Centre for Monetary Economics

NORGES BANK WATCH 2005

An Independent Review of Monetary
Policymaking in Norway

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Preface

Norges Bank Watch has gained prominence in the public debate about monetary policy in Norway. The yearly reports of Norges Bank Watch provide an external evaluation of the monetary policy decisions of Norges Bank in the preceding year. In addition, each Report addresses some specific issues that are pertinent to the Norwegian monetary policy framework. The continued ability of monetary policy to provoke controversies underscores the importance of preserving the annual tradition of independent reviews by Norges Bank Watch.

We hope that Norges Bank Watch 2005 fulfils its aim of contributing to improvements to monetary policy in Norway.

Oslo, 5 April 2005

Norges Bank Watch 2005

Executive summary

Monetary policy in Norway is quite successful. The series of cuts in the signalling rate starting in December 2002, and a low interest rate during 2004, seems the appropriate policy choice. The analyses on monetary policy done in the Bank document a highly competent staff. Communication with the market is good and steadily improving. Not surprisingly, there is still room for improvement in the conduct of monetary policy in Norway. Those areas should receive particular attention in a Report like this one. In our best judgment, Norges Bank is overall doing a very good job, however.

The policy mandate and the exchange rate

A repeated issue in the discussion of Norwegian monetary policy is to what extent Norges Bank cares about exchange rate stability, and to what extent the policy mandate says that it should care about it. In our view there are indications that Norges Bank interprets the policy mandate in a narrow way, by downplaying the statement in the mandate that monetary policy also should contribute to exchange rate stabilization. We find the existing policy mandate appropriate. In some situations a clause about exchange rate stability in the mandate, and Norges Bank reminding the market about it, may affect market participants' expectations, thus contributing to exchange rate stability. As a matter of principle, the statement of the objectives for the monetary policy given in policy documents such as the Inflation Report should be complete, not excluding the part about exchange rate stability.

Central Bank independence

The procedure of having the Governor submit his suggested proposals to the Board, the day before Board meetings, to the Ministry of Finance, does not limit the policy options considered by the Board. However, it may limit the influence of the outside directors. More resources committed to the Board should be considered like providing outside Board members with research assistants within the Bank. Also, time and money devoted for the outside Board members to be working on monetary policy could be enlarged. The Government's right to instruct Norges Bank does not limit the Bank in its execution of monetary policy. This option acts as an escape valve and as a means for rapid decision making. We see no reason for scrapping it.

A narrow theoretical framework

Given the large deviation from the 2.5 percent inflation target, a direct evaluation according to a standard loss function for a central bank only caring about inflation and output variability, would presumably indicate that monetary policy is highly unsuccessful. Yet there is currently almost no criticism of monetary policy in Norway. Observers, be it politicians, social partners, market participants - with few exceptions - do not consider the very low rate of inflation an important problem, as long as the real economy is doing well. On the other hand, many of the same observers are really concerned about the future development of variables that monetary policy, narrowly conceived, should not care about. This discrepancy suggests that either the theoretical framework is too narrow, or that most observers do not really understand what is going on. The former, we believe, is the case.

Norges Bank's policy documents reflect the work of a highly competent staff. Norges Bank follows the current thinking and progress around inflation targeting. However, as the main approach to monetary policy is methodologically rather narrow, it is important that Norges Bank is open also to other parts of the economic literature, and to other perspectives on monetary policy. The Bank's regional network is one example of such openness.

What should a central bank care about?

Under a flexible inflation target, the central bank cares about low and stable inflation, as well as output stability. When inflation variability is a sign of instability in the real economy, addressing this instability usually also involves an appropriate policy for the real economy. However, when inflation variability is caused by other factors, such as exogenous supply shocks, inflation variability does not imply similar costs to society. In contrast, there is reason to believe that variability in other variables, which inflation targeting central banks usually do not care directly about, do entail real costs.

Large fluctuations in the real exchange rate may involve considerable costs for the economy. Under flexible inflation targeting, the interest rate is not pinned down exactly by the inflation target. In situations where the exchange rate is viewed as very weak or very strong, one may allow a longer horizon for reaching the inflation target, thus providing room to take the effect of interest rate changes on the exchange rate into consideration.

The interest rate is primarily an instrument to ensure low and stable inflation, as well as a stable real economy. When the economy is changing, the interest rate must also change. However, large changes in interest rates increase the risk that some households and enterprises make financial decisions based on incorrect expectations. A concern for the negative consequences of large changes in the interest rate suggests that the central bank should try to avoid setting very low or very high interest rates, as long as this is consistent with the inflation and output objectives.

Monetary policy under low inflation

Low inflation and negative output gap in Norway over the last two years have called for a low interest rate to stimulate the economy, reducing unemployment and pushing inflation up towards the 2.5 percent target. To reduce the risk of excessively stimulating the economy, the Bank should not set a too low interest rate. By extending the horizon for achieving the 2.5 percent inflation target to 3 years, the Bank does take the cautious approach as advocated here. The current low rate of inflation does not imply that the inflation target should be reduced. The appropriate response to positive supply shocks is to stretch the horizon for reaching the inflation target, ensuring that monetary policy contributes to a stable evolution of the real economy.

The new macroeconomic model NEMO

The new calibrated macroeconomic model NEMO is likely to prove useful to the Bank. However, a model of this type may downplay the risks and uncertainties associated with monetary policy. Thus, it is crucial that the Bank supplements the analyses done in NEMO with other types of analyses and information, when policy decisions are made. It is our understanding that Norges Bank is aware of the importance of supplementing NEMO with other types of information and analyses, in accordance with this view.

Too tight monetary policy in 2002 and into 2003….

Monetary policy operates with long time-lags. Thus, the effects of monetary policy decisions taken in 2001-03 are still being felt in 2004-05. Likewise, decisions taken in 2004 must be judged in light of how the economy performs in 2005 and 2006.

In 2003 and 2004, inflation was far below the 2.5% target, and the output gap was negative. This is strong evidence that monetary policy, viewed with the benefit of hindsight, was too tight in 2002 and early 2003, and possibly also in 2001. The tight monetary policy and strong krone at the time contributed to Norwegian firms increasingly expanding abroad. However, when Norges Bank started to act, the series of cuts in the interest rate since December 2002 seems an appropriate response to the situation.

To some extent, the too tight monetary policy reflected that throughout 2002 and 2003, Norges Bank’s wage forecasts for 2004 were consistently higher than the actual outcome, leading to too high inflation estimates. Other forecasters expected lower wage growth. When such large discrepancies occur, the Bank should work out alternative strategies based upon various likely assumptions, thus being able to react quickly when one of the alternatives plays itself out.

However, the setting of interest rates must also be seen in the light of the wage formation process. By raising interest rates after the 2002 wage negotiations Norges Bank demonstrated the consequences of too high wage growth with an inflation target. This interest rate hike and the subsequent weakening of labour market conditions contributed to the observed wage moderation in 2003 and 2004.

…. calling for decisive actions through 2003 and loose monetary policy in 2004

On the quality of the decisions taken in 2004 and into 2005, the jury is still out. Was the final bout of rate cuts, from 2½% in October 2003 to 1¾% in March 2004 necessary? On the one hand, they took place when the domestic economy already had turned the corner, confirmed by increasing demand, production and employment. On the other, core inflation continued to surprise on the downside, hitting a low of –0.1% in January 2004, strongly suggesting a low interest rate.

In July 2004 the two-year horizon was abandoned in favour of a more flexible horizon of 1-3 years. Such a step had been recommended by many, e.g. NBW-04. Given the low prevailing rate of inflation, maintaining the two-year horizon would mean that rates would have to be cut even further, increasing the likelihood of real economy instability.

NBW approves of the decision to stretch the horizon to 1-3 years. A longer time horizon gives the Bank more flexibility when responding to shock, implying that stability of the economy can be given more weight. As the rationale for stretching out the horizon is both reasonable and clearly spelled out, the credibility of the inflation target should not be put in jeopardy.

The present challenge is to avoid stimulating the economy excessively

Current monetary policy is expansionary, with the folio rate at its lowest level since 1816, and the real rate 1½-2½ percentage points below its assumed neutral level. The output gap is currently close to zero, and is expected to be positive for the next four years. In such a situation, monetary policy must avoid an excessive stimulation of the economy. Too strong growth entails a risk for a renewed period with a too high interest rate, an appreciating krone and loss of competitiveness for Norwegian enterprises. The time is ripe for gradually abandoning the current expansionary monetary policy. It is therefore comforting that Norges Bank’s Board in its latest strategy document (enclosed in IR 1/05) is signalling that rates will be raised towards normal levels over the next four-year period. The rate should be hiked in a measured way, to await market reactions. Relevant and persuasive communication should be part of the action, reducing the risk of a currency appreciation.

The importance of forecasting must not be undervalued

Since changes in the interest rate affect the economy with a lag of 2-3 years, forecasting economic developments over the short- to mid-term is a necessary element in the conduct of monetary policy. The forecasting errors, in particular for the rate of inflation, have been large. Also, Norges Bank’s fan charts seem to underestimate the real uncertainty associated with the inflation forecasts. To what extent forecast errors could have been smaller by employing other methods, one cannot know. A proper evaluation and comparison of the various forecasts and reasons for their large deviations from the later observed values of the relevant variables would be useful, both when it comes to improving the forecasts, and when assessing the uncertainty associated with the forecasts.

The large forecast errors illustrate the need for at least two forecasters with sufficient resources. It is therefore important that Statistics Norway allocates enough resources to forecasting and analyses of the development of the Norwegian economy.

Norges Bank is overall a transparent communicator….

A central aspect of inflation targeting is to communicate the central bank's objectives and plans and likely response function. Norges Bank is doing a good job in informing the market and the public at large. Communication has been continuously improved over the years. The Inflation Report, in particular, contains much information that helps to enlighten the markets' understanding of the conduct of monetary policy. Analyses in the

Inflation Report are driven by a commitment to seek a better understanding of the forces shaping economic activity and inflation going forward. The decision to publish the Board's strategy Report for the forthcoming strategy period in the Inflation Report, has further improved communication.

Norges Bank has taken an active approach in communicating with the academic community and with the public at large. It is very valuable that researchers in the Bank take part in the scientific debates with fellow researchers outside the Bank.

Norges Bank is doing a good job in communicating the objectives and plans of monetary policy with the social partners. The hearings in the Storting meet the expectations of the politicians.

In regard to the stretching of the horizon to 1-3 years in July 2004, there is, however, a notable discrepancy between Norges Bank and external observers. The Bank does not consider the change as important, while external observers generally do. When policy formulations are changed significantly, while the Bank maintains that the policy is the same, private agents may be uncertain how the new formulations should be interpreted. This may reduce transparency and predictability of the monetary policy.

If monetary policy is fully transparent, market reactions to actual interest rate changes should be small, as the market would respond continuously to new information becoming available. Such a pattern does not emerge. After four years of inflation targeting Norges Bank continues to surprise. However, surprises are few and generally of a minor nature. It is difficult to see that they represent a large problem, or reflect a substantial lack of transparency.

… but significant policy shifts should be announced at press conferences rather than at speeches

The two most important shifts in monetary policy in the last three years were announced in speeches and not after ordinary Board meetings. A speech on another subject does not allow for a proper explanation of changes in the policy stance. The fact that important changes were announced in a speech also raises the question of whether the Board actually was involved in the decisions. In our view the Board should be involved on occasions where the Bank actually changes its strategy. An extraordinary meeting should be held. The decision to take larger steps could have been communicated at a press conference, preceded by a press statement explaining that the former strategy no longer was valid, with the reasons for this change being given.

The optimal path for the rate of interest

During 2004, and also in IR 1/05, Norges Bank took further steps towards applying an optimal interest rate path, as NBW-04 recommended. We approve of this practice, not least because it implies that the forecasts will be unbiased. This has not always been the case in the past.

1 Introduction

Formally, Norges Bank has been practicing inflation targeting for four years (since March 2001). However, already in January 1999 a reorientation of monetary policy took place as it was explicitly stated by Norges Bank that an inflation rate of two per cent was a necessary (but not necessarily sufficient) condition to stabilize the krone against the euro.

Although Norges Bank is a latecomer to the group of inflation targeting central banks, it has learned fast and is steadily moving forward. Today Norges Bank is on the best practice frontier on monetary policy on a number of dimensions. Kuttner (2004, p. 21) maintains that "Norges Bank's directness on the issue of flexibility is exceptional." He goes on to argue (p. 22) that by conveying a great deal of flexibility Norges Bank "contradicts the view that a trade-off exists between transparency and flexibility."

Svensson (2004, p. 163) labels Norges Bank "an enthusiastic newcomer to the inflation-targeting camp that has moved straight into the group of best-practice inflation targeters." The Bank's practice of plotting the inflation forecast and the output-gap in the same graph, is an innovation, Svensson says, adding that the graph "clearly serves to emphasize that the Bank is concerned with the stability of the real economy as well as with inflation, emphasizing the flexibility in its inflation targeting."

The Centre for Monetary Economics (CME) at BI Norwegian School of Management has organized Norges Bank Watch since 2000 by every year inviting a group of experts to write a Report on the conduct of monetary policy in Norway. This is the sixth Norges Bank Watch Report. Its mandate reads as follows:

> *The objective of the Norges Bank Watch Report of 2005 is to evaluate Norges Bank's conduct of monetary policy, given the mandate for the monetary policy set by the Government in March 2001. The committee should evaluate if the objectives stated in the monetary policy mandate concur with those expressed by Norges Bank and whether Norges Bank uses its policy instruments efficiently in order to achieve the relevant objectives.*
>
> *The committee should also address other issues that it may find relevant for the present conduct of monetary policy.*
>
> *Finally, the committee should evaluate the communication strategy of Norges Bank.*
>
> *The Report shall be presented at a press conference no later than 1 June 2005.*

Starting last year Norges Bank Watch receives financial support from the Ministry of Finance. However, Norges Bank Watch 2005 is fully independent. The views and recommendations in this Report may not correspond to those of the Ministry of Finance.

In line with the mandate, we review Norges Bank's interpretation of the monetary policy mandate in Chapter 2. This is followed by a discussion of the theoretical framework for inflation targeting which is then applied to the Norwegian case in Chapter 3. Norges Bank's forecasts and interest rate decisions in 2003 and 2004 are assessed in Chapter 4.

Finally, in Chapter 5 Norges Bank's communication in general and with the financial community in particular, is looked more closely into.

A summary in Norwegian is provided at the very end of this Report.

Communication is a two-way street. What messages are communicated? How are the messages perceived or understood? In preparing this Report we have met with people on the receiving side, i.e. politicians in the Finance Committee in the Storting, representatives from the social partners, people working in financial markets, as well as bureaucrats in the Ministry of Finance and in Norges Bank. Also, it has been our good fortune to discuss monetary policy with the Governor and Deputy Governor in Norges Bank. We take this opportunity to thank them all for being willing to share with us their time and insights as to the conduct of monetary policy in Norway.

The views of the authors on specific issues are summarized throughout the Report. Also, an opening statement is offered at the start of each chapter (except for this one) highlighting important issues and conclusions.

2 Institutional framework and decision making process

In our view there are indications that Norges Bank interprets the policy mandate in a too narrow way, by downplaying the objective of monetary policy also contributing to exchange rate stabilization. We find the existing policy mandate appropriate. In some situations, a clause about exchange rate stability in the mandate, and Norges Bank reminding the market about it, may affect market participants' expectations, thus contributing to exchange rate stability. As a matter of principle, the statement of the objectives for the monetary policy given in policy documents as the Inflation Report should be complete, not excluding the part about exchange rate stability.

The procedure of having the Governor submitting his suggested proposals to the Board, the day before Board meetings, to the Ministry of Finance, does not limit the policy options considered by the Board. The Government's right to instruct Norges Bank does not limit the Bank in its execution of monetary policy. This option acts as an escape valve and as a means for rapid decision making. We see no reason for scrapping it.

More resources committed to the Board should be considered like providing outside Board members with research assistants within the Bank. Also, time and money devoted for the outside Board members to be working on monetary policy could be enlarged.

2.1 The interpretation of the policy mandate

The mandate for the monetary policy, as given by the Government on 29 March 2001, states that

> *Monetary policy shall be aimed at stability in the Norwegian krone's national and international value, contributing to stable expectations concerning exchange rate developments. At the same time, monetary policy shall underpin fiscal policy by contributing to stable developments in output and employment.*
>
> *Norges Bank is responsible for the implementation of monetary policy.*
>
> *Norges Bank's implementation of monetary policy shall, in accordance with the first paragraph, be oriented towards low and stable inflation. The operational target of monetary policy shall be annual consumer price inflation of approximately 2.5 per cent over time. In general, the direct effects on consumer prices resulting from changes in interest rates, taxes, excise duties and extraordinary temporary disturbances shall not be taken into account.*

Norges Bank's interpretation of its mandate in the introduction to the Inflation Report, reads as follows,

> ***Objective***
> The operational target of monetary policy is low and stable inflation, with annual consumer price inflation of approximately 2.5 per cent over time. In general, direct effects on consumer prices resulting from changes in interest rates, taxes, excise duties and extraordinary temporary disturbances are not taken into account.
>
> ***Implementation***
> Norges Bank operates a flexible inflation targeting regime, so that weight is given to both variability in inflation and variability in output and employment. Monetary policy influences the economy with long and variable lags. Norges Bank sets the interest rate with a view to stabilising inflation at the target within a reasonable time horizon, normally 1–3 years.
>
> The more precise horizon will depend on disturbances to which the economy is exposed and how they will affect the path for inflation and the real economy ahead."

In its letter to the Ministry of Finance of 27 March 2001, in connection with the new mandate, Norges Bank describes the role of the exchange rate as follows

> "The krone is floating, and the value of the krone fluctuates periodically, as do the exchange rates of other small and open economies. The best contribution monetary policy can make to stabilising exchange rate expectations is to aim at the objective of low and stable inflation. Changes in the Norwegian interest rate level have a predictable effect on the krone exchange rate only when they also contribute to low and stable inflation."

These statements indicate that there is a discrepancy between the mandate and the interpretation given by Norges Bank. The first sentence in the mandate specifies that monetary policy should aim at stability in the krone's national and international value, contributing to stable expectations concerning exchange rate developments. However, exchange rate stability is not mentioned in Norges Bank's interpretation. This discrepancy has also been pointed out by previous Norges Bank Watch reports. The 2002 Report argues that the reference to exchange rate stability should be removed from the mandate, while the 2004 Report recommends that the interpretation should be clarified.

However, more recently, Norges Bank has changed its formulations on the motivation for exchange rate stability. The Annual Report of 2002 maintains the early and narrow focus on low inflation:

> "Norges Bank no longer targets a specific level for the krone exchange rate. Developments in the krone are nevertheless of considerable importance for Norges Bank's interest rate setting. [...] The value of Norwegian krone will vary, as will the value of other countries' currencies. Norges Bank's response to a change in the exchange rate will depend on how the change influences inflation."

In contrast, the Annual Report of 2003 also mentions the effect of the exchange rate on output and employment:

> "Norges Bank has no specific target for the level of the exchange rate. However, changes in the krone exchange rate are nonetheless of central importance in

> interest-rate setting because they affect inflation and developments in activity. The response to a change in the exchange rate will depend on its expected impact on inflation, output and employment."

The role of the exchange rate in connection with the policy mandate is also discussed in speeches, e.g. in the one given by the Governor on 7 June 2004:

> "The first paragraph of the mandate sets forth its intentions. The last paragraph specifies what Norges Bank is required to do.
>
> The first sentence in the mandate refers to the value of the krone. Stability in the internal value of the krone implies that inflation must be low and stable. Low and stable inflation fosters economic growth and stability in financial and property markets.
>
> The regulation also states that monetary policy shall be aimed at stability in the Norwegian krone's external value, contributing to stable expectations concerning exchange rate developments.
>
> With open trade with other countries and free capital movements, we do not have the instruments to fine-tune the krone exchange rate. The krone has appreciated when economic activity has been high and there have been expectations of a wide interest rate differential between Norway and other countries. The krone has depreciated when activity has declined and the interest rate differential has narrowed. There is also a strong tendency for the krone to revert to a level that stabilises the price level in Norway relative to our trading partners, measured in a common currency.
>
> The task of monetary policy is to provide a nominal anchor. The inflation target is such an anchor. "

These latter formulations are closer to the discussion of the role of the exchange rate in policy documents from the Government, e.g. Kredittmeldinga 2003, where one among other things emphasizes the importance of the exchange rate for inflation and output.

The change in the Bank's formulations is in harmony with our talks with the social partners, where we repeatedly heard that Norges Bank now was more concerned about the exchange rate than it was 2-3 years ago. However, it is still the case that the role of the exchange rate is neglected in the formulations in the introduction to the Inflation Report.

Given the specification in the mandate that inflation is the operational target, it is clear that Norges Bank should not sacrifice the inflation target in pursuing a specific target for the exchange rate. However, as we point out in chapter 3.2, under flexible inflation targeting, the interest rate is not pinned down exactly by the inflation target. In situations where the exchange rate is viewed as very weak or very strong, there might be room for the central bank to keep an eye on the effect on the exchange rate, as long as this is not inconsistent with the inflation target.

This view was adopted with the 2002 change of the monetary policy mandate in New Zealand, where it was specified that

> "In pursuing its price stability objective, the Bank shall implement monetary policy in a sustainable, consistent and transparent manner, and shall seek to avoid unnecessary instability in output, real interest rates and the exchange rate." http://www.rbnz.govt.nz/monpol/statements/mar05.pdf.

In most situations, a clause on the exchange rate, or a possibility of interventions by the Bank (see discussion in Chapter 3.2), will not affect monetary policy nor the exchange rate. However, in a situation where the krone is very weak or very strong, the risk as seen from the market participants that the central bank will act to move the krone may be a risk that they do not want to take. If this is the way market participants reason, the central bank may contribute to exchange rate stability without compromising on its inflation target.

NBW's view:
There are indications that Norges Bank interprets the policy mandate in a too narrow way, by downplaying the objective of monetary policy also to contribute to exchange rate stabilization. We find the existing policy mandate appropriate. In some situations, a clause about exchange rate stability in the mandate, and Norges Bank reminding the market about it, may affect market participants' expectations, thus contributing to exchange rate stability. As a matter of principle, the statement of the objective for the monetary policy given in policy documents as the Inflation Report should be complete, not excluding the part about exchange rate stability.

2.2 Central bank independence

A very important aspect of an inflation targeting regime is the instrument independence of the central bank. In the case of Norway the Ministry of Finance is informed the day before the Board meets of what the Governor and Deputy Governor will put on the table concerning the decision on interest rates. The Ministry may offer its comments on the suggested decision. Those views are communicated to the other Board members the next day. This procedure neither limits the deliberations in the Board nor the decision that is finally made. The Executive Board of Norges Bank alone is responsible for monetary policy decisions taken.

Once the rate decision is made, a letter informing the Ministry of Finance is dispatched from Norges Bank. Later in the day, usually at 14:00, the decision is made known to the public at large, on a press conference as well as on the web.

The Board is free to change the recommendation suggested by the Governor to the Ministry of Finance. Thus, this procedure does not limit Norges Bank's deliberations and decision making vis-a-vis the Ministry of Finance. However, one may wonder whether it limits the arguments and policy options outside directors of the Board are likely to put forward on the Board meetings.

Norges Bank is quite explicit on the fact that the prior information to the Ministry of Finance does not remove the Board from the responsibility it has for taking the appropriate decisions.

A related issue of a more constitutional character, is whether the Government's right to instruct Norges Bank should be terminated. It was applied for the first time in March 2001, as the vehicle through which inflation targeting was introduced. When the right to instruct is being employed, Norges Bank shall receive notice beforehand. When the Storting is informed about the Government's use of its right to instruct, the Storting shall also receive Norges Bank's view on the issue. To instruct the Bank on its interest rate decision, however, is not on the agenda. If it were, it would be tantamount to asking the Governor to resign.

The overall constitutional responsibility for economic policy rests with the Ministry of Finance. Monetary policy, being part of the overall economic policy, thus also is within the purview of the Ministry. An unforeseen situation arising in which the Ministry's right to instruct Norges Bank would be a useful device does not seem likely, but it cannot be ruled out completely either. A right for a Ministry to instruct lower level decision making bodies is in the Norwegian legal tradition. It acts as an escape valve and as a means for rapid decision making (cf. March 2001). We disagree with NBW-04 (p. 78) on the need for reforming the institutional framework to strengthen the formal independence of Norges Bank.

NBW's view:
The procedure of having the Governor submitting his suggested proposals to the Board, the day before Board meetings, to the Ministry of Finance, does not limit the policy options considered by the Board. However, it may limit the influence of the outside directors. The Government's right to instruct Norges Bank does not limit the Bank in its execution of monetary policy. This option acts as an escape valve and as a means for rapid decision making. We see no reason for scrapping it.

2.3 More resources to the Board?

Professor Alan Blinder who was on the FOMC for a few years, states that this experience

> "left him with a strong feeling that the theoretical fiction that monetary policy is made by a single individual maximizing a well-defined preference function misses something important. In my view, monetary theorists should start paying attention to the nature of decision making by committee, which is rarely mentioned in the academic literature." (Quoted from Chappell jr. et al, 2004, p. 1)

As of January 1, 2004 the composition of the Executive Board of Norges Bank was changed. The practice of having political parties nominating Board members was discontinued. The Ministry of Finance should pick members with a broad background, including particular knowledge of economics and finance. (Of the five outside directors of the Board we now find two professional economists.) This, we venture, makes for better decision making on monetary policy matters in general and on interest rate changes in particular. However, should monetary economists take the advice of professor Blinder and start paying attention to the nature of decision making by committee?

To be more concrete in the Norwegian case, is the Board properly set up? Are the deliberations as free and constructive as they possibly can be? Should there be more than two outside professionals on the Board? Should these professionals have more resources available in the Bank and a larger work assignment?

We have not gone into the internal decision making process of the Board. However, one may wonder whether the contribution of the external Board members to the monetary policy decisions is limited by the time and resources they have available. More resources committed to the Board should be considered, like providing outside Board members with research assistants within the Bank. Also, time and money devoted for the outside Board members to be working on monetary policy could be enlarged. The effect would quite likely be better and more educated discussions in the Board meetings; an increase in the number of available options for action; and a better decision making process.[1]

When discussing the decision making process in central banks Faust and Henderson (2004, p. 133) make the point that “multiple heterogeneous policymakers may pose a practical problem for transparent communication.” One response to this would be a multistage decision making process, which they explain as follows: “First, the Board agrees on the goals of monetary policy, i.e., interprets the given mandate. Next, taking the goal as given, the Board agrees on the model of the economy. Finally, the Board makes policy taking the goals and model as given.” This seems to be an orderly way of going about the business of determining interest rates. Also, it is our impression that this may be a good description of the way in which Norges Bank’s Board work.

However, Faust and Henderson go on to question whether multistage decision making is efficient or not. Imagine a Board on which one finds policy-oriented economists like James Tobin and Milton Friedman. The multistage approach, they then argue (p. 133),

> “would require that they agree first on goals, next on the model, and only then consider policy options, given those goals and model. In an alternative approach, we could simply charge them with agreeing on and implementing policy. One suspects that the multistage approach may not even be feasible in practice. There is at least room to differ regarding which approach would lead to better policy”

The multistage approach has much to be recommended as far as organizing the discussions in the Board are concerned. However, as reasonable economists will disagree on the reasonable model of the economy, and thus on the likely effects of given actions taken by the monetary authorities, too strict adherence to the multistage decision making process, may come in the way of open and frank discussions of possible policy options and likely outcomes.

NBW’s view:
More resources committed to the Board should be considered like providing outside Board members with research assistants within the Bank. Also, time and money devoted for the outside Board members to be working on monetary policy could be enlarged.

[1] The arrangement suggested here is along the lines of how the MPC in the Bank of England was set up in 1997.

3 The inflation target

In 2004, the rate of inflation targeted by Norges Bank was 0.3 percent, far below the 2.5 precent target. Thus, a direct evaluation according to a standard loss function for a central bank only caring about inflation and output variability, would presumably indicate that monetary policy is highly unsuccessful. Yet there is currently almost no criticism of monetary policy in Norway. Observers, be it politicians, social partners, market participants - with few exceptions - do not consider the very low rate of inflation an important problem, as long as the real economy is doing well. On the other hand, many of the same observers are really concerned about the future development of variables that monetary policy, narrowly conceived, should not care about. This discrepancy suggests that either the theoretical framework is too narrow, or that most observers do not really understand what is going on. The former, we believe, is the case.

Under a flexible inflation target, the central bank cares about low and stable inflation, as well as output stability. When inflation variability is a sign of instability in the real economy, addressing this instability usually also involves an appropriate policy for the real economy. However, when inflation variability is caused by other factors, such as exogenous supply shocks, inflation variability does not imply similar costs to society.

Large fluctuations in the real exchange rate may involve considerable costs for the economy. Correspondingly, large changes in interest rates increase the risk that some households and enterprises make financial decisions based on incorrect expectations. Under flexible inflation targeting, the interest rate is not pinned down exactly by the inflation target. Thus, in some situations there may be scope to also take other considerations. When the exchange rate is viewed as very weak or very strong, one may allow a longer horizon for reaching the inflation target. The central bank may also try to avoid setting very low or very high interest rates, as long as this is consistent with the inflation and output objectives.

The purpose of this chapter is to discuss how and to what extent recent developments in economics, broadly defined, can contribute to improving the performance of inflation targeting central banks. Thus, the chapter focuses on issues that are often neglected in central bank rhetoric, and it does not aim at providing a complete review.

3.1 General observations

Under flexible inflation targeting as it is pursued by Norges Bank, monetary policy aims at both low and stable inflation, and at stabilizing output. In Governor Svein Gjedrem's words:

> "The inflation target represents a framework for, not an obstacle to, monetary policy's contribution to stabilising output and employment. We have chosen flexible inflation targeting. Variability in output and employment as well as inflation is given weight. "

In general, inflation targeting central banks appear to follow a monetary policy that works much better than many of the policy regimes we have seen in the past.

However, the theoretical framework adopted by most inflation targeting central banks is rather narrow, both when it comes to what monetary policy may achieve, and to what monetary policy should care about. This narrow focus reflects policy experiences in the past, where monetary policy often aimed at infeasible or inconsistent targets, leading to the combination of high inflation and a weak real economy.

Within the institutional framework that exists in most countries, including Norway, where the central bank is given operational independence and a clear mandate for achieving price stability, and inflation expectations seem well anchored at low levels, the risk of repeating the high inflation experience seems quite limited (see e.g. Blinder, 1995). Has the time come for monetary policy to move on? Avoiding high inflation will clearly always be a priority. Yet one should broaden the focus in the hope of improving the conduct of monetary policy in a low inflation environment, and avoiding other types of serious macroeconomic problems.

The mainstream theoretical framework of inflation targeting tends to focus only on variability in inflation and output. This neglects that recent research has demonstrated that one can not rule out monetary policy having long-lasting effects on output and employment levels. Furthermore, much of this literature exaggerates the costs of inflation variability. When inflation variability is a sign of instability in the real economy, addressing this instability usually also involves an appropriate policy for the real economy. However, when inflation variability is caused by other factors, as exogenous supply shocks, they do not imply similar costs to society. In contrast, there is reason to believe that variability in other variables, such as exchange rates, financial imbalances, and interest rates, do entail real costs. Yet inflation targeting central banks usually do not care unless inflation and output are affected.

The current Norwegian situation is a case in point. Given the large deviation from the 2.5 percent inflation target, a direct evaluation according to a standard loss function for a central bank only caring about inflation and output variability, would presumably indicate a very bad outcome. Yet there is currently almost no criticism of monetary policy in Norway. Observers, be it politicians, social partners, market participants - with few exceptions - do not consider the very low rate of inflation an important problem, as long as the real economy is doing well. On the other hand, many of the same observers are really concerned about the future development of variables that monetary policy, narrowly conceived, should not be concerned with. This discrepancy suggests that either the theoretical framework is too narrow, or that most observers do not really understand what is going on. The former, we believe, is the case.

Norges Bank has shown an open mind and a willingness to learn over the past few years. Yet the Bank definitely entertains the same theoretical ideas that most other inflation targeting central banks do. This suggests that there are gains to be reaped from an even more open attitude.

To what extent a somewhat broader view on monetary policy will matter for the policy decisions is less clear, however. First, many central banks, including Norges Bank, usually show more pragmatism than what can be inferred from their presentations and policy statements. Second, the practical implications from a conclusion that a central bank should care about exchange rates, financial imbalances, and interest rates, and in some situations also about the level of output, are often not clear, the reason being the profession's limited understanding of how real economies work.

3.2 The theoretical framework

Some of the economic literature on monetary policy and inflation targeting is quite explicit on what monetary policy can achieve, and what it cannot achieve (see e.g. NBW-02). The standard view is that while monetary policy in the short run may affect both real and nominal variables, it can only affect nominal variables in the medium and long run. More explicitly, monetary policy, it is concluded, can have no lasting effect on real variables like the real exchange rate, the level of output, or the rate of unemployment. This view is also reflected in Norges Bank's policy documents.

The motivation for the emphasis on this conclusion is easy to understand. There are many episodes, from Norway and other countries, where monetary policy has been too expansionary, in an attempt to stimulate the economy, reduce unemployment and/or improve competitiveness, at the costs of increased inflation. These episodes have shown that the long run effects of a too expansionary monetary policy are high inflation, not higher output or lower unemployment.

The standard view is based on the notion that in the long run, output and employment are determined from the supply side of the economy, by labour supply, real capital (determined by saving behaviour) and technology, as well as wage and price setting behaviour. Monetary policy, it is contended, cannot affect these variables. However, there are many contributions in the economic literature showing that this view is too simplistic.

One line of argument emphasises that supply side factors do not give a unique prediction for how the economy evolves. In the vocabulary of the economic literature, there are several or a range of equilibria of the economy. In other words, several different outcomes are possible, with high or low levels of output (see e.g. Howitt and MacAfee, 1992; Lamont, 1995; McDonald, 1995). While these contributions are not specific as to the role of monetary policy, it seems reasonable to assume that monetary policy might affect which path is realised.

Other contributions are more specific as to the role of monetary policy. In an economy with dominant wage setters, as is probably a good description of the Norwegian one, several recent contributions have analysed the interaction between monetary policy and wage setters as a strategic game. A key conclusion is that a strict monetary regime, which responds aggressively to high wage growth, may dampen wage pressure (Bratsiotis and Martin, 1999; Soskice and Iversen, 2001). The intuition for this result is that when deciding whether to increase wages, wage setters compare the gain from higher wages with the loss in the form of reduced employment. If monetary policy is strict, high wage growth will be more costly in the form of reduced employment, and wage setters will set lower wages. In equilibrium, the wage moderation will lead to lower unemployment, even without affecting real wages. The reduction in unemployment is not a temporary phenomenon, and it will also have a permanent positive impact on output.

The beneficial effect on wage setting of tight monetary policy is consistent with the recent Norwegian experience, where tight monetary policy in 2002 contributed to lower wage growth in subsequent years, thus allowing for lower interest rates that stimulate output and employment.

A second conclusion in the recent literature on economies with large wage setters, is that the monetary regime may also have long run effect on the real exchange rate and the size of the traded sector. Holden (2003) and Vartiainen (2002) show that the type of monetary regime determines the relative degree of wage moderation in the traded and non-traded sectors, via the effect on wage setters’ trade off of higher wages versus reduced employment, as explained above. A monetary regime aiming at exchange rate stability gives stronger incentives for wage moderation in the traded sector, and weaker incentives in the non-traded sector, thus strengthening the traded sector and weakening the non-traded one.

Ball (1999) argues that monetary policy may also have persistent effects on unemployment via the effect on aggregate demand. He considers monetary policy in the downturns of the 1980s, comparing the responses in the US and Canada on the one hand, with those of the UK, France, West-Germany and Italy on the other. The North American central banks cut interest rates in response to the downturns, with the explicit motivation of stimulating the economy. In contrast, the European central banks maintained interest rates. In the following years, growth was markedly higher in the US and Canada. The European downturns led to persistent higher unemployment rates.

The conclusion by Ball that monetary policy in these situations had lasting effects on output and unemployment is controversial. While Ball’s view is consistent with e.g. Blanchard (2003), the explanations on European unemployment that have received most attention focus on the importance of labour market and wage setting institutions (see e.g. Nickell et al, 2003), with no lasting role for monetary policy.

The contributions referred to above, though using methods that are well accepted within the profession, take a different approach than most of the recent literature on monetary policy. The leading approach, sometimes referred to as New Keynesian or the New Neoclassical Synthesis (Clarida et al, 1999, Woodford, 2003, Canzoneri, Cumby and Diba, 2005), is also the theoretical framework embraced by inflation targeting central banks, including Norges Bank. While this approach to monetary economics has made important progress in recent years, it does not fully reflect the insight that has been found in other parts of economic literature.

In research, a narrow methodological focus may often be useful to make progress. However, for a broad understanding of the mechanisms that are at work in a real economy, a more eclectic approach seems preferable. Thus, inflation targeting central banks run the risk of being too narrow in their understanding of monetary policy, by being too attached to the main approach. In fact, even recent contributions within the main approach are questioning key parts of this very framework, underscoring the need for a broader perspective.

A crucial concept in monetary policy decisions is the output gap, traditionally defined as the difference between actual and potential output. Potential output is usually measured as trend output, i.e. some sort of average, actual output. However, recent theoretical contributions argue that the output gap should be defined as the difference between actual output and the level of output that would have prevailed had all prices been completely flexible. Measurement of the level of output that would have prevailed under flexible prices is in its infancy, and the relationship between this concept, and the traditional trend output, is not clear. Woodford (2003, page 616) argues that:

> "Furthermore, we have seen that there is at least some evidence that conventional output-gap measures (essentially de-trended output) are not at all closely related to the output-gap variable in the theoretical analysis. [..] It follows that a central bank that raises interest rates when a conventional gap measure (de-trended output) is high may be responding in quite different way than my optimal rule would prescribe."

Wright (2004) offers another example of recent research unsettling established "truths". Conventional wisdom has it that the proper monetary policy response to higher inflation is to raise the nominal interest rates a bit more, thus raising the real rate. However, by extending the New Keynesian framework to include credit rationing and nominal debt contracts, Wright shows that allowing the real interest rate to decline may be preferable under plausible circumstances.

The literature described above, questioning conventional wisdom as to the effects of monetary policy, reflects the fact that economics is a social science, with more uncertainty as to key findings and relationships than what is the case in most of the natural sciences. Clearly, this aspect cannot, and should not, make us disregard the main conclusions in monetary economics. The key propositions that monetary policy should provide a nominal anchor to the economy, and that we cannot permanently reduce unemployment by allowing inflation above some minimum level, seem very robust. However, it does call for some caution and modesty, as well as openness to new ideas and thoughts.

At this point it is relevant to give Norges Bank credit for establishing a regional network, consisting of enterprises, organisations and local authorities throughout Norway. The network was introduced in the fall of 2002. It provides the Bank with early and frequent information, as well as supplementary information about areas not covered by other statistical sources. The Bank may also learn which issues are of particular concern to enterprises. Such information may give the Bank a different perspective than it gets from the traditional monetary policy analyses.

NBW's view:
Norges Bank's policy documents reflect the work of a highly competent staff. The Bank follows the current thinking and progress on inflation targeting. However, as the main approach to monetary policy is methodologically rather narrow, it is important that Norges Bank is open also to other parts of the economic literature, and to other perspectives on monetary policy. The regional network provides the Bank with useful information from a different perspective.

3.3 The role of the exchange rate

In a small open economy like the Norwegian one, stabilising consumer price inflation is facilitated when the effective nominal exchange rate is stabilised. If, say, the krone appreciates sharply, the central bank must quite often respond by cutting the interest rate, to avoid cheaper imports causing inflation to fall below the target. On the other hand, it is also clear that with an inflation target, monetary policy can not prevent, and should not try to prevent, exchange rate changes that are caused by different target rates of inflation. Nor can monetary policy affect changes in the exchange rate due to changes in equilibrium real exchange rates.

However, the question remains whether monetary policy should put additional weight on the exchange rate, above what is implied by the inflation target. According to the mainstream view, the answer is no (see e.g. NBW-02). Obstfeld and Rogoff (2000) go so far as to argue that an inward looking monetary policy, solely occupied with domestic shocks, delivers the best possible outcome.

Yet there are also a number of contributions advocating that monetary policy should give additional and separate concern to the exchange rate. Krugman (1987) shows that a period of strong appreciation of the real exchange rate may weaken the traded sector, thus harming productivity growth in this sector with long run adverse effects on the country's international competitiveness. Tille (2002) points out that much of the previous literature overstates the gains from exchange rate flexibility by neglecting shocks that have different impact on different parts of the economy. Corsetti and Pesenti (2004) demonstrate that when there is incomplete pass-through of exchange rate fluctuations into prices, optimal policy should also focus on reducing exchange rate volatility. Against this view, Obstfeld (2002) maintains that the recent resurgence of "exchange rate pessimism", i.e. contributions questioning the gains from exchange rate flexibility, stems from oversimplified modelling strategies rather than from empirically based evidence.

The recent contributions and controversies reflect the fact that the General Theory of Exchange Rate Determination remains to be worked out. We know that changes in the interest rate do affect the exchange rate, but the relationship often appears unstable, and the literature abounds with conflicting evidence (see Bjørnland, 2005, for recent Norwegian evidence). Yet policy decisions have to be made, in spite of our limited knowledge and understanding.

Experiences from several countries indicate that large fluctuations in real exchange rates can be very costly. While firms can buy financial instruments to reduce the costs associated with short run exchange rate fluctuations, there are no financial instruments that can prevent large real exchange rate fluctuations from affecting firms' location and investment decisions. In contrast, there is little indication in the economic literature of large costs associated with small deviations from the targeted rate of inflation.[2]

Large costs from large real exchange rate fluctuations and small costs from small inflation fluctuations may be taken as an argument for a dual target, emphasising both inflation and the exchange rate. However, a dual regime will be less transparent, leading to an unpredictable and unstable policy. Under inflation targeting, inflation is the nominal anchor and must be given priority. Nevertheless, under flexible inflation targeting, the interest rate is not pinned down exactly by the inflation target. In situations where the exchange rate is viewed as very weak or very strong, one may allow a longer horizon for reaching the inflation target, thus providing room to take the effect on the exchange rate into account.

Affecting the exchange rate is not only a matter of interest rate setting. Interventions, analyses and communication in certain situations may also play a role. On interventions, the Governor of Norges Bank has talked repeatedly, e.g. on 26 August 2004,

> "Normally, Norges Bank will not intervene in the foreign exchange market in order to influence the exchange rate. [….] However, interventions may be appropriate if the krone exchange rate differs substantially from what is reasonable on the basis of fundamentals, and exchange rate movements also reduce the prospect of achieving the inflation target."

Economic research and analyses may also be of importance. The Norwegian krone is a small currency, and the resources that financial institutions are able put into analysis of the krone exchange rate are limited. Norges Bank's analyses and communication may contribute to anchoring exchange rate expectations, as long as the analyses and communication are consistent with the policy that is pursued. Some years ago, the discussion about the need for a real appreciation due to increased spending of petroleum revenues, may have contributed to the strong appreciation of the krone. More recently, research in Norges Bank documenting that there is a strong tendency for the krone to revert to a level that stabilises the price level in Norway relative to our trading partners, measured in a common currency (Akram, 2003), may have contributed to exchange rate stability.

NBW's view:
Large fluctuations in the real exchange rate may involve considerable costs for the economy. Under flexible inflation targeting, the interest rate is not pinned down exactly by the inflation target. In situations where the exchange rate is viewed as very weak or very strong, one may allow a longer horizon for reaching the inflation target, thus providing room to take the effect on the exchange rate into account.

[2] See Børsum and Ødegaard (2005) for evidence on how Norwegian firms handle exchange rate uncertainty.

3.4 Financial imbalances and monetary policy

Internationally, considerable attention is given to the question of whether financial stability should be a separate concern for monetary policy. It is widely accepted that financial stability is important, and that low and stable inflation in general contributes to ensuring financial stability. Moreover, it is clear that if the financial system becomes unstable, this will usually lead to volatility in inflation and output, variables that central banks always will care about under inflation targeting. For this reason, the probably dominant view is that a forward-looking and flexible inflation targeting regime, should encompass the concern for financial stability without giving it an explicit role (Bean, 2003). In contrast, e.g. Borio and Lowe (2002) argue that a central bank that is successful in keeping inflation low, runs the risk that the credibility of the inflation target masks the build up of imbalances in the real economy, increasing the risk of financial instability.

In a recent contribution, Disyata (2005) argues that unless financial imbalances is part of the loss function of the central bank, the monetary authorities should not attempt to prick bubbles in asset markets. To the extent that rapid increases in asset prices impinge upon the future development of the CPI, the consequences of booming asset markets for interest rate setting are already taken into account by a forward looking central bank. However, if the central bank explicitly cares for avoiding financial imbalances, this should be taken into account over and above the effect on output and inflation.

In our view, there are good reasons to believe that financial imbalances should be a concern for monetary policy, above what is reflected in variability in output and inflation. The costs associated with variability in output and inflation depends on the sources of the variability. A change in output caused by a change in preferences or technology may not involve any costs per se.[3] In contrast, a change in output due to households having made inappropriate decisions based on incorrect expectations as to financial variables will generally be costly.

In practice, it is often difficult to know how a concern for financial imbalances should be reflected in monetary policy. If asset prices are increasing at a rapid rate and over a long period of time, it is difficult to know whether a bubble is in the making. Also, how to handle such a situation is far from straightforward.

Concern for financial imbalances, as well as concern for households' consumption and debt decisions, nevertheless suggests that the central bank should aim at dampening interest rate volatility. The interest rate is more than an instrument of monetary policy. It is a price (on money), and as such, the central bank should not have a specific target for the interest rate. However, it seems clear that if households and enterprises make decisions on the basis of interest rate expectations that turn out to be incorrect, this may involve real costs.[4] For example, if households base their consumption decisions on too low expectations of future interest rates, they may consume too much and accumulate

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[3] In fact, with an appropriately defined output gap, potential and actual output will move together, and the output gap might not be affected. However, with standard estimates of the output gap, it will be affected, see the quote of Woodford above.

[4] See the speech by the First Deputy Governor of Sveriges Riksbank on 16 March 2005 for a related view.

large debts.[5] When interest rates rise, large debts may force households to increase their labour supply. This will have a positive effect on output, which may dampen the negative effect of debt via reduced demand. However, the increase in labour supply in this example reflects a reduction in welfare arising from households making decisions on incorrect expectations.

NBW's view:
The interest rate is primarily an instrument to be used to ensure low and stable inflation as well as a stable real economy. When the economy changes the interest rate must also change. However, large changes in interest rates increase the risk that households and enterprises make financial decisions based on incorrect expectations. A concern for the negative consequences of large changes in the interest rate suggests that the central bank should try to avoid setting very low or very high interest rates, as long as this is consistent with the inflation and output objectives.

Housing prices and the inflation target

Recently, it has been argued that housing prices should have been included in the inflation rate that Norges Bank targets. As housing prices have increased considerably, the adjusted inflation rate would have been higher, and Norges Bank should have set a higher interest rate (Aftenposten, 17 February 2005). This argument raises several issues. First, measurement of consumer prices is Statistics Norway's responsibility. In our view, measurement of the cost of housing is difficult, and it is not at all obvious which method is the most appropriate one (see discussion in Økonomisk Utsyn 1/2005, page 115). Statistics Norway's argument that households' house purchases should be seen as investment in assets, and thus be disregarded, is a strong one. Yet one may also argue that the current use of rents as a measure of housing costs is not really capturing the real costs many households face. Also, the statistical treatment of purchases of cars (which technically is an investment yielding a future stream of consumption services) shows that the practice is open for judgments.

If housing prices in some form were to be incorporated in the consumer price index, would it affect the interest rate setting of Norges Bank? Clearly, if one were to change the index, one might also allow for a change in the numerical target, just as one recently changed the inflation target from 2.5 to 2 percent in UK, when a new index was adopted. The 2.5 percent target was chosen based on a presumption that this was suitable for the Norwegian economy, and with a different index, a different numerical value might have been found suitable. Second, to the extent that the development of housing prices is affecting other prices, and the stability of the overall economy, Norges Bank should already have taken this into consideration under flexible inflation targeting. Third, if housing prices were included in the index, Norges Bank would probably have put less emphasis on them than their weight would suggest, as housing prices fluctuate so much. In spite of these arguments, we believe that housing prices would have had larger influence on interest rate setting if they had been included in the index that the Norges

[5] Incidentally, according to the survey undertaken by TNS Gallup for Norges Bank in the first quarter of 2005, more than one third of all households expected the interest rate to remain unchanged in the next 12 months, in contrast to the expected future increase of interest of about one percent, as given by the financial markets.

Bank were targeting. Given the recent rapid growth in housing prices, this would probably have implied that current interest rates had been higher.

3.5 How to evaluate the current low rate of inflation

The striking aspect of monetary policy during 2004 is the low rate of inflation. Consumer prices grew by 0.4 percent from 2003 to 2004. Adjusted for tax changes and excluding energy prices, CPI – ATE, which is the measure adopted by Norges Bank, prices grew by 0.3 percent, far below the 2.5 percent target. CPI-ATE grew by 1.1 percent from 2002 to 2003, also well below the target. One might expect that this large difference would cause considerable discussion and criticism in the policy debate. By and large, this has not been the case.

Most observers, including those we have met with on working with this Report, do not see the low inflation rate as an important problem. While several of our discussion partners acknowledged that it would have been better if the inflation target had been realised, others just see the low inflation as the result of mostly benevolent changes taking place. The general view among our discussion partners was that maintaining a stable development of the real economy should be given priority to pushing the rate of inflation up to the targeted level.

The low inflation rate could raise several types of concerns

- a risk for deflation and depression
- inefficient resource allocation
- a reduction in inflation expectations
- a too expansionary fiscal policy
- symmetry and credibility
- the fact that the central bank misses the policy target, apart from any direct economic implication

Deflation and depression?
To many observers, falling prices make memories of deflation and serious economic downturns alive, cf. the experiences of many countries, including Norway, in the 1920s and 1930s. More recently, Japan has experienced a decade of weak economic growth, combined with periods of falling prices. However, in these episodes, falling prices have been the result of weak demand, where firms cut prices and wages to dampen the reduction in output. Falling prices may exacerbate the weak demand, via three channels. First, the real interest rate may become too high, due to the combination of negative price growth and the nominal interest rate being restricted to be non-negative. Second, real wages may become too high, as downward nominal rigidity in the wage setting prevents nominal wages from falling in line with the reduction in prices.[6] Third, expectations of falling prices may make people postpone their purchases, reducing aggregate demand further.

[6] In recent discussion of the dangers of deflation, the zero bound to nominal interest rates has been the main focus. However, as noted below, there is now strong empirical evidence for many industrialized countries that, even if wage cuts do occur, downward rigidity exists. Thus, wage cuts are less frequent than they would have been if nominal wages had been entirely flexible, implying that real wages are pushed up under low inflation.

The recent Norwegian experience of low inflation is, however, not of this nature. Although low price growth to some extent reflects the previous downturn via reduced wage growth and a strong krone, positive supply side factors, as cheaper imports and high productivity growth, have been more important. Furthermore, the Norwegian economy is recovering, with increasing GDP growth and falling unemployment. Thus, the Norwegian economy is not, and has not been, in a situation where weak demand is exacerbated by falling prices.

One may nevertheless argue that low price growth involves a considerable risk that the situation will turn into a typical “weak demand-deflation episode”, if the economy weakens. However, this risk has probably been low, and seems even lower now. Private disposable income has increased steadily, implying little risk of a fall in private consumption. Nominal wage growth runs at almost 4 percent, above reasonable bounds due to downward nominal rigidity.[7] With Norges Bank’s interest rate at 1.75 percent, there is still considerable room for further reduction if the economy unexpectedly should weaken.

Inefficient resource allocation

Price stability makes for efficient resource allocation. If firms set prices in nominal terms for longer periods, increasing or falling prices will lead to inefficiencies. As all firms do not change their prices at the same time, inflation will distort relative prices (Woodford, 2003). In contrast, under zero inflation, firms will only change prices if changes in relative prices are called for.

The theoretical argument above is based on zero inflation being optimal. As central banks target positive inflation rates, recent research sometimes adopts the assumption that firms revise prices automatically according to the steady state rate of inflation. Under this assumption, it is deviations from the inflation target that will lead to distortions in relative prices, and thus to inefficient resource allocation.

This point has been raised in the public debate on Norwegian monetary policy (Mork, 2005), as an argument for the view that Norges Bank should have cut the interest rate even further, so as to push up price growth to the 2.5 percent target faster than under the prevailing policy.

However, the theoretical assumption that firms revise prices automatically appears empirically implausible. Doing away with this assumption, lower inflation, down towards zero, in fact reduces the distortion in relative prices.

Second, apart from the argument above, it seems hard to accept that the efficiency loss due to changes in relative prices can be substantial, as firms usually can change prices at rather low costs. Low costs of changing prices was acknowledged in previous New Keynesian literature (e.g. Mankiw, 1985), but this is neglected in most of the recent contributions.

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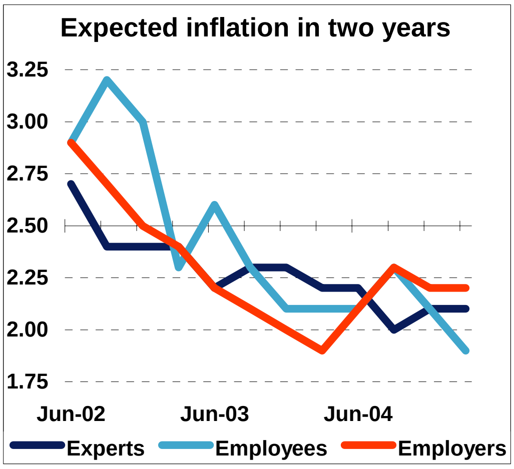
[7] Holden (1998) finds evidence for the existence of a “floor” to nominal wage growth given in the central negotiations in the Norwegian manufacturing sector at 1.5 percent.

A third line of reasoning is that monetary policy should be concerned with wage growth as well price growth. Erceg et al (2000) shows that if both nominal wages and nominal prices are sticky, optimal monetary policy should focus on stabilizing wage growth as well as price growth. In fact, Erceg et al (2000) demonstrate that strict price inflation targeting involves relatively large welfare losses. Given that wage growth in Norway is still above the growth rate in many other countries, the efficiency argument for reducing interest rates to push up price growth, clearly also pushing up wage growth, seems weak.

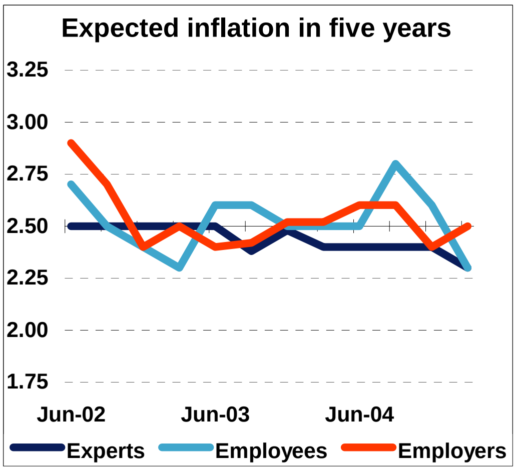
Inflation expectations

For Norges Bank, a major concern with the low rate of inflation appears to have been the effect on inflation expectations. For example, in his annual address, 17 February 2005, the Governor stated "It has been important to prevent inflation expectations from falling and becoming entrenched at a low level".

According to Norges Bank's own surveys of inflation expectations, as measured by a survey of the social partners, analysts and academics, this has not happened. While inflation expectations over the two year-horizon has drifted downwards by ¼-½ percentage points (largely reflecting the revisions to Norges Bank's own estimates), the five-year expectations remain fairly stable at around 2½%.



Source: Norges Bank



Source: Norges Bank

In view of the current low rate of inflation, Norges Bank is clearly justified in its concern about inflation expectations, i.e. to what extent observers and market participants believe that Norges Bank will succeed in fulfilling its policy objective.

Yet one may argue that Norges Bank has put too much emphasis on this aspect. In fact, one can put forward the opposite view that if inflation expectations were to fall, that would allow a longer period of low interest rates and high output growth, before inflation again is back on the 2.5 percent target. Let us make the argument more specific. According to standard macroeconomic theory (the expectations-augmented Phillips curve), unemployment can be kept below the natural rate of unemployment, by an expansionary policy pushing the rate of inflation below the expected rate. This policy will involve a temporary gain, in the form of unemployment below the natural rate. However, it will also involve a cost in the form of increased inflation expectations. If inflation expectations were to fall below the 2.5 percent target, Norway could enjoy a temporary gain in the form of unemployment below the natural rate, without an associated cost, as the induced increase in inflation expectations back to the 2.5 percent level should not be counted as a cost.

One may argue that a central bank should not be opportunistic, trying to benefit from inflation expectations deviating from the target level. However, this misses the point. The argument above does not imply that the central bank should try to manipulate inflation expectations, intentionally causing inflation expectations to deviate from the target. To the contrary, if inflation expectations are below the target value, the argument above suggests that the central bank should pursue an expansionary monetary policy which will imply that inflation expectations increase towards the target level.

The heart of the matter is that there is not symmetry as to the costs of deviations of inflation expectations from the 2.5 percent target. Pushing inflation expectations down if they are above 2.5 is costly, while raising inflation expectations may allow a temporary gain. It follows that the central bank should put more emphasis on avoiding inflation expectations to rise, if that were the risk, than it should on avoiding inflation expectations to fall, as is the risk in the current situation. This suggests that Norges Bank should respond to low inflation by setting a low interest rate, aiming at pushing price growth up. However, Norges Bank should not be so eager to raise inflation that it pursues a policy involving a large risk of excessively stimulating the economy.

The interplay with fiscal policy

The current economic situation in Norway with large oil revenues put considerable pressure on fiscal policy. While there is broad agreement among politicians on the merits of the fiscal rule (“Handlingsregelen”), the fiscal deficit has been markedly higher than the level specified in the rule. The high unemployment and sluggish economy in 2002 and 2003 increased the pressure for an even more expansionary fiscal policy. If Norges Bank had not cut interest rates in such a decisive manner, fiscal policy might have responded by becoming more expansionary, deviating further from the fiscal rule. A more expansionary fiscal policy would have been politically difficult to reverse, given the high oil revenues. The upshot would have been increased risk of a new appreciation of the Norwegian krone, with adverse impact on the manufacturing sector

Symmetry and credibility

If inflation is above target, and there is no widespread agreement that the economy is overheating, raising the interest rate is not a popular measure. In such a situation, there may be fertile ground for uncertainty to spread among wage and price setters as to whether the central bank will in fact raise the interest rate to keep inflation down. If such uncertainty and lack of credibility arise, it will have detrimental effects in the short run, via both higher inflation and lower output. To increase credibility, monetary policy should be symmetric: If wage and price setters realise that the central bank is determined to get the inflation rate up when it is below the target, they may feel more certain on the central bank’s determination of getting inflation down when it is above the target.

It is difficult to evaluate the merits of this argument. On the one hand, the central bank may demonstrate the emphasis it puts on meeting the inflation target. On the other hand, the ability of the central bank to raise interest rates in spite of political pressure cannot be tested in the current situation with low inflation. One would also expect that the central bank is able to communicate that the situation may differ, depending on the sources of deviation of the rate of inflation from target.

Missing the policy target

The Government has given Norges Bank a mandate for its conduct of monetary policy, specifying that the operational target is an annual consumer price inflation of close to 2.5 percent over time. In this light, the low inflation is a concern. Clearly, Norges Bank must aim at fulfilling the 2.5 percent target. However, the mandate specifies that the inflation target is forward looking, and that monetary policy should contribute to stabilising output and production. Norges Bank is also quite explicit about this, emphasising that the Bank pursues flexible inflation targeting. The fact that the Norwegian economy is growing briskly, and unemployment is falling, are valid arguments for Norges Bank to allow considerable patience in its pursuit of pushing inflation up, as long as the target is always kept in mind.

NBW's view:

Low inflation and a negative output gap have called for a low interest rate to stimulate the economy, reducing unemployment and pushing inflation up towards the 2.5 percent target. To mitigate the risk of excessively stimulating the economy, the Bank should not set too low an interest rate. By extending the horizon for achieving the 2.5 percent inflation target to 3 years, the Bank does take a cautious approach as advocated here. However, given the brisk growth rate the Norwegian economy now is experiencing, the time seems ripe for starting the process of gradually raising interest rates.

BOX 3.1: CHANGING THE INFLATION TARGET?

With inflation currently running at less than 1 percent, and slight prospects of inflation approaching 2.5 percent in the near future, the argument is put forward that the inflation target should be reduced to 2 percent, down to the level of Sweden and the UK. It is maintained that a higher inflation target than other countries implies that domestic wage growth will exceed wage growth abroad, and, as long as one cannot expect the krone to depreciate, this will lead to a steady increase in the cost level relative to our competitors (Nordea, 2005). Furthermore, it is argued that the high inflation target implies that the interest rate must be low, which may lead to macroeconomic imbalances and financial instability.

These arguments are not really persuasive. There is a strong prediction from economic theory that higher domestic inflation will be reflected in a weaker krone. The induced depreciation from an inflation target that is ½ - ¾ percentage points higher than elsewhere in Europe would be only 3 – 4.5 percent over 6 years. In a world in which annual exchange rate fluctuations of 10 – 15 percent are not uncommon, this is not much. In the short run, a change in the inflation target is likely to require Norges Bank to set a higher interest rate, which, combined with the lower inflation target, might lead to an appreciation of the krone. The result might easily be a short run real appreciation relative to what we can expect under the current regime.

Reducing the inflation target to reduce the gap between the target and the current and expected future inflation rates is also problematic because it would give an inappropriate signal about how a flexible inflation targeting regime should work. The very low inflation now reflects the difficulty in realising a target for consumer price inflation in a small open economy. The appropriate policy response to a temporary cost shock is to accommodate the direct effect on inflation, steering monetary policy towards a stable economy with inflation on target in the future. If market participants were to take into consideration that large cost shocks of some duration were to lead to changes in the inflation target, this would reduce the transparency and credibility of monetary policy.

If one were to choose the inflation target freely now, what level would one choose? There would clearly be an argument for choosing the same target as our trading partners, the euro-zone, Sweden and the UK, i.e. 1 ¾ - 2 percent, even if the importance of this aspect should not be given too much weight, cf. argument above. The current low inflation rate, prospects of high productivity growth and cheap imports in the future, also favour a similar target. On the other hand, even if productivity growth continues at a high rate and world market prices on Norwegian imports continue to fall, monetary policy will nevertheless be able to achieve the existing inflation target via a slight nominal depreciation of the krone, and somewhat higher wage growth.

However, it seems wise to take into account that productivity growth and import prices will vary also in the future. With a lower inflation target, this might give too small a room for growth in nominal wages. There is now strong evidence, for many OECD countries, including Norway, that wages are rigid downwards in nominal terms (see recent studies by Holden and Wulfsberg, 2005, and Knoppik and Beissinger, 2005, which also include references to previous research). As shown by Akerlof, Dickens and Perry (1996) and Holden (1994), if inflation is pushed too low, downward nominal wage rigidity will result in higher wage pressure and higher equilibrium unemployment. One should recall that only a few years ago, the argument was made that the inflation target should be increased to 3 percent, to allow for more flexibility of relative wages. Overall, it is not clear what the appropriate target for the rate inflation is.

NBW's view:
The current low rate of inflation does not imply that the inflation target should be reduced. The appropriate response to positive supply shocks is to stretch the horizon for reaching the inflation target, ensuring that monetary policy contributes to a stable development of the economy.

3.6 The new calibrated macromodel

Norges Bank is currently developing a new, calibrated macroeconomic model (NEMO), to be used to support the interest rate setting of the Bank. A key motivation was to expand the Bank's tool kit, making the Bank better equipped to conduct policy analyses. Furthermore, the Bank wanted to have a model in which the key properties were consistent with Norges Bank's view of how monetary policy works. The new model is in line with those used by other inflation targeting central banks.

Although NEMO is not fully developed, the current pilot version seems promising. There is good reason to believe that NEMO will prove useful to the Bank. However, the strong equilibrating mechanisms such models makes them less suitable to explain what happens in the economy if monetary policy does not work as expected. Thus, while analyses of robustness of the monetary policy undertaken within this model, as illustrated by the analyses based on the pilot version of the model in IR 3/04, clearly are useful, one can question whether such analyses really involve a test of the robustness of the monetary policy stance. There seems a clear risk that a model like NEMO will not reflect the real uncertainty that exists in the real world.

It may be relevant to mention the large forecasting errors that Norges Bank has done when it comes to the rate of inflation, cf. charts 4.11-4.14. While it seems easy to understand that Norges Bank was not able to forecast the full effect of cheaper imports and higher productivity growth, the fact that the actual rate on inflation turned out to be so far outside the 90 percent confidence interval, clearly indicates that Norges Bank underestimated the uncertainty as to the future rate of inflation.

This discussion underscores the importance of also making use of other types of information and analyses. One example is more traditional econometric approaches, see e.g. the inflation forecast made at the University of Oslo (Nymoen, 2005a,b). This approach has a strong advantage that it lends itself to proper evaluation of the forecasts, and comparison of different models. An entirely different perspective and type of information is provided by the regional network, as mentioned above.

NBW's view:
The new calibrated macroeconomic model NEMO is likely to prove useful to the Bank. However, a model of this type may downplay the risks and uncertainties associated with monetary policy. Thus, it is crucial that the Bank supplements the analyses done in NEMO with other types of analyses and information, and that these other types of analyses and information also are taken into account in the decision making process. It is our understanding that Norges Bank is aware of the importance of supplementing the NEMO with other types of information and analyses, in accordance with this view.

4 Monetary policy in 2001-2005

There is strong evidence that monetary policy, viewed with the benefit of hindsight, was too tight in 2002 and early 2003, and possibly also in 2001. The tight monetary policy and strong krone at the time contributed to Norwegian firms increasingly expanding abroad. However, when Norges Bank started to act, the series of cuts in the interest rate since December 2002 seems an appropriate response to the situation.

By raising interest rates after the 2002 wage negotiations Norges Bank demonstrated the consequences of too high wage growth with an inflation target.

Was the final bout of rate cuts, from 2½% in October 2003 to 1¾% in March 2004 necessary? On the one hand, they took place when the domestic economy already had turned the corner, confirmed by increasing demand, production and employment. On the other hand, core inflation continued to surprise on the downside, hitting a low of –0.1% in January 2004. Decisive action by Norges Bank may have helped to keep inflation expectations around the 2.5% target.

In July 2004 the two-year horizon was abandoned in favour of a more flexible horizon of 1-3 years. The decision to stretch the horizon was a wise one.

Current monetary policy is expansionary, with the folio rate at its lowest level since 1816, and the real rate 1½-2½ percentage points below its assumed neutral level. The output gap is currently close to zero, and is expected to be positive for the next four years. In such a situation, monetary policy must avoid an excessive stimulation of the economy. Too strong growth entails a risk for a renewed period with a too high interest rate, an appreciating krone and loss of competitiveness for the manufacturing enterprises. It is therefore comforting that Norges Bank's Board in its latest strategy document (enclosed in IR 1/05) is signalling that rates will be raised towards normal levels over the next four-year period.

4.1 The decisions

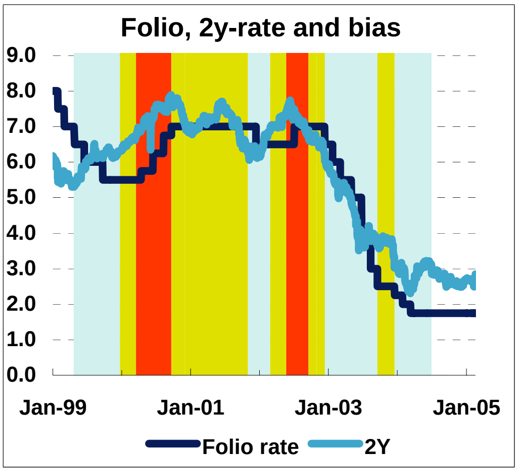
Given the 2-3 years lag inherent for monetary policy to have full effect, it is appropriate to view developments in 2004 and into 2005 in light of decisions made 2-3 years earlier, i.e. from early 2001 on. However, as these decisions have been discussed thoroughly by previous NBWs, we will only deal with them in broad terms here.

As Chart 4.1 shows, monetary policy remained fairly stable throughout **2001**. At the outset of the year, the folio rate stood at 7.0% with a neutral bias. In late October, the bias was changed to easing, and rates were cut accordingly to 6.5% at the December meeting. In February **2002** the bank returned to a neutral stance. Following higher wage growth than foreseen, a tightening bias was approved May 22nd, and rates were hiked accordingly to 7.0% on July 3rd. In September, one returned to a neutral stance, replaced by a *de facto* easing stance in Governor Gjedrem's speech on December 3rd.

Chart 4.1 illustrates the bias of the Bank: A tightening stance (darkly shaded areas), a neutral stance (shaded areas), and an easing stance (lightly shaded areas). As of July 1st 2004, the traditional way of formulating the bias was abandoned.

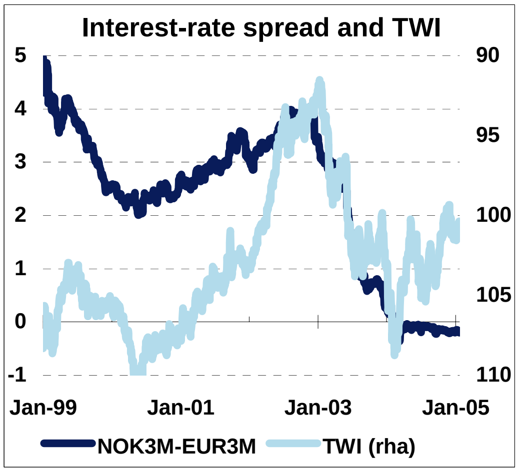
In Chart 4.1, Norges Bank had a tightening stance in the darkly shaded areas, a neutral stance in the shaded ones, and an easing stance in the lightly shaded areas. With effect from July 1st 2004, the traditional way of formulating the bias was abandoned.

Chart 4.1



Source: Datastream/DnB NOR Markets

Chart 4.2



Source: Datastream/DnB NOR Markets

An unprecedented interest rate-cutting cycle started with a reduction from 7.0% to 6.5% on December 12th, being followed by 50bp cuts on each of the three next meetings in **2003**. At a speech on June 3rd, Gjedrem stated that the Bank would "carefully consider changing the interest rate in larger steps", followed by 100bp cuts at the next two meetings, thus bringing the folio rate down to 3.0% by August. In September, rates were cut again, to 2.5%, and Norges Bank returned to a neutral stance. This was maintained in October, but the Bank added that "After a period of very low inflation as we have now witnessed, it is appropriate to be particularly vigilant in monetary policy in the event that inflation does not increase as projected." Declining inflation and a stronger NOK led to rates being cut again in December, to 2.25%. An easing bias was again introduced.

2004 proved to be a fairly quiet year for Norges Bank. Rates were changed only twice, in January and March. On both occasions, the folio rate was lowered by 25 bp. Since March 2004 and until the time of writing, i.e. early April 2005, the folio rate has remained unchanged at 1,75%.

Table 4.1: Interest rate meetings 2004-05

Date	Rate	Bias	1y spread	2y spread
28-Jan-04	2.00	Easing	-9	-11
11-Mar-04	1.75	Easing	+14	+12
21-Apr-04	1.75	Easing	-3	-8
26-May-04	1.75	Easing	-4	-2
1-Jul-04	1.75	Neutral*	-7	-15
11-Aug-04	1.75	Neutral*	-2	+1
22-Sep-04	1.75	Neutral*	+8	+13
3-Nov-04	1.75	Neutral*	0	-5
15-Dec-04	1.75	Neutral*	+3	-6
2-Feb-05	1.75	Neutral*		
16-Mar-05	1.75	Neutral*		

*) Traditional formulation of bias abandoned. Neutral: No clear alternative to unchanged rates.

Throughout the first half of the year, the *easing bias* was formulated as before: "According to Norges Bank's assessment, with a sight deposit rate of 1.75 per cent at present, the probability that inflation two years ahead will be lower than 2½ per cent is greater than the probability that it will be higher."

However, from March 2004 on, the policy inclination was supplemented with a statement discussing an alternative policy:

> "As an alternative, the Executive Board has considered leaving the interest rate unchanged now and the possibility of keeping the interest rate low for a longer period. However, the Executive Board concluded that it is not appropriate – in the light of the decline in inflation – to deviate markedly from expectations in money and foreign exchange markets at present."

This gave a hint that rates were close to bottoming out. When rates were kept unchanged in April, it was stated that

> "The Executive Board has considered two main alternatives: reducing the interest rate by 0.25 percentage point or keeping the interest rate unchanged at this time and awaiting additional information before any further reduction of the interest rate."

The same was repeated in May and - with a slightly different wording - in July. By giving a fuller explanation of its stance, the Bank makes monetary policy more transparent, something which we approve of.

Stretching the horizon
With effect from July 1st 2004, three important steps were made. The horizon, up to this date communicated as exactly two years, was widened to 1-3 years. The Board's strategy document for the coming four-month period, up to this date published *after* the strategy period was over, was now published in advance. Reflecting the above, important changes were also made to the communication of the policy stance.

When the inflation target was established in March 2001, Norges Bank stated (in Inflation Report 2/01, June 2001) that:

> "Norges Bank does not expect a change in interest rates to have an immediate effect on inflation. Different analyses indicate that a substantial share of the effects of an interest rate change occurs within two years. Two years is thus a reasonable time horizon for achieving the inflation target of 2½ per cent. If special circumstances prompt Norges Bank to apply a different time horizon than two years, the Bank will provide an assessment of this."

In various wording, the two-year horizon survived for three years. In his speech in Gausdal January 23rd 2004, Deputy Governor Jarle Bergo said that:

> "Even though, according to the theory, the horizon should be variable, there are some advantages to maintaining a fairly firm horizon that have not been as prominent in the literature. It is crucial that the public and market participants understand how the central bank sets the interest rate in order to contribute to

> confidence and credibility in monetary policy. According to the principle normally followed by Norges Bank, the interest rate is set with a view to achieving inflation of 2½ per cent at the two-year horizon. If it appears that inflation will be higher than 2.5 per cent, the interest rate will be increased. If it appears that inflation will be lower than 2.5 per cent, the interest rate will be lowered. This is a clear and simple interest rate setting principle to which the public and market participants can easily relate. This kind of simple principle also contributes to reducing uncertainty about the central bank’s trade-offs between price stability and stability in output and employment. We have no reason to believe that a variable horizon would generally result in substantially higher stability in inflation and output than a two-year horizon."

With effect from July 1st 2004, the horizon was stretched to 1-3 years. Norges Bank stated on this occasion that:

> "The formulations as to the horizon for monetary policy have also been adjusted. The new wording reads as follows: Monetary policy influences the economy with long and variable lags. Norges Bank sets the interest rate with a view to stabilising inflation at the target within a reasonable time horizon, normally 1-3 years. The more precise horizon will depend on disturbances to which the economy is exposed and how they will affect the path for inflation and the real economy ahead."

Norges Bank added that "The new formulations better express the conduct of monetary policy."

Several factors explain the stretching of the horizon. First, both NBW-04 and professor Lars E. O. Svensson had recommended that the apparently fixed two-year horizon should be softened. NBW-04 argued that "Norges Bank should abandon the current two-year targeting horizon". In his address at Norges Bank's Monetary Conference March 26th 2004, professor Svensson said that Norges Bank should reduce its emphasis on the two-year horizon, arguing that it was important that the whole forecasting path "looked good", and not only that the inflation was on target exactly two years ahead. What happens before and after the two-year point is also important.

Second, by stretching the horizon, the central bank allows itself more flexibility when responding to shocks, cf. Faust & Henderson (2004). Third, new empirical analyses from the central bank indicated that changes in the exchange rate had a smaller and slower effect on CPI than previously assumed (IR 1/04). It would therefore be appropriate to have a somewhat longer horizon for the full effects to play themselves out. Fourth, in his speech in Gausdal January 23rd 2004, Deputy Governor Jarle Bergo said about the "normally" two-year horizon that:

> “According to theories on optimal monetary policy, the horizon should vary and partly depend on the size and duration of disturbances to the economy. For some types of disturbances, such as demand shocks, the optimal choice may be to achieve the inflation target relatively rapidly. For other types of disturbances, such as cost shocks, a longer horizon may be optimal, provided that confidence in monetary policy is not in jeopardy. “

Three years earlier Bårdsen and Nymoen (2001) had argued along the same lines.
The longer horizon solved a problem related to the immediate decision on interest rates. As the projections based in IR 2/04 showed, inflation would not reach its target in two years' time without further rate cuts. At the same time other factors clearly pointed against further cuts. Both the global economy and the domestic economy had turned the corner. While labour market conditions still were slack and overall credit growth was seen as reasonable, the Bank expressed concern regarding the fact that rates were unusually low and that one did not have much experience with rate cuts this large over such a brief time period.

Given Norges Bank's hitherto strict focus on the two-year horizon, it is no wonder that outside observers took the new formulation as a change of policy. The Bank, however, maintains that it was only a (slight) change of communication. The new formulation no doubt has given rise to changing expectations as to the future interest rate setting by Norges Bank. Before the new formulation of 1-3 years, one would expect the Bank to give priority to inflation at a two year horizon. With the new formulation agents in the financial market expect the Bank to be more flexible on when to revert to the 2.5 % inflation target. The change in formulation thus affects observers' policy expectations, impacting upon the outcome of the policy.

NBWs view:
We approve of the decision to stretch the horizon to 1-3 years. A longer time horizon gives the Bank more flexibility when responding to shock, implying that stability of the economy can be given more weight. As the rationale for stretching out the horizon is both reasonable and clearly spelled out, the credibility of the inflation target should not be put in jeopardy.

From July 2004 on, the traditional way of formulating the bias was abandoned and a much broader way of formulating the strategy took over. First, one maintained the wording of no "*clear alternative*", which may be understood as a near-term neutrality on interest rates. Second, one stated that "According to the Executive Board's assessment, the inflation outlook may imply an unchanged interest rate for a longer period than implied by the interest rate assumptions in Inflation Report 2/04", which was a clear hint that forward rates were too high. Third, one published the Board's Strategy Report for the coming four-month period for the first time, referring to the end-period interest rate interval (1¼-2¼%):

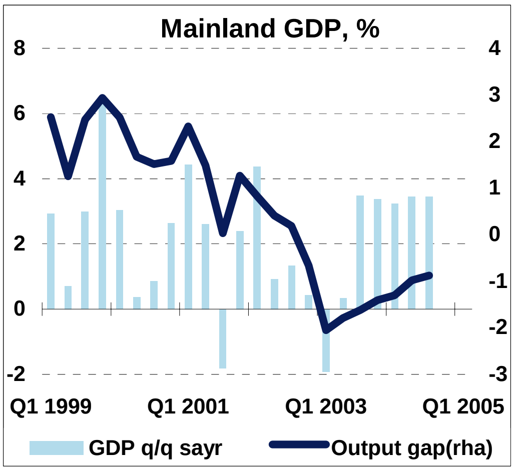
> "If the krone appreciates substantially, this may provide a basis for considering an interest rate at the lower end of, or below, the interval. The unusually low interest rate and uncertainty concerning the effects of previous monetary policy easing imply that we should exercise caution with regard to further interest rate reductions. On the other hand, given the prospect of low inflation ahead, wide deviations from projected economic developments would be required before it would be appropriate to increase the interest rate in the period to the beginning of November 2004."

Fourth, one argued that "The prospect of continued low inflation in Norway also implies that Norway should not be the frontrunner when interest rates are increased in other countries", indicating that developments in international interest rates would affect the speed of adjustment in Norwegian interest rates.

4.2 Evaluation of monetary policy in 2001 – 2003

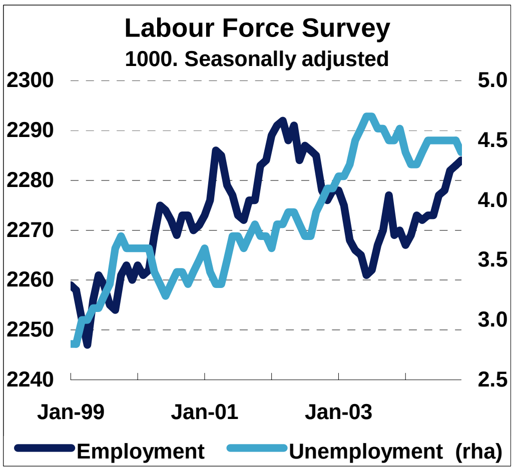
Due to the long lags of monetary policy, the interest rate setting in 2001 - 2003 still affects the Norwegian economy. Thus, there is reason to ask whether the recent development of the economy affects our evaluation of the monetary policy in 2001 – 2003, as compared to previous evaluations, including earlier reports from Norges Bank Watch. When judging the quality of the monetary policy decisions, the most relevant type of evaluation is to focus on what would have been the appropriate policy in real time, i.e. with the information that was available to Norges Bank at the time. However, as this is done in previous evaluations, we will instead benefit from the additional information arising from the passage of time, by a brief ex post evaluation, discussing how one should view the monetary policy with the benefit of hindsight. Such an evaluation may contribute to our understanding of how monetary policy works.

Chart 4.3



Source: Statistics Norway/DnB NOR Markets

Chart 4.4



Source: Statistics Norway/DnB NOR Markets

From the current perspective and information, the combination of low inflation and negative output gap both in 2003 and 2004 is strong evidence that monetary policy has been too tight. The strong krone in 2002 and early 2003 has probably been a key factor behind the increased expansion abroad of Norwegian firms (see NHO, 2004).

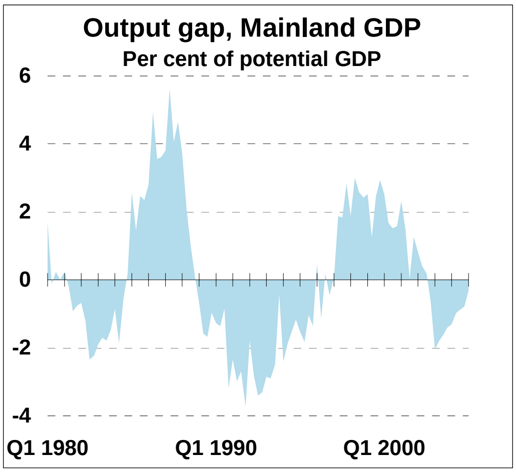
On the other hand, the series of cuts in the interest rate since December 2002 seems an appropriate response to the situation. The current healthy GDP-growth is partly a reflection of the low interest rate since mid 2003, hence it does not affect the conclusion that the 2002 policy was too tight.

The rate of growth in wages in 2001 and 2002 needed to be reigned in (see Norges Bank's Annual Report 2003, page 45.). By taking action after the 2002 wage negotiations, Norges Bank made clear its "response function". The current low nominal wage growth (spring 2005) suggests that the experience of tight monetary policy in 2002 was one that wage setters do not want to see repeated; high wage growth leading to a high interest rate and a strong krone. However, one should also remember that there are self-correcting mechanisms in the wage setting process, contributing to reduced wage growth after years of high wage growth. Furthermore, the low rate of inflation implies that the current real wage growth is fairly high relative to the conditions in the labour market. How wage negotiations work out with a relatively tight labour market in 2005 and 2006 remain to be seen.

According to an estimated response function for Norges Bank based upon historical data interest rates were already too high by early 2002 (Bernhardsen and Bårdsen, 2004). Another hike in July 2002 would therefore bring rates further away from the "appropriate" level. Together with Norges Bank's clear warning in advance, this "further-off-the-mark" action indicates that the central bank found it necessary to educate the social partners on the linkages between wage growth and interest rates.

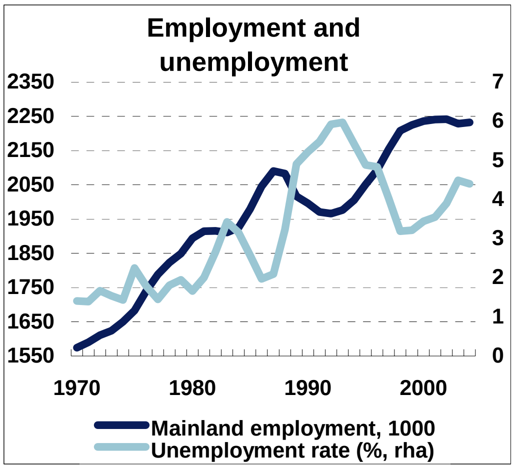
The fairly moderate downturn of the Norwegian economy in 2002 and 2003, as compared to previous downturns, can be taken as an indication of monetary policy being successful in engineering a soft landing. Yet this argument is questionable. The boom in the late 1990s/early 2000s was much smaller than the boom in 1985-86, and so were the resulting imbalances of the economy. Thus, it seems hard to argue that a sharp downturn was imminent in 2002, and that monetary policy worked to prevent it.

Chart 4.5



Source: Statistics Norway/DnB NOR Markets

Chart 4.6



Source: Statistics Norway/DnB NOR Markets

At the end of the day we think it is fair to say that a bit of luck also was involved; having the krone depreciating by 14 % from January 2003 to January 2004 on an effective nominal basis suited the Norwegian economy perfectly well. However, it was far from a guaranteed outcome of the interest rate reductions enacted by Norges Bank. International experiences abound when the effects of changes in the domestic interest rate fail to impact on the exchange rate in the desired manner. If the krone had remained strong for a longer period, inflation would have been even lower, and corporations in the Norwegian traded sector would have found themselves in a very troublesome situation.

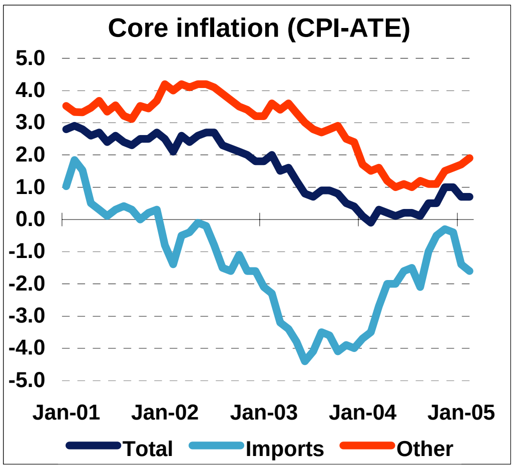
NBW's view:
The recent evolution of the Norwegian economy, in particular the current low rate of inflation, is consistent with previous evaluations concluding that monetary policy was too tight in 2002. The tight monetary policy and strong krone at the time have probably contributed to Norwegian firms increasingly expanding abroad, but also to lower wage growth domestically. A more moderate rate of growth of wages is a key element behind the current low interest rate. The series of cuts in the interest

rate since December 2002 seems an appropriate response to the low inflation, strong krone and negative output gap.

4.3 Evaluation of monetary policy from late 2003 onwards

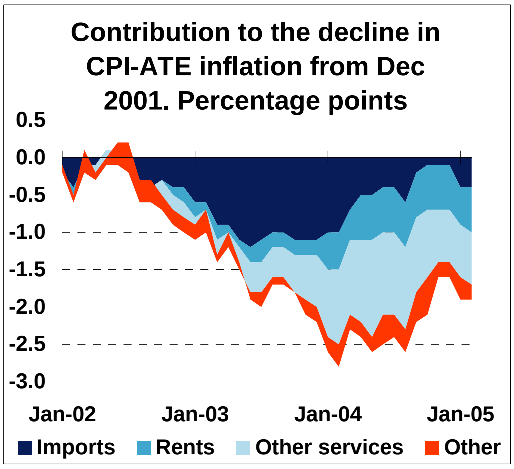
By mid-2003 private consumption was increasing, housing prices had bottomed out and employment was picking up. Also, the global economy was recovering, with particularly strong demand for a number of Norwegian exports. The international recovery remained strong throughout the autumn of 2003 and first half of 2004, while the domestic upturn gained strength and breadth. Just one factor missed the mark: Inflation remained too low. By late 2003 core inflation was approaching zero. In addition to the persistent large negative drag from imported consumer goods, price inflation for domestically produced services slowed considerably (cf chart 4.7).

Chart 4.7



Source: Norges Bank

Chart 4.8



Source: Norges Bank

Norges Bank maintained a neutral stance in October 2003, but stated that monetary policy would have to be "particularly vigilant" if inflation failed to pick up. When inflation eventually declined further, the signal rate was again cut in three steps, from 2½% in October to 1¾% in March 2004. From December 2003 to February 2004, the import-weighted exchange rate (I-44) fell by close to 6%. At the outset a new bout of rate cuts was unexpected by the market. However, at the final 25bp cut on March 11th the NOK had started to strengthen. As the reduction in Norges Bank's signalling rate was expected, the strengthening of the NOK continued.

Throughout 2004, Norges Bank was faced with conflicting objectives. Output gap was forecasted to be positive in the coming years, suggesting that interest rates should be increased to more normal levels. In contrast, inflation was expected to remain below target, being an argument for low rates. By cutting interest rates this aggressively, continuing down to 1¾% from an already low level of 2½% five months earlier, Norges Bank made it perfectly clear that fighting inflation was given high priority. But to what extent was a very low interest rate the appropriate response to low inflation?

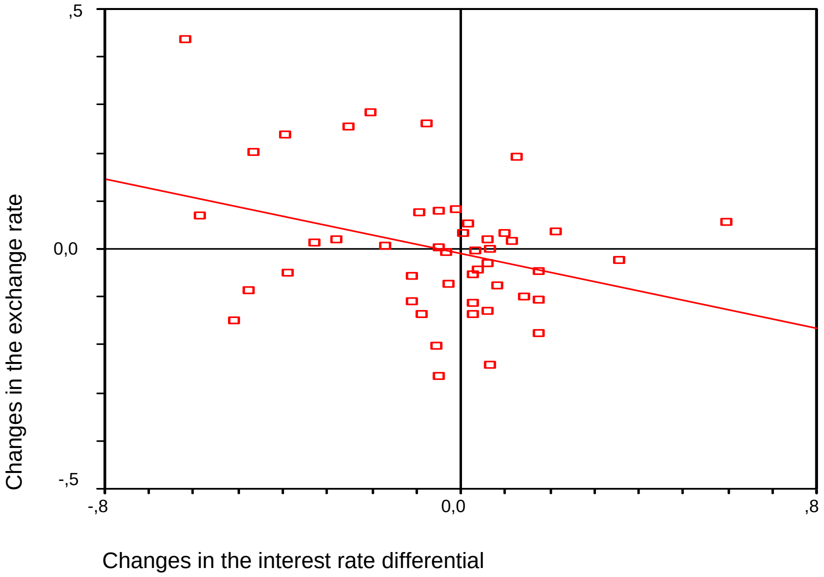
BOX 4.1: THE RELATIONSHIP BETWEEN CHANGES IN THE INTEREST RATE DIFFERENTIAL AND IN THE EXCHANGE RATE

In a speech on 7 June 2004 the Governor of Norges Bank said: “When there are prospects of moderate economic activity, low wage growth and low inflation, Norges Bank will reduce the interest rate. This will normally result in a depreciation of the krone.”

When the domestic rate of interest *unexpectedly* is increased relative to the foreign rate, one normally expects an appreciation of the currency. Following Dornbusch’s seminal contribution in 1976, the exchange rate should overshoot so as to make room for an ensuing depreciation, on the assumption that uncovered interest rate parity holds. However, the issues are not settled, neither theoretically nor empirically, cf. the enormous literature on this topic (see e.g. Froot and Thaler 1990).

In the scatter diagram below we have plotted changes in the one-month interbank interest rate differential between euro and kroner on the horizontal axis, and the changes in the exchange rate, measured as kroner per euro, on the vertical axis. The estimated line is negatively sloped, as expected, i.e. reducing the interest rate differential, makes for a weaker krone. Note that of the 47 observations, from April 2001 (when inflation target had been formally adopted) until February 2005, as many as 18 are in the “wrong” quadrants.

However, there is the problem of simultaneity (see e.g. Bernhardsen and Bårdsen, 2004). Not only do changes in the interest rate impact upon the exchange rate; changes in the exchange rate may also have an effect on the interest rate (differential). When the krone gets stronger, inflationary pressures are reduced. If Norges Bank then decides to reduce the rate of interest, a scatter point is likely to appear in quadrant four. More generally, if Norges Bank’s reaction function is the dominant force, the estimated line in the diagram above will be upward sloping.



Normally a low interest rates leads to higher inflation via a weaker exchange rate. However, the link between interest rate changes and exchange rate changes is not a straightforward one, see Box 4.1. In theory, all information should be contained in the exchange rate at a given point of time. Therefore, only unexpected changes to important variables, like current and future interest rate path, should affect the exchange rate. If Norges Bank signals heavier cuts than anticipated by the market, the NOK should immediately weaken, and then strengthen gradually, *relative to the original forward path*. Although the currency responds to a variety of surprises (or "news"), what happened was broadly in line with theory, with a decline in the external value of the krone, followed by a strengthening from late February 2004 on.

Significant interest rate differentials between Norway and EU12, and even more so between Norway and Japan through 2002 and into 2003, also impacted upon unhedged capital flows from the retail segment. Some Norwegian households moved their mortgage loans into foreign currencies, possibly without fully understanding the inherent exchange rate risk. Conversely, European retail savers bought NOK-euro loans. Obviously, these types of non-professional "carry trades" lose their appeal when the interest rate differentials evaporate. When rates were cut in the first half of 2003, demand for foreign exchange loans dried up. Consequently, already at a folio rate of 2½%, the scope for further weakening of the NOK due to this effect was small.

Lower interest rates will also increase inflation by pushing up domestic demand through lower borrowing costs. While this channel clearly works, in particular via the effect of a tighter labour market on wage growth, one can question to what extent it was appropriate to exploit this channel by cutting the rate of interest all the way down to 1.75 %. Domestic demand already grew quite briskly. Housing prices and household credit were growing at unsustainably high rates. Eventually, this would feed through into higher construction activity (as is currently the case).

As discussed in chapter 3, low inflation in 2002-2004 was a supply-side phenomenon, with little reason to worry about adverse effects on the real economy. Higher productivity growth and increased competition make production resources available for other purposes, but this was countered by the increased demand as alluded to above. Furthermore, inflation expectations seemed to be well anchored, see chart 3.1. In this light, the Board's decision to cut rates from 2½% to 1¾% can not have been an uncontroversial one. Indeed, after the meeting on March 11th, Norges Bank stated that:

> "As an alternative, the Executive Board has considered leaving the interest rate unchanged now and the possibility of keeping the interest rate low for a longer period. However, the Executive Board concluded that it is not appropriate – in the light of the decline in inflation – to deviate markedly from expectations in money and foreign exchange markets at present."

Given a rate of interest at 1¾ % as of March 2005, for how long should the rate be kept at this low level? The same considerations as above apply. The time for starting the process of measured increases now seems ripe. To avoid an undesired strengthening of the NOK, Norges Bank will have to use the communication channel intelligently and persuasively (more on this later).

As the central bank Governor pointed out in his annual address of February 16th 2005, with a real interest rate around 1%, clearly below the assumed neutral level of 2½% to 3½%, monetary policy remains loose and will continue to stimulate the economy.

Looking at the average estimates from Norges Bank and Statistics Norway, domestic demand is expected to grow by almost 4 % in real terms in 2005. Private consumption may increase by 4¼-4½% and offshore investments in the petroleum sector by close to

25%. The production gap is currently closing. Employment growth is expected to accelerate. Although low inflation will contain wage growth this year, a tighter labour market could put upward pressure on wages next year. Increased profitability may reinforce this. Already, domestic inflation is picking up, albeit quite slowly thus far.

If and when the interest rate is increased, a clear concern is whether the krone will appreciate. We believe that the risk is moderate, and that it to some extent can be affected by Norges Bank's communication. By raising interest rates now, the risk that the Norwegian economy is overheated in 2-3 years' time is reduced. This should also reduce the probability that Norges Bank will have to set high interest rate in the coming years. As the krone exchange rate is also affected by expected future interest rate differentials, the effect of an interest rate hike now on the exchange rate is not clear.

According to the theory of uncovered interest rate parity, the exchange rate depends on the cumulative expected future interest rate differential. If, say, the market expects a one percentage point lower interest rate differential next year, but a one percent higher interest rate differential in the following year, there will be no effect on the exchange rate. However, there may be reason to believe that the relationship is more complicated, in the sense that the effect of a change in the interest rate on the exchange rate depends on the size of the interest rate differential. Specifically, if the interest rate differential is small, transaction and information costs may prevent most foreigners from speculating in Norwegian kroner, implying that the exchange rate is insensitive to small changes in the interest rate. However, if the interest rate differential becomes sufficiently large, transaction and information costs become relatively less important, and foreign speculation may emerge. Then, a further increase in the interest rate may have large impact on the exchange rate. This hypothesis is consistent with the experience with the strong krone in 2002-2003, when large interest-rate differentials gave a strong stimulus to foreign currency borrowing by the domestic retail segment.

If the hypothesis above is correct, the effect on the interest rate will be minimized by avoiding periods of high interest rate differentials. This supports the view that the interest rate should be raised soon.

NBW's view:
The time is ripe for gradually abandoning the current expansionary monetary policy as Norges Bank is signalling in the latest Inflation Report (IR 1/05). Norges Bank's signal rate should be hiked in a measured way, to await market reactions. Relevant and persuasive communication should be part of the action, reducing the risk of a currency appreciation.

BOX 4.2: NORGES BANK'S CRITERIA

In its Annual Reports, Norges Bank evaluates the monetary policy according to the following five criteria:

- Was inflation close to the target of 2½ percent? What were the reasons for any deviations from the target?
- To what extent has the conduct of monetary policy increased the prospects for bringing inflation close to target two years ahead?
- Has the conduct of monetary policy contributed to stability in output and employment?
- Has monetary policy underpinned confidence that future inflation will be 2½ percent?
- Was monetary policy predictable for financial market participants?

What is NBW's evaluation according to these criteria?

- The inflation rate, adjusted for tax changes and excluding energy prices, was 0.3 percent in 2004, far below the 2.5 percent target. This seems to indicate failure, "big time". Yet this is not our conclusion. To a large extent, the low rate of inflation is caused by factors that were difficult to foresee. More importantly, the low inflation rate is the result of mostly positive supply side shocks, not reflecting an economy out of balance.
- The very low interest rate during 2004 shows a determined effort by the Bank to push inflation up towards the target. The inflation forecast two years ahead remains below target, but this is reasonable in view of the current brisk growth of the Norwegian economy.
- The decisive interest rate cuts since 2002 contributed to a soft landing of the economy, after the difficult situation in 2002 and early 2003. The low interest rate during 2004, to get inflation back on track, stimulated an economy which already was growing quite briskly. The risk now is that the low interest rate gives rise to imbalances precipitating a future economic downturn. So far, the risk of such a development to unfold does not seem high. However, the situation calls for Norges Bank starting to increase its signalling rate sooner rather than later.
- Inflation expectations five years ahead are close to the 2.5 percent target (see chart 3.1). The interest rate setting in 2003 and 2004 specifically and Norges Bank's communication more generally, have contributed to keeping expectations of future inflation around the targeted level.
- As we show in chapter 5, the Bank does occasionally surprise the market, but generally surprises are of minor nature and do not represent a large problem.

4.4 Forecasts

General

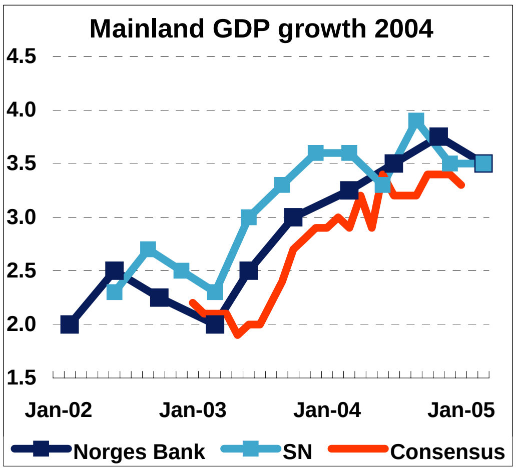
Since changes in the interest rate affect the economy with a lag of 2-3 years, forecasting economic developments over the short- to mid-term is a necessary in the conduct of monetary policy. It is hard to predict the future with great precision. However, the forecasting process is valuable in itself. If done correctly, the process secures that the attempted look into the future is reasonably consistent. Also, the process facilitates learning: Where did one fail? And why? Finally, setting numerical targets is also an important part of Norges Banks communication with the outside world.

In 2004 real GDP grew faster then forecasted…

Charts 4.9-4.12 show the 2004 forecasts for Mainland GDP growth, unemployment, wage growth and core inflation that were given by Norges Bank, Statistics Norway (SN), and an average of independent forecasters ("Consensus") from early 2002 on.

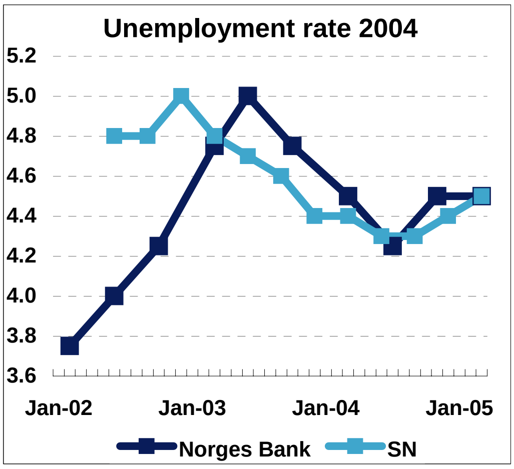
Mainland GDP grew by 3½ per cent last year, about 1¼ percentage point higher than what was assumed by Norges Bank throughout 2002 and well into 2003, cf. chart 4.9. (Typically, both Norges Bank's and Statistics Norway's estimates through 2003 hovered around the estimated long-term trend.) After further rate cuts over the summer of 2003 and higher growth globally, estimated growth was revised substantially up in October and further going into 2004. As chart 4.9 shows, Statistics Norway was quicker in revising their growth estimates upwards, while the consensus average lagged. Also, throughout 2003 Statistics Norway forecasted the 2004 unemployment level more correctly, while Norges Bank was slower in adjusting down their estimates, despite publishing after Statistics Norway.

Chart 4.9



Source: NB,SN,CF,DnB NOR Markets

Chart 4.10

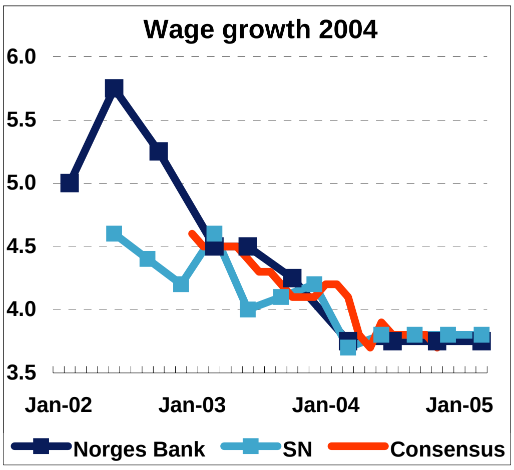


Source: NB,SN,CF,DnB NOR Markets

… but wages and prices grew more slowly

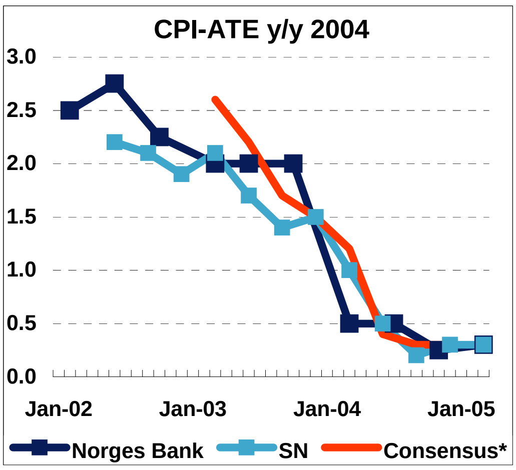
In terms of wage growth and inflation in 2004, Norges Bank's big forecasting error was made in June 2002 and maintained in the Inflation Report of October the same year. Although Statistics Norway was somewhat earlier than Norges Bank in adjusting down their estimates, throughout 2003 estimates from the two institutions differed quite modestly. Well into the year, forecasts were broadly similar, with the most noteworthy difference being the inflation estimates given in the first quarter. While Statistics Norway expected 1.0% core inflation in 2004, Norges Bank expected 0.5% core inflation, the latter closer to the final outcome of 0.3%.

Chart 4.11



Source: NB,SN,CF,DnB NOR Markets

Chart 4.12



Source: NB,SN,CF,DnB NOR Markets

The importance of independent forecasting

NBW-04 stated that Norges Bank should both cross-check their forecasts with other structural forecasters and explore the possible causes if projections differ substantially. In particular, one should make projections conditional on key determinants where assumptions regarding these differ. While we share this view, especially as regards the need to explore different outcomes given alternative assumptions, a key problem is that there are but three "structural" forecasters in Norway; the Ministry of Finance, Statistics Norway, and Norges Bank itself.

While one of these, the Ministry of Finance, has a very thorough forecasting process, incorporating exclusive information, e.g. from the ongoing budget process as well as specially gathered facts and forecasts from other ministries and public institutions, it only revises its forecasts twice a year. Furthermore, while the bulk of the forecasts are to be considered as best guesses, forecasts of some key variables might be affected by the policy significance of the forecast itself.

Statistics Norway is another contender. Norges Bank should pay attention to what this institution comes up with when looking into the crystal ball telling what the future holds. Thus, large forecasting discrepancies is a strong reason for closer scrutiny of one owns forecasts, However, when structural shifts/supply-side shocks take place it is not obvious to what extent one forecaster (Norges Bank) should adopt the view of another forecaster (Statistics Norway).

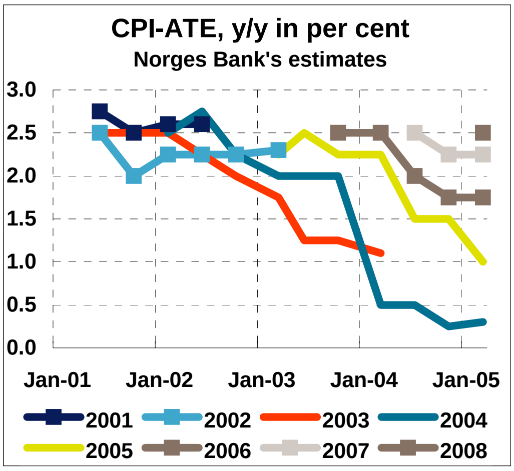
This whole discussion raises another issue: The lack of structural forecasters that may provide Norges Bank with proper benchmarks for its own forecasting. Norges Bank claims to have 10-15 man-years engaged in the process of making forecasts for the Norwegian economy, to assist monetary policy decisions. Two thirds of these are primarily oriented towards judging the current situation. In comparison, Statistics Norway allocates less than 5 man-years (Kvarts +KT) to working on the same issues. The modest amount of resources in Statistics Norway employed in forecasting has paid off quite handsomely. However, there is a concern whether the quality can be maintained in the future. With the exception of the Ministry of Finance, no other institution has a structural, model-based forecasting process.

NBW's view:
The large forecasting errors illustrate the need for at least two forecasters with sufficient resources to do proper and independent forecasts. It is therefore important that Statistics Norway allocate enough resources on forecasting and analysing the development of the Norwegian economy.

Consistently overestimating the rate of inflation

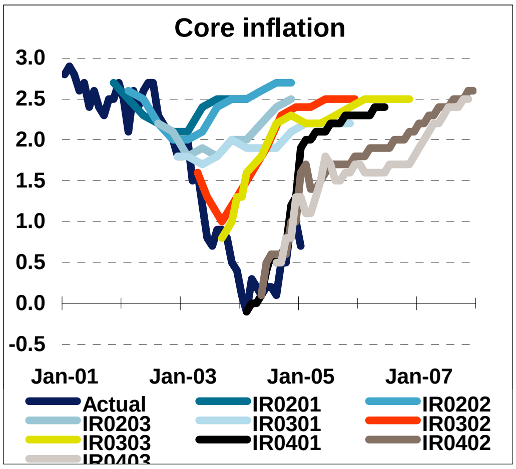
In 2003 and again in 2004, Norges Bank missed its inflation target by a wide margin. In 2003 core inflation turned out at 1.1%, in 2004 at 0.3%. As the two charts below shows, Norges Bank has, since the inflation target was established, consistently overestimated inflation 2-3 years ahead. In IR 2/01 (June 2001), Norges Bank estimated core inflation to 2½% in 2003. It ended up at 1.1%. In IR 1/02 (March 2002) core inflation was estimated at 2½% in 2004. The outcome was 0.3%.

Chart 4.13



Source: Norges Bank/DnB NOR Markets

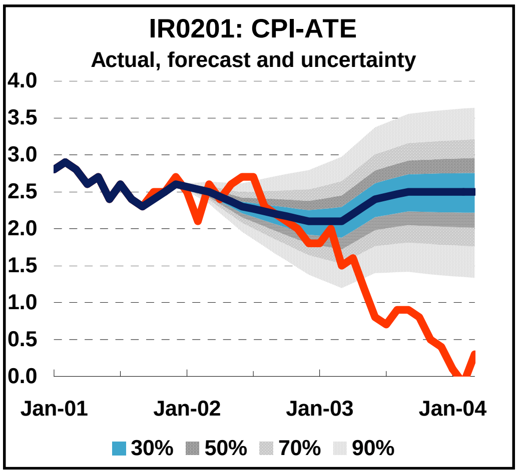
Chart 4.14



Source: Norges Bank/DnB NOR Markets

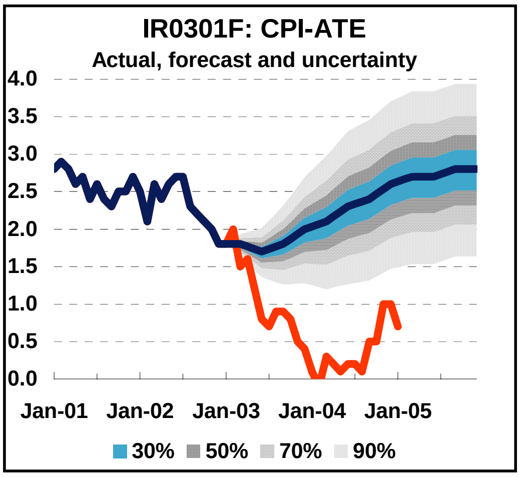
Since IR 4/00 Norges Bank has presented its forecasts for core inflation with a fan chart indicating the probabilities attached to various outcomes. As the charts below show, uncertainty increases the further out in time one goes We have selected two – quite representative – of the 14 projection paths being presented in the Inflation Reports over the years, the ones from IR 1/02 and IR 1/03. (Other projections show errors of a similar magnitude.) Both show that inflation not only undershot the central projection by a wide margin. The projections also missed the 90% interval, in broad terms the +/- 1 %-point around the central forecast.

Chart 4.15



Source: Norges Bank, DnB NOR Markets

Chart 4.16



Source: Norges Bank, DnB NOR Markets

Above, we have seen that Statistics Norway to a large extent made similar errors. Norway, it seems, was hit by a "once in a century"-wave, with a negative inflation shock that was larger than anything likely to occur in the next decades. However, the "once in a century"-wave explanation is unlikely, and we conclude that the real uncertainty associated with the inflation forecast was much higher than the impression readers get from looking at the fan chart.

Norges Bank has gone some way in addressing this issue, as the 90% variation band on the three-year horizon, is wider in IR 1/05 (1.7 %-points) than it was in, e.g. IR 1/03 (1.2 %-points). However, even if the wider band had been applied in 2003, one would miss actual inflation in 2004 by a wide margin.

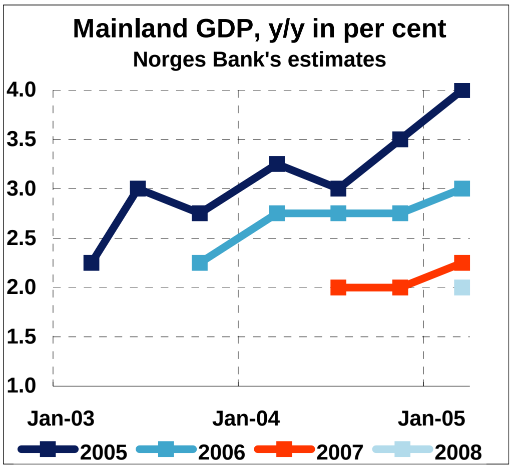
Another issue is whether the forecast errors really were unavoidable. In an unpublished paper, professor Ragnar Nymoen (2004) finds that Norges Banks fan-charts are too narrow, giving an illusion of very precise forecasts. Furthermore, Nymoen argues that a simple econometric model is able to adapt to the shocks once they have occurred, improving the forecast properties relative to the official forecasts. Thus, according to Nymoen Norges Bank's forecast failure was largely avoidable.

NBW's view:
Norges Bank's fan charts seem to underestimate the real uncertainty associated with the inflation forecasts. To what extent forecast errors could have been smaller by use of other methods, remains unsettled. A proper evaluation and comparison of the various forecasts and the reason for their large deviations from the later observed values of the relevant variables would be useful, both when it comes to improving the forecasts, and when assessing the uncertainty associated with the forecasts.

Looking ahead
As regards Mainland Norway's GDP growth in 2005, Norges Bank foresaw the shift to above trend growth half a year before Statistics Norway. By June 2003 Norges Bank expected Mainland GDP growth of 3% in 2005, cf. chart 4.17, while Statistics Norway did not adjust its estimate up to 3% before December the same year.

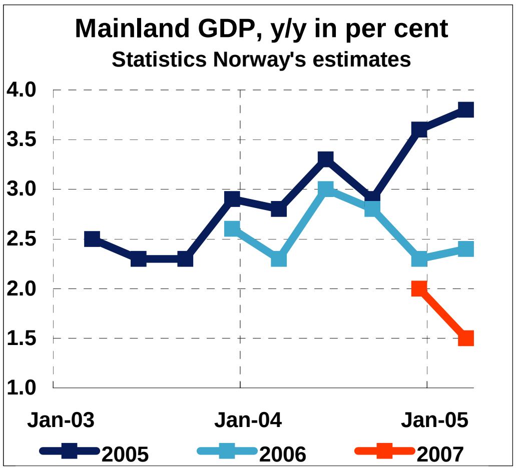
Currently there is no significant difference between the two as regards expected growth in 2005. For 2006 and 2007, Statistics Norway has a more pronounced cyclical slowdown than Norges Bank, i.e. ½-¾ percentage points lower Mainland growth both years. Statistics Norway expects a much more marked global slowdown going forward, leading to a slowing of growth in Norwegian exports. Furthermore, Statistics Norway has a more marked decline in offshore investments. The same applies to mainland investments. Interestingly, this cooling of the domestic economy takes place despite a much looser monetary policy in Statistics Norway's latest forecasts. In 2006 and 2007, Norges Bank expects the money market interest rate to be, respectively, about ¾ and 1¾ percentage points higher than Statistics Norway does.

Chart 4.17



Source: Norges Bank, DnB NOR Markets

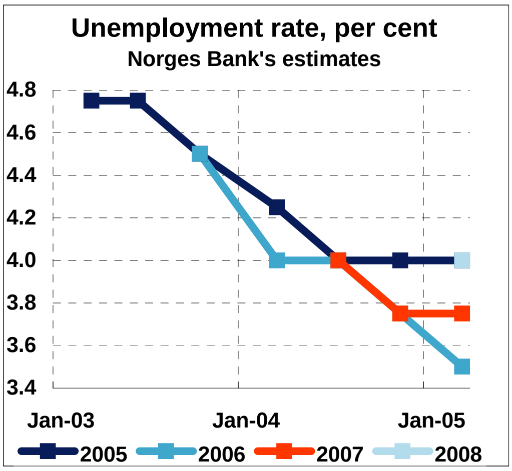
Chart 4.18



Source: Statistics Norway,DnB NOR Markets

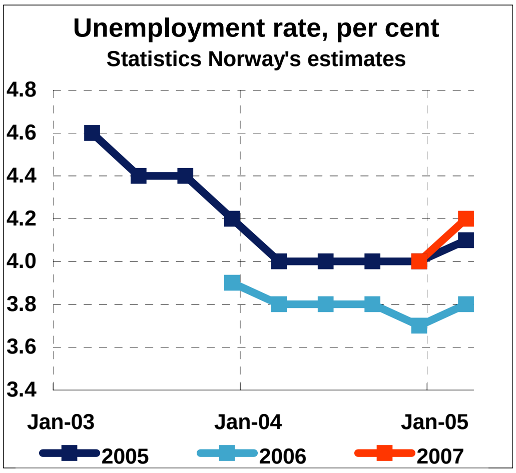
The differences in growth estimates affect the two institutions' view of the labour market developments. While both expect unemployment to bottom out in 2006, Norges Bank assumes unemployment to be about ¼ percentage point lower than Statistics Norway in 2006 and close to ½ percentage point lower in 2007, cf. charts 4.19 and 4.20. For 2005, their estimates of average unemployment are roughly similar.

Chart 4.19



Source: Norges Bank, NOR Markets

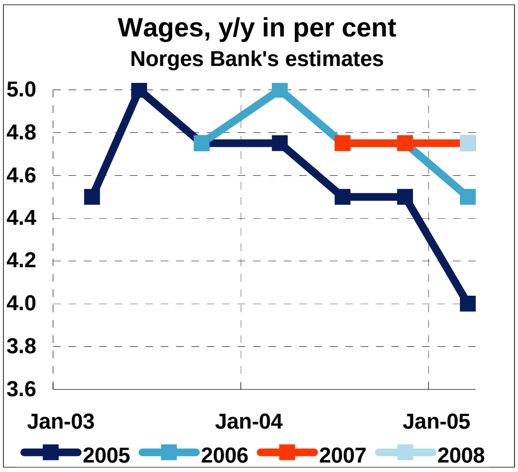
Chart 4.20



Source: Statistics Norway, DnB NOR Markets

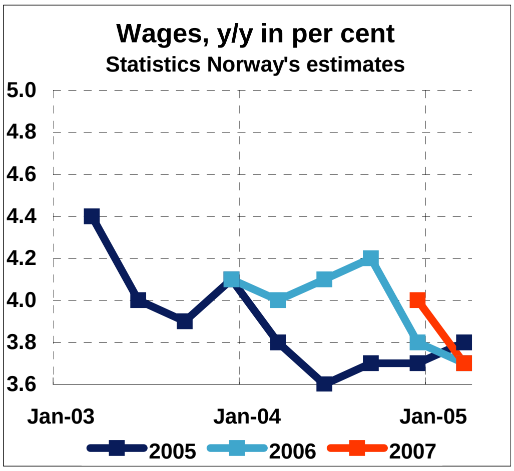
Norges Bank's view of likely wage growth in 2005 has changed considerably since mid-2003. Then, one expected an unemployment rate of 4¾% to yield a wage growth of 5% (2½% in real terms). Now, an unemployment rate of 4% is expected to give a wage growth of 4% (2¾% in real terms). Clearly, Norges Bank seems less worried about a tight(er) labour market now than earlier. With lower unemployment and higher inflation going forward, Norges Bank expects wage growth to pick up somewhat. This is a view that Statistics Norway does not share, as their wage growth estimates remain well below 4%, cf. chart 4.22, consistent with higher unemployment than Norges Bank foresees.

Chart 4.21



Source: Norges Bank, NOR Markets

Chart 4.22

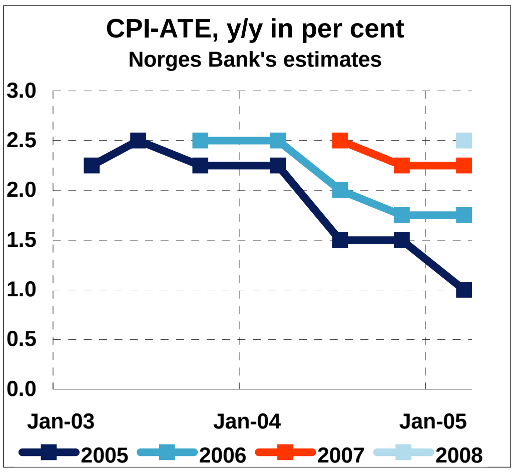


Source: Statistics Norway, DnB NOR Markets

What is puzzling, however, is that the two institutions differ only marginally in their view of expected core rate of inflation, cf. charts 4.23 and 4.24. In 2006 the difference is currently ¼ percentage point, in 2007 close to zero. While the spill-over from wages is slow, we would expect to see some effects of different wage growth forecasts by 2007. For Norges Bank, the above are factors that may need further exploration.

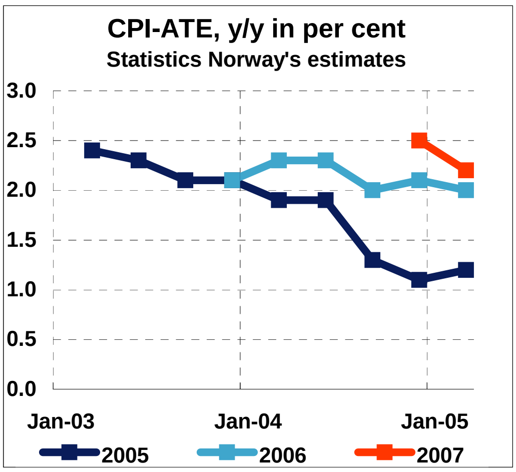
First, what would be the effects of applying the interest rate assumptions that Statistics Norway is basing their forecasts on? Second, is Norges Bank underestimating the likelihood of a more marked global slowdown some years ahead? Third, since Statistics Norway is expecting the same inflation with lower wage growth, are there some inflationary impulses that Norges Bank has not taken fully into account? Finally, if Statistics Norway is proven right about the domestic slowing, what would be the appropriate monetary policy response?

Chart 4.23



Source: Norges Bank, NOR Markets

Chart 4.24



Source: Statistics Norway, DnB NOR Markets

5 Communication

In NBW's view Norges Bank is doing a good job in informing the market and the public at large. Communication has been continuously improved over the years. The Inflation Report, in particular, contains much information that helps to enlighten the markets' understanding of the conduct of monetary policy. The decision to publish the Board's strategy Report for the forthcoming strategy period in the Inflation Report, has further improved communication.

Norges Bank does not consider the stretching of the horizon to 1-3 years in July 2004 to be a significant change. However, external observers do. This discrepancy indicates that communication still leaves something to be desired.

If monetary policy is fully transparent, market reactions to actual interest rate changes should be small, as the market would respond continuously to new information becoming available. After four years of inflation targeting Norges Bank continues to surprise. However, this does not reflect any significant lack of transparency.

The practice of announcing important shifts in monetary policy in speeches and not after ordinary Board meetings should be discontinued. Important policy changes should be announced at a press conference, following an ordinary or extraordinary Board meeting. The fact that important changes were announced in a speech also raises the question of to what extent the Board was involved in the decisions.

Norges Bank is taking further steps towards applying an optimal interest rate path, as NBW-04 recommended. We approve of this practice, not least because it implies that the forecasts will be unbiased. This has not always been the case in the past.

Norges Bank has taken an active approach in communicating with the academic community and with the public at large. It is important that researchers in the Bank are free to engage in scientific debates with fellow researchers outside the Bank.

Norges Bank is doing a good job in communicating the objectives and plans of monetary policy with the social partners. The hearings in the Storting meet the expectations of the politicians. Norges Bank should acknowledge that it is pursuing inflation targeting more flexibly now than in the early days.

5.1 General Observations

An integral part in the behaviour of an inflation targeting central bank is a strong emphasis on communication. However, the postulate of *absolute transparency* is not a viable one. The Bank's transparency is limited by information that may have detrimental effects on the decision making process itself within the Bank. As Otmar Issing, chief economist of the ECB, puts it: "Transparency is not an end in itself; a central bank is not established with the primary objective of communicating with the public." (Issing 2005, p. 68)

We would like to put forward five reasons in favour of an open and transparent central bank

First, the central bank has an obligation to the public to communicate its objectives and plans in the most open way possible. In the words of US Federal Reserve Governor Ben S. Bernanke, "…as public servants whose decisions affect the lives of every citizen, central bankers have a responsibility to provide the public as much explanation of those decisions as possible, so long as doing so does not compromise the decision making process itself." (Bernanke 2004)

Second, by communicating its objectives and pursuing them in a coherent and transparent manner, a central bank may contribute to anchoring the public's long-term expectations of the rate of inflation. A positive inflation shock will then only have moderate influence on the future trajectory of the general price level, wage demands will not factor in higher inflation, and a wage price spiral may be avoided. Also, with stable inflation expectations, changes in the nominal interest rate are likely to have stronger impact on the real economy.

Third, as Faust and Henderson argue (2004, p. 122), “what constitutes optimal policy is inextricably linked with public expectations about policy”, the point being that one cannot know how a policy measure, say, a change in the interest rate, will affect the economy without taking expectations into account.

Fourth, by communicating openly, the bank will also stimulate the debate about how monetary policy is conducted and engage others in the public discourse on the development of best practice monetary policy.

Finally, the central bank, by communicating clearly its plans and objectives, increases the cost of short-run opportunism. Thus, as emphasized by Faust and Henderson (2004), proper central bank communication can be seen as an enforcement mechanism based on policymakers aversion to criticism.

5.2 Communicating with the market

If Norges Bank’s communication is transparent, consistent and precise, each monetary decision should be regarded as a consequence of objectives, plans and forecasts communicated at earlier stages; the Bank's explanation of its response function; and all new "external" information since the last decision. To put it differently, only genuinely new information on economic developments since the last Board meeting should have an impact on the interest rate decisions.

There are three ways to evaluate the quality of Norges Bank's communication with the market. First, one may ask market participants about their view on the Bank's communication. Second, one may look at analysts' forecasts in advance of the meetings vs the actual outcome. Third, one may look at movements in market prices following the publication of the decision. If the decision is anticipated, market reactions should be muted. If not, Norges Bank has surprised the market.

In general, agents in the financial markets think highly of the performance of Norges Bank and regard the Bank as a relatively clear communicator, where future actions may be predicted with some certainty. That is not to say that these agents never are taken by surprise, as is elaborated in the following.

The biannual meetings that Norges Bank arranges with chief economists work well. The opportunity to offer Norges Bank advice on its communication strategy is highly appreciated.

As expected, Norges Bank moves the markets

One way to investigate the transparency of Norges Bank is to look at the change in key financial variables after a rate decision or a key speech by the central bank Governor or the Deputy Governor. Table 4.1 presents the average daily changes in five such variables – the three month money market rate, the one- and two year interest rate swaps, the 10 year Government bond rate and the trade-weighted exchange rate (TWI). Instead of looking solely at the domestic rate changes, we have chosen to study changes in the interest rate differentials vis-a-vis Euro interest rates, thus excluding any substantial changes in international interest rates due to external forces. If the change (or lack of change) in the folio rate was expected by the market, one would expect only minor changes in the interest rate differentials and, for that matter, in the exchange rate.

Table 5.1 Daily changes in key financial variables (average absolute values)

	3m diff, bp		1y diff, bp		2y diff, bp		10y diff, bp		TWI, %	
	events	all	events	all	events	all	events	all	events	all
1999	15	4	9	4	10	4	4	3	0.1	0.2
2000	6	2	4	3	4	4	3	2	0.2	0.2
2001	6	3	9	4	9	4	2	2	0.2	0.2
2002	12	3	12	4	10	4	3	3	0.2	0.2
2003	12	13	17	4	18	5	9	4	0.5	0.3
2004	4	1	6	3	7	3	4	3	0.3	0.3
2005	3	1	8	2	12	3	6	2	0.4	0.3
Avg.	9	3	10	4	10	4	4	3	0.3	0.2

Source: Datastream/DnB NOR Markets. Events indicate days with interest rate decision or key speech, while all indicate all other days.

Unsurprisingly, the data referred in the table show that market prices move more on (or after) interest rate meetings or key speeches. On average, the spread between Norwegian 3m-, 1y- and 2y-interest rates and their European counterparts move by 3-4 bp on a daily basis. On the days where events take place, they move by 9-10 bp. Interestingly, there is no discernible effect on the 10-year Government bond rate or the trade-weighted exchange rate. (The same applies to the EURNOK-rate.)

Over the last six years, one year stands out; 2003 saw the largest changes in the folio rate, and also the largest changes in interest rates after meetings or speeches. While 2004 may be termed "eventless", Norges Bank managed to move the markets more than it did in similarly eventless 2001.

In the discussion that follows, we limit the study to changes in the one- and two-year interest rate differentials. The charts below show the absolute value of the changes in basis points (bp) in the folio interest rate on each rate meeting (a large part of the observations are zero), and the absolute value of the corresponding (same-day) changes in the one- and two-year interest rate differentials against similar eurozone interest rates (red dots). Also, a 20-day moving average of the latter is displayed. In addition to the rate meetings, we have included market reactions to a small number of significant speeches.

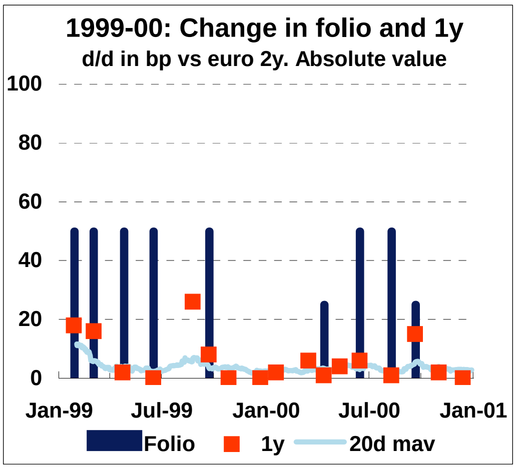
1999

The first observation in the charts below is January 27th 1999, when the folio rate was cut from 8.0 % to 7.5% (i.e. an absolute change of 50 bp). Before the rate cut, the one-year interest spread vis-à-vis the euro zone was 346 bp, declining to 328 bp the day after. Thus, the spread narrowed by 18 bp, as the chart shows. Similarly, the 2-year spread narrowed by 24 bp. (The one-month interest rate differential declined by as much as 75 bp, indicating that no cut was expected at this particular meeting.)

Markets were surprised, but less so, when the next 50 bp cut was taken on March 3rd. The one-month rate fell by 35 bp, while the one- and two-year interest rate differentials fell by 16 and 13 bp, respectively. When rates were cut by 50 bp again in April and in June, the interest rate differentials hardly moved at all, indicating that these interest rate changes were close to being fully expected by the market.

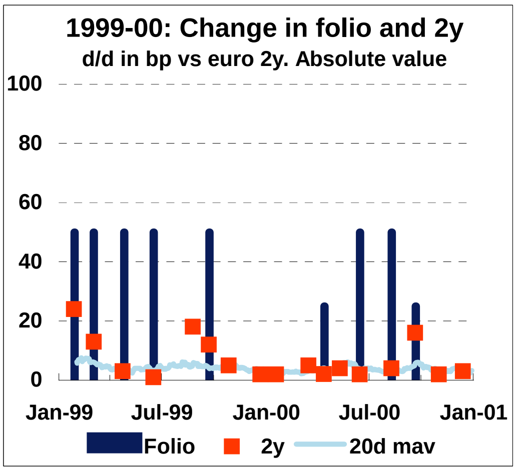
The next surprise came when rates remained unchanged in August the same year, after four consecutive cuts of 50bp each. Interest rate differentials rose 15-20 bp. When rates were cut again in September, market rates fell, though less this time.

Chart 5.1



Source: Datastream/DnB NOR Markets

Chart 5.2



Source: Datastream/DnB NOR Markets

2000

In 2000, the only notable surprise came when Norges Bank in September hiked the folio rate from 6.75% to 7.00% and simultaneously assumed a neutral stance going forward.

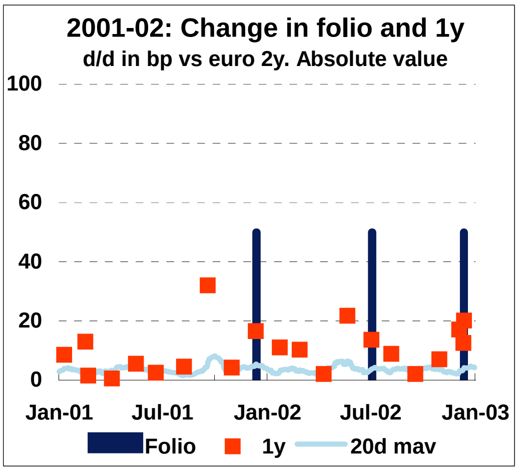
2001

In 2001, Governor Svein Gjedrem's upbeat annual address on February 15th caused the one-year interest rate differential to increase by some 15 bp. The second time Norges Bank took the market by surprise that year was when the Bank failed to cut rates in the aftermath of the terrorist attack in New York and Washington DC on September 11.

Following the non-action of the September 19th meeting, the interest rate differential increased by 30bp.

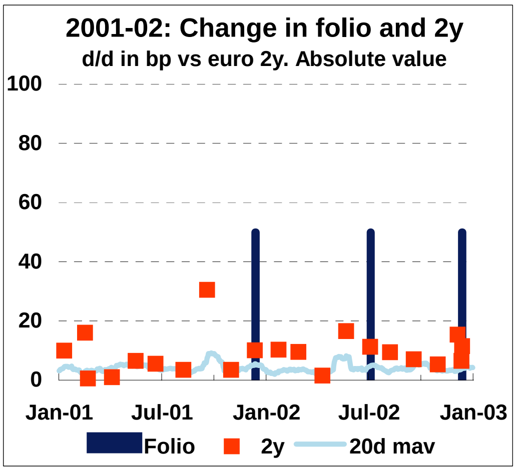
NBW-03 was quite critical of Norges Bank's lack of action after 9/11. With additive uncertainty there is no point in applying the Brainard principle of gradualism and a wait and see attitude. The market was again surprised when Norges Bank finally cut rates by 50 bp on December 12th, with the interest rate differential being reduced by 10-15 bp.

Chart 5.3



Source: Datastream/DnB NOR Markets

Chart 5.4



Source: Datastream/DnB NOR Markets

2002

Following wage negotiations indicating higher wage growth than expected, Norges Bank on May 22nd 2002 shifted from a neutral to a tightening stance, indicating that rates would have to increase going forward. Market actors, expecting higher rates at the forthcoming meeting on July 3rd, responded by increasing the interest rate differential by 15-20bp. A smaller reaction came to the actual 50bp hike at the July meeting, when the interest rate differential moved another 10-15 bp.

Over the summer it became apparent that Norway was increasingly affected by the ongoing slowdown in global economic activity. Following a shift in stance from tightening to neutral at the September meeting, the 2-year interest rate differential peaked in early October. Keeping a neutral stance in October caused no significant market reaction. Throughout the autumn Norges Bank's rhetoric remained bullish on the outlook. When the Bank finally changed its mind, it again took markets by surprise. Gjedrem's speech on December 3rd for Sparebanken Nord-Norge contained the coded message "A preliminary assessment of some new aspects of economic developments is also presented.", after which followed a more cautious description of the economic situation. Rates fell 15-20bp the following day. Despite this hidden warning, market actors were still confused about the next step. When the Bank cut 50bp on December 11th and signaled further cuts, rates fell 10-20 bp.

2003

Again in 2003, Gjedrem's annual address, on February 20th, managed to move the markets. By stating that "If the world economy experiences prolonged stagnation and the krone remains firm, a markedly lower interest rate will contribute to a weakening of the krone and mitigate the effects for Norway.... A gradual easing of monetary policy would thus seem appropriate", the Governor reinforced expectations of further substantial rate cuts. The interest rate differential fell 35 bp the following day. After that, none of the next two cuts, to 5½% in March and to 5% in April moved the markets much.

The next big surprise came at the CME-meeting on June 3rd, where Gjedrem again applied a coded message: "An assessment of some new aspects of economic developments is also presented." This statement was followed by the formulation "Growth in Norway is likely to be fairly weak now, and with an unchanged interest rate, inflation is likely to remain below target in the period ahead. The easing of monetary policy will therefore continue. Norges Bank's Executive Board will also carefully consider changing the interest rate in larger steps."

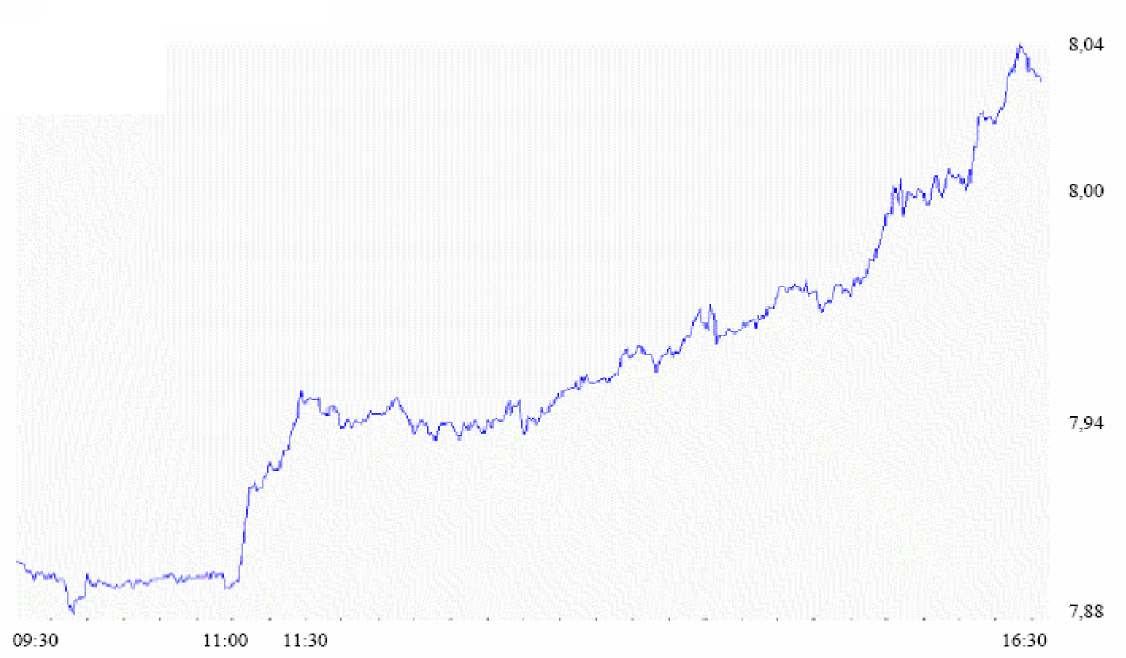
BOX 5.1: THE POWER OF COMMUNICATION

At 11 o'clock in the morning on June 3, the Governor of Norges Bank gave a speech at a CME-seminar. At 11 a.m. the speech was put out on the web. At the very beginning Mr. Gjedrem announced that "Norges Bank's Executive Board will also carefully consider changing the interest rate in larger steps." This statement was taken as an indication that the next interest rate reduction in late June could be one whole percentage point, i.e. a reduction from 5 % to 4 %.

The graph below shows that the krone immediately was weakened against the euro. In the course of half an hour, the price of the euro rose substantially, from 7.88 kroner to 7.94 kroner – half of this increase in a few minutes time. Through the day the weakening of the krone continued.

Price of euro in terms of kroner on 3 June 2003

Source : Reuters



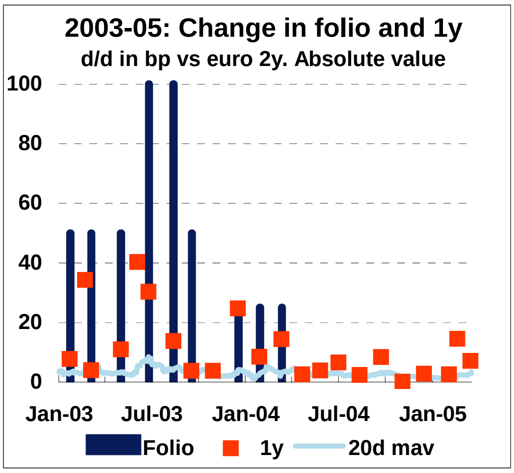
Six months NIBOR fell from 4.46% on 3 June to 4.16% the next day, and down to 3.88% on 5 June. Through clever communication – with all participants in the financial market receiving the same information at the same time – Norges Bank was able to change market prices, i.e. interest rates and the exchange rate, substantially. And, mind you, without actually *doing* anything with the signal rate until a good three weeks later.

On June 25th rates were cut from 5% to 4%, the hitherto largest single step under Gjedrem's rule. The easing bias was maintained and Norges Bank added that it "... is now taking larger steps in interest rate adjustments" and " Given this outlook, there may also be a basis for an easing of monetary policy further than currently implied by expectations in money and foreign exchange markets." Despite being warned in advance, market rates again fell, this time by 30-40bp.

When rates again were cut by 100bp, from 4% to 3% at the next meeting, market reactions were much more muted, with spreads against euro rates declining by just 10-15bp. The next two outcomes – a cut to 2½% and return to a neutral stance in September and no change in October - were largely expected and caused little reaction.

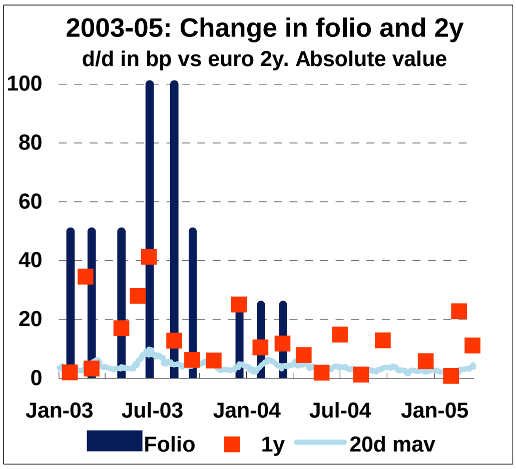
When rates were cut again to 2¼% on December 17th with a shift to an easing bias, without any explicit warning in the shape of an easing bias after the preceding meeting, the market was again taken by surprise. Spreads fell 25bp on that day.

Chart 5.5



Source: Datastream/DnB NOR Markets

Chart 5.6



Source: Datastream/DnB NOR Markets

2004

Compared with the preceding 2-3 years monetary policy was fairly stable in 2004 and surprises were few.

The two 25bp cuts in January and March was expected and caused little change in market expectations. When the Bank left rates unchanged in April and maintained its easing stance, and repeated this in May, neither affected the market to any significant degree.

In July the Bank declared that calculations based upon current forward rates gave too low inflation going forward (IR 2/04). Accordingly, 2-year spreads fell 15 bp, 1-year spreads less. The same assessment in August gave no reaction, but when wording became more neutral again in September, spreads picked up somewhat. At the next two meetings this stance was maintained, and market reactions were muted.

2005
The meeting on February 2nd maintained the wording from the preceding meeting, bar a minor twist regarding the possibility for further cuts, stating that they now were "less likely". In mid-December the Bank said "it would exercise caution with regard to further interest rate reductions." Markets did not react to this.

In Governor Svein Gjedrem's annual address February 17th, a number of key sentences applied in previous post-meeting press statements were modified. Gjedrem stated that "It has been important to prevent inflation expectations from falling and becoming entrenched at a low level", that "we have kept interest rates low for a longer period" and that "Norway has lagged behind other countries in adjusting interest rates to a more normal level." After the Board meeting two weeks earlier, it was stated that "…we should lag behind other countries in setting interest rates at a more normal level." Furthermore, the Governor stated that the folio rate was at its lowest level since 1816, that the real rate was below its assumed neutral level, and that this would continue to stimulate demand going forward.

Markets responded immediately. The following day the one- and two-year interest rate differentials rose 15 bp and 23 bp, respectively. In light of the experiences with the December 2002 and June 2003 speeches, markets were concerned that Norges Bank would not wait long before acting. Over the course of the next month, the one- and two-year differentials rose another 29 bp and 13 bp, partly fuelled by data from Statistics Norway showing good growth in the second half of 2004.

The press statement following the March 16th meeting, by not following up on the Governor's annual speech, took the market by surprise. Norges Bank flagged no alternatives that could have indicated that rates were to be hiked soon. The interest rate interval at the end of the four-month strategy period was lifted from 1¼%-2¼% to 1½%-2½%, but it was at the press conference explicitly stated that one should not interpret this as a higher central value. Rather, it reflected that the previous low end now was seen as less likely, and that one wanted to maintain the width of the band as before. Both the one- and two-year interest rate differentials fell on the news, by 7 bp and 11 bp, respectively.

The bank has surprised – and will do it again
On a number of occasions Norges Bank has taken the market by surprise. Monetary policy void of surprises is not possible in practice. New information arrives continuously, and our understanding of how important economic variables affect each other is developing over time. Quite often a gradual change in the economic outlook, including the expected rate of inflation, takes place. New pieces of information accumulate. The last piece of information making for a change in policy (change in folio rate or communicating that markets have gotten important forward prices wrong, as Norges Bank sees it) may be innocuous. However, it is the accumulated set of events that makes the bank move. And this accumulation over time of how the Bank perceives the situation and the likely future path of the economy can not be communicated on a continuous basis.

The above historical description shows that the Bank has, on a number of occasions, surprised the market. This typically happens when Norges Bank changes its direction/bias. It is difficult to see how this may be avoided given the fact that Norges Bank's communication is – and has to be – *discretionary*. A continuous dissemination and weighting of new information, dispersed to the market is impossible, since much of the information is imprecise and uncertain. Also, if the bank changes its view every fortnight according to shifting winds in the global and domestic economy, we believe communication will be less transparent. The best way to communicate the Bank's view of the future is therefore by well-researched and thorough analyses. Given the fact that forecasts are uncertain and personal judgements thus play an important role, it is hardly surprising that one cannot forecast with precision to what extent Norges Bank's views will change from meeting to meeting.

More surprises from Norges Bank than from other European central banks
That being said, empirical evidence seems to indicate that Norges Bank surprises the markets more than what other central banks do. In table 5.2, we compare the average changes in the one year swap rate after a monetary policy meeting. For Norway and Sweden we look at changes in the one-year interest rate differential vis-à-vis Euro rates to exclude any effects of changes in international rates. (Data for Norway differ slightly from those presented in table 5.1, as changes following key speeches are omitted in the table below.)

Norwegian interest rates vary on a daily basis slightly more than rates in the three other countries, which must be seen in light of the large overall variations in Norwegian short-term rates over the last six years. Norway also has the largest changes in one-year rates after meetings, and the largest ratio of post-meeting changes to overall daily changes. Measured in this way, Sweden and UK comes second, and EU12 enjoys the lowest variation.

Table 5.2 Market reactions to interest rate meetings. Daily change in one-year interest rate, measured in basis points (absolute values)*

	EU12		United Kingdom		Sweden		Norway	
	meetings	all	meetings	all	meetings	All	meetings	all
1999	3	2	8	3	3	3	9	4
2000	3	2	3	2	6	3	4	3
2001	4	3	6	4	5	3	8	4
2002	3	2	4	3	4	3	11	4
2003	2	2	4	3	3	2	12	4
2004	2	2	2	2	3	1	6	3
2005	2	1	2	2	1	1	5	2
Avg	3	2	4	3	4	2	8	3

*) Change in interest rate for EU12 and UK, change in interest rate differential vis-à-vis EU12 for Sweden and Norway.
Source: Datastream and DnB NOR Markets.

Why are market movements largest in the Norwegian case? One can only speculate. Inflation targeting has a shorter history in Norway than in UK and Sweden, and market actors may therefore be less used to the modes of communication applied. Not only may market actors be less experienced, the same may be the case for the communicators in the central bank. Secondly, the Norwegian market is smaller and probably also less liquid, and may therefore be more volatile. Thirdly, as a smaller, more open and more resource-based economy, the monetary policy targets may be more exposed to volatile factors, leading to more sudden shifts in the views entertained by the central bank.

Some events worth noticing

We may tentatively conclude that Norges Bank's communication with the market in general has been as good as what can reasonably be expected. However, again with the benefit of hindsight, a couple of events in later years stand out:

First, Norges Bank's late acknowledgement of the domestic downturn in late 2002, leading to an abrupt change of wording from the presentation of the Inflation Report in October 2002, to the Governor's speech on December 3rd, less than five weeks later.

Second, the weaker growth globally and domestically in the spring of 2003 that forced Norges Bank to cut rates in larger steps. Again, the change was not communicated following an ordinary Board meeting, but at a speech at the CME-seminar close to five weeks later.

As stated above, the overriding consideration must be to do the right thing. Considerations regarding communication should not affect this. But, if Norges Bank changes its view on the economic outlook and on the proper policy stance, this has to be communicated. Two questions then arise: When to communicate the changes? How to communicate them?

On the first question; if Norges Bank changes its view on the economic outlook and on the proper policy response, which was the case both in November 2002 and in May 2003, this should be communicated *as soon as possible*. The sooner market prices are corrected, the better. On both of the occasions mentioned above, the combination of weak growth and a too strong exchange rate led to too low inflation according to Norges Bank's calculations. By signalling lower interest rates, the NOK should weaken, thus increasing the probability that the inflation target was reached "in time".

The answer to the second question is less obvious. Is a speech on a given topic on a given day the right outlet for breaking rather dramatic news on the monetary policy stance? We do not think so.

First, by disseminating important information in an ordinary speech, the Bank gives undue advantage to those who follow all public communication by the central bank. As a matter of openness and transparency, it should be possible to follow the main lines in monetary policy, without keeping an eye on the web every time the Governor or Deputy Governor gives a speech.

Second, since the subject of the speech is not the change in monetary policy that happens to be announced, the occasion does not invite to any elaboration of the changes.

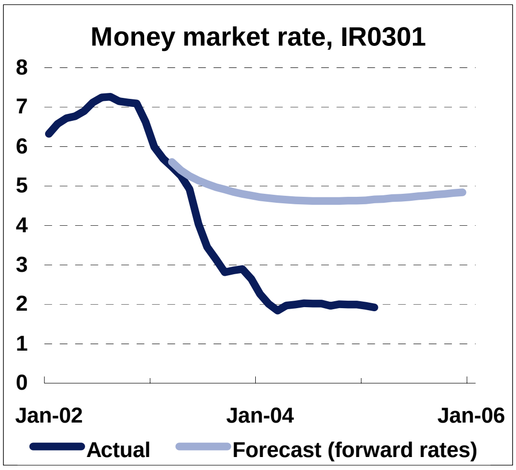
Third, providing market-sensitive information at a speech where a number of market participants are present is a bit unfair: Those attending the meeting can neither engage in immediate trading nor communicate externally with customers or colleagues, without disturbing the meeting as such.

One may also raise the issue of the extent external members of the Board are involved when the administration communicates changes in monetary policy through speeches. The strategy approved by the Board on March 5th 2003 envisaged an end-June interval for the folio rate of 4¾-5½%. Rates were cut from 6% to 5½% March 5th and to 5% April 30th and again to 4% in late June.

In the March Inflation Report an alternative calculation based upon the forward interest rate and on the assumption of uncovered interest rate parity (UIP) being valid, led to a positive production gap, and inflation overshooting the target. Norges Bank's Board stated that "If the krone remains strong or appreciates further, it may be appropriate to reduce the interest rate to the lower range of the interval or below the interval."

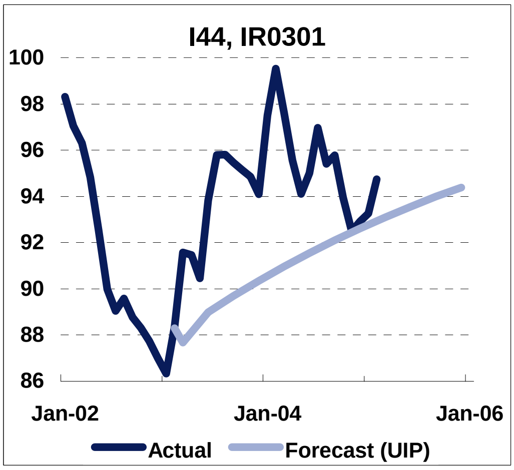
As it turned out, interest rates fell more than the market had foreseen (chart 5.7) and the NOK depreciated more quickly than the UIP assumption would indicate (chart 5.8). On the other hand, estimates of GDP growth for Norway's trading partners in 2003 were lowered by ¼%-point from March to June (but estimates for 2004 were unchanged). Inflation turned out 0.2 %-points lower than foreseen. Whether or not these developments called for a more aggressive policy, it is clear that the change in policy that materialized on June 3rd was not a part of the strategy.

Chart 5.7



Source: Norges Bank/DnB NOR Markets

Chart 5.8



Source: Norges Bank/DnB NOR Markets

The strategy for the following period, July – October, was approved by the Board on June 4th, i.e. after the speech was given (and presumably some time after it was made). Since the speech tied up the Board to a large extent, we assume that the Board was involved regarding the statement on the bank's future course of action. However, there has been no public statement by the Bank to confirm this assumption. Norges Bank has informed NBW that it is the responsibility of the Governor to inform the Board.

NBW's view:
Viewed more broadly, on occasions where the bank actually changes its strategy, the Board should be involved. An extraordinary meeting should be held. The decision to take larger steps could have been communicated at a press conference, preceded by

a press statement explaining that the former strategy no longer was valid, with the reasons for this change being given.

The Inflation Report

Norges Bank publishes its Inflation Report three times per year. This Report is the cornerstone for Norges Bank's communication with the market. The Report has come a long way since first being published in fourth quarter of 1994, then as a 26-page supplement to Norges Bank's quarterly Penger og Kreditt.

The Inflation Report has steadily improved as a source of information on how Norges Bank perceives the working of the economy, and how the Bank may respond to future developments. A large number of special analyses (on average 4 per Report) are particularly valuable.

NBW-04 argued that the Inflation reports should be published quarterly, some time after the quarterly national accounts, for the reports to be as updated as possible. While this is a good argument, Norges Bank has responded that producing the Inflation Report requires a lot of resources, making it worthwhile to publish fewer and more thoroughly researched reports. We find this explanation understandable.

Interest and exchange rate assumptions

A central aspect of the communication process is what assumptions to base the forecasts for interest rates and the exchange rate on. Both NBW-03 and NBW-04 addressed this issue, and both advised that Norges Bank should release an explicit policy inclination in the form of a projected "optimal" path for interest rates. We share this view.

Over the last six years, Norges Bank has based its forecasts for two central variables, namely the folio rate and the exchange rate (EURNOK, later the import-weighted exchange rate, I44), on a large number of varying assumptions, cf. table below.

Table 5.3 Technical assumptions for folio rate and import-weighted exchange rate

IR	Money market rate	EURNOK
1/99	Unchanged for ½ year, then forward rates	Back to initial range in 6 months
2/99	- " -	8.30: Approximately average last three months
3/99	Forward rates	8.30: Approximately average last month
4/99	- " -	8.25: Average last two months
		I44
1/00	Forward rates	Average 1/1-17/3
2/00	- " -	Average 1/1-30/4
3/00	- " -	Average 1/1-21/9
4/00	- " -	Average last three months
1/01	- " -	Average 1/1-1/3
2/01	Unchanged 8 quarters, then towards forward r.	Average last three months
	Folio rate	
3/01	Unchanged (7%)	Average last three months
1/02	Unchanged (6.5%)	Average last month
2/02	Unchanged (6.5%)	Average last three months
3/02	Unchanged (7%)	Average last three months
1/03	Unchanged (5.5%)	Average last month
2/03	Unchanged (4%)	Average 3/6-19/6
2/03A	Forward rate	Forward rate
3/03	Forward rate	Forward rate

1/04	Forward rates (-¼%)	Forward rate
2/04	Forward rates (-¼%)	Forward rate
3/04	Forward rates (credit-risk adjusted, -¼%)	Forward rate
1/05	Forward rate, adjusted after 2006	Forward rate

This varying practice was confusing and made monetary policy less transparent. As previously argued, such lack of transparency could possibly create more market volatility.

Since IR 2/03 Norges Bank has made forecasts based upon the market's forward prices for interest rates and the exchange rate. This is clearly preferable to forecasts conditioned upon unchanged interest and exchange rates. Note that the Swedish Riksbank in 2005 abandoned its practice of unchanged rates in favour of using forward rates, like Norges Bank and the Bank of England.

One problem remains, however: Norges Bank's forecasts are still conditioned on interest rate assumptions that may deviate from what the Bank considers the optimal one. Therefore, the forecasts are not best guesses. The bank's forecasts for private consumption, housing prices and CPI inflation may be "intentionally wrong", and more so if the optimal paths of interest rates and exchange rates deviate significantly from the respective forward rates. This is unfortunate given that Norges Bank is trying to affect the whole forward rate curve. The alternative of publishing an optimal interest rate path, should be considered.

Norges Bank, we are pleased to note, is moving in this direction. In March 2004, when the folio rate was cut to 1.75%, the Bank informed the market that the alternative under consideration was to maintain the folio rate at 2.0% and keep it at that level for a longer period. In May, the Bank added that "The inflation outlook in Norway implies that Norway will not be the frontrunner when other countries increase interest rates", informing the market that it should not expect rates to be hiked earlier in Norway than elsewhere. In the July Inflation Report of 2004, forecasts based upon forward rates implied that inflation did not reach its 2½% target before the end of the three-year horizon. Norges Bank then stated that "Monetary policy should be aimed at increasing inflation at a somewhat faster pace than projected in the Inflation Report. The most appropriate alternative now seems to be that the interest rate should be kept unchanged for a longer period than indicated by market expectations." Again, this gave a signal not only about the near-term rates, but also about a likely level for forward rates. When this exercise was repeated in November, Norges Bank expressed satisfaction with the forward curve.

A further step was taken in March this year, in IR 1/05, where Norges Bank based its forecasts upon the market forward rates for the first two years (until end-2006), then on a rate path where rates adjusted faster towards the "normal" level of 5½% than what market prices implied. Given that the Bank (implicitly) seems satisfied with market prices for the period up to end-2006, one is very close to applying a preferred – or "optimal" – rate path.

One argument against applying an optimal interest rate path is that preparing and discussing a detailed interest rate path may claim resources both at the staff and Board level that may be put to better use. However, one should remember that a proper discussion of the future interest rate path is a necessary component of any interest rate decision, so it is not clear how many additional resources are really required.

A second argument against applying an optimal interest rate path is that it may take some time before the market and, probably to a greater degree, the public, learn to accept that a published optimal interest path will not represent an obligation to set rates accordingly. On the other hand, we have learned to live with signals of unchanged interest rates that were abandoned soon after.

Given the great uncertainty attached to estimates of future exchange rates, the best assumption is probably to continue using the assumption of uncovered interest rate parity as the bank does today, but conditioned upon the optimal interest rate path and not market rates. In IR 1/05 one sticks to the forward exchange rate, despite not fully using the forward interest rate. This obviously is inconsistent, but unlikely to make much of a difference for the calculations undertaken for the Report. (By indicating higher interest rates than the market expects, the exchange rate should be slightly stronger, thus postponing the time when the inflation target is met.)

Both to test the robustness of the strategy and to deepen the public and the market’s understanding of how the transmission mechanism works, it is worthwhile presenting calculations based upon alternative assumptions. One such could be unchanged interest and exchange rates. Other good examples are the five alternatives presented in the monetary policy assessments (strategy) in Chapter 5 in the Inflation Report 2005/1.

5.3 Communication – the receiving end of it

Norges Bank has done an impressive job in terms of making available data on prices, interest rates, exchange rates, etc. as far back as to 1819, providing economic historians with unique time series for further scrutiny, see Eitrheim, Klovland and Qvigstad (2004). A consumer price index as far back as to 1516 is also provided in this publication.

A new and welcome initiative in 2004 is the series Staff Memos. These memos “are intended to encourage comments from colleagues and other interested parties”. They offer a useful channel for scientific discourse with fellow economists outside the Bank. It is important for researchers in the Bank to have an outlet for research-based policy analyses that do not necessarily reflect the views of the Bank.

Once a year the Bank invites leading academics to participate in a one- or two-days seminar, jointly with economists from Norges Bank, where monetary policy in general and the Norwegian approach in particular, is on the agenda. This initiative is in line with what was suggested by NBW-02.

Norges Bank is quite active in educating the public through presentations and speeches given by the Governor and the Deputy Governor. Also, by occasionally writing feature articles in leading newspapers the Bank reaches out to a wider audience.

NBW’s view:
Norges Bank has taken an active approach in communicating with the academic community and with the public at large. It is important that researchers in the Bank are free to engage in scientific debates with fellow researchers outside the Bank.

Norges Bank receives very good marks on its communication with the organizations in the labour market. The Governor is good at explaining the Bank's policy and also at listening to arguments advanced by the organizations. Speeches given by the Governor and the Deputy Governor across the country at fairly short intervals are valued contributions to Norges Bank's explanation of its objectives and plans. Labour market organizations now have a clear conception of Norges Bank now putting more emphasis on variables other than the expected rate of inflation two years down the road.

Likewise, the politicians are very pleased with the performance of Norges Bank The economic development in Norway over the last year and a half has generally been good. Monetary policy has contributed in a positive manner, although the current rate of inflation is far off the mark. At the two hearings in the Storting the Governor of Norges Bank did a fine job in explaining his monetary policy stance and in educating members of the Finance Committee on the intricacies of the conduct of monetary policy. He also gave good answers to the question posed.

Agents in financial markets, leaders of labour unions and of employees' federation, as well as politicians and the public at large are all clear that Norges Bank now practices inflation targeting more flexibly than in the early stages. Extending the horizon for reaching the inflation target is one indication of increased flexibility. More focus on keeping the krone exchange rate at a suitable level is another. Some observers go so far as to suggest that *l'ancien regime* is back. Whereas Norges Bank in 1999 and 2000 argued that an inflation rate of about 2 % would be necessary to keep the exchange rate stable, the perception now is that Norges Bank focuses on a stable exchange rate to keep inflation on track. *Plus ca change, plus c'est la meme chose.*

Norges Bank, however, maintains that its behaviour has not changed over time. In its view, its practice of flexible inflation targeting has remained invariant. In his annual address in 2002 the Governor stated that people could "take as a given" a rate on inflation of 2.5 %. On the same occasion three years later he was more flexible arguing that Norway should "accept somewhat wider variations in inflation than some other countries." Such changes are noticed by the outside world.

A communication problem of a special nature arises, namely one in which the Bank is unwilling to acknowledge how its messages are received by the outside world. Admitting that there is room for changes and improvements may increase the credibility of the Bank. When policy formulations are changed significantly, while the Bank maintains that the policy is the same, private agents may be uncertain how the new formulations should be interpreted. This may reduce transparency and predictability of the monetary policy.

NBW's view:
Norges Bank is doing a good job in communicating the objectives and plans of monetary policy with the social partners. The hearings in the Storting meet the expectations of the politicians. When policy formulations are changed significantly, while the Bank maintains that the policy is the same, private agents may be uncertain how the new formulations should be interpreted.

6 Sammendrag av Norges Bank Watch 2005

Vårt hovedsyn er at pengepolitikken nå fungerer godt. De betydelige rentekuttene siden desember 2002, og et lavt rentenivå etter dette, fremstår som en egnet politikk. Norges Banks politikkanalyser dokumenterer stor faglig kompetanse i Banken. Kommunikasjonen med markedet er gjennomgående god. Et meget positivt hovedbilde forhindrer ikke at det på noen områder er rom for forbedringer. Naturlig nok vil slike forhold få stor plass i en rapport som denne. Hovedbildet om en god norsk pengepolitikk, står imidlertid fast.

Mandatet til Norges Bank Watch 2005 lyder slik:

> *The objective of the Norges Bank Watch Report of 2005 is to evaluate Norges Bank's conduct of monetary policy, given the mandate for the monetary policy set by the Government in March 2001. The committee should evaluate if the objectives stated in the monetary policy mandate concur with those expressed by Norges Bank and whether Norges Bank uses its policy instruments efficiently in order to achieve the relevant objectives.*
>
> *The committee should also address other issues that it may find relevant for the present conduct of monetary policy.*
>
> *Finally, the committee should evaluate the communication strategy of Norges Bank.*
>
> *The Report shall be presented at a press conference no later than 1 June 2005.*

Norges Banks tolkning av sitt mandat

Regjeringen har det konstitusjonelle ansvaret for den økonomiske politikken, herunder pengepolitikken, og har derfor anledning til å instruere Norges Bank ved Kongelig resolusjon. Om regjeringen fant det nødvendig å instruere Norges Bank om den operative utøvelsen av pengepolitikken, ville sentralbanksjefen trolig måtte gå av. Terskelen for å bruke instruksjonsretten er derfor høy. Slik bør det også være. Samtidig er instruksjonsretten hensiktsmessig å ha om en helt uforutsett situasjon skulle kreve rask handling.

Dagen før et rentemøte i Norges Banks hovedstyre legger sentralbanksjefen frem for Finansdepartementet sine vurderinger og eventuelle forslag til beslutning. Denne prosedyren fratar ikke hovedstyret det fulle ansvar for den beslutningen som treffes.

Et gjennomgående tema i norsk pengepolitisk debatt har vært i hvilken grad Norges Bank har tatt hensyn til valutakursen, og hva mandatet for pengepolitikken sier om dette. Etter vårt skjønn synes Norges Bank i noen sammenhenger å tolke mandatet på en snever måte, ved å nedtone henvisningen til at pengepolitikken også skal bidra til valutakursstabilisering. Vi mener at det nåværende mandatet er tilfredsstillende. I noen situasjoner vil en henvisning til valutakursstabilitet i mandatet kunne påvirke markedsaktørenes valutakursforventninger, og dermed bidra til valutakursstabilitet. Mandatet for pengepolitikken bør gjengis i sin helhet i politikkdokumenter som Norges Banks inflasjonsrapport, og ikke utelate henvisningen til valutakursstabilitet.

Den meget lave inflasjonen nå reiser spørsmål om hva som egentlig bør være målet for pengepolitikken. Dersom pengepolitikken skulle måles direkte ut fra den vanlige målsettingen om inflasjon nær 2,5 prosent, og stabil produksjon, ville det store avviket for inflasjonen kunne tyde på at pengepolitikken var mislykket. Likevel er de aller fleste observatører godt fornøyde. Den lave inflasjonen blir ikke betraktet som noe problem, så lenge realøkonomien fungerer godt. Dette tyder på at de vanlige pengepolitiske målsettinger er for snevre.

Norges Banks politikkdokumenter viser høy kompetanse. Banken følger hovedstrømmene når det gjelder tenkningen om pengepolitikk ved inflasjonsmål. Men siden hovedstrømmene er noe snevre metodologisk, er det viktig at Norges Bank er åpen også for andre deler av økonomisk teori, og andre tilnærminger til pengepolitikk. Bankens bruk av det regionale nettverket er et eksempel på slik åpenhet.

Pengepolitikken i 2001-2005

Pengepolitikken virker med langt tidsetterslep. Den økonomiske utviklingen i 2004 og 2005 kan derfor kaste nytt lys over pengepolitikken i 2001-2003. Både i 2003 og 2004 var inflasjonen langt under målet på 2,5 prosent. Samtidig var produksjonsgapet negativt. Vurdert i ettertid var følgelig pengepolitikken for stram i 2001-2003. Når Norges Bank først erkjente at politikken var for stram, var imidlertid Banken rask med å reagere. De betydelige rentekuttene siden desember 2002 fremstår i ettertid som en riktig reaksjon på situasjonen.

Rentesettingen må imidlertid også ses i forhold til lønnsfastsettelsen. Ved å heve renten etter lønnsoppgjøret våren 2002, tydeliggjorde Banken konsekvensene av for høy lønnsvekst under et inflasjonsmål. Denne rentehevningen, sammen med noe større slakk i arbeidsmarkedet, bidro til lønnsmoderasjonen de to påfølgende årene.

Hvor gode rentebeslutningene tatt i 2004 og så langt i 2005 har vært, gjenstår å se. Den siste runden med rentekutt ble tatt etter at oppsvinget i norsk økonomi var kommet godt i gang. Lavere rente var derfor ikke nødvendig av realøkonomiske hensyn. Samtidig fortsatte inflasjonen å overraske på nedsiden, og hensynet til inflasjonsmålet tilsa derfor en svært lav rente.

I juli 2004 ble toårshorisonten forlatt til fordel for en mer fleksibel horisont på 1-3 år. Uten en slik endring ville den lave inflasjonen kreve ytterligere rentekutt, med tilhørende fare for ustabilitet i realøkonomien. Beslutningen om å strekke horisonten var således fornuftig.

Dagens pengepolitikk er ekspansiv. Realrenten er 1½-2½ prosentenheter under sitt antatte nøytrale nivå. Ekspansiv pengepolitikk er riktig når inflasjonen er så lav som den er nå. Men den realøkonomiske utvikling er god, og produksjonsgapet er nær null. Derfor må pengepolitikken også legge vekt på å unngå for kraftig stimulans av økonomien. Dersom veksten blir for sterk, vil det innebære en betydelig risiko for en ny runde der høy rente fører til appresiering av kronen og kostnadsproblemer for næringslivet. Det er derfor betryggende at Norges Banks hovedstyre nå signaliserer at renten gradvis vil bli hevet til mer normale nivåer i løpet av fireårsperioden.

Kommunikasjon

Norges Bank gjør en stadig bedre jobb med å informere markedsaktørene og publikum for øvrig om innretningen av pengepolitikken. Særlig inneholder Inflasjonsrapporten mange innsiktsfulle analyser. Beslutningen om å ta hovedstyrets strategirapporter med i Inflasjonsrapporten, og etter hvert publisere dem forut for selve strategiperioden, har bedret kommunikasjonen ytterligere.

Dersom kommunikasjonen er god og pengepolitikken er forutsigbar, vil markedsaktørene normalt kunne forutse de faktiske rentebeslutningene. Dersom læring finner sted, bør markedsutslagene bli mindre over tid. Et slikt mønster ses ikke. Norges Bank overrasker fortsatt markedet. Renteutslagene er gjennomgående noe større enn i Eurosonen, Storbritannia og Sverige. Markedsutslagene representerer etter vårt skjønn likevel ikke noe stort problem.

Norges Banks to viktigste endringer i pengepolitikken de tre siste årene ble kunngjort i foredrag og ikke etter ordinære rentemøter. Når Norges Bank gjør slike større skift, kan det diskuteres om dette bør kunngjøres på annen måte, f.eks. ved pressemeldinger og/eller pressekonferanser. I tillegg er det naturlig at Hovedstyret involveres i beslutningen.

Aktørene i finansmarkedene, politikere og arbeidslivets parter er samstemte om at Norges Bank nå praktiserer inflasjonsstyring mer fleksibelt enn tidligere. Et konkret uttrykk for dette er at Banken har gitt seg selv lengre tid før inflasjonsmålet skal være innfridd. En annen indikasjon er den sterkere fokusering Banken nå har på hva som er en passende valutakurs. Norges Bank på sin side er imidlertid av den oppfatning at dens atferd ikke har endret seg over tid; inflasjonsstyringen har hele tiden blitt praktisert på samme, fleksible vis. Bankens oppfatning av egen virksomhet på dette punktet samstemmer således ikke med omverdenens.

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