

ARTICLE – What indicates that inflation will fall back next year?

Several factors indicate that inflation will fall relatively quickly during the forecast period. One reason is that the central banks now are acting forcefully in many regions to dampen the effects of inflation impulses. Moreover, the factors that have been pushing up the general price level for some time are expected to gradually wane in significance. This applies, for instance, to commodity prices, which have already fallen. It should gradually have an impact on consumer prices, too. However, there is significant uncertainty surrounding energy prices at present, although the forward price market indicates a downturn. If energy prices instead continue to rise, this can dampen the downturn in inflation and at the same time mean that Swedish and international economies develop more weakly.

A simplified intellectual framework

The purpose of this article is to explain why there are now reasons to expect that inflation will not become entrenched at the current high level, but will relatively quickly fall back. Inflation is currently at 9.0 per cent, but according to the Riksbank's forecast is expected to fall back to around 2 per cent in 2024, given that monetary policy is tightened in the way indicated in the forecast. A simplified intellectual framework that makes it easier to reason regarding inflation in the Swedish economy going forward could look like this:

Inflation can be divided up into different parts. One is *international price increases on certain products*, such as energy and some commodities of food. These are often affected by supply factors, such as the war in Ukraine, but also by simultaneous and expected future demand.²⁹ This is actually a question of changes in the price of certain products in relation to the price of others.

Another factor is *international inflation* in the broader sense. In connection with the pandemic, many countries, and not least the United States, launched extensive stimulus programmes. This contributed to demand in the economies increasing and meant that the inflation impulse from the higher prices for energy and other commodities spread more easily to other parts of the economy. High international inflation affects Swedish inflation via, for instance, higher import prices.

A third factor is the inflation that is primarily generated on the *Swedish domestic markets*. One example is price increases in the service sector. It is this part of inflation

²⁹ Expectations of demand can affect the price of oil, for instance.

that the Riksbank's monetary policy is mainly able to affect, partly by affecting demand in the economy and partly through expectations of future inflation. If confidence in the inflation target is maintained, this will also contribute to anchoring expectations of the Swedish labour market and prevent price and wage spirals.

The Riksbank is not able to directly affect the first two parts. On the other hand, the *impact* of international price increases and high inflation abroad on inflation in Sweden is affected by monetary policy via its effects on the exchange rate. And price increases on the world market for certain products as a result of disruptions on the supply side, such as different types of bottleneck, can be dampened and reversed if the bottlenecks are resolved.

International inflation is affected by the central banks' monetary policy response more generally. The world's central banks have reacted forcefully and roughly simultaneously during this upturn in inflation. The fact that policy rates in general are on the way up contributes to keeping inflation down globally.

Energy prices began to rise from low levels as early as the second half of 2020 and over the past one and a half years the rate of price increase has been exceptionally high. During 2021 and especially 2022, many food prices and prices of other goods have also contributed to the rise in inflation. Last year, some service prices also began to be raised more than usual. Inflation has risen much faster than expected and the upturn is broad. So what indicates that these price components will increase more slowly going forward?

Indicators point to the rate of price increase slowing down

For inflation to be as high in 2023 requires prices to increase as quickly in the coming twelve months as they have over the past year. For inflation to become permanently higher thus requires that prices not only become higher, but also follow a steeper trend than before. One can say that price formation in the latter case, with permanently rising inflation, needs to change more fundamentally.³⁰ In the Riksbank's forecast, inflation instead declines relatively rapidly. This is not because prices are expected to cease rising, but because they are not expected to rise as much as they have done over the past year. This in turn is because the effects of certain supply factors will wane and inflation abroad will slow down. Further, it is assumed that monetary policy will be adapted to avoid a domestically-generated price-wage spiral.

The electricity price in Sweden, which began to rise clearly as early as last year, has now attained exceptionally high levels. The development in prices can be explained by a number of different supply factors, but the main explanation is that the European electricity market is tightly interwoven and several countries on the continent are

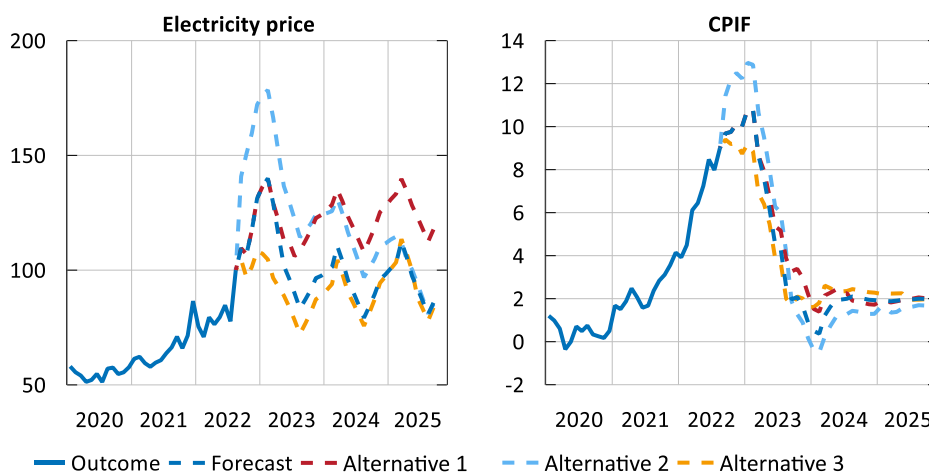
³⁰ For a discussion on this, see the fact box "Link between price level and inflation rate" in *Monetary Policy Report*, September 2021. Sveriges Riksbank.

strongly dependent on natural gas.³¹ At the same time, the oil price has fallen and fuel prices have become somewhat lower than expected, compared with the assessment in the June Monetary Policy Report. This development can also be explained by internationally-determined supply and demand factors. Even if price levels remain high, the rate of increase in energy prices will decline at the beginning of 2023, in line with pricing on the forward market (see Figure 38). This in turn means that energy prices will gradually contribute less to the rate of inflation with effect from spring 2023.

Uncertainty over the development of the electricity price is substantial at present. The current crisis in the energy market is an example that can lead to an entirely different development than is indicated by forward prices at present. Figure 44 below shows the effect on CPIF inflation if the electricity price develops according to three alternative scenarios. In alternative 1, electricity prices are assumed to be in line with the main scenario up to the end of 2023 Q1. After that, the electricity price is expected to remain relatively constant for the remainder of the forecast period, with the exception of seasonal variations. In alternative 2 the price of electricity rises much faster up to the first quarter of 2023, and then attains the same level as in the main scenario towards the end of the forecast period. In alternative 3, the electricity price does not rise as quickly during the coming six months and therefore lies relatively still during the remainder of the forecast period. The figure also shows the Riksbank's forecast. In all cases, apart from alternative 3, CPIF inflation rises further in 2022, but peaks at different levels. Similarly, inflation dampens in 2023, but the lowest level at the start of 2024 differs in the different alternatives.

Figure 44. Effects on CPIF inflation under various assumptions of the electricity price.

Index, 1 August 2022 = 100 (left), and annual percentage change (right)



Note. Blue unbroken line refers to outcome, broken line represents the Riksbank's forecast.

Sources: Statistics Sweden and the Riksbank.

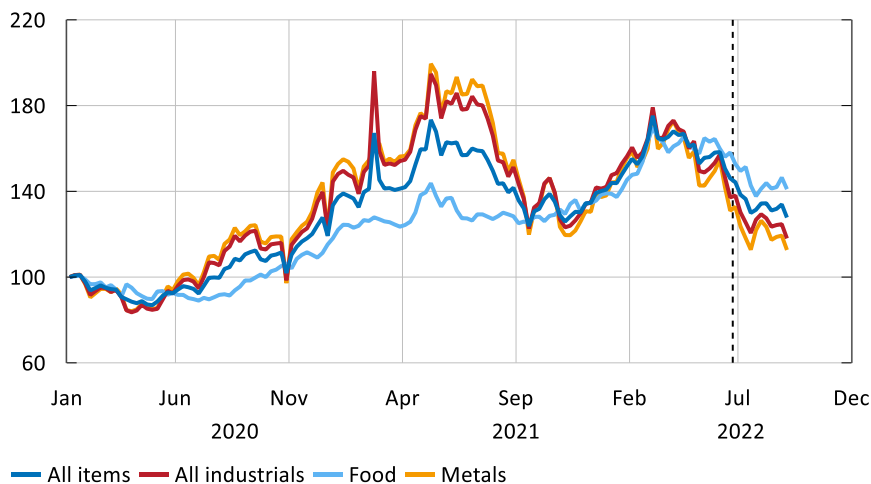
As for energy, prices of food have been affected by more internationally determined supply factors, such as poorer harvests for certain commodities as a result of extreme

³¹ For a discussion of why electricity prices are so high, see the article "What effect can measures to dampen the price of electricity have on inflation?" in this report.

weather, such as droughts in parts of Europe, higher costs for energy, among other things, and Russia's invasion of Ukraine. The rate of increase in food prices is expected to rise further for some months before slowing down at the beginning of 2023 (see Figure 36). The food-related commodity prices, such as prices of cereals, have fallen quite clearly and the percentage monthly changes in producer prices of food have also been somewhat subdued, although they are still larger than normal (see Figure 45 and Figure 46). The fact that commodity prices are falling and producer prices are now increasing at a somewhat slower pace should mean that consumer prices can also be expected to increase more slowly going forward, although this may take some time.³² However, as with the assessment of energy prices, there is greater uncertainty than usual. This especially applies to the scope of the indirect effects if the disruptions to the energy market become more prolonged and more climate-related disruptions occur. Many Swedish farmers and food producers already have squeezed margins. Further increases in electricity and fuel prices will leave a clear mark on operations and pricing.

Figure 45. Commodity prices

Index, 07 January 2020 = 100



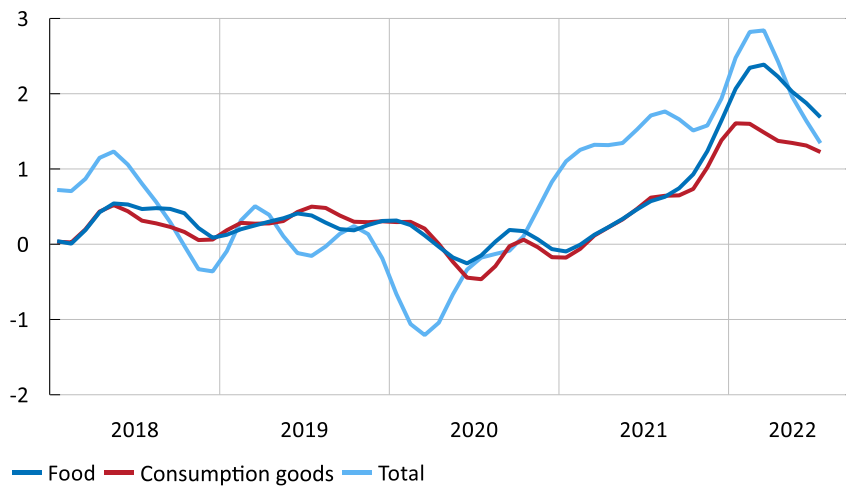
Note. The broken line marks the time of the monetary policy meeting in June.

Source: The Economist.

³² Producer prices can be tied by contracts, which can in turn delay the impact on consumer prices. See, for instance, an article in Dagens Nyheter newspaper on 1 September (only in Swedish), <https://www.dn.se/ekonomi/globala-matpriserna-faller-tillbaka-pa-normala-nivaer/>.

Figure 46. Producer prices

Smoothed percentage monthly changes



Note. This shows monthly percentage changes in the estimated trend cycle for the different series. The trend cycle was produced in the seasonally-adjusted programme X12 and can be regarded as a smoother seasonally-adjusted series, where the time series' random term has been filtered out. All series refer to ITPI (domestic supply price index).

Sources: The Riksbank and Statistics Sweden.

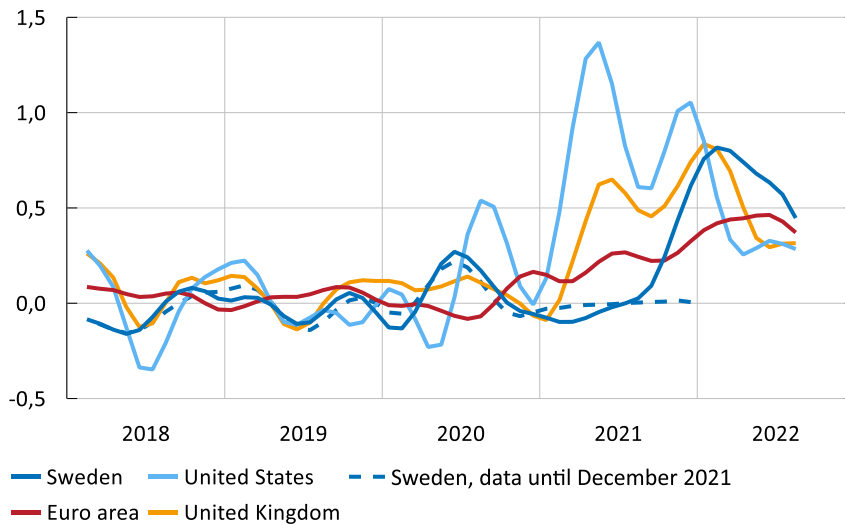
Figure 47 shows smoothed percentage monthly changes for goods prices excluding food in various countries and regions. The results indicate that goods prices began to increase more rapidly, compared with the previous years, in the United States and the United Kingdom as early as 2021. In Sweden, the monthly price changes began to increase at a somewhat later stage and the upturn was from very low levels (see Figure 47). Such turning points are often very difficult to date in real time. The smoothing method itself, which is rough and gives a simplified picture, can also be misleading when trying to interpret the historical development, especially the last observations. For example, prices on goods in Sweden appear to rise relatively quickly as early as the second half of 2021 according to the smoothed series (see unbroken blue line in Figure 47). However, if one only uses the data available when the Monetary Policy Report was published in February, the method does not capture any turning point at all during the past year (see broken blue line in Figure 47).

The upturn in goods prices can probably be explained by certain supply factors, such as higher transport costs and a shortage of input goods, combined with price impulses linked to strong international demand. One can say that it is a mixture of part 1 and 2 of inflation according to the simplified intellectual framework above. Although the results should be interpreted with caution, they indicate that the monthly price increases have slowed down, especially in the United States and United Kingdom, but also in Sweden. If no further supply shocks arise, this should be an indication that the largest price adjustments on goods may already have been made. But the risk of

higher energy prices, and a new wave of cost increases and indirect effects, makes his assessment uncertain.³³

Figure 47. Percentage monthly changes for goods prices

Smoothed percentage monthly changes



Note. This shows monthly percentage changes in the estimated trend cycle for the different series. The trend cycle was produced in the seasonally-adjusted programme X12 and can be regarded as a smoother seasonally-adjusted series, where the time series' random term has been filtered out.

Sources: Statistics Sweden and the Riksbank.

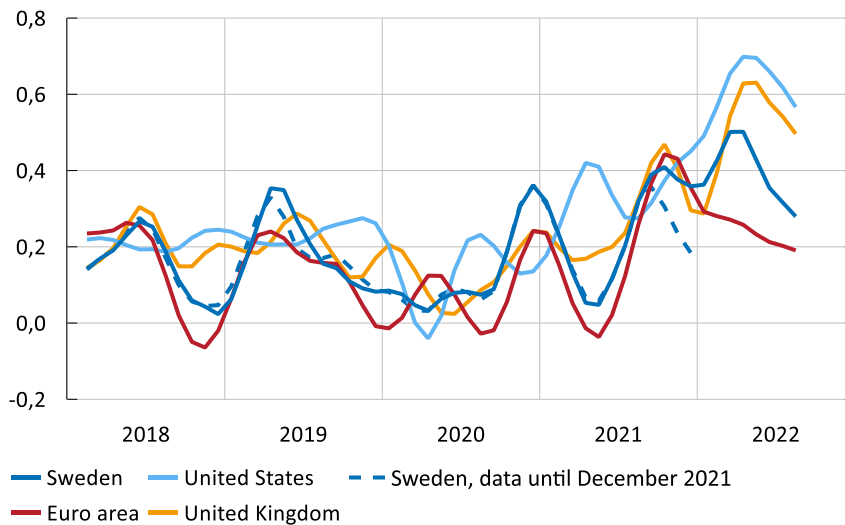
The pandemic has caused service prices to fluctuate more than usual. When the various restrictions were introduced, they held back price developments on services, such as hotels and restaurants. Once the restrictions were eased, it meant that demand for services increased rapidly and prices rose. Several companies have also experienced difficulties in re-recruiting staff or recruiting new staff, as people have changed branch or retrained during the pandemic. The sector has also faced higher costs in general.³⁴ However, service prices are not expected to continue rising as quickly going forward. For one thing, lower demand, together with tighter monetary policy, is expected to contribute to a lower rate of price increase going forward. Costs are not expected to continue rising as quickly going forward, either. As with goods excluding food, the monthly price increases on services in the consumer channel have slowed down somewhat in the United States and the United Kingdom, and this is even more clear in Sweden and the euro area (see Figure 48). All in all, there are indicators pointing to prices not rising as much as they have done recently.

³³ The Riksbank has previously analysed how Swedish consumer prices have developed over time in relation to the corresponding prices abroad. See the article, "Many indications that inflation will be high this year and next year" in *Monetary Policy Report*, April 2022, Sveriges Riksbank.

³⁴ See, for instance, "As soon as you find one component, you realise you're missing another", *Riksbank Business Survey*, September 2021, Sveriges Riksbank.

Figure 48. Percentage monthly changes in service prices

Smoothed percentage monthly changes



Note. This shows monthly percentage changes in the estimated trend cycle for the different series. The trend cycle was produced in the seasonally-adjusted programme X12 and can be regarded as a smoother seasonally-adjusted series, where the time series' random term has been filtered out.

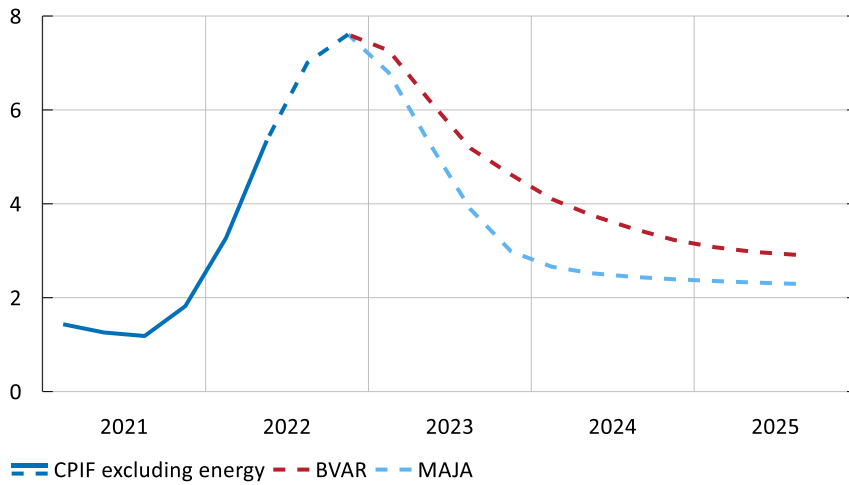
Sources: Statistics Sweden and the Riksbank.

The assessment that inflation will fall next year is supported by projections from various models usually used by the Riksbank in its forecasting work. Figure 49 shows two such model forecasts, which both start out from the Riksbank's assessment of inflation and real economic developments in Sweden and abroad for this year. The model named MAJA indicates that inflation will fall back somewhat faster, while the time series model BVAR generates a forecast that is higher during the forecast period.³⁵ According to MAJA, the downturn in inflation is largely explained by negative supply shocks, which have also contributed to pushing up inflation, gradually waning next year. Long-term inflation expectations that fall back relatively slowly according to the model, together with a weaker exchange rate, will instead contribute to slowing down the downturn in inflation. In the BVAR model it is primarily the gradually lower inflation abroad that is driving the downturn in inflation in Sweden. The fact that the time series model indicates a higher level of inflation than MAJA going forward is because the estimated parameters in BVAR are affected to a greater extent by the recent rapid upturn in inflation.

³⁵ MAJA is a so-called dynamic stochastic general equilibrium model that takes into account Sweden's international dependence, while BVAR is a simpler time series model. BVAR includes 8 domestic variables (unemployment, employment, GDP, wages, the CPIF, the CPIF excluding energy, the real exchange rate and the policy rate) together with 3 international variables (trade-weighted GDP, inflation and the policy rate). The projection in the BVAR model is based on exogenous forecasts for international variables. The forecasts of international developments were thus produced outside of the actual model in this case. For a presentation of MAJA see V. Corbo, and I. Strid, (2020), "MAJA: a two-region DSGE model for Sweden and its main trading partners", *Working Paper* No. 391, Sveriges Riksbank and for BVAR see J. Iversen, S. Laséen, H. Lundvall, and U. Söderström, (2016), "Real-Time Forecasting for Monetary Policy Analysis: The Case of Sveriges Riksbank", *Working Paper* 16/318, Sveriges Riksbank.

Figure 49. Model forecasts for the CPIF excluding energy

Annual percentage change



Note. Blue unbroken and broken lines refer to the Riksbank's forecasts for the CPIF excluding energy. The model forecasts are based on the assessment up to the end of 2022 Q4.

Sources: Statistics Sweden and the Riksbank.

The Riksbank forecasts that inflation will fall relatively rapidly next year

All in all, several factors indicate that inflation will fall relatively rapidly as early as next year. This is not an expression of prices ceasing to rise, but that they are not expected to rise as much as they have done over the past year. This in turn is a combined result of the effects from certain supply factors waning, inflation abroad dampening and of monetary policy being adapted to avoid a domestically generated price-wage spiral.

However, there is considerable uncertainty over the forecasts at present. One example is developments in energy prices, where the forward market indicates a downturn. If energy prices instead continue to rise, this could lead to a new wave of cost increases and indirect effects, which in turn can dampen the fall in inflation.