

## Jarle Bergo: Oil revenues, monetary policy and economic cycles

Lecture by Mr Jarle Bergo, Deputy Governor of Norges Bank (Central Bank of Norway), at the Telemark University College, Bø, 13 November 2002.

*The text below may differ slightly from the actual presentation.*

*The lecture is based on the assessments presented at Norges Bank's press conference following the Executive Board's monetary policy meeting on 30 October and on previous speeches.*

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Petroleum activities constitute an important part of the Norwegian economy. A sound economic policy and high oil prices have contributed to the highest current account and budget surpluses that have been recorded in any OECD country. In 1998 when oil prices were down to USD 10 per barrel, we also recorded a surplus that came to 4 per cent of GDP measured in terms of government net financial investment.

Societies that suddenly gain access to wealth have a tendency to spend the money and then fall into decline. Access to an abundance of natural resources can result in slower growth. The explanation may be that time and resources are spent on grabbing as large a share as possible of the acquired wealth. Historical experience therefore suggests that it is important to have decision-making systems to provide protection against individual groups gaining strong control over Norway's petroleum wealth. In addition we must maintain and develop incentives to acquire knowledge and engage in innovative work.

It is also important to be aware that the bulk of Norway's national wealth consists not of oil, but of the country's labour force. Should our oil wealth lead to our working a little less, or being a little less productive, the decline in Norway's remaining wealth would rapidly become as great as our entire petroleum wealth.

On 29 March 2001, the Stoltenberg Government issued new guidelines for monetary policy and presented a guideline for fiscal policy. The guideline for fiscal policy implies that the central government budget deficit shall be equivalent over time to the expected real return on the Government Petroleum Fund. The guideline thereby provides a long-term anchor for fiscal policy. The Petroleum Fund thus serves as a buffer against fluctuations in petroleum revenues and the Norwegian economy. The alternative, to allow the government budget to fluctuate in pace with petroleum revenues, would have resulted in abrupt, unpredictable shifts in economic policy from year to year. The result would have been greater uncertainty. The guideline provides a stable framework that contributes to curbing uncertainty.

The phasing in of petroleum revenues will contribute to stimulating activity in Norway. The fiscal guideline implies that the non-oil deficit will increase in the years ahead, thereby providing a substantial fiscal stimulus each year.

The phasing in of petroleum revenues will have implications for Norway's industry structure. Increased spending of petroleum revenues on goods and services that are dependent on domestic resources requires an increase in employment in the sheltered sector. This labour has to be recruited from the exposed sector, or through the natural increase in the labour force finding its way to the sheltered sector.

Over time, the size of the internationally exposed sector will be affected by the portion of the petroleum revenues that is absorbed into the Norwegian economy. The size of the internationally exposed sector is independent of monetary policy. An appreciation of the krone may, nevertheless, affect the speed at which changes occur in the business and industry.

To maintain balance in the Norwegian economy, the phasing in of petroleum revenues must be countered by a monetary policy stance that is tighter than it would otherwise have been. This may be accomplished by keeping interest rates higher than they would otherwise have been, or by an appreciation of the krone, or both.

A clear monetary policy target is a necessary complement to the fiscal guideline with a view to ensuring reasonable macroeconomic stability. Monetary policy is oriented towards low and stable inflation. The inflation target is set at 2½ per cent.

If evidence suggests that inflation will be higher than 2½ per cent with unchanged interest rates, the interest rate will be increased. If it appears that inflation will be lower than 2½ per cent with unchanged interest rates, the interest rate will be reduced. Inflation in Norway is determined by both domestic and international inflationary impulses. Domestic inflationary impulses are influenced by the state of the Norwegian economy. International inflationary impulses are generated via prices for imported consumer and intermediate goods. These inflationary impulses will partly be influenced by developments in international commodity and consumer prices and by the exchange rate.

Interest rates influence inflation through their impact on domestic demand and on the market for NOK. When interest rates rise, it is more profitable to save and more costly to borrow. This dampens consumption and investment and hence aggregate demand. Lower demand in turn curbs the rise in prices and wages.

Higher interest rates make it more attractive to take krone positions and borrow in foreign currency. As a result, higher interest rates normally lead to an appreciation of the krone. This reduces prices for imported goods. In addition, a strong krone reduces activity and profitability in the internationally exposed sector.

It is important to be aware of the relationships between employment, output and inflation. If there is a shortage of labour and other economic resources, a tight monetary policy stance will reduce inflation by affecting aggregate demand. Conversely, when unemployment is high, low interest rates stimulate demand, which will contribute to stable wages and prices. A monetary policy stance that is aimed at stabilising inflation will thus also contribute to stabilising aggregate output and employment.

In the long term, monetary policy determines the average level of inflation. Output is determined by the supply of labour, capital and technology and by productivity growth. Attempts to increase output beyond the total capacity of the economy will lead to inflation in the long run.

What monetary policy can do is to maintain stability without unnecessary fluctuations in output and employment. Overall employment is also influenced by wage formation. If wages increase at an unsustainable pace, employment will decline and unemployment will gradually increase. Monetary policy cannot prevent an increase in unemployment that is due to a wage-driven cost shock.

When there is confidence that monetary policy will contribute to low and stable inflation over time, it can contribute in the short term - under certain conditions - to smoothing fluctuations in output and demand. In the short term, there is a trade-off between the objectives of inflation stability on the one hand, and output and employment stability on the other. An aggressive monetary policy will rapidly bring inflation to the target. This will cause wide fluctuations in the real economy. The interest rate can also be changed more gradually, which will have less impact on the real economy but cause more pronounced fluctuations in inflation. By influencing inflation over time, we can ensure that an overly aggressive monetary policy does not in itself cause unnecessary disturbances to the economy.

The impact of monetary policy occurs with considerable and variable lags. Our analyses indicate that a substantial share of the effects of an interest rate change will occur within two years. Two years is thus a reasonable time horizon for achieving the inflation target. It is nevertheless conceivable that in a situation where a very high rate of inflation is accompanied by sluggish economic growth, Norges Bank may decide to apply a somewhat longer time horizon than two years to reach the inflation target of 2½ per cent.

The choice of monetary policy time horizon reflects the fact that there are real economic costs associated with bringing inflation rapidly back to the target. This horizon is thus an indirect expression of the trade-off between the objectives of, on the one hand, stable output, and on the other hand, low and stable inflation.

Historical data for Norway and other countries show that interest rate changes affect aggregate demand fairly quickly. Using the RIMINI model, we have estimated the effects of a 1 percentage point increase in interest rates over a period of two years. The chart shows that, in isolation, an interest rate increase of this magnitude may reduce mainland GDP by ¼ -1 per cent after two years.

The effect will depend on a number of factors, such as household loan debt and corporate profitability. Household and business expectations may also play a part in determining the impact of interest rates. The band in the chart illustrates some of this uncertainty as shown by our models.

In practice, it is often difficult to determine how long the interest rate will be kept at high or low level. The associated effects, for example on the exchange rate, will inevitably change if the interest rate is changed for a shorter or longer period than in our analysis. Experience shows that the time it takes for

a change in interest rates to have an impact will also vary. For example, the interest rate increases in 1998 had an impact on wage growth as early as the following spring. In other situations, it may take longer.

The impact on consumer price inflation is also uncertain. The inflation rate is reduced by an estimated 0.20-0.35 percentage point after two years and 0.30- 0.40 percentage point after three years. The result will depend partly on how the exchange rate reacts to the increase in interest rates. All the above estimates are based on the assumption that monetary policy credibility remains firm. For example, if an interest rate decrease reduces credibility, the impact on the exchange rate and inflation may be substantially stronger than indicated here. However, it is impossible to quantify these effects. Sizeable interest rate changes could theoretically influence monetary policy credibility. The above estimates are therefore based on small interest rate changes. Pronounced interest rate changes could have a different impact from that described here.

Forward rates reflect the market expectation of future levels of short-term interest rates. The difference between German and Norwegian forward rates reflects different inflation expectations and a risk premium. During the period when the objective of monetary policy was a stable exchange rate against the euro, the difference between Norwegian and German long-term interest rates was about ½ percentage point less than it is today. The difference between Norwegian and Germany 10-year forward rates widened by about ½ percentage point after the introduction of the inflation target. This indicates that the market previously assumed that in the long term price inflation in Norway would be on a par with that in the euro area, i.e. around the ECB's objective of less than 2 per cent rate of increase in prices.

The members of Norges Bank's Executive Board are collectively responsible for the Bank's decisions. The Executive Board meets every three weeks. At every second meeting, the Executive Board discusses monetary policy in depth. Decisions regarding changes in the interest rate will normally be made at these monetary policy meetings. The Executive Board discusses the economic outlook at a separate meeting three weeks before the *Inflation Report* is presented. On the basis of preliminary projections for the report, the Executive Board assesses the outlook for inflation two years ahead and the uncertainty surrounding these projections. The following day, the Executive Board summarises its discussions and assesses the consequences for monetary policy for the next four months. This assessment constitutes an important internal reference when the Executive Board later makes a decision regarding the interest rate. It will also provide the basis for our external communication through speeches and the media.

Growth forecasts have been revised downwards as a result of the interest rate increase in July. GDP growth will pick up, but will remain below the growth potential next year. The internationally exposed sectors of the economy are moving on a different path from some sheltered industries. Whereas private consumption is buoying demand growth, scaling back is expected in the manufacturing industry. Frictional unemployment is expected to rise. High real wage growth is resulting in divergent developments between private and public consumption. A large share of the growth in public spending will go to covering higher labour costs in the central and local government sector. As a result there will be little scope for increased activity in the public sector, and instead high growth in private consumption.

A time horizon of two years for interest rate setting allows monetary policy to contribute to stabilising production. This horizon prevents monetary policy in itself from causing unnecessary fluctuations in the economy. As an alternative, we could have sought to achieve the inflation target of 2½ per cent using a time horizon of six months to one year. We would then have had to reduce the interest rate sharply this summer. This would have amplified the pressures in the Norwegian economy that are so clearly reflected in wage developments and household demand for loans. In all likelihood, this would have required marked interest rate increases one to one and a half years ahead. Strict inflation targeting of this type would thus have resulted in more pronounced fluctuations in the interest rate and in aggregate demand and production.