Article: What do inflation expectations tell us?

Expectations of future inflation are very significant for the Riksbank's monetary policy. A well-anchored inflation target makes it easier for various participants to make well-founded financial decisions and lays the foundation for efficient price-setting and wage formation. Inflation has been low in recent years and various measures of inflation expectations have also fallen. The Riksbank is pursuing a very expansionary monetary policy to get inflation to rise and to counteract falling inflation expectations. This is judged to have contributed to a rise in inflation since the beginning of 2014 and to an upturn in inflation expectations since the beginning of 2015.

Various participants' expectations of future inflation are very important for monetary policy with an inflation target. A well-anchored inflation target makes it easier for households and companies to make well-founded financial decisions, thereby helping to increase stability in the economy.[9] If the general public expects the Riksbank to bring inflation towards the target within a few years' time, this will also affect price-setting and wage formation, making the inflation target easier to achieve.[10] Inflation expectations in the longer run can thus be regarded as a measure of confidence in the Riksbank's inflation target.

Inflation has been low in recent years and various measures of inflation expectations show a decline. Expectations in the longer term are also lower. The risk of these falling even further and making it difficult to get actual inflation to rise has therefore been one of the reasons for the Riksbank's expansionary monetary policy in recent years.

Inflation measured in terms of the CPIF has risen since the beginning of 2014, and since the beginning of 2015 inflation expectations have also turned upwards. It is primarily short-term expectations that are higher, but long-term expectations have also risen slightly (see Figure 1:12).

Different measures of inflation expectations

Inflation expectations cannot be observed directly, but one must rely on various types of measures and assessments, such as surveys, the pricing of financial instruments and the inflation forecasts of analysts. All measures have shortcomings, and individual ones must therefore be interpreted with caution. The Riksbank therefore analyses several different measures and indicators to form an opinion on how inflation expectations are developing.

A common measure of inflation expectations is from surveys. Survey company TNS Sifo Prospera has been commissioned by the Riksbank to ask various participants what they believe CPI inflation will be one, two and five years' ahead.[11] One advantage of such surveys is that the question covers directly what one is trying to measure. However, it is uncertain what the responses actually reflect, as the question is put to a broad group of participants with different backgrounds and knowledge of inflation developments.[12]

Inflation expectations can also be measured via financial instruments, for instance as the spread between a nominal and a real government bond yield with the same maturity, where the real bond is linked to the future development of the CPI (see Figure 1:16).[13] The advantage of this method is that the various participants on these markets adopt positions depending on what they think about inflation in the future. One problem with the method is, however, that bond prices are also affected by investment preferences and various types of risk premium, which are difficult to measure and can vary over time.[14]

Inflation expectations covary with actual inflation

Inflation expectations are an important factor in price-setting and wage formation, and in this way affect how actual inflation develops going forward. At the same time, however, actual inflation also affects inflation expectations, particularly in the short term. Figure 1:17 shows, for instance, that the correlation between expected inflation two years ahead according to Prospera's survey and the most recent CPI outcome is relatively high. But the figure also shows that inflation expectations are not so closely correlated with future inflation.[15]

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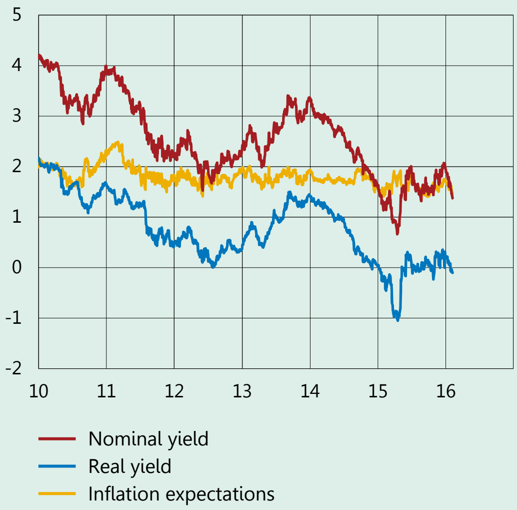
[9] See the article "Why is it important that inflation rises towards the target?", July 2015 Monetary Policy Report.
[10] See the article "The interplay between wage formation, monetary policy and inflation", July 2014 Monetary Policy Report.

[11] The groups asked are money market participants, employee organisations, employer organisations and purchasing managers in manufacturing and trade. The National Institute of Economic Research also reports households' and companies' inflation expectations in its Business Tendency Survey, however these are only measured at one year ahead.
[12] For instance, Jonsson and Österholm (2009) argue that Prospera's survey does not fully capture true inflation expectations, see "The Properties of Survey-Based Inflation Expectations in Sweden", Working paper No. 114, National Institute of Economic Research.
[13] For further information, see for instance "Handbook on government securities" (2007), Swedish National Debt Office, p. 10.
[14] For example, those who hold a nominal bond may demand compensation for the inflation risk. The markets for real and nominal bonds also have different levels of liquidity. This means that inflation expectations estimated on the basis of financial instruments can also contain risk and liquidity premiums. This is deemed to be a greater problem in Sweden than in, for instance, the United States and the euro area, where the markets are larger.
[15] Jonsson and Österholm (2009) show that both professional forecasters and more simple autoregressive models make better forecasts of inflation than survey-based inflation measures, "The Properties of Survey-Based Inflation Expectations in Sweden", Working paper No. 114, National Institute of Economic Research.

Inflation expectations five years ahead fluctuate much less than short-term expectations and are closer to the Riksbank's target of 2 per cent. But these measures also covary to a certain extent with actual inflation. Longer-term expectations should also reflect the extent to which participants think that monetary policy can bring inflation towards the target. They can thus be regarded as a measure of confidence in the Riksbank's inflation target.

Figure 1:16. Long-term inflation expectations according to the bond market
Per cent



Note. Inflation expectations are measured as the difference between a nominal and a real government bond yield with the same maturity, where the real bond is linked to the future development of the CPI. The difference reflects thereby both the market's inflation expectations and a risk premium.

Sources: Thomson Reuters and the Riksbank

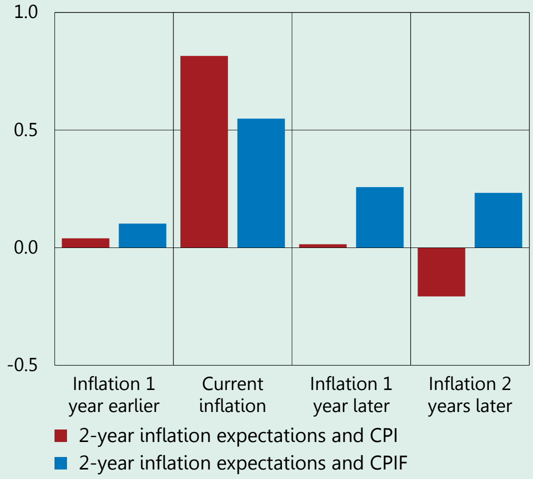
Fewer participants believe in high inflation outcomes going forward

The Prospera survey also provides a picture of the uncertainty surrounding long-term inflation expectations. Figure 1:18 shows inflation expectations five years ahead according to money market participants, together with an upper and a lower limit where the respondents are asked to estimate the interval for the annual percentage change in the CPI, with a 75 per cent probability. The figure highlights that it is primarily the probability of high inflation outcomes that has declined in recent years, while the probability of low inflation has been relatively stable. This indicates that fewer participants believe that inflation will exceed the Riksbank's 2-per cent target in the long run, which can probably be linked to the low inflation in recent years.

Important for inflation expectations to rise

Despite the shortcomings in the various measures, inflation expectations are significant for monetary policy. If fewer and fewer participants say that they believe inflation will reach the target of 2 per cent, it is a sign that the credibility of the inflation target has weakened. Low inflation expectations increase the risk of actual inflation establishing itself on a lower level, and making it more difficult for the Riksbank to bring inflation back to the target. This again highlights the importance of inflation rising.

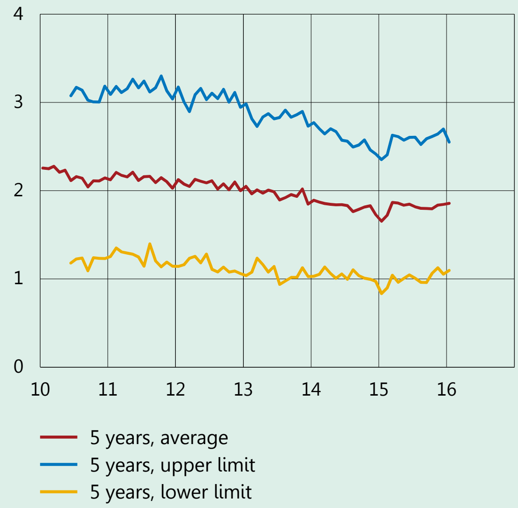
Figure 1:17. Correlation between 2 year inflation expectations and actual inflation
Correlations



Note: The correlation is calculated between the inflation expectations of all participants two years ahead and the latest available inflation outcome. There is normally a difference of two months between the month in which the survey is published and the latest available inflation outcome. The correlation gives the relationship between two variables, where 1 shows the maximum positive relationship and –1 the maximum negative relationship. The data refers to the first quarter of 2000 and the last quarter of 2015.

Sources: TNS Sifo Prospera, Statistics Sweden and the Riksbank

Figure 1:18. Inflation expectations 5 years ahead and uncertainty band
Per cent



Note. The figure refers to mean values. In the survey, the respondents are asked to estimate the band within which they think the annual percentage change in the consumer price index, the CPI, will fall with a 75-percent probability.

Source: TNS Sifo Prospera