Experiences with inflation targeting in Norway and other countries

Speech by Mr. Svein Gjedrem, Governor of Norges Bank. Centre for Monetary Economics/Norwegian School of Management, 7 June 2005

The speech does not contain assessments of the economic situation or current interest rate setting. Please note that the text below may differ slightly from the actual presentation.

Monetary policy's most important task is to provide the economy with a nominal anchor. Through history this task has been accomplished in different ways. All of them have not been equally successful. Five hundred years of Norway's inflation history nevertheless show that price stability is normal and that high inflation is a phenomenon of wartime and years of social distress as well as a phenomenon of the 1970s.[1]

The economic policy of the 1970s and parts of the 1980s contributed to wide fluctuations in output and employment and high and variable inflation.

It was gradually recognised that monetary policy's most important task is to ensure low and stable inflation. Throughout the 1980s, monetary policy was oriented towards reducing inflation.

Norway and a number of other countries chose a fixed exchange rate as a target for monetary policy. The fixed exchange rate was chosen to provide the economy with a nominal anchor. In Norway, this was a breach in the approach whereby monetary policy and exchange rate policy had been oriented towards strengthening the internationally exposed sector. Deteriorating competitiveness due to high wage growth would no longer be remedied by means of devaluations. This is clearly indicated in the following quotes from the Steigum Commission which submitted its report in 1988.

"If international inflation is low and stable, such an exchange rate policy will contribute strongly to price and wage developments in Norway that are also favourable, assuming that the value of the krone is not gradually devalued."

"If a fixed exchange rate rule is to be credible, the authorities must also refrain from using (devaluations of the krone) in the current economic policy when weakened cost competitiveness leads to a decline in output and employment."

With increasingly mobile capital, it became gradually more difficult to maintain the fixed exchange rate. Small differences in interest rates could result in substantial capital flows and monetary policy easily became pro-cyclical. That fiscal policy dampened fluctuations in the domestic economy and that wage growth was held at bay were not sufficient grounds for a fixed exchange rate either. Currency speculation could be self-fulfilling because interest rate increases that were necessary to counter an attack on the exchange rate could trigger such a low level of activity that confidence in the fixed exchange rate was pulverised.

In Norway, the fixed exchange rate regime was abandoned in December 1992. There had been persistent unrest and widespread speculation in European currency markets. A number of countries had to abandon a fixed exchange rate.

The exchange rate target in Norway became more flexible. Monetary policy was oriented towards maintaining a stable exchange rate in relation to European currencies, without defining a central exchange rate with fluctuation margins. At the same time, fiscal policy was to stabilise the domestic economy.

With rising petroleum revenues, it proved demanding to use the government budget to curb growth in domestic demand and costs. The krone exchange rate began to fluctuate increasingly from 1997, and interest rate setting had to increasingly be oriented towards maintaining low and stable inflation.

Through the 1990s, inflation targeting had emerged as an attractive alternative. This monetary policy regime was based on experiences from the 1960s, 1970s and 1980s.

One important lesson was that it was not possible to reduce unemployment in the medium and long term by merely accepting somewhat higher inflation. Faced with the question of whether an increase in inflation from say 10 to 12 per cent was acceptable if stimulating the economy could at the same time reduce unemployment from say 2 to 1½ per cent, the decision-making authorities would most likely have been inclined to answer yes. But experience showed that this was not an available option. An attempt to increase output beyond the level that is consistent with stable inflation will over time lead to steadily rising inflation. Economic agents will eventually incorporate higher inflation into their inflation expectations. In the long run, the result will only be higher inflation, not higher employment. Output and employment will return to their potential level.

Another important lesson from the 1970s and 1980s was that economic agents look to the future when they make decisions about consumption and investments, wages and prices. They will take into account not only current economy policy, but their expectations of future economic policy.

If economic agents expect that tomorrow's policy will result in high inflation, the cost of reducing inflation may be high in terms of increased unemployment. Therefore, it is important to establish confidence in monetary policy and the objective of price stability. There must be consistency between the stated objectives of economic policy and what is actually done to achieve these objectives. This is the most important reason why the implementation of monetary policy has been delegated to the central bank in Norway, as has been the case in other comparable countries. In Norway, responsibility for interest rate decisions was delegated to Norges Bank through the 1985 Norges Bank Act and through adaptations in practice in 1986.

However, confidence in the inflation target also requires that government finances are in order. One aspect of independence is that the government is not allowed to borrow directly from the central bank. In this way, it is possible to avoid a situation where the government uses the printing press to finance deficits. Printing press financing will lead to inflation over time.

In Norway, the government's possibility of borrowing directly from Norges Bank was eliminated by means of changes in the Norges Bank Act in 2003. (The change became effective 1.1.2005.) Now, the Norwegian government has large surpluses and saves considerable amounts through the Government Petroleum Fund. The change may therefore appear to be of little practical importance, but it is not completely uninteresting. The Petroleum Fund is invested abroad. The government must borrow funds to finance domestic lending and financial investment. One observation is that the prohibition would be more important if the assets in the Petroleum Fund were earmarked for a particular purpose and could not be used for general financing of government expenditures. But there are no plans for this.

Today, more than 20 countries have adopted inflation targeting. Some of them have had an inflation target for more than 10 years, but many adopted inflation targeting after 1998.

Which countries actually have inflation targeting and when they introduced this regime is open to discussion. The following chart is based on information from T. Pétursson of the Central Bank of Iceland.[2]

In New Zealand, the new monetary policy regime emerged as a solution to a practical problem. Like most OECD countries, New Zealand had experienced high and variable inflation in the 1970s and the first part of the 1980s. Monetary policy was tightened and inflation fell. At this time, they needed a robust system that could ensure stable and continued low inflation. The arrangement chosen was part of a more far-reaching reform of the central government administration in New Zealand. Management by objectives, delegation and accountability were important aspects.

Developments in Canada are of particular interest. This country is one of the industrialised countries with the longest experience with a floating exchange rate regime, first from 1950 and later from 1970. Canada spent many years searching for a credible and sustainable system.

The UK and Sweden switched to inflation targeting after currency crises and the collapse of their fixed exchange rate regimes at the beginning of the 1990s.

In Chile and Israel, the introduction of inflation targeting was important for reducing inflation. This has also been the case for a number of the countries that introduced inflation targeting around the turn of the millennium.

The practice of inflation targeting varies. There are, nevertheless, a number of common features that we will refer to as the core of inflation targeting.

First, low and stable inflation in the long term is defined as the most important monetary policy objective in inflation targeting countries. The government authorities state this explicitly.

Second, the inflation target is quantified. The actual target varies, however, from one country to another.

In some countries, such as New Zealand and Israel, the target has been set as a target band for inflation, and not as a single target figure. Other countries like Canada and Sweden have a target figure with a target band around it. Common to all inflation-targeting countries is the existence of symmetry: It is equally important to avoid an inflation rate that is too low as it is to avoid an inflation rate that is too high.

Monetary policy in the US and the euro area is not usually considered to be inflation targeting. In the US, low and stable inflation is an important long-term monetary policy objective, but no explicit target has been set. In the euro area, price stability is the most important monetary policy objective. This is stipulated by a treaty. The ECB has defined price stability as a rise in consumer prices that is less than but close to 2 per cent. This means that there is no symmetry. The ECB differs here. It also appears that the ECB has a longer time horizon for its assessments, and the bank emphasises developments in the money supply.

For most inflation-targeting countries, the explicit target is linked to a level or a band for the consumer price index. Some of the prices in the consumer price index vary considerably, however, due, for example, to tax changes, weather and wind. Changes in these prices provide little information about inflationary pressures in the economy. Therefore, some central banks focus on an underlying measure of inflation. This may be the consumer price index excluding prices that fluctuate most, or measures such as the trimmed average or the weighted median.

While the purchase and sale of a dwelling is an investment, the advantage we derive from using the dwelling - shelter services - is part of consumption. Therefore, the price of shelter services should be included in the consumer price index. However, this is a price that cannot be observed and is difficult to measure. Consequently, some central banks completely disregard shelter services. New Zealand uses an index for construction costs, while Iceland includes the market value of resale homes.

As a rule, the price of shelter services will increase when the interest rate rises. All central banks disregard the direct effect of interest rates on the price of shelter services. This is also the case at Norges Bank.

In very open economies, inflation may fluctuate somewhat without prompting fluctuations in domestic output and employment or leading to changes in inflation in the medium term. In such economies, it may be appropriate therefore to accept somewhat wider fluctuations in inflation.

Which prices to include in the price index is a topic of discussion. In the academic literature, some have suggested that the central bank can increase economic stability or reduce the negative effects of slow price adjustment by stabilising an index with fewer prices and weights other than those in the consumer price index.[3] Prices that adjust slowly should have a relatively higher weight than prices that change quickly. Prices for goods and services where labour costs are a major component often adjust slowly.[4] Labour costs are very important in these indices not only because they change slowly but also because they react to cyclical movements and are seldom exposed to extraordinary disturbances.

Another topic currently of interest to academic research is whether a price level target may be better than an inflation target. With a price level target, high inflation today must be followed by low inflation tomorrow. This is not the case with an inflation target. One advantage of a price level target is that it may reduce the uncertainty surrounding the price level ahead. But the view has been that a price level target results in wider fluctuations in output and employment and less stable inflation. Recent literature challenges this view.[5] As far as we know, there are no concrete plans in any country to shift to a price target.

A third characteristic of inflation targeting is that the central bank alone sets the interest rate - the central bank has instrument independence. One exception must nevertheless be mentioned here. In the UK, the authority to set interest rates was not transferred from the Ministry of the Exchequer to the Bank of England until 1997, five years after an inflation target had been set.

In some countries, legislation allows the authorities to review the decisions under very special conditions. This has not had any practical significance.

A fourth characteristic is that central banks in inflation-targeting countries are transparent. This provides broad insight into the basis for interest rate decisions.

Transparency makes monetary policy more predictable. Inflation targeting provides an explicit and understandable framework for clarifying and stating the reasons for the trade-offs in interest rate setting.

Central banks practice transparency in different ways.

Inflation-targeting central banks usually publish inflation reports or monetary policy reports, but there are major differences in the frequency of publication, horizons and assumptions for projections as well as the contents in general.[6]

In the UK, economic developments receive broad coverage. The Bank makes projections two years ahead, but only for developments in GDP and prices.

Sweden has a two-year horizon for the inflation target. The inflation report does not discuss the monetary policy stance. Instead, this is presented in the published minutes from the monetary policy meetings. The inflation report contains relatively detailed prognoses.

In all inflation-targeting countries, with the exception of Iceland, the interest rate is assessed at pre-announced times. The interest rate may also be assessed at extraordinary meetings. In addition, signals about the interest rate may be given in speeches or other statements.

Practice varies with regard to the publication of meeting minutes and voting.

At Norges Bank, we have become more transparent in recent years about the background for the interest rate decisions. So far, we have only had positive experience with this. In statements following monetary policy meetings, press conferences, inflation reports and speeches, we present an account of aspects of economic developments that influence the Executive Board's assessments and interest rate decisions. Everything is available on Norges

Bank's website. Interest rate decisions are based on a monetary policy strategy drawn up by the Executive Board every four months. The strategy is published as soon as it is adopted and prior to the relevant strategy period. In the last year, we have commented on market participants' interest rate expectations.

The fifth characteristic is that central banks in inflation-targeting countries must be accountable in different ways for the results of their monetary policy.

Inflation targeting is transparent. This allows for a regular follow-up and assessment of the interest rate setting.

Norges Bank's Annual Report with a discussion of the conduct of monetary policy is sent to the Ministry of Finance for submission to the King and communication to the Storting. The Government's evaluations are presented in the annual Credit Report. As governor of Norges Bank, I appear at an open hearing in the Storting's Standing Committee on Finance and Economic Affairs as part of the Committee's deliberations on the Government's Credit Report. In addition, Norges Bank Watch sends an independent professional evaluation of monetary policy to the Ministry of Finance.

In many countries, the central bank governor must appear before parliament and answer questions. For example, the Riksbank in Sweden reports to the Swedish Parliament's Finance Committee on the conduct of monetary policy at least twice a year. Canada has a similar arrangement.

The Bank of England must write an open letter to the Minister of the Exchequer if inflation deviates from the target by more than one percentage point. In the letter, the bank must explain why the target has not been reached and what measures will be initiated. In Norway in the summer of 2003, the Ministry of Finance asked Norges Bank to provide a more detailed account of actual price developments in relation to the monetary policy target. At that time, inflation was more than one percentage point below the target.

Many central banks are required to inform the Ministry of Finance concerning their use of monetary policy instruments. The formal frameworks vary. The central banks in Australia and Canada have regular consultations with the government authorities concerning monetary policy. In Sweden, the central bank informs the authorities in advance about important monetary policy decisions. This is also the practice in New Zealand. Norges Bank has provided information to the Ministry of Finance in special meetings ever since the Bank received instrument independence in 1986. The Ministry can then also express their view. This procedure does not reduce the Executive Board's responsibility for their decisions.

In some central banks, government representatives can participate in monetary policy committee meetings, as a rule without voting rights. In Australia, the senior official in the Ministry of Finance and Administration is a member of the monetary policy committee. He or she has voting rights. In the UK, the Ministry of the Exchequer has the right to be present but only has the right to speak. In the ECB, the chairman of the ECOFIN Council and one member of the Commission may participate in the meetings of the Governing Council, but they have no voting rights.

At Norges Bank, the Executive Board makes the monetary policy decisions. The Executive Board consists of internal and external members and has responsibility for all of Norges Bank's operations. Australia has a similar arrangement. In the Bank of England and the Riksbank in Sweden, the interest rate is set by a monetary policy committee with members who in practice work full-time for the bank. In New Zealand, the central bank governor alone sets the interest rate. In Canada, the central bank governor has also been given this responsibility.

In the UK and Sweden, the individual member's responsibility is emphasised in particular. Minutes from the monetary policy meeting as well as the voting results are published. At the same time, members participate actively in the public debate with speeches and articles on monetary policy.

In Norway, we have chosen to provide a broad account of the interest rate decision that reflects the Executive Board's discussions.

Differences in the practice of inflation targeting are often due to historical and cultural differences. It is reasonable to expect that some of the differences will disappear over time.

Result

With more than ten years of experience with inflation targeting, we can now evaluate what the countries have achieved.

Inflation had already fallen somewhat among the OECD countries that first introduced inflation targeting. Inflation has fallen further and has remained at the lower level. There is also considerably less variability in inflation.

Inflation targeting in Chile and Israel reduced inflation from a very high level. There is also less variability in inflation.

The countries that introduced inflation targeting from the end of the 1990s may be divided into countries with high inflation and countries with low inflation at the time of the shift in monetary policy. Inflation has remained low and stable in those countries that initially had low inflation. The countries where inflation was high have so far experienced the same favourable developments as Chile and Israel.

Many of the countries that have inflation targeting today previously had a fixed exchange rate regime. With inflation targeting, the nominal exchange rate fluctuates.

In those countries that introduced inflation targeting first, fluctuations in the exchange rate have diminished.

Changes in the exchange rate are of importance to interest rate setting because the exchange rate affects inflation and output. When there are prospects of moderate economic activity, low wage growth and low inflation, the central bank will reduce the interest rate. This will normally result in a weaker currency. Prices for imported goods and services will

increase. A weaker currency strengthens the competitive strength of a country's enterprises and indirectly increases output, employment and inflation.

Most inflation-targeting countries base their monetary policy on inflation targeting that is more flexible and use some time to bring inflation back to target, i.e. flexible inflation targeting. Such a policy has a less pronounced effect on demand and output than stricter inflation targeting.

We see that real economic developments among the first inflation-targeting countries have become more stable.

Growth has also accelerated. For all OECD countries in the first group of inflation-targeting countries, growth has been higher since inflation targeting was introduced than before.

With confidence in the inflation target, monetary policy can make a greater contribution to smoothing fluctuations in the economy.

Inflation expectations have also fallen and are stable at the target.[7]

On the whole, we may conclude that the inflation-targeting countries have had low and stable inflation. Growth has increased and become more stable.

Nevertheless, we cannot necessarily conclude that inflation targeting alone has been responsible for these favourable results. Other countries have also had favourable economic developments in the last ten to fifteen years.

The results must be seen in the light of the fact that all of these countries have conducted a sound monetary policy. Low and stable inflation is an important and often the only monetary policy objective. The central bank sets the interest rate, and in all of these countries monetary policy is currently based on the understanding that in the long-term there is no trade-off between inflation and employment. This applies regardless of whether they have introduced inflation targeting or not.

Among the countries with positive economic developments in the last ten to fifteen years, different degrees of confidence in the nominal anchor early in the 1990s have probably been decisive for the choice of inflation targeting as a monetary policy regime. When confidence was lacking, it was costly to reduce inflation. For many countries it was important to establish a system that could build confidence. Inflation targeting is tailor-made for this purpose.

It is possible that the disturbances in the world economy were particularly large in the 1970s and 1980s, and that later it has been easier to stabilise inflation and output.[8] In the 1970s and early 1980s, oil prices rose sharply. We have not had similar disturbances in the last fifteen years. On the other hand, monetary policy is probably more robust now. Disturbances are not allowed to spread in the same way as earlier. Many countries have been exposed to major disturbances in the last fifteen years as well.

Globalisation, increased trade and at times strong growth in productivity may have made the trade-offs easier. It is possible that the costs of holding inflation at bay have been reduced.[9]

It appears that the short-term trade-off between inflation and unemployment has changed in Norway as well.[10]

Whereas a given rise in unemployment resulted in a relatively small reduction in inflation in the 1970s and 1980s, the gain in the form of lower inflation was far greater in the 1990s. This may be due to a more successful monetary policy and supply-side conditions in the economy, including wage determination.

Inflation targeting has proved to be a sound system and may be particularly well suited for small and medium-sized open economies.

A topic currently being discussed by academia and central banks is whether and how monetary policy should contribute to stability in the financial system.

Price stability and financial stability often require the same medicine. For example, periods of strong growth in demand for goods and services will usually result in both higher inflation and increased asset prices. Both considerations may imply a tighter monetary policy. There are also examples of situations where these objectives must be weighed against one another.

In recent years, inflation has been low and stable in many countries while asset prices have risen sharply. There may be several reasons for this.

First, a credible monetary policy will result in expectations of low inflation. Long-term implicit and explicit price and wage contracts based on low inflation in the period ahead may thus become more common. This would mean that it could take longer for increased demand to translate into higher inflation. Asset prices will not necessarily be constrained by expectations and may on the contrary react quickly to changes in the activity level.

Second, periods of higher productivity growth may lay the basis for high corporate earnings, heightened optimism and reduced risk awareness. Productivity growth may also result in low inflation. Banks usually have low losses and solid profits and can increase lending without eroding their capital adequacy. Debt-financed investments may lead to a faster rise in house and property prices.

Increased globalisation and changes in trading patterns may have similar effects.

There seems to be broad agreement that extreme events that can threaten financial stability should be met with a resolute monetary policy response. For example, a number of countries initiated measures to ensure liquidity in the financial system after the terrorist attacks on 11 September 2001. This reduced the risk in the financial systems.

There is less agreement, however, about how central banks should respond to financial imbalances that accumulate gradually.

One view is that it is neither possible nor desirable to counter financial imbalances with an active monetary policy. According to this view, it is impossible to determine precisely the level of debt, asset prices and investments that constitutes an unacceptable risk for the financial system. Both an increase and the level of these variables may be important, but also the situation in the rest of economy.

In addition, it is very difficult to determine the timing for a monetary policy response since monetary policy often functions with a lag.

Third, the change in the interest rate that is necessary to reduce financial imbalances may be so large that it results in a sharp downturn.

It is also conceivable that such an active policy may lead to moral hazard. Investors may undervalue risk if they expect the central bank to intervene when financial imbalances build up. The result may be that economic agents take more risk than is desirable.

Central banks will, nevertheless, place emphasis on the effects of developments in asset prices, the money supply and credit on future inflation and output.

The grounds are somewhat different. Ben Bernanke from the US Federal Reserve points to the relationship between the rise in the stock market and nascent inflationary pressures.

"For example, to the extent that a stock-market boom causes, or simply forecasts, sharply higher spending on consumer goods and new capital, it may indicate incipient inflationary pressures. Policy tightening might therefore be called for - but to contain the incipient inflation, not to arrest the stock-market boom per se"
Ben S. Bernanke, October 2002[11]

Otmar Issing at the ECB states that pressures in the financial system can be detrimental to the objective of price stability in the long term.

"Truly optimal monetary policy cannot avoid that, at times, strains in the financial system might be such that deviations from the desired inflation rate during shorter periods of time have to be accepted, in order to preserve price stability over the medium to long run"
Otmar Issing, March 2003[12]

Lars Heikensten, the governor of the Riksbank in Sweden, stresses the possible repercussions of financial imbalances on output when household debt is high and interest rates are rising.

"the developments in credit and house prices are one argument against looser monetary policy. A rate cut followed by a faster hike could bring about problems through their effects on household indebtedness and consumption."
Lars Heikensten, March 2005

None of the three set separate objectives for developments in asset prices or debt.

Another view is that monetary policy should take into account the effects of financial instability in addition to its impact on inflation and output. For example, the Reserve Bank of

New Zealand will in an extraordinary situation with a very sharp rise in asset prices consider extending the horizon for achieving the inflation target in order to dampen developments in asset prices. The purpose of this is to reduce the risk of a serious economic downturn at a later time.

In Norway, we have flexible inflation targeting. We have chosen to incorporate assessments of financial stability in the interest rate decisions. This is primarily because developments in financial balances affect inflation and output over time. Through its work on financial stability, Norges Bank gathers information about the financial strength of the financial system and the financial position of households and the corporate sector. This information is useful in connection with monetary policy decisions. Integrating the objective of financial stability into monetary policy ensures that we are giving adequate attention to risks in the financial system.

But it is important to remember that we have only one monetary policy instrument, the interest rate. Monetary policy should continue to focus on price stability. In the light of the experiences of different countries in the last 10-15 years, I am confident that flexible inflation targeting provides us with a sound framework for performing this task.

Footnotes

[1] See Qvigstad, Jan (2005), "500 års prishistorie - Prisstabilitet er det normale. Hva kjennetegner det unormale?" (500 years of inflation history - Price stability is the norm. What distinguishes the abnormal?) Lecture at Norges Bank's conference on Historical monetary statistics for Norway, Bogstad Gård, 7 June.

[2] Pétursson, Thórarinn G. (2004), "Formulation of inflation targeting around the world," *Monetary Bulletin* 2004/1, pp. 57-84.

[3] See Aoki, Kosuke (2001), "Optimal Monetary Policy Responses to Relative Price Changes," *Journal of Monetary Economics*, Vol. 48, pp. 55-80, Arrazola Maria and José de Hevia (2002), "An Alternative Measure of Core Inflation," *Economics letters*, Vol. 75, pp. 69-73, Mankiw, Gregory and Ricardo Reis (2003),"What Measure of Inflation Should a Central Bank Target?" *Journal of the European Economic Association*, Vol. 1, pp. 1058-1086, and Woodford, Michael (2003), *Interest & Prices - Foundations of a Theory of Monetary Policy*, Princeton University Press.

[4] Angeloni, Ignazio, Luc Aucremanne, Michael Ehrmann, Jordi Gali, Andy Levin and Frank Smets (2004), "Inflation Persistence in the Euro Area: Preliminary Summary of Findings", presented at the ECB's conference on inflation persistence in the euro area, Frankfurt am Main , 10-11 December 2004.

[5] See Svensson, Lars E.O. (1999), "Price Level Targeting vs Inflation Targeting: A Free Lunch?" *Journal of Money, Credit and Banking*, Vol. 31, pp. 277-295, and Vestin,David (203), "Price-level versus Inflation Targeting" forthcoming in *Journal of Monetary Economics*.

[6] See Fracasso, Andrea., Hans Genberg and Charles. Wyplosz (2003), "How do Central Banks Write? An Evaluation of Inflation Reports by Inflation Targeting Central Banks, *Geneva Reports on the World Economy, Special Report* 2.

[7] Consensus Forecasts Inc. provides an overview of different institutions' inflation forecasts for different countries. This may be a measure of inflation expectations. See also Levin, Andrew T., Fabio M. Natalucci and Jeremy M. Piger (2004), "The Macroeconomic Effects of Inflation Targeting," *Federal Reserve Bank of St. Louis Review*, Vol. 86, pp. 51-80.

[8] See, for example, Stock, J.H. and M.W. Watson (2003), "Has the business cycle changed? Evidence and explanations", in *Monetary policy and uncertainty: Adapting to a change in economy*, Federal Reserve Bank of Kansas City.

[9] See Rogoff, K. (2003), "Globalization and global disinflation", in *Monetary policy and uncertainty: Adapting to a change in economy*, Federal Reserve Bank of Kansas City.

[10] In the UK, developments have been similar. See King, Mervyn (2005), "Monetary Policy: Practice Ahead of Theory, Mais Lecture 2005", lecture at the Cass Business School, City University, London, 17 May.

[11] "Asset price bubbles' and monetary policy". Remarks before the New York Chapter of the National Association of Business Economics, New York, 15 October

[12] Issing, Otmar (2003), "Monetary and Financial Stability: Is there a Trade-off?" Speech at the conference "Monetary stability, financial stability and the business cycle". 28-29 March, BIS, Basle.

[13] Heikensten, Lars (2005), "Introduction on Monetary Policy" speech to the Committee on Finance, Swedish Parliament, Stockholm, 15 March.