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Monetary-Policy Communication The Experience of the Swedish Riksbank*

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Abstract

Over the past ten to fifteen years, central banks have begun to communicate more openly. The article describes the Swedish central bank's communication experiences in two central areas: the role of real stability in monetary policy, and the interest-rate assumption used as a basis for the economic forecasts. One conclusion is that a higher degree of openness, although desirable, often makes the central bank's message more complex. The communication may therefore be perceived as less clear during a transitory period. Another conclusion is that how open a central bank chooses to be is not an isolated decision that leaves the bank's practices unaffected in other respects. The degree of openness is likely to have repercussions on the central bank's internal analyses and decision-making processes.

"The received wisdom in central banking circles then was: Say as little as possible, and say it cryptically. But attitudes toward transparency have changed dramatically since then, and central banks around the world have opened up." (Alan Blinder, 2006, p. 38.)

1. Introduction

It was long a tradition that central banks' activities should be characterised by a substantial measure of mystery and secrecy. However, over the past ten to fifteen years central banks have become much more open and clear, or transparent, regarding what they do and how they think.

So what lies behind this development towards greater transparency? One obvious explanation is that many central banks have become more independent in relation to the political system. This greater independence has led to a requirement that monetary policy can be evaluated in a satisfactory manner. This in turn requires that the central bank is open and clear with regard to what it is trying to achieve and how. In other words, the increased transparency is a means of acquiring legitimacy among the general public – the central bank's ultimate employer – for the higher degree of independence.

However, another driving force behind this development has been that many central banks have regarded greater transparency as a means of more easily attaining their objectives and of making monetary policy more efficient. If monetary policy is transparent it will become more predictable and it will be easier for economic agents to know that the interest rate decisions made are really aimed at achieving low and stable inflation. A transparent and well-communicated monetary policy can thus con-

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tribute to anchoring inflation expectations and to reducing the risk that monetary policy as such will become a source of uncertainty.

Transparency is also important for the impact of monetary policy. If a central bank is open and clear with regard to its intentions, it can influence expectations of short-term rates. This means it can indirectly affect longer-term rates. Greater influence over the yield curve makes monetary policy more efficient.

Finally, there is another type of efficiency argument that is worth highlighting: The improved insight into monetary policy that results from increased transparency means that central banks are constantly forced to "be on their toes" and to hone their arguments and analyses. Transparency thus contributes to heightening the quality of the material on which the monetary policy decisions are based.

Sveriges Riksbank, the central bank of Sweden, is often ranked as one of the world's most transparent central banks.[1] However, the way there has not been entirely straightforward; it has in many ways been a learning process. This means that the Riksbank has greater experience than most central banks of problems that may arise when monetary policy is communicated, and of trying to find solutions to the problems.

This article describes the Riksbank's experience with communication in two central areas: (i) the role of real stability in monetary policy and (ii) the interest rate assumption used as a basis for the forecasts. Both of these areas are linked to the degree of flexibility, or freedom of action, in inflation targeting. They are also areas where the Riksbank's communication has occasionally been criticised.

One conclusion from the Riksbank's experience is that even though a high degree of transparency is desirable, it can sometimes be difficult to combine its two key components – openness and clarity. It is hard to avoid the fact that a higher degree of openness also makes the central bank's message somewhat more complex and less simple. The communication may therefore be interpreted as becoming less clear. Another conclusion is that how open the central bank chooses to be will matter not only for its ability to affect expectations on the future interest rate, but also for the analysis it conducts and thus its policy.

2. A Brief Retrospective of Developments in Sweden

To set the stage, it may be a good idea to begin with a brief review of developments in Sweden. Sweden was one of the first countries in the world to introduce inflation targeting, in 1993. This occurred in connection with a severe economic crisis and after a long period of unsuccessful attempts to maintain a fixed exchange rate policy. In the 1970s and '80s, policy in Sweden had for various reasons tended to be unduly expansionary and this had generated an environment that made it difficult to keep price and wage increases at a reasonable level. Thus, the policy regime with a fixed exchange rate did not serve, as had been intended, to keep inflation in line with the rate among Sweden's main trading partners. Instead, the development of prices and wages repeatedly undermined the fixed exchange rate. These costs crises were temporarily resolved by devaluing the currency, the Swedish krona, but this did not do away with the underlying problem – the excessively rapid upward trend in domestic prices and wages. When yet another cost crisis meant that the fixed exchange

[1] See, for instance, (Eijffinger, Geraats, 2006).

TABLE 1 Mean and Standard Deviation of Inflation and GDP growth 1970–1990 and 1995–2006, respectively

	Inflation		GDP growth	
	Mean	**Std.dev.**	**Mean**	**Std.dev.**
1971–1990	8.64	2.81	2.10	2.17
1995–2006	1.31	1.00	3.01	1.54

Note. Percentage change in CPI and GDP from the same quarter in the previous year. The old index construction for CPI is used to calculate inflation before 2005.

Source: Statistics Sweden

rate finally had to be abandoned in November 1992 – after resolute but fruitless efforts to defend the krona and break the negative trend – it was clear that fairly drastic measures were needed to put the Swedish economy on a sounder footing.

The solution was a shift in the stabilisation policy regime, involving a fundamental reformulation of the tasks assigned to both monetary and fiscal policy. Fiscal policy, having previously been unduly expansionary and a factor behind the rapid inflation, would now be required to ensure long-term stability and sustainability in the public finances.

The Swedish economy has developed quite well under the inflation-targeting regime.[2] Inflation has been low and considerably more stable than before (see *Table 1*). Economic growth has fluctuated less and has been stronger than in the 1970s and '80s. Employment has not developed as favourably, though the situation today is considerably better than in the mid-1990s, shortly after the crisis. Moreover, the combination of the earlier devaluation policy and an ultimately unsustainable expansion of public sector employment is commonly considered to have simply postponed the need to tackle the Swedish economy's employment problems (see e.g. (Lindbeck, 2003), and (Ljungqvist, Sargent, 2006), for analyses of the development of unemployment in Sweden).

A high degree of transparency is commonly considered a significant characteristic of inflation targeting.[3] Indeed, the adoption of inflation targeting by some central banks in the yearly 1990s is sometimes seen as the starting point of the international trend towards greater transparency.[4] The Riksbank has constantly striven to become clearer and more open regarding its policy ever since inflation targeting was introduced in 1993. The bank has gradually published more and more of the materials used as a basis for interest rate decisions, while the materials themselves have been constantly improved. The most recent step was taken at the beginning of 2007, when the Riksbank began publishing its own assessment of how the policy rate will develop over the coming years.

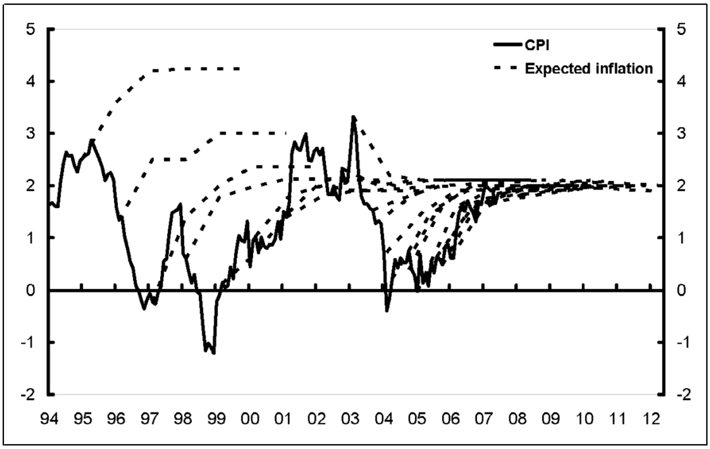
The fact that the Riksbank had the ambition to be open and clear from the very beginning of the new inflation-targeting regime was probably an important

[2] There is an international debate about the importance of inflation targeting for the positive economic developments in many countries where this policy has been introduced; see, for instance, (Mishkin, Schmidt-Hebbel, 2007) for a review of the research. Few Swedish analysts would however question the assertion that the inflation targeting policy has been significant for developments in Sweden.

[3] See, for instance, Svensson (2007a), who lists as the main characteristics of inflation targeting: (a) an announced numerical inflation target, (b) implementation of "inflation forecast targeting", and (c) a high degree of transparency and accountability.

[4] See, for example, (de Haan, Eijffinger, Rybinski, 2007).

FIGURE 1 Inflation and Expectations of Inflation Two Years Ahead



explanation as to why inflation expectations relatively quickly adjusted to the target of 2 % (see *Figure 1*). As inflation expectations have been adjusted to the target, the distribution of expected inflation has become tighter.[5]

Using this as a brief background we will now go on to discuss the Riksbank's experience with communicating the inflation targeting policy.

3. Monetary Policy and Real Stability

One of the subjects most discussed during the period with an inflation target, both within and outside of the Riksbank, is the balance between stabilising inflation and stabilising the real economy. Is it possible to maintain low and stable inflation and at the same time consider how production and employment develop? The answer is a simple one for economists, at least in principle. When the economy is hit by demand shocks inflation and GDP usually rise or fall simultaneously. If monetary policy then succeeds in stabilising inflation, it contributes at the same time to stabilising the real economy. If the economy is instead hit by supply shocks (such as unexpected fluctuations in the oil price due to conditions in producer countries), the balance is more complicated. Then the desire to stabilise inflation often comes into conflict with the desire for stable developments in the real economy and it is necessary to find a suitable compromise between the two.

In practice it is often difficult to know exactly what shocks will contribute to inflation and GDP growth rising or falling. An unexpected rise in inflation could thus undermine confidence in the central bank with regard to its ability to attain the inflation target. A lack of confidence would in itself contribute to making it more difficult to attain the inflation target.

Openness and clear communication are means for the central bank to maintain its credibility in that the reasons for the monetary policy decisions become easier for

[5] The standard deviation in inflation expectations among money market agents has fallen from an average of around 0.5 during the period 1995–2000 to an average of 0.36 in 2001–2006. The fact that inflation expectations tend to be better anchored in inflation targeting countries has been noted in several empirical studies; see, for instance, (Gürkaynak, Levin, Marder, Swanson, 2007), and (Levin, Natalucci, Piger, 2004).

the general public to understand. When inflation deviates from the target it is important that the central bank can communicate its interpretation as to why there has been a deviation and can also explain what interest rate path is required to return inflation to the target.[6] Communication is made easier if monetary policy can be described in terms of simple principles or policy rules. This is one reason why central banks have often chosen to have explicit targets for inflation, the exchange rate or the money supply.

At the same time, it is evident that there are no simple recipes for how monetary policy should be conducted. Central banks therefore have to maintain a delicate balance, not only between inflation and real economic stability, but also in their communications. They have to describe the objective and stance of the policy in a simple manner to enable others to forecast and evaluate the policy, so that confidence is maintained in the central bank. At the same time, the message must not be over-simplified so that interest rate decisions often deviate from the principles that have been communicated, as this will undermine confidence.

Central banks' problems are aptly described in the following quotation from Stanley Fischer: *"Central bankers have a tendency to say that price stability should be the only goal of monetary policy, and to shrink from the point that monetary policy also affects output in the short run. That is not hard to understand, for explicit recognition of the powers of countercyclical monetary policy encourages political pressure to use that policy, with the attendant risk that inflation will rise. But it is also problematic and destructive of credibility to deny the obvious, as well as to undertake countercyclical policies while denying doing so."*[7] (Fischer, 1996, p. 26)

During the period with an inflation target the Riksbank's communication of the balance between price stability and real economic stability has gradually changed. To begin with the policy could best be described as what Lars Svensson (1997) called "strict inflation targeting", but it has gradually become clearer that it should be characterised as "flexible inflation targeting".[8] Although the changes have occurred gradually, it is possible to distinguish some points in time when particularly important changes have been made. Consequently the regime can be divided into a number of different episodes:

– The simple policy rule, 1993–1998

– Increased flexibility phase 1, 1999–2004

– Increased flexibility phase 2, from 2005

3.1 The Simple Policy Rule, 1993–1998

For several years the Riksbank's communication was dominated by a simple policy rule: *"[...] if the overall picture of inflation prospects (based on an unchanged repo rate) indicates that in twelve to twenty-four months' time inflation will deviate from the target, then the repo rate should normally be adjusted accordingly".*[9]

[6] For example, the Riksbank has in speeches and publications emphasised that the very low inflation in recent years was to a large extent due to unexpectedly high productivity growth and weak development of import prices; see for example (Rosenberg, 2005) and (Sveriges Riksbank, 2006a).

[7] See also (Faust, Henderson, 2004) for similar reasoning.

[8] See (Apel, Heikensten, Jansson, 2007) for a description of how the design and communication of monetary policy has been influenced by academic research.

The simple policy rule could be justified by several different reasons. Firstly, it explained that the objective of monetary policy is to stabilise inflation, not, for instance, the exchange rate or unemployment. In many central banks, not least Sveriges Riksbank, there was particular focus on inflation in the rhetoric during the first years after the new regime had been introduced. To a large extent this was because inflation had previously been very high and variable. It was necessary to be very clear that stabilising inflation was the overriding objective of the policy.

Secondly, the rule provided discipline with regard to monetary policy analysis and debates, both inside and outside the Riksbank. It made it clear that where there were different opinions as to whether the repo rate should be raised or cut, the different stances should first and foremost be justified by differences in the view of the future development of inflation. Thirdly, the simple policy rule demonstrated that inflation must be forward-looking. It takes time before an interest rate adjustment has an effect on inflation, and monetary policy should therefore not be governed by the current inflation rate, but by how inflation is expected to develop in the future.

One reason for focussing monetary policy on inflation a couple of years ahead is that it allows some consideration to developments in the real economy. If the goal was to always bring inflation back on target as quickly as possible, it would be necessary to make substantial adjustments to the interest rate, resulting in increased real economic volatility. But this was not initially a decisive reason in the Riksbank's communication of the simple policy rule. Instead, the time lags in the impact of monetary policy were emphasised. This is demonstrated in the following quotation from a speech by the governor of the Riksbank in 1994: *"If inflation deviates from the target, policy has to be designed to bring it back to a level which is in keeping with the objective of price stability. The time schedule for this is governed by the substantial lag before effects of monetary measures materialize. The interval before the full effect of a change in the instrumental interest rates shows up is commonly estimated to be between one and two years. [...] Policy should be constructed so that forecast inflation one to two years ahead [...] is 2 %."* (Bäckström, 1994, p. 6)

This quotation can be interpreted to mean that it is only the delayed impact of monetary policy that is important to how quickly inflation should be brought back on target following a deviation. There is no mention of any circumstances where the process of adjusting inflation could be considered to take longer.[10]

The simple policy rule resembles the more well-known Taylor rule, which has proved to provide a good description of how monetary policy is conducted in many countries.[11] The differences are that in the Riksbank's policy rule there is no measure of the cyclical position of the economy (output gap) and that the Taylor rule, at least

[9] The quotation is from the Inflation Report published in October 1999, but the rule has been expressed in similar ways both prior to and after this. The exact definition of "in twelve to twenty-four months' time" has changed somewhat from time to time. Most often it has been taken to mean the rate of change in prices between $t + 12$ and $t + 24$. Similarly, "accordingly" has no simple definition. How closely the Riksbank has followed the rule is discussed in (Berg, Jansson, Vredin, 2004).

[10] In theoretical models where monetary policy is assumed to minimise the loss function $L = (\pi - \pi^*)^2 + \gamma(y - y^*)^2$ (where y is production and π inflation) this corresponds to a monetary policy under the restriction that $\gamma = 0$. Stabilising production is thus not considered to be important; the inflation targeting policy is "strict".

[11] See (Taylor, 1993).

in its standard form, is based on the current inflation rate rather than the expected future inflation rate. However, as inflation and the output gap of today are important variables in forecasting future inflation, it may be difficult in practice to distinguish between the implications of the Riksbank's simple policy rule and the Taylor rule respectively.[12] Moreover, the perception behind the policy rule was that stabilising inflation often contributes to stabilising production and employment, that is, fluctuations in inflation and economic activity are primarily driven by demand shocks rather than supply shocks. This is illustrated by the following quotation from 1996: *"[In] the direction of monetary policy [...] there is an [implicitly] built-in consideration of the development of output [...]. If growth becomes too high, this is liable to lead to inflation rising and exceeding the target. That calls for a tighter monetary policy. Conversely, weaker growth means [...] that inflation falls below the target, which correspondingly calls for a more expansionary monetary policy. In this way we see how an inflation-targeting monetary policy aims to smooth unduly large fluctuations in growth [...]."* (Bäckström, 1996, p. 4)

It is worth noting that the way in which policy is described has changed somewhat. Unlike the previous quotation, it is emphasised that there is a need to also stabilise real economic developments. However, the cited case is one where the central bank does not need to actively weigh its stabilisation policy objectives against one another, since the interest rate changes automatically stabilise both inflation and demand.[13]

Gradually, however, the simple policy rule proved to have considerable disadvantages. Firstly, it is too inflexible if the economy is hit by serious supply shocks. There is in general no reason to believe that the forecast horizon of two years is the most relevant for monetary policy. If the economy suffers major disruptions, there may be justification for allowing a longer time to bring inflation back on target. Secondly, the simple policy rule was based on inflation forecasts two years ahead under the assumption of an unchanged repo rate.[14] Such forecasts are in practice often difficult to make (and are therefore not made by most forecasters). If the forecasts are misleading, for instance by partly reflecting the most likely inflation path rather than what would be the result of an unchanged repo rate, the simple policy rule could lead to incorrect monetary policy decisions. Thirdly, the simple policy rule was of course not an exact description of how Swedish monetary policy was conducted. It provided a good description, but not an exact one.

Despite these disadvantages, the simple policy rule worked well in terms of communication. The focus on the current interest rate decision and the inflation forecast exactly two years ahead does not appear to have been perceived as too much of a problem outside of the bank. The Riksbank's communication was perceived as clear and inflation expectations were firmly anchored around the inflation target of 2 % (see *Figure 1*). The need for changes was therefore due to reasons other than financial mar-

[12] See (Jansson, Vredin, 2003) and (Berg, Jansson, Vredin, 2004) for empirical estimates of the Riksbank's reaction function.

[13] In terms of the theoretical model it is not possible to say here whether $\gamma = 0$ or $\gamma > 0$. However, the fact that it is stated that there is a need for real economic stabilisation indicates implicitly that $\gamma > 0$.

[14] Even though the Riksbank in its rhetoric often stressed the importance of the inflation forecast one to two years ahead, the simple policy rule in practice tended to focus on the inflation forecast exactly two years ahead. The disadvantages of the assumption of an unchanged repo rate are described in greater detail in Section 4.1.

ket agents and the general public considering the Riksbank's communication to be inadequate.

3.2 Increased Flexibility Phase 1, 1999–2004

At the beginning of 1999 the Riksbank published a document on monetary policy which was supported by the entire newly-appointed executive board.[15] There were several reasons behind the need for this clarification of monetary policy.

The most important reason was that inflation in terms of the consumer price index (CPI) had been below target for a period of time, despite the interest rate cuts made by the Riksbank. One important reason for this was that the interest rate costs for housing loans are included in the CPI, which means that when the repo rate is cut, this will temporarily, through housing costs, lead to lower inflation rather than higher inflation. Inflation will gradually rise as a result of the lower interest rate stimulating economic activity, but in the short term the development of the housing component will normally dominate. If a longer sequence of interest rate cuts or interest rate increases is implemented, such as in the years 1996–1999, CPI inflation may not approach the target in the short term; it may actually deviate even further.

As the change in the CPI is the best known and most used measure of inflation, the Riksbank did not want to swap its target variable for an inflation measure adjusted for the housing component. Instead the Riksbank chose to explain that there might sometimes be reasons for deviating from the simple policy rule. Two such situations are highlighted in the clarification document: *"Monetary policy acts with a substantial time lag and the effect on inflation is largest after one to two years. [...] Normally, monetary policy aims to fulfil the inflation target [...] in one to two years. Departures from this general rule may, however, be warranted for two reasons. One is that the CPI can be pushed upwards or downwards in the relevant time perspective by one or more factors that are not considered to affect inflation more permanently. [...] The other reason for departing from the rule can be that a quick return to the target in the event of a sizeable deviation can sometimes be costly for the real economy."* (Heikensten, 1999, pp. 8 and 16)

One case thus refers to when the deviations from the inflation target two years ahead can be considered to be the result of various temporary shocks. The effects on the CPI of interest rate adjustments via housing costs are one example of such temporary fluctuations in the CPI, which monetary policy does not have any reason to counteract. Similarly, if there are changes in indirect taxes or subsidies as a result of fiscal policy measures, this is not normally something that needs to be counteracted by monetary policy.

The other case applies when such large deviations have arisen that the consequences for the real economy of trying to attain the target within two years would be too large. Consideration to the real economy could lead to a readiness to accept deviations from the inflation target even beyond this time horizon. But this is described more as an exception to the rule. Under normal circumstances policy would still be determined by the simple rule.

The clarification was one step towards more flexible inflation targeting in the sense of academic research. Its way of describing the policy implied, unlike

[15] (Heikensten, 1999)

the earlier quotation above, that a conflict might arise between stabilising inflation on the one hand and stabilising the real economy on the other hand. This means that the ambition to stabilise real economic developments took on a more concrete meaning for the shaping of monetary policy.[16]

One reason for publishing a clarification in 1999 was that a new Sveriges Riksbank Act entered into force from that year. The objective of price stability (but not the explicit inflation target) had been written into the act and the bank's independence in relation to the government and the Riksdag (Swedish Parliament) was strengthened in several ways. The changes were to a large degree motivated by the Treaty of Maastricht, but they were also a way of marking the political unity on the importance of low inflation and an independent central bank, a unity that had gradually emerged over a long period of time. The new Sveriges Riksbank Act entailed that the Riksbank would be governed by an executive board consisting of one governor and five deputy governors, who would also make the interest rate decisions.[17] The clarification in 1999 was thereby also a means for the new executive board to explain how they looked upon monetary policy.

Despite the clarification, a number of communication problems arose. These had less to do with the clarification itself and more with the fact that the economy was hit by shocks which the simple policy rule and the clarification were not adapted to deal with. In brief, one can say that serious supply shocks became more common than had been expected.

Despite the fact that there had been no change in the inflation target, the clarification in 1999 was perceived to mean that the Riksbank had in practice replaced CPI as the target variable with a measure adjusted for house mortgage interest expenditure and the effects of changes in indirect taxes and subsidies. While the Riksbank was increasingly using such a measure of underlying (core) inflation in its communication (an index known as UND1X), the idea behind this was to better explain developments in inflation and monetary policy, not to change the target variable. However, many people interpreted this to mean that the Riksbank was continuing to follow its simple policy rule, with the difference that CPI had been replaced with UND1X.

In 2001 inflation in Sweden, like in many other countries, rose as a result of soaring food prices. A similar upswing occurred at the beginning of 2003 as a result of a sharp rise in energy prices. In these cases inflation rose to 3 % or slightly above. The Riksbank's assessment was that these were largely temporary fluctuations in inflation which did not need to be, and in fact could not be, completely counteracted with monetary policy measures. As the simple policy rule still had a strong position with financial market agents and the general public, they tried to interpret the Riksbank's policy in terms of this rule but using measures of inflation other than CPI.

[16] In terms of the theoretical model, one could say that the Riksbank here describes a monetary policy that is characterised by a *time variable* value in the parameter γ. "Normally," γ can be roughly equal to zero but "sometimes" (when inflation changes temporarily or the shocks are large) the value of γ may need to be adapted so that it is positive.

[17] Prior to 1999 there were only two deputy governors and the interest rate decisions were not formally made by the governors but by the General Council of the Riksbank. In practice, however, the Riksbank governor's recommendation to the General Council had long been the decisive factor in the interest rate decisions.

The Riksbank received criticism, mainly from market analysts, for being unclear and was increasingly often asked the question "What index are you using now?"[18] The Riksbank repeated on several occasions a message that was expressed in the clarification from 1999: there is no individual measure of inflation that can provide a clear conclusion of how monetary policy should be conducted.[19] Even if the target for monetary policy is to stabilise CPI, the deviations from the target and the interest rate decisions will depend on how large the shock to the economy is and in which sector of the economy it arises.

The clarification from 1999 stated that the simple policy rule would normally govern the Riksbank's actions, and that temporary shocks could arise that might in exceptional cases lead the Riksbank to aim to attain its target in a slightly longer horizon. The problem with this message was partly that severe supply shocks proved to be more common than it was assumed when this reasoning was formulated, and partly that the simple policy rule led to a discussion of the relevance of various *measures of inflation* rather than on the *causes* for inflation deviating from the target and what monetary policy conclusions might be drawn from this. The simple policy rule, which had long been of great value to the Riksbank's communication and credibility, appeared increasingly to have become a straitjacket that made discussion of monetary policy considerations more difficult. The step towards greater flexibility that was taken when the clarification was published in 1999 proved not to provide sufficient scope for action in communications.[20]

3.3 Increased Flexibility Phase 2, from 2005

Flexible inflation targeting means that monetary policy must continuously maintain a balance between stabilising inflation around the target and stabilising the real economy. The length of time it takes to bring inflation back on target after a shock depends on what type of shock has occurred (demand or supply or both), the size of the shock and of course also the importance the central bank places on stabilising inflation in relation to the real economy. The Riksbank realised that if it wished to communicate this message, which is closely related to the message in the clarification published in 1999, it would be a disadvantage to discuss temporary fluctuations in inflation and target deviations merely in terms of *different measures of inflation*. It is important to be able to explain how *lasting* the effects on inflation of various changes may be, irrespective of whether the changes are supply or demand shocks outside of the central bank's control or policy-induced interest rate adjustments. If one wants to explain why an expected target deviation in a time horizon as long as two years should in some cases nevertheless be regarded as a temporary phenomenon (which does not give reason to change the interest rate or question the credibility of the inflation target), one may need to present inflation forecasts with a longer range than two years.

[18] The occasional confusion as to the precise target variable was discussed in, for example, the IMF's Country Report; see (IMF, 2004).

[19] See, for example, (Heikensten, 2000) and (Sveriges Riksbank, 2003).

[20] Note that we deliberately write communication and not policy. It is far from obvious that the simple policy rule made policy more difficult in the same way that it made communication more difficult. The policy had for a long time – for good reasons – been implemented more flexibly than the simple policy rule implied. The actions after 11 September 2001 are only one example of this.

During the years 2005–2007 the Riksbank's communication has been changed in several steps:

– In March 2005 the Riksbank published forecasts with a horizon of three years, based on the assumption that the repo rate would develop in line with expectations in the financial markets. This was reported as an alternative scenario – the main scenario was still based on the assumption of an unchanged repo rate and extended two years ahead.[21]
– In October 2005 a main scenario was presented which instead contained forecasts extending three years ahead. The assumption of an unchanged repo rate was considered too unrealistic for such a long forecast horizon, and the interest rate assumption in the main scenario was that the interest rate would develop in line with financial market expectations.[22] Forecasts for two years ahead under the assumption of an unchanged repo rate were presented in an alternative scenario.
– In May 2006 the executive board decided to publish a document entitled "Monetary policy in Sweden". A further step towards flexible inflation targeting was taken in this publication compared with the document published in 1999. It was pointed out, for instance, that: *"normally, a well-balanced monetary policy means that inflation is close to the inflation target within two years while inflation and the real economy are not showing excessive fluctuations"*. (Sveriges Riksbank, 2006b, p. 5)
– In February 2007 forecasts were published for the first time based on the executive board's own assessment of the interest rate path three years ahead that would give a well-balanced monetary policy.[23]

Presenting forecasts for inflation and GDP three years ahead and not based on an unchanged repo rate, but on a realistic path for the interest rate, is entirely reasonable if one wishes to conduct flexible inflation targeting. However, it is not compatible with a simple policy rule. Under the old rule an inflation forecast that was above the target two years ahead was a signal that the repo rate would be raised immediately (in "normal" cases). When the inflation forecasts are based on a repo rate path this may be a signal that the *path* needs to be raised. In that case, the interest rate may be raised more now, or later on. But well-balanced monetary policy could very well mean that the inflation forecast deviates from the target two years ahead. It is only possible to determine whether or not this is desirable if one also takes into account developments in the real economy.

Naturally, this is a much more complicated way of looking at monetary policy than the simple policy rule. It is hardly surprising, therefore, that the changes the Riksbank implemented during a relatively short period of time in 2005–2007 have been criticised for making monetary policy communication less clear.

Before moving on, it may be useful to recapitulate why the Riksbank gradually abandoned the simple policy rule which had initially been such a successful tool for communication. The main reason was that the simple policy rule provided a mis-

[21] See (Sveriges Riksbank, 2005) for a description and justification of the changes made at the beginning of 2005.

[22] See Section 4.2.

[23] See Section 4.3.

leading description of what can be considered desirable monetary policy and also of the Riksbank's actions. The clarification published in 1999 modulated the message, but the simple policy rule still appeared as the main principle and deviations from it as exceptions. The new clarification in 2006 emphasised the fact that an optimal monetary policy should always be formulated with consideration to both inflation and the real economy. To explain why one should expect some deviations from the target, even when monetary policy is well balanced, the message needed to be more sophisticated than the simple policy rule allowed. One weakness with the simple policy rule was that it did not provide any guidance as to what pace was needed for adjustments in the repo rate to bring inflation back to target within a reasonable period of time. Forecasts extending further ahead than two years and based on an assumed path for the repo rate (or a few alternative paths) make it easier to provide more correct explanations for the monetary policy decisions.

4. Interest Rate Assumption

Another, and to some extent related area in which the Riksbank has gathered some experience through the years is communication about the interest rate assumption that forms the basis for the forecasts.[24] During the period with an inflation target the Riksbank has employed three different assumptions as to how the policy rate will develop during the forecast period – that it is unchanged, that it will develop in accordance with market expectations and that it will develop in the manner the bank finds most probable.

4.1 Unchanged Policy Rate

From the time the Riksbank began to publish forecasts during the second half of the 1990s up until the autumn of 2005 the forecasts were based on the assumption that the policy rate would not change during the forecast period. The advantage with this assumption was that it illustrated, in a simple way, when there was reason to change the rate. However, there were also considerable disadvantages which gradually became more apparent, not least in the bank's internal work.[25] Firstly, it is often a fairly unrealistic assumption that the policy rate should remain unchanged over a period of several years. Monetary policy is after all endogenous and needs to be adapted more or less continuously to what is happening in the economy. If the central bank, during a protracted period, does not react in a reasonable and credible way – for example, if it were to keep the policy rate constant during a sharp upswing in the economy with rising inflation – sooner or later problems arise, not least because confidence in monetary policy is undermined. Since the methods (models) used for forecasting presuppose that the general public believes that monetary policy will be conducted in a normal way, it is difficult to make reliable forecasts under the assumption that the rate is held constant.

Bearing this in mind, one can ask why the inflation forecasts that the Riksbank has presented in the inflation reports have not seemed more striking than they

[24] This section hence focuses on the conditioning assumption about the policy instrument in the forecasting process. Some central banks also make conditioning assumptions about the exchange rate. The Riksbank has however typically (irrespective of how the interest rate has been modelled) treated the nominal exchange rate as an endogenous variable, along with GDP, inflation, etc.

[25] See, for instance, (Jansson, Vredin, 2004).

have, but have generally been close to the two-percent target, even during periods when the assumption about a constant rate was unrealistic. One probable explanation is that the forecasts to some extent are based on subjective assessments by sectoral experts. When forecasts are produced in this judgemental way it is often difficult to guarantee that they actually are based on the assumption of an unchanged repo rate during the entire forecast period. Rather, it is probable that the economists involved in the forecasting process nevertheless implicitly assume that the rate will change. Even if the forecasts were intended to be based on the assumption that the rate is unchanged, the forecasts that are presented in practice will therefore be based on some other, unknown policy rate assumption – maybe a mix between an unchanged policy rate and the most probable rate development. Such forecasts are not of course a particularly good guide for monetary policy decisions.

Another disadvantage with the assumption of a constant policy rate is that it makes it difficult to evaluate the forecasts *ex post* and compare them with other analysts' forecasts. The latter are generally based on the most probable development of the policy rate, which is seldom kept constant. Forecasts based on unrealistic interest rate assumptions can not be expected to be particularly accurate. In order to assess the quality of such forecasts it is necessary to adjust them in some way for the changes of policy rate that do actually occur.

It is probably correct to say that the problems which were linked to the assumption of an unchanged policy rate were perceived as more troublesome inside than outside the bank.[26] The difficulty of making credible forecasts based on a periodically unrealistic assumption was something that was not directly and outwardly visible. That the assumption of an unchanged policy rate was abandoned thus had more to do with a need to improve the basis for monetary policy decisions than with criticism from outside.

4.2 Market Expectations

Part of the problem was solved when the Riksbank in the autumn of 2005 switched to making forecasts based on market expectations about the policy rate, as they were mirrored in the so-called implied forward rates. This would however prove to be a fairly brief transitional solution.

The main advantage of this assumption is of course that it is more realistic than to assume that the policy rate does not change during the forecast period. Thus it became easier to make reasonable forecasts as well as to evaluate the forecasts and compare them with those of other analysts. It also became easier for the Riksbank to present its view on the future development of inflation, GDP growth, etc. and the consequences for interest rate developments. The bank no longer had to describe in a roundabout way the changes in interest rates that it believed would be needed in the future. Instead, it could explicitly say whether it perceived market expectations as reasonable, or whether the policy rate needed to be changed more or less than these expectations indicated.

[26] From the academic quarter the assumption about an unchanged repo rate was criticised; see, for instance, (Leitemo, 2003) and (Honkapohja, Mitra, 2005). Somewhat surprisingly, very little criticism was expressed by analysts on the financial markets, which suggests that they generally disregarded which interest rate assumptions the forecasts were based on.

There are, however, certain weaknesses in making forecasts based on market interest rate expectations. One is that there is no clear-cut way of determining market expectations. Implied forward rates do not just measure expectations about the repo rate. They may also contain premiums that can be regarded as compensation for differences between securities with regard to duration, credit risk and liquidity. Estimating the size of these premiums is complicated and can be done in different ways. Furthermore, the implied forward interest rates may vary substantially in the short term. Consequently, the rate assumption on which the forecasts are based is fairly sensitive for the exact point in time at which market expectations are read. These problems mean that messages of the kind *"The Riksbank's assessment is that the repo rate will need to be changed approximately in line with market expectations"* may not be as clear communication as intended.

Another type of problem arises in those cases when the central bank has a different view from the market as to what constitutes a reasonable future development for the policy rate. The forecast of developments in the real economy and inflation that is published is then not the same as the one the central bank believes most likely and the value of the published forecast is therefore diminished. These are the same type of problems as with constant repo rate forecasts, although the problems are not as great.

As noted above, in those cases when the central bank's view of future interest rates differs from that of the market, the central bank may explain how. It may, for example, state that it estimates a somewhat faster or slower increase than indicated by the implied forward interest rates. The Riksbank did this on occasion during the relatively short period in which the forecasts were based on the implied forward interest rate. Apparently, the step from providing such qualitative opinions to providing ones own quantitative policy rate forecast is not very far. If one has the ambition to provide clear information on one's assessment of the economy, including the future development of the repo rate, it is hard to justify why one should not present the information in the form of an explicit interest rate forecast.

4.3 The Riksbank's Own Forecast for the Development of the Policy Rate

Therefore, it was natural that the next step was not long in coming. In February 2007 the Riksbank presented for the first time its own interest rate forecast in the Monetary Policy Report, which had previously been known as the Inflation Report. The name change was justified as the publication now included an account of the deliberations the executive board of the Riksbank took when it made its interest rate decision. Previously, the Reserve Bank of New Zealand and the Norwegian Central Bank had begun to publish their own interest rate forecasts (in 1997 and 2005, respectively).[27]

One of the reasons for publishing one's own interest rate path is that it will make it easier to steer monetary policy expectations.[28] With its own forecast on the development of the policy rate, the central bank can explain clearly to the general pub-

[27] The Icelandic central bank began to publish its own interest rate forecasts in March 2007. The Czech National Bank announced in March 2007 that it will start doing so in 2008.

[28] See, for instance, (Rosenberg, 2007) and (Svensson, 2007b) as to how the Riksbank justifies publication of its own interest rate forecast.

lic and the financial markets how it envisages future interest rate developments. In those cases in which the central bank's view differs from that of the market, there is no longer any need to take the rather lengthy detour via qualitative opinions about market expectations.

If a central bank influences expectations of short-term rates, it can indirectly also affect expectations of rates with a somewhat longer duration. Greater influence over the entire range of interest rates – the yield curve – will raise the degree of impact of monetary policy. After all, monetary policy is to a large degree about influencing expectations – "management of expectations".[29]

With its own interest rate forecast, it is not just easier for the central bank to show what policy it considers reasonable. It will also make it easier to show *why* it believes in a certain policy and how it reasons when making monetary policy decisions. One could say that by publishing its own interest rate path it becomes easier for the central bank to show not only *what* it is thinking but *how* it thinks – how it views the driving forces behind the economic development and the aims and effects of monetary policy. If the central bank is successful in mediating its view of this, the agents on the financial market and the general public will be able to make fairly accurate assessments of how new information will influence the central bank's view of the future development of the interest rate.

The fact that central banks publish their own interest rate forecasts may, in some sense, be said to be transparency at its ultimate: every time the central bank announces an interest rate decision, not only does it announce the level of the interest rate it has decided upon, but also what it believes will happen with the future development of the interest rate. However, this raises new questions. By how much is it reasonable that the interest rate path changes from one forecast to another? How much can the interest rate forecast three years from now deviate from what can be regarded as a reasonable long-term interest rate level? How is such a level established? These are important questions that need to be discussed both within central banks and in their communication with the general public. The answers are not obvious, however, and this may contribute to the fact that published interest rate forecasts are not always perceived as particularly clear communication after all.

Most academic researchers today appear to advocate that central banks publish their own interest rate forecasts.[30] However, there has also been criticism of this procedure.[31] One type of criticism focuses on the fact that decisions in many central banks are made by a group of persons. It has been claimed that it is simply too difficult for a group of decision makers to agree on a forecast for the policy rate. The experience of the Riksbank, with its executive board of six persons, does not indicate that this is a major problem. Neither in Norway, where the decisions are taken by an executive board of seven persons, does it seem to have entailed any major difficulties in reaching agreement on an interest rate forecast.[32]

[29] See, for instance, (Woodford, 2005).

[30] See, for instance, (Faust, Leeper, 2005), (Woodford, 2005), (Blinder, 2006), (Rudebusch, Williams 2006) and (Svensson, 2007c).

[31] See, for instance, (Mishkin, 2004) and (Cukierman, 2007).

[32] In New Zealand this potential problem does not arise since decisions are taken by the central bank governor alone.

In connection with the publication of the monetary policy report in June 2007, one of the Riksbank's board members entered a reservation against the report and its interest rate forecast and indicated that the interest rate would probably need to be raised further.[33] However, this is wholly in line with the fact that the executive board of the Riksbank is what is usually known as an individualistic committee.[34] This means, in simple terms, that the members act as individuals, both in the monetary policy communication and when interest rate decisions are taken. The interest rate decisions are made through voting and the members can publicly state whether or not they share the majority view.[35]

Another argument has been that by publishing its own interest rate forecast the central bank may impair its credibility. Assume that the central bank first publishes a particular interest rate path but that new information makes it necessary to revise this path. The central bank's interest rate decision will then deviate from the original path. According to the argument, the deviation could be perceived as a failure by the central bank and could impair the bank's credibility.

From a theoretical point of view, this argument does not seem convincing. Central banks publish forecasts for a number of different variables and the general public and the financial markets normally do not appear to have any difficulty in realising that these forecasts need to be revised if the conditions change. It is difficult to see that this would not apply to forecasts for the policy rate.

Nonetheless, criticism was directed at the Riksbank in June 2007 when the bank revised its interest rate forecast from February.[36] The Riksbank then made an upward adjustment to the interest rate path of more than the market had expected, which was reflected by reactions in the fixed income and foreign exchange markets (see *Figure 2*). The first time the Riksbank published its own interest rate path, in February 2007, there also appears to have been an element of surprise (see *Figure 3*). The market had then expected a higher interest rate path than the one the Riksbank presented.[37]

Most of the criticism has thus focused on the fact that the Riksbank's adjustment of the interest rate path was unexpectedly large, rather than on the fact it adjusted the path at all. It can nevertheless be said that the Riksbank's experience so far indicates that adjustments of interest rate forecasts may be harder to explain and to gain acceptance for than other kinds of forecast adjustment.

It is perhaps not very strange that the central bank's forecasts are more intensely discussed when they involve the publication of an interest rate path compared to the case when the bank only announces its current interest rate decision. Publishing an interest rate path means giving more information, compared to not doing so. Over

[33] See (Sveriges Riksbank, 2007).

[34] See, for instance, (Blinder, 2007).

[35] From the minutes of the monetary policy meetings, published with a lag of about two weeks, it is clear which members have entered a reservation against the interest rate decision. Moreover, in May 2007 it was decided that the minutes should include the names of the executive board members in relation to the discussion and not merely if they enter a reservation.

[36] See, for example, (Dagens Nyheter, 2007) (the largest Swedish morning newspaper).

[37] In contrast, as indicated by shorter term interest rates, the interest rate *decisions* in February and June (in both cases involving an increase by 0.25 percentage point) seem to have been less of a surprise.

FIGURE 2 Market Reactions in Connection with the Riksbank's Publication of Its Own Interest Rate Forecast, 20 June 2007

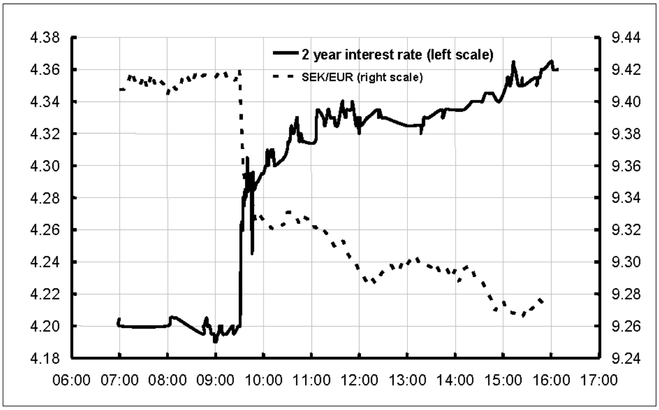
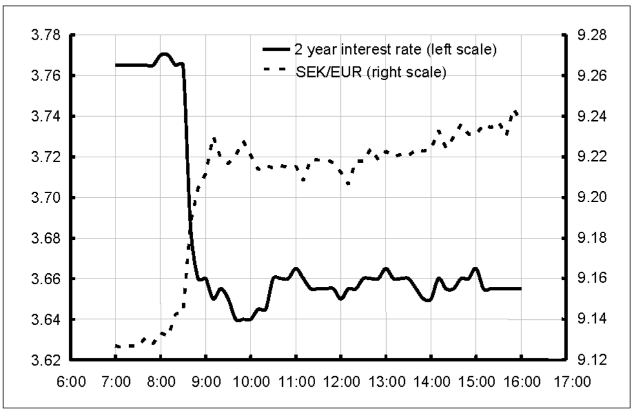


FIGURE 3 Market Reactions in Connection with the Riksbank's Publication of Its Own Interest Rate Forecast, 15 February 2007



time this should mean that monetary policy will be better understood, but on specific occasions the element of surprise may, of course, be greater. The differences that now and then unavoidably arise between the financial markets' and the Riksbank's assessment of what constitutes a suitable policy obviously becomes much clearer when the central bank publishes complete interest rate forecasts that extend several years ahead.[38] There were of course differences between the Riksbank's and the market's views of the most suitable monetary policy also during the period when the Riksbank's forecasts were based on assumptions of an unchanged policy rate. But since these differences were not visible they were never discussed.

[38] Obviously, the differences between central bank's assessment and those of individual agents in the financial markets also become clearer, which may be a reason for the negative reactions to central bank's communication.

However, there is reason to believe the criticism that has occurred has in part stemmed from the lack of practice by the market in interpreting the Riksbank's interest rate forecasts. As the new method of communication becomes better established, both at the bank and among market agents, this type of criticism is likely to fade. The most recent publication of an interest rate forecast, in October, did not cause any large market reactions. The experience of the central banks in New Zealand and Norway also inspire hope. In both countries the central banks' practice of publishing their own interest rate forecasts has worked well.[39]

5. Concluding Comments

In the introduction of this paper we observed that central banks now endeavour to be transparent and we also stated several reasons as to why transparency can make it easier for central banks to achieve their objectives. Transparency has often – not least in Sweden – been perceived as synonymous with openness and clarity in communication. At the same time, the Swedish experience shows that it can sometimes be difficult to combine openness and clarity. A clear message is often the same as a simple message. However, monetary policy must be based on complicated analyses and considerations. To explain the monetary policy in a clear and simple way can mean that one gives a misleading description and thus forgoes openness, as Fischer (1996) pointed out in the quotation we used in Section 3.

During the first years of the inflation targeting regime much emphasis was placed on gaining credibility for the new policy and for the target. This was necessary against the background of earlier problems with stabilisation policy. In the Riksbank's communications it was emphasised on several occasions that monetary policy followed a simple rule. If the inflation forecast two years ahead was higher than the target under the assumption of an unchanged repo rate, the repo rate should be raised, and vice versa. This was a simple and clear message and an extremely successful communication strategy in the sense that inflation expectations were anchored on the inflation target. The fact that target deviations arose *ex post* did not shake confidence in monetary policy. External analysts were aware that monetary policy cannot perfectly control inflation and that there will be certain fluctuations in inflation around the target.

However, the simple policy rule gradually proved to be a restriction if one wished to give a true and fair explanation of the formulation of monetary policy *ex ante*. There are important circumstances that monetary policy needs to take into account other than expected inflation one and two years ahead. This obviously applies in extreme situations such as various forms of financial crises. However, it also applies to more normal changes in the economy and inflation. Large fluctuations in food and energy prices have resulted in practical examples of something that has been emphasised for a long time in the theoretical literature: how quickly inflation should be returned to the target depends on what shocks have hit the economy. In order to deliver a simple message, it can be tempting to try to deal with this problem by focusing policy and communication on a measure of underlying (core) inflation where, for instance, energy and/or food prices have been removed. However, this entails

[39] See (Archer, 2005) and (Ferrero, Secchi, 2007) for New Zealand and (Bergo, 2007) for Norway.

the risk of confusion about what the target variable is. Moreover, there is no single inflation measure that always indicates which monetary policy measures are desirable. Firstly, monetary policy always needs to take account of developments in the real economy with regard to ascertaining how quickly inflation should be brought back on target. Secondly, it is not certain that the forecasts for inflation and the development in the real economy, given the forecasting methods available to central banks, always capture all relevant conditions that central banks have reason to monitor. Developments in house prices and credit volumes in Sweden during the 21st century are examples of this.

This presents central banks, as the Swedish experience clearly shows, with a tough dilemma. On the one hand it is necessary to establish several sufficiently simple and clear principles for monetary policy, so that the internal work can be carried out in an efficient manner and so that external analysts are able to understand, predict and evaluate monetary policy. If monetary policy does not follow some relatively simple and clear rules, credibility can easily be lost. On the other hand, credibility can also be damaged when one is forced to back down from a simplified message. The Riksbank's publication "Monetary policy in Sweden" from 2006 is an attempt to establish a few simple principles for the formulation of monetary policy. The basic ideas behind the simple policy rule are retained, but the message is somewhat modified and "modernized" – against a background of both practical experience as well as monetary policy theory. The message is more transparent than was previously the case in the sense that it is a more correct and thus a more open description of what governs interest rate decisions. Nonetheless, the message is inevitably less simple and clear than the old policy rule.

Another conclusion from the Swedish experience is that there is a strong correlation between communication and policy. This is not just in the fairly self-evident sense that central banks' communication is an important part of their policy, since the communication affects expectations on the future interest rate. How open a central bank chooses to be will also affect the analysis it conducts and thus its policy.

Sometimes the question of openness is discussed as though it were just a matter of how open the central bank should be regarding a given foundation for its decisions, for instance, whether forecasts that are used internally should be published or not. However, for the Riksbank an argument for increased openness has also been that it could raise the quality of internal work. Since the inflation forecasts are published they can also be evaluated, and this puts pressure on the bank to develop its forecasting methods. In the same way, but perhaps to an even greater extent, the decision to publish forecasts based on a repo rate path (first market expectations and then the Riksbank's own interest rate forecast) has affected the internal analyses and decision-making processes. When the executive board of the Riksbank decided to be more explicit about the way in which it envisages future interest rate developments, it was also necessary to have more discussions internally about alternative future interest rate paths. Thus the question of the balance between price stability and real stability also needed to be more explicitly discussed, internally and in the external communication. This was followed by the publication of the document "Monetary policy in Sweden" in 2006 and by the bank's own interest rate forecasts in 2007, which involves further steps towards flexible inflation policy in the sense of the theoretical literature – and greater openness. To date, the changes in communication have received a divided response from the media and financial market agents. This is probably due in part to the fact that greater openness has also meant that the message is less simple than before. In all likelihood, it is also a question of it taking some time for market agents and others to grow accustomed to a new way of communicating monetary policy, just as it takes the central bank time to succeed in making its communication as clear as possible.

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