ANALYSIS – Effects of monetary policy

An important starting point for the Riksbank's monetary policy work is assessments of the scale of the effects monetary policy has on inflation and the rest of the economy. The effects are difficult to measure and the Riksbank regularly evaluates and elaborates on the analysis on which the assessments are based. As a part of this work, the Riksbank has used new methods that can be compared with calculations using more traditional methods. The methods give similar results, but they differ on certain points. It is important to be aware of the uncertainty of the effects.

Prior to the monetary policy decision, the Riksbank produces various scenarios to evaluate different policy alternatives and assess risks. Apart from presenting a main scenario with accompanying monetary policy, the Riksbank has also started to include alternative scenarios to a greater extent in its Monetary Policy Reports to help communicate its assessments clearly.[1] One of the roles of alternative scenarios is to illustrate how monetary policy would need to be changed if developments were to diverge considerably from the main scenario.

An important starting point in the work on forecasts and scenarios is assessments of the size of the effects monetary policy has on inflation and the rest of the economy. The Riksbank regularly assesses the analyses on which the assumptions are based, and a number of projects have recently been implemented for this purpose. This analysis presents an overview of the results from two of the Riksbank's studies. An Economic Commentary describes the results in more detail and discusses the challenges of calculating the effects of monetary policy.[2] Monetary policy affects the economy via various mechanisms and some of these have a rapid effect, while others take longer. It is also difficult to separate cause and effect when studying developments in the macro economy. It is therefore a challenge to isolate the part of the developments that are due to monetary policy.

To gain an idea of the size of the effects of monetary policy, one often uses data on how the policy rate, GDP, inflation and so on have developed historically, and calculates the effects of monetary policy with statistical methods. The research literature contains various such methods, all with their advantages and disadvantages. One aim of the Riksbank's work has been to produce results with new methods and data and to compare them with updated calculations using more traditional methods.[3]

[1] See the section on scenarios in Chapter 3.

[2] B. Andersson and H. Lundvall (2024), "Effects of monetary policy", *Economic Commentary* no. 16, Sveriges Riksbank.

[3] The Riksbank will publish documentation of the analysis with the newer method later this year. The analysis with the more traditional method is documented in E. Berggren, S. Mammos and I. Strid (2024),

Put simply, both studies use a statistical model, a so-called vector autoregression (VAR) to calculate what effects a change in the policy rate has on, for instance, GDP, unemployment, the exchange rate and inflation. An important difference between the studies is the method used to ensure that it is the effects of monetary policy that are measured, and not the effects of other factors that affect inflation and the other macroeconomic variables. The method in one study is to use assumptions of how quickly monetary policy affects various variables in the short term. The other study isolates monetary policy changes in a more direct way. Here, the method is to use information on how prices on financial markets change during a short time interval in connection with the Riksbank having published new information on monetary policy.

The results are relatively consistent, but the effects on GDP and unemployment differ on certain points

The results of the two studies are similar in several ways, and qualitatively the effects are completely consistent.[4] They also agree with economic theory – when, for instance, the interest rate is raised, the effect is a stronger exchange rate, higher unemployment and lower levels of GDP and inflation, compared with if the interest rate had not been raised. In terms of size too, the effects resemble each other in certain dimensions. The effect on inflation is roughly the same according to the two studies. This applies both to how the effect changes over time and how much inflation is affected at most, that is, the size of the maximum effect. According to both methods, the effect of a policy rate increase is largest after around 1 year. If the policy rate is raised by 1 percentage point, inflation one year later is pushed down by around 0.5 percentage points. After this, the effect gradually abates.

According to both studies, the effect on GDP is largest after around 2 years. On the other hand, the size differs, with the effect on GDP being at most 0.8 per cent in one study and 1.8 per cent in the other if the policy rate is raised by 1 percentage point. The greatest difference between the results is the effect on unemployment. The results in one of the studies indicate that the rate increase has a maximum effect on unemployment that is just over 0.6 percentage points. The maximum effect is also synchronised with the maximum effect on GDP, that is, it occurs after around 2 years. The results in the second study indicate that the maximum effect on unemployment is around 0.2 percentage points and that it occurs a couple of quarters after the policy rate has been raised.

It is important to recognise that the effects are uncertain

Even if the results are relatively consistent, an overall conclusion from studies of this nature is that there is considerable uncertainty as to how large an effect monetary policy has on inflation and the rest of the economy. The statistical methods in the studies themselves contain uncertainty and the results differ on various points, depending on the method. Moreover, the historical correlations between the policy

"The effects of monetary policy in Sweden during the inflation targeting period: estimates with structural VAR models", *Staff memo* August 2024, Sveriges Riksbank.

[4] There is a figure illustrating the results in B. Andersson and H. Lundvall (2024), "Effects of monetary policy", *Economic Commentary* no. 16, Sveriges Riksbank.

rate, inflation and the rest of the economy on which the calculations are based can change over time. One example from recent years is the change in companies' price-setting behaviour (see further Chapter 3). It is important to be aware of these various sources of uncertainty. One way of making the conclusions more robust is not to rely on the results from a specific method or model, but to weigh together different results. The Riksbank will take the results of the studies made as a starting point in the forecasting and scenario work going forward. However, when one is to assess the impact of monetary policy, it is important to also weigh in other types of information not included in the models. Ultimately, one always needs to assess whether the effects appear reasonable in the relevant scenario.