

## ARTICLE – How quickly will inflation fall?

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Several factors indicate that inflation will fall in the coming year. The forces that have pushed up prices over the past year are instead expected to dampen price development going forward. For example, prices of energy and other commodities on the global market are falling, and this is expected to gradually impact consumer prices in the coming months. At the same time, demand in the Swedish economy is assessed to be lower this year than it was last year. However, consumer prices are still rising rapidly and it is uncertain how quickly inflation will start to fall. This uncertainty has also become more evident due to inflation being surprisingly high on several occasions this past year.

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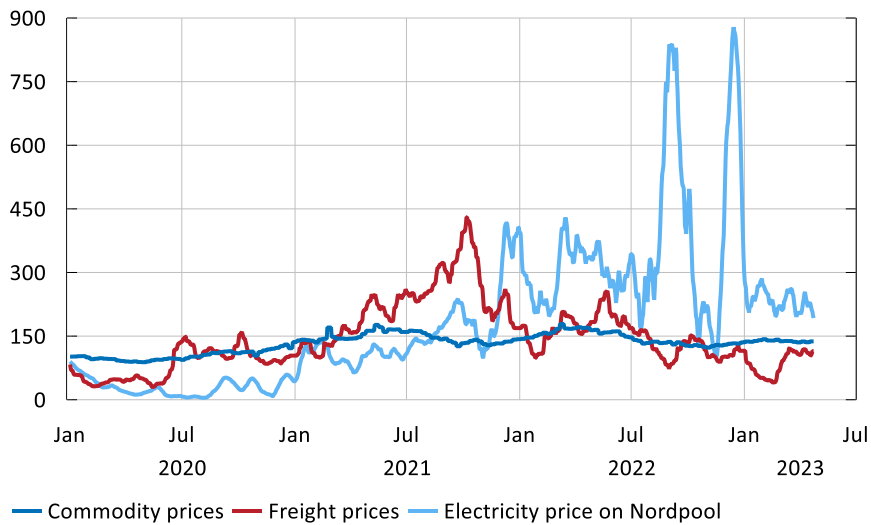
### Lower costs and prices at early stages of production suggest that inflation will fall over the next year

CPIF inflation remains high and was 8 per cent in March, which is a decline compared with the end of last year. A slower rate of increase in energy prices and a continued high rate of increase in other prices lie behind this figure. The rate of increase in the CPIF excluding energy was 8.9 per cent in March. The most important explanations for this past year's high inflation are seen as rising prices for energy, food and other commodities on the global market, first as a result of imbalances between supply and demand after the pandemic and then as a result of Russia's invasion of Ukraine. At the same time, however, demand in Sweden has been high, which has enabled companies to raise their prices.

There are now clear signs that cost and price pressures have decreased in early stages of the production chain. This is an effect of diminishing post-pandemic disruptions and decreasing demand due to many central banks tightening monetary policy. Several of the imbalances that contributed to the inflation upturn have thus been alleviated, which is evident from the decline in energy, freight and commodity prices from the high levels they were at during parts of 2021 and 2022 (see Figure 45). This can be expected to lead to a gradual fall in consumer prices as well. But it normally takes time for such changes to move through the production chain and eventually affect consumer prices.

**Figure 45. Electricity, commodity and freight prices**

Index, December 2019=100



Note. Electricity price refers to the system price on the Nordpool power exchange in Swedish kronor. Freight prices refer to the Baltic Dry Index, which measures commodity shipping costs. Commodity prices refer to The Economist.'s commodity price index, which includes prices of metals, food and other agricultural produce. The indices for both freight and commodity prices are based on the price in US dollars.

Sources: The Economist, Baltic Exchange and Nordpool.

Figure 46 illustrates what cost and price pressures look like at different stages of production. Different indicators are presented in rows. The rows higher up show early stages in the production chain. Global market prices of metals and agricultural produce can be found here. The development of consumer prices is shown at the bottom. Each column represents one month in the period January 2020 to March 2023. The colours show how each indicator relates to its mean.<sup>36</sup> Blue shades indicate low price pressures, while red shades suggest high price pressures.

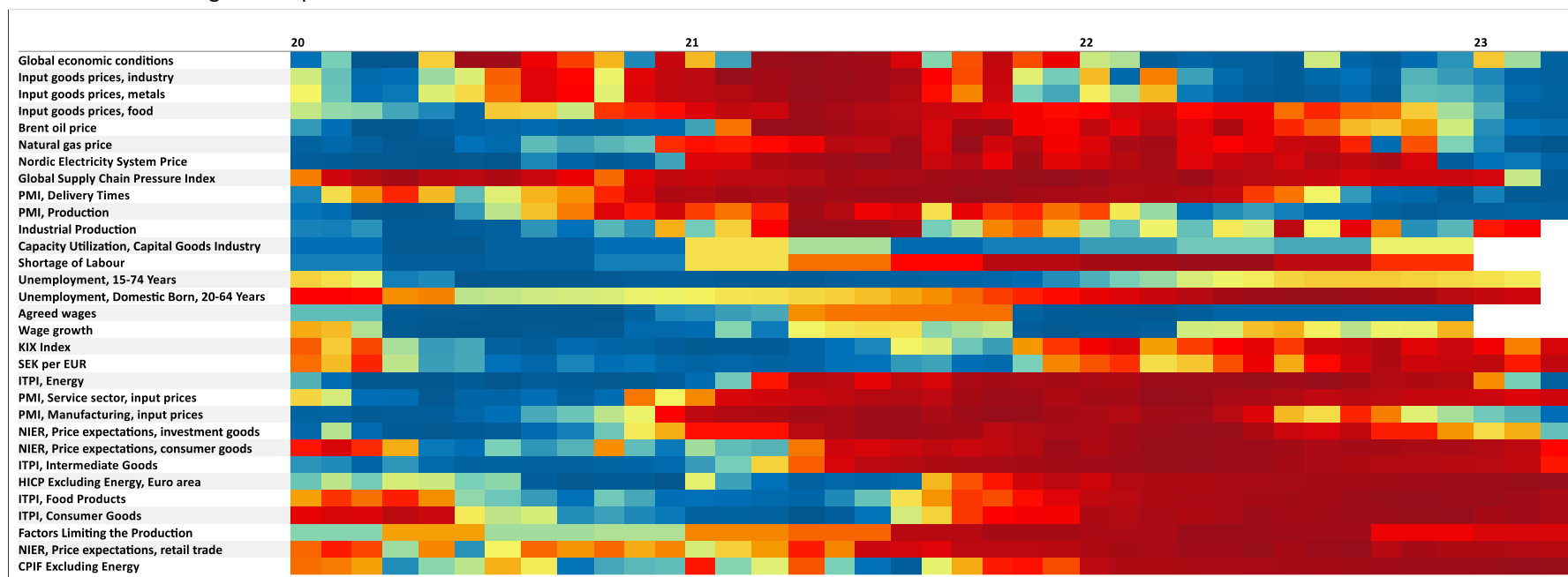
The figure shows that price pressures at early stages of production have gradually fallen, and that this trend began about a year ago. For instance, global freight prices have fallen and several commodity prices have also gradually declined from the extremely high levels recorded particularly in 2021 and after the outbreak of war in spring 2022. However, the closer one gets to the consumer stage, the redder the shades become in the present situation, indicating that consumer prices are still increasing rapidly.<sup>37</sup> This is a mirror image of the situation in 2021, when price pressures were high at earlier stages of production but low at the consumer stage. If the relationship is similar over the next year to 2021/2022, there is reason to believe that price pressures at the consumer stage will also decrease over the coming months.

<sup>36</sup> The average for each indicator is calculated for the period 2000–2019.

<sup>37</sup> Weekly data from the food price-monitoring company Matpriskollen indicates that food prices fell in April.

**Figure 46. Heat map for the development in price pressure indicators at different stages of production**

Deviation from average development 2000–2019



Note. Indicators of price developments at different stages of the production chain presented in rows for the period January 2020 to March 2023. Indicators at earlier stages are at the top of the figure and indicators at the consumer stage are at the bottom. Blue colour shading indicates low price pressures in relation to the indicator’s average development, yellow shading indicates that price pressures are approximately average and red shading indicates high price pressures. White fields indicate that data has not yet been published. The indicator names are abbreviated. The dataset for this report gives the complete names of all indicators and their sources.

Sources: Statistics Sweden, National Institute of Economic Research, Swedbank, national sources and the Riksbank.

## Consumer prices still increasing rapidly

Inflation is normally measured as the annual percentage change in a price index. To obtain a more up-to-date picture of how high inflationary pressures are, one can instead look at price changes calculated over shorter periods. In the United States, for example, it is common to analyse monthly seasonally adjusted price changes calculated as an annual rate. The reason for often calculating the monthly change as an annual rate is to show what the annual percentage change would have been if prices had increased at the same rate as during the current month for 12 months in a row.<sup>38</sup> The disadvantage is that monthly rates vary more than annual percentage changes as they are often affected by seasonal factors, which can be difficult to exclude entirely using existing methods.

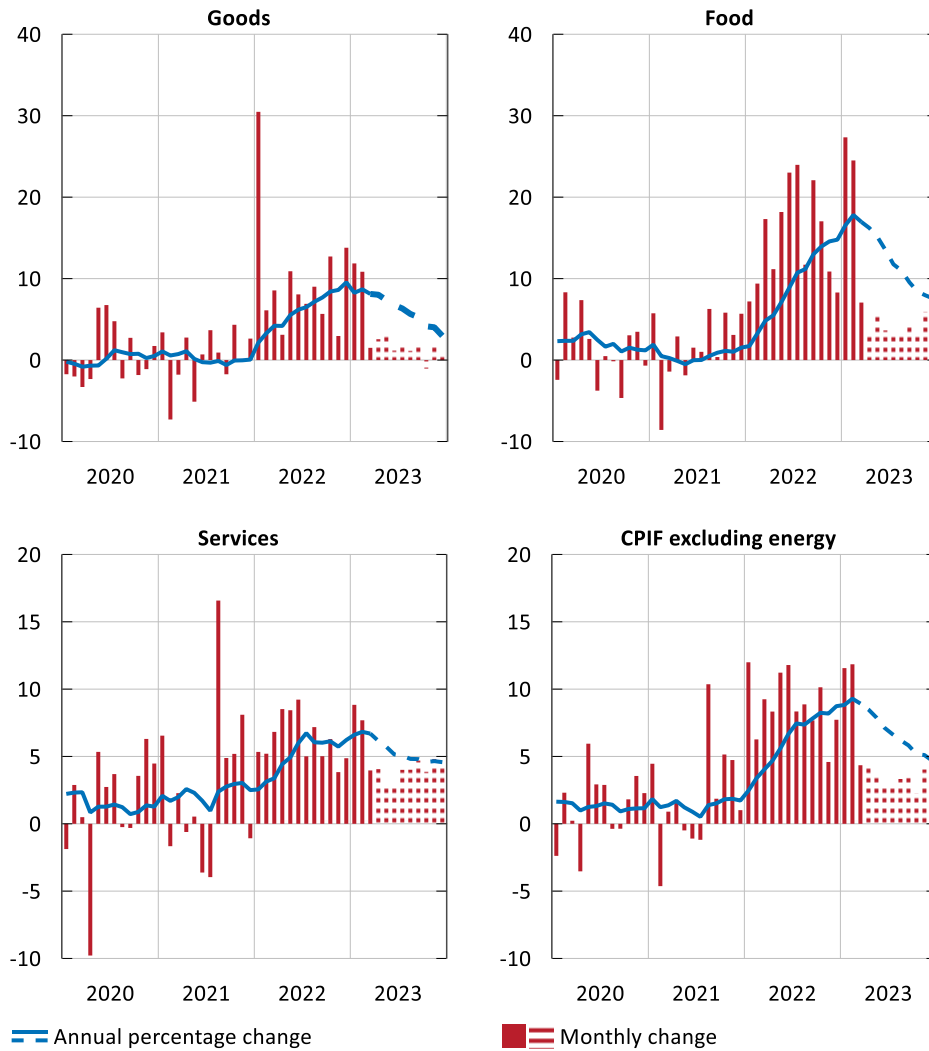
The continued relatively rapid rise in consumer prices can also be seen when looking at price changes over periods shorter than one year. Figure 47 shows changes in the CPIF excluding energy and its largest sub-groups calculated over time periods of one month (bars) and one year (lines). The monthly price changes in the CPIF excluding energy are still at relatively high levels. In March, the price changes decreased compared to the beginning of the year, but CPIF excluding energy still increased at a monthly rate that would signify an annual percentage change of just under 5 per cent.

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<sup>38</sup> The annual percentage change is affected by all price changes occurring over the past twelve months and not just the changes occurring in the most recent month.

**Figure 47. CPIF excluding energy and sub-groups**

Annual percentage change (line) and monthly percentage change in seasonally adjusted indices calculated as an annual rate (bar).



Note. To better be able to distinguish price changes from changes in indices due to the so-called basket effect, the calculations in this figure are based on adjusted indices where the so-called year-to-month links are weighted using 2023 weights in both 2022 and 2023.

Sources: Statistics Sweden and the Riksbank.

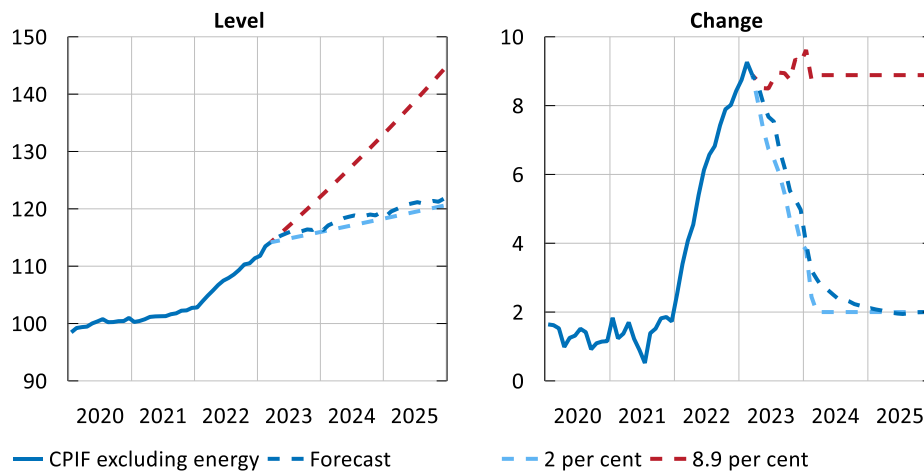
## Prices rising unusually rapidly this year, but inflation will still fall

Consumer prices are still rising rapidly and it is very difficult to know exactly when and how quickly inflation will start to fall.<sup>39</sup> The uncertainty has become even more evident in light of the Riksbank having been surprised by unexpectedly high inflation figures on several occasions this past year.

Figure 48 presents a few calculation examples of how sensitive the forecast is for different assumptions as to how quickly the rate of price increase will return to normal.<sup>40</sup> The dashed red lines show the index and annual percentage change in the CPIF excluding energy if prices, expressed as a monthly percentage change, increase as quickly every month over the coming years as they have done on average over the past year. In this case, inflation would therefore remain at its currently high level in the coming year. This example illustrates a development whereby prices going forward will increase more rapidly than they have done on average since the inflation target was introduced.

**Figure 48. CPIF excluding energy projected with different monthly rates of price increase**

Index, 2020=100 and annual percentage change



Note. The left-hand figure shows the index level that is the result of 3 different monthly percentage changes from April 2023 onwards – one that would lead to unchanged inflation at its current level, is compatible with 2-percent inflation and is line with the one in the main scenario. The right-hand figure shows the annual percentage change that will be the result of the index levels on the left.

Sources: Statistics Sweden and the Riksbank.

<sup>39</sup> For inflation to fall, prices need to increase at a slower rate than they have done over the past twelve months. Prices, on the other hand, do not need to fall. For inflation to be as high in the coming years as it has been over the past year, prices will have to increase equally rapidly every month going forward as they have over the last twelve months. Price developments therefore need to follow a steeper trend going forward than they have done in recent decades.

<sup>40</sup> Similar calculation examples are presented in the National Institute of Economic Research's publication *The Swedish Economy*, March 2023 in the box "Inflationen och månadsvisa prisförändringar" (in Swedish).

The dashed turquoise lines in Figure 48 show the index and annual percentage change in the CPIF excluding energy if prices every month from now on increase at a rate that is compatible with the inflation target of 2 per cent.<sup>41</sup> In this example, the monthly rate of price increase is normalised directly, although it still takes about a year before inflation, measured as an annual percentage change, returns to 2 per cent.

The blue lines between the red and turquoise lines show the inflation forecast in the main scenario. In the main scenario, the monthly rates are expected to remain higher than is compatible with 2-percent inflation for another few months, but not as high as they have been over the past year. The assessment is still that some of last year's cost increases have not yet fully had its full impact on prices. But monthly changes in prices are gradually expected to become more normal and the annual percentage change then falls back and is close to 2 per cent some way into 2024, measured as the CPIF excluding energy.

## Inflation back on target in 2024, but difficult to predict the exact path

In this article, we have shown that there are many indicators of cost developments at early production stages pointing to falling inflation in the period ahead.

Neither are there any signs of economic agents having lost confidence in the inflation target and basing their decisions on inflation remaining permanently at its current level. An important indication of this is that expectations of future wage growth and inflation among economic agents are in line with the inflation target. Neither are there currently any signs of wages starting to rise too quickly going forward. The fact that several wage agreements on the Swedish labour market have been signed at levels in line with the benchmark from the Industry sector indicates this. At the same time, demand has fallen and is expected to continue to do so over the next year against the background of a gradually increasingly large effect from a tighter monetary policy. This makes it more difficult for companies to raise their prices.

Inflation is therefore expected to gradually fall and be close to 2 per cent during 2024, measured as the CPIF excluding energy. As energy prices has fallen rapidly over the past year and are expected to remain at a lower level going forward, CPIF inflation is expected to fall more quickly than when energy prices are excluded. CPIF inflation is expected to be close to 2 per cent as early as at the end of 2023 (see Figure 44 in Chapter 3).

However, it is very difficult to know exactly when and how quickly inflation will fall. In the past year, the Riksbank and other forecasters have been surprised on several occasions by unexpectedly high inflation and one should therefore exercise caution when interpreting the current forecast.

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<sup>41</sup> A monthly percentage change of 0.165 per cent for twelve months will lead to an annual percentage change of 2 per cent after twelve months.