

Account of monetary policy

2016



Account of monetary policy 2016

The Riksbank is an authority under the Riksdag, the Swedish Parliament, with responsibility for monetary policy in Sweden. Since 1999, the Riksbank has had an independent position with regard to the Riksdag and the Government. This means that the six members of the Executive Board decide on monetary policy issues without seeking or taking instructions. Nor may any other authority determine how the Riksbank should decide on issues concerning monetary policy.

The way in which the Riksbank carries out the delegated task is followed up in various ways by the Riksdag. For instance, every year the Riksdag Committee on Finance examines whether the General Council of the Riksbank and the Executive Board can be discharged from liability for their administration during the past year. Every year, the Riksdag Committee on Finance also examines and assesses the monetary policy conducted by the Riksbank during the preceding years. The Riksbank compiles and publishes material for this assessment.

The material compiled by the Riksbank is thus a basis for assessment – not an assessment in itself. On the other hand, this does not mean that it is a pure compilation of figures. The account also includes analyses of outcomes, forecasts and events as the Riksbank believes that those who evaluate monetary policy should have access to the Riksbank's interpretation of the material. It is then up to the Committee on Finance, and others who wish to assess the material, to concur with the Riksbank's conclusions or to make another interpretation.

The Account of Monetary Policy, 2016 may be downloaded in PDF format from the Riksbank's website www.riksbank.se, where more information about the Riksbank can also be found.

Monetary policy in Sweden

MONETARY POLICY STRATEGY

- According to the Sveriges Riksbank Act, the objective for monetary policy is to maintain price stability. The Riksbank has specified this as a target for inflation, according to which the annual change in the consumer price index (CPI) is to be 2 per cent.
- At the same time as monetary policy is aimed at attaining the inflation target, it is also to support the objectives of general economic policy for the purpose of attaining sustainable growth and a high level of employment. This is achieved through the Riksbank, in addition to stabilising inflation around the inflation target, endeavouring to stabilise production and employment around paths that are sustainable in the long term. The Riksbank therefore conducts what is generally referred to as flexible inflation targeting. This does not mean that the Riksbank neglects the fact that the inflation target is the overriding objective.
- It takes time before monetary policy has a full impact on inflation and the real economy. Monetary policy is therefore guided by forecasts for economic developments. The Riksbank publishes its own assessment of the future path for the repo rate. This repo-rate path is a forecast, not a promise.
- In connection with every monetary policy decision, the Executive Board makes an assessment of the repo-rate path needed, and any potential supplementary measures necessary, for monetary policy to be well-balanced. It thus normally a question of finding an appropriate balance between stabilising inflation around the inflation target and stabilising the real economy.
- There is no general answer to the question of how quickly the Riksbank aims to bring the inflation rate back to 2 per cent if it deviates from the target. A rapid return may in some situations have undesirable effects on production and employment, while a slow return may have a negative effect on confidence in the inflation target. The Riksbank's ambition has generally been to adjust monetary policy so that inflation is expected to be fairly close to the target in two years' time.
- According to the Sveriges Riksbank Act, the Riksbank's tasks also include promoting a safe and efficient payment system. Risks linked to developments in the financial markets are taken into account in the monetary policy decisions. With regard to preventing an imbalance in asset prices and indebtedness, the most important factors, however, are effective regulation and supervision. Monetary policy only acts as a complement to these.
- In some situations, as in the financial crisis 2008-2009, the repo rate and the repo-rate path may need to be supplemented with other measures to promote financial stability and ensure that monetary policy is effective.
- The Riksbank endeavours to ensure that its communication is open, factual, comprehensible and up-to-date. This makes it easier for economic agents to make good economic decisions. It also makes it easier to evaluate monetary policy.

DECISION-MAKING PROCESS

The Executive Board of the Riksbank usually holds six monetary policy meetings per year at which it decides on monetary policy. A Monetary Policy Report is published in connection with these meetings. Approximately two weeks after each monetary policy meeting, the Riksbank publishes minutes from the meeting, in which it is possible to follow the discussion that led to the current decision and to see the arguments put forward by the different Executive Board members.

PRESENTATION OF THE MONETARY POLICY DECISION

The monetary policy decision is presented in a press release at 9.30 a.m. on the day following the monetary policy meeting. The press release also states how the individual Executive Board members voted and provides the main motivation for any reservations entered. A press conference is held on the day following the monetary policy meeting.

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Foreword

Every year, the Riksdag Committee on Finance examines and assesses the monetary policy conducted by the Riksbank during the preceding years. The Riksbank compiles and publishes material for this assessment in a document called "Account of monetary policy". This material covers the outcome for inflation and economic developments in general over the year, the monetary the Riksbank has conducted and the forecasts on which the Riksbank based its policy.

This year's "Account of monetary policy" differs to some extent from previous accounts. It is shorter and contains three chapters: Chapter 1 "Target attainment", Chapter 2, "Monetary policy in 2016", and Chapter 3 "the Riksbank's forecasts". In addition, this year it contains two articles. The purpose of a shorter report is to make the account easier to read and understand. The main differences in relation to previous years are as follows:

- In previous years' accounts there was a relatively technical evaluation of the forecasting performance of the Riksbank and other analysts (in the then Chapter 4). With effect from this year, an analysis of this type, but which goes into greater depth, will be published in a separate study. This year's account contains a non-technical discussion of the Riksbank's forecasts in Chapter 3.
- The "Account of monetary policy" this year contains an account of the interest-rate decisions made in the previous year and the motives behind them briefly described in Chapter 2. Previously, the account contained a longer and more detailed review of each of the individual interest-rate decisions made during the year (in the then Chapter 3). However, such a review is now included in the section "Maintaining the value of money – price stability" of the Riksbank's Annual Report, which is published in February every year.

The Riksbank has thus not ceased publishing the information that was previously contained in this report, but will instead present it in other publications.

CHAPTER 1 – Target attainment

The Riksbank has over several years conducted a very expansionary monetary policy to maintain confidence in the inflation target. This policy has contributed to good growth, to an increase in employment and a decline in unemployment, as well as to inflation rising. The upturn in inflation has been slow in Sweden, as in other countries. Measured in terms of the CPIF, inflation was 1.4 per cent on average in 2016, which was 0.5 percentage points higher than in 2015. Inflation expectations also rose and long-term expectations were once again close to 2 per cent towards the end of the year. However, the upturn in inflation still appeared relatively fragile and was largely due to the development of energy prices. If both energy prices and the direct effects of changes in the interest rate are excluded (CPIF excluding energy) inflation was unchanged at 1.4 per cent in 2016 in relation to 2015.

Economic developments and inflation during 2016

Developments in recent years

To put developments in 2016 into perspective, it may be useful to begin by looking further back in time. The Swedish economy has developed well in an international perspective, following the global financial crisis 2008-2009 (see Figure 1:1). Nevertheless, inflation has been lower in Sweden than abroad during most of the recovery after the crisis and it has undershot the inflation target longer than has been the case in many other countries (see Figure 1:2).

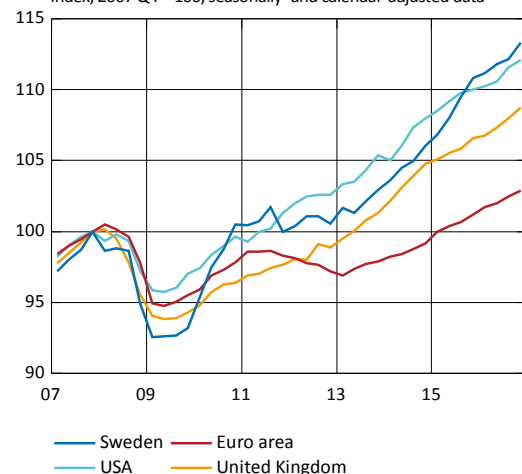
A high level of confidence in the inflation target is important for the target to function as an anchor in price-setting and wage formation in the economy. Smoothly-functioning price-setting and wage formation are in turn a necessary condition for a well-functioning economy. The inflation target has been one of the foundations of the in many ways favourable developments in the Swedish economy since the early 1990s.

If the inflation target is credible, it gives rise to a positive self-reinforcing process: If economic agents are confident that the Riksbank will achieve its target, inflation expectations a few years ahead will be close to the inflation target. This in turn makes it easier for the Riksbank to attain the target.

During 2014 there were signs that economic agents were beginning to question whether the Riksbank would attain an inflation rate of 2 per cent. One indication was that long-term inflation expectations, which had long been firmly anchored around the target, began to fall below the target (see Figures 1:3 and 1:4).¹ Actual inflation, measured as both the CPI and the CPIF, had then long been below 2 per cent and showed little sign of starting to rise (see Figure 1:5). The Riksbank therefore

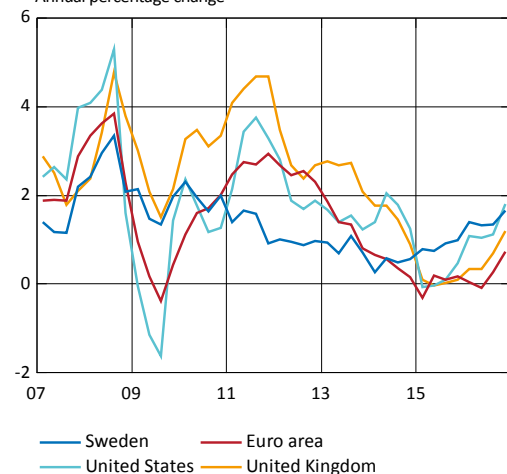
¹ For example, the Economic Council of Swedish Industry considered that this caused problems for the social partners, see "Industrins konkurrenskraft, växelkurs och penningpolitik" (The industry's competitiveness, the exchange rate and monetary policy) – A report from the Economic Council of Swedish Industry, June 2014.

Figure 1:1. GDP development in Sweden and abroad
Index, 2007 Q4 = 100, seasonally- and calendar-adjusted data



Sources: Bureau of Economic Analysis, Eurostat, Office for National Statistics and Statistics Sweden

Figure 1:2. Inflation in Sweden and abroad
Annual percentage change



Note. The CPIF is shown for Sweden and the HICP for the euro area. Others refer to the CPI.

Sources: Bureau of Labor Statistics, Eurostat, Office for National Statistics and Statistics Sweden

decided that monetary policy must be clearly aimed at maintaining confidence in the inflation target and getting inflation to rise towards 2 per cent.

When making monetary policy decisions, the Riksbank has not solely taken into account the low inflation and falling inflation expectations in Sweden. It has also needed to take into account the fact that many other central banks, not least the European Central Bank (ECB), have conducted a very expansionary policy with a negative interest rate and extensive asset purchases. If Swedish monetary policy were to deviate too far from that in other countries, it could lead to severe exchange rate fluctuations. Although some appreciation of the krona is probably justified in the long run, it may be problematic if the krona appreciates too much and too quickly, especially in a situation where confidence in the inflation target has weakened. This could make it more difficult to attain the inflation target, but also result in a much less favourable development in the real economy.

The Riksbank has therefore conducted a very expansionary monetary policy in recent years. In 2015 the repo rate was cut below zero for the first time and the Riksbank also decided to purchase government bonds so that monetary policy would become even more expansionary and have a broader impact. This policy was introduced around the same time as the ECB launched its major asset purchase programme.

Inflation on the right track, but uncertainty over the strength of the upturn

The expansionary policy conducted in recent years has had an impact and contributed to a positive development in the Swedish economy. Growth has been high, employment has increased and inflation and inflation expectations have risen. CPIF inflation rose to an average of 1.4 per cent in 2016, from 0.9 per cent in the previous year. In December, CPIF inflation was 1.9 per cent, but the Riksbank’s forecast is that it will then fall back somewhat and stabilise more permanently around 2.0 per cent again in 2018. The repo rate cuts have reduced household mortgage costs, which have had a dampening effect on CPI inflation and led to it temporarily becoming lower than CPIF inflation, which disregards this effect. However, this gap declined in 2016. CPI inflation amounted on average to 1.0 per cent from a level of 0.0 per cent in the previous year (see Table 1:1 and Figure 1:5).

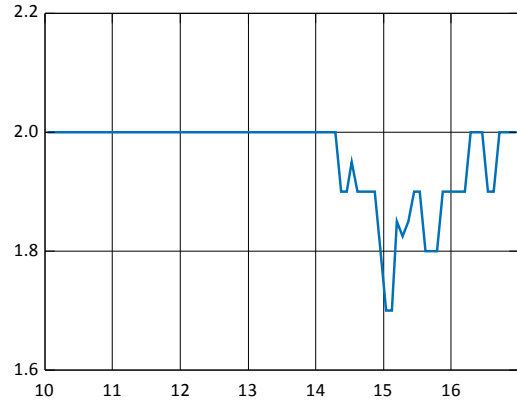
Table 1:1. Inflation according to different measures
Annual percentage change, annual average

	2014	2015	2016
CPI	-0.2	0.0	1.0
CPIF	0.5	0.9	1.4
CPIF excluding energy	0.7	1.4	1.4

Note. The CPIF is the CPI with a fixed mortgage rate.
Source: Statistics Sweden

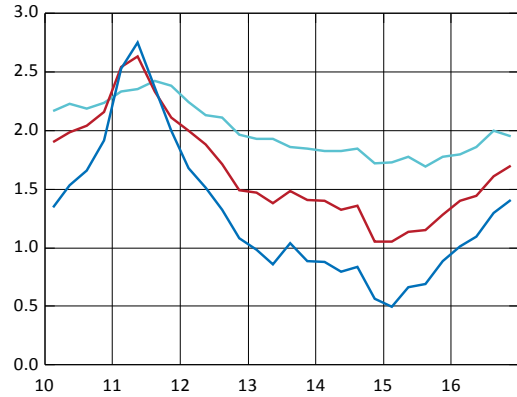
Inflation in 2016 was affected by energy prices, which began to rise after having fallen for a couple of years (see Figure 1:6 and Table 1:2). If both energy prices and the direct effects of changes

Figure 1:3. Long-term inflation expectations, 5 years ahead
Per cent, median



Note. Refers to money market participants.
Source: TNS Sifo Prospera

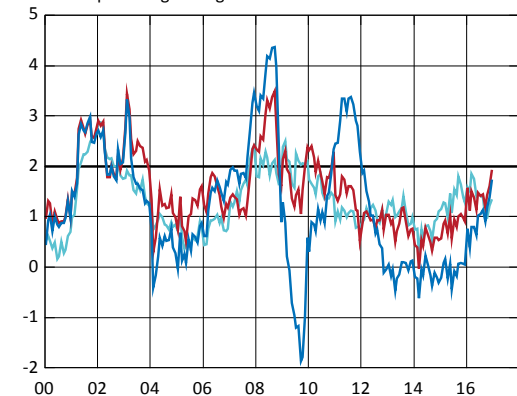
Figure 1:4. All respondents' expectations of inflation
Per cent



— 1 year ahead
— 2 years ahead
— 5 years ahead

Note. Participants surveyed are social partners, purchasing managers and money market participants.
Source: TNS Sifo Prospera

Figure 1:5. Development of inflation
Annual percentage change



— CPI
— CPIF
— CPIF excluding energy

Note. The CPIF is the CPI with a fixed mortgage rate.
Source: Statistics Sweden

in the interest rate are excluded (CPI inflation excluding energy), then inflation was unchanged at 1.4 per cent compared with 2015. If one looks at the development over the year, this measure of inflation has even declined somewhat. This is partly due to slower price increases on imported goods, which in turn were partly a result of the krona strengthening during the period until the middle of 2016. As energy prices can quickly change, there remains uncertainty regarding the strength of the upturn in inflation.

With regard to the other components of the CPI, only food prices increased less than in 2015 (see Table 1:2). Service prices, which have a substantial weighting in the CPI, rose by 2 per cent, in line with the average increase 2000–2015. Goods prices, which normally fall somewhat, were on average unchanged, as in 2015. If one adjusts the development in prices for goods and services for mobile phones being reclassified from services to goods, service prices have increased at a somewhat slower pace than normal, while goods prices have shown a stronger development.

Table 1:2. Development of the CPI and its components
Annual percentage change, annual average

	Weight (per cent)	2000–2015	2015	2016
Services	44.5	1.8	1.2	2.0
Goods	26.9	-0.5	0.0	0.0
Food	18.0	1.9	2.7	1.1
Energy	7.0	3.5	-4.9	1.4
Interest expenditure	3.6	0.3	-16.6	-7.7
CPI	100.0	1.2	0.0	1.0

Note. The weights are those applying for 2017.
Source: Statistics Sweden

As inflation has risen, inflation expectations have also risen (see Figure 1:4). Towards the end of 2016, long-term inflation expectations were once again at or very close to 2 per cent. The policy the Riksbank has conducted thus appears to have contributed to maintaining confidence in the inflation target.

Continued good growth and falling unemployment

The expansionary policy also contributed to the Swedish economy continuing to develop well in 2016. GDP grew by 3.3 per cent, which was somewhat slower than in 2015, but still significantly higher than the historical average, which is around 2 per cent (since 1980). Also from an international perspective, the situation in Sweden was good. As during the previous year, growth was higher than in, for instance, the United States, the United Kingdom and the euro area (see Figure 1:7).

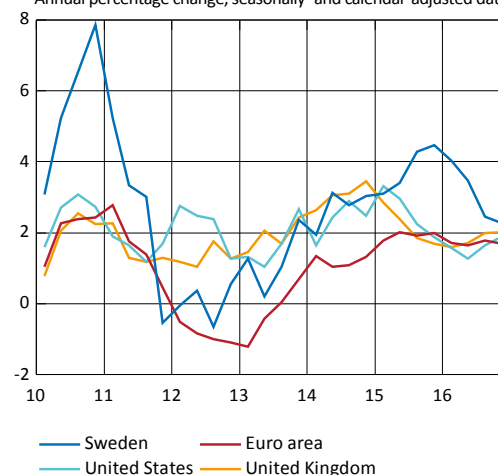
The good growth was reflected in the positive development of the labour market. The number of persons employed increased by 1.5 per cent, which was around the same increase as in the previous year. Although the labour force also increased, this means that unemployment measured as an annual average fell by half a percentage point to 6.9 per cent (see Table 1:3). However, the decline over the course of the year was not as rapid as in 2015 (see Figure 1:8).

Figure 1:6. Crude oil price
USD per barrel



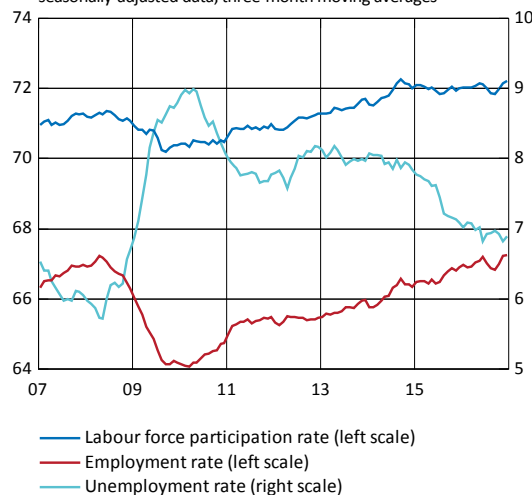
Note. Brent oil, outcomes represent monthly averages of spot prices.
Source: Macrobond

Figure 1:7. GDP growth in Sweden and abroad
Annual percentage change, seasonally- and calendar-adjusted data



Sources: Bureau of Economic Analysis, Eurostat, Office for National Statistics and Statistics Sweden

Figure 1:8. Labour force, employment and unemployment
Per cent of the population and per cent of the Labour force, aged 15–74, seasonally-adjusted data, three-month moving averages



Source: Statistics Sweden

Table 1:3. Production and the labour market according to different measures

Annual percentage change, annual average

	2014	2015	2016
GDP	2.6	4.1	3.3
Number of hours worked	1.5	1.6	2.4
Employed, 15–74 years	1.4	1.4	1.5
Labour force, 15–74 years	1.3	0.8	1.0
Unemployment, 15–74 years	7.9	7.4	6.9

Note. Unemployment refers to percentage of the labour force.

Source: Statistics Sweden

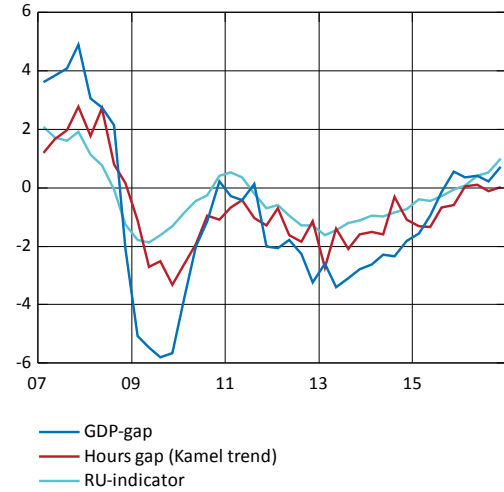
The level of activity in the economy is often summarised in some form of measure of resource utilisation. However, there is no clear-cut method for measuring this. The Riksbank therefore uses a number of indicators to assess the level of resource utilisation. Two examples of such indicators are the GDP gap and the hours worked gap, which measure the percentage deviations of GDP and the number of hours worked from their respective estimated long-run levels. The Riksbank also has its own indicator of resource utilisation, the RU indicator, which summarises information from surveys and labour market data using a statistical method. If the respective measure is positive, it indicates a high level of activity in the economy and a higher level of resource utilisation than normal. The opposite applies when the measurements are negative. If the measurements are equal to zero, the situation is normal and there is economic balance.

All three measures indicate that resource utilisation was normal or somewhat higher than normal during 2016, after having been lower than normal for several years (see Figure 1:9). The Riksbank assesses that resource utilisation will increase further in the years ahead. The assessment is that this is necessary to bring inflation in line with the target within a reasonable time perspective.

The low interest rates and stronger economic activity also contributed to housing prices and household debt continuing to increase. The problems on the housing market are essentially structural rather than cyclical, and must be resolved with measures that make the housing market function better and reduce households' incentives and possibilities to take on debt. But the currently expansionary monetary policy also contributes to an increase in risk. The Riksbank has been pointing out the problems linked to this development for some time now and the Executive Board continued to discuss and draw attention to them during the year (see further Chapter 2).

Figure 1:9. GDP gap, hours gap and RU indicator

Per cent and standard deviation respectively



Note. GDP gap refers to the GDP deviation from trend, calculated using a production function. The hours gap refers to the deviation of number of hours worked from the Riksbank's assessed trend. The RU indicator is normalised so that the mean value is 0 and the standard deviation is 1.

Sources: Statistics Sweden and the Riksbank

CHAPTER 2 – Monetary Policy 2016

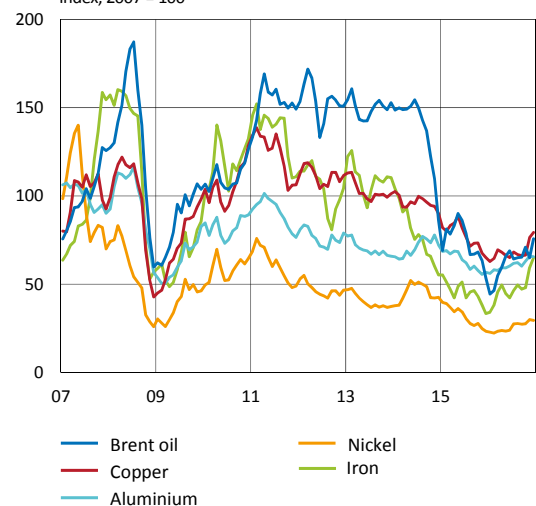
Inflation continued to rise towards the target in 2016, but the upturn appeared to be fragile. Risks associated with the economic developments abroad, low inflation in many countries and low global interest rates remained. The Riksbank therefore continued to pursue an expansionary policy during 2016 to support the upturn in inflation and maintain confidence in the inflation target. The repo rate was cut from -0.35 per cent to -0.50 per cent at the beginning of the year and purchases of government bonds were increased on two occasions, from a total of SEK 200 billion to SEK 275 billion. The Executive Board was unanimous regarding the importance of keeping the policy expansionary and much of the communication during the year focused on explaining and justifying this, given the good growth in the real economy. The risks of low interest rates also continued to be in focus in the monetary policy debate, as did the effectiveness of various monetary policy tools.

Monetary policy in brief

During 2016, monetary policy was, like the year before, characterised by considerable uncertainty over international economic developments and low global interest rates. Inflation was still low internationally, partly as a result of a fall in the price of oil and other commodities (see Figures 2:1 and 2:2). Monetary policy remained highly expansionary in several parts of the world. However, there were differences between developments in different countries, which was reflected in monetary policy. For example, the ECB expanded its bond purchasing programme in December 2016, at approximately the same time as the US Federal Reserve raised its policy rate. Important international political events also took place during the year, including the United Kingdom's decision to leave the EU and the US presidential election. It is still difficult to forecast the consequences of these events and this adds to the continued major uncertainty surrounding international developments at the start of 2017. In comparison with other countries, economic growth in Sweden was relatively good in 2016, but uncertainty about developments remained and monetary policy was still expansionary to support the upturn in inflation.

In Sweden, economic activity had strengthened during 2015 and unemployment had fallen, partly due to the expansionary monetary policy. Resource utilisation was deemed to be close to normal at the beginning of 2016. Underlying inflation (the CPIF and the CPIF excluding energy) had shown a rising trend but the upturn had been somewhat erratic. After the monetary policy meeting in December 2015, the krona strengthened against most other currencies, partly as a reaction to economic statistics indicating strong economic growth. An excessively rapid appreciation of the krona would jeopardise the ongoing upturn in inflation and at two extraordinary meetings in January, the Executive Board stressed its preparedness to use foreign exchange interventions in a vulnerable situation in order to

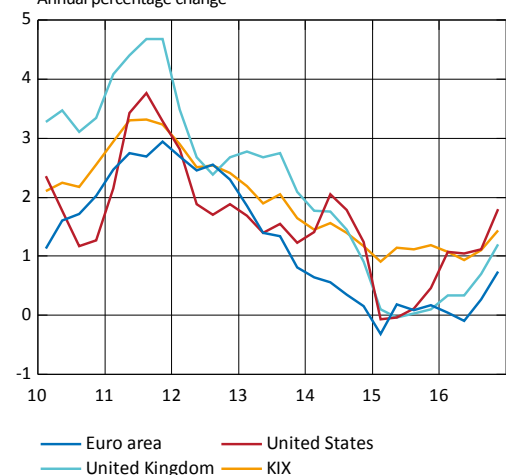
Figure 2:1. Commodity prices
Index, 2007 = 100



Note. Outcomes represent monthly averages of spot prices.

Sources: London Metal Exchange, Macrobond and the World Bank

Figure 2:2. Inflation abroad
Annual percentage change



Note. The HICP is shown for the euro area, for others CPI. KIX is an aggregate of the countries that are important to Sweden's international transactions.

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

counteract such a development and safeguard the upturn in inflation. On 4 January, the Executive Board decided to give the Riksbank a mandate to intervene on the foreign exchange market, as a supplementary monetary policy measure, and that the Governor and the First Deputy Governor could decide on interventions if there was not enough time to await a decision by the entire board. On 19 January, the Executive Board decided to extend the Governor and First Deputy Governor’s delegation mandate for foreign exchange interventions. During the year, however, the krona depreciated and a situation in which interventions might come into question never arose. The Riksbank assessed the monetary policy measures implemented so far, cutting the repo rate and extending purchases of government bonds, to be sufficient.

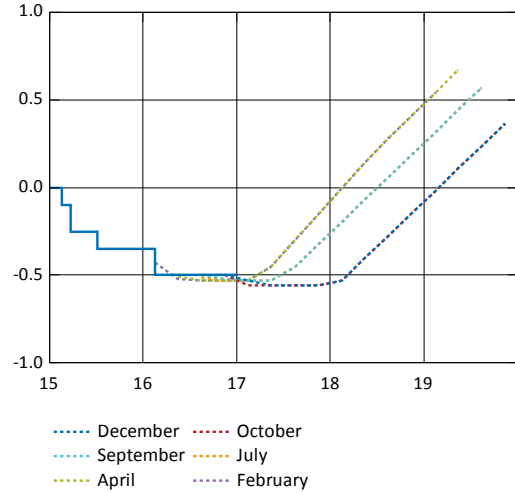
A brief account of monetary policy during the year is given below.² The forecasts made during 2016 for the most central variables, and which formed the basis of the decisions taken, are shown in Figures 2:3–2:8.

Prior to the first ordinary monetary policy meeting of the year in February, low inflation figures, together with lower energy prices and low rent increases, had contributed towards inflation in 2016 likely being lower than forecast in December 2015. This meant that the period of low inflation looked set to become even more prolonged, which, in turn, increased the risk of confidence in the inflation target becoming weaker. The Executive Board therefore made the assessment that monetary policy needed to become more expansionary to secure the rising trend in inflation and safeguard the role of the inflation target as nominal anchor for price-setting and wage formation. The repo rate was cut from –0.35 per cent to –0.50 per cent in February (see Figure 2:3).

In March, the ECB decided to cut its policy rates and extend its already comprehensive purchases of securities. The ECB’s expansionary monetary policy was expected eventually to lead to higher resource utilisation and inflation in the euro area and thereby also in Sweden. However, in the short term, there was a risk that the krona would appreciate sooner and faster than expected, which could restrain growth and inflation in Sweden and weaken confidence in the inflation target. The Executive Board therefore decided in April to purchase government bonds for a further SEK 45 billion during the second half of 2016 (see Figure 2:9). These purchases were expected to help reduce the risk of the krona appreciating too quickly and interrupting the rise in inflation. To achieve a broad impact on different interest rates, it was decided that the purchases would include both nominal and real government bonds corresponding to SEK 30 billion and SEK 15 billion respectively.

Uncertainty over economic developments abroad increased further in July due to the result of the British referendum that the United Kingdom intends to withdraw from the EU. Due to this increased uncertainty, the Riksbank assessed that a highly expansionary policy would continue to be necessary. The repo

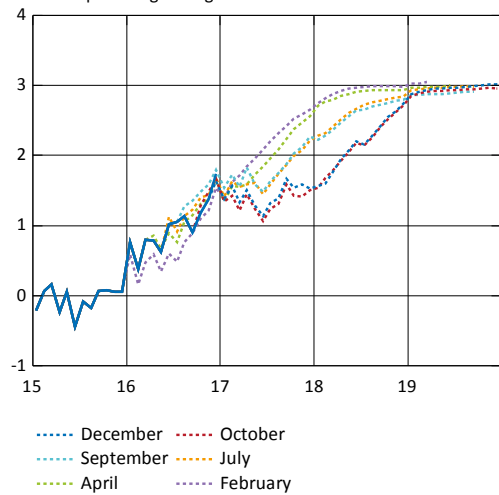
Figure 2:3. Repo rate, forecasts 2016
Per cent



Note. Outcome data are daily rates and forecasts are quarterly averages. The repo-rate path in February largely coincides with the path in April, the path in July with that in September, and the path in October with that in December

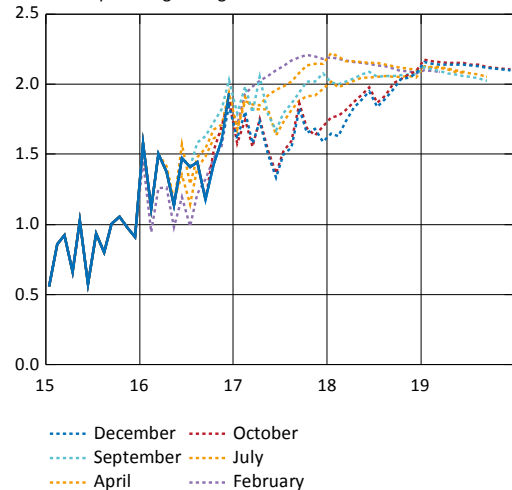
Source: The Riksbank

Figure 2:4. CPI, forecasts 2016
Annual percentage change



Sources: Statistics Sweden and the Riksbank

Figure 2:5. CPIF, forecasts 2016
Annual percentage change



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

Sources: Statistics Sweden and the Riksbank

² A more detailed account of the monetary policy decisions in 2016 can be found in the chapter “Maintaining the value of money – price stability” in the Riksbank’s Annual Report 2016.

rate was held unchanged at -0.50 per cent in July, but the Executive Board deemed it appropriate to adjust the forecast for the first rate increase further ahead in time. The delegation mandate for foreign exchange interventions was also extended to February 2017.

The weak inflation outcomes in August and September emphasised the uncertainty in the assessment of inflation. The Riksbank revised its view of inflationary pressures downwards and estimated that it would take more time for inflation to reach 2 per cent. The forecast time for a future increase in the rate was therefore postponed once again in October. The Executive Board also emphasised that, ahead of the monetary policy meeting in December, it was ready to extend government bond purchases and that it was highly prepared to make monetary policy even more expansionary if the rising inflation should be threatened.

In December, the Riksbank noted that the recovery abroad had continued at the same time as growth in Sweden had been higher than expected during the third quarter. Confidence indicators pointed to rising optimism in both the business sector and the household sector. However, inflation had been somewhat weaker than expected in recent months, and it was deemed to still be uncertain how quickly inflation would rise going forward. The ECB decided to extend its bond-buying programme for another nine months (but at a lower rate of purchase per month) and there was concern that the krona might appreciate too quickly. The upturn in inflation was deemed to still be in need of support from monetary policy and the Executive Board therefore decided to extend the purchases of government bonds by SEK 15 billion each in nominal bonds and real bonds during the first half of 2017.

Challenges and trade-offs in monetary policy in 2016

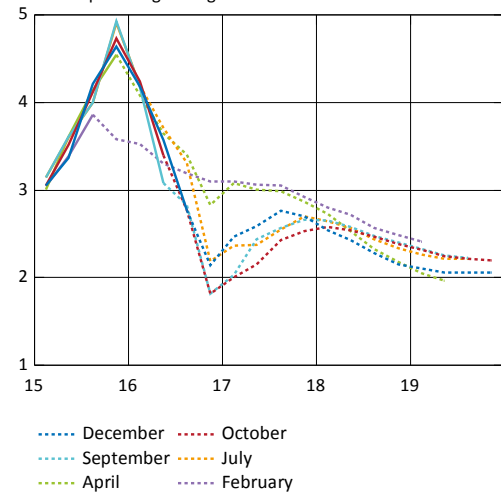
The low interest rate level

During the year, there has been a relatively lively economic policy debate in the media about the expansionary monetary policy. It has centred on the effects and risks of the negative repo rate in itself as well as on whether it has been necessary to maintain the very expansionary policy, given the strong growth in the real Swedish economy. Much of the Riksbank's communication during the year has centred on these issues.³

In speeches and other contexts, the members of the Executive Board have pointed out that the low interest rates are very much an international phenomenon. Global interest rates have been falling from twenty or so years and are currently very low (see Figure 2:10). A general explanation for the low level of

³ The Riksbank participated in the public economic policy discussion in the form of contributions and speeches by various Executive Board members, see for instance Per Jansson "Unjust criticism of the Riksbank" Dagens Industri, 8 March, Martin Flodén, "Why we have negative interest rates", Dagens Industri, 22 November and Per Jansson, "Time to scrap the inflation target?", presentation at Swedbank, 7 December.

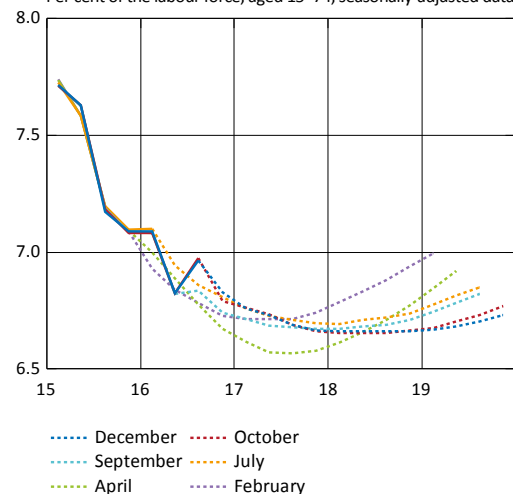
Figure 2:6. GDP, forecasts 2016
Annual percentage change



Note. Several outcome lines are shown in the figure. This is because the outcomes have been revised by Statistics Sweden.

Sources: Statistics Sweden and the Riksbank

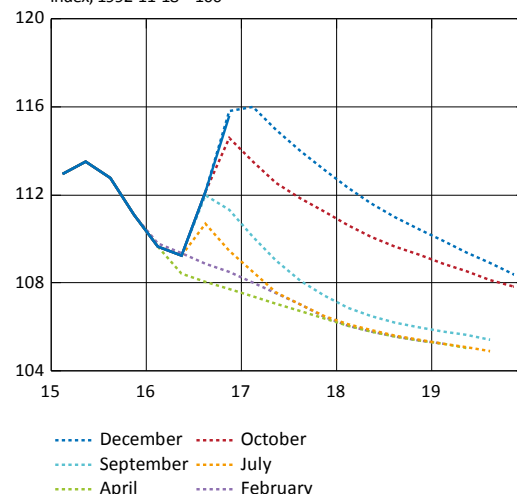
Figure 2:7. Unemployment, forecasts 2016
Per cent of the labour force, aged 15–74, seasonally-adjusted data



Note. See the note to figure 2:6.

Sources: Statistics Sweden and the Riksbank

Figure 2:8. KIX-weighted nominal exchange rate, forecasts 2016
Index, 1992-11-18 = 100



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

Sources: National sources and the Riksbank

interest rates is that, across the world, the willingness to save has long been greater than the willingness to invest.⁴ Global real interest rates are an important determinant for real interest rates in individual countries. Monetary policy has to relate to this level of interest rates, but can neither affect it nor deviate from it persistently. This is reflected in the low policy rates currently applying all around the world (see Figure 2:11). What are sometimes depicted as various negative side effects of the expansionary monetary policy, for example low yields on pension savings, are therefore largely a result of low real global interest rates.

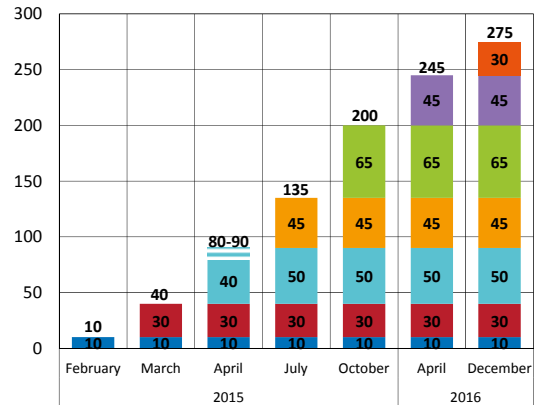
Confidence in the inflation target and the risks of low inflation

There is considerable understanding among the Executive Board members for the fact that the situation with a negative repo rate is unusual and can therefore give rise to some concern among economic agents.⁵ The backdrop to the policy being conducted is, however, that inflation has been below-target for a long time and that there have been signs that confidence in the inflation target has started to be undermined. The Executive Board has been in agreement on the necessity to prioritise maintaining confidence in the inflation target in this situation, even though it has required the Riksbank to use an unusual and largely untested monetary policy.

There are good reasons for safeguarding confidence in the inflation target. With a shared perception of how prices will develop in the future, it is easier for economic agents to plan for the long term and the coordination of expectations lays the foundation for efficient price-setting and wage formation. This is something from which the Swedish economy has obviously benefitted. With expectations anchored around the target, a positive self-reinforcing circle is created, in which the actual prices and wages are adapted to the inflation target. On the other hand, if the expectations start to deviate from the target, the central bank would have to grapple with a negative self-reinforcing circle.

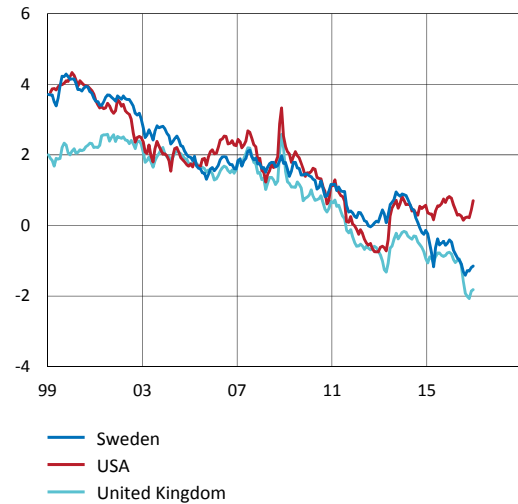
In this context, it is important for a central bank to include the risks associated with an excessively low inflation rate in the considerations. Persistently below-target inflation increases the risk of economic agents adjusting their expectations and starting to assume that inflation will not return to the target even in the longer term. If inflation and inflation expectations were to permanently remain on too low a level, it could give rise to problems similar to those that would arise if the inflation target were set too low. In both cases, the average nominal interest rate would also be lower. This would reduce the central bank's leeway for cutting the policy rate in the future if inflation becomes low or economic activity wavers. In other words, there would be a risk of reaching the policy rate's lower bound more often and for longer periods.

Figure 2:9. Purchases of government bonds decided by the Riksbank
SEK billion



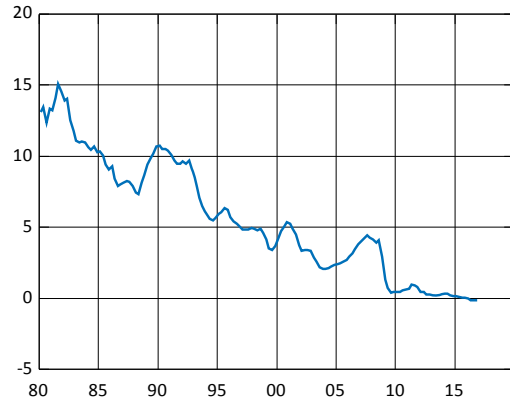
Note. Purchases of government bonds, excluding reinvestments, will continue until mid-2017.
Source: The Riksbank

Figure 2:10. 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 2:11. Policy rate abroad, KIX
Per cent



Note. The policy rate refers to relative KIX-weighting of the euro area, the USA, the UK and Norway. KIX refers to an aggregate of countries that are important for Sweden's international transactions.
Sources: National sources and the Riksbank

⁴ See the article "The long-term repo rate" in the Monetary Policy Report of February 2017.
⁵ In several speeches during the year, the Executive Board has communicated its understanding for the concern, see, for instance, Per Jansson, "Time to scrap the inflation target?" 7 December.

A very expansionary monetary policy that pushes up inflation more rapidly can reduce the risk of inflation and expectations permanently remaining at too low a level.

The debate on low interest rates, debt and housing prices

The debate during the year has focused considerably on the risks associated with negative interest rates. One risk that is highlighted in particular is that the expansionary policy contributes to the increase in housing prices and indebtedness.⁶

With regard to the development of housing prices and household debt, the Riksbank has been making it clear for a long time that low interest rates involve heightened risks. As noted above, however, it is important to realise that real interest rates in Sweden and abroad are currently very low, and that this is not something monetary policy can influence. Low real interest rates in general mean that the central bank's policy rates are on average low, both when monetary policy is expansionary and when it tightens. The fact that monetary policy in Sweden is currently expansionary does contribute to the risks increasing somewhat, but the main problem on the housing market is not that the repo rate is low at the moment.

The Executive Board's view is that the Riksbank, in a situation where confidence in the inflation target is showing signs of weakening, cannot disregard this decline in confidence to try to dampen developments in housing prices and debt. The problems on the housing market are essentially structural and if confidence in the inflation target were to be lost, it could be difficult and costly to restore it.

Housing prices and household indebtedness have risen in parallel and almost constantly for twenty years (see Figure 2:12) and during this time monetary policy has been both expansionary and contractionary. A combination of measures in different policy areas is necessary to reduce the risks. Above all, measures are needed that tackle the primary causes of the rise in indebtedness. These include measures aimed at the housing market to obtain a better balance between supply and demand, as well as measures in taxation policy and macroprudential policy to reduce households' incentives and ability to take on debt.

The repo rate and other monetary policy tools

As previously mentioned, the Executive Board members were in agreement about the importance of safeguarding confidence in the inflation target of 2 per cent and about the need to keep monetary policy expansionary. The views of Executive Board members did vary, however, as regards exactly how expansionary monetary policy needed to be and which tools were most effective. But in general, they agreed that the repo rate needed to be held at a very low level, that purchases of government bonds were an important supplementary tool and that vigilance needed to be maintained against an overly rapid appreciation of the Swedish krona.

Figure 2:12. Real housing prices and household debt
Index, 2000 Q1 = 100 and per cent of disposable income respectively



Note. Real housing prices refer to the property price index (single-family houses) and debt refers to total debt. Housing prices have been converted from nominal to real terms by using the CPI.

Sources: Statistics Sweden and the Riksbank

⁶ For a more detailed analysis of potential side effects, see the article "The effects of the Riksbank's monetary policy 2015–2016" in this report.

A majority of members were of the view that cutting the repo rate to -0.50 per cent in February and the extended purchases of government bonds in April and December were necessary in order to secure the upturn in inflation towards the target and to maintain confidence in the inflation target. On these occasions, a few members made a slightly different assessment, one feature of which was that ever-stronger economic activity was increasing the likelihood of an upturn in inflation, even without a more expansionary monetary policy. Another argument was that the tools were increasingly difficult to use and that there was a limit to how far the rate can be cut without weakening its impact or leading to problems.

The question of to what extent the effectiveness of various monetary policy tools had begun to decline and to what extent they had begun to be linked to gradually increasing problems was discussed at considerable length by the Executive Board over the course of the year. With regard to the repo rate, for instance, one question concerned whether the cuts had begun to have such a small impact on lending rents to households and companies that monetary policy's conventional interest-rate channel no longer supplemented other channels in the transmission mechanism. In general, however, the assessment was that a repo-rate cut is still an effective measure, partly because it can have an impact through the exchange-rate channel. This was reflected in, for instance, the fact that the interest rate forecast across the whole year indicated that the rate was more likely to be cut than raised in the period ahead.

The effectiveness of government bond purchases was also discussed by the Executive Board. One aim of the purchases is to push down market rates with longer maturities, but the purchases can also have an effect via other channels, such as by signalling that monetary policy will remain expansionary in the period ahead.⁷ An issue that was discussed towards the end of the year was whether the monetary policy impact of additional purchases of nominal government bonds might only be slight due to the Riksbank already having bought a significant share of the outstanding stock. However, the Executive Board's assessment was that bond purchases were an effective and useful tool during 2016.

As regards the exchange rate, the Executive Board agreed that there was reason to try to prevent an overly rapid appreciation of the Swedish krona, until stronger economic activity could take over as the main inflationary driver. As noted above, the Executive Board opened the door at the beginning of the year to foreign exchange interventions as a feasible tool with which to influence the exchange rate in a vulnerable situation. The views of the Executive Board members varied, however, as regards how effective this tool would be. But during the year, the krona depreciated and interventions on the foreign exchange market did not become an issue.

⁷ See J. Alsterlind, H. Erikson, M. Sandström and D. Vestin, "How can government bond purchases make monetary policy more expansionary?", *Economic Commentary*, no. 12, 2015, Sveriges Riksbank.

Monetary policy decisions in 2016

The Executive Board of the Riksbank normally holds six ordinary monetary policy meetings per year, at which it decides on the repo rate and other monetary policy measures. In conjunction with the monetary policy meetings, a Monetary Policy Report is published, which includes forecasts for the repo rate, inflation and other economic variables. Two extraordinary monetary policy meetings were held in January 2016.

4 January The Executive Board decided that the Riksbank could intervene on the foreign exchange market, as a supplementary monetary policy measure, and that the Governor and the First Deputy Governor could decide on interventions if there was not enough time to await a decision by the entire board. Martin Flodén entered a reservation against the decision on the grounds that it was appropriate to wait before employing further monetary policy stimuli and that foreign exchange interventions were not a suitable tool for making policy more expansionary in the current situation.

19 January The Executive Board decided to extend the Governor and First Deputy Governor's delegation mandate for foreign exchange interventions. Martin Flodén entered a reservation against the decision on the same grounds as before.

10 February The repo rate was cut by 0.15 percentage points to -0.50 per cent and the inflation forecast was revised downwards. The Executive Board also decided that, until further notice, the Riksbank should reinvest received coupons from and repayments upon the maturity of its holdings of nominal government bonds. The delegated mandate for foreign exchange interventions was extended until the monetary policy meeting in July. Martin Flodén and Henry Olsson entered reservations against the repo rate cut and advocated an unchanged rate. Martin Flodén also entered a reservation against extending the delegation mandate for foreign exchange interventions on the same grounds as before.

20 April The repo rate was left unchanged at -0.50 per cent and the Executive Board decided to purchase government bonds for a further SEK 45 billion during the second half of 2016. The Executive Board also decided that, until further notice, the Riksbank should reinvest received coupons from and repayments upon the maturity of its holdings of Swedish government bonds. Cecilia Skingsley entered a reservation against carrying out further bond purchases and advocated an unchanged monetary policy.

5 July The repo rate was left unchanged at -0.50 per cent and the forecast for future rate increases was postponed. The Executive Board also decided to extend the delegated mandate for foreign exchange interventions until 14 February

2017, against which Martin Flodén entered a reservation on the same grounds as previously.

6 September The repo rate was held unchanged at –0.50 per cent.

26 October The repo rate was held unchanged at –0.50 per cent. It was deemed necessary to keep the repo rate at this level for six months longer than in the assessment in September.

21 December The Executive Board of the Riksbank decided to continue purchasing government bonds during the first six months of 2017, both nominal and real bonds, each corresponding to SEK 15 billion. The Executive Board also decided that the reinvestment of the sum of around SEK 30 billion, that largely concerns repayments on maturity of the Riksbank's holdings of Swedish government bonds in August 2017, shall begin after the turn of the year 2016/2017 and continue throughout the year. Martin Flodén entered a reservation and advocated that the purchases should be extended by SEK 15 billion and only cover real government bonds. Henry Ohlsson and Cecilia Skingsley argued that the purchases should not be extended at all as monetary policy did not need to be made more expansionary in the current economic situation.

ARTICLE – The effects of the Riksbank’s monetary policy 2015–2016

In recent years the Riksbank has conducted what is an unusually expansionary monetary policy, in a historical perspective. The repo rate has been cut below zero, the Riksbank has announced and implemented extensive purchases of government bonds, and the Executive Board has announced its preparedness to intervene on the foreign exchange market. This policy has had the intended effects. This article analyses how monetary policy has affected different financial variables (long-term and short-term interest rates, the international spread and the krona exchange rate). This is the first stage in what is known as the monetary policy transmission mechanism, which describes how monetary policy affects the economy. It also discusses potentially negative side-effects of the monetary policy conducted, including the risk that households and companies will withdraw large volumes of cash and that the government bond market will function less efficiently.

An unusual monetary policy

The monetary policy the Riksbank has conducted in recent years has been both very expansionary and very unusual in a historical perspective. The repo rate has been cut in several stages to –0.50 per cent, the Riksbank has announced purchases of government bonds to a total nominal value of SEK 275 billion, and the Executive Board has declared a readiness to intervene on the foreign exchange market if necessary to prevent the krona from appreciating too rapidly.

Inflation has been rising since the beginning of 2015, and long-term inflation expectations are once again close to 2 per cent. Moreover, growth is good and unemployment is falling. The expansionary monetary policy has contributed to this development, although it is difficult to assess exactly how much. This article focuses on estimating the more direct effects monetary policy has had on financial variables. In addition, there is a discussion of the potentially negative side-effects of the policy.

How can one measure the effects of monetary policy on financial variables?

Financial variables in Sweden are affected by many events, both in Sweden and abroad. A common method for measuring the effects of monetary policy on financial variables is to study what happens to them when monetary policy decisions are announced (for example, during 30 minutes around the announcement, or during the same day).⁸

However, financial variables react primarily to information that is not expected. If the monetary policy

decision is expected, the effects of the announcement will probably underestimate the total impact of the decision, as the effects will have occurred prior to the announcement.

A monetary policy decision that is more expansionary than expected should lead to short-term and long-term interest rates falling (both in terms of their level and in relation to interest rates in other countries) and to the krona exchange rate weakening. During 2015–2016 this has also been the case on several occasions when monetary policy decisions have been announced. For instance, most interest rates fell and the krona weakened in March and July 2015, when the Riksbank announced that the repo rate was being cut and that the purchases of government bonds would be extended. However, on other occasions the market effects have been the reverse, for instance, in April 2015 when interest rates rose and the krona strengthened after the Riksbank announced it would extend the government bond purchases. This was probably due to market participants then expecting that the repo rate would also be cut, that is, they had counted on an even more expansionary policy than the one announced.

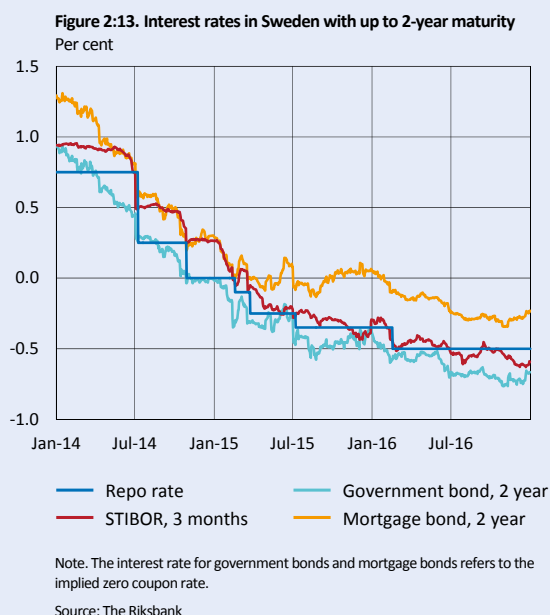
Market rates have fallen

The cuts in the repo rate to below zero have had a clear impact on short-term market rates, roughly in the same way as when the repo rate is positive (see Figure 2:13). Interbank rates and government bond yields for maturities up to five years are now negative. This is due to many different factors, but one explanation is the monetary policy conducted.

Since the beginning of 2015, short-term market rates have fallen by a total of 70–80 basis points (hundredths of

⁸ This article measures the effect of an announcement as a change throughout the whole day of the announcement.

percentage points). For interbank rates, 10–15 basis points can be linked to the announcement of the monetary policy decisions, while short-term government bond yields have fallen by a total of 25–35 basis points in connection with these announcements.



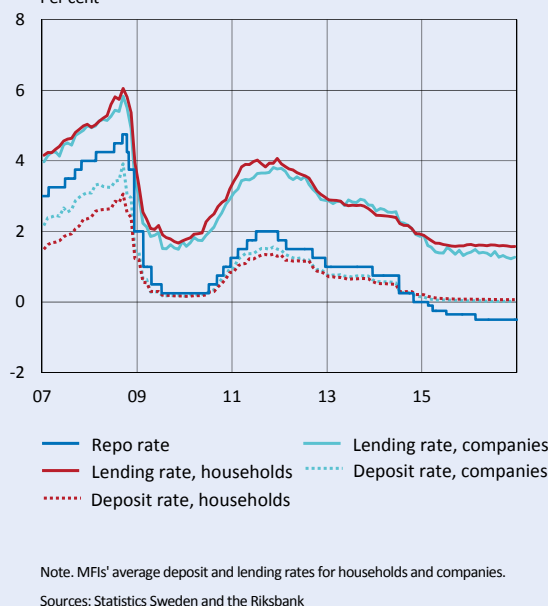
Longer-term government bond yields have also fallen somewhat since the beginning of 2015. For example, the yield on a 10-year nominal government bond was 30–40 basis points lower at the end of 2016/beginning of 2017 than two years earlier. During the same period, the yield on real government bonds, which the Riksbank has been buying since April 2016, has fallen by one percentage point. The fixed-income market may be affected by factors that are not linked to the monetary policy decisions. But the conclusion that monetary policy has had an effect holds if we look at the changes that have taken place in connection with the monetary policy announcements. The total effect of the announcements has been that the yield on 10-year nominal bonds has fallen by 25 basis points. For real government bonds the fall has been roughly twice as large, around 50 basis points. But again, this only measures the effect to the extent that the announcement was unexpected. The total effect is probably greater than this.

How have interest rates for households and companies been affected?

Interest rates charged to household and companies have been affected in a somewhat different way than before. Deposit rates normally fall when the repo rate is cut. However, the banks have chosen not to introduce negative deposit rates for most of their customers, which means that

they are remaining on average close to zero (see Figure 2:14). The fact that deposit rates in general did not become negative was also expected.⁹

Figure 2:14. Repo rate together with the deposit and lending rate to household and companies, new contracts
Per cent



Lending rates to companies have fallen more than the repo rate since the beginning of 2015, while lending rates to households fell primarily at the beginning of 2015 and have since then remained more or less unchanged. The fact that the downturn has slowed down is partly due to the banks' funding costs not falling as much as the repo rate, which in turn is partly explained by the banks not applying negative deposit rates for households and most companies.

Krona depreciation

One of the reasons why the Riksbank introduced an expansionary monetary policy was concern that the krona would appreciate substantially in connection with the ECB's expansionary monetary policy.

The announcement of monetary policy decisions has had different effects on the krona exchange rate against the euro and the dollar. When the announcements were made, the krona depreciated by a total of almost 1 per cent against the euro, but appreciated almost as much against the dollar.¹⁰

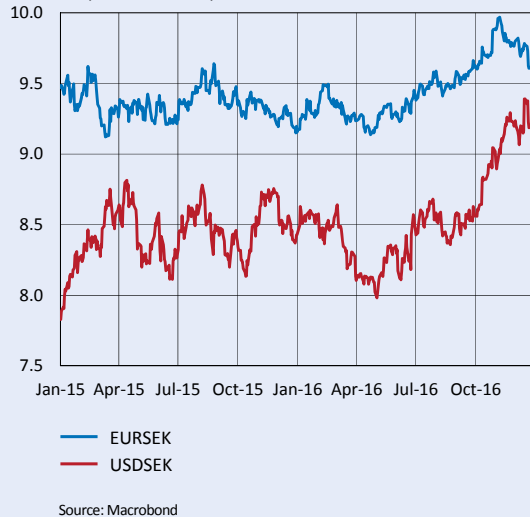
For the krona, too, however the total effect of the expansionary monetary policy is greater than that which is shown by exchange rate developments in connection with the announcements. The krona would probably have been considerably stronger today, and inflation lower, if the Riksbank had not consistently aimed its monetary policy at maintaining confidence in the inflation target. At the end of

⁹ See J. Alsterlind, H. Armelius, D. Forsman, B. Jönsson, A.-L. and Wretman, "How far can the repo rate be cut?" Economic Commentaries no. 11, 2015, Sveriges Riksbank. Some companies and municipalities pay a charge for deposits, that is, in practice a negative interest rate. However, this is not shown in the statistics.

¹⁰ The fact that the krona has appreciated against the dollar is to a large degree due to fluctuations at the time of the announcement in April 2015, when the krona appreciated almost 2.5 per cent against the dollar. This was in turn to a large degree due to statistics on the US economy that were published on the same day.

2016, the krona had even depreciated somewhat against the euro and the dollar compared with two years earlier (see Figure 2:15).

Figure 2:15. The krona's exchange rate against the euro and the dollar
SEK per EUR and SEK per USD



Few negative side effects of a negative interest rate

Prior to and after each monetary policy decision, the Riksbank has carefully analysed the effects of the unconventional monetary policy. The measures have been implemented in small steps so that the effects can be evaluated regularly.

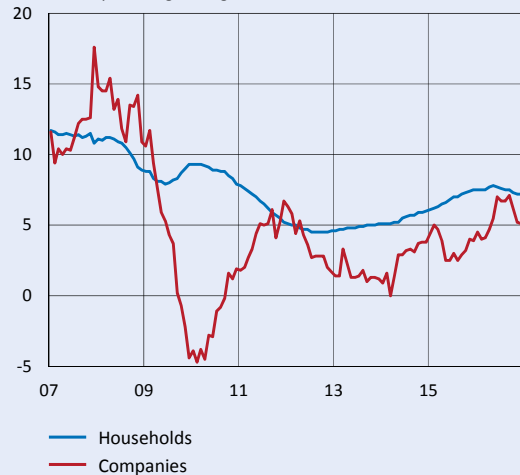
With regard to negative interest rates, the Riksbank was anxious to identify potential side-effects at an early stage.¹¹ For instance, there was a risk that cash withdrawals might increase if household, companies and other parties faced negative interest rates on their deposits (as cash gives zero interest). However, households and most companies have so far not faced negative deposit rates and those who have done so have not increased their holdings of cash in any way that has caused problems. The demand for cash has rather declined steadily over many years, and there is no sign this trend has slowed down.

Another argument against negative interest rates is that they reduce the banks' profitability, which could lead to higher lending rates and a lower supply of credit. However, Swedish banks' profitability has remained high and stable in recent years. The total effect on the banks' profitability therefore appears to be limited and may even be positive, as the banks' wholesale funding has become cheaper and the lending volumes greater (see Figure 2:16).¹²

A further argument that is sometimes put forward is that the negative repo rate is interpreted as a crisis signal that creates unease and subdues demand. However, there are no

signs that this is the case. On the contrary, domestic demand has been an important driver of improved economic activity in Sweden, and sentiment among households and companies is optimistic according to various confidence indicators (see Figure 2:17).

Figure 2:16. Bank lending to households and companies
Annual percentage change

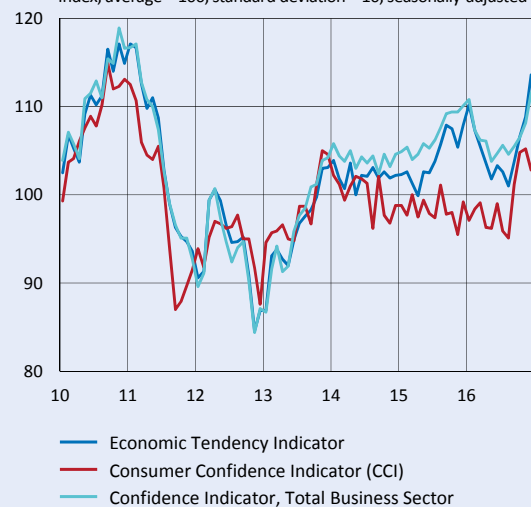


Note. MFIs' lending to households and non-financial companies according to financial market statistics adjusted for reclassifications and traded loans since 2006.

Source: Statistics Sweden

Figure 2:17. Confidence indicators

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



Negative interest rates (and low interest rates in general) can lead to increased risk-taking in the economy. To some extent, it is now possible to observe such effects.¹³ Many asset prices and particularly housing prices have risen substantially in recent years, and household indebtedness has risen in line with housing prices. However, this is a trend that has existed for many years, and is probably primarily driven by imbalances on the housing market, in the form of a low and poorly diversified supply of housing.

¹¹ See J. Alsterlind, H. Armelius, D. Forsman, B. Jönsson, and A-L. Wretman, "How far can the repo rate be cut?", Economic Commentaries no. 11, 2015, Sveriges Riksbank.

¹² See also the article "How do low and negative interest rates affect banks' profitability?" in Monetary Policy Report April 2016.

¹³ See Financial Stability Report 2016:2.

In general, the financial markets have been able to manage the negative interest rate relatively smoothly. However, there have been some exceptions. For example, many bonds with variable coupons, what are known as FRN loans, gained negative coupons when the reference rate became negative. This means that the investor is to pay the coupon rate to the issuer instead of the other way around, a possibility that few had imagined. Nowadays it is often agreed that the coupons on FRN loans shall consist of a variable reference rate, just as before, but with a more substantial supplement to avoid the coupon becoming negative.

With regard to the purchases of government bonds, the Riksbank now holds around 40 per cent of the outstanding stock of nominal government bonds in SEK. This means that a relatively large proportion of the stock is not available for trade, which could influence the functioning of the market. Several indicators point to the Riksbank's bond purchases having had a limited impact on market liquidity, although the picture is not unambiguous. The overall assessment is that the Swedish government bond market is still functioning relatively well. The Swedish National Debt Office regularly monitors the functioning of the government bond market, and noted recently that although the Riksbank's purchases contribute to a lower level of activity on the market, other factors, such as regulation, also affect liquidity. The Debt Office's overall assessment is that the government bond market is functioning satisfactorily.¹⁴

Another argument that has arisen in the debate is that the negative interest rate and purchases of government bonds are not necessary, as the Swedish economy is developing well in any case. One forgets then that the current strong economy in Sweden is a consequence of the monetary policy that has been conducted. A less expansionary monetary policy would not only have led to lower inflation, but also to developments in the real economy being weaker and less favourable than is now the case.

Clear impact of monetary policy

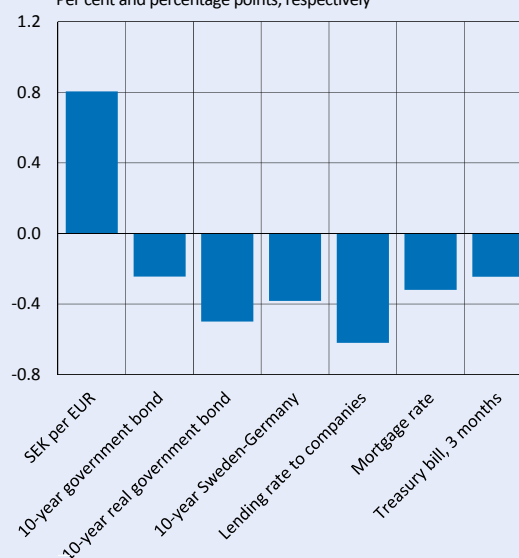
An overall analysis thus shows that monetary policy has had a clear impact on many financial variables over the past two years. Many interest rates (both market rates and final interest rates charged to household and companies) are lower than would otherwise have been the case, and the krona is weaker. Monetary policy has thus affected the overall financial conditions in an expansionary direction. Figure 2:18 summarises the total effect on different financial variables when monetary policy measures have been announced.

The expansionary monetary policy has probably contributed to housing prices and household indebtedness

rising somewhat more than would otherwise have been the case. The risks are therefore somewhat greater than follows on from the generally low real interest rates in Sweden and abroad. But apart from this, the Riksbank has not observed any clearly negative side-effects of either the negative repo rate or the government bond purchases. The Riksbank is constantly following developments to assess whether the monetary policy is having the intended effect and to ensure that no serious problems arise on the financial markets.

Figure 2:18. Total effects of announcements on selected financial variables 2015–2016

Per cent and percentage points, respectively



Note. The bars show the total effect of the announcements, measured as the sum of the changes in the respective variables on the date of the announcement. For lending rates to households and companies the effect is calculated as a change between January 2015 and December 2016.

Source: The Riksbank

¹⁴ See the report "Central government borrowing: Forecast and analysis 2017:1", Swedish National Debt Office.

CHAPTER 3 – The Riksbank’s forecasts

The Riksbank forecast that inflation would rise more rapidly towards the target and would be somewhat higher in 2016 than was the case. The fact that inflation was lower than expected is partly due to inflationary impulses from abroad being unexpectedly weak and domestic cost pressures being lower. Factors that are more difficult to capture, such as companies finding it difficult to raise their prices despite the good economic activity, may also have contributed. In comparison with other forecasters, the Riksbank made accurate forecasts for GDP and employment, but less accurate ones for inflation. A more expansionary monetary policy at an earlier stage might have contributed, all else being equal, to higher inflation in 2016. However, it is not clear that the Riksbank could in practice have conducted a much more expansionary policy than it did. As the experiences of a policy with a repo rate close to zero and extensive bond purchases were very limited, there was reason to proceed with caution.

The Riksbank’s forecasts 2014–2015

Target attainment is a natural starting point for assessing monetary policy. However, a comparison between the outcome for inflation and the inflation target does not necessarily show how well monetary policy has been conducted. Inflation is also affected by a number of other factors than monetary policy, as the economy is constantly being subjected to unexpected shocks. This means that even well-founded and carefully-analysed forecasts often prove to be wrong, and that deviations from the inflation target are the rule rather than the exception.

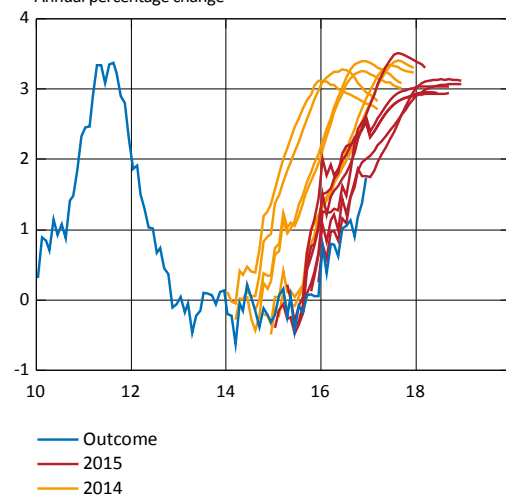
Although inflation has risen and is relatively close to the target, it may be interesting to try to see why developments were nevertheless not quite as expected. One way of doing this is to analyse how the Riksbank’s forecasts have been revised over time. When a forecast is changed, this is usually because something unexpected has occurred, which was not foreseen when the forecast was made.¹⁵

Monetary policy and forecasts in relation to outcome in 2016

As there is a lag in the effect of monetary policy, it was largely through the monetary policy conducted in 2014 and 2015 that the Riksbank had a possibility to influence the outcome for inflation in 2016. Monetary policy in 2014 and 2015 was based on the forecasts made by the Riksbank then, and by studying how these forecasts changed one can form an opinion of which factors contributed to the forecasts not being realised. However, there are no specific boundaries regarding the time lag for the effects of monetary policy. Inflation and economic developments in 2016 were also affected to some extent by the monetary policy conducted in the same year. Monetary policy in 2016 and the deliberations on which it was based were discussed in Chapter 2.

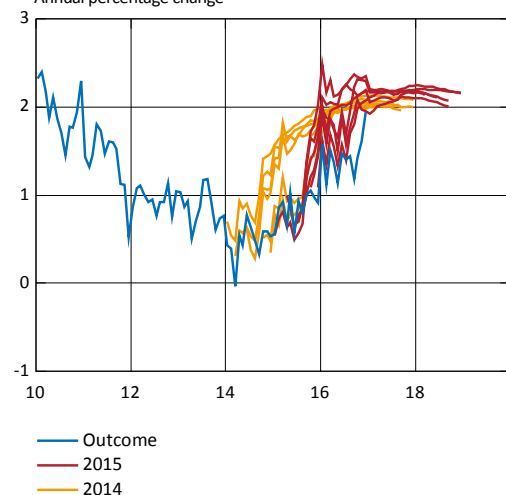
¹⁵ A more detailed and technical review of the Riksbank’s forecasts and the factors behind the unexpectedly low inflation is provided in a special study, which will be published soon.

Figure 3:1. CPI, outcome and forecasts
Annual percentage change



Note. The yellow and red lines represent the Riksbank’s forecasts 2014–2015.
Sources: Statistics Sweden and the Riksbank

Figure 3:2. CPIF, outcome and forecasts
Annual percentage change



Note. See the note to Figure 3:1. The CPIF is the CPI with a fixed mortgage rate.
Sources: Statistics Sweden and the Riksbank

Figures 3:1–3:10 show the actual developments and the Riksbank's forecasts during the years 2014 and 2015 for a number of central variables. The purpose of the figures is to illustrate in a general manner how the Riksbank's view of the future during the years 2014–2015 related to the later outcomes. It is therefore not necessary to distinguish individual forecasts.

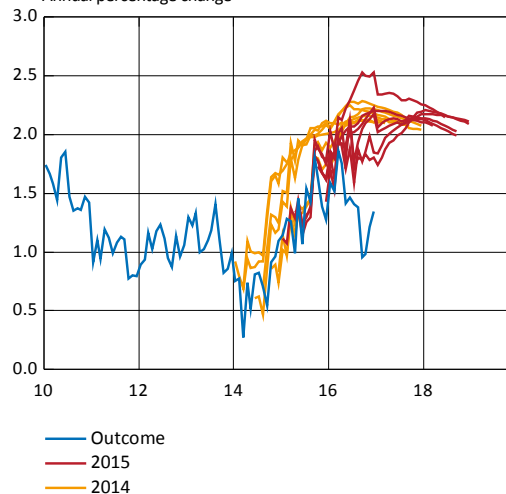
The figures illustrate that the Riksbank overestimated how high inflation would be in 2016 (see Figures 3:1–3:3). The forecasts made in 2015 capture the actual upturn in inflation much better than the forecasts made in 2014, but they also overestimate the outcome to some extent. The fact that inflation was expected to begin rising earlier than it did and become higher than it did, means that the Riksbank also assessed that monetary policy would be less expansionary than became the case. The development of the repo rate was thus overestimated in the forecasts (see Figure 3:4). Another sign that monetary policy became more expansionary than expected is that the Riksbank decided to begin buying government bonds and on several occasions found it necessary to extend these purchases (see Figure 2:9).

Factors behind the unexpectedly low inflation in 2016

There are several reasons why inflation was lower than expected. Economic activity abroad improved at a somewhat slower pace in 2015 than the Riksbank, in common with other analysts, had expected (see Figure 3:5). International developments were marked by the oil price and other commodity prices being lower than expected. With hindsight, it would appear that the negative effects on first and foremost investments in oil-exporting countries were stronger than the positive effects on, for instance, household consumption arising from increased real income. Compared with the forecasts made by the Riksbank at the beginning of 2015, GDP growth in 2016 was clearly lower than expected in countries such as the United States and Norway, while growth in the euro area, which is a significant importer of commodities, was more or less as expected. Inflation abroad was also much lower than the Riksbank had forecast (see Figure 3:6). This is mostly connected with the effects on consumer prices of the lower oil price. However, lower food prices have probably also contributed. Lower international inflation has meant that inflationary impulses from abroad have been weaker than expected.

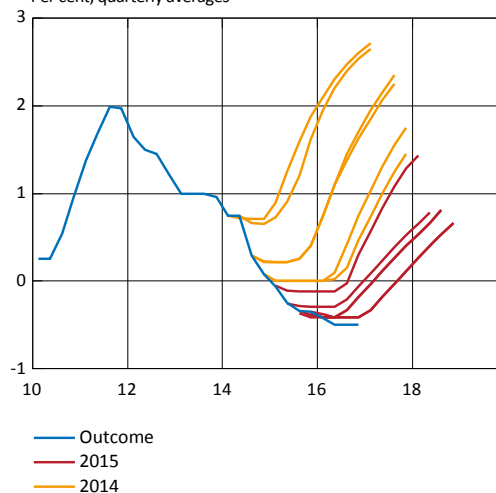
Despite the Riksbank overestimating GDP abroad, growth in Sweden was not overestimated (see Figures 3:5 and 3:7). On the contrary, growth in Sweden at the end of 2015 and beginning of 2016 was higher than expected, and the average for 2016 well in line with the Riksbank's forecast. The weaker international developments mean that exports rose more slowly than expected, while domestic demand at the same time grew faster than expected, in particular public consumption and housing investment. Unemployment was also as expected or somewhat lower (see Figure 3:8). All in all, economic activity in Sweden was

Figure 3:3. CPIF excluding energy, outcome and forecasts
Annual percentage change



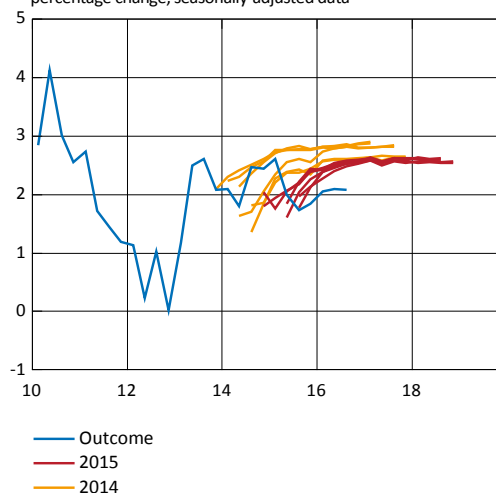
Note. See the note to Figure 3:1. The CPIF is the CPI with a fixed mortgage rate.
Sources: Statistics Sweden and the Riksbank

Figure 3:4. Repo rate, outcome and forecasts
Per cent, quarterly averages



Note. See the note to Figure 3:1.
Source: The Riksbank

Figure 3:5. GDP abroad, outcome and forecasts
KIX-weighted, quarterly change in per cent, calculated as an annual percentage change, seasonally-adjusted data



Note. See the note to Figure 3:1. KIX refers to an aggregate of countries that are important for Sweden's international transactions.
Sources: National sources and the Riksbank

thus more or less as the Riksbank had forecast.¹⁶ The fact that inflation in 2016 was overestimated thus does not appear to be due to an unexpectedly weak development in the real economy in Sweden.

Although the general demand situation was as expected, cost pressures in the economy nevertheless appear to have become lower than expected. This could be one contributory factor in overestimating inflation. The Riksbank's forecasts for unit labour costs are shown in Figure 3:9. Unit labour costs can be described as the difference between wage increases and the development of productivity in the economy. Wage increases that do not correspond to productivity growth entail cost increases for the companies. It would appear that there was a tendency to overestimate the costs somewhat in 2015. At the same time as production was higher, the number of hours worked was more or less as expected, which means that productivity was higher than expected. This is one explanation for unit labour costs showing a weaker development than expected.

The development of the exchange rate is an important factor for inflation prospects. However, it is difficult to identify which factors are behind changes in the krona exchange rate, and thereby how inflation will ultimately be affected.¹⁷ The krona was weaker than expected in 2014 and the first half of 2015 (see Figure 3:10). Despite this, inflation has been lower than expected.

It is in particular CPIF inflation excluding energy that has been weaker than expected in 2016 (see Figure 3:3). A weaker than expected development in international food and commodity prices in 2015 and 2016 has contributed to holding back Swedish prices.

There are other factors more difficult to capture, which may have contributed to inflation being lower than expected. Despite the good economic activity, companies still appear to find it difficult to pass on cost increases to their customers. Stiff competition and rapid structural transformation within the retail trade, partly due to increased sales within e-commerce, seem to be continuing to hold back prices.¹⁸

Another factor that may have contributed is the decline in long-term inflation expectations in 2014–2015. It is possible that this had a greater impact on actual price-setting and wage formation than was expected.

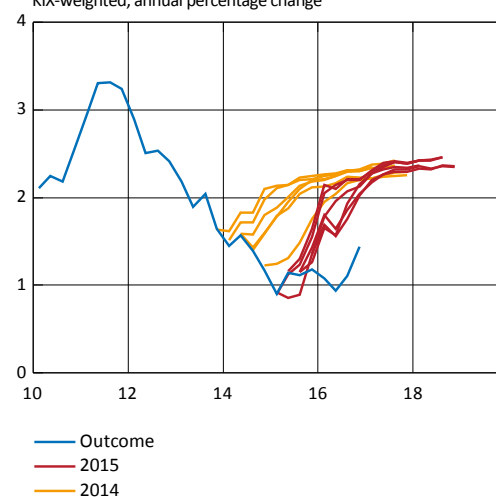
A further circumstance that may have been significant for the overestimation of inflation is that the impact on inflation of the expansionary monetary policy may have been weaker than estimated. In both Sweden and other countries, monetary policy has for some time been conducted in a very unusual environment. Global interest rates are very low, policy rates are lower than ever before and in many countries, including Sweden, supplementary monetary policy tools of which we have little or

¹⁶ However, it should be noted that this was based among other things on a monetary policy that became much more expansionary than the Riksbank had intended to conduct.

¹⁷ See also the article "The impact of the exchange rate on inflation" in the Monetary Policy Report, December 2016.

¹⁸ The Riksbank's Business Survey, September 2016.

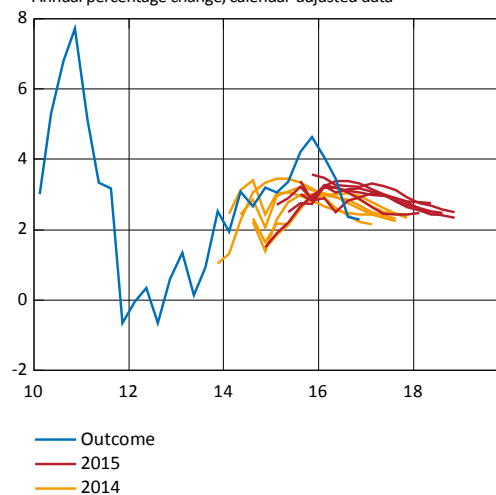
Figure 3:6. Inflation abroad, outcome and forecasts
KIX-weighted, annual percentage change



Note. See the note to Figure 3:1. KIX refers to an aggregate of countries that are important for Sweden's international transactions.

Sources: National sources and the Riksbank

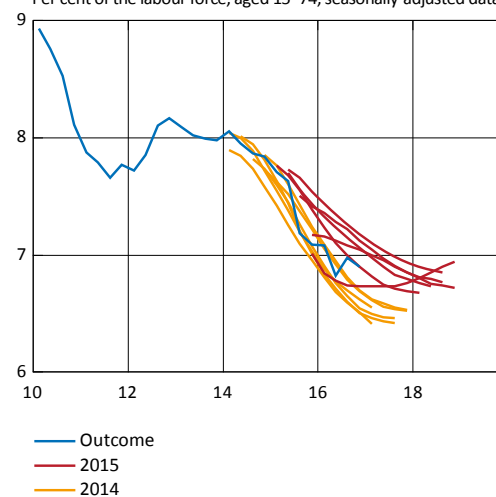
Figure 3:7. GDP, outcome and forecasts
Annual percentage change, calendar-adjusted data



Note. See the note to Figure 3:1.

Sources: Statistics Sweden and the Riksbank

Figure 3:8. Unemployment, outcome and forecast
Per cent of the labour force, aged 15–74, seasonally-adjusted data



Note. See the note to Figure 3:1.

Sources: Statistics Sweden and the Riksbank

no previous experience are now being used. It is naturally difficult to say how effective monetary policy is in such situations.

Conclusions regarding the forecasts and monetary policy 2014–2015¹⁹

The overall picture is thus that the Riksbank's forecasts for 2016, which were made in 2014–2015, succeeded relatively well in capturing developments in the real economy, although economic activity abroad was somewhat weaker than expected. On the other hand, inflation was overestimated both in Sweden and abroad.

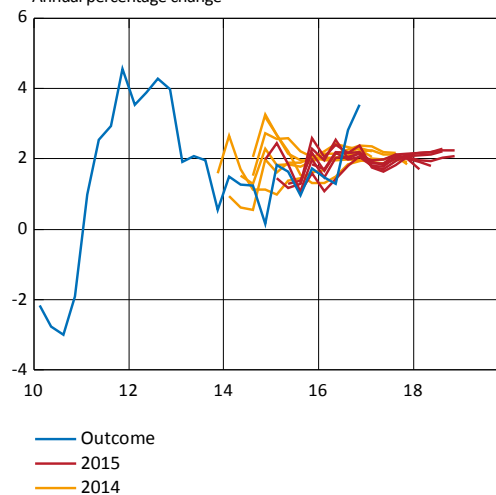
The Riksbank's objective is to stabilise inflation around 2 per cent. The Riksbank's forecasts are therefore normally based on a monetary policy that will bring inflation on target a couple of years ahead. The Riksbank's forecast for the repo rate is thus not merely a forecast, but equally much an assessment of what monetary policy is required to attain the inflation target. With the benefit of hindsight one might possibly argue that an even more expansionary monetary policy at an earlier stage could have contributed to a faster upturn in inflation and to inflation therefore, all else being equal, being closer to the target in 2016.

When making such an ex-post assessment, however, there is reason to consider that the policy has been very expansionary anyway, with the repo rate being cut below zero and extensive purchases of government bonds. There has been reason to proceed with caution, as this has been a situation for monetary policy without precedent. Given this, it is not clear that the Riksbank could in practice have conducted a much more expansionary policy than it did. It is also worth noting that the general economic policy debate in recent years has not concerned the policy conducted by the Riksbank being too tight, but rather whether it has been too expansionary.

There is of course also reason to take into account the fact that inflation has shown a rising trend towards the target, although this has been somewhat slower than expected, and that inflation expectations have risen and in the long-run are well in line with the target. An important condition for this development is that the Riksbank has succeeded in managing the risks of an overly rapid krona appreciation. As noted above, the monetary policy conducted has in this sense had the desired and intended effect.

There may nevertheless be reason to consider which conclusions and lessons could be drawn. One conclusion is that it is still worth reflecting on the relationship between resource utilisation and inflation. Historical correlations do indicate that the rising trend in inflation will continue.²⁰ But it is uncertain how quickly a change in resource utilisation will have an impact on inflation and how large the effect will ultimately be. As noted above, the Riksbank's underestimation of inflation could be at

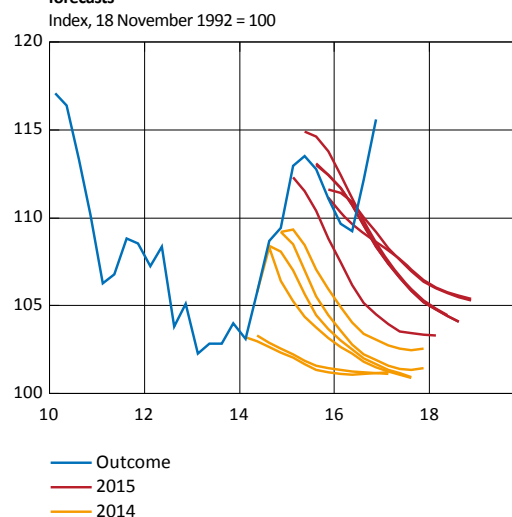
Figure 3.9. Unit labour cost, outcome and forecasts
Annual percentage change



Note. See the note to Figure 3.1.

Sources: Statistics Sweden and the Riksbank

Figure 3.10. KIX-weighted nominal exchange rate, outcome and forecasts



Note. See the note to Figure 3.1. KIX refers to an aggregate of countries that are important for Sweden's international transactions.

Sources: National sources and the Riksbank

¹⁹ See the article "The effects of the Riksbank's monetary policy 2015-2016" in this report for an evaluation of how monetary policy has affected different financial variables and a discussion of possible negative side-effects.

²⁰ See also the article "The relationship between resource utilisation and inflation" in the Monetary Policy Report, October 2016.

least partly due to the impact of resource utilisation on inflation being weaker or taking longer than the Riksbank had expected. Another important question concerns the relationship between long-term inflation expectations and actual inflation. Here, the impact could instead be greater than there was previously reason to assume, in the way that when confidence in the inflation target begins to weaken, it has a fairly rapid impact on price-setting and wage formation in the economy.

The Riksbank's forecasts for 2016 compared with those of other forecasters

In addition to seeing how the Riksbank has revised its forecasts, it may be useful to compare the Riksbank's forecasts with those of other analysts. Such a comparison can provide information on whether the Riksbank has in any way made significantly different analyses than those of other forecasters, or whether its reasoning has been more or less the same.

Figures 3:11–3:17 show the development in forecasts by the Riksbank and other analysts for a number of central variables in 2016, from the beginning of 2015 until the actual outcomes were known.

A typical pattern is that the forecasts made early on, at the beginning of 2015, were further from the outcome than the forecasts made late, at the end of 2016. This is natural, as towards the end of 2016 there was much more information available on which the forecasts could be based. One such example is GDP growth in the United States (see Figure 3:16). However, there are also examples where the forecasts were from the start relatively close to the final outcome. One such example is GDP growth in Sweden (see Figure 3:13).

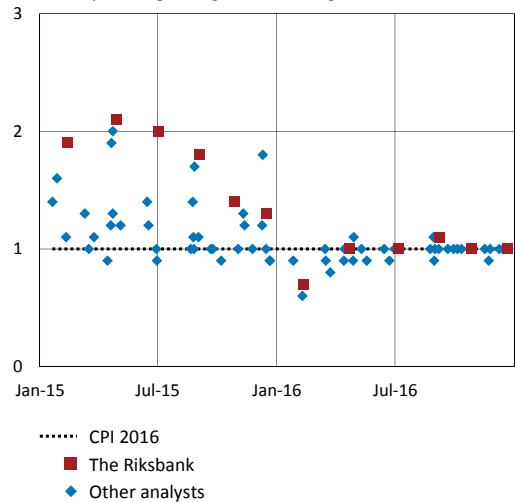
The figures also show that most analysts' forecasts were often close to one another and that they were revised in a similar way. This is a good illustration of the fact that there are constant changes in the economy which are difficult to predict and which mean that forecasts must be successively revised along the way. However, there are also examples where the dispersion of the forecasts is wider.

The Riksbank made better forecasts of the real economy than of inflation

One observation is that the Riksbank overestimated inflation in 2016 in the forecasts made in 2015 more than most other analysts did, both with regard to CPI inflation and CPIF inflation (see Figures 3:11 and 3:12), at the same time as the Riksbank's real economic forecasts were more accurate (see Figures 3:13 and 3:15). With effect from the start of 2016, the spread between the analysts was small and the forecasts were on the whole close to the outcomes.

One explanation for the Riksbank's higher inflation outcomes could be that the Riksbank had a more positive view of economic activity than most other analysts. This is shown in Figure 3:13, where the Riksbank's forecasts for GDP growth in 2016 are

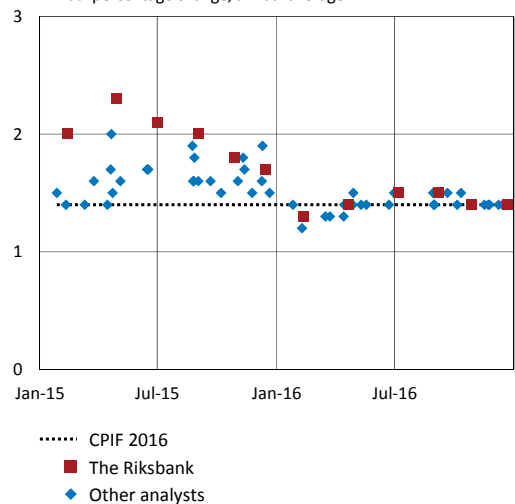
Figure 3:11. Forecasts 2015 and 2016 for CPI inflation in 2016
Annual percentage change, annual average



Note. Other analysts refer to the Confederation of Swedish Enterprise, HUI Research AB, the Ministry of Finance, the National Institute of Economic Research, Nordea, SEB, Svenska Handelsbanken, Swedbank and the Swedish Trade Union Confederation (LO).

Sources: Respective analysts, Statistics Sweden and the Riksbank

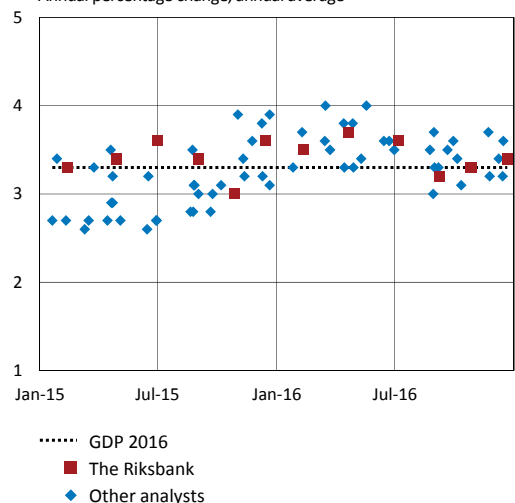
Figure 3:12. Forecasts 2015 and 2016 for CPIF inflation in 2016
Annual percentage change, annual average



Note. Other analysts refer to those specified in Figure 3:11 except from HUI Research AB. The CPIF is the CPI with a fixed mortgage rate.

Sources: Respective analysts, Statistics Sweden and the Riksbank

Figure 3:13. Forecasts 2015 and 2016 for GDP growth in 2016
Annual percentage change, annual average



Note. Other analysts refer to those specified in Figure 3:11.

Sources: Respective analysts, Statistics Sweden and the Riksbank

higher, and closer to the final outcome, than most other analysts' forecasts in 2015. The Riksbank's forecasts regarding unemployment were also among the most positive (see Figure 3:15). From the Riksbank's perspective inflation was thus lower than expected, given the positive development in the real economy, while other analysts, with lower inflation forecasts, tended to be surprised that growth turned out to be so high.

Even in a longer-run perspective the Riksbank has made relatively accurate forecasts for real economic variables, but less accurate forecasts for inflation, especially CPI inflation. This is clear from the evaluation of the forecasting performance of various analysts since 2007 carried out on a regular basis by the Riksbank.²¹

Natural that the Riksbank forecasts an inflation rate of 2 per cent a couple of years ahead

The fact that the Riksbank has tended to make relatively less accurate forecasts of inflation even in a longer-run perspective points to another relationship that may have significance for the Riksbank's overestimation of inflation.

The Riksbank has the task of promoting price stability and has been given tools to attain the inflation target. An inflation forecast which means that inflation does not attain 2 per cent a couple of years ahead could be interpreted as monetary policy not being well-balanced and ultimately that the Riksbank is deviating from the price stability mandate it has been given by parliament.²² The Riksbank needs to have a view as to what monetary policy is required to bring inflation back on target at an appropriate pace. As noted above, the Riksbank's forecast for the repo rate is not merely a forecast, but equally much an assessment of what monetary policy is required to attain the inflation target. It is not always easy to make such assessments, and there are many indications that it has been particularly difficult during the period since the financial crisis.

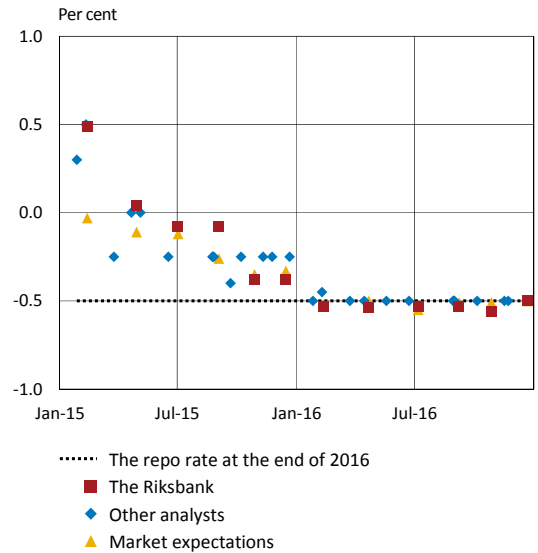
Other forecasters are probably freer to make inflation forecasts that deviate from 2 per cent a few years ahead. This can be seen, for instance, in Figure 3:18, which shows the inflation forecasts at the beginning of 2014 by the Riksbank and some other analysts. An inflation forecast lower than 2 per cent a couple of years ahead means in a strict sense that monetary policy is not well-balanced, as inflation is not expected to attain the target. But this does not rule out the possibility that such a forecast will prove more accurate, which has also been the case.

One experience is therefore that under certain circumstances it is difficult to conduct a monetary policy that brings inflation back on target within the normal forecasting horizon. This has been the case in the period following the financial crisis, when an inflation rate well below the target and low global interest rates have forced central banks to almost empty their monetary policy arsenals. If it should prove difficult to attain the inflation target

²¹ See, for example, Chapter 4 "Forecasting performance" in "Account of monetary policy 2015". With effect from this year, a corresponding analysis will be published in a separate study.

²² See C. Nyman and U. Söderström, "Forecasts and monetary policy", Economic Commentaries no. 6, 2016, Sveriges Riksbank.

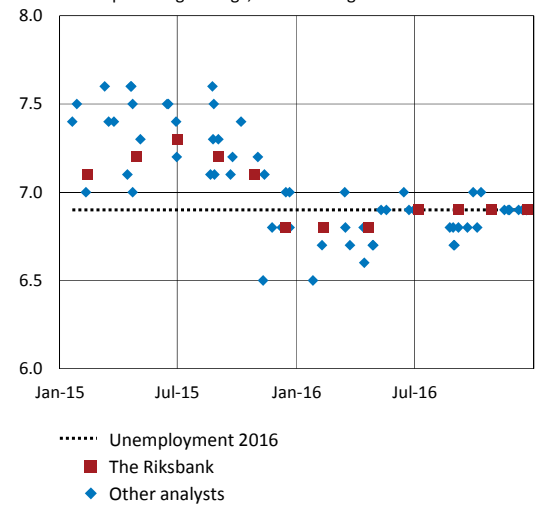
Figure 3:14. Forecasts 2015 and 2016 for the repo rate at the end of 2016



Note. Other analysts refer to the Ministry of Finance, the National Institute of Economic Research, SEB and Swedbank. Market expectations are calculated according to market pricing of forward rates. The forward rates are calculated using derivative contracts (RIBA and FRA) adjusted for credit risk premiums.

Sources: Respective analysts and the Riksbank

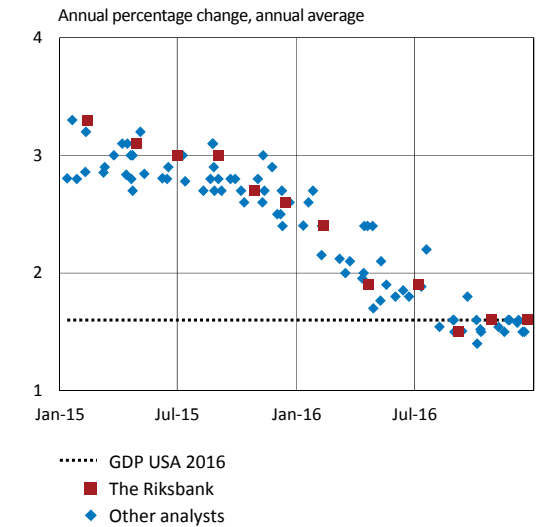
Figure 3:15. Forecasts 2015 and 2016 for unemployment in 2016



Note. Other analysts refer to those specified in Figure 3:11.

Sources: Respective analysts, Statistics Sweden and the Riksbank

Figure 3:16. Forecasts 2015 and 2016 for GDP growth in the United States in 2016

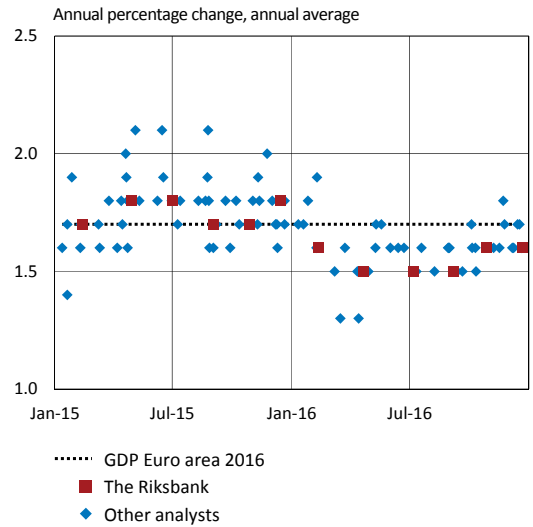


Note. Other analysts refer to the Confederation of Swedish Enterprise, Consensus Economics, the Ministry of Finance, IMF, the National Institute of Economic Research, Nordea, OECD, SEB, Svenska Handelsbanken, Swedbank and the Swedish Trade Union Confederation (LO).

Sources: Bureau of Economic Analysis, respective analysts and the Riksbank

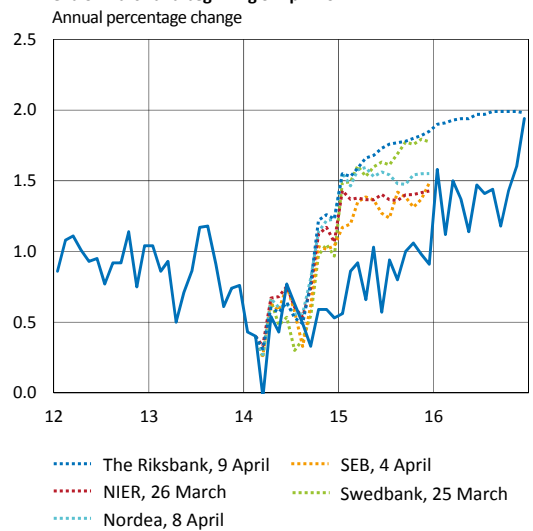
for some time to come, it is important that this is not interpreted to mean that the Riksbank has abandoned the target. However, it is likely that the period since the global financial crisis has been very unusual. As the economic situation gradually normalises, the Riksbank will probably be able to once again conduct a policy where inflation does not deviate from the target for long periods of time.

Figure 3:17. Forecasts 2015 and 2016 for GDP growth in the Euro area in 2016



Note. Other analysts refer to those specified in Figure 3:16.
 Sources: Eurostat, respective analysts and the Riksbank

Figure 3:18. Forecasts for CPIF inflation made by different analysts at the end of March and beginning of April 2014



Note. The CPIF is the CPI with a fixed mortgage rate.
 Sources: The National Institute of Economic Research, Nordea, SEB, Swedbank and the Riksbank.

ARTICLE – The Riksbank's development work and analysis of the monetary policy framework

The Riksdag Committee on Finance's external review of monetary policy 2010–2015 reached a number of conclusions and put forward recommendations concerning, for example, the design of the inflation target and the monetary policy meeting minutes. Other aspects considered in need of further analysis were the Riksbank's experience in publishing repo rate forecasts, the forecasting methods for developments abroad and how model forecasts are used as part of the basis for monetary policy. In addition to the review's conclusions, other aspects of inflation-targeting policy have also been recently discussed in Sweden, including which inflation measure the target should apply to and a possible reintroduction of an interval around the target. This article gives an account of the analysis performed by the Riksbank in 2016 and early 2017 within these areas.

Target variable and interval in focus during 2016

The first recommendation in the Committee on Finance's external review performed by Marvin Goodfriend and Mervyn King was related to the actual objective for monetary policy itself.²³ The reviewers proposed that the Riksdag, on the recommendation of the Minister of Finance, should establish the objective for monetary policy and that this objective should be reviewed every ten years. The objective was also proposed to be 2 per cent measured in terms of the CPIF, not the CPI as is the case today.

In its consultation response to the review, the Executive Board did not take a stance on whether the Riksdag should establish the objective, but did state that changing the target variable may have its benefits. A review of feasible target variables was published in conjunction with the consultation response.²⁴

It has been known for a long time that CPI inflation is somewhat problematic as a target variable for monetary policy as changes in the policy rate in the short term have major direct effects which also impact the CPI in the wrong direction – repo rate cuts to drive up inflation push down mortgage rates and hence housing costs in the CPI in the short term. For this reason, the Riksbank has regularly allowed price indices other than the CPI to influence interest rate decisions, recently mainly the CPIF (CPI with a fixed mortgage rate). The basic premise has been that CPIF inflation works as an intermediary target variable and that inflation in terms of the CPIF and the CPI coincide in the long term.

However, problems can arise when the deviations between the CPI and the CPIF are large and protracted, as has been the case in recent years. In such a situation, participants in the economy might start to question whether the Riksbank is actually stabilising CPI inflation around the target by stabilising CPIF inflation around 2 per cent. This may reduce credibility in the inflation target.

During the past year, discussions and analysis have been ongoing at the Riksbank regarding the target variable issue. In conjunction with this, the question of a possible reintroduction of an interval around the target has also been discussed and analysed, partly as a result of the issue being raised in the public monetary policy debate. As part of its analysis, the Riksbank published a study that discussed the benefits and drawbacks of different feasible target variables as well as an interval around the target.²⁵

This study ascertained that there might be benefits linked to changing the target variable but that the inflation target should continue to be formulated in terms of a relevant, broad and well-known index. The reason being that this facilitates communication of monetary policy and anchorage of the inflation target. The broad measures CPIF and the EU-harmonised index for consumer prices (HICP) were considered to be the most natural alternatives to the CPI as target variables, if a change were to take place.

The study also discussed two different types of interval around the inflation target. A *tolerance interval* can be a way of illustrating uncertainty and showing that the Riksbank is unable to fine-tune inflation around a specific value. A *target interval* means instead that the inflation target itself is defined in terms of an interval, and not just a specific value.

²³ See M. Goodfriend, M. King, "Review of the Riksbank's Monetary Policy 2010-2015", Reports from the Riksdag 2015/16: RFR 16, Sveriges Riksdag.

²⁴ See M. Apel, H. Armelius and C.A. Claussen, "Price index for the inflation target", Economic Commentaries no. 2, 2016, Sveriges Riksbank.

²⁵ See "The Riksbank's inflation target – target variable and interval", Riksbank Studies, September 2016. A detailed analysis of the tolerance band itself can be found in M. Apel and C.A. Claussen, "Inflation targets and intervals – an overview of the issues", *Economic Review* 2017:1, Sveriges Riksbank.

One conclusion in the Riksbank study was that a target interval could make it more difficult to anchor inflation expectations, as all outcomes within the interval mean that the inflation target has been attained. The nominal anchor in the economy would then risk becoming unclear. This could make wage formation more difficult, for example. A tolerance interval to describe the uncertainty could, on the other hand, facilitate monetary policy communication without any actual consequences for interest rate decisions.

To attain a broad and open discussion of these issues, the Riksbank invited financial market participants, authorities and social partners to round-table talks during the autumn of 2016 using the Riksbank study as a basis. Academics were also sounded out on the issues. Discussions are continuing at the Riksbank and the Executive Board will revisit the issues in the coming year.

The Riksbank's experience of interest rate forecasts

In their review, Goodfriend and King also recommended that the Riksbank evaluate their experience of publishing interest rate forecasts and analyse the differences between these forecasts and market expectations.

There were several reasons why the Riksbank started to publish its own repo-rate forecasts in 2007.²⁶ One reason was to facilitate monetary policy communication. As monetary policy affects the economy with a time lag, it must be based on forecasts for economic development. These forecasts must in turn be based on an assumption about the development of the repo rate. The previous assumptions used by the Riksbank proved to be associated with major problems – a constant repo rate 2–3 years ahead was unrealistic, while an interest rate development according to market pricing did not necessarily reflect the most suitable monetary policy.²⁷ Both of these assumptions made it difficult to make forecasts that were totally coherent. The assumption also made it more difficult to evaluate the Riksbank's forecasts and compare them with those of other analysts. Another reason for publishing its own interest rate forecasts was that monetary policy could, to a greater extent, affect market expectations regarding the future repo rate and hence rates with longer maturities.

The Riksbank agreed with Goodfriend and King's recommendation that it can be appropriate to evaluate the experiences with interest rate forecasts over the ten-year period they have been published. Work to analyse different

aspects of the interest rate forecasts has been ongoing during the autumn and winter and the Riksbank plans to publish conclusions from these analyses during 2017.²⁸

Forecasting methods

Another recommendation in the external review was that the Riksbank should re-examine its methods for producing forecasts for both the global economy and overseas interest rates. In its consultation response to the review, the Executive Board pointed out that re-examinations already take place on a regular basis as part of the forecasting work.²⁹ At the end of 2015, Riksbank staff performed a review of the Riksbank's international forecasts during the period 2007–2015. The review shows that the Riksbank, like other analysts, tended to overestimate GDP growth and the international policy rate during this period. A comparison with other analysts shows that the Riksbank's forecasting accuracy as regards international developments is close to average. Furthermore, the Riksbank's forecasts of international developments have gradually improved since the global financial crisis.

Goodfriend and King also argued that the Riksbank is too dependent on models. Their impression was that the Executive Board had shown very strong confidence in forecasts which have been developed with the aid of models and on which monetary policy decisions were based. Important assumptions behind the model forecasts were seldom questioned, according to the reviewers.

Just like other forecasters, however, the Riksbank uses both models and different assessments when making its forecasts. Examples of assessments that may affect the final forecast include a changed view of how the economy is expected to develop in the long term or of relationships in the economy.³⁰

To investigate how much influence the models and the assessment have de facto on the published forecasts, this issue was analysed by Riksbank staff for forecasts during the period 2006–2016.³¹ The conclusion of this analysis is that the Riksbank's published forecasts for the medium term have largely been based on assessments rather than model forecasts – the direct contribution from models has actually been rather small.³²

The results show therefore that the economic models have not affected the forecasts mechanically and neither is this the way forecasting work is intended to function. The

²⁶ S. Ingves, "Communication – what demands are made of an independent central bank?", speech at the Swedish Economics Association on 24 April 2007, Stockholm.

²⁷ The Riksbank used a constant repo rate up until 2005 and forward rates between 2005 and 2007. See the article "The Riksbank publishes its own forecast for the repo rate" in Monetary Policy Report 2007:1.

²⁸ During the spring, the Riksbank will also host a conference on "forward guidance" in monetary policy, where one of the aims is to listen to the experiences of other central banks as regards different ways of communicating and guiding the general public about future monetary policy.

²⁹ The extent to which the Riksbank considers international developments in its inflation forecast revisions was analysed in last year's Account of monetary policy, see "Does the Riksbank sufficiently take into account Sweden's international dependence in its forecasts?" Account of Monetary Policy in 2015.

³⁰ See C. Nyman and U. Söderström, "Forecasts and monetary policy", Economic Commentaries no. 6, 2016, Sveriges Riksbank.

³¹ See J. Lindé and A. Reslow, "A myth that the Riksbank's forecasts are governed by models", Ekonomisk Debatt 8/2016. A more detailed version of this paper, with the same name, has also been published in Economic Review 2017:1, Sveriges Riksbank.

³² One reason why the Riksbank's published forecasts differ from the model forecasts is that the Riksbank is trying to reach an inflation target and therefore designs monetary policy so that the forecast for inflation is close to or exactly 2 per cent a couple of years ahead. However, the models can often have an inflation forecast that does not return to target within the forecast horizon. See the reference in footnote 30.

models help to structure the work by functioning as conceptual frameworks and by lending support to the forecasts.³³ But different types of assessment will always be an important aspect of making economic forecasts.

Supplementing the monetary policy minutes

Another recommendation in Goodfriend and King's review was to supplement the minutes from the monetary policy meetings with minutes also of earlier meetings at which the Executive Board discuss the forecasts. The Executive Board did not concur with this recommendation as the decisions on the interest rate path and other monetary policy measures are not taken at these drafting meetings. All forecasts including the repo-rate path can be changed at any time during the process including at the monetary policy meeting. Taking minutes at drafting and forecasting meetings prior to the monetary policy meeting would be very difficult and make the forecasting process unnecessarily formalised. Nevertheless, in order to capture the spirit of the recommendation, the Executive Board decided that the content of the monetary policy minutes shall be supplemented with information from discussions held by the Executive Board during the forecasting process. The minutes were supplemented with this information with effect from the monetary policy meeting in July 2016.

³³ The models also fulfil an important function as tools for analysing the consequences of monetary policy in different alternative scenarios.



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