

# Account of monetary policy

2023



# Account of monetary policy in 2023

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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 members of the Riksbank's 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. Regularly or upon request, the Riksbank shall submit an account of monetary policy operations to the Riksdag's Committee on Finance (Chapter 11, Section 1, Sveriges Riksbank Act [2022:1568]). The accounts are presented in the Monetary Policy Reports and in a special document for evaluating monetary policy, the Account of Monetary Policy.

The Account of Monetary Policy is 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.

Chapter 1 investigates target fulfilment in 2023, while Chapter 2 gives an account of the monetary policy conducted over the year. Chapter 3 analyses the accuracy of the forecasts made in 2022, while Chapter 4 reviews important monetary policy issues. The report also contains an article on alternative scenarios in the Monetary Policy Report and an article on the Riksbank's monetary policy development work.

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The Executive Board made a decision on the Account of Monetary Policy on 20 March 2024. The report can be downloaded in pdf format from the Riksbank's website, [www.riksbank.se](http://www.riksbank.se), where there is also more information about the Riksbank.

## Monetary policy in Sweden – The Riksbank’s strategy

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- According to the Sveriges Riksbank Act, the overriding objective of monetary policy is to maintain sustainably low and stable inflation. The Riksbank has defined the objective as a target of 2 per cent for the annual change in the consumer price index with a fixed interest rate (the CPIF). The inflation target should function as a benchmark for price- and wage-setting in the economy.
- Without neglecting the inflation target, the Riksbank shall moreover contribute to a balanced development of production and employment. The Riksbank thus conducts a policy of flexible inflation targeting. In connection with each monetary policy decision, the Executive Board assesses which monetary policy is well-balanced. If inflation deviates from the inflation target, it is normally a question of finding a balance between how rapidly it shall be brought back to target and the effects on real economic developments.
- It is neither possible nor desirable to conduct a monetary policy that always keeps inflation at exactly 2 per cent. Changes occur constantly in the economy that make inflation vary in a way that cannot be predicted with sufficient precision, or counteracted in the short term. The important thing is that households and companies have confidence in the target. Prolonged deviations from the target risk affecting expectations of the normal level of inflation in the economy.
- As it takes a long time before monetary policy has a full impact on inflation and the real economy, monetary policy is guided by forecasts of economic development. There is no general answer to the question of how quickly the Riksbank aims to bring inflation back to 2 per cent if it deviates from the target. Too rapid a return may in some situations have very negative effects on production and employment, while too slow a return may weaken the credibility of the inflation target.
- The Riksbank can weigh risks linked to developments in the financial markets into its monetary policy decisions as long as confidence in the inflation target is clearly anchored, and expected and overall target achievement regarding inflation, production and employment is improved when viewed over a longer horizon. With regard to preventing an unbalanced development of asset prices and indebtedness, however, it is of prime importance that there is an efficient financial regulatory framework and effective supervision.
- The Riksbank’s main monetary policy tool is the policy rate. When necessary, this can be supplemented with other measures, including purchases or sales of government securities, for example to ensure that monetary policy impacts effectively on the interest rates faced by households and companies. The Riksbank may buy and sell assets other than government securities if there are exceptional grounds. Such exceptional grounds may arise during times of financial turmoil or crisis, for example.
- The Riksbank strives for open and clear communication. This makes it easier for economic agents to make sound economic decisions, and monetary policy will also be easier to evaluate. The Riksdag’s Committee on Finance, the National Audit Office and the General Council of the Riksbank monitor and evaluate the conducted monetary policy in different ways within their respective remits.
- The Executive Board normally holds five monetary policy meetings a year.<sup>1</sup> The monetary policy decision and Monetary Policy Report are presented together with a press release at 09.30 on the day following the monetary policy meeting. The Monetary Policy Report describes economic developments and justifies the monetary policy decision. The decision and press release make it clear how the individual Executive Board members voted and provide the main justification for any reservations entered. A press conference is held later the same day. Just under two weeks after each monetary policy meeting, minutes from the meeting are published, which set forth the reasoning of the different Executive Board members.

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<sup>1</sup> With effect from 2024 the number of monetary policy meetings a year increased from five to eight. See <https://www.riksbank.se/en-gb/press-and-published/notices-and-press-releases/press-releases/2023/eight-monetary-policy-meetings-a-year--from-2024/>.

# Contents

1	Target fulfilment	5
1.1	Inflation 2023	5
1.2	The development of the economy in 2023	12
2	Monetary policy 2023	16
2.1	The Riksbank's forecasts and monetary policy considerations	16
2.2	List of monetary policy decisions 2023	27
	FACT BOX – More monetary policy meetings from 2024 onwards	28
3	Evaluation of the Riksbank's forecasts from 2022	29
3.1	International GDP developed in line with the forecasts, but inflation was underestimated	31
3.2	The krona weakened more than expected	32
3.3	The strength of the labour market was a surprise	33
3.4	Higher inflation than expected	35
3.5	Large forecasting errors for the policy rate	36
4	Important monetary policy issues	39
4.1	The purpose of the inflation target	39
4.2	The monetary policy debate in 2023	43
4.3	Questions for the future	51
	ARTICLE - Alternative scenarios in the Monetary Policy Report	53
	ARTICLE - The Riksbank's monetary policy development work	58

# 1 Target fulfilment

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Monetary policy contributed to CPIF inflation falling back from high levels at the beginning of the year and being close to the target in December. The deviation from the target was high on average during the year, but it declined constantly and was small at the end of 2023. However, CPIF inflation excluding energy declined much more slowly and remained at a high level at the end of the year. Long-term inflation expectations remained firmly anchored to the inflation target, indicating that there was strong confidence that inflation will stabilise around 2 per cent over the medium term. Monetary policy played an important role in keeping long-term inflation expectations stable.

During the year, demand in the Swedish economy was surprisingly resilient to high inflation and interest rate hikes, despite economic activity slowing down and GDP declining somewhat. The labour market weakened in the autumn and employment declined from a high level. The purpose of the Riksbank's interest rate increases has been to bring inflation back to the target within a reasonable time, without slowing down the economy unnecessarily. The tighter monetary policy dampened economic activity and resource utilisation. But it would have been worse to let high inflation take hold. High inflation is harmful to the economy, and by achieving sustainably low and stable inflation, monetary policy creates the conditions for long-term favourable economic development.

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## 1.1 Inflation 2023

### **Inflation fell during the year from a high level**

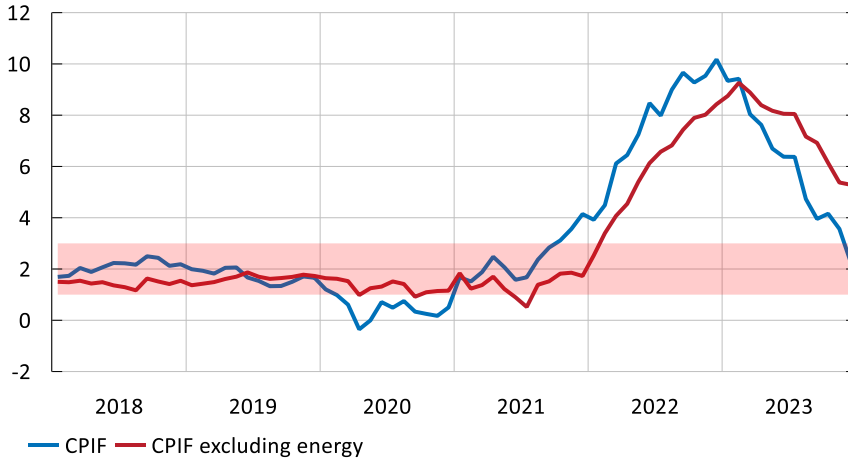
In 2022, inflation rose to a very high level (see Figure 1). Inflation was also high abroad and many of the drivers of high inflation were international, such as various pandemic-related imbalances, disruptions on the European energy market and Russia's invasion of Ukraine. However, increased demand due to the very strong recovery from the pandemic also contributed to the high inflation.

During 2023, the global disturbances declined, and this together with tighter monetary policy led to a fall in inflation, both in Sweden and abroad, causing inflation to approach central bank targets (see Figure 2). However, inflation excluding energy declined much more slowly and remained at a high level at the end of the year (see Figure 1). Inflation was somewhat higher in Sweden than in the euro area and the United States, especially if energy prices are excluded (see Figure 3). This is probably

related to the fact that the krona depreciated for much of the year and that the exchange rate pass-through to inflation appears to have been unusually large.<sup>2</sup>

**Figure 1. CPIF, CPIF excluding energy and variation band**

Annual percentage change

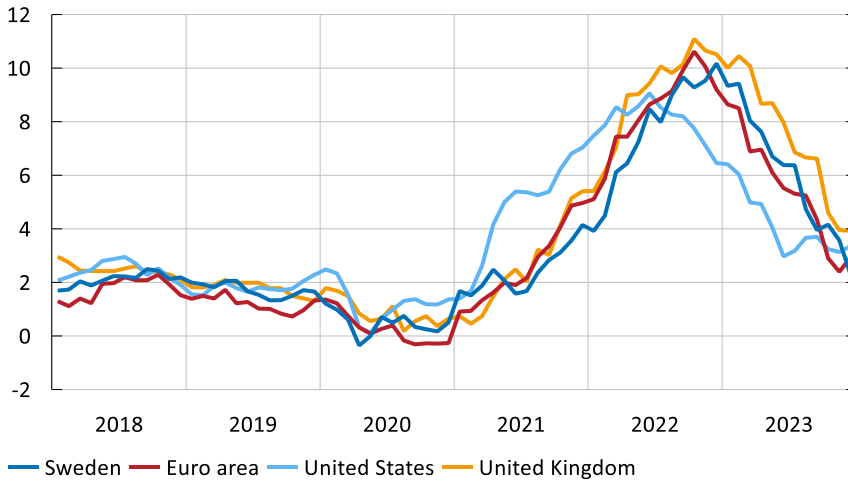


Note. The pink area shows the Riksbank's variation band and covers about three-quarters of the CPIF outcomes since January 1995. The variation band is a means of showing whether the deviation from the inflation target is unusually large.

Sources: Statistics Sweden and the Riksbank.

**Figure 2. Consumer prices in various countries and regions**

Annual percentage change



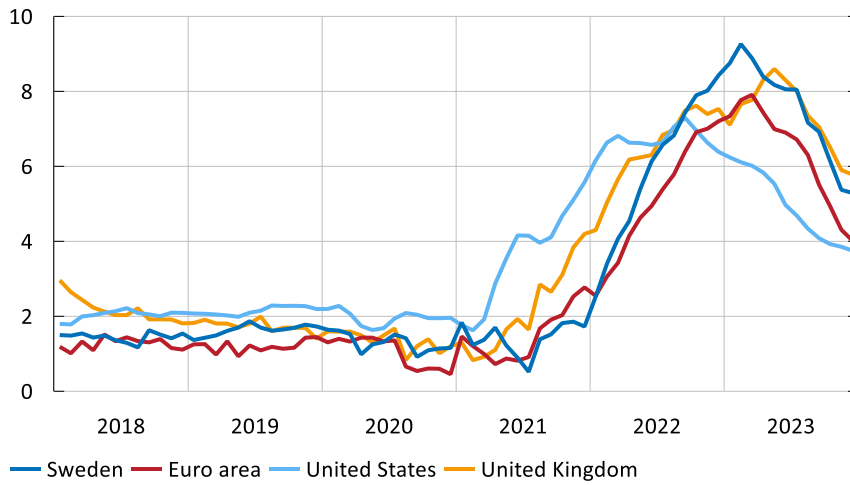
Note. Consumer prices refer to the CPIF for Sweden, the HICP for the euro area and the CPI for the United States and the United Kingdom.

Sources: Eurostat, Statistics Sweden, U.K. Office for National Statistics and U.S. Bureau of Labor Statistics.

<sup>2</sup> See the article "The krona's impact on inflation appears to have been unusually large", *Monetary Policy Report*, November 2023, Sveriges Riksbank.

**Figure 3. Consumer prices excluding energy in various countries and regions**

Annual percentage change



Note. The figure shows the CPIF excluding energy for Sweden, the HICP excluding energy for the euro area and the CPI excluding energy for the United States and United Kingdom.

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

In Sweden, CPIF inflation fell from a peak of 10.2 per cent in December 2022 to 2.3 per cent in December 2023. The decline at the beginning of the year was mainly due to lower energy prices (see Figure 4). Lower energy prices were partly due to the success of European countries in replacing Russian gas with liquid gas from other countries, which mitigated the effects of the European energy crisis in Sweden. In addition, oil prices were lower. The rate of increase in food prices also started to slow down. Services prices continued to increase rapidly, contributing at most almost 4 percentage points to CPIF inflation (see Figure 5). Rapid price increases in the service sectors that developed strongly after the pandemic, such as hotels and restaurants, suggest that high demand clearly contributed to this development.<sup>3</sup>

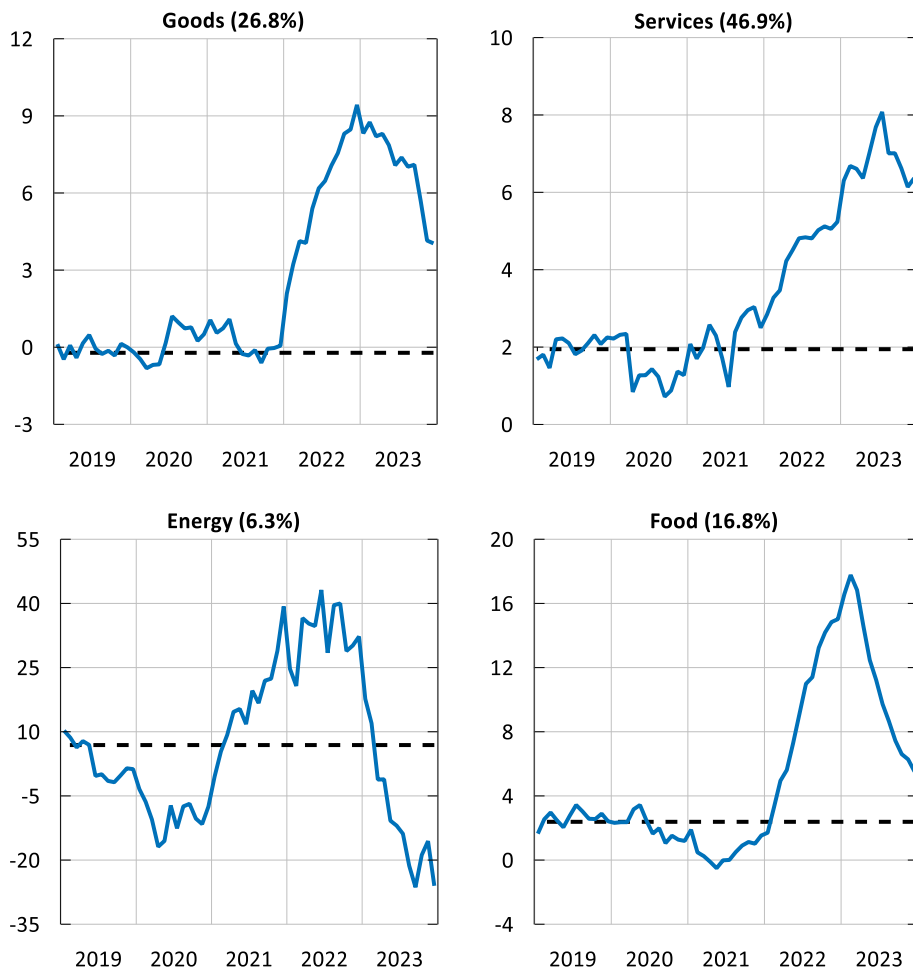
In the second half of the year, CPIF inflation excluding energy also fell more noticeably as the effects of the earlier supply shocks abated and the tighter monetary policy dampened demand in the Swedish economy. The growth rate in services prices declined in the second half of the year, and goods price increases slowed down rapidly in the autumn. However, CPIF inflation excluding energy was high throughout the year, reaching 5.3 per cent in December.

All major CPIF sub-indices except energy increased a lot more than normal in 2023 (see Table 1). Services prices made the largest contribution to CPIF inflation. However, the contributions for food and goods prices were also historically high, amounting to just under one percentage point each at the end of the year (see Figure 5). Energy prices provided a negative contribution to CPIF inflation for most of the year.

<sup>3</sup> Moreover, changes in consumption behaviour after the pandemic led to relatively large weighting adjustments within the services price aggregate, raising the annual rate of price increase in 2023.

**Figure 4. Development of various sub-indices of the CPIF to end of December 2023**

Annual percentage change



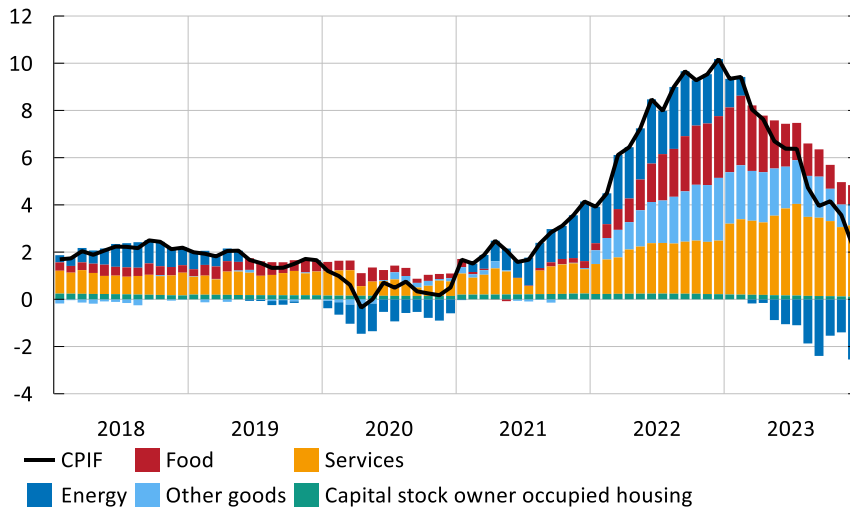
Note. Goods refers to prices of goods excluding energy and food. Weight in the CPIF according to the Riksbank's classification shown in brackets. The capital stock index, which has a weight of 3.4 per cent, is not shown here. Horizontal dashed lines represent mean values for the period 1998–2019.

Sources: Statistics Sweden and the Riksbank.



**Figure 5. Contributions to CPIF inflation**

Annual percentage change and percentage points



Note. The bars illustrate each price group’s contribution to the rate of increase in the CPIF over the past twelve months. The contributions can be interpreted as the annual rate of increase in each group multiplied by the group’s weight in the CPIF. See Table 1 for the weightings of each group in 2023.

Sources: Statistics Sweden and the Riksbank.

**Table 1. Development of the CPIF and its components**

Annual percentage change, annual average

	Weight (per cent)	2000-2022	2022	2023
Services	46.9	2.0	4.4	6.8
Goods	26.8	-0.11	6.0	7.0
Food	16.8	2.2	9.3	11.1
Energy	6.3	5.1	32.9	-9.8
Capital stock	3.2	5.4	6.9	5.6
CPIF	100	1.8	7.7	6.0

Note. The weights are those for 2023.

Source: Statistics Sweden.

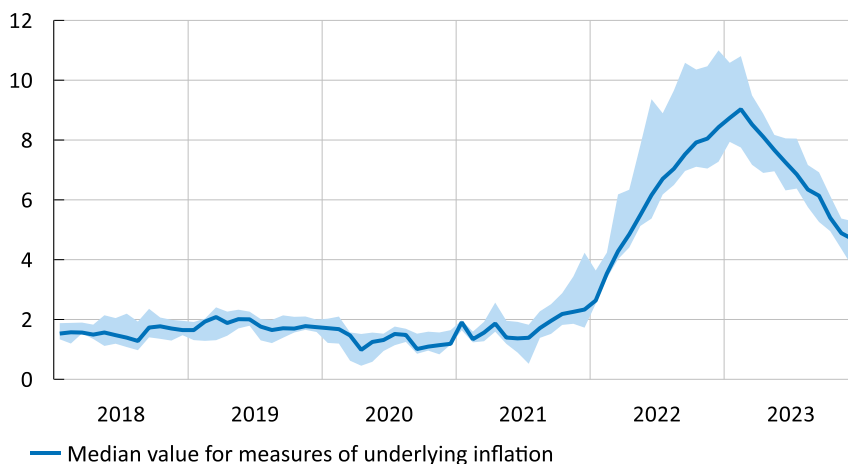
### All measures of underlying inflation fell

The tightening of monetary policy has not merely aimed to bring inflation down to the 2 per cent target, but to stabilise it sustainably around the target. The Riksbank therefore analyses several measures of inflation to assess how persistent inflation is. Various measures of underlying inflation, which exclude or reduce the impact of widely varying prices, fell sharply in 2023 (see Figure 6).<sup>4</sup> In December, the median of these measures was 4.7 per cent.

<sup>4</sup> For more information on different measures of underlying inflation, see the Riksbank’s website <https://www.riksbank.se/en-gb/statistics/macro-indicators/underlying-inflation/>.

**Figure 6. Different measures of underlying inflation**

Annual percentage change



Note. The field shows the highest and lowest outcome among 7 different measures of underlying inflation: CPIF excluding energy, UND24, Trim85, CPIF excluding energy and perishables, persistence-weighted inflation (CPIFPV), factors from principal component analysis (CPIFPC) and weighted mean inflation (Trim1).

Sources: Statistics Sweden and the Riksbank.

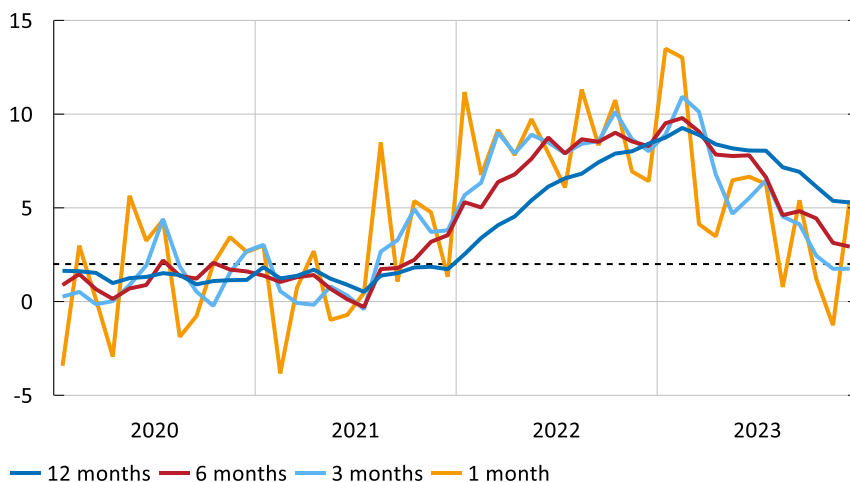
### The deviation from the inflation target was small at the end of 2023

Monetary policy and the declining effects of earlier supply shocks contributed to CPIF inflation falling back relatively quickly from high levels at the beginning of the year to 2.3 per cent in December. On average, CPIF inflation was 6.0 per cent in 2023 (see Table 1). The deviation from the target was high on average during the year, but it declined constantly and was small at the end of 2023. The rapid fall in CPIF inflation was largely due to the decline in energy prices. CPIF inflation excluding energy prices was therefore significantly higher than CPIF inflation. Services prices, which more closely reflect the domestic economic situation, rose at a rapid pace. However, the growth rate of services prices also slowed down during the year. The fact that inflationary pressures were dampened over the year is clear if one studies price changes measured over periods of time shorter than one year. Figure 7 shows annualised seasonally-adjusted price changes over 1, 3 and 6 months, together with the usual 12-month change in the CPIF excluding energy. The short-term price changes came down faster and in the second half of 2023 were lower than the 12-month figures.

The Riksbank's monetary policy affects inflation partly through demand in the economy and expectations of how inflation will develop in the future. Monetary policy has a time-lagged impact on inflation and the real economy, and the full impact of interest rate increases had therefore not yet been realised in 2023.

**Figure 7. CPIF excluding energy**

Annual percentage change and 1-, 3- and 6-month changes calculated as an annual rate



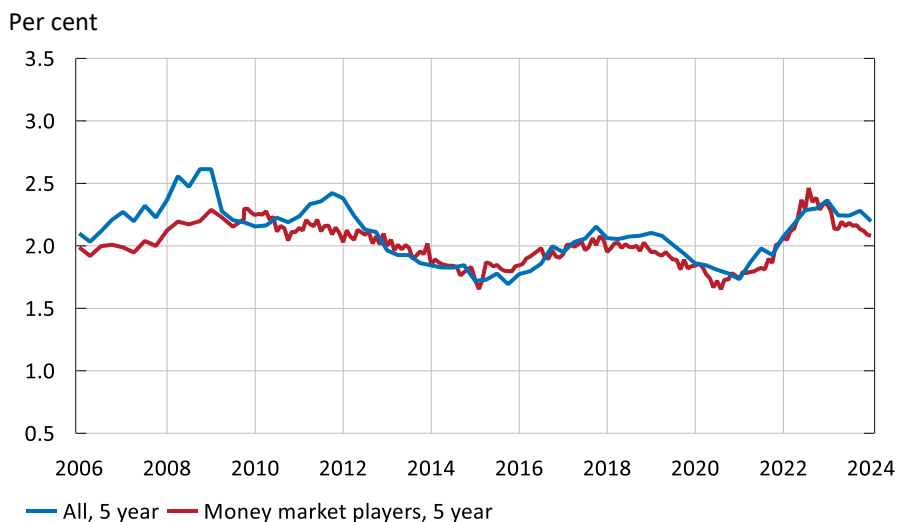
Note. Seasonally adjusted data. Dashed line marks 2 per cent.

Sources: Statistics Sweden and the Riksbank.

### Stable long-term inflation expectations

Monetary policy aims to stabilise inflation close to the inflation target. The primary purpose of the inflation target is for it to act as a long-term benchmark for price setting and wage formation in the economy. It is therefore essential that economic agents trust the Riksbank to use monetary policy to return inflation to the target when disturbances have caused it to deviate. The closeness of various measures of long-term inflation expectations to the target is an indication of such confidence in monetary policy.

Long-term inflation expectations have remained firmly anchored at the inflation target, even in recent years when inflation has reached double figures. According to surveys, long-term inflation expectations in Sweden fell slightly in 2023 and at the end of the year were just above 2 per cent (see Figure 8). The Riksbank's assessment is that the tighter monetary policy has been important in stabilising long-term inflation expectations close to the target.

**Figure 8. Long-term inflation expectations**

Note. Expectations refer to the CPI.

Source: Kantar Prospera.

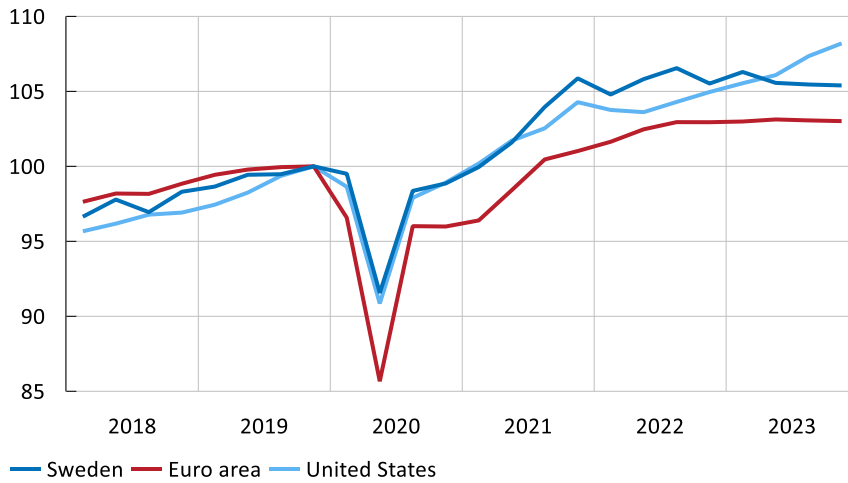
## 1.2 The development of the economy in 2023

### **Economic activity slowed down and unemployment rose**

Demand in the Swedish economy was surprisingly resilient to high inflation and interest rate hikes and Swedish GDP increased in the first quarter of 2023 (see Figure 9). But economic activity then slowed down and GDP declined somewhat. The parts of the economy that are sensitive to interest rates, such as household consumption and housing investment, were affected to a large degree by the contractionary monetary policy. Household consumption declined and developments were weak both historically and in comparison with other countries, reflecting the high indebtedness of Swedish households and short interest rate fixation periods. In addition, housing investment fell significantly as interest rate rises have both gradually restrained demand for new housing and increased construction companies' funding costs, at the same time as construction costs also increased. Net exports, other business investment and government consumption made a positive contribution to GDP, but not enough to compensate for the decline in consumption and residential investment and a negative contribution from inventory investment. In the United States, GDP growth remained strong in 2023, but in the euro area GDP remained broadly unchanged (see Figure 9).

**Figure 9. GDP in Sweden and abroad**

Index, 2019 Q4 = 100, seasonally adjusted data



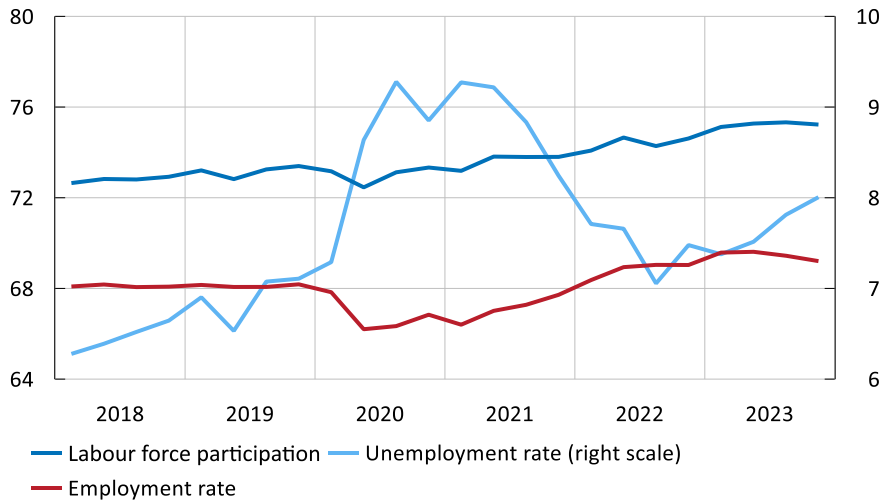
Sources: National sources and the Riksbank.

The labour market in Sweden was strong in the first half of 2023, despite contractionary monetary policy and weak GDP growth. There are probably several explanations for this. One of these was households' pent-up willingness to consume labour-intensive services after the pandemic. Another was that companies chose to continue to recruit even though demand slowed down, presumably because they had previously had large labour shortages and difficulty recruiting. In addition, real wages fell sharply due to high inflation and the cost of labour declined relative to the cost of capital. This probably contributed to higher demand for labour.<sup>5</sup> However, during the autumn the labour market also showed clear signs of weakening, although the employment rate and labour force participation rate remained at high levels (see Figure 10). Unemployment rose and demand for labour slowed down significantly. The number of new job vacancies declined and redundancy notices rose. Some industries, such as construction and retail trade, were more severely affected. In the United States and the euro area, labour markets were also strong and demand for labour was high. In the United States and the euro area, the unemployment rate remained low even at the end of the year.

<sup>5</sup> See the article "Strong labour market in Sweden and abroad" in *Monetary Policy Report*, June 2023, Sveriges Riksbank.

**Figure 10. Labour force, employment and unemployment**

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



Note. In October 2023, the series were re-linked and revised by Statistics Sweden for the period 2005–2020 for the time series break that occurred in the LFS in January 2021. Outcomes after 2021 were also revised as a result of some corrections to the statistics.

Source: Statistics Sweden.

### Resource utilisation decreased during the year

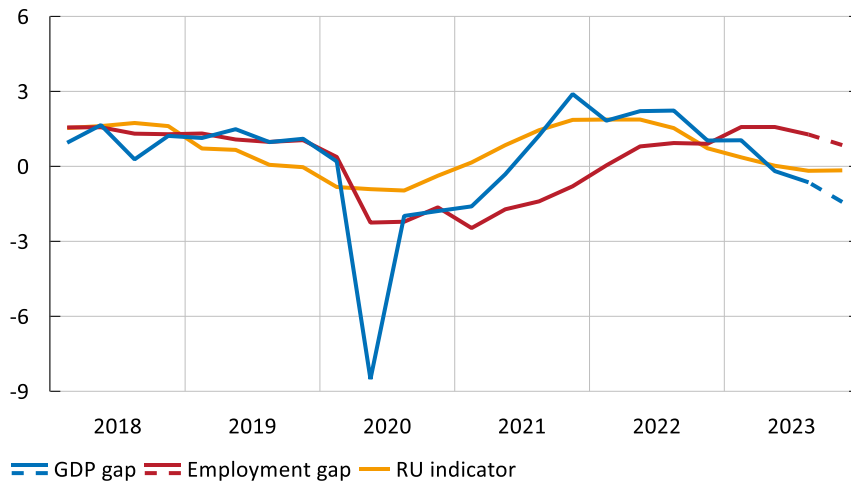
Without neglecting the inflation target, the Riksbank must also contribute to a balanced development of output and employment. The level of activity in the economy is often summarised in various measures of resource utilisation. What one tries to measure is to what extent the productive resources of the economy – labour and capital – are used in relation to what is sustainable in the long term. In addition, resource utilisation affects developments in wages and prices. It is therefore important for the Riksbank to try to gain an impression of this. Resource utilisation cannot be measured precisely and there is no single measure that perfectly captures resource utilisation in the economy. The Riksbank therefore makes an assessment on the basis of several different indicators. Such indicators include unemployment, industrial capacity utilisation and shortages.

According to the Riksbank's resource utilisation indicator, which is an aggregate of different indicators, resource utilisation fell in 2023 and was close to normal at the end of the year (see Figure 11).<sup>6</sup> Measured by the GDP and employment gaps, resource utilisation was higher than normal in early 2023. The GDP gap declined rapidly, pointing to lower than normal resource utilisation at the end of the year, while the employment gap remained positive, pointing to relatively high resource utilisation at the end of the year. The Riksbank's overall assessment is that resource utilisation fell in 2023 and was lower than normal at the end of the year.

<sup>6</sup> For a description of the Riksbank's resource utilisation indicator, see H. Lovéus (2023), "New indicators of resource utilisation", *Economic Commentaries* no. 4, Sveriges Riksbank.

**Figure 11. Measures of resource utilisation in Sweden**

Standard deviation and per cent



Note. The gap refers to the deviation of GDP and employment from the Riksbank's assessed trends in the Monetary Policy Report, November 2023. The RU indicator is a statistical measure of resource utilisation. It is normalised so that the mean value is 0 and the standard deviation is 1, for the period 1996–2023. The solid line represents outcomes, the dashed line represents the Riksbank's forecast in the Monetary Policy Report, November 2023.

Sources: Statistics Sweden and the Riksbank.

When inflation substantially overshoots the target, there is a risk that economic agents will lose confidence in the inflation target, which could cause inflation to become entrenched at a high level. This would be very detrimental to output and employment, as it would require a substantial increase in the policy rate to bring inflation back to the target.<sup>7</sup> The purpose of the Riksbank's interest rate increases has been to bring inflation back to the target within a reasonable time, without slowing economic activity unnecessarily. The tighter monetary policy dampened economic activity and resource utilisation and contributed to somewhat higher unemployment. But it would have been worse to let high inflation take hold. High inflation is harmful to the economy, and by achieving sustainably low and stable inflation, monetary policy creates the conditions for long-term favourable economic development.

<sup>7</sup> See also section 4.1 in this account.

## 2 Monetary policy 2023

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The Riksbank, like many other central banks, raised its policy rate rapidly in 2022 to prevent the rapidly rising inflation from becoming entrenched in price setting and wage formation. The policy rate was also raised in 2023, but in more gradual steps by a total of 1.5 percentage points. The Riksbank's holdings of securities decreased as securities matured, but also through the Executive Board's decision to sell government bonds to normalise the Riksbank's balance sheet more quickly.

Monetary policy and the fading effects of earlier supply shocks contributed to a relatively rapid decline in inflation in 2023. Measured in terms of the CPIF, the decline was in line with the Riksbank's projections. However, this measure is very much affected by what happened to the volatile electricity prices. In the first half of the year, the CPIF excluding energy was significantly higher than expected, mainly because services prices continued to increase rapidly. In addition, the krona continued to depreciate, adding to the uncertainty surrounding inflation prospects. Both GDP and the labour market also initially developed more strongly than in the Riksbank's forecasts. To ensure that inflation would fall, monetary policy needed to be more restrictive than the Riksbank had expected and the forecast for the policy rate was revised upwards in the first half of the year.

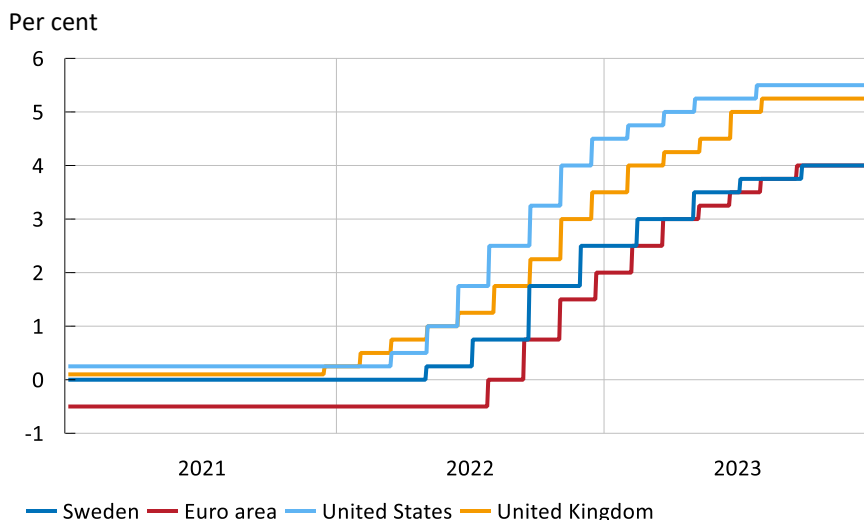
Since the middle of 2023, economic developments have been in line with the Riksbank's forecasts. CPIF inflation excluding energy fell more markedly and activity in the Swedish economy slowed down. In November, the Executive Board decided to leave the policy rate unchanged at 4 per cent, but emphasised that it was prepared to raise it further if inflation prospects deteriorated.

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### 2.1 The Riksbank's forecasts and monetary policy considerations

The Riksbank, like many other central banks, raised its policy rate rapidly in 2022 to prevent the high inflation from becoming entrenched in price setting and wage formation. Global financial conditions clearly tightened and by early 2023 policy rates began to have increasingly clear effects on demand. Most major central banks thus slowed the pace of increases in spring 2023 (see Figure 12).



**Figure 12. International policy rates**

Sources: The respective central banks and the Riksbank.

### How much would monetary policy need to be tightened to bring inflation down?

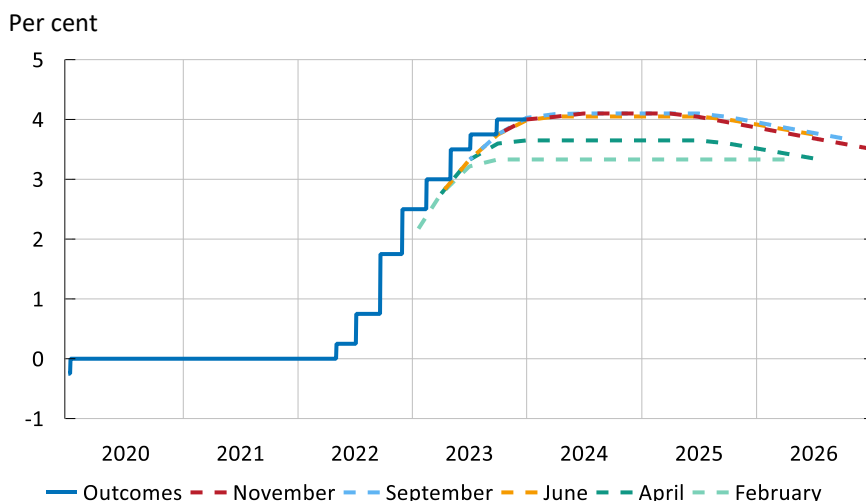
The global economy had been affected for several years by a number of unexpected shocks, such as imbalances caused by the pandemic, disruptions in the European energy market and Russia's invasion of Ukraine. The shocks had rapidly pushed up global inflation and in Sweden it rose to levels not seen since the introduction of the inflation target. The Executive Board's monetary policy discussions in 2023 focussed on the extent to which supply-driven price increases in areas such as energy and food would continue to spread to other prices. Another key question was how much impact the strong demand following the pandemic had on the rise in inflation. Policy rates had been raised substantially, but the global economy had proved to be relatively resilient to rising prices and interest rates, and labour markets continued to develop strongly both in Sweden and abroad.

It is difficult to know in advance how much the policy rate needs to be raised to bring inflation to the target, because monetary policy affects different parts of the economy at different speeds and to different extents. To ensure that inflation would fall, monetary policy needed to be tighter in 2023 than the Riksbank had expected (see Figure 13). Despite the fact that the rise in inflation in Sweden was relatively fast and the inflation peak comparatively high, the Riksbank is one of the central banks that has raised its policy rate to a relatively low level (see further "Has inflation been supply-driven and the interest rate increases therefore unnecessary?" in Section 4.2). The Swedish economy is sensitive to interest rates and an important factor in this context is the high level of indebtedness of Swedish households and short interest rate fixation periods.<sup>8</sup> High interest rate sensitivity in the economy means that the impact of policy rate increases on resource utilisation and inflation can be greater and

<sup>8</sup> See, for instance, the article "Higher sensitivity to interest rates in the Swedish economy" in *Monetary Policy Report*, September 2022, Sveriges Riksbank.

come sooner. The question of how much monetary policy needed to be tightened to cool the economy was therefore continuously analysed.

**Figure 13. Policy rate, forecasts 2023**



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

Source: The Riksbank.

Monetary policy has focused on bringing inflation back to the target within a reasonable period of time, without slowing down the economy unnecessarily. It has been important to avoid a situation with weaker confidence in the inflation target and thus ultimately an inflation that is more difficult to control without more extensive negative consequences for the Swedish economy. The Executive Board therefore discussed the importance of tightening monetary policy sufficiently at a relatively early stage. To safeguard the inflation target and prevent monetary policy from needing to be tightened even more at a later stage, the policy rate needed to be raised substantially.

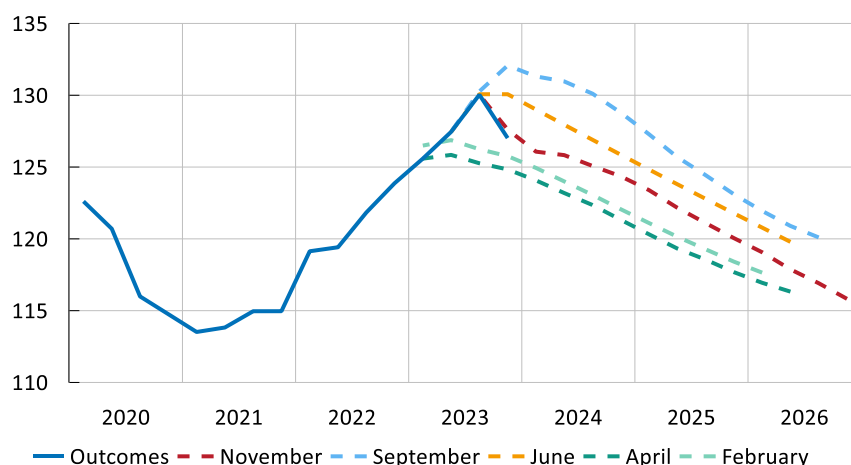
The high inflation in 2023 was still assessed to comprise a risk that supply-driven price impulses would spill over into the economy, through so-called indirect effects and second-round effects. The rapid cost increases and the strong recovery after the pandemic seemed to have created conditions for a change in companies' pricing behaviour, compared to what had been the case for a long time before the pandemic. Cost increases had been passed on to consumers at a faster pace and to a higher degree than before and consumers appeared to have accepted price increases to a greater extent.<sup>9</sup> The development of the exchange rate and its impact on inflation and the real economy was also an important factor in this context. The krona continued to perform surprisingly weakly in the first half of 2023 (see Figure 14). The trend depreciation of the krona has probably been an important explanation for the faster increase in goods prices in Sweden than in many other countries. Studies have shown

<sup>9</sup> See for example "Prissättning hos svenska företag 2023" (Pricing in Swedish companies 2023), Special study, National Institute of Economic Research and "I've never before experienced customers accepting price increases so easily", the *Riksbank's Business Survey* February 2022, Sveriges Riksbank.

that changes in costs have a greater impact on prices when inflation is high than when it is low, and the Riksbank's in-depth analysis in 2023 indicated that the change in the exchange rate has had an unusually rapid impact on consumer prices over the past year.<sup>10</sup> Towards the end of the year, the krona exchange rate began to strengthen, helping to reduce the risk of continued excessive inflation. However, uncertainty about business costs and how they are passed on to consumer prices has remained at the centre of discussions about risks to inflation.

**Figure 14. Nominal exchange rate, KIX, 2023 forecasts**

Index, 18 November 1992 = 100



Note. KIX (krona index) is a weighted average against currencies in countries important for Sweden's international transactions.

Source: The Riksbank.

As it takes time for monetary policy to have a full impact on inflation and the real economy, monetary policy decisions are guided by economic forecasts. The effects of the previous year's interest rate hikes and the fading effects of supply shocks were not expected to materialise until 2023, and forecasts suggested that inflation would fall towards the target in that year. CPIF inflation also fell in line with the Riksbank's forecasts (see Figure 15). However, this measure is very much characterised by what happens to the volatile electricity prices. During the first half of the year, the CPIF excluding energy was on several occasions significantly higher than the Riksbank had expected (see Figure 16). For instance, service prices continued to increase at a rapid rate. In addition, the krona continued to depreciate, adding to the uncertainty surrounding inflation prospects. Both GDP and the labour market also initially developed more strongly than expected and the Riksbank's forecasts were revised upwards (see Figure 17, Figure 18 and Figure 19).

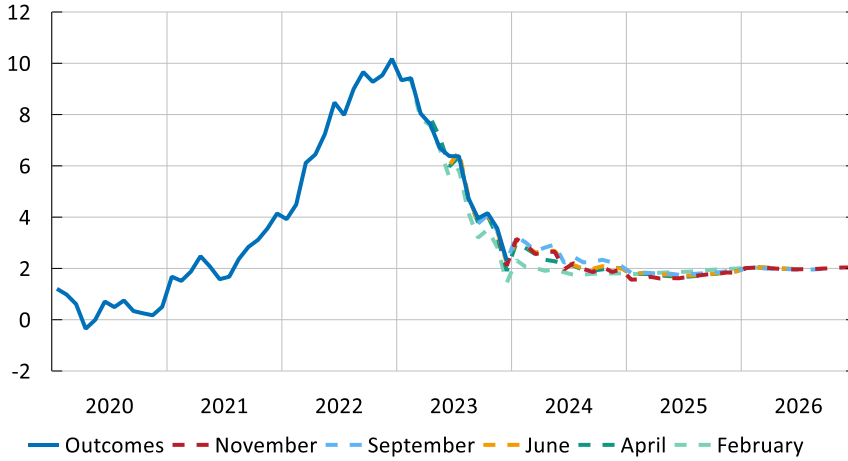
To ensure that inflation would fall and stabilise at the target within a reasonable period of time, monetary policy needed to be more restrictive in 2023 than the Riksbank had expected and the forecast for the policy rate was revised upwards in the

<sup>10</sup> See, for example, the fact box "Pass-through of the exchange rate when inflation is high" in *Monetary Policy Report*, June 2023, Sveriges Riksbank and C. Borio, M. Lombardi, J Yetman and E. Zakrajšek (2023), "The two-regime view of inflation", BIS papers No 133, Bank for International Settlements.

first half of the year (see Figure 13). Since the middle of 2023, economic developments have been in line with the Riksbank's forecasts. CPIF inflation excluding energy fell markedly and activity in the Swedish economy slowed down.

**Figure 15. CPIF, 2023 forecasts**

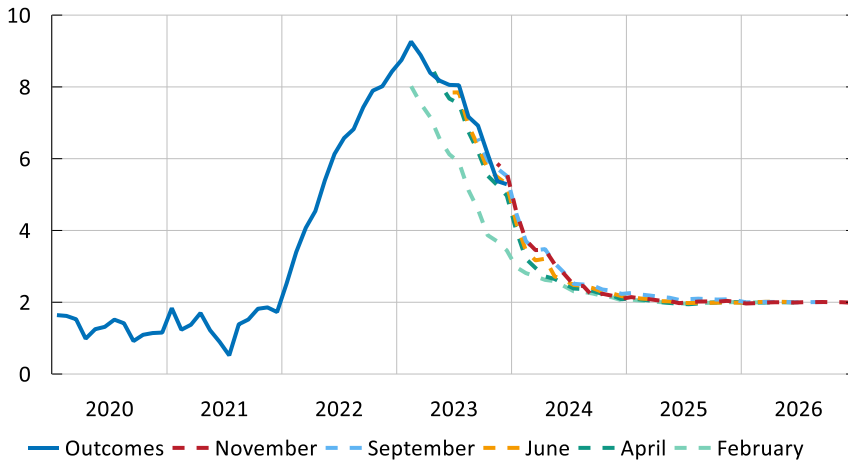
Annual percentage change



Sources: Statistics Sweden and the Riksbank.

**Figure 16. CPIF excluding energy, forecasts 2023**

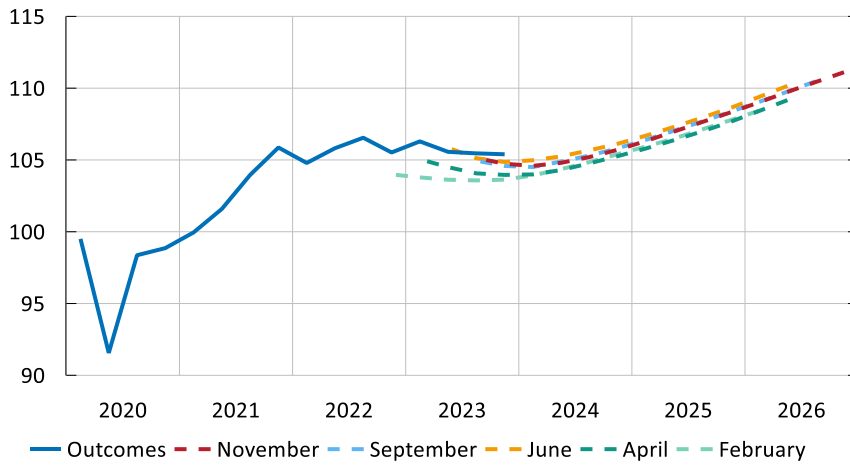
Annual percentage change



Sources: Statistics Sweden and the Riksbank.

**Figure 17. GDP, 2023 forecasts**

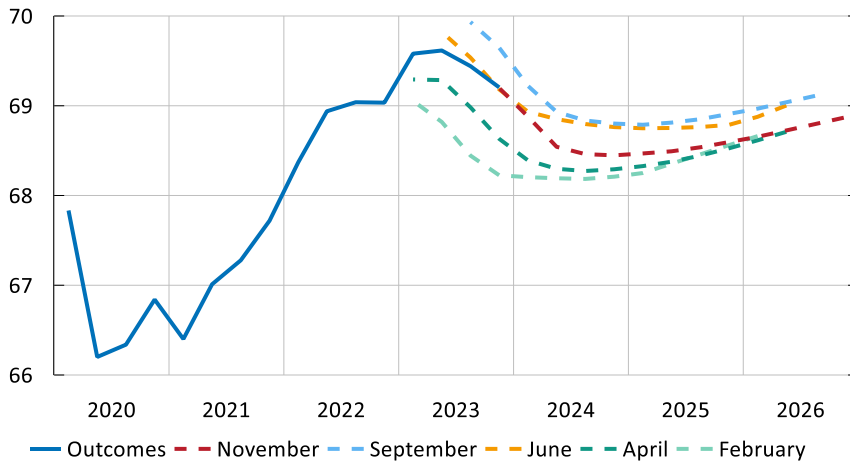
Index, 2019 Q4 = 100, seasonally adjusted data



Sources: Statistics Sweden and the Riksbank.

**Figure 18. Employment rate, 2023 projections**

Percentage of population, 15–74 years, seasonally adjusted data

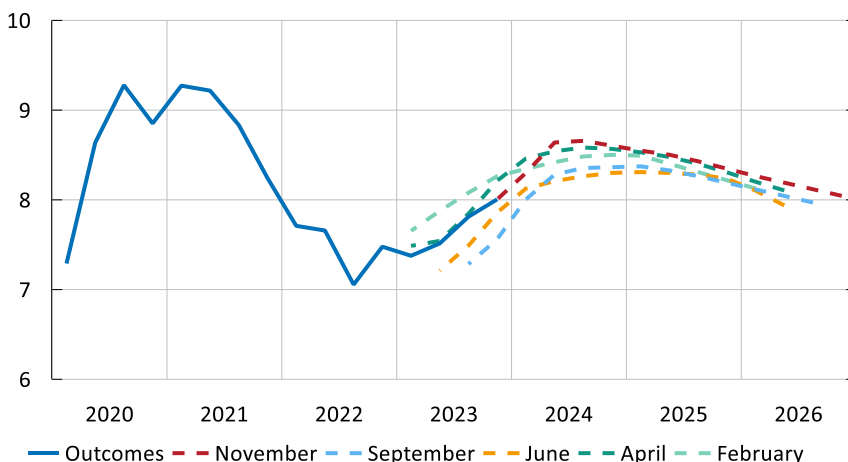


Note. In October 2023, the series was re-linked and revised by Statistics Sweden for the period 2005–2020 for the time series break that occurred in the LFS in January 2021. Outcomes after 2021 were also revised as a result of some corrections to the statistics.

Sources: Statistics Sweden and the Riksbank.

**Figure 19. Unemployment rate, 2023 projections**

Percentage of labour force, 15-74 years, seasonally adjusted data



Note. In October 2023, the series was re-linked and revised by Statistics Sweden for the period 2005–2020 for the time series break that occurred in the LFS in January 2021. Outcomes after 2021 were also revised as a result of some corrections to the statistics.

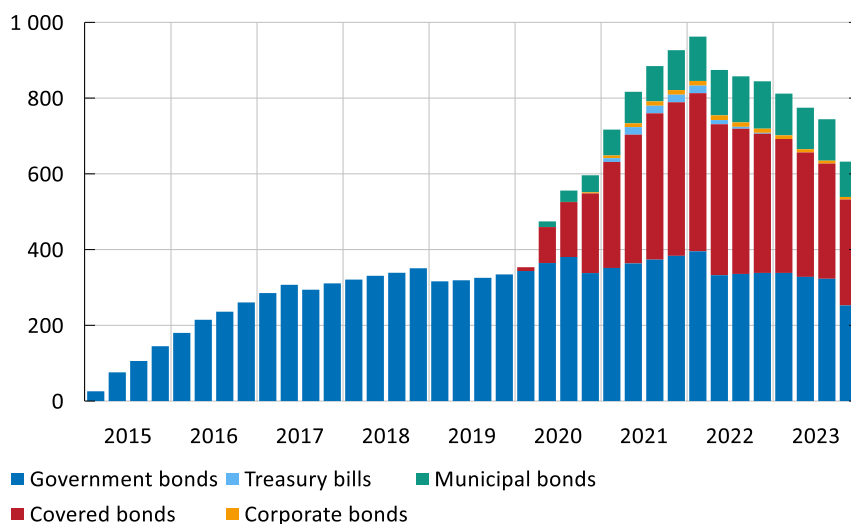
Sources: Statistics Sweden and the Riksbank.

During 2023, the policy rate was raised in total by 2.5 percentage points to 4 per cent. The Executive Board also decided to sell government bonds so that the Riksbank’s holding of securities would normalise at a faster pace (see Figure 20).<sup>11</sup> The sales were also expected to contribute to higher government bond yields, but to have a limited impact on deposit and lending rates faced by households and non-financial corporations. The measure also increased the amount of safe and easily marketable assets in the Swedish market. This was expected to make it easier for foreign agents to invest in Swedish assets and also improve the functionality of the financial markets. All in all, the sales were assessed to help strengthen the krona and improve the Riksbank’s possibilities to reduce inflation. Participants active on the Swedish foreign exchange and fixed-income markets have stated in the Riksbank’s financial market survey that the functioning and liquidity of the markets improved in 2023 and that the Riksbank’s sale of government bonds contributed to this.

<sup>11</sup> In February, the Executive Board was decided to start sales from April, and in June it was decided to accelerate sales with effect from September. In November, the Executive Board announced that the Riksbank was considering increasing the pace of sales further in 2024. In total during 2023, the Riksbank’s securities holdings decreased by SEK 212 billion.

**Figure 20. The Riksbank's asset holdings**

Nominal amounts, SEK billion



Source: The Riksbank.

### Unexpectedly high underlying inflation – policy rate increased in February

In the February Monetary Policy Report, the Riksbank noted that there were clear signals of a continued economic downturn during 2023 in Sweden, not least through a slowdown in household consumption. The Economic Tendency Survey showed that households' views of both their own finances and the Swedish economy had become more pessimistic than ever before and that sentiment in both the retail trade and the services sector was very weak. However, while economic activity had started to decline in the Swedish economy, the employment rate was still high and inflation was far above the target. CPIF inflation had risen to just over 10.2 per cent in December and even disregarding the rapid increase in energy prices, inflation was high and continued to rise. Several measures of underlying inflation confirmed that prices were rising broadly and at a similar pace, and they had not yet shown any signs of turning downwards. In addition, companies were planning to continue raising their prices. Therefore, although there were many indications that inflation would fall back, it was very difficult to know whether it would fall fast enough and far enough. The unexpectedly weak development of the krona also contributed to the uncertainty surrounding inflation prospects.

The Executive Board assessed that the risks of tightening monetary policy too little in the near term were greater than the risks of tightening it too much. To bring down inflation and safeguard the inflation target, the Executive Board decided at its monetary policy meeting on 8 February to raise the policy rate by 0.5 percentage points to 3.0 per cent. The forecast for the policy rate was revised up and indicated that the policy rate would be raised further during the spring. As an additional measure to the higher policy rate, the Executive Board decided that the Riksbank would sell government bonds equivalent to SEK 3.5 billion a month as from April so that the asset holdings would decrease at a faster pace, and to offer larger volumes of Riksbank Certificates in the weekly monetary policy operations. Both the sales of

government bonds and the increased volume of Riksbank Certificates were expected to contribute to higher market rates and to an increase in the volume of safe and easily marketable assets on the Swedish market. All in all, the sales were assessed to help strengthen the krona and improve the Riksbank's possibilities to reduce inflation.

### **Resilient demand and weak krona – policy rate raised in April**

During the spring, the policy rate increases had increasingly clear effects on demand in the Swedish economy. However, new information suggested that the real economy was developing somewhat more strongly than expected (see Figure 17, Figure 18 and Figure 19). However, the aggregate measures hid a divided development, where the Swedish export sector was continuing to do well, at the same time as domestic demand was increasingly weak. The April Monetary Policy Report also noted that CPIF inflation had fallen roughly in line with the Riksbank's forecast during the first three months of the year. However, the decline in inflation was due to a faster-than-expected fall in volatile energy prices. Instead, food prices, other goods prices and services prices had continued to increase unexpectedly fast. At the time of the decision in April, inflation measured as the CPIF excluding energy was thus significantly higher than in the Riksbank's forecast and the surprisingly high outcomes at the beginning of the year led the Riksbank to revise its forecast upwards (see Figure 16).

In the United States, concerns in the banking sector had arisen after the collapse of the US Silicon Valley Bank in March. The banking turmoil contributed to somewhat tighter credit conditions, which were expected to dampen economic activity. In Sweden, there were few signs of any such credit crunch, but the Riksbank assessed that it was not unlikely that lending or investment activity might also be dampened here, particularly if the turmoil in the financial markets were to return.

The overall picture was that economic agents still had confidence that inflation would return to 2 per cent within a reasonable period of time. When the social partners in the manufacturing sector agreed in March on a settlement that sets the standard for the Swedish labour market, it indicated continued strong confidence in the inflation target, even though it entailed a rate of wage increase that was slightly higher than in the Riksbank's forecast. The agreements were valid for two years and provided greater predictability and stability for companies' cost developments. This reduced the risk of a problematic wage-price spiral. If wage drift were to follow a normal historical pattern, wages were assessed to rise at a pace that – given economic developments in general – was compatible with inflation being close to the target in 2024.

Low and stable inflation is a prerequisite for favourable economic development, enabling a return to real wage growth and increasing households' purchasing power. In line with this, monetary policy remained focused on bringing inflation to the target within a reasonable period of time, and to ensure this, the Executive Board judged that a further increase in the policy rate was needed. The Executive Board therefore decided on 25 April to raise the policy rate by 0.5 percentage point to 3.5 per cent. The forecast for the policy rate was revised up at the same time and indicated that



the policy rate would most likely be increased by a further 0.25 percentage points in June or September. The Executive Board considered that after the April meeting there would be scope to adjust the policy rate in smaller steps, but emphasised that there was still considerable uncertainty.

First Deputy Governor Anna Breman and Deputy Governor Martin Flodén entered reservations against the decision to raise the policy rate by 0.5 percentage points and against the forecast for the policy rate. They advocated an increase in the policy rate of 0.25 percentage points and an interest rate path that indicated a high probability of further increases in June and/or September.

### **Continued uncertainty about inflation developments – monetary policy tightened slightly further in June**

In April and May, CPIF inflation continued to fall, to a level somewhat below the Riksbank's most recent forecast. But surprisingly large falls in energy and food prices were an important explanation for this. CPIF inflation excluding energy prices was dampened more slowly and was instead slightly higher than expected. The June Monetary Policy Report noted that GDP and the employment rate had been stronger than expected (see Figure 17 and Figure 18). Services prices had increased unexpectedly quickly, which was judged to reflect the fact that demand remained high in some parts of the Swedish economy.

Developments differed greatly between different parts of the economy. Exports and investments developed strongly, if one disregards housing, while household consumption slowed down rapidly. While the demand for services such as hotel and restaurant visits was sustained fairly well, demand for goods fell substantially. Housing prices and housing investment, which are affected substantially by rising interest rates, had fallen quickly, although housing prices stabilised somewhat during the first half of the year.

The picture of inflation developments was not clear-cut. Some indicators pointed to prices rising at a slower pace, for instance, prices at earlier stages of production and plans for price increases in the National Institute of Economic Research's Economic Tendency Survey. On the other hand, the inflation outcome for May showed that service prices were increasing faster than expected, which could reflect continued high demand in parts of the Swedish economy. Although household consumption had fallen substantially, the demand for services had been maintained relatively well, which meant that service prices were expected to continue to increase relatively rapidly for some time to come. In addition, the household sector as a whole had access to large savings after the pandemic, which they could use for consumption. The fact that service prices, which comprise almost 50 per cent of the consumer price index, continued to increase rapidly, followed an international pattern and pointed to risks that inflation both in Sweden and abroad might become stuck at a high level. The Riksbank assessed that the weak krona was also helping to sustain inflation, and there was a risk that the pass-through of the krona to price increases was larger in situations with high inflation.

The policy rate was judged to be contractionary, but to ensure that inflation would continue to fall and stabilise around the target within a reasonable period of time, the Executive Board judged that monetary policy needed to be tightened further. On 28 June, the Executive Board decided to raise the policy rate by 0.25 percentage points to 3.75 per cent. The members also decided to increase the pace of the Riksbank's government bond sales from SEK 3.5 billion to 5 billion per month with effect from September. The increased pace was expected to help strengthen the krona and improve the Riksbank's possibilities to reduce inflation.

The forecast for the policy rate was revised upwards and showed that the policy rate would probably be raised one more time during the year and after that would remain at a contractionary level for a relatively long period of time. The Riksbank continued to emphasise the great uncertainty and that new information on developments and their impact on the economic outlook and inflation prospects would be crucial for the monetary policy stance going forward.

### **Inflationary pressures still too high despite falling CPIF inflation – policy rate raised to 4 per cent in September**

Inflation continued to fall, and in the September Monetary Policy Report, the Riksbank noted that inflation was moving in the right direction – but also that inflationary pressures were still too high. The main elements in the development of prices were the same since June: Energy and food prices were increasing more slowly, at the same time as service prices were continuing to increase at too rapid a pace, which was contributing substantially to total inflation. The krona exchange rate was still weak, which was holding up the price increases on imported goods.

The Riksbank's assessment was that there were conditions for a further decline in inflation, not least because price increases at the producer level had continued to slow down. However, the short-term change in services prices did not yet show any unambiguous downward trend, which was considered necessary for inflation to sustainably reach 2 per cent. All in all, the price increases were moving in the right direction, but they were still too high, both measured in terms of annual percentage change and as more short-term monthly changes. The fact that the growth rate of services prices did not show sufficient signs of slowing down indicated that household demand for services remained relatively strong. During the summer, the krona had also continued to develop weakly – and somewhat weaker than in the June forecast. The Riksbank still regarded the development of the krona and its impact on inflation as an uncertainty factor. The rapidly rising service prices and the weak krona increased the risk that inflation would not continue falling and would not approach the target sufficiently quickly.

In line with the June forecast, it was concluded that monetary policy needed to be tightened somewhat further to bring inflation back to target within a reasonable period of time. The Executive Board therefore decided on 20 September to raise the policy rate by 0.25 percentage points to 4 per cent. They continued to emphasise the need for monetary policy to remain tight for an extended period, and the forecast for the policy rate indicated that it could be raised further.

### **Clearer decline in inflation – policy rate left unchanged in November**

Monetary policy continued to cool demand in the Swedish economy, and in the November Monetary Policy Report, the Riksbank noted that inflation had continued to fall and that there were now clear indications that inflationary pressures had eased.

Real economic developments had been in line with the Riksbank's forecast. Growth was low, much as a result of demand being subdued by the parts of the economy that are sensitive to interest rates, such as household consumption and housing investment. But in other parts of the economy, such as the export sector, demand was slowing down in the wake of weaker economic activity abroad. There were increasing signs that the economic downturn was having an impact on the Swedish labour market and that it was slowing down from a strong starting point. The employment rate was still at a historically high level, but unemployment had started to rise at the same time as indicators were suggesting it would continue to do so in the near term.

Inflation prospects now looked better, consumer prices had increased at a slower pace than before in recent months and companies had adjusted their plans for price increases downwards. Short-term growth rates in consumer prices had declined significantly from their highest levels with regard to both services and goods. Since September, the krona exchange rate had also strengthened somewhat, although it remained weak by historical standards and still presented a risk to inflation prospects.

On 22 November, the Executive Board decided to hold the policy rate at 4 per cent. At the same time, it was emphasised that inflation was still too high and that risks remained that it would not continue to fall sufficiently fast and stabilise at the target within a reasonable period of time. The forecast for the policy rate was that it could be raised further at the start of 2024, and that monetary policy needed to be contractionary for a relatively long period of time. The Executive Board also communicated that the Riksbank was considering increasing the pace of government bond sales further in 2024.

## **2.2 List of monetary policy decisions 2023**

The Executive Board of the Riksbank held five monetary policy meetings in 2023. In conjunction with these, the Riksbank published a Monetary Policy Report containing forecasts for the policy rate, inflation and other economic variables. There the Riksbank also described general economic developments and developments on the financial markets in more detail.

**8 February:** The Executive Board decided to raise the Riksbank's policy rate by 0.5 percentage points, to 3.0 per cent. The Executive Board also decided that the Riksbank should sell government bonds equivalent to SEK 3.5 billion a month as from April so that the asset holdings would decrease at a faster pace, and to offer larger volumes of Riksbank Certificates in the weekly monetary policy operations.

**25 April:** The Executive Board decided to raise the Riksbank's policy rate by 0.5 percentage points, to 3.5 per cent. First Deputy Governor Anna Breman and Deputy Governor Martin Flodén entered a reservation against the decision. They instead advocated raising the policy rate rate by 0.25 percentage points.

**28 June:** The Executive Board decided to raise the Riksbank's policy rate by 0.25 percentage points, to 3.75 per cent. The Board also decided to increase the pace of government bond sales from SEK 3.5 billion to SEK 5 billion per month with effect from September.

**20 September:** The Executive Board decided to raise the Riksbank's policy rate by 0.25 percentage points, to 4 per cent.

**22 November:** The Executive Board decided to leave the Riksbank's policy rate unchanged at 4 per cent, but emphasised that it was prepared to raise it further if inflation prospects deteriorated. The Executive Board also communicated that the Riksbank was considering increasing the pace of government bond sales further in 2024 and that a decision on this could be taken in connection with the monetary policy meeting in January 2024.

## FACT BOX – More monetary policy meetings from 2024 onwards

In September 2023, the Executive Board decided to increase the number of regular monetary policy meetings from five to eight per year, starting in 2024. It was assessed that further opportunities for decision making would enable the Riksbank to quickly adapt monetary policy to the prevailing situation and to more frequently communicate a comprehensive view of economic developments. This would contribute to predictable monetary policy. Compared with most other central banks, the Riksbank has had a smaller number of monetary policy meetings. With eight meetings instead of five, the Riksbank now follows a more international practice.

At four of the eight monetary policy meetings, the Riksbank will publish a Monetary Policy Report with full forecasts. A shorter Monetary Policy Update will be published after the other four meetings. The updates will not contain any new forecasts, but they will contain the Executive Board's assessment of how new information will affect the prospects for inflation and monetary policy, as well as the Executive Board's deliberations when reasoning as to what is an appropriate monetary policy.

As before, all monetary policy decisions will be followed by a press conference and minutes from the monetary policy meeting together with a decision annex will be published after all meetings. However, the Riksbank will reduce the time between the monetary policy meeting and the publication of the minutes to approximately five working days.

### 3 Evaluation of the Riksbank's forecasts from 2022

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The Riksbank's forecasts for international GDP in 2023 were roughly in line with the outcomes, while the forecasts for Swedish GDP underestimated the outcomes. Inflation developments for 2023 were underestimated both internationally and in Sweden, in particular by the forecasts from the first half of 2022. As inflation rose, the forecasts were revised upwards. The forecasting errors thus became increasingly smaller, and the forecasts from the second half of 2022 were associated with small errors for Swedish CPIF inflation.

The underestimation of inflation, primarily from the forecasts in the first half of 2022, was due to the supply problems that had arisen in connection with the pandemic fading more slowly than expected, and to the strength of the demand during the recovery from the pandemic being underestimated. This had a prolonged impact that meant that world market prices for commodities, input goods and food rose more than expected. In particular, energy prices rose sharply, largely due to the various effects of Russia's illegal invasion of Ukraine. As a result of inflation forecasts underestimating inflationary pressures, the policy rate forecasts also showed large forecasting errors.

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Monetary policy affects inflation and the rest of the economy with a certain time lag. This means that monetary policy decisions need to be based on forecasts of how the economy will develop in the future. An important element in assessing monetary policy's target fulfilment is therefore an evaluation of how well different forecasts – especially those for inflation – matched the outcomes, and to explain the reasons behind any forecasting errors. To evaluate how well the Riksbank's monetary policy decisions influenced inflation towards the inflation target in 2023, the forecasts from 2022 are presented in this section.

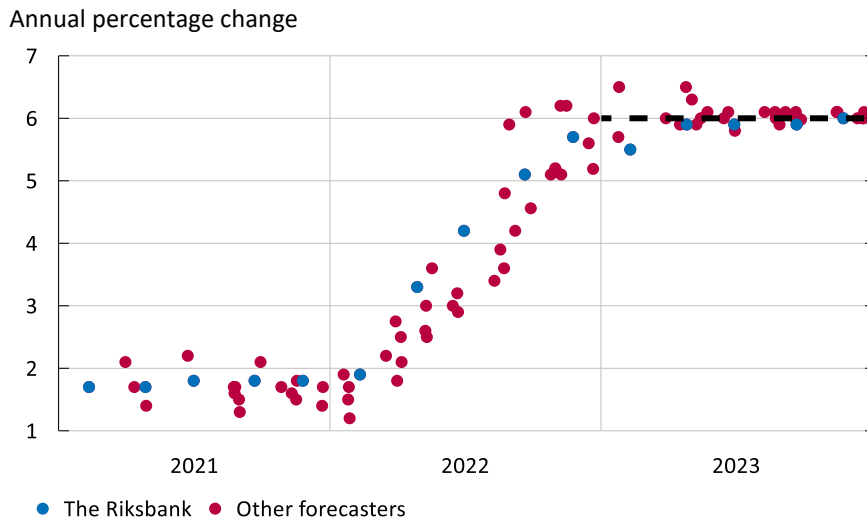
In previous years, the forecasts made two years ago have also been reported, which in this year's Account of Monetary Policy would have meant the forecasts from 2021. These forecasts show that the Riksbank - like other forecasters - grossly misjudged the inflation path for 2023 (see Figure 21).<sup>12</sup> A detailed evaluation of these errors of

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<sup>12</sup> In previous years, the Riksbank has published an evaluation of how well the Riksbank's forecasts have fared compared with those of other Swedish forecasting institutions. The Swedish National Institute of Economic Research (NIER) publishes an evaluation of the forecasting ability of various forecasting institutes every year, so in the future the Riksbank will refrain from doing so. The NIER will publish its forecast evaluation for 2023 in spring 2024. It will then be available on [www.konj.se](http://www.konj.se).

judgement was made in last year's report.<sup>13</sup> Forecasts from 2021 are therefore not shown in this year's account.

**Figure 21. CPIF in Sweden, the Riksbank's and other analysts' forecasts for 2023 made in 2021-2023 (dots) and outcome for 2023 (dashed line)**



Note. The dashed line represents the annual average for 2023.

Sources: Statistics Sweden, other analysts and the Riksbank.

Although monetary policy normally operates with a time lag, some monetary policy measures can operate more quickly or entirely without a time lag. For example, a credible inflation target can lead to relatively rapid effects on price developments in the event of large deviations from the target. Moreover, the effects of monetary policy on the exchange rate can quickly have an impact on the prices of imported goods, which are a significant part of consumer prices. This means that monetary policy in 2023 may also have affected inflation in the same year. This is discussed in Chapter 2.

The forecasts for CPIF inflation show the pace at which the Riksbank intends to bring inflation back to the 2 per cent target after a shock. Depending on the nature and magnitude of the shock to the economy, it can take different amounts of time to bring inflation back to target. The Riksbank shall also contribute to a balanced development of production and employment in Sweden. The forecasts for these variables show how the Riksbank has taken into account developments in the real economy when making monetary policy decisions.

Thus, a deviation from the Riksbank's inflation target of 2 per cent does not always mean that monetary policy has been poorly balanced. Inflation is affected by various events and disruptions that can be difficult or impossible to predict, such as the pandemic or Russia's illegal invasion of Ukraine. These events have had a major impact on both inflation and economic developments in recent years and were therefore important explanations for the large forecasting errors. In addition, some statistics are revised afterwards, which means that the information on which the

<sup>13</sup> See Account of Monetary Policy 2022.

forecasts were based also changes. This is another source of error that can contribute to forecasts being wrong.

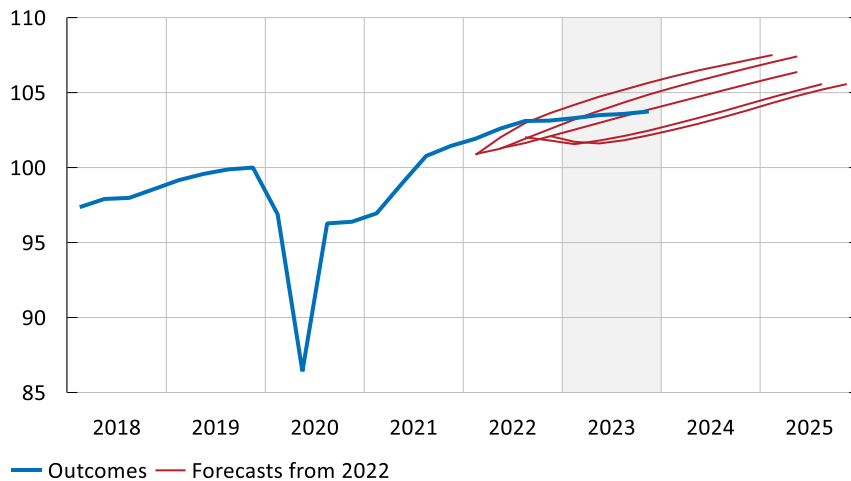
### 3.1 International GDP developed in line with the forecasts, but inflation was underestimated

Sweden is a small and open economy that is highly dependent on exports and imports. This means that international GDP and inflation are important factors when the Riksbank formulates its monetary policy. To provide a measure of international GDP and inflation, developments in the euro area and the United States have been weighted into an index (KIX2) which is based on how important their trade with Sweden is.

The forecasts for international GDP were close to the outcomes (see Figure 22). Inflation around the world fell after the outbreak of the pandemic in early 2020. It then rose sharply in both 2021 and 2022 before falling back in 2023. By the end of the year, KIX2 inflation had fallen back to below 3 per cent (see Figure 23). In 2022, inflation projections were gradually revised upwards as outcomes continued to be higher than expected, largely due to rising energy and food prices in many countries. The 2022 projections, and in particular those from the second half of 2022, thus became more accurate.

**Figure 22. GDP abroad, outcomes and forecasts**

Index, 2019 Q4 = 100, seasonally adjusted data

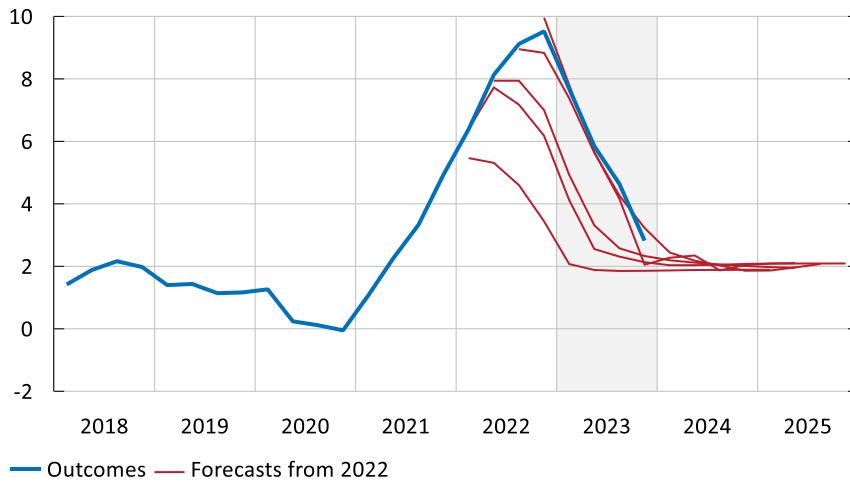


Note. The figure shows KIX2 weighted GDP. KIX2 is a weighted average of the euro area (85 per cent) and the United States (15 per cent).

Sources: National sources and the Riksbank.

**Figure 23. International inflation, outcomes and forecasts**

Annual percentage change



Note. The figure shows KIX2-weighted inflation. KIX2 is a weighted average of the euro area (85 per cent) and the United States (15 per cent).

Sources: National sources and the Riksbank.

### 3.2 The krona weakened more than expected

An important factor that affects price developments is the exchange rate. Changes in the exchange rate can have rapid and direct effects on some imported goods and services. However, it is difficult to determine with any degree of certainty how fast and how large the pass-through from the exchange rate to prices is in general, as it varies over time, depending on the state of the economy and other factors.<sup>14</sup>

In early 2022, the krona started to trend downwards – a trend that continued for most of 2023. However, the Riksbank's forecasts from 2022 indicated that the krona would strengthen, which has meant that the Riksbank has systematically overestimated the strength of the exchange rate (see Figure 24).

The Riksbank's exchange rate forecasts are based, among other things, on an assessment of the long-term level of the real exchange rate and that the krona will begin to adjust towards this level in the not too distant future. The Riksbank's calculations had for a long time indicated that the krona was undervalued and that it should therefore strengthen, but this was not the case. One can point to several different factors that the Riksbank did not foresee and which may have contributed to the misjudgement of the exchange rate.<sup>15</sup> The US Federal Reserve raised interest rates faster and earlier than other central banks, which contributed to the weakening of many currencies against the dollar. Another reason could be that the financial markets are characterised by generally greater sensitivity to risks, for instance,

<sup>14</sup> See, for example, the article "The pass-through of the krona to inflation appears to have been larger than usual" in *Monetary Policy Report*, November 2023, Sveriges Riksbank, where the results indicate that cost changes have a greater impact on prices when inflation is high than when it is low.

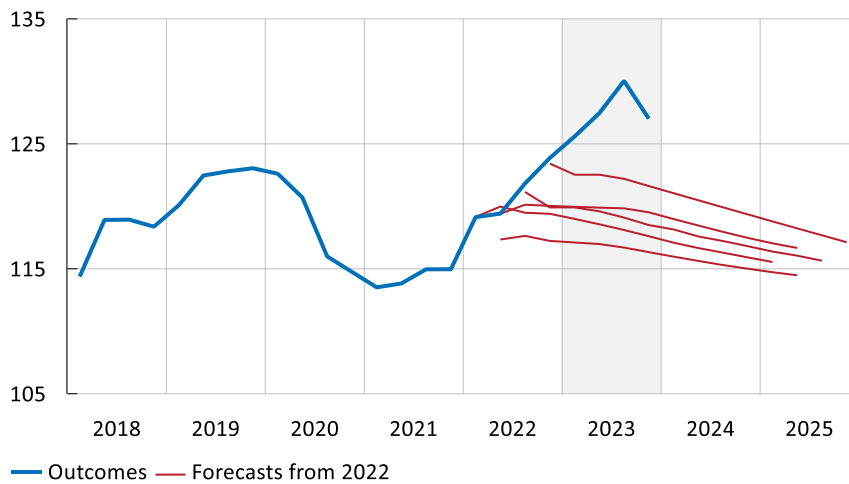
<sup>15</sup> See the article "The krona will strengthen in the medium term", in *Monetary Policy Report*, September 2023, Sveriges Riksbank.



regarding the global security situation. Therefore, if market participants perceived risks specifically linked to the Swedish economy, this may also have played a role. There are also signs that investment strategies used by market participants may have contributed to the weak development of the krona.

**Figure 24. Nominal exchange rate, KIX, outcomes and forecasts**

Index, 18 November 1992 = 100



Note. The KIX (krona index) is a weighted average of the krona exchange rate against currencies in countries that are important for Sweden's international transactions. A higher value indicates a weaker exchange rate.

Source: The Riksbank.

### 3.3 The strength of the labour market was a surprise

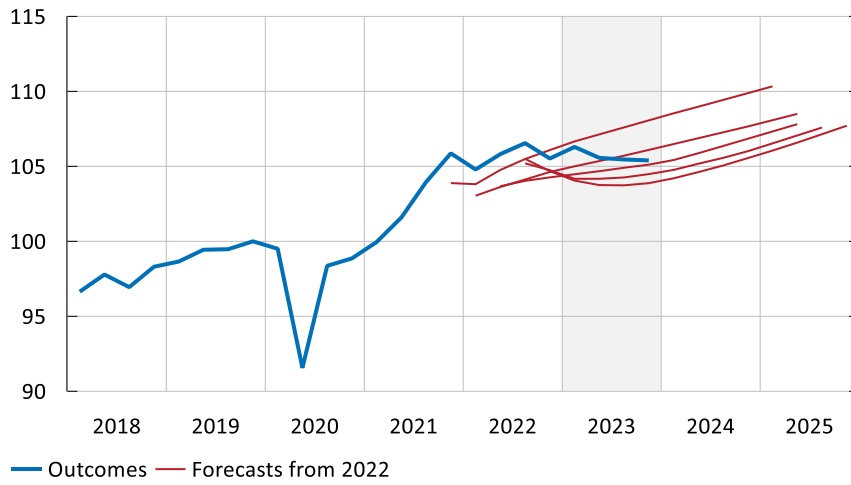
GDP in Sweden was weak in 2023, but nevertheless stronger than many of the 2022 projections (see Figure 25). In contrast to GDP, employment developed strongly. However, the favourable developments slowed down somewhat in the second half of 2023, although the employment rate remained at a historically high level (see Figure 26). Many forecasts underestimated the strong rebound.<sup>16</sup>

Although employment was underestimated, the unemployment forecasts were relatively accurate. The rise in unemployment in 2023 was captured well by the projections (see Figure 27). The fact that the unemployment forecast was close to the outcome while the development of employment was underestimated is because the development of the labour force was also underestimated in the forecasts. To summarise, many of the forecasts underestimated GDP, while the strength of the labour market was a surprise.

<sup>16</sup> The rearrangement of the statistics in January 2021 led to linking and revisions of the statistics in several rounds in 2022 and 2023. This complicated the labour market forecasting process.

**Figure 25. GDP, outcomes and forecasts**

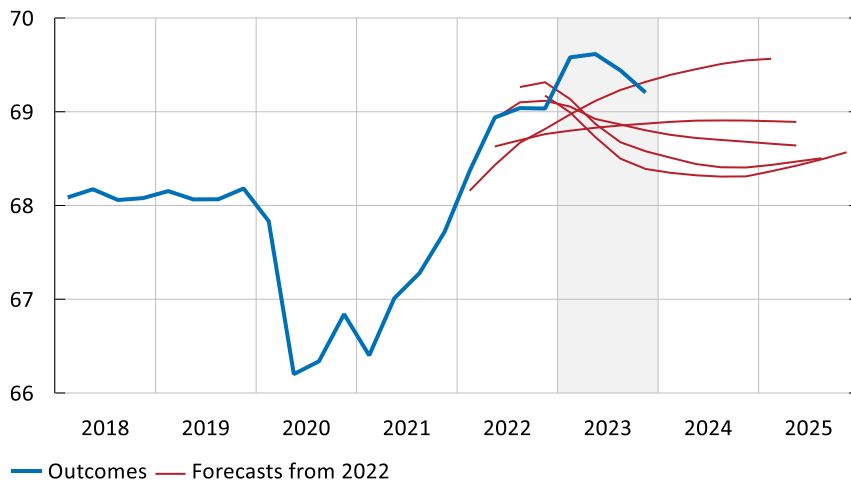
Index, 2019 Q4 = 100, seasonally adjusted data



Sources: Statistics Sweden and the Riksbank.

**Figure 26. Employment rate, outcomes and forecasts**

Percentage of population, 15-74 years, seasonally adjusted data

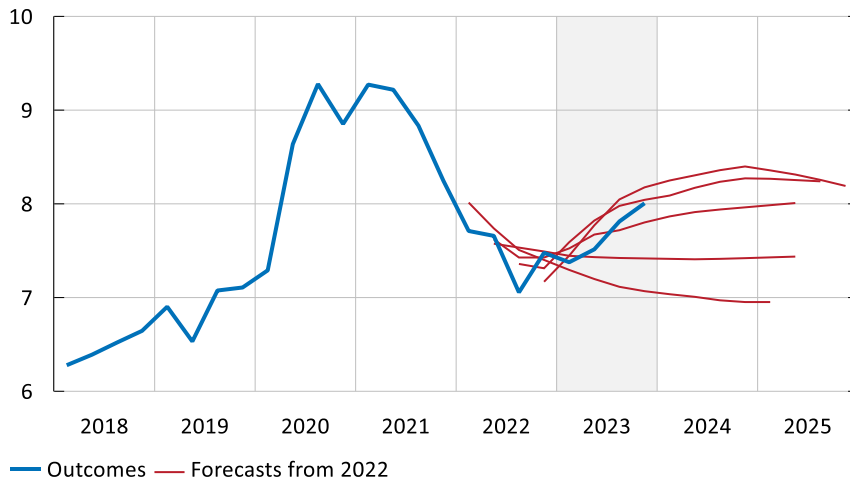


Note. In October 2023, the series was re-linked and revised by Statistics Sweden for the period 2005–2020 for the time series break in the LFS in January 2021. Outcomes after 2021 were also revised as a result of some corrections to the statistics.

Sources: Statistics Sweden and the Riksbank.

**Figure 27. Unemployment, outcomes and forecasts**

Percentage of labour force, 15-74 years, seasonally adjusted data



Note. In October 2023, the series was re-linked and revised by Statistics Sweden for the period 2005–2020 for the time series break in the LFS in January 2021. Outcomes after 2021 were also revised as a result of some corrections to the statistics.

Sources: Statistics Sweden and the Riksbank.

### 3.4 Higher inflation than expected

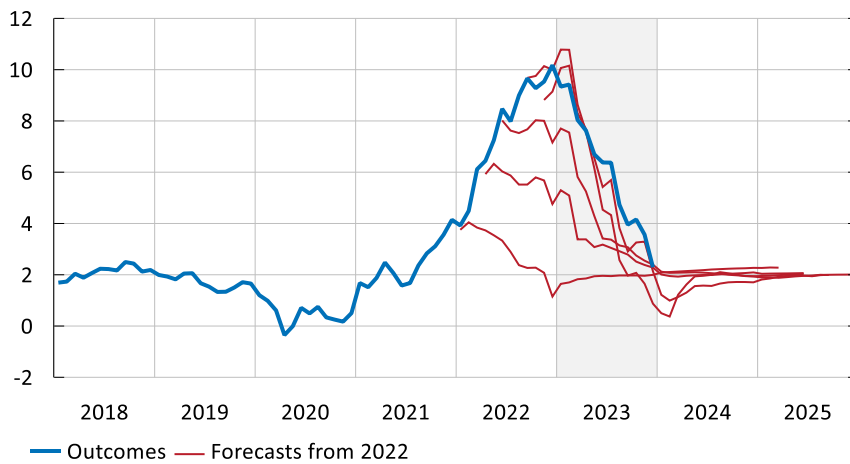
Both outcomes and forecasting errors for Swedish inflation – measured in terms of the CPIF or the CPIF excluding energy – largely followed the same pattern as inflation abroad. Inflation rose rapidly in 2022 but fell back in 2023. At the end of 2023, CPIF inflation was close to the 2 per cent target (see Figure 28 and Figure 29).

The Riksbank underestimated inflation developments for 2023, in particular the forecasts from the first half of 2022. As inflation rose, the forecasts were revised upwards. The forecasting errors thus became increasingly smaller, and from the second half of 2022 they were small for Swedish CPIF inflation. The fact that the forecasts for the CPIF turned out to be more accurate than the forecasts for the CPIF excluding energy, was mainly due to electricity prices increasing more slowly than expected.

The underestimation of inflation, primarily during the first half of 2022 was due to the supply problems that had arisen in connection with the pandemic fading more slowly than expected, and to the strength of the demand during the recovery from the pandemic being underestimated. This had a prolonged impact that led to world market prices for commodities, input goods and food rise more than expected. In particular, energy prices rose sharply, largely due to the various effects of Russia's illegal invasion of Ukraine.

**Figure 28. CPIF, outcomes and forecasts**

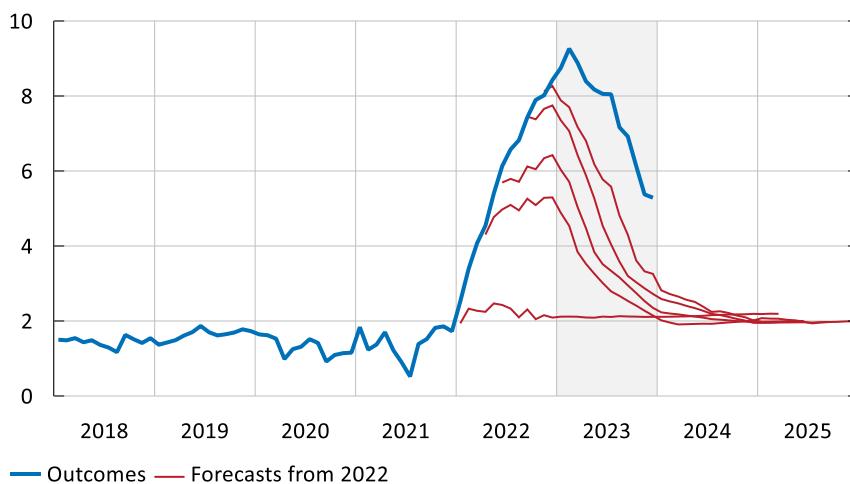
Annual percentage change



Sources: Statistics Sweden and the Riksbank.

**Figure 29. CPIF excluding energy, outcomes and forecasts**

Annual percentage change



Sources: Statistics Sweden and the Riksbank.

### 3.5 Large forecasting errors for the policy rate

The policy rate was increased from 2.5 per cent at the beginning of 2023 to 4.0 per cent at the end of the year. As a consequence of underestimating the inflationary pressure, the forecasting errors for the policy rate were also large, especially the forecasts from the beginning of 2022 (see Figure 30). The Riksbank revised up the forecasts for the policy rate as inflation accelerated. However, the forecasts still underestimated the size of the subsequent interest rate increases. Given that the inflation forecasts for the CPIF from both September and November were largely in line with the outcomes, one might wonder why the Riksbank deviated from the interest rate paths published in connection with the inflation forecasts.

It is possible to identify several reasons why the policy rate needed to be raised more than projected in the second half of 2022. Perhaps the most important reason was that inflation turned out to be higher than had been forecast once energy prices were removed (see Figure 29). This was seen as a sign that underlying inflation – which captures more trend-like movements – was not showing the same signs of slowing down as CPIF inflation.

Other reasons included faster-than-expected growth in services prices, which could indicate that demand remained high in some parts of the economy. The unexpectedly weak krona probably kept inflation up. Moreover, the historically very high rate of inflation posed risks that households and companies would lose confidence in the inflation target. If inflation expectations were to start rising, thereby affecting firms' price setting and households' wage demands, a so-called wage-price spiral could emerge. Inflation risks then becoming a self-generating process that is very costly to overcome, as the experiences of the 1970s and 1980s showed.

Forecasting is an important element of monetary policy decision-making and a good forecast is of course better than a poor one. However, perhaps the most important condition for successful monetary policy is that central banks are nimble and able to respond to various surprises in the economic environment by adapting their decisions to the new circumstances in a sensible, systematic and forceful manner.<sup>17</sup> No forecasters anticipated the pandemic, but monetary policy was still successful and could help mitigate the economic downturn.

To increase the accuracy of the forecasts, the Riksbank continuously develops its forecasting methods and analyses. This work includes analysing price changes for a variety of products using micro data. The Riksbank's business surveys ask more questions about how companies set their prices to better understand pricing behaviour. Assessments of the indirect effects of higher energy prices and the impact of the exchange rate on prices are also reviewed. The Riksbank also exchanges experiences with other central banks, many of which have made similar forecasting errors.<sup>18</sup>

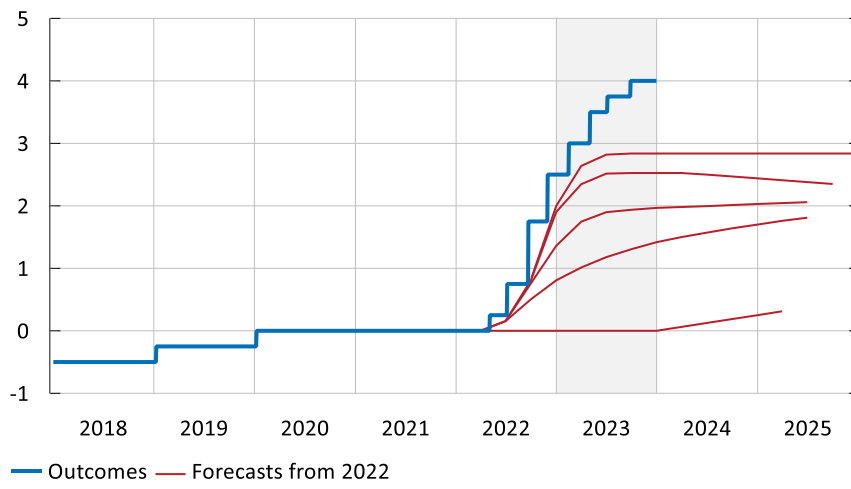
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<sup>17</sup> See also D. Wilcox (2024), "The pandemic era underscored how messy economic forecasting is. Here's how to deal with that." Peterson Institute for International Economics, blog post 22 January 2024.

<sup>18</sup> See C. Håkanson and S. Laséen (2024), "Cruising to victory or dead heat? Central Bank Championships in forecasting ability 2021 and 2022", *Economic Commentary* no. 1, Sveriges Riksbank.

**Figure 30. Policy rate, outcomes and forecasts**

Per cent



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

Source: The Riksbank.

## 4 Important monetary policy issues

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The debate on monetary policy during the year included the Riksbank's interest rate increases and whether they had been necessary. Some observers argued that interest rate hikes were not effective, as the high inflation in 2022 and 2023 was largely due to international price increases on energy and food. A related discussion assumed that relatively significant interest rate raises were required, but that it would have been sufficient if the policy rate had remained at a slightly lower level than 4 per cent. How monetary and fiscal policy should interact was another topic discussed, linked by some commentators to the question of whether the delegation of monetary policy to an independent Riksbank is a problem. At the end of the year, the Swedish National Audit Office's audit of the Riksbank's previous securities purchases was also published.

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### 4.1 The purpose of the inflation target

The primary task of monetary policy is to maintain sustainably low and stable inflation. It is therefore important that there is confidence in the 2 per cent inflation target. The decision to introduce the inflation target was taken in 1993 by the Riksbank's Governing Board, which was then the decision-making body of the Riksbank.<sup>19</sup> The new Sveriges Riksbank Act, which entered into force on 1 January 2023, specifies that the Riksbank is to maintain price stability through sustainably low and stable inflation.<sup>20</sup> The inflation target has explicit political support and so does the current specification of the target, i.e. 2 per cent measured in terms of the CPIF.<sup>21</sup>

It is not possible to keep inflation at 2 per cent at all times, as the economy is constantly changing. Inflation therefore varies in a way that cannot be predicted or counteracted in the short term. The important thing is that households and companies have confidence that deviations from the target will not last too long. Otherwise, they may begin to expect that some other level of inflation will be the normal one, or that there may not even be a normal level.

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<sup>19</sup> The Governing Board consisted of eight members, with seven being elected by the Riksdag and the eighth, the Governor of the Riksbank, being appointed by the others. Many of the members were active politicians (see, for example, B. Dennis (2003), "Första året med flytande krona" [First year with a floating krona], in L. Jonung, (ed.), På jakt efter ett nytt ankare [Looking for a new anchor], SNS Förlag). The Governing Board at that time was thus largely politically appointed, unlike the Executive Board that has governed the Riksbank since 1999.

<sup>20</sup> The previous wording was that the Riksbank would "maintain a stable value of money".

<sup>21</sup> A new Sveriges Riksbank Act, Government Bill 2021/22:41, p. 275. For a review of the implications of the new Sveriges Riksbank Act for monetary policy, see the article "The new Sveriges Riksbank Act and the monetary policy framework" in *Monetary Policy Report*, February 2023, Sveriges Riksbank.

## **Joint expectations contribute to favourable economic development**

The inflation target is intended to act as a benchmark for price setting and wage formation in the economy – it shall constitute what is usually referred to as a nominal anchor. When inflation does not vary so much and economic agents have a common perception of how prices will develop in the future, it becomes easier to plan for the long term. This, in turn, improves the conditions for favourable economic development with good growth.

Most people agree that high inflation is harmful in many ways. One obvious reason is that you get fewer goods and services for the same amount of money when you shop, and in this sense you are poorer, unless incomes grow at the same pace as prices. This is something that has been reflected in everyone's day-to-day life over the last two years. If high inflation is built into the expectations of households and businesses, this can lead to wage-price spirals that mean inflation becomes entrenched at a high level. It will then be difficult to bring it down again without a sharp policy tightening. When average inflation is high, it also tends to fluctuate substantially from one year to the next. This makes it more difficult to take financial decisions about the future. High and unexpected inflation also has a redistributive effect which generally favours borrowers at the expense of lenders, and generally those who have the means to protect themselves against inflation in various ways, over those who do not. The experience of previous episodes of high inflation, such as those in the 1970s and 1980s, shows that high inflation can be very costly for the economy.

There are also good reasons why the target is 2 per cent and not lower. One reason is that the conditions for wage formation to effectively distribute resources in the economy can deteriorate when average inflation is too low. The reason for this is that, in practice, it is difficult to cut nominal wages. If inflation is low and nominal wages cannot be lowered, then it becomes difficult to adjust relative wages between different professions, companies and sectors. This makes it more difficult to attract labour to the parts of the economy where it has the most benefit. Ultimately, this can lead to both higher unemployment and lower productivity growth. You could say that a certain level of inflation acts as a lubricant in the economy.

## **2 per cent inflation target creates scope to counteract recessions**

Another important function of the inflation target is that it provides some scope to counteract recessions and crises by lowering interest rates. This function has become increasingly important, because overall global real interest rates have fallen over a couple of decades to historically low levels. To put it in economic terms, the global real equilibrium interest rate has fallen. One consequence of this is that the policy rate where monetary policy stimulates the economy has also fallen, that is, the so-called neutral real interest rate has fallen in parallel. A driving force behind this development, which is often emphasised, is that many countries' populations have become older, which has led to an increase in savings.<sup>22</sup>

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<sup>22</sup> See, for example, H. Lundvall (2023), "Drivkrafter bakom globala trender i den neutrala räntan" (Driving forces behind global trends in the neutral interest rate), Annex 2 to the Long-Term Survey 2023, SOU 2023:87, for a more detailed explanation.



A not unusual perception is that central banks determine the general level of real interest rates in the economy and that interest rates have been low until quite recently only because of central banks pursuing an expansionary monetary policy. But the general level of interest rates is thus fundamentally determined by factors that central banks cannot control. Central banks set their policy rates in relation to this underlying general interest rate environment. How interest rates will develop in the future is an open question (see also “What will happen to the neutral real interest rate in the future?” in Section 4.3).

A key element is that the average level of nominal interest rates is affected by the average level of inflation. If average inflation is very low, say close to zero, instead of averaging the 2 per cent inflation target, then interest rates will also be about 2 percentage points lower on average.<sup>23</sup> This also applies to central bank policy rates.

This in turn means that if inflation and inflation expectations are persistently below the target, the scope for cutting interest rates will also be less than if they are at the 2 per cent target. The policy rate will then reach the limit where it cannot be lowered further and needs to remain there for a longer period of time. It thus becomes difficult to make monetary policy sufficiently expansionary when needed.<sup>24</sup> It is the combination of the low level of global real interest rates and the ambition to avoid inflation and inflation expectations becoming too low that explains why policy rates remained at zero or negative for a long time.

### **The purpose of monetary policy independence**

The Riksbank is a public authority under the Riksdag, the Swedish parliament. The Riksdag has given the Riksbank an independent status, in particular through amendments to the Sveriges Riksbank Act in 1999. These mean that monetary policy decisions are taken by an Executive Board, which does not take directives or instructions from outsiders. At the same time, the objective of price stability was enshrined in law. The General Council of the Riksbank, which is appointed by the Riksdag, and which had previously made the monetary policy decisions, has the task of appointing the members of the Executive Board and is also responsible for monitoring and controlling the work of the Executive Board. Under the Sveriges Riksbank Act that came into force on 1 January 2023, the Riksdag must also approve the exact specification of the inflation target, should the Riksbank wish to change it. However, the current specification is considered to be valid until further notice. The

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<sup>23</sup> This relationship is described by the so-called Fisher equation, named after the American economist Irving Fisher. The Fisher equation is usually written as  $i = r + \pi$ , where  $i$  is the nominal interest rate,  $r$  the real interest rate and  $\pi$  the (expected) inflation rate.

<sup>24</sup> One conclusion that many economists have drawn is that the inflation target should actually be higher than 2 per cent, as the scope for monetary policy would then be greater. There is a discussion, particularly in the academic community, about whether such a change is appropriate and, if so, how and under what circumstances it could be implemented (see, for example, L. Calmfors, J. Hassler and A. Seim (2022), *Samspel för stabilitet – en ESO-rapport om rollfördelningen mellan finans- och penningpolitik (Interaction for stability - an ESO report on the division of roles between fiscal and monetary policy)*, Report to the Expert Group for Public Economic Studies).

decision to delegate to the Riksbank to conduct monetary policy independently on the basis of a given target has thus been taken by the Riksdag in good democratic order.<sup>25</sup>

The purpose of delegating monetary policy to an independent central bank is that there are decisions that can be necessary to take for the economy to function well in the long term, but that are at the same time difficult for politicians to take as they have a negative effect the general public, that is their voters, in the short term. One such decision is to raise the policy rate, as an increase in interest rates raises borrowing costs for households and companies and dampens demand and employment. This may be perceived negatively even if the purpose of the interest rate increase is to bring down inflation. The decision can be particularly difficult to take if inflation is rising at a time when economic growth is not particularly strong. A central bank with the explicit task of keeping inflation anchored to an inflation target is not under the same pressure and can more easily make decisions that may be perceived as uncomfortable and unpopular.

### **Independence requires monitoring and evaluation of monetary policy**

A natural consequence of independence is that the Riksbank's activities are monitored and evaluated. The Riksdag Committee on Finance evaluates monetary policy every year in a special report and also regularly organises open hearings on monetary policy. The Riksbank's most important basis for the annual assessment is the report "Account of Monetary Policy", i.e. this report. Some time after it has been published, the entire Executive Board participates in an open hearing at the Committee on Finance. Two external opponents commissioned by the Committee on Finance have then given their views on the monetary policy conducted by the Riksbank. As a complement to its own evaluations, the Committee on Finance has around every five years or so also commissioned two foreign experts to evaluate the Riksbank's monetary policy in a written report. So far, four such evaluations have been carried out.<sup>26</sup> The Riksbank can also be audited by the Swedish National Audit Office, which published an evaluation of the Riksbank's purchases of securities 2015-2021 on 6 December 2023 (see also section 4.2). There are thus extensive and well-established procedures for following up and evaluating the policy conducted by the Riksbank.

As a consequence of the new Sveriges Riksbank Act, the Committee on Finance will commission external economists to evaluate monetary policy in a written report every year with effect from 2023. Last year, this evaluation was carried out by the Centre for Monetary Policy and Financial Stability (CeMoF) at Stockholm University.<sup>27</sup> The authors of the report also participated in the annual hearing of the Committee on Finance. Various parts of section 4.2 below refer to this evaluation and its conclusions.

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<sup>25</sup> Independence is also protected by, among other things, the Treaty on the Functioning of the European Union (TFEU).

<sup>26</sup> The most recent, by Karnit Flug and Patrick Honohan, concerned the monetary policy conducted 2015–2020 and was published in March 2022.

<sup>27</sup> J. Hassler, P. Krusell and A. Seim (2023), "Utvärdering av penningpolitiken 2022" (Evaluation of monetary policy 2022, only in Swedish), Report from the Riksdag 2022/23:RFR5.

## 4.2 The monetary policy debate in 2023

In addition to being discussed internally by the Executive Board (Chapter 2) and subsequently formally evaluated by the Committee on Finance, monetary policy is also discussed more or less regularly in the media. The fact that monetary policy is found interesting, engaging and is debated is of course positive. This section describes the various arguments put forward in the external debate during the year. The Swedish National Audit Office's review of the Riksbank's securities purchases, which is part of the formal evaluation, is also discussed.

### **Has inflation been supply-driven and were the interest rate increases therefore unnecessary?**

A discussion that started in 2022 and continued in 2023 centred on the fact that some analysts claimed that the high inflation was entirely or almost exclusively supply-driven and due to increases in international energy and food prices. Interest rate hikes are therefore pointless and even harmful, according to this view.<sup>28</sup>

This criticism has been voiced in connection with virtually every policy rate increase since the first increase in May 2022, and can be interpreted as meaning that the interest rate should not have been raised at all, or at least very little. It therefore differs in essence from the criticism that the policy rate should have been raised relatively much, but not quite as much as to 4 per cent (see the sub-section "Difficult assessment of how much the rate needs to be raised" below). How much monetary policy needs to be tightened to bring inflation back on target in a sustainable manner is a genuinely difficult judgement and part of a broader and more general discussion.

During the period of high inflation, many have attempted to explain the drivers of the price rise in more detail, by trying to decompose it into underlying demand and supply factors.<sup>29</sup> The analyses have been done in slightly different ways and give slightly different results, but tend to conclude that both demand and supply factors have played a role. The econometric analyses are relatively consistent with more descriptive analyses. For example, Hassler, Krusell and Seim (2023) conclude that the high inflation rate was mainly due to a number of unexpected supply-side shocks to

<sup>28</sup> See for example A. Almqvist, N. Blomqvist, T. Carlén, P. Gerlach, T. Hållö, A.-K. Löfgren and F. Söderqvist (2023), "Räntevapnet biter inte på dagens svenska inflation" (the interest rate has no effect on inflation in Sweden today), DN Debatt, 12 November. For a discussion of this criticism, see also E. Thedéen (2023), "Lessons from a turbulent period", speech at Carnegie Fonder, 12 December, Sveriges Riksbank.

<sup>29</sup> See, for instance, A.H. Shapiro (2022), "How Much Do Supply and Demand Drive Inflation?", FRBSF Economic Letter 2022-15, M. Bańbura, E. Bobeica, C. Martínez Hernández (2023), "What drives core inflation? The role of supply shocks", ECB working paper no. 2875, V. Guerrieri, M. Marcussen, L. Reichlin and S. Tenreyro (2023), "The Art and Science of Patience: Relative prices and inflation", Geneva Reports on the World Economy, CEPR and R. A. De Santis (2023), "Supply chain disruption and energy supply shocks: impact on euro area output and prices", ECB Working Paper Series No. 2884. N. Kashkari (2024), "Policy Has Tightened a Lot. How Tight Is It?", February 5, Federal Reserve Bank of Minneapolis, argues that while supply effects have been important for both the rise and fall in inflation, the tightening of monetary policy has been central to keeping inflation expectations anchored. Federal Reserve Governor Jerome Powell argues that one lesson from the period since 2020 is that it is difficult to separate supply and demand shocks in real time and assess their duration (J. Powell (2023), Opening remarks at "Monetary Policy Challenges in a Global Economy," a policy panel at the 24th Jacques Polak Annual Research Conference, organised by the IMF, Washington, D.C., 9 November).

the economy combined with a strong recovery in demand after the pandemic. One criticism raised there was that the Riksbank should, if anything, have raised the interest rate earlier than it did.<sup>30</sup>

Even if an inflationary impulse comes entirely from the supply side, it does not mean that the central bank can refrain from raising the policy rate and only has to wait for the impulse to fade and inflation to return to target.<sup>31</sup> The impulse can spread widely in the economy and gradually become entrenched.<sup>32</sup> The rise in inflation had clear elements of this.

In the Riksbank's Business Surveys, companies had also stated for years that it was very difficult to raise prices, as competition was fierce and they would lose customers. This appears to have changed with the rise in inflation. The rapid cost increases and the strong recovery after the pandemic seem to have created the conditions for a change in pricing behaviour in the economy from what had long been the dominant one. Companies were able to quickly pass on their cost increases to consumers, to a greater extent than before, and consumers also seem to have accepted this to a greater extent than normal.<sup>33</sup>

Figure 31 shows that the price increase in the economy was broad-based and did not concern only a few components of the CPIF basket. The figure shows the share of components that increase in price by at least 4 per cent at an annual rate. In more normal cases, it is just below 20 per cent, but in 2022–2023 it quickly rose to over 80 per cent. Services prices, which tend to be less affected by international food and energy price increases, also rose sharply (see Figure 4 in Chapter 1).

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<sup>30</sup> See p. 48 in J. Hassler, P. Krusell and A. Seim (2023), "Utvärdering av penningpolitiken 2022" (Evaluation of monetary policy 2022), Report from the Riksdag 2022/23:RFR5. An evaluation of ten central banks' 2021–2022 forecasts is provided in C. Håkansson and S. Laséen (2024), "Cruising to victory or dead heat? Central Bank Championships in forecasting ability 2021 and 2022", *Economic Commentary* no. 1, Sveriges Riksbank. One conclusion is that the criticism in Hassler, Krusell and Seim (2023) that the Riksbank should have increased its preparedness when inflation began to rise abroad can be relevant if one looks at the forecast occasions in November 2021 and February 2022. Overall, however, the accuracy of the Riksbank's forecasts is in line with that of other central banks.

<sup>31</sup> IMF Chief Economist Gita Gopinath argues that the pandemic emphasised that supply shocks can have broad, persistent inflationary effects and that central banks need to review the robustness of strategies that view supply shocks as temporary (G. Gopinath, 2023, "Crisis and Monetary Policy", *New Directions for Monetary Policy, Finance & Development*, March 2023, IMF).

<sup>32</sup> In terms of spillover effects, it is common to talk about indirect and secondary effects. An example of an indirect effect is when higher fuel costs lead to more expensive transport and thus to higher prices for the products being transported. Typical second-round effects are when an inflationary impulse spreads to wage formation or inflation expectations. But secondary effects can also occur in price formation, for example in that the prices of products with little or no link to higher fuel costs begin to rise. The distinction between indirect and secondary effects is not always very clear.

<sup>33</sup> See the example "Prissättning hos svenska företag 2023" (Pricing among Swedish companies in 2023), Special study, National Institute of Economic Research. This relationship is also discussed in J. Hassler, P. Krusell and A. Seim (2023), "Utvärdering av penningpolitiken 2022" (Evaluation of monetary policy in 2022), Report from the Riksdag 2022/23:RFR5, pp. 10–11, and in "I have never seen customers accept price increases so easily", *Riksbank's Business Survey*, February 2022, Sveriges Riksbank.

**Figure 31. Share of products in the CPIF basket whose prices increase by more than 4 per cent**

Annual percentage change



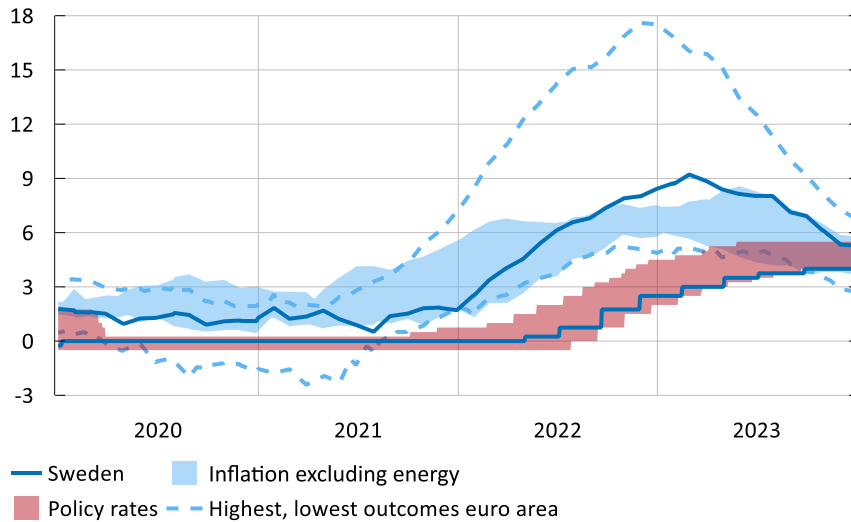
Note. Calculated as an unweighted share of the annual percentage changes of 69 product groups that make up the CPIF.

Sources: Statistics Sweden and the Riksbank.

It can also be informative to place monetary policy in Sweden in an international context. Figure 32 shows inflation excluding energy and the policy rate in a number of countries with which Sweden is usually compared.

**Figure 32. Inflation excluding energy and policy rates in a number of economies**

Per cent and annual percentage change



Note. The red field shows the highest and lowest outcomes for the policy rates in the euro area, the United States, United Kingdom, Norway, Canada and New Zealand. The light blue field shows the highest and lowest outcomes for inflation excluding energy for the same countries. The dashed light blue lines show the highest and lowest outcomes for inflation excluding energy in the euro area.

Sources: Eurostat, Statistics Canada, Statistics New Zealand, Statistics Sweden, U.K. Office for National Statistics, US Bureau of Labor Statistics, Statistics Sweden and the Riksbank.

Several observations can be made from the figure. One is that inflation started to rise at slightly different times in different countries. For example, the underlying data show that it rose earlier in the United States than in the euro area and Sweden. It also shows that inflation in the euro area countries developed very differently. In Lithuania, inflation peaked at around 17.5 per cent, while in Luxembourg it only rose to around 5 per cent. Another observation is that central banks reacted to rising inflation with a time lag. The underlying data show that, even excluding energy prices, inflation had generally risen well above target before the first interest rate increase. As inflation started to rise at slightly different times, policy rates also started to be raised at different times. A third observation is that central banks have nevertheless acted in a very similar way both in large and fairly closed economies and small open ones. Taken together, this suggests that an increase in inflation was gradually spreading globally and that central banks gradually realised that they needed to act to slow the rise and bring inflation back to target.

The Riksbank does not stand out in any way in this comparison, either in terms of the time lag between inflation starting to rise and the interest rate starting to be raised or in terms of how high the policy rate has been raised. If anything, the Riksbank is one of the central banks that has raised the policy rate to a relatively low level, despite the rise in inflation in Sweden being relatively fast and the peak in inflation relatively high. One explanation for this is a relatively higher sensitivity to interest rates in Sweden. Thus, all central banks have viewed the period of high inflation as one that required a monetary policy response.

To summarise, the rise in inflation has thus been complex and cannot be said to be simply due to international price increases that the Riksbank cannot influence. The upturn has been driven by both demand and supply factors, and supply-side inflationary impulses can also give rise to spillover effects that monetary policy needs to counteract.

### **Difficult to assess how much the rate needs to be raised**

The purpose of the Riksbank's interest rate increases has been to bring inflation back to the target within a reasonable time, without slowing down the economy unnecessarily. By tightening monetary policy sufficiently decisively at a relatively early stage, the Riksbank has sought to prevent an even more severe tightening from becoming necessary later, when it has become more difficult to control inflation due to weakened confidence in the inflation target. This would be even more costly for the real economy.

Some analysts consider that the return to the inflation target could have been achieved by a smaller increase in the policy rate to, say, 3–3.5 per cent instead of 4 per cent. It is of course possible to make different estimates of exactly how much the policy rate needs to be raised in a situation like the one that arose in 2022 and 2023. This is a genuinely difficult assessment. The Riksbank assessed that inflationary pressures in mid-2023 were still too high as a result of, among other things, a weak krona and rapidly rising service prices and that the interest rate therefore needed to be raised to 4 per cent.

It remains to be seen how the real economy will develop in the future and when inflation is sustainably back on target. Of course, it cannot be ruled out that inflation will temporarily fall below the target and the policy rate will need to be adjusted downwards more quickly than the Riksbank had previously anticipated. But it could also turn out that the decline in inflation slows down somewhat above the target, which would instead lead to a higher than expected policy rate.<sup>34</sup>

This discussion has a different character than the criticism discussed above. It assumes that relatively substantial interest rate increases have been necessary and thus does not argue that inflation in Sweden has been due to supply-driven international price increases that have meant interest rate increases were unnecessary and harmful. Instead, it is about relatively limited differences in assessments of monetary policy and its effectiveness.

### **Can the interaction between monetary and fiscal policy be improved?**

One issue that has been discussed for some time is whether the interaction between monetary and fiscal policy can be improved.<sup>35</sup> More specifically, one question has been whether fiscal policy should play a larger and more active role in stabilising the economy than has been the case in recent decades. Discussions on this arose again towards the end of the year, not least because the issue was a key theme of the 2023 Long-Term Survey published in December.<sup>36</sup>

An important reason why this discussion has arisen is the decline in the neutral real interest rate in recent decades, which has reduced the Riksbank's ability to stimulate the economy via the policy rate when necessary (see Section 4.1). This has made it more difficult for monetary policy to manage both the stabilisation of the economy and to maintain confidence in the inflation target. In addition, the Long-Term Survey argues that the view of fiscal stabilisation policy has become more positive after its effects on the economy proved to be greater than previously thought.

The debate on how fiscal and monetary policy should interact is important and is likely to continue. A key question here is what role fiscal policy should play in helping to maintain confidence in the inflation target – which does not always coincide with stabilising the economy. Another is how to avoid a risk that more active stabilisation policy role for fiscal policy makes it systematically too expansionary.

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<sup>34</sup> The final phase of the process of bringing down inflation is sometimes described as “the last mile problem”, see for example I. Schnabel (2023), “The last mile”, speech at the Annual Homer Jones Memorial Lecture, St. Louis, 2 November.

<sup>35</sup> See, for example, P. Jansson (2021), “Is it time to review the role of macroeconomic policy?” speech at the Riksbank of Sweden, 8 December and L. Calmfors, J. Hassler and Anna Seim (2022), “Samspel för stabilitet – en ESO-rapport om rollfördelningen mellan finans- och penningpolitik” (Interaction for stability – an ESO report on the division of roles between financial and monetary policy), report to the Expert Group for Public Economic Studies 2022:3.

<sup>36</sup> The Long-Term Survey 2023, SOU 2023:85, J. Lyhagen and H. Shahnazarian (2023), “Samspelet mellan finans- och penningpolitik i Sverige” (The interaction between fiscal and monetary policy in Sweden), Appendix 5, SOU 2023:90, K. Walentin (2023), “Penning- och finanspolitisk konjunkturstabilisering” (Monetary and fiscal stabilisation policy), Appendix 6, SOU 2023:91 and L. Calmfors (2023), “Nytt ramverk för finanspolitiken” (New framework for fiscal policy), SOU 2023:92.

The debate on the interaction between monetary and fiscal policy has in some cases been linked to the question of whether the independence of the Riksbank is a democratic problem.<sup>37</sup> One explanation for this discussion may be that interest rate increases are often unpopular and that interest rates have been raised more and faster than ever before during the inflation targeting period. One idea in this discussion is that fiscal policy could instead contribute to dampening a rise in inflation by, for example, regulating certain prices. This is assumed to be more favourable to the economy than monetary (or fiscal) policy dampening demand. The discussion on such more specific fiscal policy measures to try to dampen a rise in inflation is also likely to continue.<sup>38</sup>

As described in section 4.1, the decision to delegate to the Riksbank the right to conduct monetary policy independently on the basis of a given target was taken by the Riksdag in good democratic order. It also shows that there are extensive and well-established procedures for following up and evaluating the policy conducted by the Riksbank, as required by this independence.

### **The Swedish National Audit Office's audit of securities purchases**

On 6 December 2023, the Swedish National Audit Office published an audit of the Riksbank's purchases of securities 2015–2021.<sup>39</sup> The Riksbank ended its net purchases of securities at the end of 2021 and during 2022 the purchases were aimed at compensating for securities that matured. From 2023, reinvestments also ceased and the Riksbank began selling off its holdings. The Swedish National Audit Office's audit thus refers to the Riksbank's policy a number of years ago, but it may nevertheless be worth discussing in this account as it was published last year and raises a number of fundamental issues concerning monetary policy through securities purchases that could become relevant in the future.

In brief, the Swedish National Audit Office states that the securities purchases made by the Riksbank at the beginning of the pandemic were effective in reducing unease in the economy and stabilising the financial markets in connection with the outbreak of the pandemic, but that it is also difficult to prove that the purchases in general have had a particularly large effect on inflation.<sup>40</sup> At the same time, as a result of the surprisingly rapid rise in inflation and interest rates, the purchases have led to large losses that affect the Riksbank's results and government finances. They may also have contributed, for example, to the market for government bonds functioning less well when the Riksbank has purchased a large part of the outstanding bond stock.

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<sup>37</sup> See, for instance, E. Odeberg (2023), "Riksbankens fria roll är problematisk" (The free role of the Riksbank is problematic, only in Swedish), SvD Debatt, 25 October.

<sup>38</sup> For an overview of the theory and experiences of price regulation, see I. Häkkinen Skans, D. Lööv and A. Westermark (2024), "Effekter av prisregleringar" (Effects of price regulations, only in Swedish), Staff memo, February 2024, Sveriges Riksbank.

<sup>39</sup> "The Riksbank's asset purchases – expensive experiences", RiR 2023:21, Swedish National Audit Office.

<sup>40</sup> J. Hassler, P. Krusell and A. Seim (2023), "Utvärdering av penningpolitiken 2022" (Evaluation of monetary policy 2022), Report from the Riksdag 2022/23:RFR5, also makes the assessment that the effects in normal times are limited.



The audit results in three main recommendations. The Swedish National Audit Office recommends that the Riksbank should avoid buying assets with the primary purpose of influencing inflation. Secondly, the Riksbank should avoid large long-term holdings of government bonds, so that it is possible to buy them in the event of future financial crises. Thirdly, the Swedish National Audit Office considers that the asset purchases were generally carried out in a transparent manner and with a solid basis for decision-making, but that there is room for improvement when preparing for similar situations in the future. The Swedish National Audit Office therefore recommends that the costs and side effects of any future asset purchases should be reported to the public and the Riksdag in a clearer way.

In a comment, the Riksbank notes that the Swedish National Audit Office's review contains important observations and conclusions that the Riksbank will take into account in its future work.<sup>41</sup> The Riksbank agrees that the impact of asset purchases on inflation is much more uncertain in situations where financial markets are functioning normally, compared with in times of crisis.

The Riksbank regards asset purchases as an option during unusually difficult monetary policy circumstances, which means that the threshold for such measures will be high. This applies in particular to the purchase of private securities, for which the Sveriges Riksbank Act requires exceptional reasons.

However, situations may also arise in the future where purchases of securities are assessed to be an effective means of influencing inflation. A reasonable conclusion is that the effects of such a measure depend on conditions that can change from one situation to another. Under normal circumstances, the policy rate is the main tool of monetary policy. When the policy rate is close to its lower bound, and when the credibility of the inflation target is threatened, all measures have some weaknesses, both asset purchases and alternative ways of stimulating the economy – such as a negative policy rate or more expansionary fiscal policy.

As regards the recommendation that the Riksbank should avoid large long-term holdings of government bonds, so that there is a possibility to buy them in future financial crises, it can be noted that a gradual shrinkage of the holdings to significantly lower levels has begun and is expected to continue, through both maturity and active sales. What level of holdings can be considered appropriate under normal circumstances is a question that the Riksbank intends to return to. With regard to the costs and side effects of possible asset purchases and sales in the future, the Riksbank agrees that these should be reported more clearly.

### **Different views on monetary policy in the debate and research**

The monetary policy framework, legislation and practical monetary policy are based on the mainstream of economic research – the core of knowledge that most researchers in the field agree on. This was summarised briefly in section 4.1. It is

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<sup>41</sup> "The Riksbank's comments on the Swedish National Audit Office's audit of the Riksbank's asset purchases", published on 2 February 2024, Sveriges Riksbank.

important that the formal evaluations of monetary policy also reflect this core of knowledge.

A situation that has received relatively little attention so far is that there is often a gap between how monetary policy is viewed in parts of the media debate and how it is viewed in research and actual policy. This can concern very basic aspects, such as the conditions under which monetary policy is conducted, why the Riksbank has the task it has, and sometimes even what that task is.<sup>42</sup>

There are factors that are central to formal evaluations of monetary policy and the thinking on which the monetary policy framework is based, but which are often omitted when monetary policy is discussed in the public debate in the media. One is the neutral real interest rate, which was discussed in section 4.1. If the neutral interest rate is not included in the analysis when debating monetary policy, the conclusions may be quite different than if it is. For example, what is sometimes described as *low interest rate policy* has often been more about monetary policy *operating in a low interest rate environment*, which it can neither influence nor ignore.

The inclusion of the neutral rate in the analysis also provides a different perspective on the previous negative policy rate. Since the neutral interest rate was historically low, a reduction in the policy rate below zero was needed to make monetary policy sufficiently expansionary. As low neutral interest rates were a global phenomenon, the Riksbank was also far from the only central bank with a negative policy rate.

The conclusions on, for example, the impact of monetary policy on asset prices may also be different. A not uncommon argument in the debate is that the high housing prices are due to the Riksbank's expansionary monetary policy. But Swedish house prices have been more or less on a rising trend since the mid-1990s. Hassler, Krusell and Seim (2023) observe that it is mainly the decades-long trend of falling real interest rates, and the resulting low *neutral* real interest rate, that have caused house prices to rise so sharply for so long. The fact that monetary policy has been expansionary for limited periods of time has played a relatively minor role.<sup>43</sup>

It is also not uncommon for the Riksbank's main task of maintaining confidence in the inflation target to be neglected, and sometimes omitted altogether, when monetary

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<sup>42</sup> However, this situation was noted in J. Hassler, P. Krusell and A. Seim (2023), "Utvärdering av penningpolitiken 2022" (Evaluation of monetary policy 2022), Report from the Riksdag 2022/23:RFR5, pp. 51–52. A discussion on this issue has also arisen in the journal *Ekonomisk Debatt*, see M. Apel and P. Jansson (2023), "Penningpolitik i forskningen och den allmänna debatten" (Monetary policy in research and the general debate), *Ekonomisk Debatt* no. 7 2023, F.N.G. Andersson and L. Jonung (2023), "Svar på kommentarer om penningpolitiken" (Response to comments on monetary policy), *Ekonomisk Debatt* no. 8 2023, and M. Apel and P. Jansson (2024), "Replik till Andersson och Jonung" (Reply to Andersson and Jonung), *Ekonomisk Debatt* no. 1 2024. See also P. Jansson (2023), "The gap in the monetary policy debate", speech at Danske Bank, 12 December.

<sup>43</sup> Of course, interest rates are not the only factor affecting house price developments. For example, Sweden, Germany and Finland have had roughly the same interest rates (both the real policy rate and the neutral interest rate), but house price developments between the countries have long differed quite substantially, with much less steep price trends in Germany and Finland than in Sweden. One reason for this, which the Riksbank has been emphasising for a long time, is that the Swedish housing market suffers from major structural problems on both the supply and demand sides.

policy is discussed. For example, one may argue that the Riksbank should focus on keeping the krona exchange rate stable or strengthening it, avoid a very low policy rate for various reasons, or focus monetary policy on slowing down a rise in asset prices or on stabilising the economy in the short term.

If the arguments are not based on the current monetary policy framework and do not explain which alternative framework they believe would have been preferable, the discussion risks being unclear and less constructive. For example, it can be difficult to determine whether the criticism relates to the policy conducted by the Riksbank or the framework to which monetary policy must adhere.<sup>44</sup>

## 4.3 Questions for the future

### **What will happen to the neutral real interest rate in the future?**

An important question in the central banking community and among academic researchers is how the neutral real interest rate will develop going forward. As noted in Section 4.1, this is central to monetary policy. For example, a rise in the neutral rate reduces the risk of the policy rate hitting its lower bound when it needs to be cut in an economic downturn or if there is a risk of inflation becoming persistently very low. On the other hand, if the neutral interest rate continues to be low, it may be that central banks will continue to be limited in their ability to use the policy rate to stabilise resource utilisation and attain the inflation target.

There are several theories as to why the neutral real interest rate has been trending downwards in recent decades.<sup>45</sup> The supply of savings has increased globally, partly due to very high savings rates in some Asian countries and to the ageing of the world population. A large proportion of middle-aged and older people means high savings. This has helped to push down real interest rates on assets considered safe, such as US and German government bonds.

At the same time, the required rate of return on risky assets, such as equities and housing, has remained quite high. The comparatively high required rate of return on risky assets may explain why investment has not increased much at the global level, despite the significant decline in real interest rates.

There are a couple of possible explanations for the different behaviour of real interest rates on safe assets and the required rate of return on risky investments. One such explanation is that there is a chronic shortage of risk-free assets because only a few,

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<sup>44</sup> In a monetary policy overview article in *Ekonomisk Debatt*, Göran Hjelm argues that “a constructive discussion would be promoted by separating opinions within the prevailing, now clearer, institutional structure from opinions within the framework of alternative frameworks” (G. Hjelm, 2024, “Penningpolitikens gränsöverskridande natur – ramverk, samspel och grunder för en konstruktiv debatt” (The cross-border nature of monetary policy – framework, interaction and basis for a constructive debate), *Ekonomisk Debatt* no. 1).

<sup>45</sup> For a review of the literature and references, see H. Lundvall (2023), “Drivkrafter bakom globala trender i den neutrala räntan” (Driving forces behind global trends in the neutral interest rate), Annex 2 to the Long-Term Survey 2023, SOU 2023:87.

relatively slow-growing countries can provide them. Another possible and complementary explanation relates to increased risk aversion. It could also be explained by demographic factors, namely that large age groups that are either relatively close to the end of their working lives or have retired favour safe investments over riskier ones.

There is considerable uncertainty about the future path of the neutral real interest rate. Some analysts believe that it will rise, partly as a result of major investments linked to climate change, for example.<sup>46</sup> But most analyses indicate that it will remain low or possibly even fall further in the coming decades. One reason for this is demographic projections showing that the world population will continue to age in a way that suggests that savings will continue to be high in relation to investment needs.

To address potential problems with a continued very low neutral real interest rate, several proposals have been put forward, such as raising the inflation target – which would increase the scope for interest rate cuts in a similar way to a rise in the neutral real interest rate – or giving fiscal policy a more pronounced stabilisation policy role than before, when the scope for monetary policy has been limited (see “Can the interaction between monetary and fiscal policy be improved?” in Section 4.2).<sup>47</sup> What will happen to the neutral real interest rate and how a potentially continued low interest rate should be handled is a discussion that is likely to continue.

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<sup>46</sup> See for instance Larry Summers, Peterson Institute for International Economics (2023), “Summers and Blanchard debate the future of interest rates”, Unedited Transcript, 7 March, 2023.

<sup>47</sup> These proposals are discussed in the 2023 Long-Term Survey (SOU 2023:85) and K. Walentin (2023), “Penning- och finanspolitisk konjunkturstabilisering” (Monetary and Fiscal Stabilisation Policy), Annex 6 to the Long-Term Survey 2023, SOU 2023:91.

## ARTICLE - Alternative scenarios in the Monetary Policy Report

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One lesson in the Account of Monetary Policy 2022 was that the Riksbank could use scenarios to a greater extent in its monetary policy analysis and communication. In 2023, therefore, the Riksbank regularly published scenarios in the Monetary Policy Reports from April onwards.

The purpose of the scenarios was to illustrate that developments were uncertain, to point to uncertainty factors that the Riksbank had a special focus on and to try to indicate how the monetary policy plan might need to be changed if the uncertainty factors materialise. This article describes the scenarios used by the Riksbank and how they were integrated into monetary policy.

The scenarios were important for monetary policy communication for several reasons. A key message was that if inflation became unexpectedly high, it would be regarded as a bigger problem than if it became unexpectedly low. This meant that monetary policy could quickly be tightened further if inflation was higher than expected, while a slightly more cautious stance would apply in the event of it being lower than expected. The different scenarios at the same time illustrated that inflation could be unexpectedly high or low for a variety of reasons, making it difficult to predict exactly how monetary policy would react.

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### More symmetric risk outlook around inflation in 2023

The Riksbank also published scenarios on a couple of occasions in 2022, although they were not part of the ongoing analysis and communication in the same way as in 2023. During 2022, inflation had been consistently higher than expected, which meant that the scenarios then focused on unexpectedly high inflation. In spring 2023, the Riksbank noted that the risk outlook regarding how inflation would develop had recently become more symmetrical, i.e. the probability of unexpectedly low and unexpectedly high inflation had become more similar. Therefore, the Monetary Policy Reports from April onwards showed two scenarios: one with unexpectedly high inflation and one with unexpectedly low inflation.<sup>48</sup> By contrast, the factors driving inflation in the scenarios varied across the Monetary Policy Reports.

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<sup>48</sup> The scenarios were based on simulations in the Riksbank's macroeconomic model, MAJA.

Some of the uncertainty factors that the Riksbank identified in 2023 concerning the development of inflation in Sweden were

- inflation expectations among households and firms
- wage formation
- the krona exchange rate and its impact on inflation
- global supply disruptions
- companies' price-setting behaviour
- cyclical risks that indirectly affect inflation

## An overview of the April–November scenarios

**In the April Monetary Policy Report**, the Riksbank noted that actual inflation had begun to fall back and that the new Industrial Agreement had reduced the risk of a wage-price spiral quite substantially. The more balanced risk outlook around inflation warranted discussing the possibility of both unexpectedly high and unexpectedly low inflation.

In the unexpectedly high inflation scenario, the contributing factors were assumed to be the development of inflation expectations and companies' pricing behaviour. While long-term inflation expectations had been anchored around the target during the period of high inflation, short-term expectations remained at high levels. At the same time, surveys, such as the Riksbank's own Business Survey, showed that many companies were planning to raise their prices more than usual. The scenario assumes that the real economy would develop in line with the forecast.

If monetary policy were not to react to the unexpectedly high inflation, it was assumed that confidence in the inflation target would be weakened, thus adversely affecting price and wage formation. Inflation would then persistently overshoot the target in the coming years. If, on the other hand, monetary policy were to be tightened more directly than in the main scenario, there would be a good chance of stabilising inflation around the target. Economic agents would then continue to have confidence that the Riksbank would bring inflation down to the target within a reasonable period of time, and companies' price increases would thus slow down. However, the higher policy rate would also dampen real economic growth. But compared with monetary policy not reacting initially and instead needing to raise the policy rate at a later stage, the real economic costs were assessed as small.

There were increasing indications in April that the large price increases were over. Energy and commodity prices had fallen significantly. Moreover, demand in the Swedish economy had clearly slowed down. A significant part of the previous large cost increases had been passed on to consumers. There was at the same time a possibility that rapidly falling costs going forward could correspondingly have a more dampening effect than normal on consumer prices, making inflation lower than expected. In the alternative scenario with lower inflation, the real economy was also

assumed to develop more weakly than forecast, as weaker demand would make it more difficult for firms to raise their prices. The Riksbank had previously communicated that lower-than-expected inflation would be much less of a problem than continued higher-than-expected inflation. It would probably therefore be necessary for inflation to be lower than expected over a slightly longer period of time before monetary policy changes direction.

**In the June Monetary Policy Report**, the higher-than-expected inflation scenario was based on an unexpectedly weak krona, combined with a larger exchange rate pass-through. The scenario with lower inflation than expected was similar to that presented in April.

In the scenario with higher inflation than expected, it was assumed that the weaker krona would continue to weaken in combination with a greater exchange rate impact on import prices and inflation. As in April, the Riksbank assessed that there were strong reasons for monetary policy to react with a higher policy rate if inflation proved to be higher than expected. An important point highlighted by the Riksbank was that the tighter monetary policy that stabilises inflation around the target did not mean that the krona exchange rate returned to the same level as in the forecast. It reflected the fact that monetary policy is aimed at the inflation target and not at attaining a specific level for the krona exchange rate. The higher policy rate would also dampen the real economy. But as in April, the real economic costs were judged to be small if one reacted immediately, compared with waiting and having to raise the policy rate at a later stage.

The scenario of lower inflation was significantly similar to the one in April and related to firms' pricing behaviour: Rapidly falling costs could have a larger than usual dampening effect on consumer prices. The alternative scenario therefore also assumed that the real economy would be weaker than in the forecast. As before, it was assessed that it would probably be necessary for inflation to be lower than expected over a slightly longer period of time before the policy rate was cut.

**In the September Monetary Policy Report**, the scenarios were more clearly linked to risks to the real economy than before. The scenario of unexpectedly high inflation was assumed to be the result of renewed supply shocks in the global economy. It was assumed in this scenario that the real economic development will be weaker than forecast, at the same time as inflation will be higher, that is to say the normal pattern in supply shocks. The scenario of unexpectedly low inflation was instead linked to weaker demand in the economy.

Although in theory, supply shocks represent a trade-off between dealing with a weaker real economy and higher inflation, it was assumed that monetary policy needed to react immediately if inflation became unexpectedly high, thereby reducing the risk that confidence in the inflation target would be weakened. A concrete alternative was shown where the Riksbank initially did not react with tighter monetary policy but instead was eventually forced to do so. Even if the real economy were to develop more strongly in the short term, it would be weaker in the longer term in this alternative. This is connected to the large interest rate increases that would have

been needed to restore confidence in the inflation target once inflation expectations had begun to drift upwards.

The scenario with lower than expected inflation was assumed to be related to weaker demand than in the Riksbank's forecast. This could have been caused by both global and domestic factors. When demand falls, the possibility for companies to pass on their cost increases to consumer prices declines. Inflation would therefore become lower. As before, it was assumed that it would take some time for the policy rate to be cut, even though inflation was unexpectedly low.

**In the November Monetary Policy Report**, the scenario of unexpectedly high inflation was again based on firms' pricing behaviour. It was assumed that companies increased their margins to maintain their profitability. As a result, inflation was unexpectedly high. The second scenario was again linked to risks of weaker demand.

In the unexpectedly high inflation scenario, it was assumed that firms did not adjust prices in line with costs but instead increased their margins. By raising the policy rate at an early stage, the Riksbank was trying to both soften demand so that companies could not raise their prices as planned, and avoid the higher inflation giving rise to higher inflation expectations and a rise in wage growth in the economy. As before, it was emphasised that the real economic costs of tightening monetary policy in the short term were less than the benefits in the longer term.

As in September, the reason why inflation was lower than in the main scenario was assumed to be unexpectedly weak demand. The fact that both demand and inflation were lower than expected meant, in theory, that monetary policy would need to be more expansionary. However in the prevailing situation, the trade-off was nevertheless complicated by inflation having been much higher than the target level for a period of time. It was therefore assumed in the scenario that the Riksbank would not start cutting interest rates immediately but would wait for some time.

## The scenarios have been useful for monetary policy analysis and communication

An important message from the various scenarios was that the Riksbank would react with monetary policy in a different way if inflation was unexpectedly high than if it was unexpectedly low. This is due to the difficult period of high above-target inflation. Another important message has been the importance of reacting in time if inflation were to become unexpectedly high. The costs to the economy linked to waiting and having to raise interest rates later can be very high.

The Riksbank's assessment is that the scenarios have been very important in describing to the general public that economic developments are uncertain and that monetary policy may need to react if the outlook turns out to deviate from previous assessments. This allows economic agents to be better prepared for changes in monetary policy. At the same time, the Riksbank has been careful to point out that it is difficult to know exactly how it will act in the future if inflation deviates from the forecast. The different scenarios have clearly illustrated that inflation can be higher or



lower than expected for different reasons and with different consequences for the real economy.

## ARTICLE - The Riksbank's monetary policy development work

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Understanding the drivers of inflation and analysing how the economy is affected when the policy rate and securities holdings change was the focus of the Riksbank's monetary policy development work in 2023. An important question was to what extent companies' pricing behaviour has changed over the past years of high inflation. To better understand aggregate inflation, the Riksbank studied what could explain the depreciation of the krona and whether the impact of cost changes, such as changes in the exchange rate, is greater when inflation and demand are high. There were signs that the change in the exchange rate has affected consumer prices faster than usual over the past year. Other in-depth analysis included the unexpectedly strong labour market and the household liquidity buffer of savings. The Riksbank's analytical work also continued to be deepened through international co-operation.

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### Focus on the drivers of inflation and the effects of monetary policy

It was important for the Riksbank to develop the analysis in 2023 to better understand firms' pricing behaviour and how it can affect inflation prospects. Research projects have used microdata containing information on financial variables and company prices to study both how the effects of monetary policy differ across households and what macroeconomic conclusions can be drawn from companies' pricing behaviour. The Riksbank used microdata to analyse how prices for individual products change and how changes in producer prices affect consumer prices. The fact that this was analysed carefully in preparation for the monetary policy decisions in 2023 is evident from the articles published in the Monetary Policy Reports. Given that inflation was so much higher than expected in 2022, there was considerable uncertainty regarding inflation prospects and the Riksbank examined and learned from the major forecasting errors to better understand the development of inflation going forward.

An important question was to what extent companies' pricing behaviour has changed over the past years of high inflation. It is clear that the correlations between producer prices and consumer prices, between energy prices and consumer prices, and between exchange rates and inflation have not followed historical patterns. The exchange rate is one of many factors that influence inflation, as it affects the price of what is imported. To better understand aggregate inflation, the Riksbank therefore studied what could explain why the krona had weakened relatively much and what indicated that it would strengthen in the future. Various studies analysed whether the pass-through from cost changes, such as changes in the exchange rate, was greater

when, for example, inflation and demand were high. There were signs that the change in the exchange rate had affected consumer prices faster than usual over the past year. The Riksbank's Business Surveys were also important in gaining an in-depth understanding of the companies' assessment of the economic situation and early and reliable signals of the development of the economy.

The Riksbank also analysed how economic activity and inflation were affected when the policy rate and asset holdings changed, the way the labour market functions, and the interplay between monetary policy and fiscal policy.

That the labour market was so strong initially, despite the high inflation having led to monetary policy tightening and despite restrained GDP growth, has surprised many analysts. The analysis suggested that the strong willingness of households to consume services after the pandemic could be one explanation. Companies also chose to continue to recruit even though demand slowed down, presumably because they had previously experienced large labour shortages. In addition, real wages had fallen and this too may have contributed to higher demand for labour.

An important area of analysis has been household savings, which rose sharply at the start of the pandemic. The restrictions imposed and changed behaviour patterns thus led households to accrue a liquid buffer. The Riksbank's analysis indicated that households still retained a large part of this buffer in 2023 and if households were to use more of it for consumption, demand could develop more strongly than in the Riksbank's forecast.

Other elements of the Riksbank's development work over the year with a bearing on monetary policy worth mentioning include describing and analysing the changes in the new Sveriges Riksbank Act and their implications for monetary policy work in practice.

The Riksbank's analytical work continued to deepen through international cooperation. In January, an international symposium was organised in Stockholm that addressed, among other things, the independence and mandate of central banks and how independence is affected by the need for global policy coordination. The Riksbank participates in a global network for central banks, where, among other things, the issue of how climate change can affect monetary policy was discussed during the year. The Riksbank also organised several scientific conferences. At one of the conferences, researchers discussed the challenges and opportunities that climate change presents for central banks. Another conference presented research on geo-economics and how economies are affected by energy price shocks and economic sanctions. At another conference, female researchers presented papers in macroeconomics and financial economics.

An important committee for the Riksbank's international co-operation is Working Party 3, which is a working group within the OECD in which the largest economies participate. Each country is represented by one member from the ministry of finance and one from the central bank. In 2023, the group discussed, among other things, the impact of Russia's invasion of Ukraine, the causes of high inflation and appropriate economic policies to address various labour market challenges. The design of fiscal

policy was also discussed, such as the lessons learnt from the stimulus during the pandemic, the role of fiscal policy in high inflation and the interaction between fiscal and monetary policy in times of high inflation. The Riksbank also cooperates with other central banks within the European System of Central Banks (ESCB), by participating in a number of sub-groups. The development work in these working groups mainly concerns forecasting, public finances, and econometrics and modelling.

**Table 2. Monetary policy-related studies conducted in 2023**

Year of publication 2023, unless otherwise specified

<b>Articles in Monetary Policy Reports</b>
"The new Riksbank Act and the monetary policy framework", February
"How quickly will inflation fall?" April
"Strong labour market in Sweden and abroad", June
"The krona will strengthen in the medium term", September
"Household savings increased significantly during the pandemic", September
"The pass-through of the krona to inflation appears to have been larger than usual", November
<b>Economic Commentaries</b>
C.-J. Belfrage, J. Hansson and A. Vredin, "How should we view the development of the krona?", No. 3
H. Lovéus, "New indicators of resource utilisation", No. 4
N. Holmer, "The Business Survey's new indicator of economic activity – an early temperature gauge of the Swedish economy", No. 5.
I. Häkkinen Skans and P. Wasén, "The labour force, employment and changes in population composition", No. 6.
<b>Economic Review</b>
P. Holmberg and T. P. Tangerås, "The Swedish electricity market - today and in the future", No. 1.
<b>Staff memos</b>
Y. Akkaya, C.-J. Belfrage, P. Di Casola and I. Strid, "The macroeconomic effects of Riksbank asset purchases during the pandemic: simulations using a DSGE model", February
M. Kilström and R. Nilavongse, "Monetary policy transmission and the cash-flow channel via nominal and real interest rates", August
M. Lindskog and H. Lovéus, "Import prices, labour costs and profits – what role have they played in inflation dynamics?", September
L. Thomas, "Global Currents, Local Waves: The Foreign Influences Shaping Sweden's Economy", October
M. Beechey Österholm and P. Gustafsson, "Estimating the effect of Riksbank government bond purchases on bond term premia and yields", December
<b>Riksbank studies</b>
"Evaluation of the Riksbank's forecasts", No. 2, 30 March.

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**Working papers**

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S. Laséen, “Central bank asset purchases: Insights from quantitative easing auctions of government bonds”, No. 419.

C. Olovsson and D. Vestin, “Greenflation?”, No. 420

Y. Akkaya, C.-J. Belfrage, P. Di Casola and I. Strid, “Effects of foreign and domestic central bank government bond purchases in a small open economy DSGE model: Evidence from Sweden before and during the coronavirus pandemic”, No. 421

N. Amberg, T. Jacobson, V. Quadrini and A. Rogantini Picco, “Dynamic Credit Constraints: Theory and Evidence from Credit Lines”, No. 422

E. Ahlander, M. Carlsson and M. Klein, “Price Pass-Through Along the Supply Chain: Evidence from PPI and CPI Microdata”, No. 426

M. Blix Grimaldi and S. Kapoor, “Fed QE and bank lending behaviour: a heterogeneity analysis of asset purchases”, No. 428.

E. Bylund, J. Iversen and A. Vredin, “Monetary policy in Sweden after the end of Bretton Woods”, No. 429.

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