SPEECH

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Unusual measures in unusual times – experiences with the Riksbank's unconventional monetary policy*

The start of a new year – particularly after such an eventful year as 2015 – can be a good time to look back and try to learn a few lessons from the past year's experiences. I will therefore focus today on the reasons for the new monetary policy ground broken by the Riksbank in 2015. This includes our introduction of a negative repo rate and our initiation of government bond purchases as a complement to repo rate cuts to further boost demand in the economy and increase inflation.

The inflation target is worth defending. This is why we have taken to unusual measures under unusual circumstances and these measures seem to have contributed towards good growth and a rising inflation trend. At the same time, there is reason to remember that the low level of interest rates is leading housing prices and mortgages to develop in a dangerous direction. I also intend to present a few preliminary reflections on the recently published assessment of the Riksbank's monetary policy.

Why is the inflation target so important?

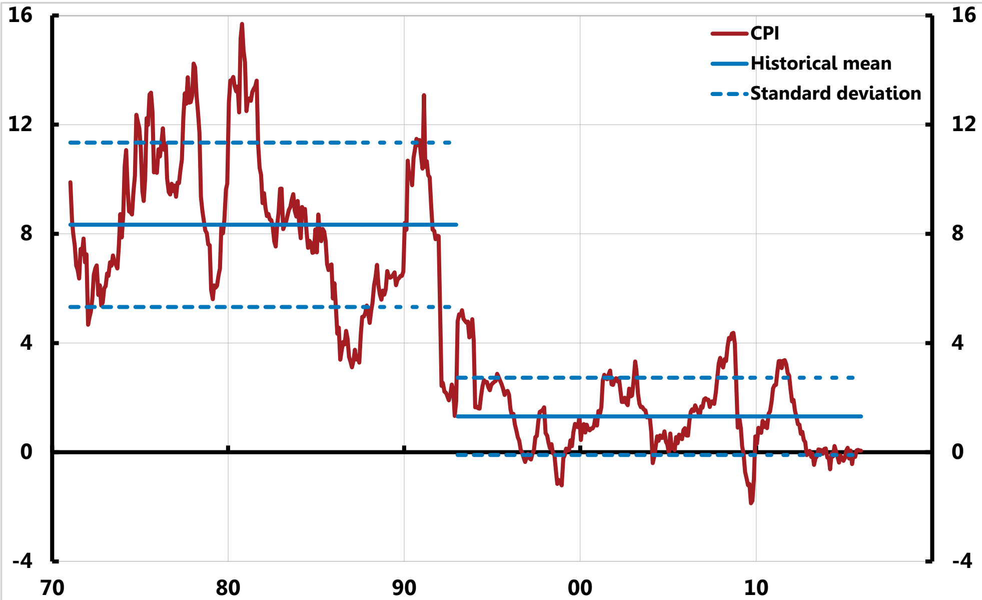
Understanding the Riksbank's actions first requires understanding why we think the inflation target is so important. We introduced inflation targeting in Sweden in 1993 after we were forced to abandon the fixed exchange rate regime. We used academic research to support this decision, along with the good example provided by forerunners such as Canada and New Zealand.[1] A well-implemented inflationary targeting policy benefits economic development by making inflation lower, more stable and more predictable. Sweden's experiences in the decades before and after the introduction of the inflation target provide a rough idea of the significance of inflation targeting for the

* I would like to thank Carl-Johan Belfrage, Hanna Köhler and Cecilia Roos-Isaksson for helping me with this speech.

[1] The Swedish inflation target was announced in January 1993 and started to be applied in 1995. For a more in-depth review of the relationship with academic research and countries that had previously adopted inflation targeting, see Berg, C., "Experience of inflation targeting in 20 countries", *Sveriges Riksbank Economic Review* 2005:1, Sveriges Riksbank.

development of prices and wages – severe fluctuations in the 1970s and 1980s were followed by very stable development after the introduction of inflation targeting (see Figure 1).

Figure 1. Inflation targeting has made inflation lower, more stable and more predictable.



Note. Annual percentage change.
Sources: Statistics Sweden and the Riksbank

It has benefited economic development in Sweden. This is because more predictable price developments make borrowers and savers feel more secure in how inflation will develop and create good conditions for economic decisions. This lowers borrowing costs and thereby benefits investments. Investments and new recruitments are facilitated by companies' ability to make a reasonably good prediction of price and wage cost increases over the lifetime of an investment. The less uncertainty there is over future price developments, the easier it also becomes to agree on conditions for various contracts, not least the wage agreements negotiated by the labour market parties. All in all, it is thus not unreasonable to consider that inflation targeting has contributed towards the higher average growth we have experienced over the two decades since targeting was introduced, as compared with the preceding period.

It is important that inflation expectations are not too low

There is consequently a lot to be gained from having low, stable and predictable inflation. But it is also important that expectations of future inflation are not *too* low.

One reason for this is that inflation allows wages to develop more weakly in certain areas without requiring nominal wages to be cut. This means that unemployment can be avoided when changes occur that reduce the demand for certain types of knowledge, skill and experience.

- However, inflation expectations also affect the strength of the Riksbank's primary monetary policy weapon – the repo rate – and thereby the Riksbank's ability to stabilise the Swedish economy and lead it out of crises.

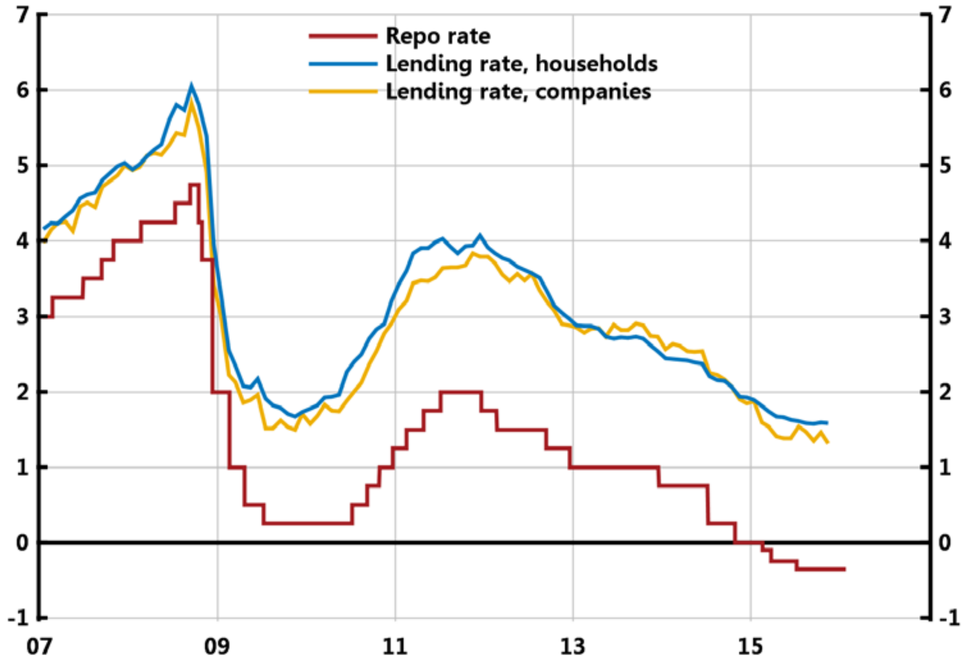
This is a product of the way inflation expectations affect real interest rates. In the same way as the figures for GDP growth we usually discuss refer to *real* growth, which is to say growth adjusted for inflation, there is namely reason to adjust interest rates in the economy for inflation – in particular, to determine how much stimulus monetary policy is supplying. There are good reasons to subtract the effects of inflation on debts and saving. For example, a loan for an investment becomes less burdensome to repay the more the price of the goods the borrower is selling has increased over the period in question. And the lender, correspondingly, has reason to consider how much the money is worth when the loan is eventually repaid. Another way of putting it is that those borrowing and lending must consider how much of the amount lent they expect to be 'eaten up' by inflation. The economically-significant real interest rate is therefore the usual nominal rate with a deduction for expected inflation:

Real interest rate = nominal interest rate – expected inflation

How expansionary the interest rate policy is, which is to say how low the real interest rate level is, is thus determined both by the nominal interest rate level and by expected inflation. This also means that how expansionary the level of interest rates can be made is not just determined by how far the nominal interest rate can be cut but also by how high inflation is expected to be. When inflation is expected to be high, the real interest rate can be made very low, but this also means that, as inflation expectations fall, the scope for cutting the real interest rate also decreases.

The fact that inflation expectations were anchored around the target of two per cent meant that the low nominal interest rates of 2009 and 2010 (see Figure 2) gave households and companies very low real interest rates and supported the recovery of the Swedish economy. With lower inflation expectations, the same interest rate policy would have had a less powerful stimulatory effect and that would probably have meant lower employment and even lower inflation in recent years.

Figure 2. Average mortgage rate and corporate rate, and repo rate



Note. MFIs' lending to households for housing purposes and to non-financial companies, new loans and agreements, refers to monthly data. Repo rate refers to daily data and date of implementation.
Sources: Statistics Sweden and the Riksbank

Inflation expectations are thus of vital importance for how expansionary monetary policy is and how expansionary it can be made when the Swedish economy is subjected to new severe stresses. The stimulus provided by a really low real interest rate can make it possible to avoid more prolonged low interest rate periods with the drawbacks in the form of rising indebtedness and exaggerated risk-taking that we are now concerned about. But if inflation expectations are too low, not even the lowest possible repo rate may be enough to push the real interest rate down to the desired level.

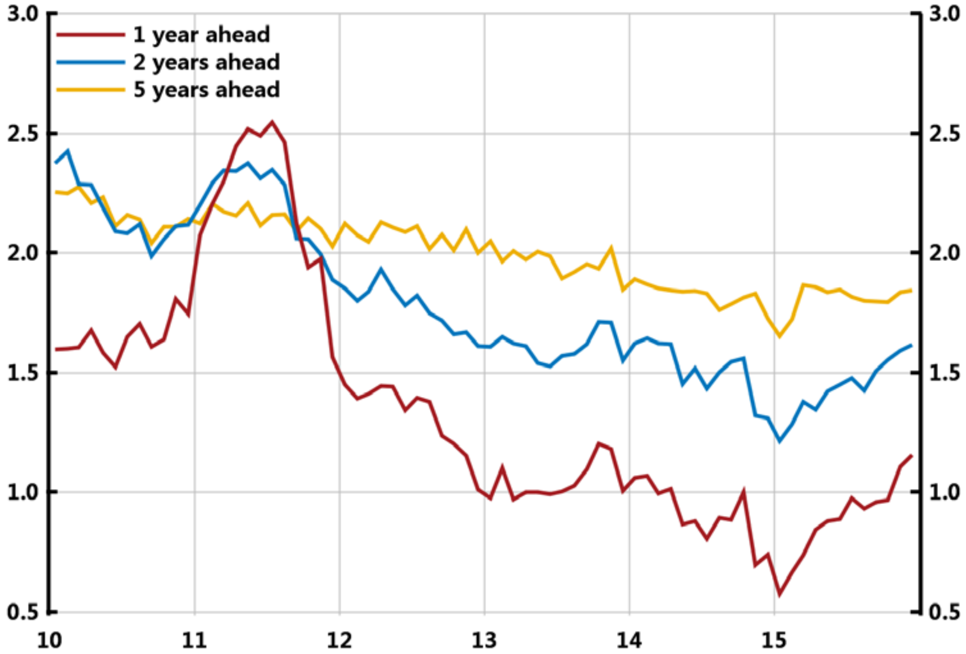
To sum up, it is thus of great benefit to the Swedish economy if households and companies, savers and investors, expect a future rate of inflation that is on a reasonably low level and that their expectations more or less correspond. The key to such jointly-agreed inflation expectations is that the inflation target of two per cent is seen as credible, which is to say that all parties expect that the Riksbank will be able to hold inflation close to the target in the period ahead.

Inflation expectations were losing their stable footing at two per cent

Unfortunately, one of the unusual circumstances prevailing at the start of 2015 was that long-term inflation expectations were losing their stable footing around the target of two per cent. Of course, there are no perfect measures of inflation expectations and it is not obvious whose expectations are most important, but we carefully monitor the survey-based measures of expectations provided by Prospera. The decrease in inflation expectations five years ahead that took place in the period up to the end of 2014 was worrying (see Figure 3).

- Pricing on the bond market gave the same view of falling long-term inflation expectations.

Figure 3. Inflation expectations



Note. Per cent. Money market agents.
Source: TNS Sifo Prospera

If this meant that doubts were now starting to arise about the two per cent target, this was perhaps not so strange, considering that inflation at this point had been low for an extended period of time. There was certainly reason to believe that this was at least partly the result of temporary factors. The Riksbank's own analyses pointed to the strengthening of the krona exchange rate between 2009 and 2013, the weak level of economic activity abroad and falling energy prices. We also noted an unusually low interest among companies in raising their prices, despite rising costs. Conceivable explanations for this included decreasing inflation expectations and perceived uncertainty over the economic outlook, as reported by the companies in our Business Surveys.[2]

The unusually low inflation in recent years is something we have shared with many other countries. This may have strengthened the perception that there are forces in motion making it impossible for the Riksbank to reach the inflation target. There has been, not least, an emphasis on the effects of globalisation and digitisation on costs and competition. However, as my colleague in the Executive Board, Martin Flodén, pointed out in a speech last autumn, it is difficult to see why this should have persistent effects on the rate of inflation in particular and why it has not prevented higher inflation in

[2] See, for example Andersson, B., Corbo, V. and Löf, M., "Why has inflation been so low?", *Sveriges Riksbank Economic Review* 2015:3, Sveriges Riksbank.

countries like Norway, Canada and Australia.[3] In addition, these factors were relevant when Sweden had a higher rate of inflation, just a few years ago.

Regardless of the underlying reasons, it would be very unfortunate if long-term inflation expectations were to drift away from the inflation target. We would then start to lose everything we gained by having an inflation target.

Inflation prospects are influenced by international developments

At the same time, at the start of 2015, the European Central Bank (the ECB) had announced bond purchases in an amount of EUR 60 billion per month to make its monetary policy more expansionary. Of course, these measures will eventually have positive effects on inflation in Sweden as they provide welcome stimulus for an important Swedish export market. But, by weakening the euro, the ECB's measures risked exerting price pressure on a significant portion of Swedish imports over the short term.

In addition, the price of oil had fallen sharply in 2014 and continued to fall in 2015. The international development of the price of oil directly influences inflation in Sweden via the price of fuel oil and, not least, the price of petrol. Over time, it can also have effects on other prices, as it affects companies' energy and transportation costs. It is true that, in normal cases, a fall in the price of oil has a brief effect on the actual inflation figures. But as the price of petrol in particular is so very visible for so many people, it may have a disproportionately high impact on how inflation is perceived and thereby possibly also on inflation expectations.

We have also had a year characterised by a large degree of uncertainty over international developments in general. Greece's membership of the single currency and possibly, therefore, the entire European monetary union was, at moments, on the ropes. The conflict in Ukraine and the sanctions levied on Russia had consequences for the Russian economy but also created unease over the political and economic development of eastern and central Europe in general. We saw drastically reduced demand from the global growth engine of recent years, China. This gave new fuel to concerns over an imminent hard landing of the economy there. The severe conflicts in the Middle East started to make themselves increasingly felt via a heavy increase in the numbers of people seeking safety in Europe. The possible effects of the central banks acting out of step – after a number of years of crisis policies – also led to a degree of concern.

There is always uncertainty but, nevertheless, my impression is that it has been unusually high over the past year. Uncertainty in itself can cause problems as it can lead households and companies to hold off consumption and investment, and can reduce companies' willingness to raise their prices. Everything else being equal, a higher degree of uncertainty therefore argues for a more expansionary monetary policy. In addition, greater uncertainty over international developments also entails a greater risk that the Swedish economy will be exposed to such strong negative pressure that we will end up in a really serious situation with persistently falling prices and employment. A desire to lower the chances of such a situation may, in itself, argue for a more expansionary monetary policy.

[3] "Sweden needs its inflation target", published 13 October 2015.

A more expansionary monetary policy

At the start of 2015, we thus found ourselves in an unusual situation with a series of circumstances that suggested that monetary policy needed to be more expansionary: declining confidence in the inflation target, the measures adopted by the ECB to weaken the euro, the risk that the falling oil price would put further pressure on inflation expectations and increased uncertainty over international developments.

Consequently, there was a need to strengthen confidence in the inflation target through clear signals of the Riksbank's ability and willingness to bring inflation back to the two per cent target in a controlled form. We needed to clarify and practically demonstrate that monetary policy had more to give.

The repo rate was already at a historically-low zero per cent and even the interest rates we sometimes call the final interest rates – that is, those actually paid by households and companies – were at historically low levels. But interest rates needed to be even lower and we needed to counteract the increasingly rapid appreciation of the krona.

Negative interest rate?

The most obvious measure was to cut the repo rate further, that is to make it negative – to introduce what, in everyday parlance, was starting to be called a negative interest rate. When we cut the repo rate to zero per cent, we did not observe any major problems. But would making the repo rate negative and quite simply forcing the banks – and, ultimately, perhaps their customers – to pay to keep money in an account really have the same impact on final interest rates for households and companies and, if so, could it be implemented without causing problems elsewhere in the system? One objection towards negative interest rates is that people will choose the alternative of keeping cash in their mattresses. As this would be troublesome and not entirely risk-free, it can be imagined that most people would want to hold off stuffing their mattresses with cash as long as interest rates stay only slightly negative, but it is, of course, difficult to gain clarity as to exactly where such a boundary would lie. If the banks were unwilling to introduce negative deposit rates, would they then attempt to maintain their earnings by not cutting their lending rates either, in the eventuality that the repo rate was cut to below zero per cent? There are some international experiences, albeit short-lived, of negative interest rates that can be looked at – from the euro area, Denmark and Switzerland – but how would the Swedish system react?

Purchasing government bonds?

Another measure with the potential to push interest rates down and counteract the excessively rapid appreciation of the krona was the purchasing of government bonds. There were significantly more comprehensive historical and international experiences of this than there were of negative interest rates.

The bond purchases made by a number of central banks in the wake of the global financial crisis were aimed at pushing down yields on longer maturities. Put simply, the idea is that, if the central bank purchases part of the available debt securities, anybody wishing to have these in their portfolios will be forced to compete for a smaller supply. This will push up the prices for debt securities so that yields will decrease.

Of course, assessments of the effects of central banks' bond purchases vary between different analyses, but there is a lot to suggest that three major central banks (the Federal Reserve, ECB and Bank of England) have succeeded, to some degree, in pushing down long-term yields and weakening their exchange rates.[4] But there has, of course, been some uncertainty over what the effects would be in Sweden's case. There have also been risks to consider, for example that the functionality of the Swedish bond market may start to become impaired if the Riksbank were to purchase a large portion of the supply.

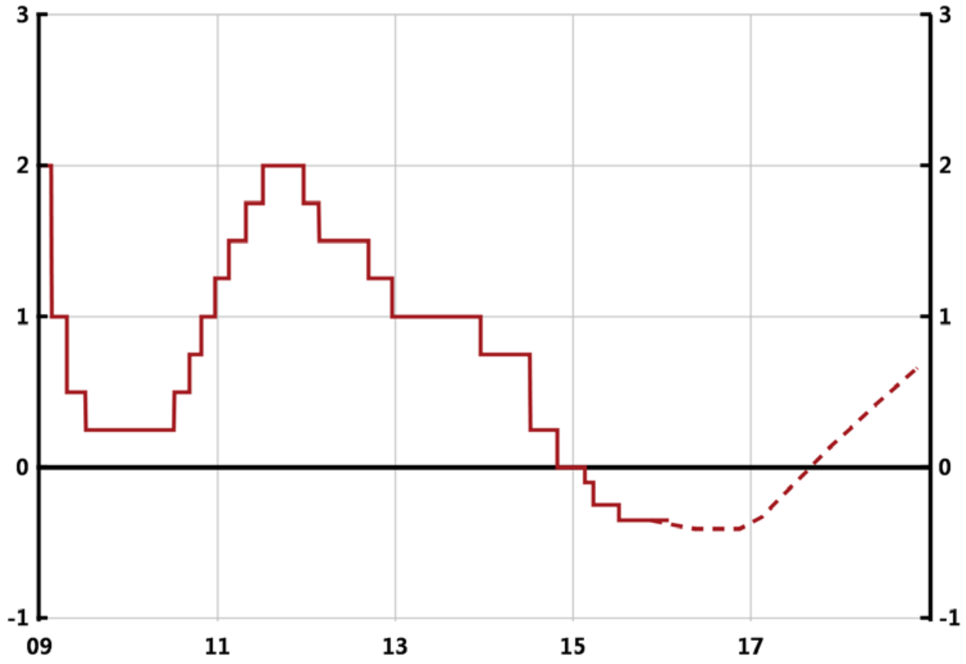
There are also other measures on the menu. One of these is lending to companies via the banks to reduce the differences between the final interest rates for companies and the yields on government securities with corresponding maturities. Another possible measure, justified by the great significance of the krona exchange rate for the development of inflation, is conducting currency interventions.

A cautious combination of a negative repo rate and bond purchases

So how have we chosen to act, and what have the results been, so far? Up to this point, we have kept to changes to the repo rate and repo rate path, and purchases of government bonds. As it has not been completely certain how these would function in practice, there has been reason to proceed cautiously. We have combined several measures over the past year to make the combined effect sufficiently great. Over a number of stages, we have cut the repo rate and/or the repo rate path, at the same time as we have announced and initiated bond purchases in amounts that have been increased in several stages (see Figure 4 and Figure 5). In addition, in our communication, we have emphasised our preparedness, if necessary, to also rapidly increase monetary policy stimulus between the ordinary monetary policy meetings held every second month. In March 2015, we did exactly this – we took a decision on new monetary policy stimulus between two ordinary meetings.

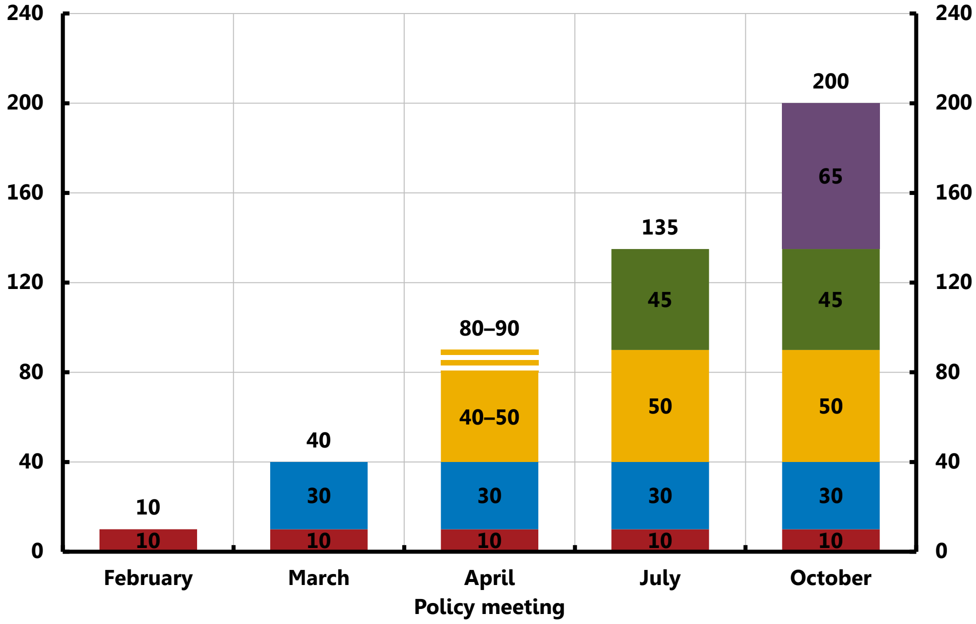
[4] For a review of current studies and an analysis of the effects in Sweden, see De Rezende, R. B., Kjellberg, D. and Tysklind, O., "Effects of the Riksbank's government bond purchases on financial prices", Economic Commentary no. 13, 2015, Sveriges Riksbank.

Figure 4. The development of the repo rate



Note. Per cent. Outcomes are daily rates and the forecasts refer to quarterly averages.
Source: The Riksbank

Figure 5. Bond purchases

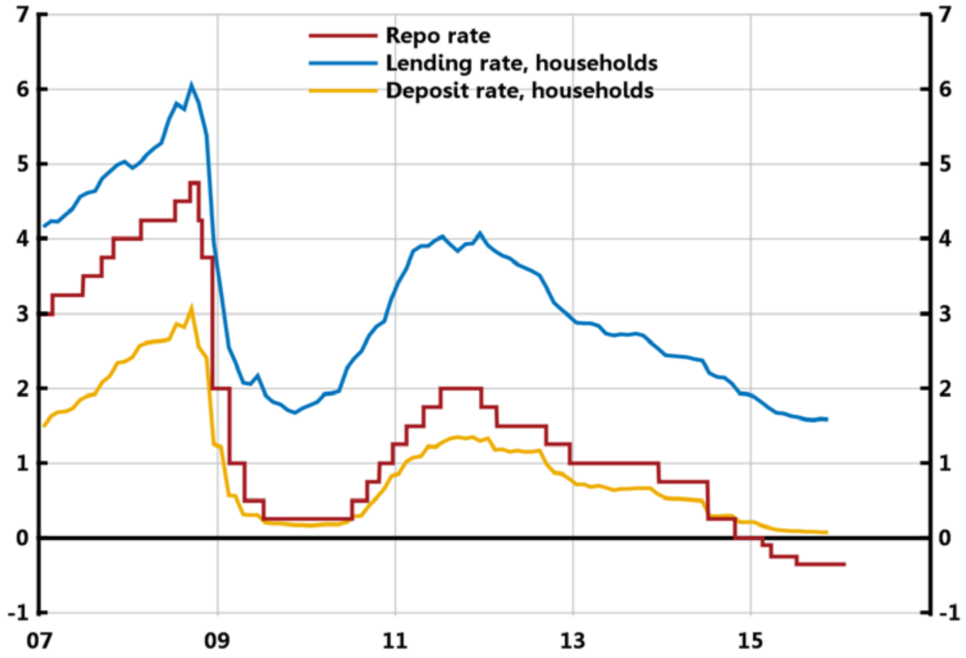


Note. SEK billion. Government bond purchases will continue until the end of June 2016.
Source: The Riksbank

The repo rate cuts have largely worked

As regards the repo rate cuts, so far we have been able to observe that lending rates followed to a normal extent, while deposit rates have stopped at zero for everybody except some larger companies.

Figure 6. Development of interest rates under a negative repo rate



Note. Per cent. Interest rate to households, lending rate refers to loans for housing purposes.
Sources: Statistics Sweden and the Riksbank

The bond purchases have had the intended effect on interest rates

To get an idea of the effects of the bond purchases, staff at the Riksbank have studied the financial markets' immediate reactions to the announcement of the decisions. [5] On those occasions on which the decisions were deemed unexpected, yields fell over the days on which the decisions were announced. In addition, they fell in comparison to corresponding yields abroad, for example in Germany. It therefore seems reasonable to conclude that the bond purchases have pushed interest rates in the economy down – Swedish government bond yields are now probably lower than they would have been without the purchases. These effects are in line with those observed in studies of the Federal Reserve's bond purchases in the United States.

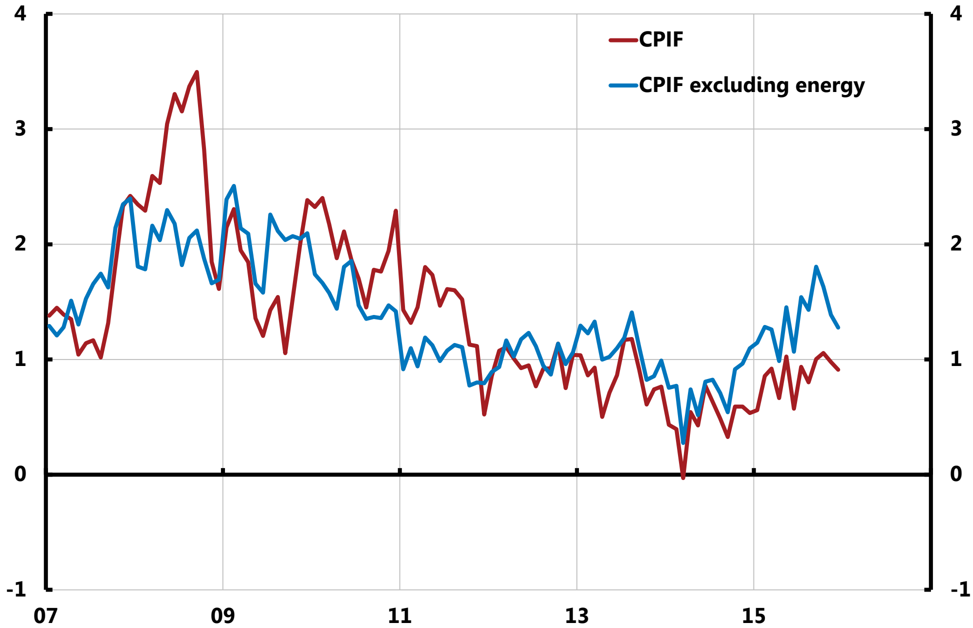
Our analyses of the financial market's reactions to the monetary policy decisions have also concluded that the decisions have entailed a weakening of the krona exchange rate.

[5] De Rezende, R. B., Kjellberg, D. and Tysklind, O., "Effects of the Riksbank's government bond purchases on financial prices", Economic Commentary no. 13, 2015, Sveriges Riksbank.

■ It thus seems to be the case that the additional monetary policy measures that we introduced over the past year have given us lower interest rates and a weaker krona than we would otherwise have. This means that the measures have probably achieved and are continuing to achieve greater demand for domestically-produced goods and services, higher employment and thus, ultimately, greater cost and price increases than we otherwise would have experienced.

The monetary policy conducted last year can therefore be said to have contributed towards turning the development of inflation and inflation expectations around (see Figures 3 and 7).

Figure 7. Inflation has turned up



Note. Annual percentage change. The CPIF is the CPI with a fixed mortgage rate.
Source: Statistics Sweden

The positive effect of last year's measures on inflation expectations is also suggested by the slight increase in what is known as inflation compensation – that is, the difference between the yields for nominal and real government bonds – in conjunction with the announcements of repo rate cuts and bond purchases that came as surprises.

Standing prepared to make monetary policy more expansionary

Inflation and inflation expectations are now higher than they were one year ago. But, over the autumn, the development of inflation was weaker than we predicted and the rise in inflation is still largely due to the krona being weak. If the rise in inflation is broken, confidence in the inflation target may be weakened. We are therefore prepared to do even more if it proves necessary to safeguard the inflation target.

We still have many possible measures in our toolbox. Experiences from the past year suggest that cuts to the repo rate and repo rate path also work below zero and that purchases of securities form a good complement. We can do more in this style if we deem that inflation prospects are changing. Loans to companies via the banks are another possibility that I have already mentioned. In addition, the Riksbank is prepared to carry out currency interventions if the exchange rate develops in a way that is not compatible with a rise in inflation to two per cent. The aim of this would not be to influence the long-run krona rate, but to counteract an overly rapid strengthening before inflation has stabilised around 2 per cent.

I hope that my comments so far have made clear that confidence in the inflation target has been given the highest priority by the Riksbank and that monetary policy has contributed towards the favourable development of the real economy. At the same time, since 2012, we have been careful to point out that a situation with low interest rates over a long period of time may create imbalances on the financial markets and on the housing market. We have therefore clearly communicated to the Government and other authorities that it is important to use various measures to limit risk-taking in the economy. My assessment so far is that significantly more commitment will be required to obtain a functioning housing market in Sweden and to reduce the risks of household indebtedness. The risk otherwise is that we will create new problems that may lead to low growth further on and new difficulties for monetary policy to reach the inflation target. I am concerned about Sweden's position as one of a handful of countries in Europe that has not succeeded in getting a functioning macroprudential policy into place. With such a large financial system and the obvious major vulnerabilities present in the Swedish economy, our focus should be on urgently adopting measures.

Valuable evaluation of monetary policy

We thus have an unusual time behind us that has required unusual measures over the past year. Under such circumstances, it is natural to wonder, for example, how well the inflation target is functioning and which areas monetary policy should be responsible for. It therefore seems appropriate that the Riksdag Committee on Finance has just published its latest assessment of monetary policy.[6] First and foremost, I would like to say that it has been a privilege to have my work reviewed and assessed by people with such impressive academic and practical credentials in the area of monetary policy as those possessed by Messrs. Goodfriend and King. Assessments are a key ingredient in every kind of work to improve operations and this assessment contains many reasonable opinions and suggestions for discussion and further work. We will do this over the spring, before submitting our consultation response in April. Today, I will just express my own initial reactions to a few of the elements in the assessment that come closest to the theme of today's address.

First and foremost, I cannot, of course, avoid noting that Goodfriend and King also consider that Swedish monetary policy since the introduction of inflation targeting has been an overall success. Neither is there any doubt that they support an inflation target as the starting point for monetary policy.

However, they would like to switch target variable to the CPIF, that is the CPI with a fixed mortgage rate. It would not be difficult for us to make such a change, as we already focus most of our analysis and communication on the

[6] Goodfriend, M. and King, M., "An assessment of Swedish monetary policy 2010–2015", Riksdag Committee on Finance, Sveriges Riksdag, 2016.

CPIF. At the same time, I think that there may be reason to evaluate several possible measures, for example the internationally-comparable measure HICP, as my colleague on the Executive Board Per Jansson has previously discussed in a speech.[7]

I appreciate how much Goodfriend and King have endeavoured to base their assessment on the information and experience available at the time of each individual decision, rather than proceeding on the basis of everything we know today about how developments turned out. As they note, we have been through a difficult period with major challenges and difficult decisions. One consequence of this is that it has been particularly difficult to make a good forecast of the repo rate and to take into consideration the repo rate expectations reflected at that moment by pricing on the financial markets. However, speaking for myself, I have always seen the repo rate path as a component of our ambition to be transparent as it shows which repo rate we include in our forecasts. And we always emphasise that the repo rate path itself is a forecast and not a promise.

One important source of the difficulties that Goodfriend and King point out is the unclear allocation of roles, responsibilities and instruments for managing the work of financial stability and macroprudential policy in Sweden. As I have already mentioned, I consider sorting this matter out to be a matter of great urgency, considering that Sweden has one of Europe's largest banking systems in relation to GDP.

This spring, Goodfriend and King's assessment will provide an excellent basis for the discussion of monetary policy and the issues that a modern central bank must manage. These unusual times are placing great demands on both monetary policy and macroprudential policy. It is important that we are able to meet these challenges in the right way.

[7] "Time to improve the inflation target?", published 3 December 2015.