

## Lars E O Svensson: Differing views on monetary policy

Speech by Prof Lars E O Svensson, Deputy Governor of the Sveriges Riksbank, at SNS/SIFR Finanspanel, Stockholm, 8 June 2012.

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My view is that monetary policy should stabilise inflation around the inflation target and unemployment around a long-run sustainable rate. In my opinion, this mandate for monetary policy follows from the Sveriges Riksbank Act and the government bill that contained the proposal for this legislation.<sup>1</sup> According to the Sveriges Riksbank Act, the objective of monetary policy is to maintain price stability. The Government Bill states that the Riksbank should, without prejudice to the objective of price stability, support the objectives of general economic policy with the aim to achieve high employment. Accordingly, the mandate is to maintain price stability and to attain the highest possible sustainable employment. In practice, it is the same thing as stabilising inflation around the inflation target and unemployment around a long-run sustainable rate. At each monetary policy meeting it is therefore a matter of choosing the repo-rate path that according to the corresponding forecasts for inflation and unemployment best stabilises these around the inflation target and a long-run sustainable rate respectively. In recent years I have therefore entered reservations against the majority decision, preferring a lower repo-rate path as I consider this would lead to better target fulfilment for inflation and unemployment.

Several objections to my view of monetary policy have been expressed in the monetary policy discussion. As far as I understand it, these objections are that monetary policy should have more objectives than stabilising inflation and unemployment or other real-economy objectives than stabilising unemployment. The objectives of price stability and the highest sustainable employment – from which stabilisation of inflation and unemployment follows – can thus be set aside for a period if one wants to slow down growth in mortgage lending or to hold interest rates at a higher level, as low interest rates are assumed to build up imbalances. But several objectives, and unclear ones, would risk making monetary policy arbitrary and disjointed. This is contrary to the government bill, according to which the delegation of monetary policy to an independent Riksbank requires a clear objective for monetary policy. This is to ensure there is no scope for arbitrary monetary policy and so that the Riksdag (the Swedish parliament) can evaluate monetary policy on the basis of the established objectives. In my view, it should only be possible to neglect price stability and highest sustainable employment for a limited period if there are clear signs of problems with financial stability, if there are no means of addressing these problems without setting aside price stability and highest sustainable employment and if it can be credibly demonstrated that another, for example a higher, repo-rate path would lead to better target fulfilment for inflation and unemployment in the longer run. This last condition is important. The government bill that contained the proposal for the Sveriges Riksbank Act states namely that the policy rate may only be used to prevent a financial crisis if such a crisis threatens the price stability objective.

In my opinion, there are no clear signs of problems with financial stability at present, there is no lack of means to maintain financial stability and if necessary to limit growth in mortgage

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<sup>1</sup> Sveriges Riksbank Act 1983:1385 and Government Bill 1997/98:40.

lending, and nor is there any theoretical or empirical support for the view that a low policy rate would lead to imbalances in Sweden. If anything, a lower policy rate might instead mean that the banks have less incentive to seek short-term funding in foreign currency and thus the risks linked to this funding will decline.

If the Riksbank succeeds in stabilising inflation around the target and unemployment around a sustainable rate, average inflation should be in line with the target over a longer period of time. In Sweden, however, inflation has significantly undershot the target of 2 per cent over the last 15 years. In other countries that have had a fixed inflation target for the same length of time as Sweden, the average inflation rate has instead been on target. At the same time, inflation expectations in Sweden have been anchored to the target. According to established economic analysis, anchored inflation expectations lead to a negative relationship between average inflation and average unemployment. Then the long-run Phillips curve is no longer vertical, but down-ward sloping, which is confirmed by data. That the average inflation rate has undershot the target in Sweden has thus probably led to substantial costs to the real economy in the form of higher average unemployment. This makes it important to ensure that average inflation is henceforth on target for an extended period of time. The too high average unemployment rate also means that the long-run sustainable rate of unemployment may have been overestimated.

## **The Riksbank's mandate for monetary policy**

### ***Price stability and the highest sustainable rate of employment***

My view is thus that the Riksbank's mandate for monetary policy means that monetary policy should stabilise inflation around the inflation target and unemployment around a long-run sustainable rate. I consider that this follows from the Sveriges Riksbank Act and the government bill containing the proposal for the current Act. The Sveriges Riksbank Act states that the objective of the Riksbank's monetary policy shall be to maintain price stability. The government bill also states that the Riksbank, without prejudice to the objective of price stability, should also support the objectives of general economic policy with the aim to achieve sustainable growth and high employment.

The general economic policy that the Riksbank should support is very much a policy for full employment. According to the 2012 Spring Fiscal Policy Bill, the most important objective for the present government's economic policy is full employment.<sup>2</sup> Full employment has also been an important objective for previous governments.

*High employment* is the same as the *highest sustainable rate* of employment. The Riksbank therefore writes at the beginning of every Monetary Policy Report that it strives to stabilise employment around a path that is sustainable in the long run. The Riksbank therefore conducts what is generally referred to as flexible inflation targeting.

If one follows this line of reasoning, then the Riksbank's mandate for monetary policy is price stability and the highest sustainable rate of employment. It may be interesting to note in this context that the Riksbank has in principle the same mandate as the Federal Reserve. According to the Federal Reserve Act, the US central bank should "promote effectively the goals of maximum employment and stable prices". In this case too, *maximum* employment means *maximum sustainable* employment.

It is sometimes claimed that the Riksbank's mandate is a so-called hierarchical mandate, while the Federal Reserve's mandate is a so-called dual mandate. With a hierarchical mandate, price stability is a primary objective and highest sustainable employment is a subordinate objective, while with a dual mandate price stability and highest sustainable

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<sup>2</sup> Government bill 2011/12:100 page 29.

employment have equal status. As I point out in Svensson (2004), there is in practice no difference between these mandates. It is a question of distinguishing between means and variances, what is known in statistics as first and second moments. With regard to mean inflation and mean employment, the mandate is hierarchical. The central bank sets just one target, which is the inflation target. The highest sustainable rate of employment is not set by the central bank; it is determined by the structure of the economy and the way it functions, and it may change over time. It can only be estimated, not set, by the central bank. With regard to the variance in inflation and employment, the mandate is dual. There it is a matter of stabilising both, in an appropriate trade-off. This applies both to the Riksbank and the Federal Reserve.

Stabilising employment around a long-run sustainable path is in practice the same thing as stabilising unemployment around an estimated, long-run sustainable rate.<sup>3</sup> One can therefore regard stabilising unemployment around a long-run sustainable rate as an operational target to stabilise employment around a long-run sustainable development path.

According to the government bill, the Riksbank should support the objectives of general economic policy with the aim to achieve not only high employment but also sustainable growth. However, the idea is hardly that there is any conflict between sustainable growth and high employment. The Riksbank writes at the beginning of every Monetary Policy Report that, in addition to stabilising employment, it also endeavours to stabilise production around a long-run sustainable development path. Nor is the idea here that there is any conflict between stabilising production and stabilising employment around a long-run sustainable path. However, in practice, the estimation of a sustainable path for production in addition to a sustainable path for employment requires assumptions about and estimates of sustainable average working hours, sustainable total factor productivity and a sustainable path for the capital stock. These assumptions and estimates introduce such large sources of error, and such a large degree of arbitrariness in a sustainable path for production, that in practice such a path provides no guidance for monetary policy. It is better to focus on stabilising unemployment around an estimated long-run sustainable rate. To estimate the long-run sustainable unemployment rate is not easy, but it is much easier than estimating a long-run sustainable path for production. Estimates of the long-run sustainable unemployment rate can also be examined and evaluated, while estimates of a long-run sustainable path for production will in practice become more or less impossible to verify.

With regard to specifying price stability, what measure of inflation should be used? There is a generally-accepted principle that looking a few years ahead, CPIF inflation is the relevant operational measure of inflation. The reason for this is that in the short term, CPI inflation is affected directly by the Riksbank's own repo-rate adjustments and monetary policy should not react to these temporary effects. CPIF inflation does not include these effects. In the longer run, these effects largely cancel one another out, and then it is CPI inflation that is relevant.<sup>4</sup>

The point of using CPIF inflation as the operational measure is thus to best stabilise CPI inflation in the longer run. In the longer run, monetary policy should therefore be assessed with regard to how well it stabilises CPI inflation around the target and unemployment around a long-run sustainable rate.

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<sup>3</sup> The employment gap is equal to the labour-force gap (the "participation" gap) minus the unemployment gap, where the "gap" refers to the difference between the actual rate and the long-run sustainable rate. If the labour force gap is not so small that it can be ignored, the employment gap can be stabilised by more precisely stabilising unemployment around the sustainable unemployment rate minus the labour force gap.

<sup>4</sup> This is entirely in line with the recommendations in the assessment made by Goodhart and Rochet (2011), and which the Riksbank agreed with in its consultation response.

### ***A more expansionary monetary policy gives better target fulfilment***

My view of monetary policy implies that at each monetary policy meeting one should choose the repo-rate path that with the corresponding forecasts for inflation and unemployment best stabilises inflation around the target and unemployment around a long-run sustainable rate. It should not be the case that a lower or higher repo-rate path leads to better target fulfilment for both inflation and unemployment. In other words, it should not be the case that inflation and the inflation forecast are below the target while unemployment and the unemployment forecast are above a long-run sustainable rate. Based on Norwegian central bank deputy governor Qvigstad's (2005) criteria for a good repo-rate path, this can be worded as: For monetary policy to be well-balanced, the inflation gap (the gap between inflation and the target) and the unemployment gap (the gap between the unemployment rate and the long-run sustainable unemployment rate) should have the same sign.

My view is also that the target fulfilment for inflation and unemployment during the entire forecast period is what is important, not just the target fulfilment at the end of the forecast period. For an unemployed person there is a major difference between getting a job in one or two years' time and getting one in three years' time.

It is possible to assess these things with the aid of the so-called four-panel figures that I usually refer to at the monetary policy meetings, and which are included in the minutes of the meetings. These figures are central to monetary policy, as they make it possible to compare different repo-rate paths and to see what level of target fulfilment for inflation and unemployment they result in. I consider these figures very useful when choosing a repo-rate path, when justifying the choice of the repo-rate path and when evaluating monetary policy.

In Figure 1 I summarise some possible policy choices at the monetary policy meeting in April. The figure is based on the assessment of the current situation and the economic outlook presented in the Monetary Policy Update (Sveriges Riksbank 2012c).<sup>5</sup> The figures show clearly that a lower repo-rate path entails better target fulfilment, with inflation closer to the target and unemployment closer to a long-run sustainable rate.

At the monetary policy meeting in April I considered that the forecast for foreign policy rates presented in the Update was too high, and that a much lower forecast in line with implied forward rates was more realistic. I also considered that the forecast for euro area growth was too optimistic. As I illustrated with a further figure at the meeting, an even lower repo-rate path would then be needed to best stabilise inflation and unemployment.

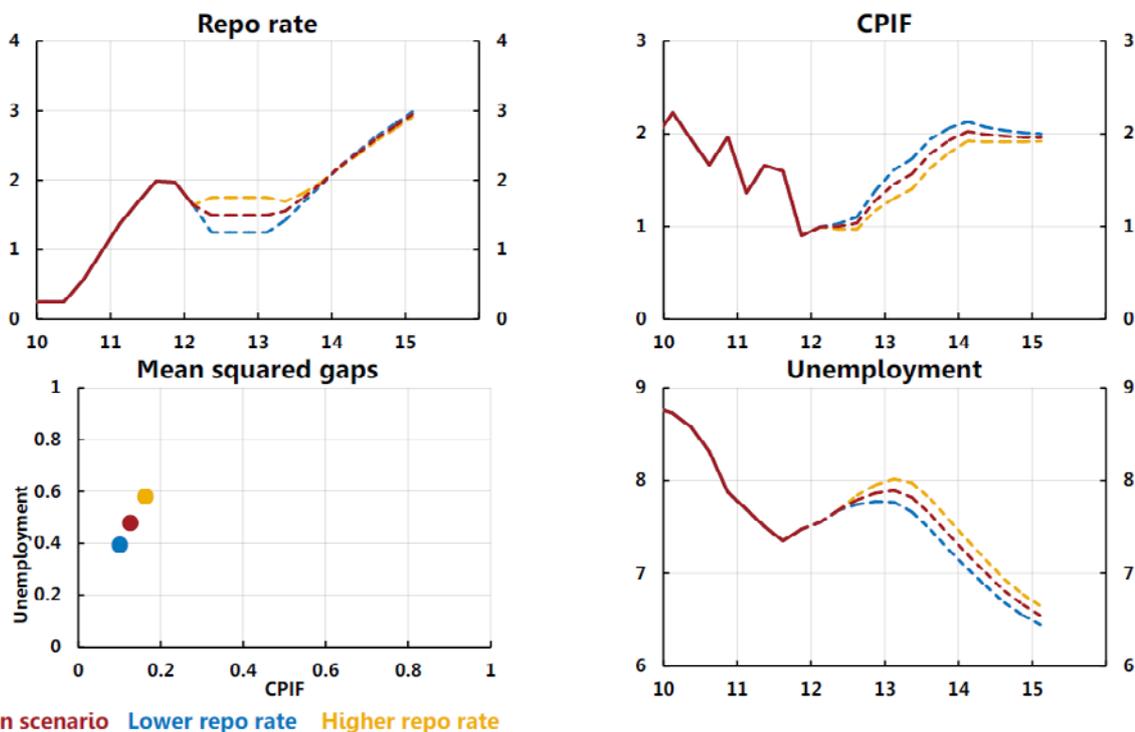
Given these factors, I entered a reservation against the decision, preferring a much lower repo-rate path than the one proposed by the majority. At the next monetary policy meeting in July, there will be a new assessment, with new four-panel figures.

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<sup>5</sup> So-called mean squared gaps are also shown, although they are not needed in this case to judge which of the alternative repo-rate paths leads to the best target attainment.

## Figure 1. Monetary policy alternatives, April 2012

Policy rates abroad according to the main scenario. Long-run sustainable unemployment 6.5%



Sources: Statistics Sweden and the Riksbank

### Objections to monetary policy focusing on inflation and unemployment

The Sveriges Riksbank Act, the government bill proposing it and economic analysis thus all provide strong support, in my opinion, for monetary policy aiming to stabilise inflation around the target and unemployment around a long-run sustainable rate. At the same time, it is clear that the majority of Executive Board members have conducted a monetary policy that aims to do something other than this. As I discuss in detail in Svensson (2011), the majority of the Executive Board began to raise the repo rate in July 2010, despite the forecast for CPIF inflation being below the target and the forecast for unemployment being above any reasonable long-run sustainable rate. In recent years, according to the forecasts made at the time of each monetary policy meeting, a lower repo-rate path than the one chosen by the majority would have led to better target fulfilment for both inflation and unemployment. If a more expansionary monetary policy had been conducted instead, as advocated by my colleague Karolina Ekholm and myself, inflation would have been higher now and closer to the target, and unemployment would have been lower and closer to a long-run sustainable rate.

So what are the most important objections to monetary policy stabilising inflation and unemployment as expressed in the monetary policy discussions at the Riksbank and which can thus justify conducting a different policy?

An overall objection appears to be that monetary policy should have more objectives than stabilising inflation and unemployment, or other real economic objectives than stabilising unemployment. Objectives that could thus justify neglecting the objective of price stability and highest possible sustainable employment.

In line with this, it has been claimed that it is too narrow to merely focus on unemployment, that is, there are other or further variables than unemployment and employment that should be real-economy target variables. It has been claimed that it is resource utilisation more generally that should be stabilised and that a broad approach to the assessment of resource utilisation is preferable. This means that resource utilisation in a more general and abstract sense would be the target variable, and not unemployment. Using several different measures of resource utilisation is highlighted as desirable as individual estimates are uncertain and a single measure does not capture the different dimensions of resource utilisation.

It has also been said that it is not self-evident which measure of inflation should be used, that is, that some other index than the CPIF, for instance the CPI, could be appropriate as an operational target variable within the forecast period.

Another objection is that monetary policy should also be aimed at maintaining financial stability, which then presumably becomes a separate objective for monetary policy. The objective of price stability and highest sustainable rate of employment could then be neglected for a certain period of time, for instance, to avoid unsustainable financial imbalances building up.

A more precise objection is that monetary policy should counteract an unsustainable development in household indebtedness. In this case a sustainable development of household indebtedness will become a separate objective for monetary policy, which can justify neglecting the objective of price stability and the highest sustainable rate of employment.

A more concrete variation of these objections assumes that there is a correlation between a low policy rate and the build-up of unsustainable financial imbalances. A normal level of the policy rate then becomes a separate target for monetary policy and can justify neglecting the objective of price stability and the highest sustainable rate of employment.<sup>6</sup>

One kind of objection thus concerns the fact that, with regard to price stability, it is not as simple as to merely focus on the CPIF during the forecast period and the CPI in the longer run. It is actually not clear which target variable for inflation should be used. With regard to real economic stability, it is not as simple as merely focusing on employment and unemployment. It is actually not clear which real-economy target variable should be used.

The other kind of objection ultimately entails sustainable growth in mortgages and financial stability being separate objectives for monetary policy. One can then neglect the objective of price stability and highest sustainable employment for a while in an attempt to slow down mortgage growth, promote financial stability and maintain a higher interest rate, as it is assumed that low interest rates would build up unsustainable financial imbalances.

### ***Clear targets mean that monetary policy is less arbitrary and easier to assess***

In response to these objections I would like to state that several and unclear targets for monetary policy risks making it arbitrary and difficult to assess, which the work on formulating the Sveriges Riksbank Act aimed to counteract. Delegating monetary policy to an independent Riksbank requires that monetary policy has clear objectives.<sup>7</sup>

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<sup>6</sup> See the discussion of the “normalising argument” in the minutes of the monetary policy meetings and Svensson (2011).

<sup>7</sup> “In the opinion of the government, a delegation of monetary policy to an independent Riksbank cannot take place unless the objective of the activities is clear. An independent Riksbank must therefore be given a democratically-anchored objective for its activities. If no objective is formulated, there would be scope for an arbitrary conduct of monetary policy.

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I therefore consider it important that monetary policy is conducted in a clear and comprehensible manner so that it can be evaluated easily and fairly. At present, the Riksbank makes a qualitative assessment of resource utilisation based on a number of different measures. This contributes to making the justification for the monetary policy decisions unclear and it also makes it more difficult to assess the Riksbank and hold it accountable.

I thus instead want to focus on stabilising unemployment around a long-run sustainable rate and not on trying to stabilise a number of other, quite shaky measures of resource utilisation in the economy, such as the output gap. Compared with other measures of resource utilisation, unemployment has a stronger link to household welfare, is better understood and more familiar to the public, is measured often and with fewer errors and is seldom revised. The fact that other measures of resource utilisation are not appropriate as targets for monetary policy of course does not prevent them from playing an important role as indicators when assessing inflationary pressures and constructing inflation forecasts.

Nor do I see that there is any support for a qualitative assessment of resource utilisation instead of a quantitative, measurable target fulfilment. In economic policy it is now well-known that targets must be measured quantitatively to obtain sufficient weight and to be fulfilled in practice. "What is measured gets done," as they say. This is why there is an inflation target and why fiscal policy endeavours to have measurable surplus targets in public finances. It is thus important to have a measurable, quantitative target fulfilment not just for inflation but also for resource utilisation, and then in the form of unemployment.

### ***Monetary policy should not focus on financial stability as there are better instruments***

With regard to the view that monetary policy should also aim to limit growth in mortgage lending and more generally to maintain financial stability, I would like to state the following: The policy rate is a blunt, indirect and inappropriate means of influencing financial stability in Sweden and it has a direct effect on inflation and unemployment. As I said in the beginning, the objective of price stability and highest sustainable employment should not be neglected out of consideration for financial stability, except in extreme circumstances and then only for a limited time. This only includes such situations where there are clear indications of threats to financial stability and where there are no means to manage these threats without neglecting the objective of price stability and the highest sustainable employment. At the same time, there should be confidence that this type of temporary neglect will in the longer run lead to a better development of inflation and unemployment. This last condition is important. According to the government bill, the monetary policy instruments should only be used to maintain price stability and they should only be used to prevent a financial crisis if this threatens the objective of price stability.<sup>8</sup>

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A further motive [for a clear objective] is that a far-reaching delegation of monetary policy should be combined with follow-ups and controls. The Riksdag as the Riksbank's principal must therefore have the possibility to evaluate its activities on the basis of an objective that is set for the activities." (Government bill 1997/98:40 p. 52)

<sup>8</sup> "The Riksbank shall also promote a safe and efficient payment system. This is a fundamental task for the Riksbank and not an actual objective for its activities. The corresponding task applies to the ESCB. It could be claimed that this task could come into conflict with the Riksbank's objective of price stability, as the Riksbank could in certain situations use the policy rate to avoid a crisis in the banking system. *However, the monetary policy instruments shall, in accordance with the government's proposal, only be used to maintain price stability.* The Riksbank has at its disposal other instruments for managing such situations, for instance, the possibility to grant liquidity assistance, as lender of last resort. *At the same time, there may be situations in which a crisis in the payment system threatens to jeopardise the price stability target. In these situations it should of course be possible to use the monetary policy instruments to prevent a crisis.*" (Government bill 1997/98:40 p. 54, my italics)

In the present circumstances in Sweden I therefore see no clear signs of problems with financial stability, there is no lack of means to maintain financial stability and nor is there any reason to believe that higher policy rates would provide better outcomes for inflation and unemployment in the longer run. I shall elaborate further on this.

Financial stability can be defined as a situation where the financial system is able to perform its most important functions – converting savings into funding, enabling risk management and mediating payments – and has sufficiently large resilience to shocks that may threaten these functions. Under normal circumstances, one can maintain financial stability with the aid of financial supervision and regulation and by publishing analyses and leading indicators, which can warn of threats to stability at an early stage. When it comes to financial stability, monetary policy should thus be the last line of defence, not the first. In Sweden, stricter capital requirements for the banks and minimum levels for liquidity measured by the Liquidity Coverage Ratio (LCR) and the share of stable funding measured by the Net Stable Funding Ratio (NSFR), according to the Basel III agreement and in accordance with the Riksbank's recommendations in the latest Financial Stability Report (Sveriges Riksbank 2012a), provide better means to manage financial stability than the policy rate.

A view is sometimes expressed in the monetary policy debate that monetary policy should give consideration to the risks of imbalances resulting from low real interest rates over a long period of time. There is a lot of talk about a low policy rate entailing risks for rapid credit growth that will lead to high leverage and greater risk in the financial sector. However, I consider that there is no theoretical or empirical support for a low policy rate in itself leading, for instance, to excessively high leverage in the Swedish financial system. This is because the Swedish system is dominated by a few major banks and does not have a large difficult-to-regulate shadow-banking system of financial intermediaries and broker-dealers.

Experiences from different crises indicate that it is not low policy rates in themselves that lead to imbalances and threats to financial stability. It is if the low policy rates lead to an overheated economy that problems arise, such as in Sweden prior to the crisis at the beginning of the 1990s and more recently in Greece, Portugal, Ireland and Spain. It is the overheated economy that entails exaggerated optimism, with for instance property prices being pushed up above levels that are fundamentally motivated, an excessive construction boom and risky investments. It is not the low interest rates in themselves. Low interest rates that do not lead to an overheated, but to a balanced, development in the real economy and inflation do not appear to entail imbalances. There is thus hardly any support for low interest rates in themselves causing problems for financial stability or for high interest rates in themselves improving financial stability.<sup>9</sup>

The current situation in Sweden is rather that higher policy rates may have a negative effect on financial stability. Swedish banks are now choosing to fund themselves by short-term borrowing in foreign currencies, which is cheaper than borrowing in Sweden as interest rates are higher here than abroad. But this entails some risks as foreign investors are an unstable source of funding (Sveriges Riksbank 2012a). When the policy rate in Sweden is raised in relation to interest rates abroad, it becomes even more attractive for the banks to borrow in

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<sup>9</sup> Is the United States an exception? Hardly. A very fragile financial sector arose there without resilience, as a result of a lack of regulation, exaggerated confidence in risk management, very excessive leverage, gigantic hidden off-balance sheet liabilities and large information problems with a large spread of uncertain assets. A modest shock in the form of loan losses due to untenable sub-prime mortgages with low-quality credit assessments then led to a major financial crisis. It was not low interest rates that led to this lack of resilience and to these untenable sub-prime loans, and it is difficult to see that higher interest rates would have prevented the crisis.

foreign currency. This is thus an example of a situation where raising the policy rate will if anything increase the risks to financial stability.<sup>10</sup>

### ***Using policy rate to influence housing prices is costly***

There are also many references to developments in housing prices in the monetary policy debate. Monetary policy would appear to have very little effect on housing prices. If one nevertheless uses the policy rate to influence housing prices (and thereby mortgage growth) this will lead to large costs to the real economy. A study by Claussen, Jonsson and Lagerwall (2011), which is included in the Riksbank's inquiry into the risks in the Swedish housing market shows, for instance, that it would have been very costly in terms of both production and inflation to try to prevent the upswing in housing prices from 2004 onwards using monetary policy. Keeping housing prices at a long-run trend level in 2004–2010 would have required repo-rate increases over several years of up to 5 percentage points in both 2006 and 2007. GDP growth would then have been on average almost 2 percentage points lower up to 2010, which corresponds to an accumulated GDP loss of around 12 per cent. CPIF inflation would have been on average 3 percentage points lower during the same period. The study confirms for Sweden what several other international studies have concluded, such as Assenmascher-Wesche and Gerlach (2010).

One argument that has been put forward for trying to slow down an increase in housing prices is that future falls in housing prices would have negative effects on future inflation and the real economy. However, Claussen, Jonsson and Lagerwall show that the macroeconomic effects of a 20 per cent fall in housing prices would be relatively limited and possible to counteract by adopting a more expansionary monetary policy. This is shown in more detail in the minutes of the monetary policy meeting held in June 2010, when I presented simulations of how expansionary monetary policy can stabilise CPIF inflation and GDP growth following such a fall in housing prices (Sveriges Riksbank 2010).

According to Finansinspektionen's (the Swedish financial supervisory authority) report on the Swedish mortgage market (Finansinspektionen 2012), Swedish mortgages do not constitute any threat to financial stability at present. Mortgage borrowers have a good debt-servicing ability and pass stringent stress tests, credit assessments are thorough, the loan-to-value ratio for new mortgages is declining and the loan-to-value ceiling appears to be effective. If the growth in mortgages or the loan-to-value ratio were to develop in a problematic way further ahead, it is possible to lower the mortgage cap. This is a better means of influencing growth in mortgages and loan-to-value ratios than using the policy rate.

All in all, I consider there is no reason to neglect the objective of price stability and highest sustainable employment to conduct some form of "leaning against the wind" policy, conducting tight monetary policy in the belief that one is thereby improving financial stability, for instance, by limiting mortgage growth. I cannot see that there is any theoretical or empirical support for a higher policy rate in the current conditions being able to significantly improve financial stability in Sweden. To achieve this there are currently better tools within macroprudential policy, for instance, capital adequacy rules, a mortgage cap and minimum levels for the LCR and NSFR. These instruments have a greater and more direct effect on financial stability and mortgage growth. With the Riksbank's work on its financial stability reports and Finansinspektionen's work on its report on the Swedish mortgage market these institutions have very good information on potential risks.

I think that we should do in Sweden what they now appear to be doing in the United Kingdom, that is, conduct monetary policy and financial stability policy separately, with

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<sup>10</sup> However, the risks of borrowing abroad can to a large degree be managed with the minimum levels for the Liquidity Coverage Ratio and Net Stable Funding Ratio in each separate currency, in accordance with the recommendations made in the Riksbank's most recent Financial Stability Report (2012a).

separate policy committees with separate objectives and instruments but, especially given the overlap of some committee members, with full information on which policy is being conducted in each area. This is also natural, as financial stability has a longer cycle and thereby needs less frequent decision-making than monetary policy. The well-functioning relationship between separately conducted monetary policy and fiscal policy in Sweden can, in my opinion, serve as a model for how the relationship between monetary policy and financial-stability policy should be.

If one mixes together monetary policy and financial stability, it also becomes more or less impossible to evaluate monetary policy. Then an overly tight monetary policy can be blamed on an endeavour to maintain financial stability.

## **Inflation and unemployment in the longer run**

### ***Average inflation has undershot the target***

If the Riksbank succeeds in stabilising inflation around the target and unemployment around a sustainable rate, average inflation should be in line with the target over a longer period of time. Indeed, “without prejudice to the price stability objective” can be seen as making sure that average inflation over a longer period of time is close to 2 per cent. But during the period 1997–2011 average CPI inflation in Sweden was 1.4 per cent, measured using real-time data.<sup>11</sup>

One cannot of course expect average inflation to have been exactly on target over the last 15 years. To get an idea of what is possible, however, we can compare the results in other countries that have had a fixed inflation target as long as Sweden, that is, since the early 1990s. It is also reasonable to exempt the very first years of the new inflation-targeting regime for Sweden and other countries. Canada has had an inflation target since 1991, which from the end of 1995 is 2 per cent and its average inflation rate during the period 1996–2011 is 2.0 per cent. The United Kingdom has had an inflation target from the end of 1992, which was however modified in 2003/2004. Up to the end of 2003, the UK inflation target was 2.5 per cent, when measured using the RPIX price index, and the average inflation rate in 1996–2003 was 2.5 per cent. With effect from 2004 the United Kingdom has had an inflation target of 2 per cent for the CPI, which cannot be regarded as any significant change in level as inflation measured as the CPI is on average 0.75 percentage points lower than when measured using RPIX.<sup>12</sup> The average inflation rate for the period 2004–2007 was 2.0 per cent, while the average for the crisis years 2008–2011 is higher, at 3.4 per cent. However, given the higher rate of unemployment in the United Kingdom stemming from the crisis, a well-balanced monetary policy means that inflation should overshoot the target. Australia has had an inflation target of between 2 and 3 per cent for CPI inflation over the cycle since 1993, and its average inflation rate in the period 1996–2011 was 2.7 per cent.<sup>13</sup>

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<sup>11</sup> An older method of calculating the rate of inflation with an unchanged consumer basket was used in real-time data prior to 2005. Using the current method of calculating the inflation rate as the percentage change in the CPI, average inflation was 1.3 per cent during the period 1997–2011, but real-time data are more relevant when evaluating monetary policy. See Sveriges Riksbank (2004).

<sup>12</sup> In the period 1992–1996 the target was expressed as 2.5 per cent or lower in terms of the RPIX. RPIX = Retail Price Index. In the United Kingdom the CPI corresponds to the HICP price index. Since 1993 the average HICP inflation rate has been 0.75 percentage points lower than average RPIX inflation.

<sup>13</sup> New Zealand has had an inflation target since 1990, but its target has been adjusted upwards twice and thus one cannot say that it has had a fixed inflation target.

How have things turned out for the large economies, the euro area and the United States? The euro area has had a target for inflation, although during a shorter period than the countries mentioned earlier. The target is that inflation should be below but close to 2 per cent. The average inflation rate in the euro area in the period 2000–2011 was 2.1 per cent. The United States, on the other hand, did not have an explicit inflation target until the Federal Reserve announced a target of 2 per cent for PCE inflation in January 2012.<sup>14</sup> However, a common view is that the Federal Reserve has even prior to this targeted a core inflation rate of 2 per cent or somewhat lower. The average for core CPI inflation in the United States in the period 2000–2011 was 2.0 per cent and for core PCE inflation 1.9 per cent.

Sweden differs from these examples in that inflation in Sweden has both fallen below and deviated more from the target. Figure 2 shows that all of the five-year moving averages for CPI inflation are well below 2 per cent. The five-year average of CPIX/CPIF inflation has also been well below the target, apart from the period 2003–2004.<sup>15</sup> As the average for CPI inflation is so far below 2 per cent, especially in comparison with other countries that have had inflation targets as long as Sweden, one could perhaps claim that the Riksbank has neglected the price stability objective. However, an even more important question is whether the missed target has also led to costs to the real economy.

### ***Inflation expectations anchored to the target entail a sloping long-run Phillips curve***

The standard response to the question of whether missing the target has led to costs to the real economy is no. This is because average unemployment is independent of monetary policy and the inflation rate. This is in turn because inflation expectations are assumed to adapt to actual inflation. The long-term Phillips curve, which illustrates the relationship between average inflation and average unemployment, then becomes vertical, and average unemployment thus becomes independent of the average inflation rate.

In Sweden, however, inflation expectations as measured according to TNS Sifo Prospera's survey have stabilised around 2 per cent, despite the average inflation rate being lower. This is illustrated in Figure 2, which shows the five-year average of expectations one and two years ahead for all of those interviewed from 1996. The Riksbank has thus succeeded in anchoring inflation expectations around 2 per cent, despite actual inflation being lower on average. That inflation expectations are anchored to the target is good, and makes it possible for the Riksbank to better stabilise unemployment without inflation fluctuating too much.

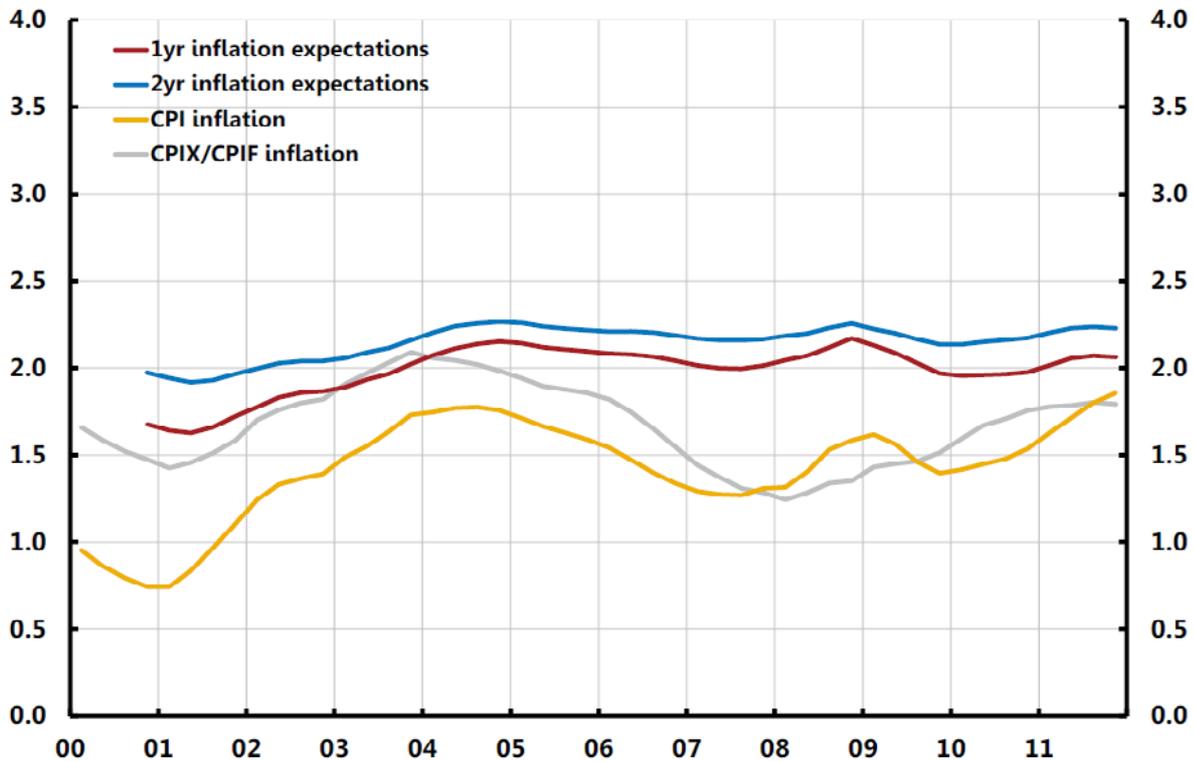
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<sup>14</sup> PCE stands for personal consumption expenditure.

<sup>15</sup> CPIX/CPIF refers to CPIX inflation up to the end of the first quarter of 2008 and CPIF inflation from the start of the second quarter of 2008. The CPIX excludes the effects of indirect taxes, subsidies and mortgage costs from the CPI. The CPIF excludes the direct effects on the CPI of changes in mortgage rates. The average CPIX/CPIF inflation is 0.4 percentage points lower than the target when measured using real-time data for the period 1997–2011.

## Figure 2. Inflation expectations and inflation

Annual percentage change, five-year moving average



Note. The CPIX/CPIF series is constructed from CPIX inflation up to the end of the first quarter of 2008 and from CPIF inflation from the second quarter of 2008. CPI and CPIX/CPIF inflation are measured using real-time data.

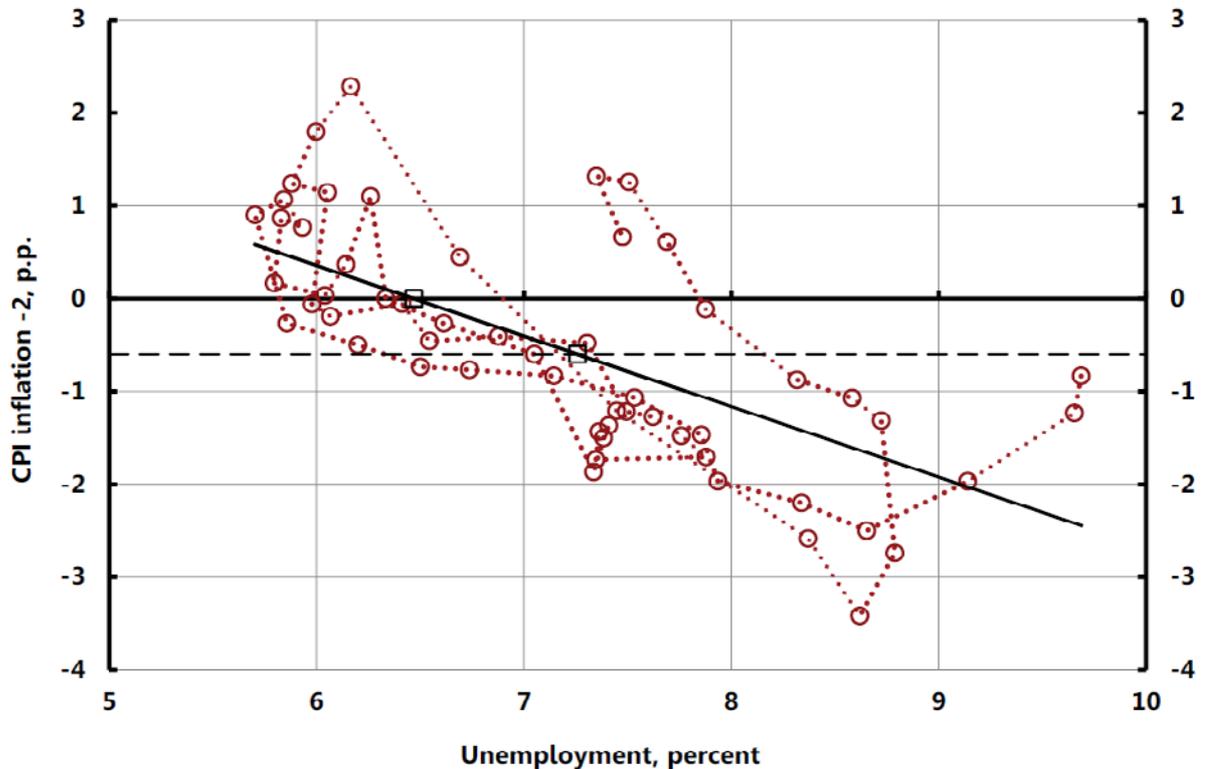
Sources: Statistics Sweden and INS SIFO Prospera.

But if inflation expectations are anchored to the target at the same time as average inflation is deviating from the target, this means that the long-run Phillips curve is no longer vertical, but sloping downwards. This relationship is supported by data and shown in Figure 3. The red circles show the outcome for unemployment and the gap between CPI inflation and the target of 2 per cent from the first quarter of 1998 and up to the end of the fourth quarter of 2011. The black line is an estimated long-run Phillips curve.

If the average inflation rate would deviate substantially from the target, it is hardly likely that inflation expectations would still remain anchored to the target. The estimated long-run Phillips curve is therefore reasonably only relevant in moderate deviations from the target. It is thus marked as a dashed line for average inflation that deviates more than 1 percentage point from the target. That the long-run Phillips curve is no longer vertical for inflation expectations anchored to the target has been noted for the United States in the period 2000–2011 by Jeffrey Fuhrer (2011) at the Federal Reserve Bank of Boston.

**Figure 3. Downward-sloping long-run Phillips curve**

1998 Q 1 – 2011 Q 4



Sources: Statistics Sweden and own calculations.

***Higher average unemployment when average inflation undershoots the target***

The right-hand square on the long-run Phillips curve in Figure 3 shows an average inflation rate that is 0.6 percentage points below the target, which thus corresponds to the deviation in Sweden during the period 1997–2011. This deviation gives an average unemployment rate of 7.3 per cent. The left-hand square corresponds to an average inflation that is on target, at 2 per cent, which gives an average unemployment rate of 6.5 per cent. The difference between these figures is thus 0.8 percentage points. For Sweden it thus appears that an average inflation rate 0.6 percentage points below the target has led to an 0.8 percentage points higher average unemployment rate over the past 15 years than would have been the case if average inflation has been on target.<sup>16</sup> This estimate appears fairly robust for various assumptions. If one, for example, uses CPIX and CPIX inflation (which on average have undershot the target by less than the CPI inflation) the estimated long-run Phillips curve becomes somewhat flatter and gives roughly the same increased average unemployment.

The fact that average unemployment that is compatible with average inflation on target is so much lower than actual average unemployment also indicates that estimates of the long-run sustainable unemployment based on historical averages may have a significant upward bias.

<sup>16</sup> A 95-per cent confidence interval for the increased average unemployment is limited by  $0.8 \pm 0.3$  percentage points and thus lies between 0.5 and 1.1 percentage points. Alternative assumptions and sample periods give roughly the same or a larger increase in average unemployment. For details, see Svensson (2012).

A higher average unemployment rate by 0.8 percentage points over 15 years is of course a very large cost to the real economy of undershooting the inflation target. At present, a higher unemployment rate of 0.8 percentage points corresponds to around 40,000 jobs. In comparison, it can be mentioned that the government's own calculations show that the four stages in the earned income tax credit and the changes in unemployment insurance reduce unemployment in the long run by 0.6 and 0.7 percentage points respectively.<sup>17</sup> The respective reforms are thus expected to have a slightly smaller effect on unemployment than the calculated real-economic cost of inflation on average undershooting the target over the past 15 years.

### ***Implications for future monetary policy***

Why average inflation in Sweden has undershot the target over the past 15 years is a separate and important question that requires thorough examination. I do not intend to discuss this here. But a clear conclusion for future monetary policy is that it is important that the Riksbank ensures that average inflation is actually close to 2 per cent over a longer period of time and that it does not fall as low as during the past 15 years. This means that the inflation target must be regarded as symmetrical and that it should constitute a central point for the fluctuations in inflation. One should thus not be more afraid of overshooting the target during a limited period than undershooting it. It is particularly appropriate to overshoot the target when unemployment is higher than its long-run sustainable rate, as it can then reach its long-run sustainable rate sooner.

The usual way of applying the current inflation target entails that even if the target is undershot over a period of time the central bank still endeavours to maintain inflation in line with the target. Thus the central bank does not attempt to compensate for the previously low inflation with a period when inflation is above the target. To ensure that average inflation is on target over a longer period of time, the central bank could instead have a so-called price level target that means the price level should be stabilised around a price level path that rises by 2 per cent a year. Such a price level target would mean that average inflation is at 2 per cent over a longer period of time. The advantages and disadvantages of a price level target have been discussed at length in academic literature (see for instance Bank of Canada 2011). Since a downward-sloping long-run Phillips curve makes it important to keep average inflation over a longer period of time on target, this strengthens the arguments in favour of a price level target.

A less dramatic change would be a target in the form of a moving average of inflation over a longer period of time, for instance five or ten years (Nessén and Vestin 2005). The Australian central bank has such a target for its monetary policy: to attain an average inflation rate of between 2 and 3 per cent over the economic cycle. However, the central banks in Canada and the United Kingdom appear to have succeeded well in keeping average inflation close to the inflation target without specifying a target for a longer period.<sup>18</sup>

As undershooting the inflation target over a long period of time would appear to have major costs to the real economy in the form of increased average unemployment, it is thus important that monetary policy henceforth is conducted so that average inflation is close to the target over a longer period of time. It is an open question whether this requires some further specification or change to the current inflation target.

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<sup>17</sup> Swedish government (2012, p. 121, table 5.2).

<sup>18</sup> In their evaluation of monetary policy 1995-2005, Giavazzi and Mishkin (2006, p. 77) noted: "However, in recent years the Riksbank has persistently undershot its inflation target; this has been associated with a loss in output and higher unemployment." They recommended that the Riksbank should ensure that it neither undershoots nor overshoots the inflation target over a long period of time, that is, average inflation should be in line with the target over a longer period of time.

In summary, in this speech I have pointed out that it follows from the Sveriges Riksbank Act and the associated Government Bill that the mandate for monetary policy is price stability and highest sustainable employment. I have also explained that this means that the Riksbank shall stabilise inflation around the inflation target of 2 per cent and unemployment around a long-run sustainable rate. A lower repo rate in the last few years would have led to better target attainment for both inflation and unemployment. At the same time, financial stability and mortgage growth under current circumstances provide no reason for keeping inflation below target and unemployment above a long-run sustainable rate. Financial stability and mortgage growth can be better handled with the instruments available in macroprudential policy. It is also likely that average unemployment has been higher in the last 15 years because average inflation has undershot the target. Therefore it is important that average inflation over a longer period is kept in line with the target.

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