

## Svein Gjedrem: Monetary policy's role and contribution

Address by Svein Gjedrem, Governor of Norges Bank, at the Norwegian Savings Banks Association's Conference Society and Economics 2000 held in Oslo on 13 October 2000.

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The long-term task of monetary policy is to provide the economy with a nominal anchor. Economic agents must be relatively certain of the future value of money. Agreements relating to purchases and sales, loans and interest rates are concluded in nominal terms. The decentralisation of decisions both in the public and business sector is based on nominal budget limits. The tax system is in nominal rates. When prices fluctuate widely, it is impossible to foresee the content of such agreements and budgets in real terms. Unexpected price variations could thus easily result in undesired fluctuations in the real economy.<sup>1</sup>

A credible and consistent monetary policy provides enterprises, households and institutions with the confidence that the value of the krone will be stable over time. This confidence is the best contribution monetary policy can make to employment, economic growth and welfare.

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### Chart 1 Long-term responsibility of monetary policy

- Nominal stability
- Nominal instability leads to alternating booms and recessions, with undesirable effects on distribution
- Nominal stability is monetary policy's best contribution to economic growth

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This also prevents monetary policy from having arbitrary distributional effects. We thereby avoid high and varying inflation and boom periods that are followed by recessions.

Norges Bank's main monetary policy instrument is the interest rate. This instrument must be oriented towards the long-term objective of nominal stability in the economy.

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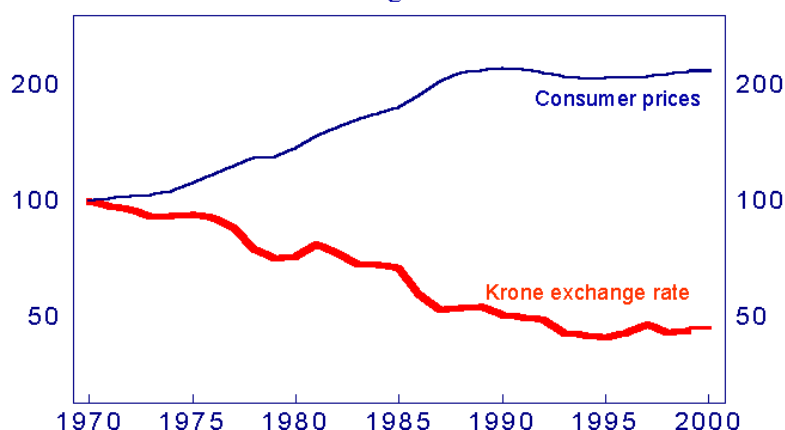
<sup>1</sup> See Rødseth (1987).

## The objective of monetary policy

Norway has a tradition of having a fixed or stable exchange rate, although we cannot say that we have had a high degree of continuity in monetary policy. On the contrary. In the 1970s and 1980s, the economy lacked a nominal anchor. Interest rates were low in nominal terms and they were politically

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Chart 2 Relative prices and exchange rates  
for Norway and Germany  
1970=100. Logarithmic scale

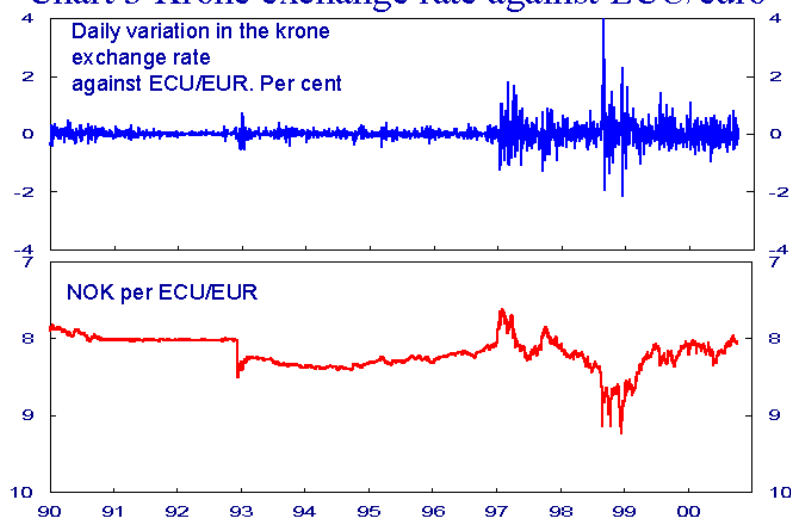


determined. Frequent devaluations were used to redress the negative effects of high price and wage inflation on competitiveness. The average rate of increase in prices between 1973 and 1987 was almost 10%. The value of the Norwegian krone against the German mark was nearly halved from 1973 to 1987. We paid about 2 kroner for a mark in 1973 and close to 4 kroner in 1987.

The low interest rate and devaluation policy collapsed in the mid-1980s. Following a shift, which can now perhaps be said to have occurred in 1986, monetary policy has created nominal stability. Through the 1990s inflation in Norway was on a par with the level elsewhere in Europe. At the same time, the value of the krone against European currencies is about the same today as it was in the early 1990s. The exchange rate against the German mark is still around 4 kroner.

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Chart 3 Krone exchange rate against ECU/euro



Norway abandoned a fixed exchange rate system in 1992 in the wake of heavy speculation against the krone during the period of turbulence in European foreign exchange markets. The krone was very stable in the first years following this episode, with small daily fluctuations in the exchange rate. Looking back at developments in the Norwegian foreign exchange market in the 1990s, it appears that no significant change really occurred in 1992.

However, there was a marked shift in January 1997. From that time, daily and monthly variations in the krone exchange rate show that the krone is floating.

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## Chart 4 The Exchange Rate Regulation

"The monetary policy to be conducted by Norges Bank shall be aimed at maintaining a stable krone exchange rate against European currencies, *based on* the range of the exchange rate maintained since the krone was floated on 10 December 1992. In the event of significant changes in the exchange rate, policy instruments will be oriented with a view to returning the exchange rate over time to its initial range. No fluctuation margins are established, nor is there an appurtenant obligation on Norges Bank to intervene in the foreign exchange market."

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Monetary policy is oriented towards stability in the value of the krone. The Exchange Rate Regulation - which is the mandate assigned to Norges Bank by the political authorities - states that monetary policy shall be aimed at maintaining a stable krone exchange rate against European currencies. Since 1 January 1999, Norges Bank has defined European currencies as the euro.

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## Chart 5 Interpretation of the Exchange Rate Regulation

- The krone is floating (cf. last sentence in the Regulation)
- "European currencies" = euro
- "The initial range" is a broad indication of a central rate around which the krone may fluctuate.
- "Significant changes" must be given an economic content.
  - a change that influences expectations concerning price and cost developments to the extent that the change in the exchange rate becomes self-reinforcing
- The expressions "with a view to", "over time", "aimed at" and "based on" provide scope for exercising discretion.

The Exchange Rate Regulation takes into account that the krone exchange rate may remain outside its normal range. In the event of significant changes in the exchange rate, Norges Bank shall orient instruments with a view to returning the exchange rate over time to its initial range. Norges Bank considers an exchange rate change to be significant if it influences expectations concerning price and cost developments to the extent that the change in the exchange rate becomes self-reinforcing.

## Chart 6 Implementation of monetary policy

- Emphasis on the fundamental preconditions for exchange rate stability:
    - Monetary policy instruments are oriented with a view to reducing price and cost inflation to the level aimed at by the ECB
    - At the same time, monetary policy must not in itself contribute to deflationary recessions, as this would undermine confidence in the krone.
  - If a situation arises where Norges Bank is not able to return the krone to its initial range without inflation or a deflationary recession, the Bank will inform the authorities that measures other than those available to the central bank are required:
    - fiscal policy measures
    - change the monetary policy guidelines
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In its conduct of monetary policy, Norges Bank places emphasis on satisfying the fundamental preconditions for exchange rate stability against the euro: Instruments must be oriented with a view to reducing price and cost inflation to the level aimed at by the European Central Bank (ECB). At the same time, monetary policy must not in itself contribute to deflationary recessions as this may weaken confidence in the krone.

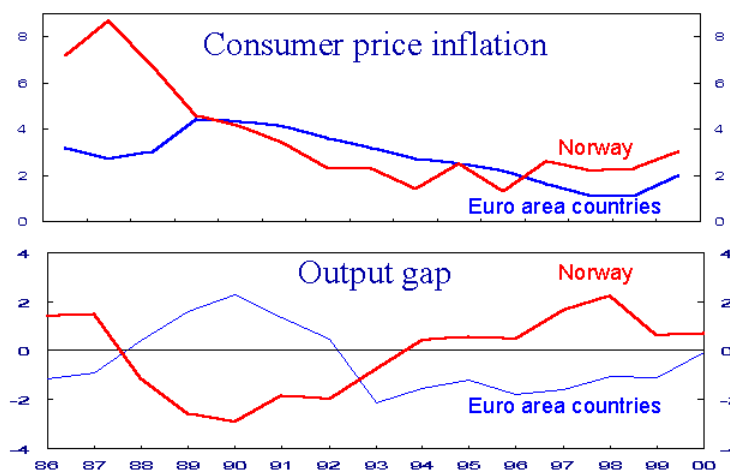
The Regulation's requirement with regard to returning the krone exchange rate to its initial range may - if stretched - imply too strong an element of parity policy. For example, in a scenario with a sharp and prolonged fall in oil prices, the krone exchange rate may remain outside the initial range for a longer period. If Norges Bank responds by raising interest rates in order to force the krone back to its initial range, monetary policy could trigger a recession of a type that will undermine confidence in the krone. Similarly, after an appreciation a situation may arise whereby interest rates must be set at such a low level to return the krone exchange rate to the initial range that this results in higher inflation. The basis for exchange rate stability is weakened in both cases. Hence, Norges Bank cannot with open eyes orient policy instruments in such a way that they fuel inflation or lead to a deflationary recession.

If a situation arises whereby Norges Bank is not able to return the krone to its initial range without such consequences, the Bank will inform the government authorities that measures other than those available to the Bank are required. This may involve recommendations concerning fiscal measures that make it possible to return the krone exchange rate to its initial range and to stabilise it. In the event of pronounced and prolonged shifts in the economy, fiscal policy and wage determination must contribute to restoring balance in the economy. However, if fundamental and permanent changes have taken place in the framework conditions for the Norwegian economy, it may also be appropriate to change the guidelines for monetary policy.

According to the Maastricht treaty, the main objective of the ECB is the maintenance of price stability. The ECB has defined price stability as inflation of 2% or lower.

Inflation in Norway cannot remain higher than inflation in the euro area year after year without any consequences for the exchange rate between the Norwegian krone and the euro. If price and cost inflation remains higher than the rate of increase aimed at by the ECB over a long period, the krone will depreciate against the euro sooner or later.

Chart 7 Inflation and business cycles in Norway and the euro area countries



Even if instruments are oriented with a view to stability in the krone exchange rate against the euro, cyclical differences will result in inflation differentials between Norway and euro area countries. Business cycles have been desynchronised over the last 15 years. Because of the stagnation in the 1990s, inflation has been particularly low in Europe in recent years. Norway, on the other hand, experienced a long period of economic expansion in the 1990s. Since 1997, price inflation in Norway has been higher than in euro area countries, which is reflected in the higher level of interest rates in Norway compared with the euro area.

### The effects of monetary policy

In theory, Norges Bank has two monetary policy instruments: the interest rate and exchange market interventions. However, in Norges Bank's experience, extensive and sustained exchange market interventions to influence the exchange rate have yielded poor results. Interventions can often lead to game situations where market operators perceive the central bank's attempt to influence the exchange rate as an interesting opportunity to make a profit. Events in autumn 1992, at the start of 1997 and autumn 1998 show that exchange market interventions cannot stem the pressure on the krone.

Norges Bank does not want to intervene in such a way that these game situations arise. However, the Bank may use interventions to a limited extent if the krone exchange rate moves substantially out of line with what we consider to be reasonable based on fundamentals or in the event of exceptional short-term volatility in thin markets. In such situations, there is less risk of ending up in a game situation against exchange market operators.

We have also experienced game situations in which one or more major operators were behind the krone exchange rate fluctuations and at the same time took speculative positions in the capital market in the expectation that Norges Bank would raise its key interest rate to defend the krone. If we focus too narrowly on the exchange rate when setting interest rates, we are liable to end up in game situations. Speculators have little to gain from such game situations if Norges Bank proceeds gradually and avoids abrupt shifts in the setting of interest rates.

In practice, the interest rate is the only monetary policy instrument available to Norges Bank. The interest rate can influence the exchange rate directly through the differential between domestic and foreign interest rates, and indirectly through inflation expectations.

### Chart 8 The interest rate influences the krone exchange rate

- Normally: Higher interest rate strengthens the krone, lower interest rate weakens the krone
  - But it may have the opposite effect:
    - If a higher interest rate contributes to a recession and deflation
    - If a lower interest rate contributes to inflation
  - The interest rate has a predictable effect on the krone exchange rate only when it influences price inflation in the right direction
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Higher interest rates normally make krone positions more attractive. An increase in the interest rate will therefore result in an appreciation of the krone, and a lower interest rate will weaken the krone. However, this relationship presupposes that the market is confident that monetary policy provides the economy with a nominal anchor. In some situations, interest rate changes may have the opposite effect. A higher interest rate can weaken the krone if it contributes to a deflationary recession, and a lower interest rate can strengthen the krone if it contributes to preventing a deflationary recession. The interest rate only has a predictable effect on the krone exchange rate when it influences price inflation in the right direction.<sup>2</sup>

Historically, it has often been the case that the central bank has raised its key rate when confidence in monetary policy has declined, and the currency has been exposed to depreciation pressure. This is probably one of the reasons why it has proved difficult to find empirical support for a direct relationship between the interest rate and the exchange rate.

The impact of the interest rate on the krone exchange rate will depend on how uncertain krone positions are perceived to be and the size of the risk premium required for these positions. The Bank's analyses<sup>3</sup> indicate that the krone exchange rate is also affected in the short term by uncertainty in the global economy and international financial unrest. Volatility in international foreign exchange markets may explain short-term fluctuations in the krone exchange rate, particularly since 1997. This may be because international operators are more aware of the Norwegian krone as a speculative object.

The direct relationship between the interest rate and the exchange rate is therefore not stable, and the exchange rate level in itself provides limited information for the setting of interest rates.

It is essential to take into account that the Norwegian economy is small and very open. Norway's foreign trade is substantial. All capital controls have been removed. Our financial market is becoming increasingly integrated into the international economy. Significant structural changes took place during the 1990s. Household savings are now to a large extent invested abroad through life insurance companies and funds. Changes in capital flows have a greater impact on exchange rate movements than payments for exports and imports. Capital flows can easily be influenced by events in other

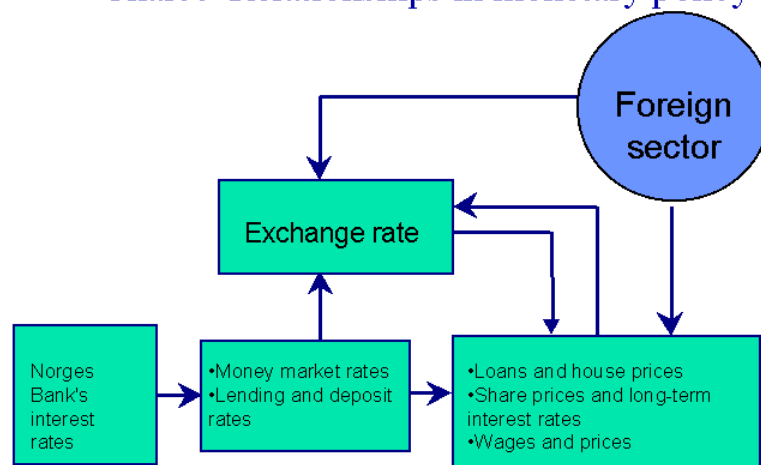
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<sup>2</sup> See Mussa (2000) and Stiglitz (2000) for two opposite views on this question.

<sup>3</sup> See Bernhardsen and Røisland (2000).

countries and by changes in expectations concerning developments in the Norwegian business sector, Norwegian prices, costs and interest rates.

Chart 9 Relationships in monetary policy



In the long term, a country's exchange rate tends to move in line with developments in domestic price and cost inflation compared with other countries. This is the hypothesis of purchasing power parity between countries. If the level of prices in one country rises at a faster pace than in other countries, that country's currency will tend to depreciate to the same extent over time. Empirical evidence has been found for these effects for a number of countries even though the effects are relatively weak in the short term. However, substantial medium-term convergence in purchasing power parity has been found between Norway and its trading partners.<sup>4</sup>

I have described a foreign exchange market with a market-determined krone exchange rate. Normally, we cannot influence price formation in this market through direct interventions. In other words, we have a floating currency not only formally but also in reality.

The formal Regulation (from 1994) and its interpretation reflect the limitations of monetary policy as a result of developments in foreign exchange markets and the structure of the Norwegian economy.

Price and cost inflation is influenced by monetary policy through a number of channels. When interest rates rise, it becomes more profitable to save and to postpone consumption. This reduces growth in household consumption. At the same time, a higher interest rate may increase the required rate of return, thereby reducing business investment.

In addition to the direct effect on demand, a rise in interest rates may moderate demand through reduced access to liquidity, a decline in asset values and a stronger exchange rate. Moreover, a stronger exchange rate will reduce the rise in prices for imports, which account for 40% of goods and services in the consumer price index.

An increase in interest rates may also have an effect through inflation expectations. Expectations of lower future inflation will increase the real interest rate, and may therefore in itself have an impact on the real economy. Inflation expectations may also influence price and wage formation as well as the exchange rate.

<sup>4</sup> See Akram (2000).

However, the relationships between the interest rate, expectations, demand and inflation must be expected to be unstable. Analyses have been published showing how changes in interest rates affect the economy in various countries. In December 1999, Norges Bank presented an analysis based on calculations which showed that an interest rate rise of 1 percentage point reduces GDP growth and price inflation by just under half a percentage point. A considerable portion of the effect on price inflation is due to effects via the exchange rate, where it was assumed that the krone exchange rate moved in line with uncovered interest rate parity. The central banks of England and Sweden have published calculations that show effects of roughly the same magnitude.

In view of the uncertainty concerning the effects of the interest rate on economic developments, it is not possible to fine-tune price developments and the exchange rate. However, it is possible to conduct a monetary policy that reinforces confidence in nominal stability.

The experience of Norway and other countries shows that monetary policy can be effective, as seen by developments before and after the shift in economic policy in 1986. A monetary policy that results in an interest rate that is too low will unleash strong forces in financial markets. An inappropriate interest rate will generate erroneous price signals to households and financial institutions in the housing and property market. With interest rates that are too low and nominal price pressures, the buyer and seller will find it more difficult to discover the real change in value, and they will buy and sell on the basis of erroneous price signals. Similarly, those extending loans will find it more difficult to assess the real value of collateral security and the borrower's wealth. This situation must be corrected sooner or later, and when bubbles burst the risk of debt crises and financial instability is high. We have seen examples of this in Norway and in other countries. If we allow imbalances to develop in the domestic economy, this may trigger major capital movements with wide fluctuations in the exchange rate and long-term rates.

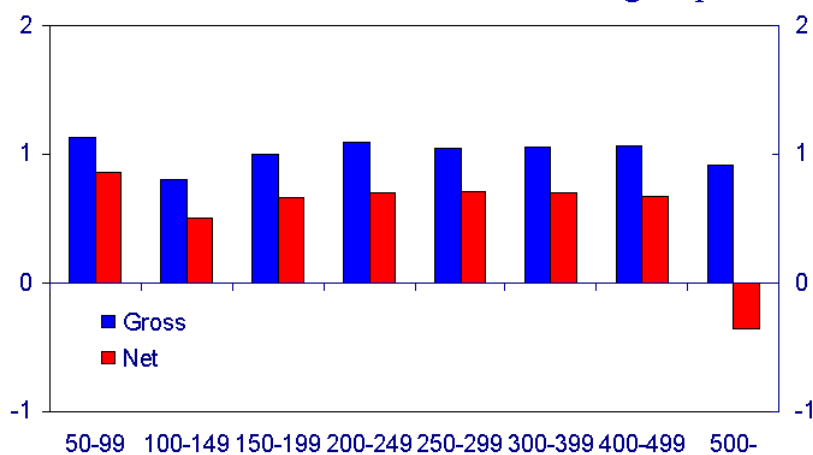
### Distributional effects of monetary policy

The distributional effects of changes in nominal interest rates figured prominently in discussions concerning interest rate policy in the 1970s. There is probably a basis for saying that the consideration of distributional effects was an important reason behind the low interest rate policy. However, as developments were to prove, this was not the right approach. The low interest rate policy contributed to increased disparity.

People are affected in different ways by a change in interest rates. Households with considerable debt will, *ceteris paribus*, be adversely affected by an increase in interest rates because they must use a higher proportion of their income to service the debt. However, the increase in interest expenditure in

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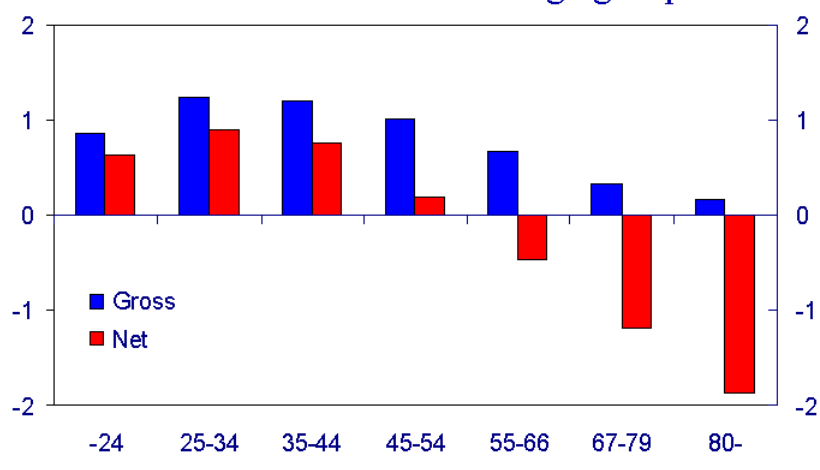
Chart 10 Effects of a one percentage point interest rate increase for various income groups





relation to household income is about the same for all income groups. This is because households with high income generally have a higher level of debt. If we also take into account capital income, the picture is somewhat different because the highest income group owns relatively more financial assets than other households.

Chart 11 Effects of a one percentage point interest rate increase for various age groups



Asset and debt positions nevertheless have a clear profile over a life cycle. Younger households often have large mortgages and student loans. These loans are repaid during a working life. Most people save for their old age. The immediate effect of an increase in interest rates will be a reduction in the disposable income of households in a start-up phase, while pensioners record an increase in their disposable income.<sup>5</sup>

However, such a static analysis of who stands to benefit and who stands to lose from an increase in interest rates does not provide an adequate indication of the distributional effects of monetary policy. Over time, interest rates rise and fall. For example, Norges Bank's interest rates fell from 12% in 1992 to 3½% in 1997. A typical mortgage rate was as high as 14-15% at the beginning of the 1990s and was down to 5% at the lowest. The households that lose when interest rates are raised are the same households that benefit when interest rates are lowered. Hence, monetary policy does not have systematic distributional effects.

Households can hedge against interest rate fluctuations. Fixed-rate loans are now offered widely, at least for a period of up to 3-5 years. By choosing a fixed-rate loan, households with a large net debt have more predictable expenses for servicing their debt.

The more long-term distributional effects of monetary policy are completely different. If interest rates are kept at a low level over a longer period, price and cost inflation will eventually pick up and long-term interest rates will rise. Rising wage and price inflation reduces the real value of assets and debt. In isolation, this will naturally benefit individuals and enterprises that have a high debt, while others will see a decline in the value of their savings. At the same time, low interest rates could lead to a rise in property prices and other asset prices. A sharp rise in house prices and advances in stock markets imply a substantial shift in favour of those who are already well positioned in these markets. Many young people will find that the price of entering the housing market is too high.

<sup>5</sup> Income less net interest expenditure.

Cyclical fluctuations, income developments and asset prices will show greater volatility in an economy without a nominal anchor. The policy of devaluation and low interest rates in the 1970s and the beginning of the 1980s contributed to pronounced cyclical fluctuations and sharp variations in property prices.

The winners and losers as a result of such instability are to some extent arbitrary. Some will always manage to come out ahead; those who take their profits in boom periods will also be able to secure and withdraw from exposed positions in time. Others - who do not use resources for these activities to the same extent - are often the losers. The economic downturn and unemployment which often follow when the bubble bursts will primarily affect the most vulnerable segment of the labour force and have very negative distributional effects.

Monetary policy cannot and shall not steer price developments in the housing market or other asset markets, but a monetary policy that inspires confidence will curb wealth effects because the potential for the emergence of bubbles is reduced. Nominal stability is the best contribution monetary policy can make to the distribution of income and wealth.

### **Interplay between economic policy components - the role of monetary policy**

The basis for achieving stable economic growth is created through a successful interplay between the various components of economic policy, ie between fiscal policy, monetary policy, the system for income settlements and other measures aimed at improving the functioning of the economy - often referred to as structural policy. The Norwegian economy is vulnerable to abrupt shifts in the global economy. We cannot fully shield ourselves against external shocks, but we can curb the effects to ensure that economic developments are optimal in the long term.

Fiscal policy in Norway has had an important role in stabilising demand and production. The Petroleum Fund shelters the mainland economy from the effects of oil price fluctuations to some extent. Developments in the real economy are of importance to price and cost inflation and hence for Norges Bank's setting of interest rates. At the same time, changes in the interest rate and exchange rate may influence developments in the real economy in the short run. This means that fiscal and monetary policy have a combined effect on the overall level of activity in the economy.

With large and to some extent varying budget revenues, the basis for determining central government expenditure and taxes from one year to the next may easily be impaired. If budget expenditure fluctuates to a large extent in step with oil prices, the result will be abrupt shifts and instability in the Norwegian economy. Changes in oil prices may then quickly influence wage and price expectations, the exchange rate and long-term rates. In that case it will be very demanding to achieve nominal stability. Short-term interest rates will have to be changed frequently and sharply, and long-term rates will reflect a high risk premium for the Norwegian krone. It is therefore important that the annual budgets are anchored in a long-term strategy that takes sufficiently into account that oil revenues can fluctuate from one year to the next. It is advantageous if fiscal policy can also be used to counter fluctuations in demand and production. The political assessment has also been that a countercyclical fiscal policy provides the best basis for sound developments in the distribution of income and wealth.

If fiscal policy is used to smooth fluctuations in demand and production, it will also contribute to stability in the krone exchange rate and in the competitive conditions for the business sector.

If fiscal policy lacks a long-term anchor, the interplay in economic policy will not function and the result will be a more unstable krone exchange rate and wider cyclical fluctuations. This will also result in poorer use of our resources, partly because strong fluctuations in domestic activity and long-term interest rates and the exchange rate will prompt investment decisions that are made on a very uncertain basis.

## Chart 12 Three possibilities for fiscal policy

- Balance in the short term only:
  - Abrupt shifts and instability in the Norwegian economy
  - Changes in the oil price may rapidly affect wage and price expectations, the exchange rate and long-term interest rates
  - Assuring nominal stability is a highly demanding task. Short-term interest rates will have to be changed frequently and markedly, and long-term rates will reflect a high risk premium for the Norwegian krone
- Long-term anchor:
  - Fiscal policy is oriented towards a balanced economy in a 20-30 year perspective. Such a strategy will not be influenced by fluctuations in oil revenues from year to year.
- Contribute to stabilisation:
  - It is an advantage if fiscal policy can also be used to counter fluctuations in demand and production.

### Concluding remarks

Allow me to conclude where I began. I would like to highlight two points.

First, the main function of monetary policy is to contribute to nominal stability. This is the best contribution monetary policy can make to a sound distribution policy, to employment, to economic growth and to welfare.

Second, history has shown that monetary policy can be effective. If we set interest rates at a level that is too low, we may trigger strong forces in the credit market, as witnessed in other countries and as we experienced in Norway in the mid-1980s. If we allow imbalances to develop in the domestic economy, this could also lead to sizeable capital movements, accompanied by wide fluctuations in the exchange rate and long-term rates. These are strong latent forces that are far too easily forgotten.

### References

Akram, Q F (2000): "PPP despite real shocks: An empirical analysis of the Norwegian real exchange rate". Working Paper 2000/7, Norges Bank, Oslo.

Bernhardsen, Tom and Øistein Roisland (2000): "Which factors influence the krone exchange rate?", Economic Bulletin 2000/4 (to be published). See also box in Inflation Report 2000/3, pages 16-17.

Mussa, M (2000): "Monetary policy to Resist Excessive Depreciation" in Bisignano, J R, Hunter, W C and Kaufman, G G (eds.) "Global Financial Crises: Lessons From Recent Events", Bank for International Settlements and Federal Reserve Bank of Chicago, Kluwer Academic Publishers.

Rødseth, Asbjørn (1987): "Stabiliseringspolitikk på godt og vondt" (Stabilisation policy for better or worse), in Full sysselsetting og økonomisk vekst? Festschrift til Eivind Erichsen (Full employment and economic growth? Festschrift for Eivind Erichsen), Tano forlag.

Stiglitz, J E (2000): "Lessons from the Global Financial Crises" in Bisignano, J R, Hunter, W C and Kaufman, G G (eds.): "Global Financial Crises: Lessons From Recent Events", Bank for International Settlements and Federal Reserve Bank of Chicago, Kluwer Academic Publishers.