Svein Gjedrem: Perspectives on the role and effects of monetary policy

Introduction by Mr Svein Gjedrem, Governor of Norges Bank (Central Bank of Norway), for the Holden Committee of Experts assessing the challenges facing the exposed sector, Oslo, 16 January 2003.

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Introduction

The primary objective of monetary policy is to ensure nominal stability.

There were wide fluctuations in the Norwegian economy in the 1970s and 1980s. Economic developments were marked by high and variable inflation. Inflation rose gradually and it took a long time before it fell.

The absence of a nominal anchor was one of the main reasons behind these pronounced swings in the Norwegian economy. With a policy of low interest rates and devaluations, inflation took root. Nominal interest rates were kept at a low level even though inflation and the value of tax-deductible interest expenditure rose. Frequent devaluations from 1976 were not able to prevent a decline in the manufacturing sector. On the contrary, they proved to be self-reinforcing. The wide fluctuations culminated in a credit boom in the mid-1980s, followed by a deep recession and high unemployment towards the end of the 1980s.

From the mid-1980s, during and after the credit bubble, it was recognised that a substantial revision in economic policy would be necessary and that the problems created by inflation had to be taken seriously. The exchange rate was chosen as the nominal anchor. A deterioration in competitiveness due to high wage growth would no longer be rectified by means of devaluations. Instead, imbalances in the labour market would be counteracted by means of a counter-cyclical policy. Substantial emphasis was placed on the importance of wage formation for developments in employment. Only when wage growth dropped below the level of our trading partners did unemployment begin to fall and the manufacturing sector began to pick up. Thus, the fixed exchange rate policy was not introduced in order to strengthen the internationally exposed business sector. On the contrary, it was a *breach* in the approach whereby monetary policy and "exchange rate policy" had been oriented towards safeguarding these sectors. The fixed exchange rate was an intermediate target for achieving low and stable inflation.

The exchange rate remained stable until the autumn of 1996, partly because wage growth was low and aggregate demand did not contribute to pressures in the economy. Gradually, the krone began to fluctuate more. The experience of the last half of the 1990s showed that monetary policy cannot fine-tune the exchange rate. Developments in international financial markets provided fertile ground for more pronounced fluctuations. And more fundamentally, when labour market pressures rose and incomes policy failed, exchange rate developments were no longer providing signals for wage formation and fiscal policy. High petroleum revenues, fiscal slippage and expectations of increased use of petroleum revenues contributed to this. Therefore, the exchange rate was no longer suitable as a nominal anchor.

The introduction of new guidelines for economic policy in March 2001 and the conduct of fiscal policy have altered the interplay between economic policy components.

In the past, growth in public spending was to be reduced or other fiscal policy measures implemented if the labour market was tight and wage growth high. With today's guidelines, it is primarily monetary policy that is tightened in a similar situation. The rise in labour costs is important when Norges Bank assesses the outlook for price inflation and sets interest rates. Excessive wage growth, in both manufacturing and other industries, will affect the internationally exposed sector through two channels. First, high wage growth will in itself reduce earnings and employment. Second, the interest rate will be increased. Normally, this will lead to an appreciation of the krone, with a further reduction in earnings and employment. The manufacturing sector will therefore feel the effects of excessive wage growth to an even greater extent than earlier. Since the new fiscal guidelines, which entail an increased use of petroleum revenues, were introduced during a period with a tight labour market, it was to be expected that the krone would be strong at times.

At the same time, it is important to be aware that low wage growth will be of double benefit to the exposed business sector. With wage growth as low as in the mid-1990s, partly as a result of incomes

policy, and other things being equal, the interest rate would probably have to be set in such a way that the krone fell in value in order to bring price inflation up to 2.5 per cent.

How does monetary policy function?

Monetary policy affects the economy through a number of channels. Let us make a stylised review of what happens if the central bank raises the key interest rate. In the short and medium term, this will result in a rise in the real interest rate. Normally, the exchange rate will also be strengthened.

Prices for imported goods are an important part of the consumer price index (CPI). An appreciation of the krone reduces prices for imported goods measured in NOK. This is often called the "direct exchange rate channel to inflation".

The rise in real interest rates reduces consumption and investment demand. This is the "real interest rate channel to aggregate demand".

With a stronger exchange rate, domestically produced goods and services will be relatively more expensive than competing foreign products. Demand for domestically produced goods will decline. This is the "exchange-rate channel to aggregate demand".

The reduction in aggregate demand will in turn cause a reduction in price inflation. This is the "demand channel to inflation".

Price inflation and wage inflation are both affected by changes in inflation expectations. Some firms set prices for several periods. In wage formation, expected price changes will figure prominently in the calculation of expected future real wages. When monetary policy is credible, expectations regarding future inflation will be dampened by a rise in the interest rate. A change in expectations will in itself contribute to curbing future price inflation. Thus, the expectations channel amplifies the effect of monetary policy.

The time it takes for a change in the interest rate to affect inflation and demand will vary. During the period in which a change in the interest rate affects output and inflation - and often before monetary policy has an effect - the economy will be influenced by a number of direct and indirect disturbances. Therefore, we cannot fine-tune inflation.

In our open economy, the exchange rate channel is one of several channels through which monetary policy operates. How much the exchange rate appreciates as a result of a rise in key rates depends on a number of factors. The effect of the exchange rate channel may therefore vary over time. The more the krone appreciates as a result of a rise in interest rates, the less the key rate must be raised in order to reduce inflation when tightening policy is appropriate.

The level of the real exchange rate affects the activity level in business and industry. We take account of the exchange rate channel and the effect of the krone exchange rate on domestic activity and inflation when preparing our inflation projections. Thus, the exchange rate influences the setting of interest rates. There is no underlying perception of what the correct exchange rate *level* in the long term should be for the conduct of monetary policy or, of course, of what the correct industry structure should be in the long term. This is consistent with an operational target of low and stable inflation and with the conduct of inflation targeting in other countries. This practice is also in line with recommendations in economic literature.

Commodity-exporting countries tend to experience wide fluctuations in their exchange rate. Australia is one example. Fluctuations in commodity prices lead to changes in countries' terms of trade, which measures the ratio of export to import prices. Fluctuations in the terms of trade affect the exchange rate. This dampens the effects of commodity price changes on profitability in business and industry. The exchange rate thus serves as a buffer against changes in the terms of trade. In Norway, the petroleum fund mechanism and the fiscal guidelines dampen the effect on the exchange rate of changes in oil prices.

We have nevertheless stated previously that we must be prepared for fluctuations in the value of our currency that are more in line with the fluctuations observed in other countries. The exchange rate will vary. The exchange rate may also act as an automatic stabiliser. In periods when economic activity is too high - or there are expectations of overheating - the exchange rate may appreciate, even if Norges Bank does not change the key rates. Similarly, the exchange rate may depreciate if the activity level is too low.

In the long term, monetary policy determines the average level of inflation. Therefore, over time, monetary policy also has a significant influence on the nominal exchange rate. Output is determined by the supply of labour, capital and technology. Unemployment will depend in part on labour market policy, structural policy and institutional arrangements in the labour market.

Industry structure - or the relative size of the internationally exposed and the sheltered sectors - is determined by a combination of two factors. First, industry structure will be affected by developments in production technology in the two sectors. Second, industry structure will be affected by how the increase in demand is spread across sectors. The use of petroleum revenues will play a decisive role. Monetary policy will not over time affect industry structure.

The relationship between inflation and long-term unemployment is often presented as a vertical curve. In other words, we cannot choose a lower level of unemployment by allowing higher inflation.

Attempts to reduce unemployment by allowing higher inflation can easily lead the economy into a situation with accelerating wage and price inflation. This is not sustainable. The real economic costs of bringing high and increasing inflation under control are considerable. A temporary rise in unemployment will be inevitable. Gradually, as the share of the long-term unemployed increases, there is a risk that the relationship between wage growth and unemployment changes. A higher level of unemployment may be the result in the long term. The labour supply will be reduced if unemployment leads to increased flows out of the labour market and into social security schemes. We experienced high inflation in the 1970s and 1980s. This period was also marked by considerable fluctuations in output and employment, followed by a lengthy period of high unemployment.

There are also real economic costs when inflation is too low. To utilise resources most effectively, relative prices must be changed in pace with changes in production conditions and preferences. Some inflation will ensure that relative prices can be changed easily without substantial real economic costs. In the 1990s, the Norwegian economy expanded sharply, with considerable restructuring and substantial changes in relative wages and income, while inflation was low and stable, averaging about 2½ per cent. The wheels of the economy run smoothly when monetary policy is oriented towards an inflation target of 2½ per cent. Deflation may intensify periods of economic contraction. With deflation, the interest rate will no longer be an effective instrument for bringing the economy out of a cyclical downturn. As developments in Japan show, fiscal policy instruments are not necessarily effective either. Unemployment can remain high over a long period.

Therefore, the best contribution monetary policy can make to the economy in the long term is to provide a nominal anchor. It is equally important to avoid an inflation rate that is too low, or deflation, as it is to avoid an inflation rate that is too high.

In the short term, monetary policy can contribute to smoothing fluctuations, that is, fluctuations in demand and employment. If there is confidence in the nominal anchor, monetary policy will be a more effective instrument in short-term stabilisation policy.

In the short term, there is a trade-off between variation in output and employment and variation in inflation around the inflation target.

The chart illustrates the best possible combinations of variation in inflation and output that can be achieved in the economy. The three points on the chart refer to different forms of inflation targeting.[1]

It would probably be possible, with an aggressive use of instruments, to force inflation back to the target within a time-frame of only a few quarters. This is often called strict inflation targeting. Monetary policy has the most rapid effect through the exchange rate channel. Strict inflation targeting will therefore often involve a relatively substantial appreciation of the exchange rate so that inflation can be brought down through a fall in imported inflation.

Monetary policy should not cause unreasonably wide fluctuations in the real economy. We therefore apply a two-year horizon to achieve the inflation target. In practice, we allow inflation to vary in the very short term.

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[1] I refer to a more detailed discussion in a lecture entitled “Monetary policy, cyclical fluctuations and competitiveness”, given by Deputy Governor Jarle Bergo at a conference hosted by the Norwegian Association of Economists in Oslo, 5 September 2002.

Another possibility would be to place weight solely on minimising variation in output or unemployment. This kind of policy does not improve the growth potential in the economy, but smooths fluctuations. Furthermore, this would generate very large variations in inflation as the economy would then be without a nominal anchor. This policy would in practice be unsustainable because it does not provide the answer to how monetary policy should respond to wage - and cost-driven unemployment. This would mean ignoring the experiences of the 1970s and 1980s.

If economic agents feel confident that inflation will remain low and stable, and take account of this in their behaviour, inflation will move more quickly towards the target. The interest rate will then need to be adjusted less each time inflation has to be brought back to the target. This will also result in more stable developments in output and employment.[2]

Developments in financial markets after inflation targeting was introduced indicate that market participants are confident that we will keep inflation low and stable. This is reflected, for example, in the long-term interest rate differential between Norway and the euro area. The interest rate differential currently stands at around 1 percentage point, which corresponds closely with the difference in monetary policy objectives. Confidence among financial market participants is an important asset if it proves necessary to use monetary policy to sustain the level of economic activity. It also lays the basis for lower interest rates over time. We do not have to pay an additional risk premium because there is uncertainty about inflation. Maintaining a firm monetary policy over time is therefore highly valuable in itself.

On the other hand, the outcome of last year's wage settlement, and the debate that followed, indicate that the *social partners* have not yet internalised the monetary policy response pattern ensuing from the mandate laid down by the Government and the Storting.[3]

Exchange rate developments

The krone has appreciated considerably since summer 2000. There may be many reasons for this.

Relationships in the foreign exchange market are unstable. There are nevertheless some fundamental forces that influence the krone exchange rate. The phasing in of petroleum revenues and the economic situation affect the exchange rate. In addition, the real exchange rate has a tendency to return to its normal level if there are substantial deviations over time. Moreover, the krone can be influenced by shifts and changes in wage formation, and the krone exchange rate can also be affected by external factors.

Increased spending of petroleum revenues or expectations of increased use of petroleum revenues may lead to an appreciation of the krone. Increased use of petroleum revenues over the central government budget implies higher demand. The contest for economic resources will then result in a further scaling back of internationally exposed industries to make room for more sheltered activities. With low and stable inflation, this restructuring might take place as a result of a stronger krone exchange rate.

Such exchange rate movements will typically come in waves. As petroleum revenues are being phased in, the real interest rate will tend to rise. The real exchange rate may appreciate, which means deterioration in competitiveness. The real krone exchange rate may move more in the short term than is necessary in the long term. The krone may be expected to depreciate at a later stage because a higher real interest rate, combined with expectations of a depreciation of the krone, contribute to convergence between the expected real return on capital invested in Norway and in other countries.[4] Moreover, there may be additional fluctuations in the krone exchange rate if market expectations concerning the use of petroleum revenues deviate from what is actually the case. Given today's

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[2] See e.g. Clarida, Richard, Jordi Galí and Mark Gertler (1999): "The Science of Monetary Policy: A New Keynesian Perspective", Journal of Economic Literature, Vol. 37, no. 4, 1661-1707.

[3] I refer here to a more detailed discussion in my lecture entitled "The Role of the Central Bank", given at a conference hosted by the Power and Democracy Research Group and FAFO Institute for Applied Social Science, Oslo on 6 September 2002.

[4] See Svensson, Lars E.O. et al. (2002): "Norges Bank Watch 2002 - An Independent Review of Monetary Policy and Institutions in Norway". Research Report 17/2002, BI Norwegian School of Management.

exchange rate, it would appear that foreign exchange operators have already factored in a substantial increase in the use of petroleum revenues.

Cyclical divergence is reflected in the interest rate differential between Norway and Germany and the US. What makes the current situation unusual is the extremely low foreign interest rates. Foreign interest rates have been reduced substantially to counter a downturn. High and widening interest rate differentials have probably contributed to the appreciation of the krone. Cyclical divergence is probably also reflected in the substantially higher wage growth in Norway compared with other countries.

In our view, the strong krone exchange rate cannot solely be attributed to the change in the fiscal policy guidelines introduced in March 2001, which allowed for a moderate and steady phasing-in of petroleum revenues. The strong krone is also the result of an overheated labour market and relatively high wage growth in Norway[5] combined with a global downturn following a long period of expansion.

Results from recent empirical analyses at Norges Bank indicate that the positive and widening interest rate differential is the main reason for the appreciation of the krone from May 2000 and up to late autumn 2002. At the same time, the fall in equity prices and reduced volatility in foreign exchange markets have contributed to the appreciation of the krone. These factors have contributed because the interest rate differential has been positive. Thus they amplify the effect of the interest rate differential. Part of the appreciation in the past year may also be due to higher oil prices. Previous research[6] has shown that changes in the price of oil have an impact on the krone exchange rate particularly when the price falls below USD 14 or exceeds USD 20 per barrel.

A measure of the real exchange rate is the trade-weighted exchange rate index (TWI) in relation to relative price developments between Norway and its trading partners. The real krone exchange rate has fluctuated around a long-term average level over the past 30 years. The krone exchange rate has a tendency to return relatively quickly to its normal level if there are deviations from the long-term average level.[7] Differences in price inflation between Norway and other countries have gradually been evened out by changes in the krone exchange rate. This relationship has been robust even when there have been considerable changes in economic policy. However, the revision of economic policy in spring 2001, with the introduction of a new fiscal guideline and an inflation target for monetary policy, may still have an impact on how quickly differences in price inflation level out in the years ahead.

Purchasing power parity can be illustrated by developments during the last 30 years of the German mark's life as a currency. In 1970, a German mark cost about 2 kroner. In 1986/87, it cost about 4 kroner. The exchange rate remained relatively stable in the following years. On the other hand, prices rose about twice as quickly in Norway as in Germany from 1970 to 1986. However, both the exchange rate and prices relative to Germany were stable from the end of the 1980s until the German mark ceased to be a currency.

A year and a half ago, the Government and the Storting adopted new guidelines for economic policy. Norges Bank's mandate states the following:

"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'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."

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

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[5] For a more detailed discussion, see PSG memo prepared by Røisland and Sveen, Norges Bank's Research Department: PSG memo No. 7, 2002.

[6] See Akram, Qaisar Farooq (2000): "When does the oil price affect the Norwegian exchange rate?" Working Paper 2000/08, Norges Bank.

[7] See Akram, Qaisar Farooq (2002): "PPP in the medium run despite oil shocks: The case of Norway." Working Paper 2002/04, Norges Bank.

the internal value of the krone implies that inflation must be low and stable. The sentence also states that monetary policy shall be aimed at stability in the external value of the krone. The krone exchange rate fluctuates from day to day, from week to week, and from month to month. We have free international trade and free capital movements. We do not have the instruments for fine-tuning the exchange rate. But when the implementation of monetary policy is oriented towards low and stable inflation, this will contribute to a stable krone exchange rate over time (see charts).

Different real economic developments across countries may nevertheless affect real exchange rates. Sweden is an example of this. Economic developments in Norway's neighbouring country have been fairly weak over the past 30 years. GDP has fallen by 20 per cent in relation to GDP in the euro area. At the same time, the real value of the Swedish krona has declined by about 40 per cent against European currencies. Sluggish price trends for Swedish export goods and the deterioration in the Swedish balance of payments have contributed to the decline. In Norway too, changes in productivity and terms of trade may have an impact on the real exchange rate in the years ahead. However, it is important to be aware that the real exchange rate functions as an automatic stabiliser in these cases. The Swedish economy recorded weaker economic growth - more sluggish productivity gains - than its trading partners, reducing the competitiveness of Swedish firms. This resulted in a depreciation of the krona, however, thereby dampening the impact on competitiveness.

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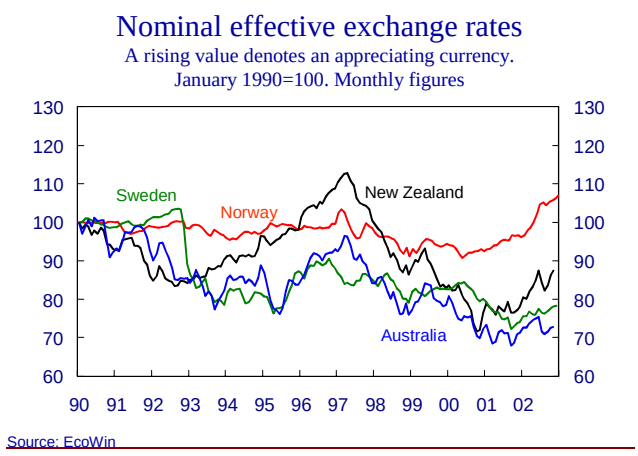

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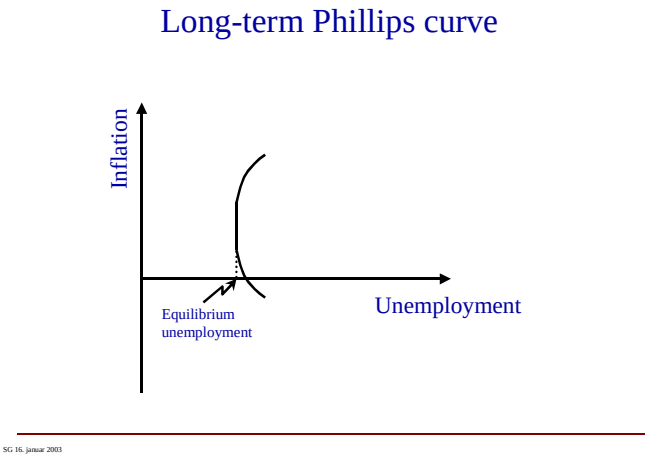

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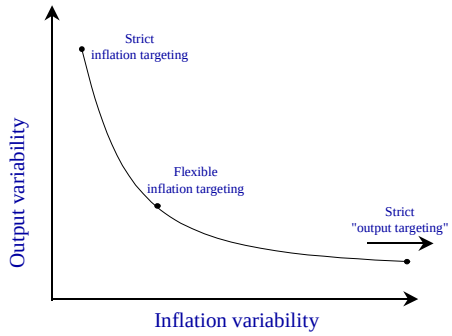
The short-term trade-off in monetary policy



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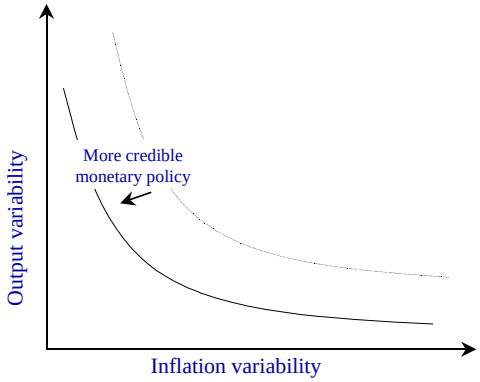
Effect of a credible monetary policy



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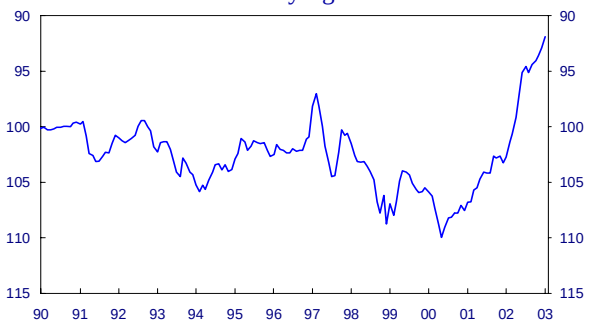
The krone exchange rate measured by the TWI

Monthly figures



The figure for January 2003 is the average up to and including 13 January.

Source: Norges Bank

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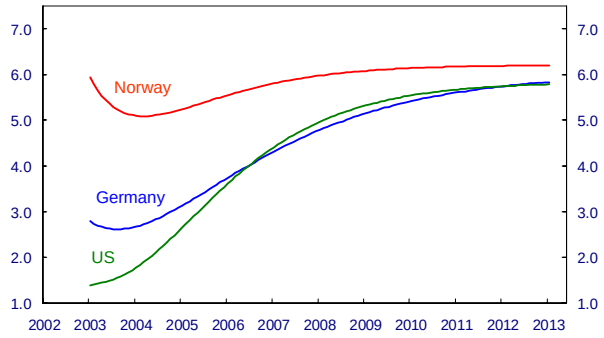
Forward interest rates

Norway, Germany and the US



Source: Norges Bank

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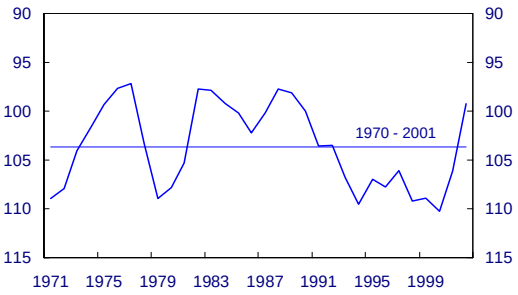
Real exchange rate (TWI/relative CPI)



Source: Norges Bank

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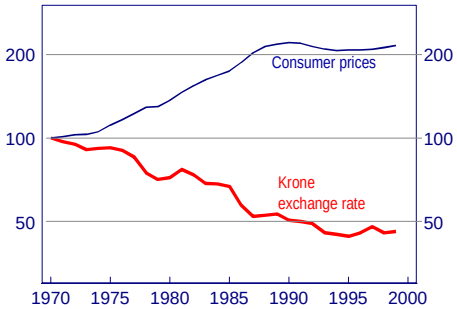
Purchasing power parity

Norway and Germany. Relative prices and exchange rate



Sources: Statistics Norway and Norges Bank

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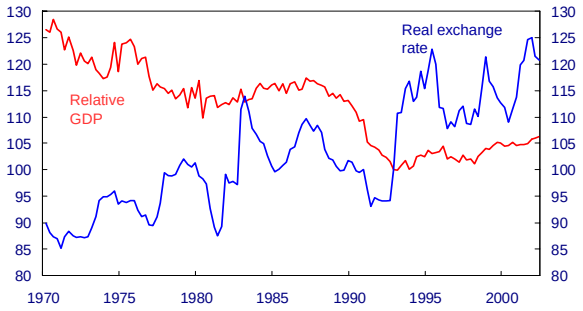
Sweden's real exchange rate and relative GDP compared with the euro area. Quarterly figures. Index 1992=100



Source: Sveriges Riksbank. Inflation Report 2002:4. Note: The real exchange rate is a geometrical average of the bilateral exchange rates between Sweden and the respective countries in the euro area.

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