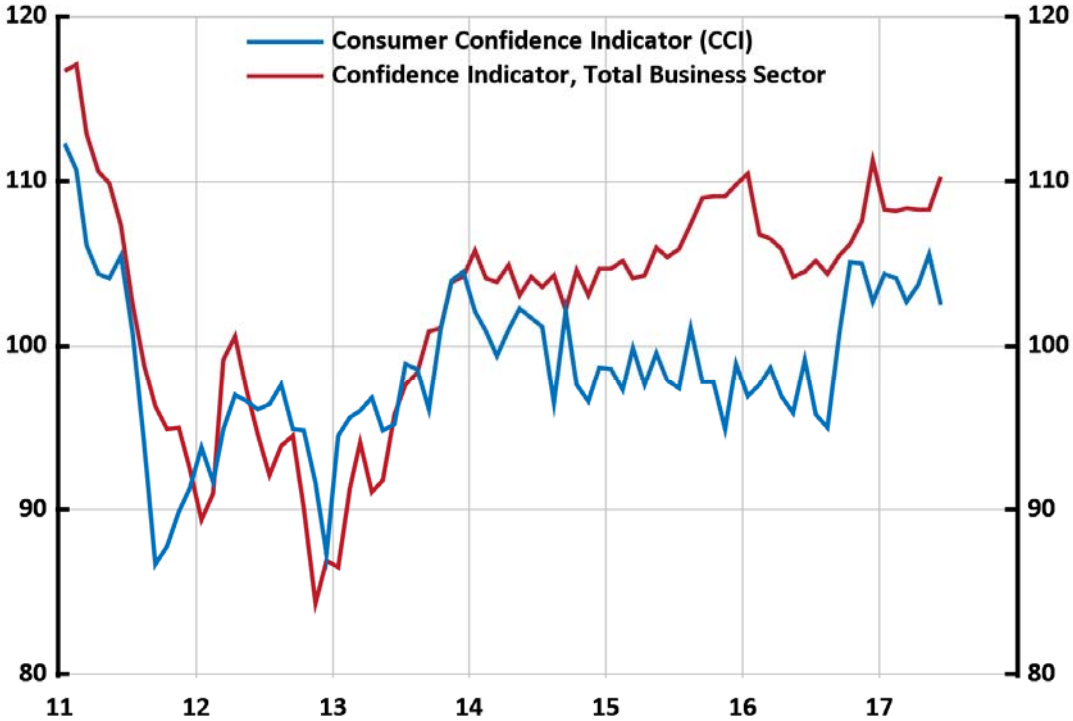


Note. HICP excluding energy and unprocessed food is shown for the euro area. PCE excluding energy and food is shown for the United States.

Sources: Bureau of Economic Analysis and Eurostat

# Figure 3.8. Confidence indicators

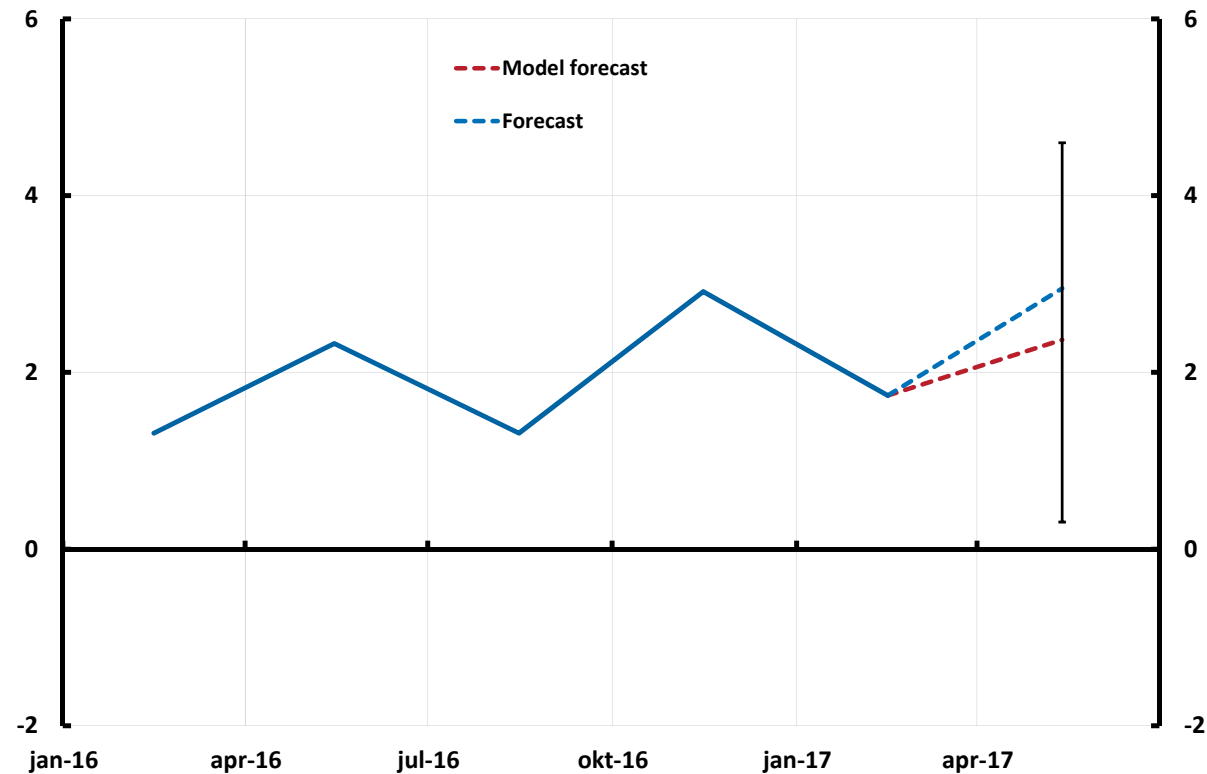
Index, average = 100, standard deviation = 10, seasonally-adjusted data



Source: National Institute of Economic Research

# Figure 3.9. GDP, model forecast with uncertainty bands

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

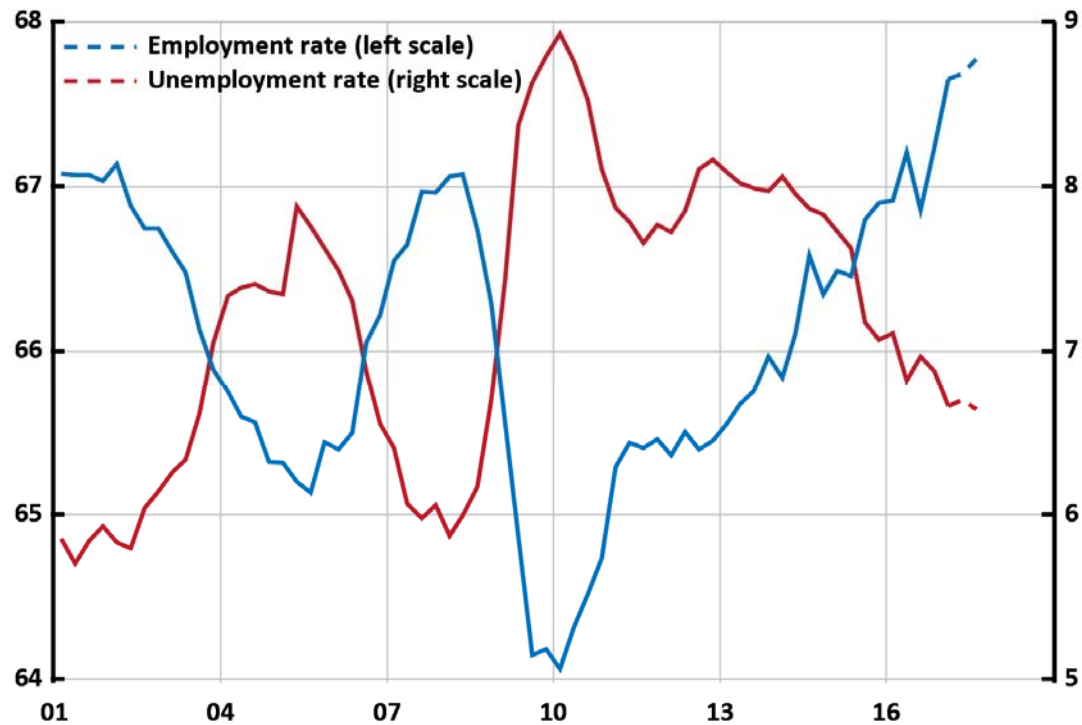


Note. The model forecast is an average of forecasts from different statistical models. The vertical line refers to a 50 per cent uncertainty band. The uncertainty band is based on the models' historical forecast errors. One explanation for the wide uncertainty interval is the large variation in growth outcomes between different quarters.

Sources: Statistics Sweden and the Riksbank

# Figure 3.10. Employment and unemployment rate

Per cent of population and labour force, respectively, 15–74 years



Sources: Statistics Sweden and the Riksbank

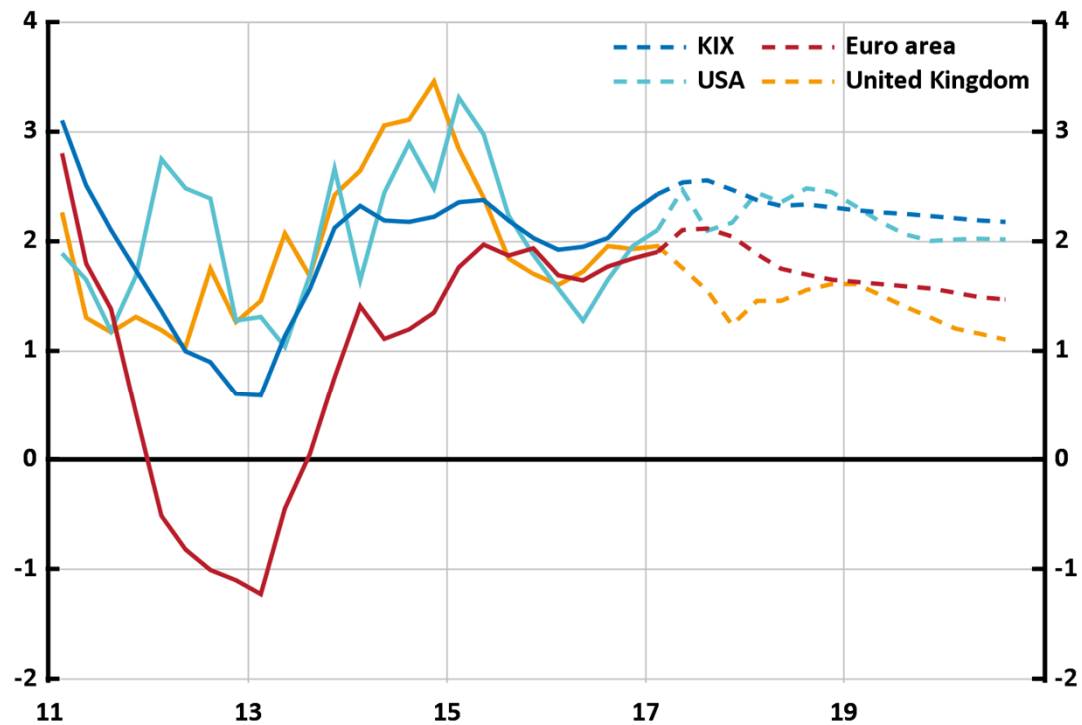
# Chapter 4

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

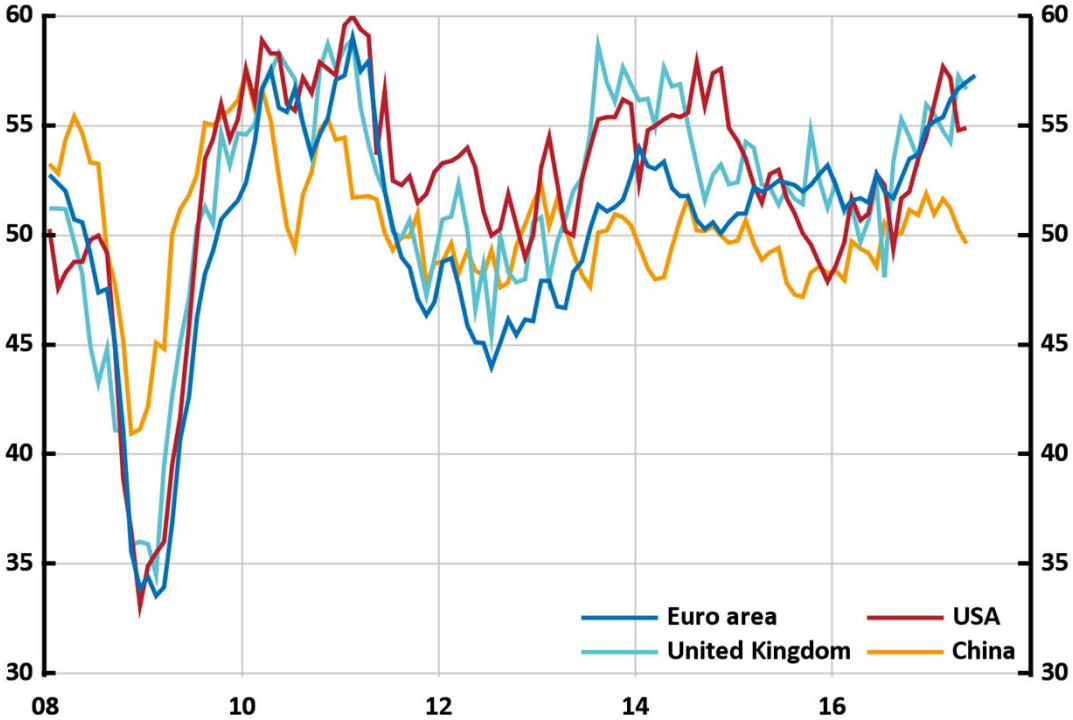


Note. KIX is an aggregate of the countries that are important to Sweden's international transactions.

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

# Figure 4.2. Purchasing Managers' Index in various countries and regions

Diffusion index



Note. Diffusion index (DI) is a transformation of net numbers (NN):  
 $DI = NN/2 + 50$ .

Sources: Institute for Supply Management (ISM) and Markit Economics

# Figure 4.3. Price of crude oil

USD per barrel



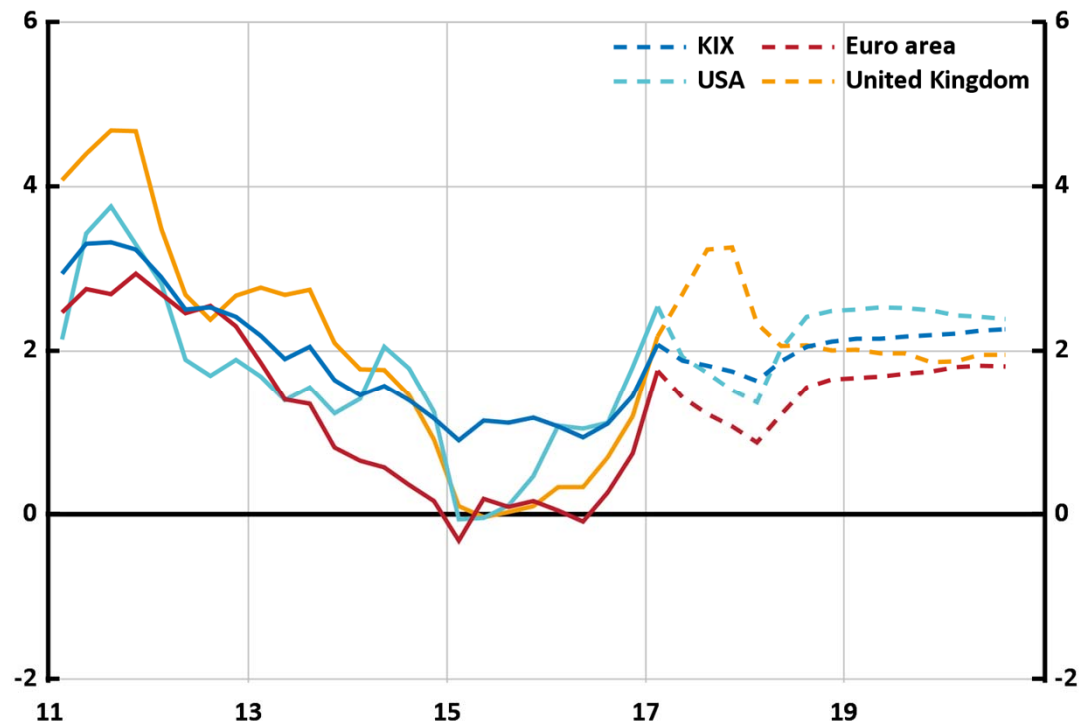
Note. Brent oil, forward rates are calculated as a 15-day average. The outcome refers to monthly averages of spot prices.

Sources: Macrobond and the Riksbank



# Figure 4.4. Inflation in various countries and regions

Annual percentage change

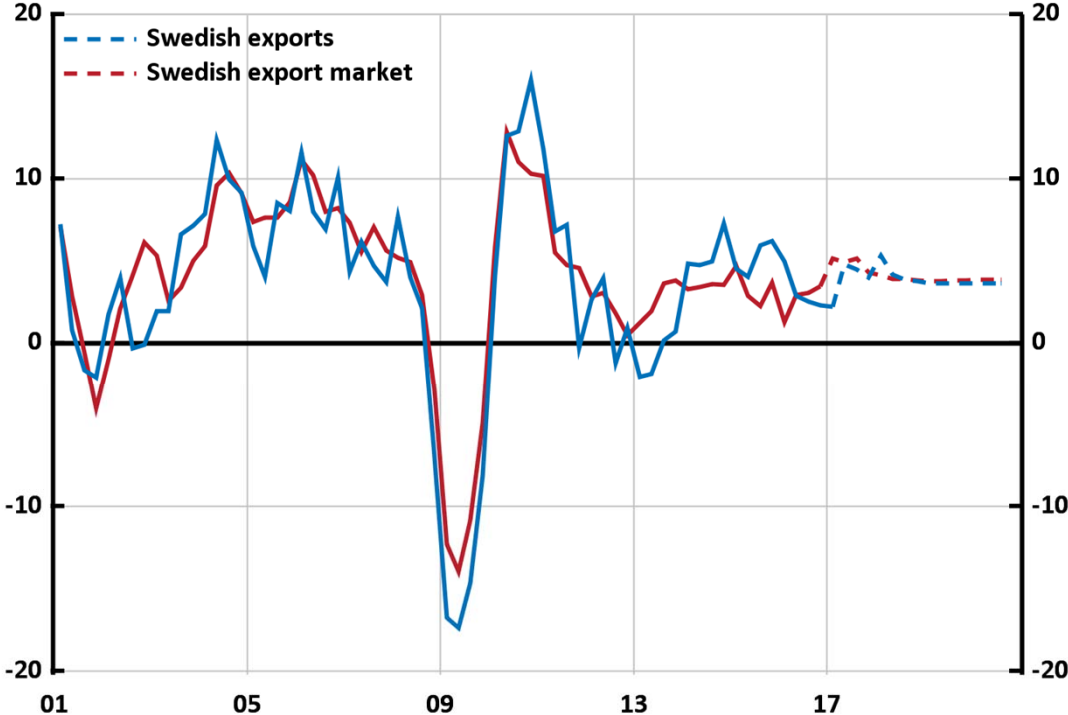


Note. KIX is an aggregate of the countries that are important to Sweden's international transactions. When calculating KIX-weighted inflation, the HICP is used for the euro area and the CPI for other countries. Inflation for the euro area shown is measured using the HICP and for the United States and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

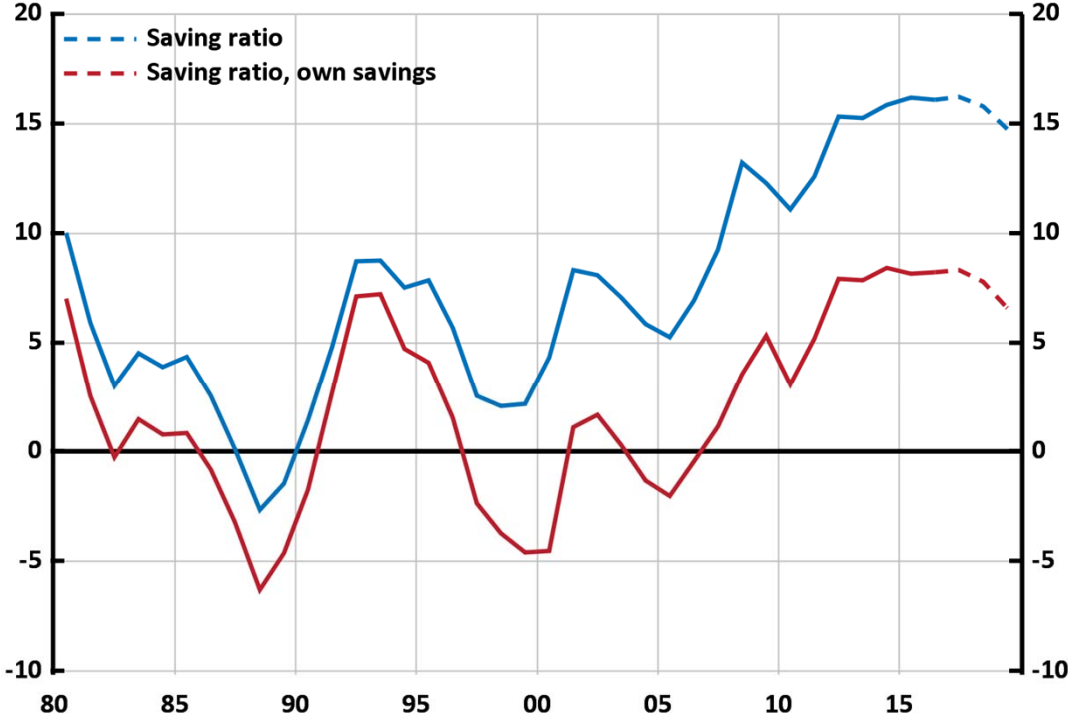


Note. The Swedish export market index aims to measure import demand in the countries to which Sweden exports. This is calculated by aggregating 32 countries and covers around 85 per cent of the total Swedish export market.

Sources: Statistics Sweden and the Riksbank

# Figure 4.6. Household savings with and without collective insurance savings

Per cent of disposable income

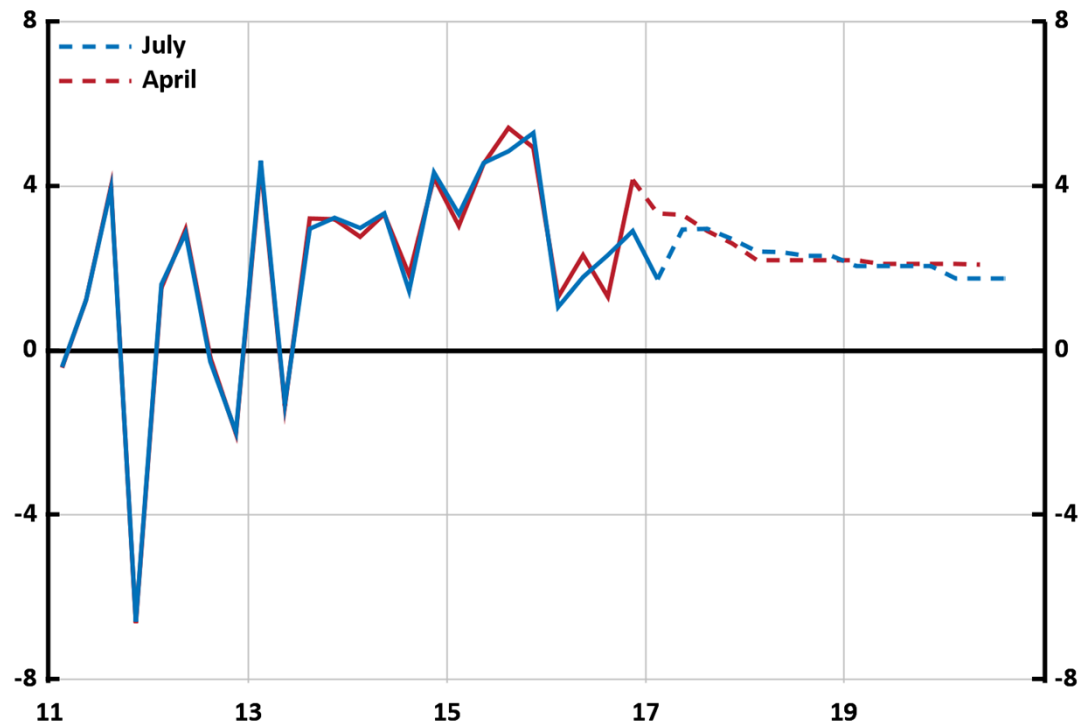


Note. Total household savings include collective insurance savings. The former definition, which was also termed 'total household saving', excluded collective insurance savings and the savings are the difference between income and consumer expenditure.

Sources: Statistics Sweden and the Riksbank

# Figure 4.7. GDP in Sweden

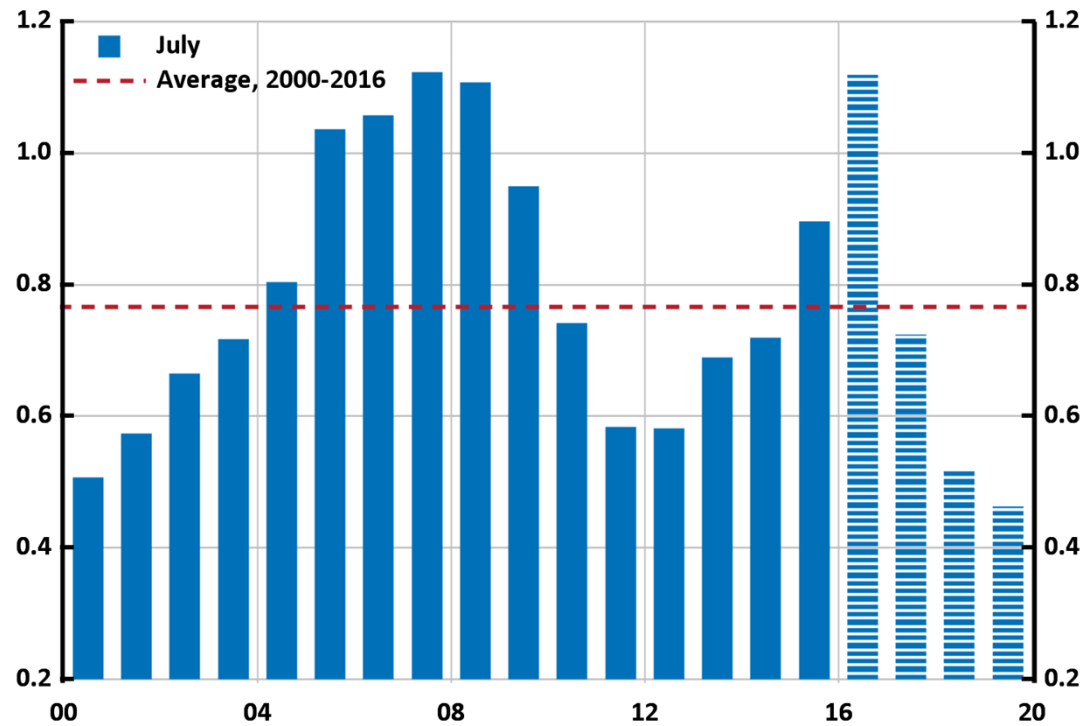
Quarterly change in per cent, calculated as an annual percentage change, seasonally-adjusted data



Sources: Statistics Sweden and the Riksbank

# Figure 4.8. Population growth, 15–74 years

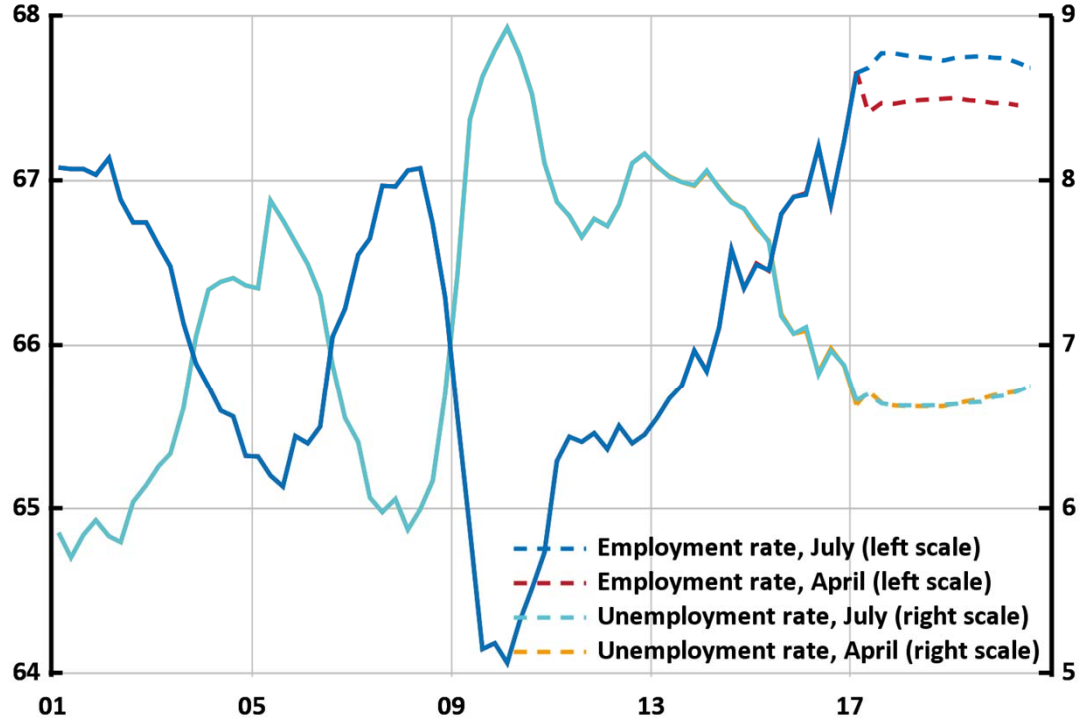
Annual percentage change



Sources: Statistics Sweden and the Riksbank

# Figure 4.9. Employment and unemployment rate

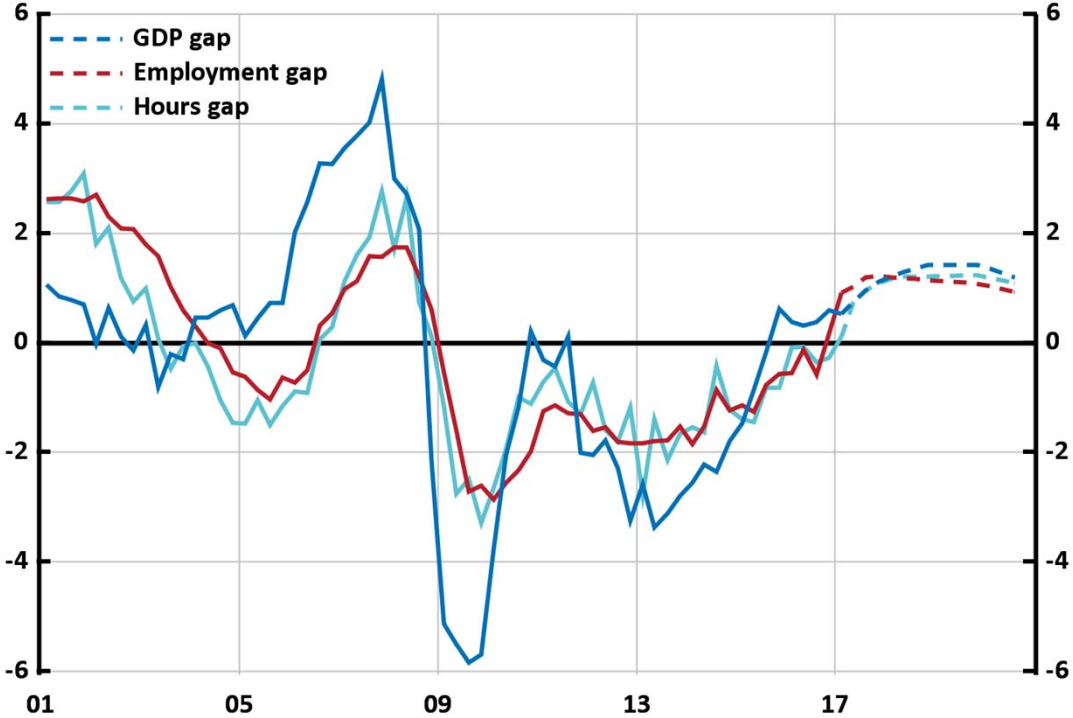
Per cent of population and labour force, respectively. 15–74 years



Sources: Statistics Sweden and the Riksbank

# Figure 4.10. GDP gap, employment gap and hours gap

Per cent

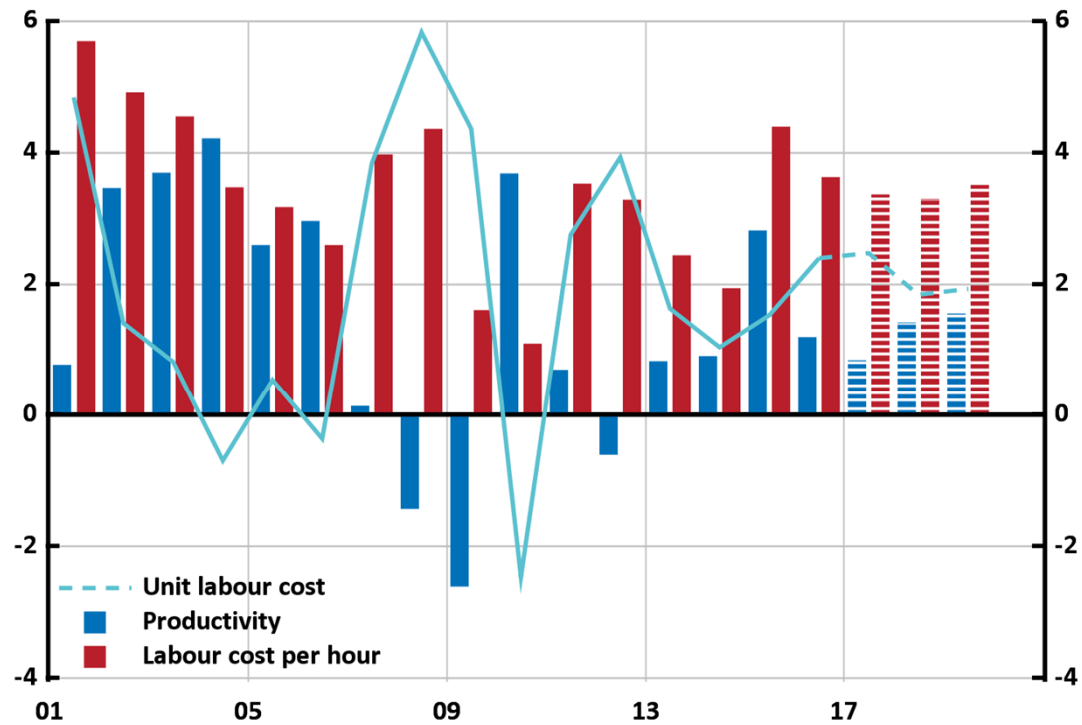


Note. The gaps refer to the deviation in GDP, the number of hours worked and the number of those employed from the Riksbank's assessed trends.

Sources: Statistics Sweden and the Riksbank

# Figure 4.11. Cost pressures in the economy as a whole

Annual percentage change

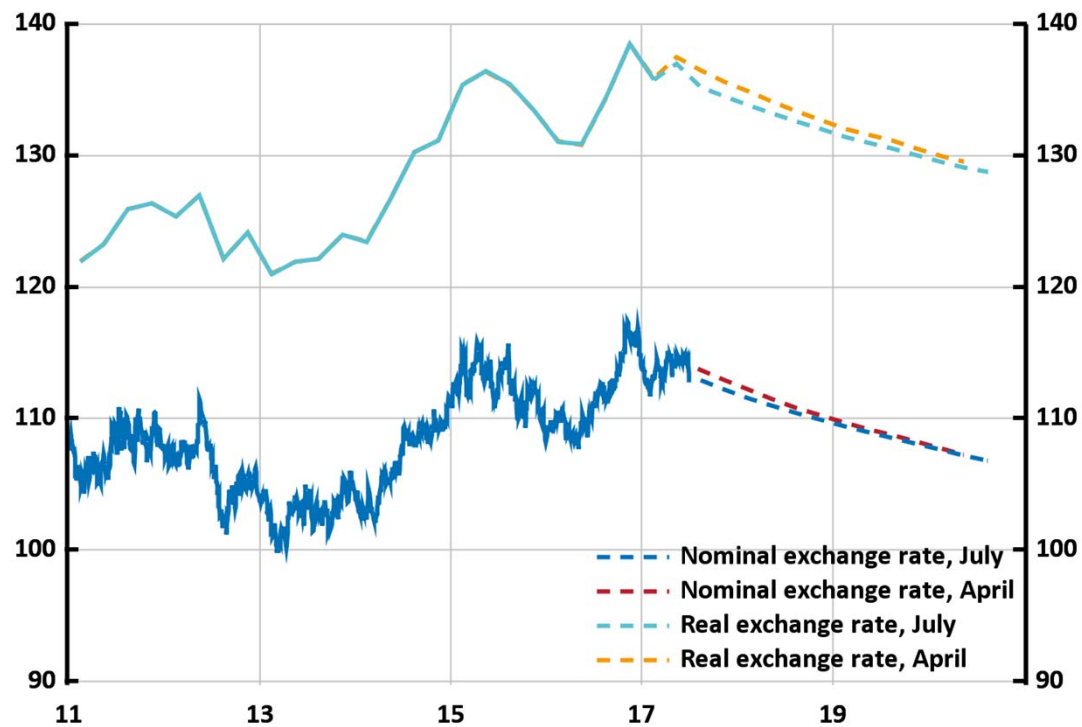


Sources: Statistics Sweden and the Riksbank



# Figure 4.12. Real and nominal exchange rate, KIX

Index, 18 November 1992 = 100

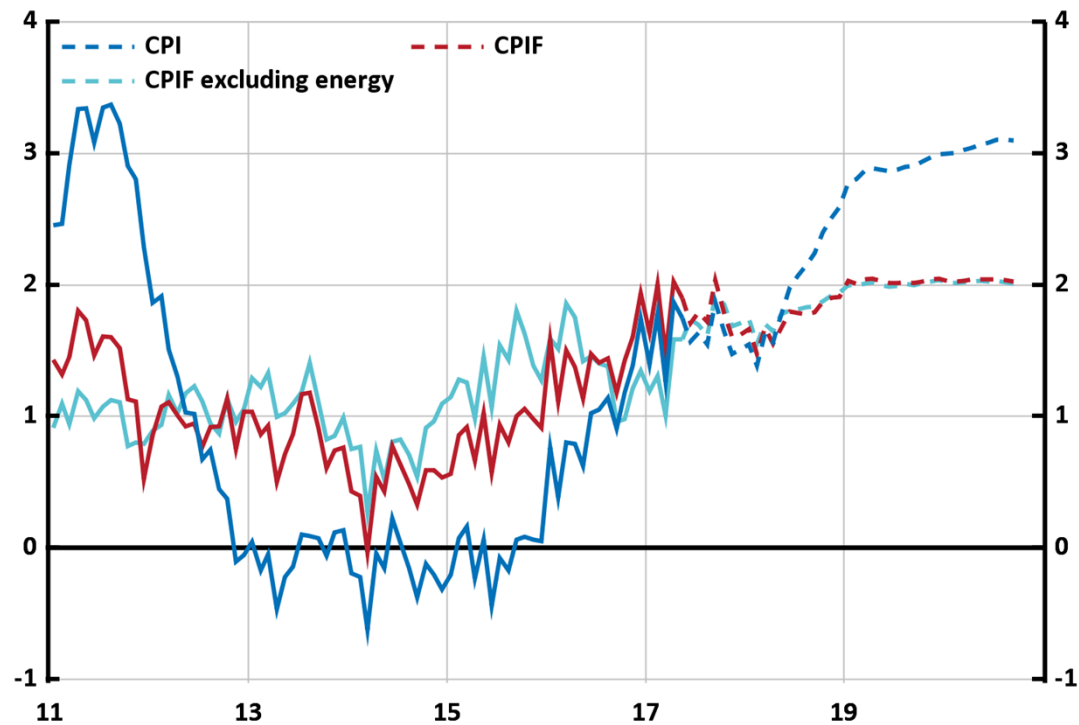


Note. The real exchange rate has been deflated with the CPI for Sweden and the CPI for the rest of the world. The CPIF is the CPI with a fixed mortgage rate. Outcomes are daily data for the nominal exchange rate, outcomes for the real exchange rate and forecasts refer to quarterly averages. The KIX is an aggregate of countries that are important for Sweden's international transactions.

Sources: National sources, Statistics Sweden and the Riksbank

# Figure 4.13. CPI, CPIF and CPIF excluding energy

Annual percentage change

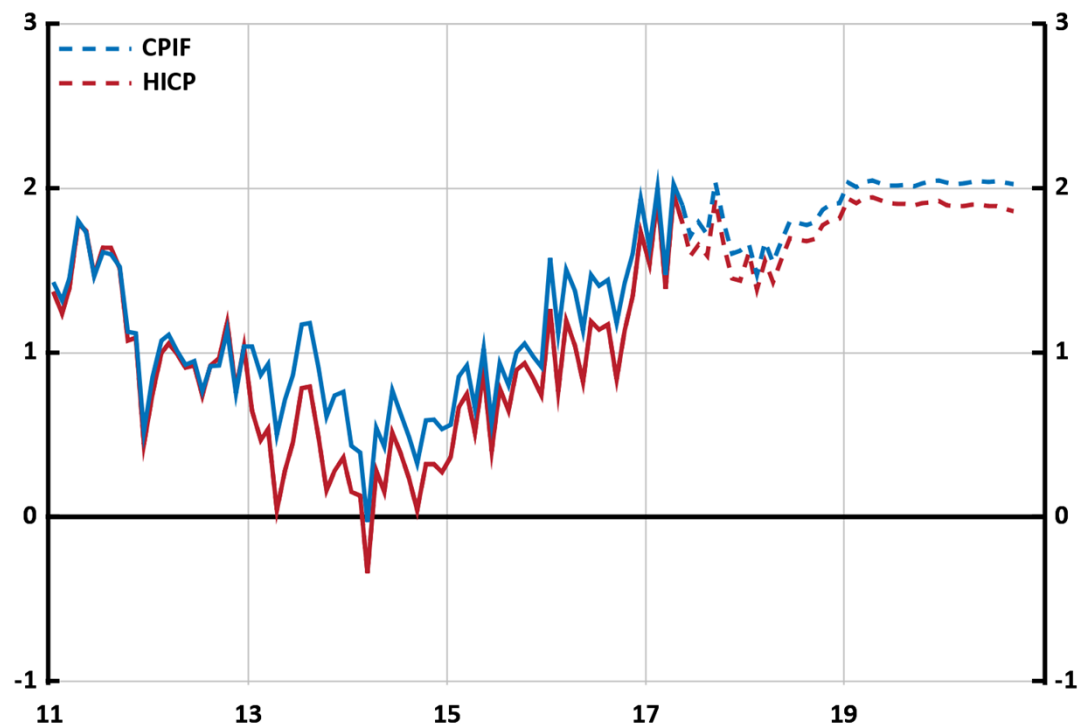


Note. The CPIF is the CPI with a fixed mortgage rate.

Sources: Statistics Sweden and the Riksbank

# Figure 4.14. CPIF and HICP

Annual percentage change



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

Sources: Statistics Sweden and the Riksbank



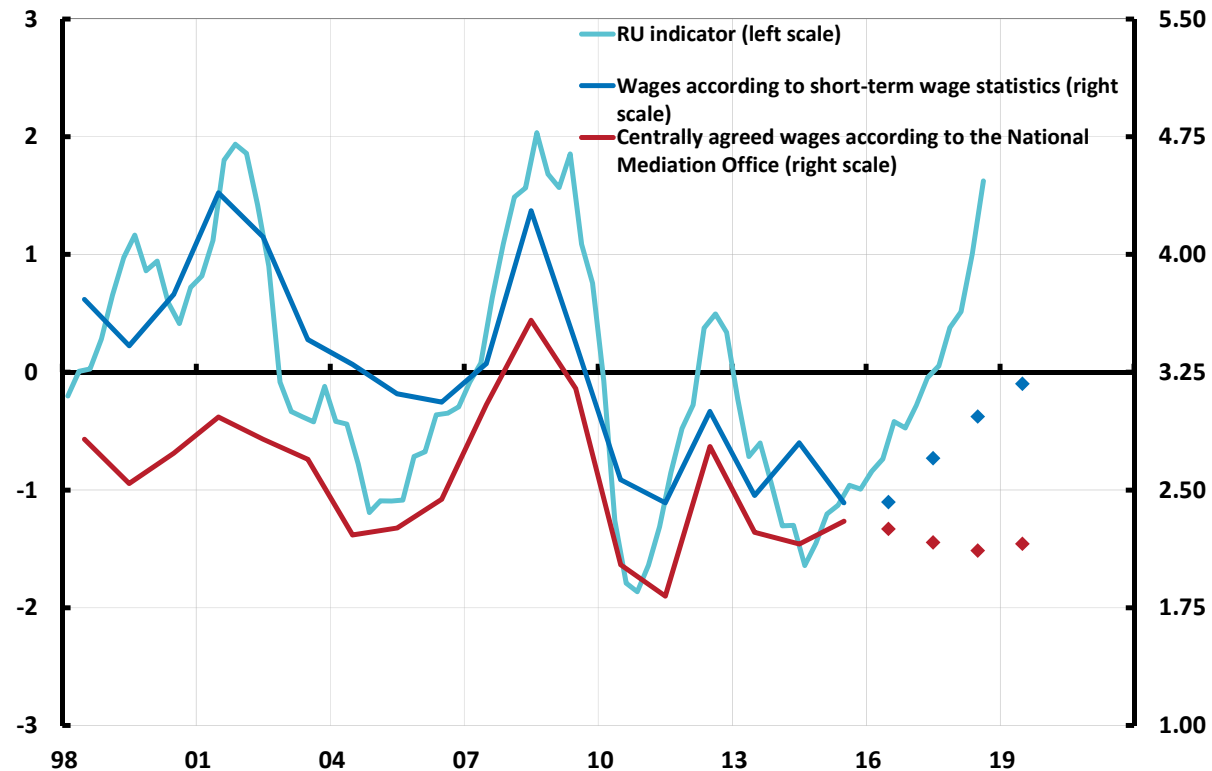
**Article – Strong  
economic activity  
but subdued wage  
increases**

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



# Figure 4.15. Wages, wage agreements and resource utilisation

Annual percentage change and standard deviation, respectively

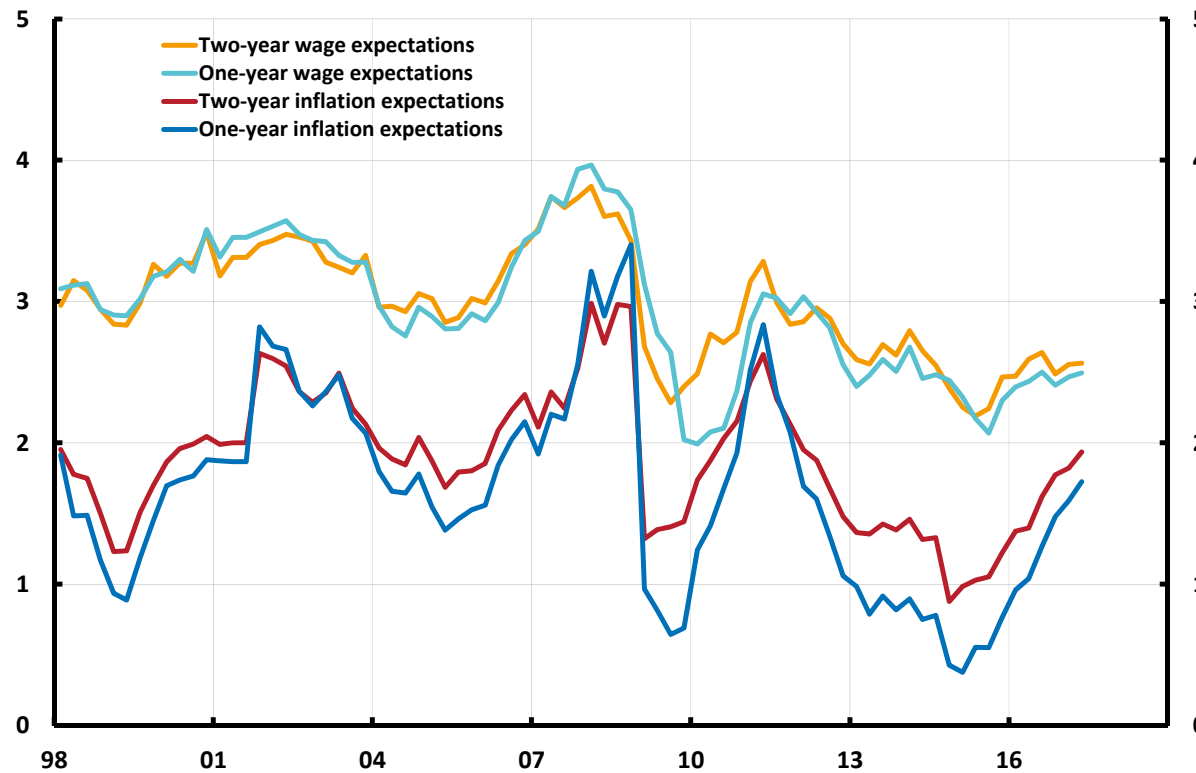


Note. The RU-indicator has been moved forward six quarters in the figure. Blue points represent Riksbank forecasts. Red points represent the National Mediation Office's forecasts of centrally agreed wages for the coming years.

Sources: National Mediation Office, Statistics Sweden and the Riksbank

# Figure 4.16. Average inflation expectations and wage expectations of the labour market parties

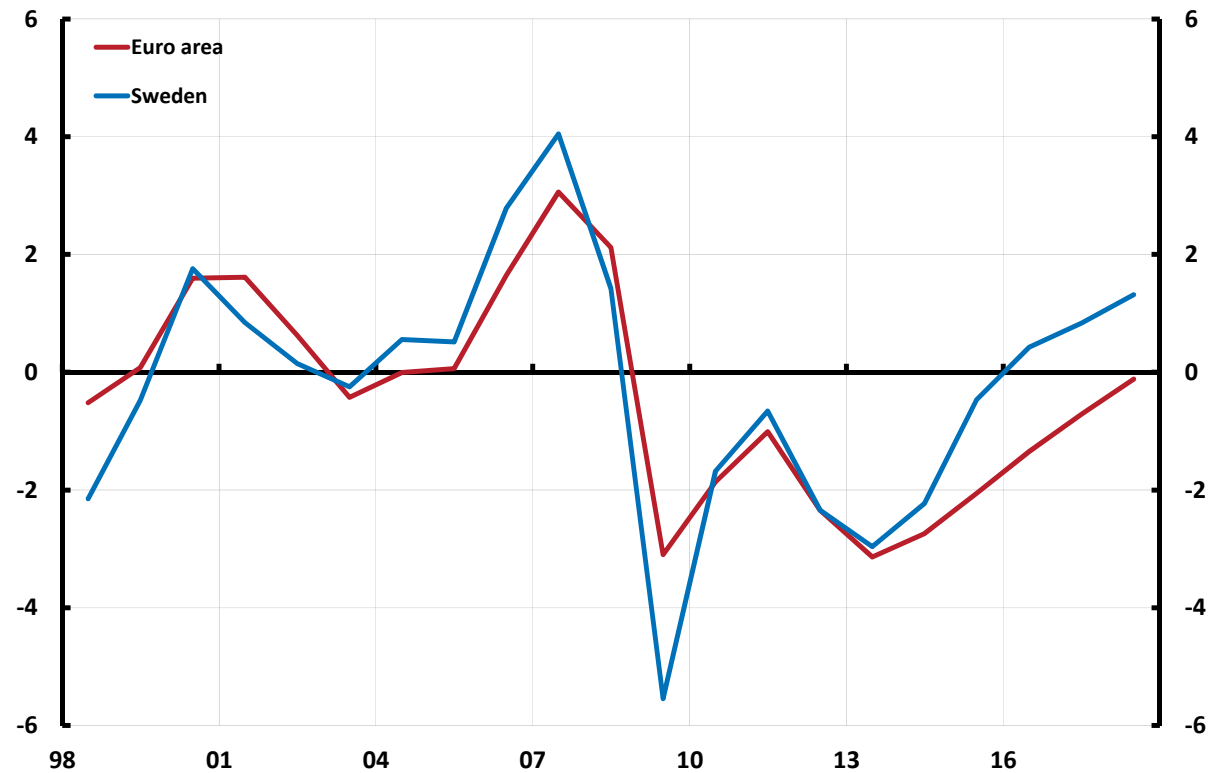
Per cent, mean value



Source: TNS Sifo Prospera

# Figure 4.17. Output gap in Sweden and the euro area

Per cent

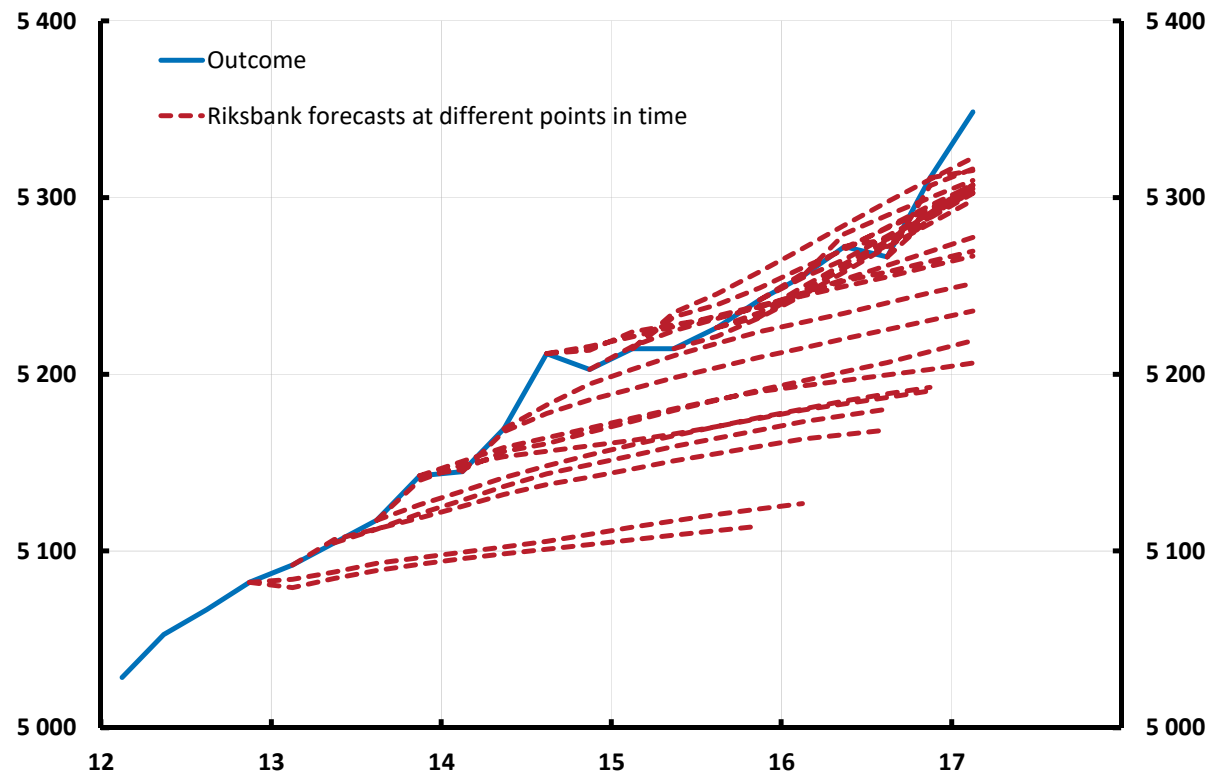


Note. The output gap for the euro area is an average of estimates made by the European Commission, IMF and OECD.

Sources: European Commission, IMF, OECD and the Riksbank

# Figure 4.18. Outcomes and forecasts for the number of people in the labour force

Thousands

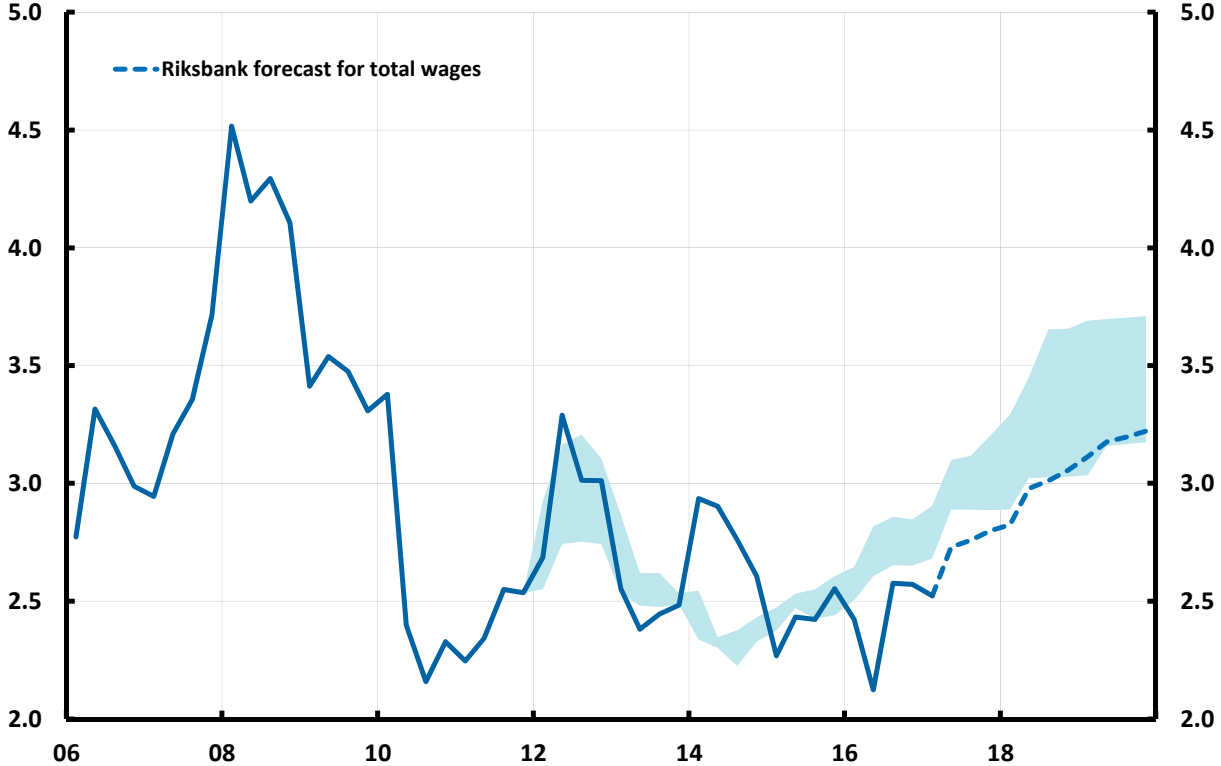


Sources: Statistics Sweden and the Riksbank



# Figure 4.19. Outcome and forecasts for the wage increase according to the short-term wage statistics

Annual percentage change



Note. The field shows adjusted values between 2012 and the first quarter of 2017. Thereafter, model forecasts are shown.

Sources: National Mediation Office 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

	Q2 2017	Q3 2017	Q4 2017	Q3 2018	Q3 2019	Q3 2020
Repo rate	-0.5	-0.5 (-0.5)	-0.5 (-0.5)	-0.4 (-0.4)	0.1 (0.1)	0.6

Source: The Riksbank

**Table 2. Inflation**

Annual percentage change, annual average

	2015	2016	2017	2018	2019
CPI	0.0	1.0	1.6 (1.6)	2.0 (2.1)	2.9 (2.9)
CPIF	0.9	1.4	1.8 (1.8)	1.7 (1.8)	2.0 (2.0)
CPIF excl. energy	1.4	1.4	1.6 (1.4)	1.8 (1.8)	2.0 (2.0)
HICP	0.7	1.1	1.7 (1.6)	1.6 (1.7)	1.9 (1.9)

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 (-0.5)	-0.4 (-0.4)	0.0 (0.0)
10-year rate	0.8	0.5	0.8 (0.9)	1.5 (1.6)	2.1 (2.3)
Exchange rate, KIX, 18 November 1992 = 100	112.6	111.7	113.2 (113.6)	110.7 (111.2)	108.8 (109.0)
General government net lending*	0.3	0.9	0.8 (0.6)	0.8 (0.7)	0.9 (0.9)

\* Per cent of GDP

Sources: Statistics Sweden and the Riksbank

**Table 4. International conditions**

Annual percentage change, unless otherwise stated

<b>GDP</b>	<b>PPP-weights</b>	<b>KIX-weights</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>
Euro area	0.12	0.47	1.9	1.7	2.0 (1.8)	1.7 (1.7)	1.6 (1.6)
USA	0.15	0.08	2.6	1.6	2.2 (2.0)	2.4 (2.4)	2.1 (2.1)
Japan	0.04	0.02	1.1	1.0	1.2 (1.2)	0.9 (0.9)	0.8 (0.8)
China	0.18	0.08	6.9	6.7	6.6 (6.6)	6.2 (5.9)	6.0 (5.7)
KIX-weighted	0.75	1.00	2.2	2.0	2.5 (2.4)	2.3 (2.3)	2.3 (2.2)
World (PPP-weighted)	1.00	-	3.4	3.2	3.5 (3.4)	3.7 (3.6)	3.7 (3.6)

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 2014 that are used for 2017, and on an assumption that the weights will develop according to the trend of the past five years in the coming forecast years.

<b>CPI</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>
Euro area (HICP)	0.0	0.2	1.4 (1.6)	1.3 (1.5)	1.7 (1.7)
USA	0.1	1.3	1.9 (2.2)	2.1 (2.3)	2.5 (2.5)
Japan	0.8	-0.1	0.6 (0.7)	1.2 (1.2)	1.6 (1.7)
KIX-weighted	1.1	1.1	1.9 (2.0)	1.9 (2.0)	2.2 (2.2)

	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>
Policy rates in the rest of the world, per cent	0.1	-0.1	-0.1 (-0.1)	0.1 (0.1)	0.3 (0.3)
Crude oil price, USD/barrel Brent	53.5	45.1	50.2 (54.8)	49.3 (55.2)	50.6 (54.6)
Swedish export market	3.4	2.7	4.9 (4.3)	3.9 (3.9)	3.8 (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	2.4	1.8 (2.1)	2.3 (2.5)	2.4 (2.4)
Public consumption	2.5	2.9	0.5 (1.4)	1.6 (1.2)	1.3 (1.2)
Gross fixed capital formation	7.0	5.3	5.3 (3.9)	3.8 (3.7)	2.4 (3.0)
Inventory investment*	0.3	0.1	-0.2 (-0.3)	0.0 (0.0)	0.0 (0.0)
Exports	5.6	3.5	3.4 (4.2)	4.1 (3.6)	3.6 (3.6)
Imports	5.5	3.8	3.4 (2.6)	4.4 (4.0)	3.8 (4.0)
GDP	4.1	3.2	2.2 (2.8)	2.4 (2.3)	2.1 (2.1)
GDP, calendar-adjusted	3.8	2.9	2.5 (3.1)	2.5 (2.4)	2.2 (2.2)
Final figure for domestic demand*	3.5	3.1	2.2 (2.3)	2.4 (2.3)	2.0 (2.1)
Net exports*	0.3	0.0	0.2 (0.9)	0.1 (0.0)	0.1 (0.0)
Current account (NA), per cent of GDP	4.7	5.1	4.9 (5.6)	4.8 (5.4)	4.7 (5.2)

\*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	1.1 (1.1)	0.7 (0.7)	0.5 (0.5)
Potential hours worked	0.9	0.8	0.7 (0.6)	0.6 (0.6)	0.6 (0.5)
GDP, calendar-adjusted	3.8	2.9	2.5 (3.1)	2.5 (2.4)	2.2 (2.2)
Number of hours worked, calendar-adjusted	1.0	1.7	1.6 (1.2)	1.1 (1.1)	0.6 (0.6)
Employed, aged 15–74	1.4	1.5	2.1 (1.8)	0.8 (0.7)	0.5 (0.5)
Labour force, aged 15–74	0.8	1.0	1.8 (1.5)	0.7 (0.7)	0.5 (0.5)
Unemployment, aged 15–74 *	7.4	6.9	6.7 (6.7)	6.6 (6.6)	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	2.4 (2.4)	2.7 (2.8)	3.0 (3.1)	3.2 (3.2)
Hourly wage, NA	3.5	3.2	3.2 (3.2)	3.2 (3.3)	3.4 (3.4)
Employers' contribution*	0.9	0.5	0.2 (0.1)	0.1 (0.1)	0.1 (0.1)
Hourly labour cost, NA	4.4	3.6	3.4 (3.3)	3.3 (3.4)	3.5 (3.5)
Productivity	2.8	1.2	0.8 (1.8)	1.4 (1.3)	1.5 (1.5)
Unit labour cost	1.5	2.4	2.5 (1.4)	1.9 (2.1)	1.9 (1.9)

\* 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