Per Jansson: My view on inflation targeting

Speech by Mr Per Jansson, Deputy Governor of the Sveriges Riksbank, at Karlstad University, Karlstad, 11 October 2012.

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Twenty years of a floating exchange rate

I would like to begin by taking you on a trip back in time, twenty years ago to 11 October 1992. Sweden and a number of other countries were then in the midst of a crisis that in many ways is similar to the one many countries in Europe are now undergoing. The situation was critical. Property and financial companies had gone bankrupt, the entire Swedish banking system was rocked to its foundations, unemployment had begun to soar and public finances were drained. The fixed exchange rate was put under severe pressure and many assumed that Sweden would do what it had done so many times before – adjust the value of the krona to get the wheels in motion once again.

Around one month earlier the Finnish central bank had been forced to give up its defence of the exchange rate and let the markka float. One week later, on 16 September, the United Kingdom and Italy decided to give up the fight for sterling and the lira. The Riksbank on the same date had instead raised its repo rate to 500 per cent in an attempt to stop the currency flows and the speculation against the krona. On 6 October, a statement of government policy declared that there was almost total support for the hard currency policy and that the prospects of success were good.

We all know what happened. Just over one month later, on 19 November, the Riksbank was forced to give up the fight and the krona was allowed to float, or perhaps I should say sink. As I have understood things with hindsight, there was no clear plan in place as to how monetary policy would be conducted from then on.[1] And this was perhaps not so strange – with the exception of a couple of brief periods between the wars, Sweden had had a fixed exchange rate for the past 120 years. So it was probably difficult to think along new lines. The aim also seems to have been that Sweden would return to some form of fixed exchange-rate system as soon as possible, and so the idea was to find some way of conducting monetary policy until then.

Inflation targeting has worked well, but has been criticised

Some countries, New Zealand, Canada and the United Kingdom, had begun to apply a new type of monetary policy known as inflation targeting. This entailed setting a numerical target for inflation, which the central bank then tried to attain by using the policy rate to affect aggregate demand. Sweden also jumped onto this bandwagon and it proved to be a much more enduring solution than most people expected at the time.

We have now lived with inflation targeting for almost twenty years. I am convinced that most people today would say that it has worked well on the whole – that it has fulfilled its purpose, and perhaps even exceeded expectations. But when one has got used to a particular system over a long period of time, it is fairly natural to start looking for faults and begin to question whether it might not be possible to make some modifications and improvements. And I do have the impression that inflation targeting in Sweden has recently been criticised somewhat harder and somewhat more often than usual.

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[1] For an interesting account of the situation at the Riksbank at this time, see Andersson, Krister (2003), “Utformningen av inflationsmålet och den penningpolitiska analysramen” (the shaping of the inflation target and the framework for monetary policy analysis), in Lars Jonung (ed), *På jakt efter ett nytt ankare (looking for a new anchor)*, SNS Förlag.

Today I intend to discuss and respond to three types of criticism that have been put forward. The first is the claim that the Riksbank has an inbuilt tendency to set the interest rate too high and has thus caused unemployment to be unnecessarily high. The second criticism suggests that the target for monetary policy should be revised, by raising the inflation target and giving the Riksbank a numerical target not just for inflation, but also for employment or unemployment. The third type of criticism is that monetary policy has recently been unclear and difficult to understand.

Inflation targeting's most important contribution

But before I move on to the different types of criticism, I would like to dwell a little longer on the situation twenty years ago. When analysing the inflation-targeting regime, I believe that it is important to remind oneself of the situation when it was introduced. Why was there such strong support for defending the krona, even though it meant high interest rates in the middle of a recession? What were the problems policymakers were so anxious to resolve?

As I have already mentioned, the recession in the early 1990s can be regarded as a setback following an excessive credit expansion, similar to the situation in many European countries today. The regulation of the Swedish credit market was phased out in the mid-1980s. Combined with a tax system that encouraged borrowing and an overly expansionary stabilisation policy, this contributed to creating a property market bubble. When the bubble burst in the early 1990s, it led to a banking crisis. As this coincided with an international economic downswing, the recession in Sweden was particularly severe.

But there was also a deeper and more fundamental problem in the Swedish economy at that time. Sweden had been caught up in what might be termed a devaluation cycle since the early 1970s. Fixing the exchange rate is equal, at least in theory, to setting a target for domestic inflation. The idea is that domestic inflation should not be able to exceed inflation in the countries to which one's own currency is pegged, at least not for any longer periods of time. But this requires that the commitment to holding a fixed exchange rate is backed up by other policies to ensure its credibility, and this was not the case in Sweden. As there were expectations that inflation would remain high and that the krona would be devalued, wage inflation in Sweden was persistently higher than that abroad. As the exchange rate was fixed, Swedish companies' competitiveness was undermined – a cost crisis arose. To resolve this, it was necessary to devalue the krona, which meant that expectations were fulfilled. This in turn meant that the inflation trend could continue, competitiveness was gradually undermined once again, the exchange rate was devalued one more time, and so on. What is referred to as "the nominal anchor" – the benchmark for inflation expectations and thereby for price setting and wage formation – had come loose.

The widespread support for the defence of the krona should be seen against this backdrop. There was considerable agreement that the devaluation cycle was harmful and must be broken. The only way of doing this that policymakers considered possible was to convince everyone that the commitment to hold onto the fixed exchange rate was irrevocable. Today we may think they overestimated the chances of success and that the defence of the krona thus went too far. But one has to remember that there was no obvious alternative. Inflation targeting was new and untried and not many people were even aware of its existence. Moreover, it was far from obvious that it would succeed where the fixed exchange-rate policy had failed – in establishing an anchor for price setting and wage formation.

We now know that it did succeed and moreover that it did so fairly quickly. If I were to choose what I think is the most important contribution of inflation targeting, and indeed its overall main merit, it would be this – that is provides a nominal anchor for the economy.[2] It is quite

[2] The same conclusion is drawn by Ben S. Bernanke, Thomas Laubach, Frederic S. Mishkin and Adam S. Posen (1999), *Inflation Targeting – Lessons from the International Experience*, Princeton University Press.

clear from a Swedish point of view that inflation targeting has helped "to put the house in order" by providing such an anchor, and it is probably an important explanation as to why the Swedish economy has developed so well since the crisis in the 1990s.

Has the Riksbank systematically set the repo rate too high?

But, as I noted, inflation targeting has nevertheless been criticised, particularly in recent years, so let me now move on to this criticism. One criticism is that the Riksbank has an inbuilt tendency to set the repo rate too high. This is said to have caused inflation to undershoot the target for most of the inflation-targeting period and to have led to unemployment being unnecessarily high, sometimes quantified to tens of thousands of people. I would like to respond to this criticism as I consider it to be misleading and based on oversimplified analyses.

How much has the target been undershot?

The first question to ask is by how much the Riksbank has actually missed the target.[3] The answer to this question is not as obvious as one might think. The inflation target is formulated in terms of the familiar measure CPI (consumer price index) and says that the CPI is to increase by 2 per cent per year. But sometimes there is good reason to allow monetary policy to be guided by other measures of inflation than the CPI. This is something the Riksbank has long emphasized.[4]

One of the most obvious reasons for also looking at other measures of inflation is that when the policy rate is adjusted, this has a direct impact on CPI "in the wrong direction" through households' mortgage costs – when the repo rate is increased, interest costs increase and this is reflected in higher CPI, and vice versa when the repo rate is cut. Seen over really long periods of time this should not matter as the Riksbank's cuts and raises of the repo rate can be expected to offset one another. However, during periods when the repo rate is adjusted substantially and in the same direction, there is reason to consider these direct monetary policy effects, as otherwise the Riksbank might be tempted to "chase its own tail" – a policy rate increase leads to higher CPI, which in turn leads to further policy rate increases and higher CPI, and so on.

The period with an inflation target has been special in the sense that the repo rate has fallen more than it has risen. One important reason for this is that it has been possible to cut the rate as confidence in the inflation target has increased and inflation has slowed down. For example, in 1995 the repo rate was almost 9 per cent, while three years later it was around 3 per cent. Since then it has only exceeded 4 per cent for brief periods.

If one calculates the average inflation rate since 1995 – when the inflation target began to apply[5] – with a measure, the CPIF, that excludes the direct effects of monetary policy, it amounts to 1.85 per cent. As CPI inflation during the same period was around 1.5 per cent, one can say that 3–4 tenths of the deviation in the CPI from the inflation target is explained by the Riksbank having cut the repo rate more than it had raised it during this period. Even though the target is specified in terms of the CPI, this information is fairly important when determining how successful monetary policy has been.

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[3] The Riksbank's long-run target fulfilment is discussed by Andersson, Björn, Stefan Palmqvist and Pär Österholm (2012), "The Riksbank's attainment of its inflation target over a longer period of time", *Economic Commentary* no. 4, 2012, Sveriges Riksbank.

[4] See, for instance, Heikensten, Lars, (1999), "The Riksbank's inflation target – clarifications and evaluation", *Sveriges Riksbank Quarterly Review*, 1999:1, pp. 5–17.

[5] The reason why the inflation target did not begin to apply from January 1993 was that it was realised that the large depreciation in connection with letting the krona float would result in a one-off increase in the price of imported products and thus a relatively large, but temporary, increase in the inflation rate.

Favourable developments have held inflation back

Of course, it is also important to analyse *why* inflation has undershot the target, even after these direct effects of interest rate changes have been excluded. My view is that growth in the economy has often been surprisingly high during the periods when inflation has been unexpectedly low. The combination of low inflation and high growth indicates that the economy was affected by positive changes on the supply side. The Riksbank and other forecasters have, for instance, often been surprised by the high productivity growth in the Swedish economy. As I see it, it is thus largely unforeseen, but beneficial developments that have kept inflation down. It is not, as one might sometimes get the impression in the current debate, a result of the Riksbank systematically putting on the brakes, thus pushing down demand and holding back price increases. If this had been the case, the low inflation would have gone hand in hand with a much weaker growth in the economy.

So is this development in inflation a poor result for monetary policy? It is of course possible to have different opinions on this. But from what I have said so far, it should be clear that I believe there are good explanations as to why inflation has been slightly lower than the target. The repo rate has been cut more than it has been raised during this period, and there have been changes in the economy – which have been difficult to forecast and often beneficial – that have dampened inflation.[6]

To gain further perspective, it may also be valuable to go back to where I started, twenty years ago, just before the inflation target was introduced. As I observed earlier, the high inflation trend at that time was a fundamental problem in the Swedish economy. During the decades preceding the crisis of the 1990s, average inflation was almost in double figures and varied substantially from year to year. Suppose one would have claimed at that time that inflation from 1995 and seventeen years onwards would be on average just below 2 per cent and much more stable, and that growth during this period would not be lower than before, but on the contrary somewhat higher. I am pretty sure that one would have been met with considerable scepticism. And very few would probably have characterised a monetary policy that contributed to this as unsuccessful.

This is a rather different picture than the one on which the criticism of tens of thousands of "lost jobs" is based. The latter instead appears to view the relatively limited undershooting of the target as a major failure, without any real mitigating circumstances. It also appears to assume that the Riksbank for some reason has intentionally and systematically aimed to attain a lower inflation rate than the 2 per cent it has itself set as the target. It is difficult to see the logic in such behaviour. And it is definitely not something that I recognise after working at the Riksbank at various times over the past fifteen years.

Wages not necessarily based on incorrect expectations

There are also other objections to the criticism that monetary policy should have cost tens of thousands of jobs. One reason claimed for the unnecessarily high unemployment is that real wages, that is, wages adjusted for inflation, have been higher than they would otherwise have been if inflation had been on target. In other words, the Riksbank is said to have "tricked" the social partners into setting wages too high in relation to the inflation that was later realised.

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[6] Several people have claimed that undershooting the inflation target has led to unnecessarily high unemployment. Assarsson, Bengt (2011), "Riksbanken måste ta sitt arbete på större allvar" (the Riksbank must take its work more seriously), debate article in the newspaper Dagens Nyheter, 2 May, 2011, is one example. Svensson, Lars E.O. (2012), "The Possible Unemployment Cost of Average Inflation below a Credible Target", unpublished article, (http://people.su.se/~leosven/papers/Phillips.pdf), tries to quantify the number of people unnecessarily unemployed using an estimated Phillips curve. His calculation method implies that the reasons for CPI inflation undershooting the target are of no importance for the effects on unemployment. It also means that average CPIF inflation is unimportant in this context.

However, it is far from clear what inflation expectations are used as a base for wage setting. In the long run, say five years, expectations are well anchored around the inflation target of two per cent. But in the shorter run, expectations vary more and follow actual inflation more closely. It may be that wage setting is based on the expectations in the somewhat shorter run. Expectations can be measured in different ways that give slightly different results. The measure of inflation expectations that appears to have the strongest link to actual wage increases is firms' inflation expectations one year ahead from the National Institute of Economic Research's business tendency survey.[7] According to this measure, inflation expectations have followed actual inflation fairly well. In other words, the agents have not been "tricked", but have realised that inflation can deviate from the target in the short run. If wage increases are based on this measure, then in other words real wages have not been too high and unemployment has thus not been "unnecessarily high".

Before I move on to the next type of criticism, I would like to emphasise that what I have said here should not be interpreted to mean that I wish to make light of inflation undershooting the target. The Riksbank should of course do its best to attain the inflation target and I can assure you that we do. However, it is not an easy task, and I believe that many people understand this.

Proposal for higher inflation target and target for employment

Another type of criticism is aimed at the target formulated for monetary policy. It comes in slightly different forms, but a common theme is that the inflation target should be raised, and that it should be combined with an explicit target for employment or unemployment. One concrete proposal that is put forward is that monetary policy should support a target for an employment rate of 80 per cent.[8]

The level of central banks' inflation targets has begun to be discussed internationally as a result of the recent crisis.[9] One argument is that if the targets were set slightly higher, it would make it easier to stimulate economies in deep recession, as it would reduce the risk of the policy rate reaching the zero lower bound. This is a relevant argument. Moreover, it is probably not the case that an inflation rate of, say, 3 per cent would be more problematic to live with than an average inflation of 2 per cent. It is only at considerably higher figures that inflation is harmful.

Difficult to change an established inflation target

However, it is one thing to set an inflation target for the first time, and a quite different thing to raise an existing target. If we go back twenty years in time, to when the policy of inflation targeting was introduced, the target could in principle have been set at 3 instead of 2 per cent. It is possible that it would have been a little more difficult to make the target credible, partly because it should have been higher than actual inflation at the time – which was fairly exactly 2 per cent, and partly because the few central banks that had begun targeting inflation at that time had chosen targets on or close to 2 per cent.

But the problems would most likely be much greater if one were to *change* an already established inflation target. There is a risk that, for instance, an increase from 2 to 3 per cent could be interpreted as an indication that the target will be raised a little every now and then,

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[7] The analysis in this section is taken from Flodén, Martin (2012), "A Note on Swedish Inflation and Inflation Expectations", unpublished paper, Department of Economics, Stockholm University. http://people.su.se/~mflod/files/swedishinflation.pdf

[8] See, for instance, the Left Party's reservation in the Assessment of monetary policy 2010–2011, Riksdag Committee on Finance report 2011/2012:FiU24.

[9] See, for instance, Blanchard, Olivier, Giovanni Dell'Ariccia and Paulo Mauro (2010), "Rethinking Macroeconomic Policy", IMF Staff Position Note February 12, 2010, SPN/10/03.

when the situation is perceived as problematic. There is even a risk that the nominal anchor in such a case could come loose. Sooner or later expectations would adjust to the new target, but the adjustment period could prove costly. The central bank might feel forced to conduct a very tight policy to convince the agents in the economy that this was indeed a one-off increase of the target. So far, no government or central bank has made the assessment that an increase in the inflation target would have sufficient advantages to outweigh the potential drawbacks.

Monetary policy only affects employment indirectly in the long run

When setting a policy target, it is important that whoever is to meet the target can do so on a lasting basis. A natural target for a central bank is to keep inflation at a particular level over time. The central bank's ability to govern inflation ultimately depends, somewhat simplified, on its ability to affect the amount of money in the economy. It cannot steer inflation with a high amount of precision, but still well enough to ensure that it is on average close to the target over time.[10]

But when it comes to targets for employment, monetary policy does not have the same power. The best way for monetary policy to promote a good long-run development of employment is to "keep the house in order". By this I mean keeping inflation low and stable – supplying a nominal anchor – and in addition holding the economy in balance by dampening fluctuations in economic activity. This creates a good macroeconomic environment where companies dare to invest and hire. The possibility of monetary policy to influence the long-run employment rate, the equilibrium level, is thus in all essentials *indirect*.

Employment target not meaningful and potentially counter-productive

The long-run employment rate is essentially determined by factors beyond the control of monetary policy, such as demography and, above all, the functioning of the labour market. If these factors together imply that what is possible to attain is a long-run employment rate of, say, 75 per cent, it would be meaningless to give the central bank the task of promoting an employment rate of 80 per cent. What monetary policy might be able to do in such a situation is to make the employment rate *temporarily* reach 80 per cent by overheating the economy. But nothing would be gained by this, as the employment rate would soon return to 75 per cent. However, the overheating, in turn, could cause problems that might be difficult to deal with, such as making inflation expectations rise and creating asset market bubbles. Thus, one cannot give the central bank a numerical target for employment that it should strive to attain in the same way as an inflation target.[11]

It is sometimes claimed that the Federal Reserve is an example of a central bank with an employment target. Although the Federal Reserve Act states that the Federal Reserve shall "promote effectively the goals of maximum employment, stable prices, and moderate long-term interest rates", this does not mean that it in practice works with a numerical target for employment.[12]

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[10] However, there is a research literature on so-called fiscal dominance that suggests that the central bank may experience difficulty steering inflation if public debt is too high. See, for instance, Leeper, Eric, M. and Tack Yun (2006), "Monetary-Fiscal Policy Interactions and the Price Level: Background and Beyond", *International Tax and Public Finance* 13(4), pp. 373–409 and Cochrane, John, H. (2011), "Inflation and Debt", *National Affairs* 9, Fall 2011, pp. 56–78.

[11] Letting the central bank itself determine the employment target is no solution, either. As discussed in the section on criticism of a lack of clarity, assessing what could be an appropriate target level/equilibrium level entails considerable problems.

[12] A press release in connection with the Federal Reserve introducing an inflation target on 25 January 2012 stated that: "The maximum level of employment is largely determined by nonmonetary factors that affect the structure and dynamics of the labor market. These factors may change over time and may not be directly

One can illustrate the fact that the long-run level of employment is determined by factors other than monetary policy in different ways. Following the crisis in the 1990s, unemployment and the employment rate have varied around an apparently unchanged long-run level, despite the policy rate having been both relatively high and very low during this period. Although there is a relationship between monetary policy and the labour market in the short run, monetary policy does not seem to have influenced the labour market on average. Despite periods of very strong growth and economic activity, unemployment has never been lower than just under 6 per cent, with an average rate of around 7 per cent since 2000. An overwhelming proportion of unemployment is thus structural rather than cyclical. This picture is also supported by unemployment varying substantially between groups. For instance, it is very high among people who do not have upper-secondary school approved grades, as well as among immigrants and young people. These groups comprise a relatively large share of job-seekers. Structural measures to enable these groups to gain a foothold in the labour market are a better recipe than expansionary monetary policy for bringing down unemployment. A further indication that long-run labour market developments are governed by factors other than monetary policy is that unemployment has varied substantially between the countries in the euro area, despite their common monetary policy.

Trying to place the responsibility for employment with monetary policy and the central bank is thus, in my opinion, not very meaningful. It could even be counter-productive as the focus is moved from the places where the problems really can be dealt with – the labour market and the political sphere – to a place where they cannot. Sometimes one almost gets the impression that the actual purpose of trying to transfer responsibility for employment to the central bank is to avoid having to take the fairly unpleasant decisions that might be needed to create good conditions for employment. Of course, it would be much easier if the employment problem merely concerned cutting the policy rate to a low level and keeping it there. But it is not that simple.[13]

Has monetary policy been unclear?

Let me now move on to the third type of criticism. It claims that monetary policy has been unclear and difficult to comprehend, particularly in recent years. According to some, it has been difficult to understand the motives behind some of the decisions and it has not been very clear why the decisions reached were preferable to the alternatives.

I can have some understanding of this criticism and I will return to this. But first I would like to discuss the question of what is meant by a *clear* monetary policy. It is not self-evident, as we shall see, and different people appear to mean slightly different things.

A theory-based policy is not necessarily clearer

The academic literature on monetary policy often describes inflation targeting as the central bank minimising a so-called loss function. This loss function is a weighted sum of a measure of the variability of inflation and the variability of the real economy. The loss function can, somewhat simplified, be written as

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measurable. Consequently, it would not be appropriate to specify a fixed goal for employment; rather, the Committee's policy decisions must be informed by assessments of the maximum level of employment, recognizing that such assessments are necessarily uncertain and subject to revision. The Committee considers a wide range of indicators in making these assessments."

13 Vredin, Anders, Martin Flodén, Anna Larsson and Morten Ravn (2012), *Enkla regler, svåra tider – behöver stabiliseringspolitiken förändras? (Simple rules, difficult times – does stabilisation policy need to be changed?) Economic Policy Group Report 2012*, SNS Förlag, draw the conclusion that there is not sufficiently strong argument to supplement the Riksbank's inflation target with an explicit target for unemployment, or for raising the inflation target.

$$L = \sum(\pi - \pi^*)^2 + \lambda \sum(y - y^*)^2,$$

where π is the forecast for inflation, π* is the inflation target and y-y* is the forecast for resource utilisation in the economy. The parameter λ represents the importance the central bank gives to stabilising the real economy in relation to stabilising inflation.[14]

It is thus a question of finding the interest rate that minimises the squared forecast deviations between actual inflation and the inflation target during the forecast period and the squared forecasts for resource utilisation.[15] This theoretical description has been very useful in developing the policy of inflation targeting. It captures in an intuitive and relatively simple way the essence of inflation targeting and it has helped to structure our thinking.[16]

However, the step from theory to practice is far from as simple and straightforward as one might think. One often gets the impression from the current debate that "clarity" in monetary policy means that the central bank should follow this theoretical description very closely. Accordingly, monetary policy decisions should be justified on the basis of a detailed quantified path for both resource utilisation and the deviation of inflation from the target.

The expression "nothing is as practical as a good theory" probably applies in many ways, but to be really practical also requires that the theory captures the central elements as they appear in real life and – in particular – that one is aware of its shortcomings and faults.

Measurement and estimation problems make the step from theory to practice difficult…

One circumstance that very much complicates the step from theory to practice is that while the variables in the loss function are well specified in theory, in practice it is far from obvious how they should be measured. Resource utilisation, y-y*, can be regarded as a summarising measure of developments in the real economy and states how far production resources, that is, labour and real capital, are used in relation to the level that is sustainable in the long run, or the "normal" level. Unfortunately, it is not possible to directly observe how high the level of resource utilisation in the economy is, and nor is there any generally-accepted view of how this should be calculated. It is thus scarcely possible to say that a particular policy will lead to resource utilisation increasing or decreasing by exactly this or that figure.[17]

Sometimes the argument is put forward that it is much easier if one uses the deviation between actual unemployment and long-run sustainable unemployment, or equilibrium unemployment, instead of resource utilisation in the loss function. But I am quite sure that

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[14] Svensson, Lars E.O. (1997), "Inflation Forecast Targeting: Implementing and Monitoring Inflation Targets", *European Economic Review* 41, pp. 1111–1146 introduced this type of loss function to analyse so-called flexible inflation targeting. However, the behavioural assumption that the loss function (or very similar variations of it) implies, has a long tradition in analyses of monetary policy (for example, Kydland, Finn E. and Edward C. Prescott (1977), "Rules Rather than Discretion: The Inconsistency of Optimal Plans", *Journal of Political Economy* 85, 473–491.)

[15] One can also calculate the mean value of these deviations, what is known as the mean squared gap. The mean squared gap for inflation and resource utilisation can then be drawn in as points in a figure; see, for instance, the article "A method for assessing different monetary policy alternatives" in the Material for assessing monetary policy 2011, Sveriges Riksbank.

[16] See, for example, Apel, Mikael, Per Jansson and Lars Heikensten (2007), "The role of academics in monetary policy: a study of Swedish inflation targeting", *Sveriges Riksbank Economic Review* 2007:1, pp. 21–58.

[17] The document "Monetary policy in Sweden 2010", Sveriges Riksbank, summarises the Riksbank's monetary policy strategy. It is stated there (p. 5) that monetary policy "in addition to stabilising inflation around the inflation target, also strives to stabilise output and employment around long-term sustainable paths". However, this does not mean that policy needs to be pegged to specific numerical estimates of these paths; see the continued discussion in this speech.

anyone who has ever tried to estimate equilibrium unemployment will agree with me that it is not much easier than estimating normal resource utilisation or the long-run sustainable GDP trend. Unemployment data is perhaps not revised as often and as much as GDP data, but this is not the only reason why estimates of equilibrium unemployment are extremely uncertain and difficult to use as a basis for economic policy decisions.[18]

... as does the fact that more than one person makes the decisions

However, the gap between theory and practice is not only about measurement and estimation problems. Problems of this type would be difficult enough to handle even if the monetary policy decisions were made by a single decision-maker. But in reality we are six individuals who decide on the repo rate. And as these issues are ultimately a question of judgement it is up to each member of the Executive Board to make his or her best estimate of which measure or measures of the development of the real economy he or she believes monetary policy should focus on to, as it says in the preparatory works of the Sveriges Riksbank Act, "support the objectives of general economic policy for the purpose of attaining sustainable growth and a high level of employment".

She or he may also make the assessment that factors other than the forecast for inflation and various measures of resource utilisation should in some situations be taken into account in the monetary policy decisions. This may be a question of paying attention to economic developments in the longer term, beyond the forecast horizon, or risks that are difficult to quantify relating to the financial parts of the economy.

The fact is that one of the main aims of having an Executive Board is that its members should have slightly different views on things. When the Executive Board was established in 1999 the more or less explicit aim was that it would consist of people with different backgrounds, experience and knowledge. The idea behind this "diversification" is that committees tend to make better decisions than individual policymakers, as a committee can "pool" its experience and knowledge.[19] And in order to have something to "pool", the people on the committee should of course not be too alike.

I believe that everyone who has ever been a member of the Executive Board of the Riksbank agrees with the general wording that the Riksbank should stabilise inflation around 2 per cent and at the same time help to stabilise the real economy. This is also the essence of the Sveriges Riksbank Act and its preparatory works. However, this does not mean that actual monetary policy can be linked to the theoretical description in a simple and very strict way. My impression is that among both the present and former members of the Executive board there is a lot of scepticism towards far-reaching and strict parallels between theory and practice. Such parallels would paint far too simple a picture of monetary policy and would give the impression that there is a precision and exactness in monetary policy – a possibility

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[18] For a slightly older, but still very readable article, see Rogerson, Richard (1997), "Theory Ahead of Language in Economics of Unemployment", *Journal of Economic Perspectives* 11 (1), pp. 73–92. A more recent reference that is also relevant in this context is Carlsson, Mikael (2012), "Monetary policy and unemployment: A conceptual review", under publication in *Sveriges Riksbank Economic Review* 2012:3. The problems with basing economic policy on estimated trends and long-run equilibria are illustrated in, for instance, Orphanides, Athanasios (2004), "Monetary Policy Rules, Macroeconomic Stability and Inflation: A View from the Trenches", *Journal of Money, Credit and Banking* 36(2), pp. 151–175 and Orphanides, Athanasios and Simon van Norden (2002), "The Unreliability of Output-Gap Estimates in Real Time", *Review of Economics and Statistics* LXXXIV (4), pp. 569–583.

[19] There is support for this view in research, see for example Blinder, Alan S. and John Morgan (2005), "Are Two Heads Better Than One? Monetary Policy by Committee", *Journal of Money, Credit, and Banking* vol. 37, pp. 789–812.

to "fine tune" – that simply does not exist. This would possibly give an illusion of "clarity" but would, as I see it, merely be a chimera.[20]

The Riksbank is hardly unique in this respect. I have no doubt that such scepticism also exists in the monetary policy committees of other countries. As far as I know, there is no central bank that literally conducts and describes its monetary policy in accordance with the simple loss function that I showed earlier. The central bank that comes closest is probably Norges Bank, but it too has recently taken some steps away from a too theory-based interpretation of practical policy in terms of the simple loss function.[21]

An incorrect estimate of the equilibrium level leads to incorrect policies

One of the risks of a policy that ambitiously tries to stabilise the real economy around a numerical, long-term target for, for instance, production or employment, is that the estimate may be incorrect. If so, this will lead to policy being conducted incorrectly. If the estimate of the long-term sustainable rate of production or employment is too high, monetary policy will be too expansionary, which can lead to problems with the nominal anchor. It has been claimed that this is an important explanation of the high rate of inflation in the United States during the 1970s, the period of the "Great inflation". It is claimed that the Federal Reserve pursued a too activist stabilisation policy at that time, based on a too-high estimate of the long-term sustainable rate of production.[22]

Before I go on, I would like to emphasise that theoretical research has been valuable for the development of the monetary policy framework that we have today in Sweden and many other countries. But in this particular case it feels as though theory is not being used as a tool to model and structure reality but rather the opposite; that is, that one tries to adapt reality so that it fits the theory. In my world at least this is not the way to proceed if you want to make monetary policy clearer.

A lack of clarity on a more general level?

There is also a more general criticism that the Riksbank's communication has not always made it easy to understand exactly why certain decisions have been made and why these decisions have been seen as being better than conceivable alternatives. Here, as I understand it, it is not a question of the critics lacking explanations in terms of any specific loss function, but rather that they feel the Riksbank's reasoning has not been clear enough on a more general level.

This is a criticism that I understand a bit better. Let me try to explain my view on this. The criticism often seems to centre on the debate between the members of the Executive Board in recent years, during the recovery from the global financial crisis. Put briefly, a majority of the Board members have advocated a somewhat higher repo rate than the minority. I would like to stress that it has not been a question of huge differences – it has not been about

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[20] The economist who has probably gone furthest in his criticism of fine tuning in monetary policy is Milton Friedman. In Friedman, Milton (1960), *A Program for Monetary Stability*, Fordham University Press, he writes, for example: "[T]he central problem is not to construct a highly sensitive instrument that can continuously offset instability introduced by other factors, but rather to prevent monetary arrangements from themselves becoming a primary source of instability".

[21] See Ejven, Snorre and Thea B. Kloster (2012), "Norges Bank's new monetary policy loss function – further discussion", *Staff Memo* No. 11, 2012. What Norges Bank has done, more specifically, is to introduce a criterion that monetary policy should be "robust". What this means in practice is that monetary policy should try to prevent financial imbalances from arising.

[22] See for example Orphanides (2004) in footnote 18, who notes that: "The subtle policy change in 1979 reflected a shift to more modest but attainable goals. Reducing the excessive emphasis on stabilizing the level of economic activity around its uncertain potential and concentrating instead on the inflation outlook for policy guidance provided the foundation for stable sustainable growth".

whether monetary policy should be expansionary or contractionary, but merely about exactly how expansionary it should be. The repo rate has been low ever since the crisis, and it is still low.

One type of criticism is that the majority has not been consistent, but has referred to a number of slightly different arguments to justify the somewhat less expansionary policy.[23] There may be something in this. However, it is important to remember here that the Executive Board consists of six individuals who have their own personal opinions. The majority is not in every respect a united team that shares exactly the same views on all matters. Nor has it consisted of the same individuals throughout this period. From time to time, opinions have been quite divided on a range of issues, but I would say that the main dividing line between the majority and the minority is that the majority has been more concerned about household debt. Many external observers also seem to have interpreted the situation in this way.

Another type of criticism is based on this, but claims that the reasoning of the majority on the risks associated with household debt has been too vague. My perception is that what the critics seem to lack are quantifications of how monetary policy is expected to affect the situation. I can understand this criticism to a certain extent too.

It would without doubt be desirable if we were able to say, for example, that a somewhat higher interest rate reduces the risk of a dramatic fall in house prices in the future by so many per cent, or that a level of household debt of x per cent is problematic while a level of y per cent is not. Unfortunately, however, neither the Riksbank nor any other central bank – or for that matter the science of economics as such – has reached that point yet. One of the lessons of the global financial crisis was just this – that we need to deepen our understanding of the workings of financial markets and the links between the financial sector and the rest of the economy. Having said this, I would like to stress that these are by no means issues that only came to the attention of central banks for the first time after the financial crisis. Over the years, the Riksbank and other central banks have on a number of occasions had reason to consider how various financial developments should affect monetary policy. However, these thoughts have been more based on intuition than on a concrete analytical framework.

Research on these issues has literally exploded in recent years, so hopefully we will make some progress in the period ahead. But until a practically useful analytical framework is in place, I at least believe that there must be scope to put forward arguments without necessarily having to be able to translate these into exact probabilities or precise numerical effects on inflation and the real economy. If we are worried by certain developments we cannot, as I see it, refrain from taking action just because certain things are difficult to quantify or cannot be fit into a simplified, theoretical or conceptual framework for how monetary policy should be conducted. We cannot take a time-out and wait for research. This is an area with enormous potential costs for society. So I think a precautionary principle must apply.

The Riksbank is in no way an exception in this respect either. I am convinced that the monetary policy discussion at most central banks is largely conducted using this type of more qualitative argument. I am also convinced that many economic-policy decision-makers in the countries that were hit hard by the crisis now regret that they did not act to a greater extent on the basis of the concern they may have felt, even though it was difficult to quantify.

[23] See for example the column by Calmfors, Lars (2012), "Riksbanken måste bli tydligare (The Riksbank must be clearer), in the newspaper Dagens Nyheter on 13 September.

What can we demand of inflation targeting?

Let me conclude by summarising my view of the scope of inflation targeting – what it can do and what we can demand of it.

As I have already mentioned, the main advantage of inflation targeting is that it provides a nominal anchor for the economy – a guideline for decisions on pricing and wage setting. This does not mean that economic agents count on inflation being on target at every given point in time, but they know that over time it will be close to the target and not get out of hand. As I noted initially, the Swedish economy lacked such an anchor 20 years ago. The fact that developments have been so favourable since then is probably largely due to the stability and order that inflation targeting has created.

In addition to keeping inflation low and stable, monetary policy should help to keep the economy in balance by dampening fluctuations in economic activity. However, as I see it this should be done by means of what one might call coarse tuning, rather than by means of fine tuning. Our aim should be to not focus too much on trying to fine tune the real economy around uncertain numerical measures of long-term employment, potential GDP or equilibrium unemployment. It may appear "clear" to do so but it is an overly simplified representation of monetary policy and requires knowledge that we simply do not have today. In my opinion, coarse tuning also means that it may sometimes be necessary to react to risks, even if they cannot be quantified within a particular analytical framework.