Mr. Heikensten looks at the intellectual framework for monetary policy in Sweden Address by the Deputy Governor of the Bank of Sweden, Mr. Lars Heikensten, at the Monetary Policy Forum held in Stockholm on 26/5/97.

Economic policy developments during the early 1990s were marked by the after-effects of the overheating in the 1980s. At the beginning of 1993--after the krona had fallen--the Riksbank made clear its intention to meet an inflation target. An important task since then has been the firm establishment of a policy of low inflation in Swedish society and the clarification of the principles that guide monetary policy.

We think that we have now come a long way in the effort to secure low inflation. At the same time, support for the policy of low inflation has increased. The Government and the Riksdag have positioned themselves behind the policy and recently proposals have been put forward to, among other things, make price stability an objective of the Riksbank prescribed by law. Against this background it may now be appropriate to try to clarify the intellectual framework within which the Riksbank is working. To contribute to such a more fundamental discussion on the principles of monetary policy formulation, I will today consider four related issues:

First I intend to comment on how I *view the connection between price stability and growth for different time perspectives*. One issue that I will dwell on somewhat is how the balance between the two appears in the short term.

Next, I shall discuss *how uncertainty and the degree of credibility* with which monetary policy is associated influence policy formulation. These two factors play an important role in practice.

The third issue concerns *the exchange rate*. For small open economies this issue is one of the most important determinants of inflation at the same time as it is also an important measure of how stable economic policy is seen to be. How changes in the exchange rate ought to be handled when monetary policy decisions are taken has been an important monetary policy issue in Sweden in recent years.

Finally I shall discuss the issue of *how the monetary policy goal has been defined and should be interpreted.*

The Inflation/Growth Connection

The Riksbank’s chief task is the achievement and preservation of price stability, which should be interpreted as keeping the rate of inflation at a low and stable level. Behind this view of the role of monetary policy lies the understanding that growth and employment cannot in the long run be achieved via an inflationary policy. There are other factors that determine growth: technological development, the way in which the economy functions, human resources development, etc.

Attempts to stimulate the economy in the short run by allowing higher inflation tend to rebound in the long run. Swedish experience in the last decade, and also experiences in other countries, demonstrate this. Participants in the economy see through the policy, revise wage demands upwards and raise prices. When inflation expectations are taken into account, the outcome of an inflationary policy is normally worse rather than better economic development .

The best contribution that monetary policy can make to good growth in the long term is to see to it that an environment with stable prices is created and maintained. Within these bounds a central bank can support economic development in general. In the short term the possibility may exist to influence the economy’s activity level with monetary policy instruments. For that to be possible, monetary policy objectives would need to be completely credible.

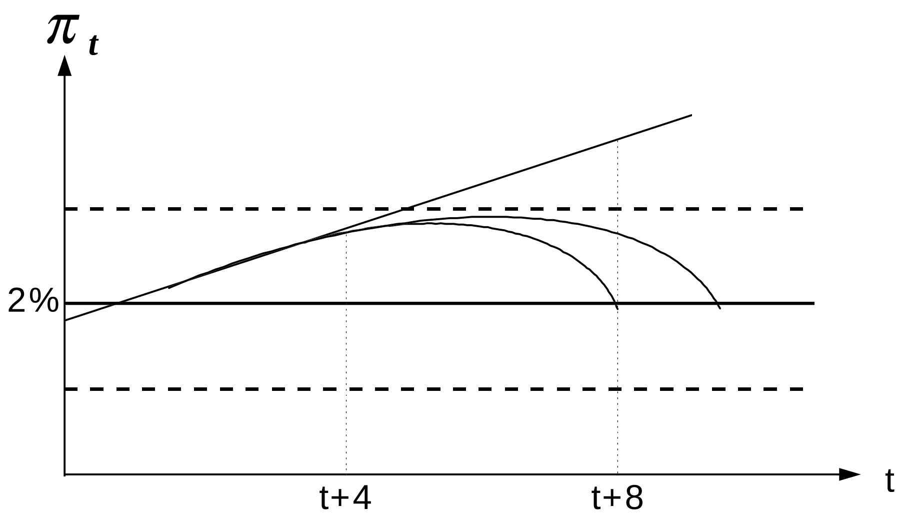
A central bank should have as its primary objective price stability. Given the time lags that exist in monetary policy, it takes from one to two years before the effects of an interest rate change make themselves fully felt on inflation. Therefore policy must be be guided by the forecasted inflation, not by the inflation existing in the present situation. If an inflation forecast for the coming two years shows that there is a risk that the inflation target may be missed, the instrumental rate should be changed so that inflation is driven back in line with the target.

If inflation is expected to be lower than the target, there is room in practice for monetary policy to take the activity level into consideration. The Riksbank can then lower the interest rate and in such a manner stimulate production and employment temporarily. In the same manner, interest rates will normally need to be raised in situations in which future inflation tends to get excessive as a consequence of a too high resource utilization.

Consequently, when an inflation forecast shows that future inflation does not appear to be in line with the target, policy must be altered. In these situations there is a balancing problem. The question is how forceful the interest rate change should be. If it is dramatic, the adjustment in the rate of inflation to the established target may be faster, but the repercussions in the short term in the form of fluctuations in production and employment will probably be bigger also.

Figure 1

Price Stabilization: Alternative Paths



The reasoning can be made clear with a simple diagram (Figure 1). By choosing interest rate path 2 rather than path 1, the adjustment to the inflation target will be somewhat slower; however, the development in the economy will also be less spasmodic.

The fact that the Riksbank--when the price stability objective was introduced in 1993--chose to postpone its application for about 2 years (the decision that evaluation would only be made when the direct effects of the krona's weakening had died away in 1995) can be said to have been a way of taking into consideration the above reasoning. In recent years, however, this sort of consideration has not played such a prominent role. There are several interrelated explanations for this. Monetary policy thus far has been aimed to a great extent at establishing a regime of low inflation and engendering understanding for it. In practice, the scope is also limited for monetary policy decisions of a fine-tuning character by the uncertainty that prevails, inter alia, about future developments and by the degree of credibility for the low inflation policy.

<u>2. Uncertainty and Credibility</u>

There are various kinds of *uncertainty* that in practice play an important part in monetary policy and are also important for the speed and scale with which changes in interest rates are made:

- One type of uncertainty has to do with the economy's *basic mechanisms.*. Which model of the economy shall we use for our analysis? A major problem here in recent years has been that the shift to low inflation and a flexible exchange rate by itself can change the relationships in the model.

- A second type of uncertainty concerns the interpretation of *new information* that is constantly coming in. It is important in this connection to assess what effects an interference or a shock have, which, inter alia, is linked with whether it is permanent or temporary.

- Finally there is uncertainty about *the effect of the measures* that the Riksbank can take--in practice, changes in the instrumental interest rates. The question is how the so-called transmission mechanism looks and in what time frame interest rate changes affect inflation.

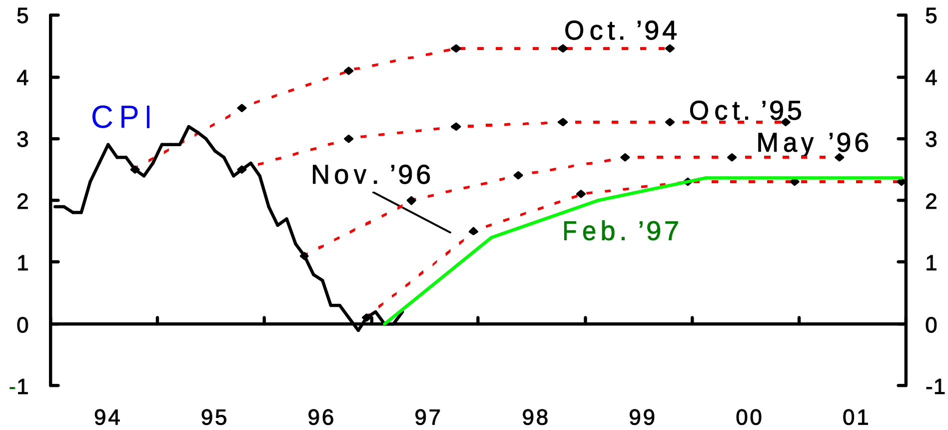
If a central bank overestimates the deviation from the inflation target or underestimates the effect of a change in its interest rate policy, there is a risk that it will raise or lower interest rates too much. In such a situation, the policy in the end will become excessively restrictive or expansive and it may become necessary for the central bank to shift its policy in the opposite direction. Such a change may create instability and reinforce cyclical swings. Therefore it would appear that there is reason to proceed with some caution when the policy is changed. Central banks also tend to adjust interest rates in relatively small steps.

Nevertheless, the conclusion that a central bank should proceed carefully is not self-evident. The question is how the markets players interpret a certain behaviour. Ever so small changes in the instrumental interest rates, which may be interpreted as the first step in policy change, can have a big impact. (cf. the Federal Reserve's increase in February 1994). There is probably no obvious and simple rule for action. Most likely, the central bank's task is to account for, as clearly as possible, both its long-term plans and the uncertainty that is inherent in its assessment.

Figure 2

Money Market Agents' Inflation Expectations

Per cent



Sources: Statistics Sweden and Prospera Research

The way in which the instrumental interest rates are changed also has to do with *credibility* and *tactics*. If complete credibility in monetary policy and a low-inflation regime have not been achieved , it will naturally influence the pace with which interest rates are lowered or raised. In situations of this kind, the result may be that the central bank has its instrumental rates set at either a too high or a too low level compared with what would have been warranted in an environment of high credibility.

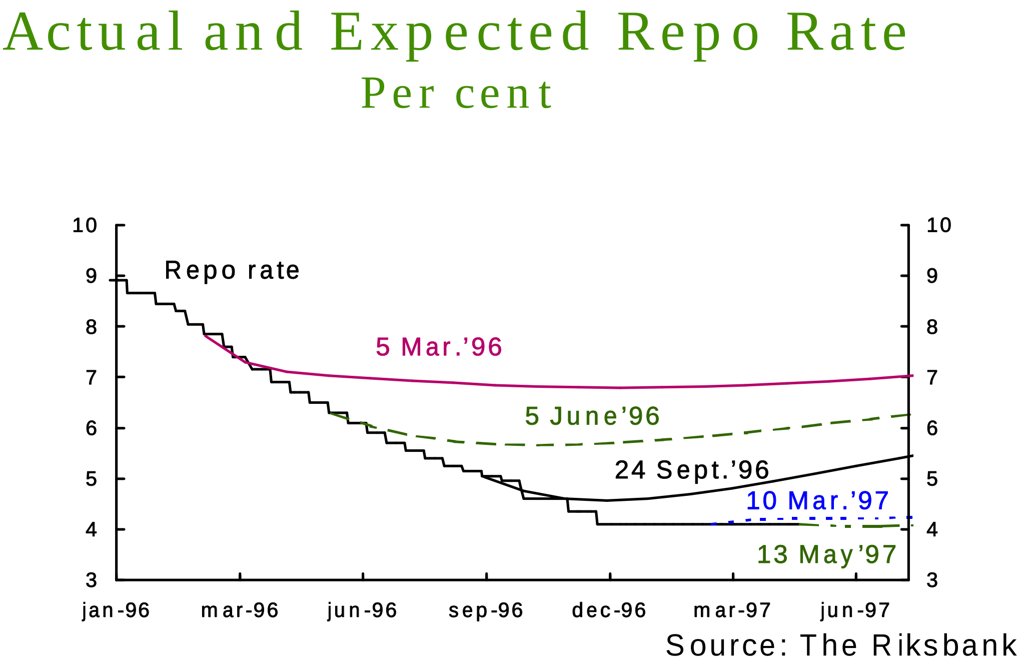
Developments during 1996 can illustrate the effects on policy of both uncertainty and insufficient credibility. At the beginning of the year, the Riksbank estimated that activity in the economy was declining and that inflationary pressure was falling. Both the demand situation and the indicators that exist for inflation expectations pointed in the same direction. (Figure 2).

However, the forecasts of inflation, which were made by private players, were still not wholly in line with the Riksbank's target. Nevertheless, the Riksbank's assessment was that in this situation there was room to begin lowering interest rates without threatening the inflation target.

Initially, the Riksbank chose to lower the repo rate in equal intervals of 25 basis points (Figure 3). Prudence was warranted by our wish to receive further information which could confirm our picture of falling inflationary pressures. Moreover, we estimated that it was urgent that the decreases not be interpreted by the market as an indication that the Riksbank had begun to tinker with the inflation target, with possible negative effects primarily on long-term interest rates and the krona. The series of small decreases in the repo rate continued to the end of the year, when the rate had been lowered to 4.10 per cent, that is to say, a total decrease of 4.81 per centage points. In the spring, new information came that supported the brighter picture. Inflation and budget figures were improving gradually at the same time as the policy generally appeared to be stabilising. This supported monetary policy.

These events give an example of how difficulties in interpreting the information received can be handled. The Riksbank's policy is based on forecasts, which are necesssarily uncertain, and it also has to be designed so that it is perceived as consistent in the long term and credible.

Figure 3



The conclusion is that there may be reason and scope for the Riksbank, within the framework of a policy with price stability as its objective, to pay attention to real economic developments. In fact, this possibility is inherent in a monetary policy based on an inflation target. In practice, however, the possibilities of an active stabilisation policy are limited by the general uncertainty that prevails.

<u>The Exchange Rate</u>

In small, open economies, the exchange rate has an important influence on inflation. At the same time, it is a variable that has fluctuated considerably in recent years for reasons which have not always been easy to foresee and interpret.

How changes in the exchange rate should be handled in practical policy depends above all on how lasting a change in the exchange rate is judged to be. More enduring changes that have an effect on inflation forecasts obviously have to be taken into account In order to decide on the duration and what is a reasonable reaction, one normally has to know what brought about the change. Several different cases can be discerned:

A nominal change in the exchange rate can be a result of a change in *the real equilibrium exchange rate*. This case is in principle simple to manage since it normally does not lead to a changed picture of inflation and thereby does not occasion any specific policy measures. Changes in the real equilibrium exchange rate have not been an especially common reason for changes in the exchange rate in recent years, at any rate since the krona fell in connection with the changeover to a flexible exchange rate in 1992.

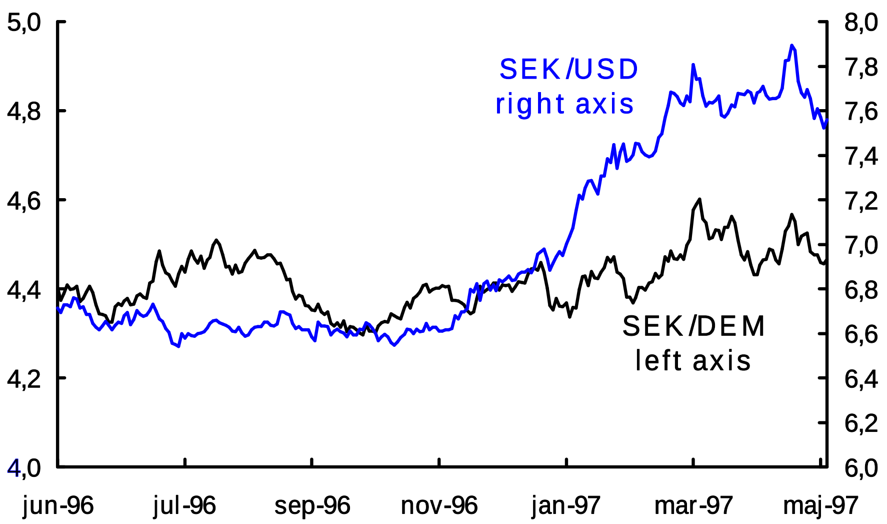
A change in the nominal exchange rate may also have to do with a change in the long-term view of the steadfastness in economic policy, or what is termed *credibility*. In practice it is not always so easy to distinguish between what is important for credibility and various factors can interact in a complicated manner. Two cases can, however, be discerned:

- In the first case, the problem of credibility is primarily based on a lack of confidence in *the central bank as such and in monetary policy.* In the long-term perspective, the task is then the establishment of a trackrecord. Laws that guarantee independence can be an important support in this process. In the short term, there is probably most often not much that can be done other than to show by action--increases in interest rates--that one is sticking to one's objectives.

- More difficult to assess and manage are situations in which the currency's depreciation is a consequence of weakening *credibility* in *the general direction of economic policy.* Investors in the financial market may, for example, think that the risk has increased for a change of regimes in the future, when the target for price stability may be abandoned at least temporarily as a result, for example, of government financial problems. In Sweden this was probably the most common explanation for the recurrent periods of exchange rate turbulence during the 1990s. In situations of this type, monetary policy itself cannot do the job, and what is worse, in the short term the costs of monetary policy measures may be considerable. Yet there is hardly any other alternative for a central bank than to respond by raising interest rates and in such a way demonstrate its intention to counter inflationary tendencies. At the same time there is reason to try to influence developments in other ways by clarifying the nature of the problems, so that financial policy is turned in the right direction.

Figure 4

The Swedish Exchange Rate versus USD andDEM



Source: The Riksbank

Another, often complementary, reason for fluctuations in the nominal exchange rate may be unrest or disturbances in the international currency and capital markets. If such disturbances can be deemed to be *pure market phenomena* and thus of short duration, they should make hardly any difference to the bank's behaviour. However, this is not the most common case. What we saw in the international financial markets—after the bond markets' crash in 1994 or the Mexico/Barings unrest in 1995—is an interaction between market tendencies in a more limited sense and weak public finances or other credibility problems. High international interest rates and currency unrest have aggravated the problem of public finances, so that on these occasions economies such as Sweden's have moved from a virtuous to a vicious circle.

Examples of how one could analyse exchange rate developments in the above terms can also be found in events of the last half-year.

An explanation of developments with respect to the krona has to do with the position of the Swedish and continental economies in the business cycle. In recent months the dollar and the pound especially have appreciated relative to continental currencies. Monetary policy in the USA and Great Britain has been relatively tight. (Figure 4).

This is still not the entire explanation. The krona has also fallen somewhat against continental currencies, especially during the winter and spring. In part, this has coincided with concerns with respect to the EMU process, possibly strengthened in Sweden's case because Sweden's position on the EMU issue is unclear. In addition there has been some uncertainty about the steadfastness of long-term economic policy connected with, inter alia, continued high unemployment.

The studies that have been done by the Riksbank indicate that there is room for an appreciation of the krona. Not only are government finances in considerably better condition than they were earlier (in fact, Sweden is one of the relatively few EU countries, which, according to the EU Commission can be expected to have a budget deficit in 1997 that complies with Maastricht targets with a margin), but also Sweden has a large current account surplus and the inflation forecasts are positive. Despite that, the krona has depreciated by 6 to 7 per cent in effective terms since October last year.

How should monetary policy handle such a situation? We can use 'open-mouth operations' and inform the markets and other players of our assessment of what has been happening. Maybe this can influence developments in some measure. If the krona's downward trend cannot be stopped, it will eventually have an effect on demand -- something the Riksbank has to take into account when the instrumental rates are decided. Accordingly, a depreciating exchange rate is an important factor that can affect the estimate of future inflation and thus the direction of monetary policy.

Target Variable

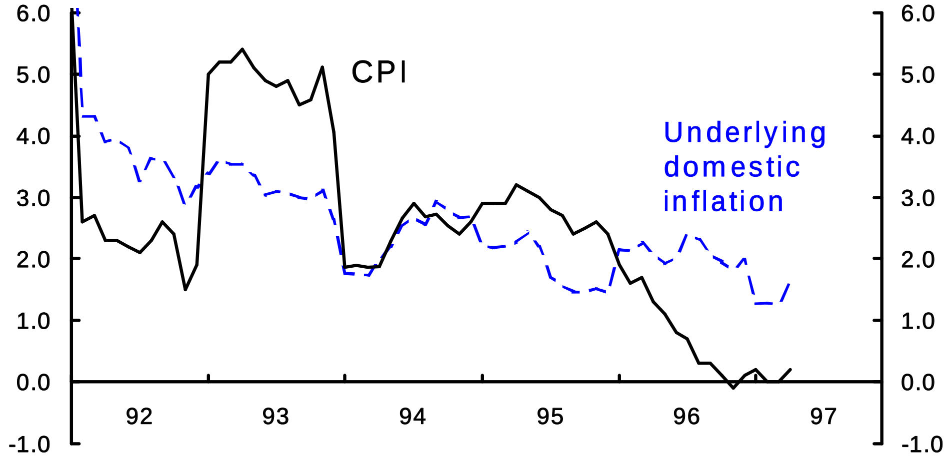
To conclude, I intend to discuss a few issues that have to do with the design and interpretation of the price stability objective. The line of argument I am going to take can hardly be perceived as controversial. Even with the general support for a price stability objective that has been achieved, a number of questions of a more practical nature concerning how monetary policy should be implemented remain. Price stability, as everyone realizes, may be defined in many ways, with somewhat different consequences for the execution of monetary policy.

When the index for measuring inflation is chosen, a number of different considerations have to be taken into account. The index has to be reasonably broad and give a picture of price developments in the economy as a whole. It is an advantage if it is also well established and regularly published with a short time lag. In addition, it is desirable that the index is seldom revised. All these factors bear out the suitability of the consumer price index (CPI) . Thus, the Riksbank's inflation target has been expressed in terms of a change in the official consumer price index.

Figure 5

CPI and Underlying Inflation

Percentage 12-month change



Sources: Statistics Sweden and the Riksbank

One problem with the CPI is that it is affected by temporary influences on inflation. Such influences can be changes in indirect taxes and subsidies or the price of oil. To the extent that such changes only have an initial direct effect on the price level but are not deemed to influence the future rate of inflation, they should not precipitate interest rate adjustments.

A special case of the temporary effects is what happens when the Riksbank changes its policy and raises or lowers the instrumental rates. This affects the interest costs of housing, thereby influencing the CPI. Hence, interest rate changes can make it more difficult to reach the price stability objective in the short run.

The CPI has varied significantly more than the various measures of underlying inflation that the Riksbank produces (Figure 5). One example is 1996, when interest rates were reduced rapidly. The CPI then fell much more than the underlying inflation, which was due to a reduction of the interest costs for housing. In this way, annual inflation ended up somewhat below the one per cent lower limit of the tolerance interval. At the same time, all indicators of underlying inflation show that it has edged downwards and has recently kept relatively stable in the interval of 1-1.5 per cent.

The problem of temporary influences can be managed in different ways:

1. One possibility is to clearly *specify* in advance which *deviations* from the CPI are acceptable. This is the method used in New Zealand. It could lead to greater transparency. On the other hand, it would be less clear exactly how the valid objective is defined. In addition, it is difficult to foresee all the corrections warranted and to quantify their exact price effects. Finally, it is a problem that corrections of this kind are so highly dependent on the central bank's own asessments, which can influence credibility negatively.

2. A closely related alternative is to use a measure of *underlying inflation* as target. Compared to the first alternative, it has the advantage of giving a clear definition of the

objective. It would, however, lead to difficulties similar to those of alternative 1 with respect to problems of defining and quantifying the effects of various disturbances.

3. Another possibility is to *supplement the CPI* by one or several measures of *underlying inflation.* In Canada the objective is expressed in terms of the CPI whereas a measure of the underlying inflation--which descibes the process of inflation better--is the operative target. In the long run, the final goal is reached since there is a clear link between it and the operative target. A ”softer” variety on the same theme is to clarify how practical policy is influenced by underlying inflation, since it can often give a clearer picture of the process of inflation.

It is important to note that the big changes which occurred in the repo rate and thus in the interest costs of housing in recent years were linked to the transition from the high inflation regime of the seventies and eighties to a regime of price stability. A continued confidence in the low inflation regime would imply that such large changes in the interest rate component are less likely in the future.

It is evident from what the Riksbank has said earlier in various contexts that there are price effects, which will not be caught within the tolerance interval and which we do not need to counteract fully by monetary policy measures. Attempts to do so could destabilise the economy further, partly due to time lags in the effects of monetary policy. Consequently, if unexpected disturbances were to occur, or if taxes and subsidies were to be changed, for example in connection with a major change in the tax system, we would have to accept that this would have an immediate effect on the price level. Temporary deviations from the targeted inflation rate may therefore happen. What is important with respect to such deviations is to drive inflation back to the target within the horizon where monetary policy has its biggest effect on price developments.

The possibility to achieve the inflation target is accordingly affected not only by how the target variables are defined, but also by what time perspective is used when the policy is evaluated and how wide the applied tolerance level is. The Riksbank has emphasized that one should see the price stability objective in an annual perspective—nothing more precise than that. As to the width of the band, we have started from an interval of ±1 per cent, which is fairly normal among countries with an inflation target.

Summary

The policy with an inflation target has functioned well in Sweden and in other countries that have chosen to work with an inflation target. Inflation has become low. In addition an increased understanding of a policy directed at price stability has been created in Sweden as well as in other countries with an inflation target. This is especially notew

orthy because many of the countries which now work with an inflation target are the very same countries that earlier had problems with inflation.

When monetary policy is conducted with an inflation target, production and employment are normally stabilised too. For example, increased demand usually implies an increased rate of inflation. When inflation forecasts indicate that a risk for inflation will exceed the target, raising the instrumental rate is warranted, thereby also slowing down demand growth.

In practice the room for an active stabilisation policy is circumscribed by the uncertainty about future inflation. Another important complication relates to how credible the policy is. Increased credibility of monetary policy creates more room for both rapidly shifting policy in a more expansionary direction in situations of weakening demand and deferring interest rate hikes. Measures to strengthen central bank independence should inter alia be seen in this light.

How the exchange rate is to be managed within the framework of a policy with an inflation target is an important matter. The countries with inflation targets have different approaches. In all circumstances, it is important to assess how durable an exchange rate change is likely to be. This normally implies a picture of what caused the change. Durable changes influencing the inflation forecast have to be taken into account when the instrumental rates are set. Increased credibility of economic policy in general makes this problem easier to handle. The higher the credibility, the smaller the exchange-rate fluctuations are likely to be.

The question of how the target is formulated and interpreted (for example, in relation to the measures describing the underlying inflation process) is worth discussing. Several factors have to be taken into account when the target variable is chosen. First, the capacity of monetary policy exactly to forecast and control inflation in the very short run is small. Second, the economy may be hit by disturbances that could create a conflict between a short-term inflation target and an ambition to stabilise the real development. Third, the outcome of the CPI is not a perfect indicator of the underlying inflation trend. This problem is handled in different ways in countries having a price stabilization objective.

The Swedish monetary policy with a price stability objective has been successful and seems well balanced in view of present inflation forecasts. However, this should not prevent us from deepening the discussion about how monetary policy is conducted against the background of the experiences in Sweden and other countries.