Conducting Monetary Policy with a Collegial Board: The New Swedish Legislation One Year On

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March 2000

Abstract
In this paper we discuss the recent experience of conducting monetary policy with a collegial board according to the Riksbank act. Interest rate decisions are normally taken with the aim to bring inflation in line with the 2 per cent inflation target one to two years ahead. When there are dissenting views in the Executive Board, the majority rule serves as a formal aggregation rule. Disagreements on the inflation outlook have occurred due to different opinions on the relation between growth and inflation, the current state of the economy and the future outlook for exogenous determinants of inflation. By publishing inflation reports and minutes from meetings with the Executive Board, good incentives are provided to both the staff and the Executive Board to do their best and it also ensures accountability on the part of the Executive Board for achievement of the price stability objective.

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[1] This paper was prepared for the conference "Central Bank Independence: the Economic Foundations, the Constitutional Implications and Democratic Accountability", in Stockholm 3-4 December 1999, organized by the Department of Law, Stockholm University, in co-operation with the Centre for Commercial Law Studies, Queen Mary & Westfield College, University of London and the London Institute for International Banking, Finance and Development Law. We would like to thank Malin Andersson, Mårten Blix, Hans Dillén, Martin Edlund, Per Jansson and Christian Nilsson for research assistance, Charlotta Groth for advice on the academic literature and Robert Sparve, Eva Srejber, Lars Svensson and Anders Vredin for comments. The views expressed in this paper are solely the responsebility of the authors and should not be interpreted as reflecting the views of the Executive Board of Sveriges Riksbank.

1. Introduction

In the literature on optimal delegation of monetary policy the central bank is normally portrayed as a single individual, who rationally processes the information available. In real-world central banks, however, the executive body is usually a board, where the Governor is *primus inter pares* (with the casting vote in case of a tie). There is also a staff, which is responsible for presenting forecasts of inflation and the economic development in general, conditional e.g. on different paths of the interest rate, which is to be set by the board.

The internal decision structure of the central bank has not been subject to much economic analysis. The few studies that exist deal primarily with the US Federal Reserve Bank.[2] In these studies, the first reason to prefer a collegial board to a single individual is to balance the influence of different groups in society on monetary policymaking, hence making monetary policy less influenced by partisan interests. The second reason is to assure that adequate competence is present in the decision-making body.

The aim of this paper is to discuss some issues concerning the institutional set up for monetary policy and price stability in Sweden. In particular, we will analyse the relation between political system and the Executive Board and the internal decision-making structure at the Riksbank, when aggregating information in order to take decisions on interest rate policy.

In 1993 Sveriges Riksbank announced an inflation-targeting strategy, stating that CPI inflation, from 1995 and onwards, should be limited to 2 per cent a year with a tolerance interval of ± 1 percentage point.[3] The inflation rate has since then been fairly well in line with the target and the credibility of monetary policy has been enhanced. The amendments to the Swedish central-bank legislation in 1999 can be viewed as being consistent with a strategy for maintaining the improved monetary policy performance by explicitly assigning price stability as the goal of an independent and accountable central bank.

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[2] See for example Faust (1996) and Waller (1989, 1992). von Hagen and Süppel (1994) provide an analysis of the effects on inflation performance of shifting power between the centre and the periphery within a monetary union, and apply the results to the European Central Bank.

[3] Monetary policy is currently based on an assessment of underlying rate of inflation, eg CPI excluding indirect taxes and subsidies and house mortgage expenditures, see Heikensten (1999) and Berg (1999).

The fundamental reason why long-term price stability is desirable is that inflation is detrimental both economically and socially. For example, unexpected inflation arbitrarily shifts wealth between borrowers and lenders. Moreover, high and volatile inflation detoriates the information content in prices and makes it harder to make appropriate economic deciscions such as evaluate the real return of future investments, thereby undermining investment spending and is thereby ultimately detrimental to real growth.

A central bank is in a unique position to pursue the objective of price stability since monetary policy is the main determinant of inflation. Government control over monetary policy entails temptations to use it in order to gain short-term benefits in terms of e.g. employment. Such improvements are related to surprise inflation and are temporary. Nevertheless they create higher inflation expectations, leading to wage-price spirals. The government may be tempted to accommodate those expectations, which is damaging for its long-term credibility. In equilibrium the inflation rate is higher than desirable without any long-term gains in employment. An institutional change that convinces market participants that the government will not create surprise inflation will reduce the equilibrium inflation rate.

Delegating monetary policy to an independent central bank with strong preferences for low inflation is hence a means of strengthening the credibility of the inflation target, see Rogoff (1985). The modern view on optimal delegation of monetary policy can be summarised in three points:

a) The political authorities define a clear goal for monetary policy, price stability being the most appropriate goal. This goal should preferably be explicitly legislated.
b) The central bank is given operational (or instrument) independence in order to be able to fulfil the target.
c) The central bank is held accountable to the political bodies for the monetary policy conducted.

The amendments to the Riksbank act which came into force 1 January 1999 were designed to give the Swedish central bank greater independence from political influence, establish price stability as the objective for monetary policy with a statutory backing and ensure accountability on the part of the Riksbank for achievement of its policy objective.[4] [5]The Riksbank shall also promote a safe and efficient payment system.

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[4] With regard to exchange rate policy, the Government will have the authority to decide, after consultation with the Riksbank, on the choice of exchange rate regime. The Riksbank will have responsibility for the implementation of the exchange rate regime adopted by the Government. This

The management structure of the Riksbank was changed. Under the previous system, the Governing Board, which is appointed by the Riksdag, had responsibility for operational matters in monetary and exchange rate policies. Although this system had worked well in the past, it was in violation of the requirement of central bank independence formulated in the Maastricht Treaty. The responsibility for monetary and exchange rate policies was instead transferred to a new body, the Executive Board. The Executive Board has six full-time members of whom one is chairman and Governor of the Riksbank.[6] Their term of office is six years and they will be up for election on a rolling basis. The General Council (former Governing Board) retains general, supervisory functions and appoints the members of the Executive Board.[7]

The Executive Board and the General Council have also other responsiblities. The Executive Board shall draft a budget for the Riksbank´s administrative activities during the following accounting year. The Executive Board shall submit the budget to the Parliamentary Standing Committee on Finance and the Office of the Parliamentary Auditors and the General Council for their attention. An Annual Report of the Riksbank's operations during the preceding accounting year shall be submitted by the Executive Board to the Riksdag and the Office of the Parliamentary Auditors and the General Council. The General Council shall make proposals to the Riksdag and the Office of the Parliamentary Auditors on the allocation of the profit of the Riksbank.

For the credibility of monetary policy and its support in society it is important that the policy can be widely understood, openly discussed and evaluated. Accountability and transparency are ensured in several ways. Speeches by the members of the Executive Board reveal overall policy intentions and views on structural issues in the economy. The quarterly inflation reports present the inflation forecasts, facilitate policy assessment and encourage discussion of monetary policy issues. The semi-annual presentation of a report to the Standing Finance Committee of the Parliament is part of the assessment procedure. Financial stability reports are published twice a year.

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means, for example, that the Riksbank will decide on the central rate and the band width in a fixed exchange rate system and on the practical application of policies in a floating rate system.

[5] The first step towards making the Riksbank more independent was taken already in 1988. For a discussion of the Swedish debate, see Apel and Viotti (1998) and Heikensten and Vredin (1998).

[6] Also having Constitutional status is a provision to the effect that no public authority will be allowed to issue instructions to the Riksbank in matters relating to monetary policy. A corresponding provision is included in the Riksbank Act. No member of the Executive Board is allowed to seek or accept instructions in monetary policy matters, except in the form of law adopted by parliament.

[7] It is not possible to separate a member of the Executive Board from his position unless he no longer fulfills the conditions required for the performance of his duties or if he has been guilty of serious misconduct.

According to chapter 3 Art. 3 in the Sveriges Riksbank Act (1988:1385)[8] minutes shall be taken at meetings of the Executive Board. At its first meeting on 4 January 1999 the Executive Board decided that it would devote eight to ten meetings a year to more comprehensive monetary policy analysis and assessment. The Board also decided to publish the minutes from those meetings. The minutes announce the view of the entire Board as well as separate members on the current economic situation. The minutes were first published with a time lag of six to eight weeks. Since October 1999, the publication lag has been reduced to between two and four weeks.

In the next section we discuss the reasons to prefer a collegial board to a single decision-maker when taking interest rate decisions. We discuss the role of a loss function for the central bank and relate it to the horizon for meeting the inflation target, i.e. the target horizon. We then describe how the staff and the Executive Board interact in producing the inflation forecast and discuss the aggregation and voting process. In the third section we describe some incidents during 1999 when the new decision-making framework was put to the test. We also discuss market reactions on the minutes from monetary policy meetings, the inflation reports and changes in the repo rate – the policy instrument of the Riksbank. The fourth section concludes.

2. Optimal delegation in theory and in practice

2.1 Balance of power

We will first discuss the balance of power in terms of the allocation of votes. To achieve a good equilibrium, preferences and judgements must be co-ordinated. One way of doing this, suggested by Faust (1996) to be the *raison d'être* for the construction of the Federal Reserve, is to create an independent, balanced board. This may allow for discretionary policy-making in the best interest of society. The policy conclusion is that diverse inflation preferences of the public may require that monetary institutions, in order to be successful, need to be more zealous than the public at large in its anti-inflation quest. This is Rogoff (1985) conservative central banker result extended to a collegial Executive Board setting.[9]

[8] As amended to apply from 1 January 1999 (unauthorised translation)
[9] However an alternative to appointing a conservative (strongly inflation-averse) Executive Board can be the contracting or legislative approaches for containing the inflation bias, see Walsh (1995) and Persson and Tabellini (1993).

Waller (1989) makes a case for the view that staggered appointments to the board of an independent central bank will make it easier to predict future policy actions, which in turn implies smaller forecast errors and, thus, smaller fluctuations in output and inflation. The main result in Waller (1992) is that overlapping terms for the members of the Executive Board will mean that more moderate members will be appointed. Hence, to the extent that these less extreme preferences are reflected in monetary policy decisions, the politically induced volatility in output and inflation will be less than otherwise. According to the Riksbank Act, the appointment of the six members are staggered in time, so in this respect the Act fulfils one important condition for central bank independence within this framework.

The Governor undoubtedly has a greater influence on the monetary policy decisions than the other members of the Executive Board. From a formal point of view, this is related to the fact that the Governor has the casting vote in case there is no majority, in particular since there are six members on the Board.[10] It might therefore seem especially motivated to avoid strong political influence over the election of the Governor. This corresponds to the conclusion in Waller (1992) that the term for the Governor preferably should be leading the general elections by one period. Members of the Executive Board are from now on appointed for a term of six years, while elections to the Riksdag (the Parliament) – and the General Council – are held every fourth year. With such term periods, the appointment of the Governor will occur with varying lead/lags relative to the election to the Riksdag.[11]

Another implication of the analysis in Waller (1992) is that the term of the Executive Board members should be relatively long compared to the interval between the general elections (and the elections of the members of the General Council, which has a term that is concurrent with the Riksdag). Such an arrangement would reduce the incentives for the majority to elect a partisan candidate. Since the appointments to the Board are staggered, changing the composition of the Board is a lengthy process; hence monetary policy ought to be sheltered from day-to-day political pressures.

It might also be argued that the partisan framework is less relevant for the Riksbank, which in the new Riksbank legislation is given a legislated primary goal of price

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[10] This differs for instance from the case in UK, where there is an odd number (nine) of members in the Monetary Policy Committee.

[11] This is assuming that all Governors serve the full term. Waller (1992) assumes, in accordance with the appointment rules applied to the Board of Governors in the Federal Reserve, that in case a board member does not serve the full term, the successor is appointed to the remainder of the term. According to the Riksbank Act, a successor that is appointed in "mid-term" will be appointed for an entire six years term. Hence, the initial pattern of staggering might change over time.

stability. Hence, according to this view, the members of the Executive Board can be seen as having common preferences – for stable prices - and any partisan motives when appointing the Executive Board are abstracted from. However, as we turn to the issue of common versus individual preferences below it is clear that inflation targeting involves concerns about real variability and the relative weight put on inflation and output may therefore easily differ among board members.

2.2 Preferences and aggregation of information

The second reason to prefer a collegial board to a single individual might be to assure that adequate competence is present in the decision-making body, and not just within the analytic departments of the central bank. However, even when the board members have common preferences over macro variables, it is necessary to think about how information is processed by the staff and how it is aggregated over the members of the executive body into decisions on monetary policy.

In this section we will discuss what factors determine the monetary policy response, i.e. how the Riksbank adjusts its instrument (the repo rate) in order to fulfil the monetary policy objective. The interesting issues with an Executive Board setting the interest rate are whether or not the various decision-makers have different views on the loss function (see below), the horizon for implementing the inflation target, the inflation forecast and the impact a change in the repo rate will have on the inflation outlook. Our starting point is that there is agreement on the target variable. As is evident from a clarification of the inflation target published in February 1999 and statements in inflation reports published in June and October 1999, while monetary policy is currently based on an assessment of underlying inflation as measured by UND1X, headline CPI is still target variable in the long run, see footnote 3.

2.2.1 Loss function and target horizon

In the academic literature, inflation targeting involves both attempts to minimize deviations of inflation from the explicit inflation target and concerns about real variability.[12] The loss function of a central bank thus includes both inflation and output gap variability.[13] Monetary policy affects the economy with some lags and current interest rate decisions therefore primarily affect future inflation and future

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[12] In formal analysis preferences for output stabilization is measured by the parameter λ in a loss function of the type $L_t = (\pi_t\text{-}\pi^*)^2 + \lambda y_t^2$ for where $(\pi_t\text{-}\pi^*)$ and y_t are the inflation and output gap respectively.

[13] See the clarification on the formulation of monetary policy in Heikensten (1999)

levels of the output gap. In order to agree on a certain interest rate, the members of a decision-making body have to make an assessment of the appropriate target horizon for meeting the target and of the inflation forecast on that horizon.
This target horizon may be interpreted as reflecting the loss function of the central bank. In general, if the central bank assigns a relatively large weight on output stabilization in the loss function then the target horizon for inflation is relatively long.

According to the clarification of the inflation target the Executive Board normally takes interest rate decisions with the aim to bring the inflation rate in line with the target one to two years ahead. Hence, the so-called target horizon is usually one to two years under normal circumstances. We interpret this as a clarification by the Executive Board that inflation targeting in practice implies concerns about real variability. In the clarification, it was also pointed out that in the event of a sizeable deviation from target, there may be grounds for weighing the ambition to achieve a rapid return to target against its consequences for the real economy.[14] There should therefore be scope for adjusting the target horizon in the event of a sizeable shock. If the normal target horizon is considered to be insufficient for returning inflation to the target, this should be made clear. Individual members of the Executive Board may have different opinions on the appropriate target horizon, in the event of such a shock. To date, however, there has not been disagreement on the appropriate target horizon within the board. On the other hand, there has been disagreement on the inflation forecast, which we will discuss below.

2.2.2 The inflation forecast

In this section the role of the staff and the role of the Executive Board in producing the inflation forecast will be discussed. A full forecasting exercise, in order to prepare for the publication of the inflation report, is undertaken by the staff four times a year. Approximately half way through the process, the staff presents its recommendation to the members of the Executive Board (in a so-called Policy Report), who then discuss the outlook and make their evaluation of it. With this as a basis, the Executive Board then commissions the staff to finalise the Inflation Report. [15]

The operative work in preparing a forecast is undertaken at the Economics Department. In general, the forecasting horizon comprises two years but it may vary somewhat depending on what particular variable that is considered. For the purpose

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[14] See Heikensten and Vredin (1998) for a discussion of flexible inflation targeting.
[15] At monetary policy meetings with the executive board when no inflation report is discussed, an inflation update is presented, referring to the inflation outlook in relation to the previous report.

of making the forecast operationally useful, it is of course crucial to be precise about the conditioning set on which the forecast relies, in particular about the assumptions concerning the bank's own instrumental rate (the so-called repo rate). At present, the Riksbank's forecast is based on the assumption that the repo rate is kept unchanged during the whole forecasting period. While this assumption obviously is not without problems, it has so far turned out to be a useful device for communicating the forecast and its policy implications, both internally and externally. By contrast, the inflation forecasts of many external observers assume some change in the repo rate over the forecast horizon. An illustrative calculation, based on repo rate changes in line with the expectations of money market investors as reported in a survey, has therefore been presented in the inflation reports since October 1999.

In the bank's Inflation Report the point estimate of the forecast is the development of the economy that is perceived to have the largest probability of occurring. This means that it is the modes of the underlying forecast distributions of the variables that are being considered. The Inflation Report labels this development the main scenario. Technically, the mode corresponds to the maximum value of the forecast distribution.

As concerns the use of the forecast in the conduct of monetary policy, it is important to note that not only the point estimate of the forecast is used but that policy also considers the uncertainty that surrounds the point forecast. In practice this means that the whole distribution of the forecast, in particular the mean forecast and the variance, is considered when discussing policy.[16]

The uncertainty analysis discussed is based on two types of assessments for each factor that is deemed to affect inflation. First, an assessment is made whether or not the uncertainty in the forecast is larger or smaller than the uncertainty that historically has been associated with the factor. Second, an assessment is made if the probability of outcomes above the main scenario is deemed to be larger than the probability of outcomes below (i.e. the possibility of asymmetric risk). For each factor these assessments are then summarised in a (possibly skewed) forecast distribution. The resulting distributions are then weighed together to an inflation-forecast distribution with weights that reflect each factor's relative importance for future inflation.

The Executive Board takes the main scenario and the picture of risk from the Economics Department's analysis as starting point for its assessment. The initial assessment from the Economics Department thereby provides a concrete basis for the

[16] For further details see Berg (1999). See also the discussion in Svensson (1999) and Blix and Sellin (1999).

Executive Board's discussion. Various alternative scenarios, reflecting different assumptions regarding the paths for important exogenous variables, e.g. oil prices, or inherently uncertain starting values for endogenous variables, e.g. the current output gap, are presented. The Executive Board's conclusions may imply that the main scenario and the distribution for the inflation forecast are revised. The role of the Economics Department is then to make sure that a new consistent projection is produced and presented to the Executive Board for its final assessment. This final assessment is presented in the Riksbank's Inflation Report, enabling the Riksbank to pedagogically communicate its assement of the inflation outlook.

The focus of interest now becomes how the information about the present state of the economy and the forecast for future inflation should be aggregated into a decision on monetary policy.

2.2.3 Aggregation and voting

The next issue concerns the aggregation process for the Executive Board's inflation forecast and the voting on the repo rate. Since the Executive Board obtained the responsibility for conducting monetary policy, four consecutive inflation reports have been published during 1999. All members of the Executive Board supported the inflation forecasts presented in the first two reports. However, one member of the executive board did not support the forecast presented in the third report, published in October 1999. In the minutes published around two weeks after the publication of the inflation report this member announced her own inflation forecast. Thus, in case there are disagreements on the inflation outlook, the inflation forecast as presented in the inflation reports represents the majority view on future inflation.

At four occasions in 1999 individual Executive Board members have expressed reservations to the majority decisions taken regarding the repo rate. So far, disagreements have occurred for the following reasons.

First, there may be disagreement on how to model the economy, for example the link between growth and inflation. According to the minutes from the meeting of the Executive Board on 5 October, Eva Srejber entered a reservation against the decision to adopt the Inflation Report. She did not support the majority view that improved confidence in monetary and fiscal policy, deregulations and increased competition pointed to a somewhat weaker link between growth and inflation than had been assumed in June 1999. Eva Srejber presented an alternative, higher, forecast, partly based on another assessment of the link between growth and inflation.

Second, there may be disagreement on the current state of the economy. During the summer in 1999 two Executive Board members, Eva Srejber and Kerstin Hessius, identified an upward risk for the inflation rate. Both Board members opposed leaving the repo rate unchanged. According to the minutes from the Executive Board meeting on 12 August Ms. Hessius stated that the repo rate should be raised by 0.25 percentage points. Ms. Srejber stated that the repo rate should be raised by 0.10 percentage points. Ms. Hessius shared the other Board members' view on the economic situation but considered that in a situation with high growth figures in Sweden and appreciably improved international economic prospects, the present level of the repo rate, at 2.90 per cent, was too low. Eva Srejber judged that the growth rates in Sweden and abroad, with rising resource utilisation in Sweden, were leading to increased inflationary pressure. She suggested that with an unchanged, monetary stance, in one to two years' time inflation would be above 2 per cent. Eva Srejber restated her dissenting view on the current state of economic situation in October.

Third, there may be disagreement on the future path for one or several exogenous determinants of future inflation, for example oil prices. In October, the majority assumed that the barrel price of crude oil would fall back from the current level to just over USD 17 at the end of the forecast period. Eva Srejber, on the other hand, suggested that the oil price would fluctuate around USD 20. In November, Villy Bergström entered a reservation against the decision to raise the repo rate on the grounds that the wage forecast was somewhat too high.

There has also been disagreement on the timing of interest rate decisions and how changes in the repo rate should relate to the inflation forecast. According to the separate minutes of the Executive Board meeting on 22 April, Lars Heikensten entered a reservation against the decision to leave the interest rate unchanged and stated that the repo rate should be reduced by 0.25 percentage points. The decisive argument for this was that, excluding transitory effects and with the repo rate unchanged, inflation one to two years ahead would be somewhat below the target. According to Mr Heikensten, a decision to refrain from lowering the interest rate in that situation could mean the establishment of a higher than necessary interest rate for a longer period of time. However, the majority of the Board underscored that it was too early to decide whether there was room for another interest rate reduction and emphasised the importance of waiting for new information to get a clearer picture of the inflation outlook.

We would like to end this section by emphasising that when there are dissenting views the majority rule serves as a formal aggregation rule. In the aggregation process, the chairman, Urban Bäckström, has a strong role for two reasons. First, he has the casting vote, in case there is no majority in the board. In practice, this means that he only needs the support from two other members in order to form a majority. Second, the chairman puts forward the proposition. In order to be informed about individual preferences and possible outcomes of the voting procedure negotiations may be undertaken before the proposition is made. This was for example evident at the meeting on 24 March 1999 when the inflation outlook pointed to a repo rate cut. Two alternatives were discussed: a reduction by either 0.15 or 0.25 percentage points. Several members then pointed out that there was an advantage in conducting monetary policy with clear, distinct steps in the repo rate. Altogether, five members considered that a reduction of the repo rate by 0.25 percentage points was appropriate. The sixth member declared a rather indifferent attitude to the choice between the two alternatives and was therefore willing to support the majority view. The Chairman thereafter proposed the Executive Board to unanimously decide to reduce the repo rate by 0.25 percentage points, which it did.

3. Being accountable in practice

3.1 The Riksbank put to the test

During the introductory year of institutional independence a few situations have arisen where the new decision-making has been put to the test. Two of them will be accounted for in this section along with reference to the new legislation. According to chapter 6 Art. 4 of the Sveriges Riksbank Act (1988:1385)[17] the Riksbank shall hand over a written report to the Parliamentary Standing Finance Committee at least twice a year on monetary policy. The Riksbank has chosen the Inflation Report for this purpose. When the first Inflation Report was presented by the Governor in a Finance Committee meeting on 25 March, the Riksbank had been asked by the Finance Committee to present the report in advance on the previous night. The request was however denied, due to the rule stating that the general public should have simultaneous access to new monetary policy information from the Riksbank. The Riksbank did however suggest a postponement of the Finance Committee meeting in order to provide the members with additional time for preparation. However, the standing committee decided to hold the meeting as scheduled.

The second test concerned the evaluation of monetary policy 1996-98 by the Riksdag, which focused on the fact that the annual rate of price increases averaged 0.7 per cent during 1996-98, and thus underscored the inflation target set by the Riksbank.[18]
In the hearing by the Parliamentary Standing Finance Committee on 18 May 1999 the Governor argued in an introductory remark that in each of these years CPI inflation was markedly affected by shocks that *ex post* were fairly easy to identify and only had transitory direct effects on the inflation rate.[19] Had the Riksbank attempted to counter such price movements, the result might have been unnecessarily costly for the economy, in terms of exaggerated fluctuations in economic activity as well as in the financial markets.

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[17] As amended to apply from 1 January 1999 (unauthorised translation).
[18] Inflation as measured by UND1X, which excludes interest expenditure, taxes and subsidies, averaged 1.5 percent.
[19] This was mainly due to three factors. Firstly, the repo rate cut, from 8.90 to 3.40 per cent, resulted in an initial further decrease in inflation through effects from the mortgage interest rate component in the CPI. This downward and direct impact on CPI inflation is appreciably larger in the short run than the upward tendency associated with stronger economic activity. Secondly, cuts in indirect taxes, such as the tobacco tax or the property tax on private houses, have generally constituted a one-off shift in the price level, which has not altered the inflation trend. All else equal, twelve months later the rate of inflation shifts back up to the earlier level. Thirdly, some transitory shocks have also affected the underlying inflation. For instance, the oil price fall caused both UND1X and CPI to decrease.

Shortly thereafter, in mid May, the Riksbank received fierce criticism in an assessment by a majority[20] of the Parliamentary Standing Finance Committee for its monetary policy conducted during the last three years, 1996-98. According to the majority, interest rates had been lowered too little and too late, despite a stronger krona and less expansive fiscal policy.

The criticism was met in an article by Governor Bäckström, Deputy Governor Heikensten, the previous Governing Board Chairman Feldt and the present Governing Council vice-Chairman Gernandt, emphasising the importance of price stability and the monetary policy conduct in terms of its effects on inflation expectations during these years.

At the subsequent meeting with the standing committee, in October 1999, this issue was not discussed further.

3.2 Some market reactions

With the new central bank legislation in place, communication with the general public and market participants has intensified. By publishing the inflation forecast, the minutes from the Executive Board's monetary policy meetings and speeches by all members of the board, intentions and changes in the monetary policy stance are communicated in a way attempting to be transparent.

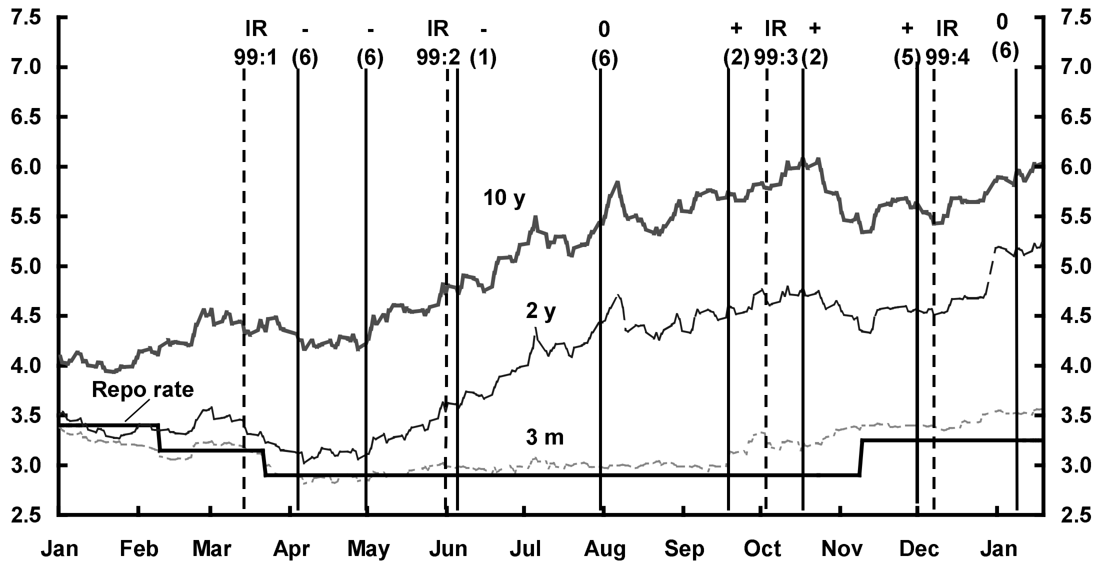
Four inflation reports and eight sets of minutes from monetary policy meetings have been published so far. The policy instrument – the repo rate – was changed three times by the Executive Board during 1999. The repo rate was lowered on 12 February and 25 March, by 0.25 percentage points each time, but on 12 November it was raised by 0.35 percentage points to 3.25 percent.

An interesting question is how the market interpreted the publications of the reports and the minutes, and what reaction, if any, they had on market interest rates. Figure 1 below shows the development during 1999 for some market interest rates. The four dotted vertical lines mark when the four inflation reports were published and the eight solid lines mark the publication of the minutes. The numbers above the lines indicate the voting results, i.e. how many of the board members that voted for a lower (-) or higher (+) repo rate. Zero indicates that nobody wanted to change the repo rate. The overall impression is that the effects on market interest rates from repo rate decisions,

[20] The SDP, the Left Party and the Greens.

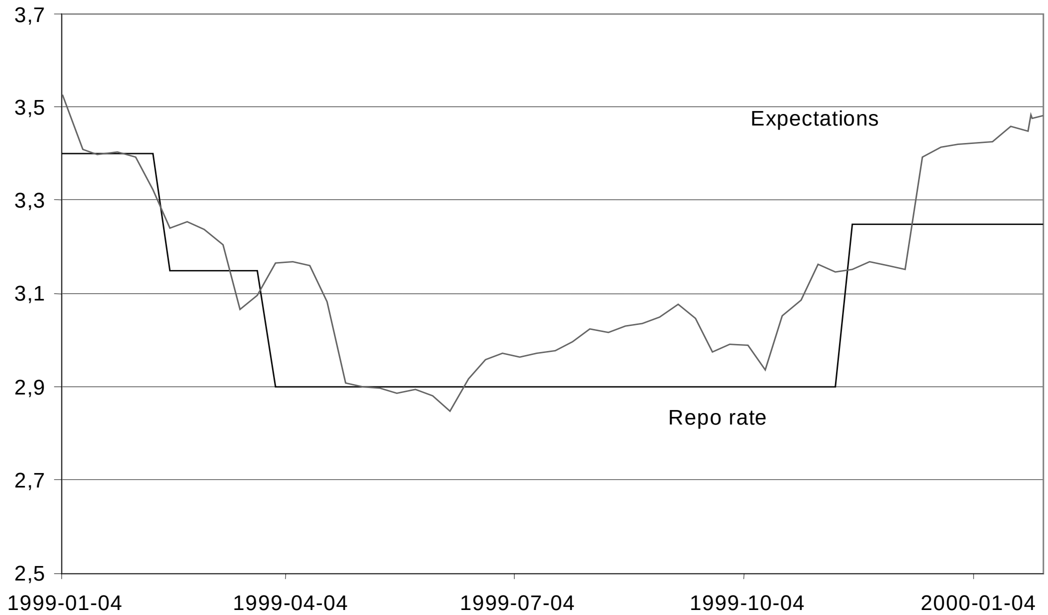
inflation reports and minutes have been relatively small. This suggests that the Riksbank has been quite clear and transparent in the communication with the market participants. The short-term interest rate was evidently affected directly by the announcement of the repo rate adjustments in February, March and November. However, the publication of the minutes also had also some effects on market interest rates. For instance, when the minutes published after the meeting in August revealed that two members of the Executive Board wanted to raise the repo rate, the short-term interest rate began to increase. In particular, the one-month forward rate rose after the publication on 21 September of the minutes of the Executive Board meeting in August.

Figure 1. Some market interest rates, the publication of the inflation reports and the minutes. Daily observations, January 1999-January 2000.



In Figure 2 it is shown that market participants anticipated the repo rate hike in November already in late September although most of them had expected an increase by 0,25 percentage points instead of the realised 0,35 percentage point increase. The upward trend in short term interest rates slowed between the publication of the inflation report on 6 October and the publication of the minutes on 20 October. The October report judged that the link between growth and inflation was to be somewhat weaker than envisaged in the June report and that inflation would be marginally above the inflation target in two years' time. The minutes published on 20 October (from the meeting on 5 October) revealed that two members of the Executive Board still wanted to raise the repo rate. Four members of the Board considered that the repo rate should continue to be kept unchanged for a time, but that it was important to send clear signals of the need to raise the repo rate in the near future. When the repo rate was finally raised on 12 November it was very much in line with market participants expectations. This experience shows that the minutes from the meetings of the Executive Board may be equally (or more) important as a signalling device than the inflation reports, as the minutes may reveal detailed information on both actual and future intentions regarding interest rate policy.

Figure 2. The repo rate and expections one month earlier according to forward rates, January 1999-January 2000.



4. Conclusions

In this paper we have discussed the recent experience of conducting monetary policy with a collegial board according to the amendments to the Riksbank act which came into force in 1999. According to the Riksbank Act, the appointments of the six members in the Executive Board are staggered in time. The term of the board members is relatively long compared to the interval between the general elections. Changing the composition of the board is therefore a lengthy process. This may reduce output volatility and the inflation bias according to the academic literature.

Interest rate decisions are normally taken with the aim to bring inflation in line with the 2 per cent inflation target one to two years ahead. There is scope for adjusting the target horizon in the event of a sizeable deviation from the target. The Executive Board takes the inflation forecast from the Economics Department's analysis as a starting point of its own assessment.

Individual Board members have expressed reservations several times to the majority decisions taken regarding the repo rate. Disagreements on the inflation outlook have occurred due to different opinions on the relation between growth and inflation, the current state of the economy and the future outlook for one or several exogenous determinants of inflation. When there are dissenting views in the Executive Board, the majority rule serves as a formal aggregation rule. The chairman, the Governor of the Riksbank, has the casting vote, but so far he has not used it. The chairman also puts forward the proposition, sometimes after negotiations have been undertaken. By publishing inflation reports and minutes from meetings with the Executive Board, the inflation forecasts of the Riksbank are openly discussed and motivated. This transparency provides good incentives to both the staff and the Executive Board to do their best. It also ensures accountability on the part of the Executive Board and its individual members for achievement of the price stability objective.

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