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# Foreword

On 14 September 2003 the Swedish people will express an opinion as to whether Sweden should adopt the euro as its currency. Introducing a new currency is a far-reaching change, which would affect Swedish society in many ways. With regard to the field of monetary policy, the immediate consequence would be that the krona ceases to exist and Sweden would share the single monetary policy of the euro area.

The Riksbank expressed an opinion in 1994 and 1997 in favour of Sweden joining the monetary union when it was established. The General Council then considered that the advantages of membership outweighed the disadvantages. The Executive Board of the Riksbank has not taken a stance on participation in the Eurosystem. As a public authority, the Riksbank will not be involved in the moulding of public opinion prior to the referendum, whether in the form of conducting campaigns or issuing recommendations. The Riksbank's role is to supply factual information to enable the general public to form its own opinion on this issue.

The Riksbank's website ([www.riksbank.se](http://www.riksbank.se)) contains general information material on EMU, which is regularly updated. In February 2003 an information booklet was published entitled *Den ekonomiska och monetära unionen EMU (Economic and Monetary Union, EMU)*, which aims to provide information to all in Sweden who are interested. (The booklet is only available in Swedish.) This publication should be regarded as a further step in the Riksbank's aim to provide information on the monetary union. Its purpose is to discuss a number of important, practical monetary policy issues that will arise if Sweden adopts the euro, such as how Sweden can best prepare for a possible changeover to the Eurosystem. The aim is to provide all those interested with further information and more in-depth knowledge.

The publication has mainly been produced by the Monetary Policy Department and coordinated by the Deputy Heads of the Department, Per Jansson and Hans Lindblad.

Read and enjoy!

Stockholm, June 2003

*Lars Heikensten*

Governor of Sveriges Riksbank



# ■ Introduction and background

IRMA ROSENBERG AND MARTIN ÅDAHL

## Sweden's position regarding EMU

The third stage of the economic and monetary union, EMU, began in 1999 when the euro was introduced. On 1 January 2002 the single currency was introduced as banknotes and coins in the euro countries. These countries now have a single monetary policy within the framework of the Eurosystem.

Sweden has participated fully in the first two stages of the EMU cooperation and partly in stage three since 1995, when Sweden joined the European Union. However, Sweden pointed out during its membership negotiations that the decision on participation in the monetary union, including the introduction of the euro, would ultimately be taken by the Swedish parliament, the Riksdag. The Riksdag decided in 1997 (Government Bill 1997/98:25) that Sweden would wait before joining the Eurosystem from its start in 1999, but maintain freedom of action for a potential membership at a later stage. In December 2002, the Riksdag decided to allow the Swedish people to decide on the introduction of the euro through a consultative referendum to be held on 14 September 2003.

## Important points following a possible "yes" vote

The Swedish government has stated that if the euro is to be introduced, this should be effective from 1 January 2006, by means of a direct changeover, with the euro being introduced simultaneously as an electronic currency and as banknotes and coins. This is also the alternative advocated by the Riksbank. During the two-year period following on from the referendum and until the krona is replaced by the euro, a number of decisions would need to be taken.

### MEMBERSHIP OF THE EXCHANGE RATE MECHANISM, ERM II

One of the entry requirements for EMU is exchange rate stability against the euro for two years. The text of the Maastricht Treaty states that exchange rate stability shall have been maintained for two years at the

time of assessment. The common practice is participation in the exchange rate mechanism, ERM II/ERM. Finland and Italy were granted membership despite the fact that, at the time of their assessments, they had not been formal participants in ERM for the required two years. However, at the time of adoption of the euro on 1 January 1999, they had participated for a longer period than two years.

Within ERM II the currency of a participating country may vary by a maximum of  $\pm 15$  per cent from a central rate against the euro, which is established for the applicant country when it joins the system. These fluctuation bands around the central rate are defended by means of interventions in the foreign exchange market by the European Central Bank, ECB, and the central banks of the countries concerned.

An application for membership of ERM II would be put forward by the government after consultation with the Riksbank. Prior to this, representatives of the government and the Riksbank will have sounded out contacts with colleagues in Europe. The two most important decisions in connection with ERM II membership are the choice of the central rate and the choice of band width, i.e. the extent to which the currency will be allowed to fluctuate. The band width is normally  $\pm 15$  per cent, but the applicant country can request a narrower band. These two issues are determined in the negotiations between the EU countries' finance ministers and central bank governors, with the chairman of the ECB representing the central banks in the euro countries. Their representatives usually conduct the negotiations within the framework of the Economic and Financial Committee, EFC, and a decision is taken in the form of an international agreement. Prior to these negotiations, the government and the Riksbank would be expected to confer on an appropriate Swedish position. When ERM II membership comes into force, the forms for monetary policy would change. It would then be necessary to keep the exchange rate stable within the given band.

#### ASSESSMENT AND DECISION ON THE CONVERGENCE CRITERIA

If the referendum results in a "yes" vote for introducing the euro, the Riksdag is expected to commission the government to prepare Sweden for membership of the Eurosystem. These preparations would entail ensuring that the entry requirements, the legal and economic convergence criteria, were met. A number of other legal and practical adjustments would need to be prepared and decided on. The convergence criteria are assessed in reports from the European Commission and the ECB. After the EU heads of state and government have given their approval,

the assessments then form a basis for the ECOFIN Council's final decision on Eurosystem membership.

There are four economic convergence criteria (the legal criteria are not discussed here):

- *Inflation* in the applicant country must not be higher than 1.5 percentage points above an average of the three EU member states with the lowest inflation rate, measured according to the harmonised consumer price index, HICP.
- *Long-term interest rates* (five-year government bonds) should not exceed the average of the corresponding rates in the three countries with the lowest inflation rates by more than 2 percentage points.
- *Public finances* must show a sufficient degree of balance, which is defined as the budget deficit being no higher than 3 per cent of GDP during normal fluctuations in economic activity and the consolidated public sector's gross debt being no higher than 60 per cent of GDP, unless the central government debt as a percentage of GDP declines sufficiently and approaches the reference value at a satisfactory rate.
- *The exchange rate* must be stable against the euro for at least two years prior to Eurosystem membership. Although exchange rate fluctuations within ERM II can be permitted up to  $\pm 15$  per cent from the central rate, this criterion is assessed on the basis of the rate remaining close to the central rate without serious tension and without the currency's central rate depreciating during the period.

The most probable scenario, following the timetable envisaged by Sweden, would involve the criteria being assessed and a decision taken in summer 2005. Most forecasts currently indicate that Sweden would be able to meet the criteria.

#### ENTRY INTO THE EUROSISTEM

If Sweden is approved for Eurosystem membership, a decision must be taken on the conversion rate from krona to euro. This decision will be taken by the appropriate finance ministers in the ECOFIN Council. For practical reasons, this decision must be taken 4–6 months prior to entry to the system. The decision has been undramatic for all of the countries now taking part in the Eurosystem and entailed the central rate in ERM/ERM II being adopted as the conversion rate to euro. However, in two cases, Greece and Ireland, there was some adjustment of the central rate prior to the decision on the conversion rate. The decision on a central rate for ERM II would thus in practice be decisive for the final conversion rate.

On 1 January 2006, Sweden would introduce the euro as its currency. During a period of one month the new euro banknotes and coins and the old krona banknotes and coins would both be in circulation. On 1 February 2006 the krona would cease to be legal tender.

## The situation following a “no” vote

The consequences of a “no” vote in the referendum are not discussed in this publication. If various actors have taken into account the possibility of a “yes” vote, then the expectations picture in the financial markets will change when it becomes clear the result is a “no”. There are differing opinions as to how it will change. Whatever happens, the Riksbank and its monetary policy will continue as before to promote price stability in Sweden. No major practical or organisational changes are expected.

## Publication layout

This publication deals with the issues that will face the Riksbank and monetary policy during the preparations for a possible introduction of the euro. The first part discusses the situation up to and including possible membership of the Eurosystem. The experiences of Finland, Italy and Greece when joining the exchange rate mechanism and their choice of central rate and band width are analysed in the first section of this part. This in turn provides a background for the next section, which describes some of the issues and aspects that should be considered when discussing an appropriate central rate in ERM II. This is followed by a discussion of which monetary policy should be conducted, given a decision on ERM II membership, during the transition period up to entry into the Eurosystem. Should the Riksbank continue to conduct an independent monetary policy or should its main aim be for the Swedish instrumental rates to approach the ECB's? The section following this discusses the risks to price stability of the actual introduction of the euro. What are the risks that the business sector will take the opportunity to raise prices when the krona is replaced by the euro and how can these risks be minimised? Here, an analysis of the present euro countries' introduction of banknotes and coins is undertaken.

The second part of the publication deals with how Sweden can best prepare for the new, single monetary policy in the Eurosystem. There is an examination of the differences in the way the Riksbank and the ECB conduct monetary policy with regard to targets, decision-making processes, liquidity control, transparency and communication. With these differences in mind, there then follows a discussion of how the Riksbank can best



prepare for the new tasks that await in the euro area. In conclusion, there is a discussion of the consequences for stabilisation policy if Sweden no longer has a national monetary policy and the krona ceases to float against the euro.

# ■ Finland's, Italy's and Greece's path to the monetary union

PETRA LENNARTSDOTTER

If the result of the autumn referendum is a “yes” vote, Sweden will join ERM II, with a fixed central rate for the krona against the euro, in order to meet the convergence criterion of exchange rate stability. The krona will continue to float against other currencies. Prior to participation in the monetary union, it will also be necessary to fulfil the convergence criteria for price stability, public finances and low interest rates, as well as making some amendments to legal acts. The present euro countries managed the convergence process in slightly different ways and from different starting points. Three of these countries, Finland, Italy and Greece, have experiences that could provide useful guidance in that they joined ERM II's predecessor, ERM, later than the others.

**Finland, Italy and Greece had different conditions for meeting the convergence criteria.**

The development of the krona against the euro in ERM II membership would be largely determined by the choice of central rate and by how rapidly the repo rate could adjust to the ECB's level. The development of the repo rate relative to the ECB's key rate during ERM II membership would in turn depend on the convergence criteria for the exchange rate and inflation. Finland, Italy and Greece had different conditions for meeting the convergence criteria and with regard to choice of monetary policy during the ERM/ERM II membership period. Finland's key rate was already close to the German rate when Finland joined the ERM. During the ERM period there was no need for any great changes in the interest rate differential to maintain price stability. Italy and, to an even greater extent, Greece, joined ERM with relatively large differentials in inflation and interest rates in relation to Germany. The interest rates in these countries were then gradually adjusted. However, both countries retained positive key rate differentials right up to the time the exchange rate was irrevocably fixed.

**Sweden has a better starting position than both Italy and Greece had when they joined the ERM.**

The experiences of the three countries cannot easily be applied to Sweden. The uncertainty over the implementation of the Third Stage of EMU and the introduction of the euro are now over. In addition, the exchange rate cooperation in ERM II entails only a bilateral relation to the euro. The assessment of exchange rate stability will therefore only apply to the krona against the euro. In addition, Sweden will probably fulfil the

other economic convergence criteria and therefore has a better starting position than both Italy and Greece had when they joined the ERM.

## Finland – immediate key rate convergence

Finland is the country with conditions most similar to Sweden's with regard to the degree of convergence and to economic structure. Finland had a gentle transition to a fixed exchange rate, partly because its economic policy was well-adapted to ERM membership. Finland and Sweden showed similar development at the beginning of the 1990s. Both countries suffered economic crises, partly caused by the same factors.

However, the crisis in Finland was made worse by the dissolution of the Soviet Union 1991–92, which led to a decline in demand for the Finnish export industry. In September 1992 Finland abandoned the fixed exchange rate against the ecu (the euro's predecessor) and the Finnish mark depreciated significantly. In 1993 an inflation target was introduced and economic policy was changed in roughly the same way as in Sweden. The economic situation then improved relatively quickly, although unemployment remained at a high level.

At the time of ERM membership on 14 October 1996 the economic recovery had begun and the economic situation in Finland met the demands of the convergence criteria relatively well with regard to long-term interest rates, price stability and public finances. The key interest rate was quickly lowered to the level that prevailed in Germany (see Figure 1). During the ERM period the Finnish key rate was close to the German rate and HICP inflation developed in line with the inflation target. There was no apparent conflict of target between price stability and exchange rate stability. The tension that arose with regard to foreign exchange, primarily appreciation pressure at the end of 1996, but also downward pressure during the crisis in Russia in 1998, was managed through market interventions. The assessment in the convergence reports was that the exchange rate deviations did not comprise a problem. Finland almost met all of the convergence criteria, with the exception of the exchange rate criterion, at the time of the 1997 convergence report.

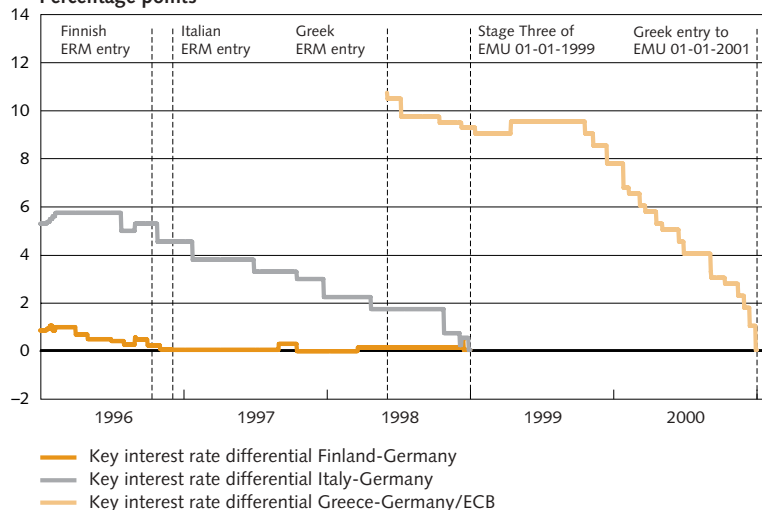
The country retained an economic policy aimed towards price stability and budget discipline and qualified for the monetary union membership from the start on 1 January 1999. The final conversion rates for the currencies to be included in the monetary union were announced as early as the assessment in May 1998 and corresponded to the central rates in the ERM. Finland's strategy of "immediate adjustment" of its key rate functioned well during the ERM period, as a result of the economic policy direction taken and the fact that there was no need for major changes in

**Finland is the country with conditions most similar to Sweden's with regard to the degree of convergence and to economic structure.**

**During the ERM period the Finnish key rate was close to the German rate.**

**Finland qualified for the monetary union membership from the start on 1 January 1999.**

**Figure 1. Finland's, Italy's and Greece's key interest rate differentials in relation to Germany**  
Percentage points



Sources: Bank of Greece, Datastream and the Riksbank.

**Figure 2. FIM/EUR; central rate in ERM with fluctuation band  $\pm 15$  per cent**



Sources: ECB and the Riksbank.

the key rate differential to secure price stability and exchange rate stability. An empirical study of the Finnish currency, from the announcement of the conversion rate to the final fixing of the exchange rate, shows that the difference between the market rate and the central rate for the Finnish mark roughly corresponded to the key rate differential to Germany.

## Italy – gradual key rate convergence

Economic developments in Italy were marked at the beginning of the 1990s by a high inflation rate, high interest rates, a large central government debt and large budget deficits. As a result, confidence in the exchange rate was low and during the exchange rate turbulence in Europe in 1992 Italy was forced to leave the ERM. Several economic policy reforms were then made; fiscal policy was tightened, labour market reforms were implemented and commodity market competition was facilitated. The central government budget was also strengthened by privatisation.

Prior to Italy's re-entry to the ERM on 25 November 1996, the central government debt was still high, but the budget deficit had declined and inflation had been subdued. However, combating inflation required tight monetary policy, which resulted in high short-term interest rates. Italy joined the ERM with a central rate for the lira that was relatively close to the prevailing market rate. During the ERM period the Italian central bank was able to gradually lower its key rate without any negative exchange rate effects and the lira remained relatively stable in relation to the central rate up to the monetary union (see Figures 1 and 3). Given this development, the improved budget results and a lower rate of inflation, Italian long-term interest rates also fell. The large central government debt was reduced, but remained far above 60 per cent of GDP.

Although the central government debt was still high, it was assessed to be declining at a sufficient rate and Italy was able to meet all of the convergence criteria at the final assessment prior to Stage Three of EMU.

During the ERM period the Italian central bank was able to gradually lower its key rate and the lira remained relatively stable.

Figure 3. ITL/EUR; central rate in ERM with fluctuation band  $\pm 15$  per cent



Sources: ECB and the Riksbank.

Italy was able to meet all of the convergence criteria at the final assessment prior to Stage Three of EMU.

To summarise, the strategy of gradual adjustment of the key rate worked well from an exchange rate perspective, as the economic fundamentals successively improved during the ERM period. Following the announcement of the final conversion rate in May 1998, the difference between the lira market rate and its central rate declined at the same rate as the interest rate differential in relation to Germany.

## Greece – gradual adjustment from a difficult initial position

Greece had since the start of the 1990s aimed its economic policy towards attaining price stability, partly through an exchange rate policy that focused on stabilising the national currency, the Greek drachma. From 1995 to 1998 the drachma was one-sidedly linked to the ecu. Other measures comprised adjusting fiscal policy, broadening tax bases, labour market reforms and liberalisation of the financial markets. The Greek policy contributed to a fall in CPI inflation. In 1991 the inflation rate was above 20 per cent. In 1997 it was around 5.5 per cent.

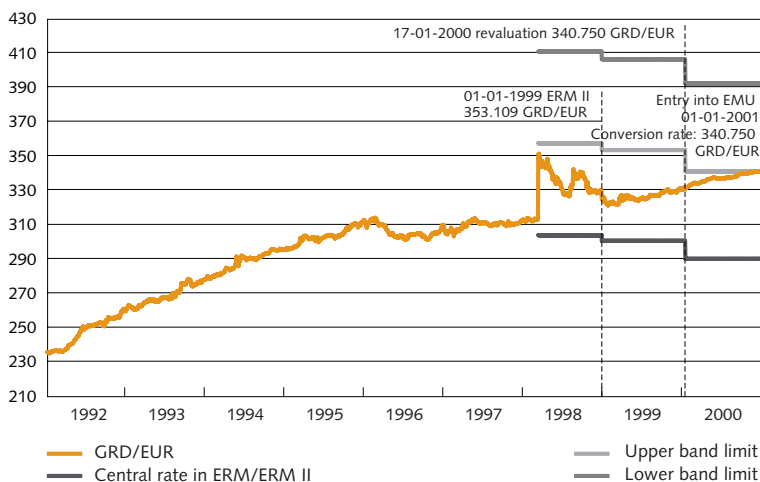
With effect from 2000, the key rate was gradually adjusted down towards the ECB's level, but some differential still remained until the final stage.

However, at the time of ERM membership on 16 March 1998, Greece did not fulfil the convergence criteria. The central rate was set at a weak level and the transfer to a fixed exchange rate coincided with an extensive reforms programme, primarily including measures to promote competition on product markets and to improve the functioning of the labour market, and accompanied by a tight economic policy. The key rate was kept at a high level during 1998–99 (almost 10 percentage points above the German rate) and the rate of inflation was gradually subdued. Despite the fact that the drachma weakened initially on entry to ERM, it was much stronger than the central rate. The central rate was revalued both on entry to ERM II in January 1999 for technical reasons, and later in January 2000 (see Figure 4). With effect from 2000, the key rate was gradually adjusted down towards the ECB's level, but some differential still remained until the final stage, when the key rate was lowered by a total of 2 percentage points (see Figure 1). The long-term interest rates fell as inflation was subdued, the exchange rate stabilised and the central government budget improved.

At the assessment of Greece in June 2000 it was agreed that all convergence criteria were fulfilled.

As was the case in Italy, public finances had been strained during the entire 1990s, but at the assessment in June 2000 it was agreed that all convergence criteria were fulfilled. The reason for this was that the central government debt was considered to be declining at a sufficient rate. The final conversion rate for the drachma was announced in June 2000, approximately six months before the exchange rate was irrevocably fixed (see Table 1). An empirical study of the development of the drachma dur-

Figure 4. GRD/EUR; central rate in ERM with fluctuation band  $\pm 15$  per cent



Sources: ECB and the Riksbank.

ing these six months shows that the difference between the central rate and the market rate largely corresponded to the key rate differential in relation to the ECB. The drachma converged towards the central rate as the interest rate differential declined. To summarise, Greece's compara-

TABLE 1. FINLAND'S, ITALY'S OCH GREECE'S PATH TO THE MONETARY UNION

	Finland	Italy	Greece
	14-10-1996 FIM joins ERM at a central rate corresponding to 5.94573 FIM/EUR	25-11-1996 ITL rejoins ERM at a central rate corresponding to 1936.27 ITL/EUR	16-03-1998 GRD joins ERM at a central rate 357 GRD/EUR
03-05-1998	Finland assessed to fulfil all convergence criteria, despite FIM only taken part in ERM 18.5 months	Italy assessed to fulfil all convergence criteria despite ITL only taken part in ERM 17 months	Greece does not fulfil all convergence criteria on assessment
01-01-1999	Stage Three of EMU begins. FIM given conversion rate 5.94573 FIM/EUR	Stage Three of EMU begins. ITL given conversion rate 1936.27 ITL/EUR	ERM replaced by ERM II. GRD given central rate 353.109 GRD/EUR
17-01-2000			Central rate revalued to 340.750 GRD/EUR at request of Greek authorities
17-06-2000			Greece considered to fulfil all convergence criteria and allowed entry to the monetary union from 01-01-2001
01-01-2001			Greece enters the monetary union. GRD given conversion rate 340.750 GRD/EUR

Sources: EMI and the Riksbank.

tively difficult economic starting position required a relatively high key rate during the period the country took part in the ERM and ERM II collaboration. As policies were changed and fundamental factors improved, the interest rate differential declined.

## Summary and conclusions

**Thanks to economic policy measures and confidence in their exchange rate arrangements, all three countries succeeded in fulfilling the convergence criteria.**

Finland and Italy joined ERM in 1996 and Greece joined in 1998, all with different starting positions. Finland entered ERM with a key rate well in line with that of Germany. Its inflation rate was low and its public finances were sound. On the other hand, Italy, and to an even greater extent, Greece had high interest rates, a high inflation rate and problems with central government finances in the beginning. However, these countries also succeeded, thanks to economic policy measures and confidence in their exchange rate arrangements, in gradually fulfilling the convergence criteria. One important issue regarding participation in ERM II is how any interest rate differentials will affect the exchange rate. During the period between the announcement of the respective currency's conversion rate and entry into the monetary union, Finland's, Italy's and Greece's exchange rates largely followed the development of interest rate differentials in the manner indicated by basic economic theory (see also the section on pp. 35-41).



# ■ The krona's central rate in ERM II

MARIANNE NESSÉN AND HENRIK DEGRÉR

If there is a “yes” vote in the referendum, the central rate for the krona in ERM II will be determined through negotiation. Most likely, the central rate will also be the final conversion rate used when converting kronor into euros. An account of some of the issues and aspects that should be taken into account when discussing an appropriate central rate for ERM II may thus be of interest. It can be pointed out now that there is no precise answer to the question of what would be an appropriate central rate. However, economic theory can be used to narrow down the possibilities and outline probable consequences of an excessively weak or strong central rate.

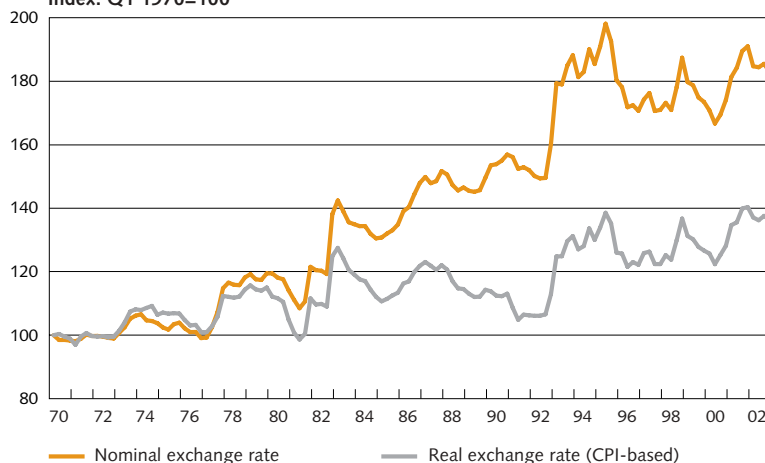
There is no precise answer to the question of what would be an appropriate central rate.

In this context it is important to remember that the SEK/EUR rate is a *nominal* exchange rate, i.e. a relative price between two currencies. According to economic theory, the deciding factor for economies' real economic development (e.g. production and employment) is the *real* exchange rate. A real exchange rate is a relative price for broadly compiled baskets of goods in different countries. When the real exchange rate is calculated in practice, the nominal exchange rate is adjusted for differences in price levels. As prices are sticky, there is a strong short-term relationship between changes in the nominal and the real exchange rate. In the long term, when prices have had time to adjust, the nominal and real exchange rates may develop in very different ways. The development of the krona against the euro is one example of this (see Figure 1). Since the beginning of the 1970s, the value of the krona in nominal terms has largely been halved and fallen by around 45 per cent.<sup>1</sup> The real exchange rate towards the euro area has also weakened during this period, but only by around 25 per cent. The difference is explained by the fact that Sweden has had a higher average inflation rate than the euro area during this period.

When analysing the economic effects of various nominal central rates it is therefore important to examine the consequences for the real

<sup>1</sup> The value of a synthetic euro was approximately SEK 4.95 at the beginning of 1970. Today a euro costs just over SEK 9. In terms of euros, therefore, a krona cost around 0.202 euros at the beginning of 1970, while the price is now 0.11 euros – a reduction in the value of the krona of approximately 45 per cent. Figure 1 shows the SEK/EUR rate as an index, where Q1 1970 is given the value 100. The final observation has a value of approximately 180, that is, around 9/4.95.

Figure 1. Nominal and real exchange rate against the euro area  
Index: Q1 1970=100



There is reason to believe that different central rates may be associated with different developments in the real economy during an adjustment period.

exchange rate, both in the short term and the long term. In the long term, it is reasonable to assume that the real exchange rate is determined independently of the nominal rate. However, in the short term, as pointed out earlier, there is a strong relationship between nominal and real exchange rates. This means that there is reason to believe that different central rates may be associated with different developments in the real economy during an adjustment period.

### Real exchange rates reflect international competition and purchasing power

Real exchange rates are of interest because they reflect a country's international *competitiveness*. The weaker the real exchange rate, i.e. the larger the amount of domestic goods that are needed in exchange for a given amount of foreign goods, the cheaper it is for foreign firms and consumers to buy Swedish goods; the stronger is Sweden's international competitiveness. At the same time, the real exchange rate is a measure of *purchasing power*; the weaker the real exchange rate, the smaller the number of foreign goods that Swedish firms and consumers can buy with a given amount of domestic goods.

Focusing on nominal exchange rates can lead to incorrect conclusions.

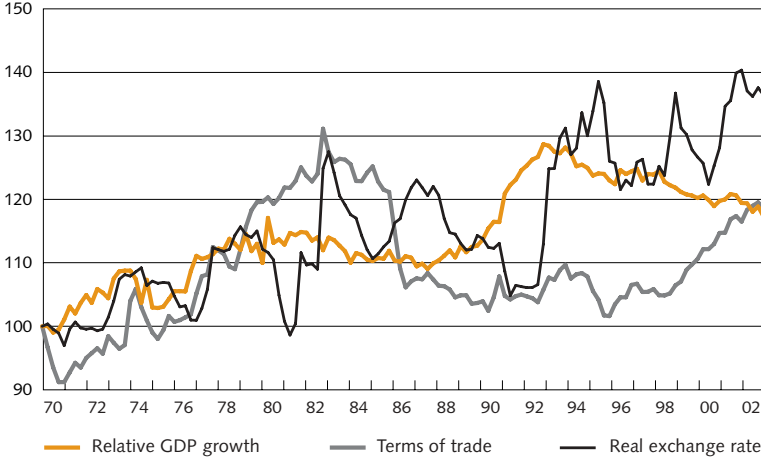
An equivalent interpretation is often made for the nominal exchange rate; i.e. the weaker the krona rate, the better the competitiveness and the poorer the purchasing power. However, this only applies in the short-term perspective, as prices and wages are sticky. If the analysis refers to longer-term developments, then focusing on nominal exchange rates could lead to incorrect conclusions. As mentioned earlier, the value of the krona against the euro has fallen by around 45 per cent since the begin-

ning of the 1970s. However, it is clear that Sweden's competitiveness on the European market has not improved to a corresponding degree and that our capacity to buy European goods has not deteriorated so markedly. What has happened over these decades is that the annual inflation rate in Sweden has been on average more than one percentage point higher than in the euro area. Thus, our competitiveness has improved and our purchasing power has declined, but not to the same extent as the nominal exchange rate has weakened.

What determines the long-term development of the real exchange rate? It is possible to identify some fundamental explanatory variables with the aid of economic theory. As the real exchange rate is basically a relative price, its main explanatory variables are the fundamental conditions for supply and demand in the domestic economy relative to other economies. The relative development in GDP or productivity is often regarded as the most important explanatory variable. Countries with a higher growth rate or stronger productivity development have higher price levels and thereby stronger real exchange rates. With regard to Sweden, a large part of the krona's depreciation over the past three decades can be explained by the fact that Swedish real GDP has grown at a much slower rate than real GDP in the euro area (see Figure 2).

The relative development in GDP or productivity is often regarded as the most important explanatory variable.

Figure 2. Relative GDP growth, terms of trade and the real exchange rate  
Index: Q1 1970=100



Note. Relative GDP growth is measured as the ratio of real GDP in the euro area to real GDP in Sweden. Terms of trade are measured here as the ratio between import prices and export prices.

For small, open economies there is a further important explanatory variable, namely the terms of trade. This is also a relative price between groups of goods, but the comparison now applies to more limited product categories – the price of imported goods in relation to the price of export-

For small, open economies there is a further important explanatory variable, namely the terms of trade.

ed goods. By definition, changes in the terms of trade have an impact on the real exchange rate. One recent example is the deterioration in Sweden's terms of trade that arose in connection with the price fall on information and communications technology products, ICT products, at the end of the 1990s. This also led to a significant weakening of the real exchange rate (see Figure 2).

Swedish adoption of the euro would mean that nominal exchange rate changes disappear, but not the real ones.

It can thus be concluded that the real exchange rate varies in response to changes in demand and supply in Sweden and abroad. It is important to understand that this applies regardless of whether our nominal exchange rate against the euro is fixed or floating. With a floating exchange rate, part of the change in the real exchange rate can occur through a change in the krona's nominal rate against the euro. If the exchange rate is fixed, all of the adjustment must be made through Swedish inflation rate that differs from the inflation rate in the rest of the euro area. Swedish adoption of the euro would thus mean that nominal exchange rate changes disappear, but not the real ones. Our competitiveness and purchasing power with regard to the euro area will continue to vary and developments in wages and prices in Sweden will from time to time differ from the rest of the euro area.

## Consequences of various central rates

The real exchange rate against the euro area will therefore continue to vary regardless of whether or not Sweden adopts the euro. The Riksbank's assessment is that the real exchange rate will strengthen over the coming years (see, for instance, the Box in the December 2002 Inflation Report). However, a real appreciation can be achieved both through a strengthening of the krona's nominal exchange rate and through a relatively higher inflation rate. According to assessments in the most recent Inflation Report, price developments are expected to be roughly the same in Sweden and the euro area over the coming years. This is the motivation behind the Riksbank's assessment that the appreciation will mainly be through a stronger nominal exchange rate against the euro. If Sweden joins ERM II, this will mean that a weak nominal central rate will require a high relative inflation rate in Sweden to achieve the same given rate of real appreciation. Conversely, if the central rate is relatively strong, inflation in Sweden will probably be relatively low in relation to the euro area.

However, this reasoning is based on the assumption that the development of the real exchange rate is independent of the nominal exchange rate's development even in the short term. But prices and wages are sticky, which means that the central rate will affect the devel-

opment of the real exchange rate, at least during a transition period. This in turn means that different central rates will be associated with different outcomes for production and employment, for instance, and thereby ultimately for inflation. Calculations of the effects on the Swedish economy of different central rates are associated with a high degree of uncertainty, but one conclusion appears to be certain: the weaker the central rate, the higher Swedish growth and inflation will be during a transition period. It is important to take this into account in discussions of an appropriate central rate, as Swedish entry into the Eurosystem requires that Sweden fulfils all of the convergence criteria. These include a requirement that Swedish inflation is in line with the rate in the euro area.

**Prices and wages are sticky, which means that the central rate will affect the development of the real exchange rate, at least during a transition period.**

## Conclusion

It is the development of the real exchange rate that plays the most important role for economic decisions and for the allocation of resources within and between economies. The value of the central rate is therefore important to the extent that it affects the development of the real exchange rate. In the long term, it is reasonable to believe that the real exchange rate is determined independently of the nominal exchange rate. But in the short term it is likely that different nominal central rates will lead to different consequences for production, employment and inflation. A relatively weak central rate could therefore be expected to provide a competitive advantage in the short term. At the same time, a weak rate means that the inflation rate will probably be higher, that Swedish purchasing power will weaken and that the value in euros of assets denominated in SEK will decline.

Swedish membership of the Eurosystem would only fix one of the components of the real exchange rate. If the determinants of the real exchange rate vary it will continue to change and inflation in Sweden will from time to time deviate from the average for the other euro countries. There is nothing unusual in this. Regional differences in the inflation rate are a natural element of a well-functioning monetary union. The challenge for economic policy in Sweden and in the rest of the euro area is to ensure that these regional inflation differences reflect necessary changes in real exchange rates and are not an expression of unmotivated price and wage increases.

**The challenge for economic policy is to ensure that regional inflation differences reflect necessary changes in real exchange rates and are not an expression of unmotivated price and wage increases.**

# ■ Monetary policy prior to Eurosystem membership

HENRIK DEGRÉR, ANDERS EKLÖF AND ARVID WALLGREN

**If the response to the referendum is a “yes” vote, Sweden will be expected to take part in ERM II for a period of time.**

At present, monetary policy is conducted with the aim of maintaining price stability in Sweden. If the response to the referendum is a “yes” vote, Sweden will be expected to take part in ERM II for a period of time. The primary purpose of monetary policy will then be to ensure that the changeover to the euro area’s price stability regime goes smoothly and to contribute to Sweden’s fulfilling the economic convergence criteria for entry to the Eurosystem. This section aims to describe the conditions for monetary policy during the ERM II period.

**Whether the transition to the euro will go smoothly will depend on to what extent economic activity and inflation in Sweden are synchronised with the euro area.**

Whether the transition to the euro will go smoothly will depend on, for instance, to what extent economic activity and inflation in Sweden are synchronised with the euro area. As both economic activity and inflation are influenced by monetary policy, it is useful to study how Swedish monetary policy has been conducted in recent years in relation to monetary policy in the euro area. It may also be interesting to study whether any long-term interest rate differentials reflect the relative growth and inflation prospects in the longer term.

**During the ERM II period the relationship between the Swedish market rates and the SEK/EUR exchange rate will change.**

During the ERM II period the relationship between the Swedish market rates and the SEK/EUR exchange rate will change. This is because a simple relationship can be expected to apply between the SEK/EUR exchange rate and the difference in the interest rate in Sweden compared with the euro area, assuming that the krona’s central rate also becomes the conversion rate and that the point of entry to the Eurosystem is known (see also the discussions in the section on pp. 10–16). Another important implication of ERM II is that the Riksbank’s possibilities to influence long-term interest rates would be very limited.

Possible alternatives for monetary policy during the ERM II period are a policy based on an inflation target, a policy aimed purely at an exchange rate target and, finally, a policy aimed at managing a combination of an inflation target and taking into account exchange rate stability.

## Interest rate developments in Sweden and the euro area

The transition to the monetary union will be facilitated if the Swedish economy is synchronised with the euro area with regard to economic activity and inflation prospects. An important indication of this is Sweden's interest rate relative to the euro area. The more similar the prevailing economic conditions and prospects in Sweden and the euro area, the less difference there should be between both the short-term and the long-term market rates.

### WHAT DETERMINES THE INTEREST RATE?

The nominal interest rate met by households and firms can be divided up into a real interest rate and expected inflation.

The real interest rate reflects fundamental preferences among households and firms and the level of technological developments. The higher the value households place on present consumption in relation to future consumption, the greater the compensation they will require, in the form of higher interest, to save and thereby postpone their consumption. The same thing applies to investment, but in this case it is the possible return that determines how much interest investors are willing to pay. The more rapid the rate of technological development, the higher the return an investor can receive on money lent. In a small, open economy the real interest rate is determined by savings and investment in the global market.<sup>1</sup>

However, the prevailing real interest rate will usually deviate from the level motivated by the above-mentioned determinants. This is because the interest rate is also affected by other short-term factors, e.g. fluctuations in economic activity. In an economy where the objective for monetary policy is to achieve price stability, the central bank will conduct its monetary policy in a way that subdues demand when it is higher than supply and resource utilisation is above the normal level in order to reduce inflationary pressure, and vice versa.

Inflation expectations, which are the other part of the nominal interest rate, depend to a great extent on the monetary policy regime, i.e. the stated target for monetary policy, the time perspective in which the policy is conducted and the credibility of the policy. However, there are other

**The nominal interest rate can be divided up into a real interest rate and expected inflation.**

**In a small, open economy the real interest rate is determined in the global market.**

**Inflation expectations depend to a great extent on the monetary policy regime.**

<sup>1</sup> A more detailed discussion of concepts regarding the long-term real interest rate can be found in the October 2000 Inflation Report.

factors that play a role in inflation expectations, for instance, the fiscal policy stance.

#### CONVERGENCE AND FALLING TRENDS IN INTEREST RATES IN THE 1990S

Since the beginning of the 1990s monetary policy in the EU countries has been aimed at attaining price stability.

Since the beginning of the 1990s monetary policy in the EU countries has been aimed at attaining price stability. The central banks have also been made independent with the aim of increasing confidence in their policies and of contributing to stabilising inflation expectations. In the fiscal policy field, the convergence criteria were aimed at creating better conditions for growth and stability by improving budget discipline, increasing public budget balances and reducing central government debt in countries where this was high.

Similar changes have also been made in Sweden. An inflation target was introduced at the beginning of the 1990s and the Riksbank has been given an independent position in achieving this. A new budget act has been introduced and fiscal policy is governed by both expenditure and savings targets.

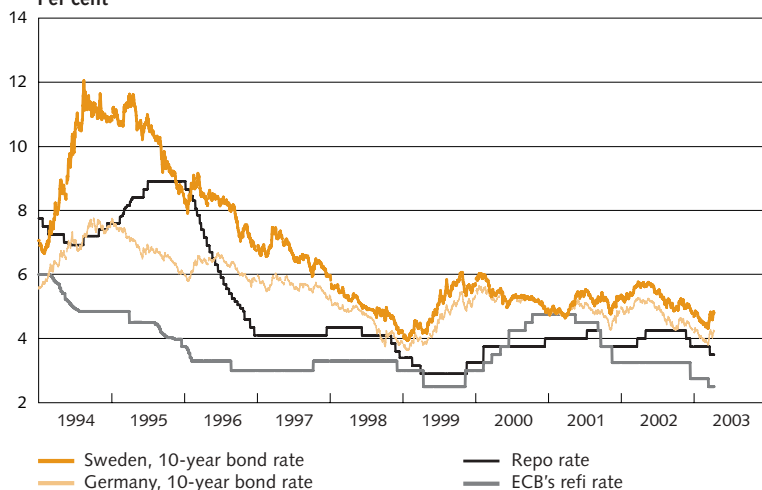
The result has been a declining trend in nominal interest rates and a marked convergence between the EU countries' nominal interest rate levels.

The result of these changes has been a declining trend in nominal interest rates and a marked convergence between the EU countries' nominal interest rate levels. The most important reason for this is that sounder public finances and greater confidence in the price stability target have contributed to declining inflation expectations. In Sweden nominal long-term bond rates fell from 12 per cent in 1995 to 4 per cent at the end of the decade. Since 1998 the interest rate differential between Swedish and German government bonds has been relatively stable, amounting to around 0.5 percentage points. At the same time, the covariation in interest rates between the countries has been significant (see Figure 1). The long-term interest rate differentials remaining are probably mainly due to risk premia related to differences in liquidity and exchange rates. Periodically, variations in the supply of government bonds (the borrowing requirement) have also affected developments.

The differential between the Riksbank's and the ECB's key interest rates has remained within a relatively narrow interval of just over  $\pm 1$  percentage point since the monetary union began in 1999. This reflects the fact that inflationary pressure and inflation expectations in Sweden and in the euro countries have developed in a similar manner (see Figure 2).



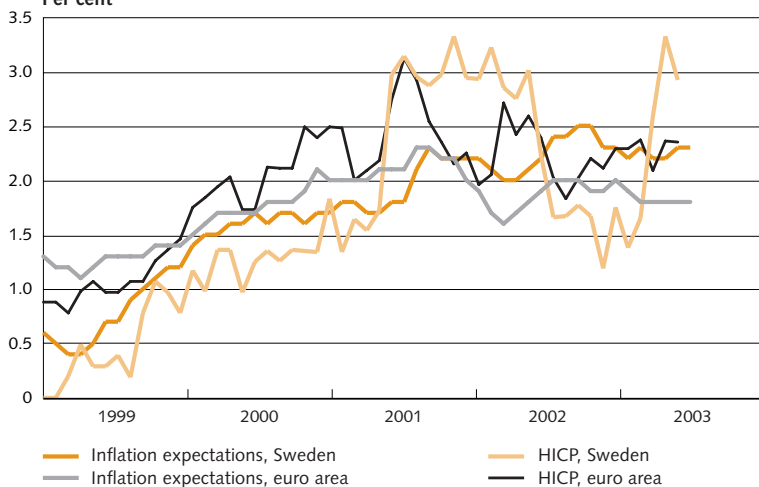
**Figure 1. Swedish and German nominal interest rates 1994–2003**  
Per cent



Note. Ten-year government bonds and key rates (1994–98 Bundesbank's key rate in Germany, thereafter ECB's refi rate).

Source: The Riksbank.

**Figure 2. Inflation and inflation expectations twelve months ahead in Sweden and the euro area**  
Per cent



Sources: Eurostat and Consensus Forecast.

## Conditions for monetary policy under ERM II

If Sweden joins ERM II with the aim of fixing the krona against the euro at a predetermined future date at a rate expected to correspond to the central rate, this should in itself lead to the exchange rate stabilising around the central rate. The risk of imbalances in the economy, which

**If Sweden joins ERM II with the aim of fixing the krona against the euro at a rate corresponding to the central rate, this should lead to the exchange rate stabilising around the central rate.**

could threaten entry to the monetary union, arising during the ERM II period and creating exchange rate tension should be limited in a situation with sound public finances, given a reasonably balanced central rate.

Under these conditions, i.e. that the central rate becomes the conversion rate and that the point of entry into the monetary union is known, a close relationship will prevail between the SEK/EUR exchange rate and the differential between Swedish interest rates and the euro countries' interest rates (see also the discussion in the section on pp. 10–16). In more concrete terms, the return on an investment in a Swedish debt security denominated in SEK with a duration longer than the time until Eurosystem membership should be the same as the return on an investment in a German debt security denominated in euro with the equivalent duration.<sup>2</sup> This is called uncovered interest rate parity and means that a positive interest rate differential on a certain duration towards the euro area is reflected in an expected depreciation of the krona against the euro during the corresponding period, and vice versa.<sup>3</sup>

**If the present interest rate differential towards the ECB is maintained on ERM II entry, the krona should initially appreciate to a level stronger than the central rate to allow for an expected depreciation.**

The interest rate parity condition means that if the present interest rate differential towards the ECB is maintained on ERM II entry, the krona should at this point appreciate to a level stronger than the central rate to allow for an expected depreciation. Figure 3 shows two examples of expected exchange rate paths following a hypothetical ERM II membership in January 2004 on the assumption that the prevailing key rate difference between Sweden and the euro area is gradually eliminated during ERM II. The two examples are based on two different assumptions of the central rate, 9.10 and 8.50 SEK/EUR respectively.<sup>4</sup>

**The freedom of action for monetary policy will be limited by the reduction in the Riksbank's possibility to affect different interest rates the closer we come to the point of membership.**

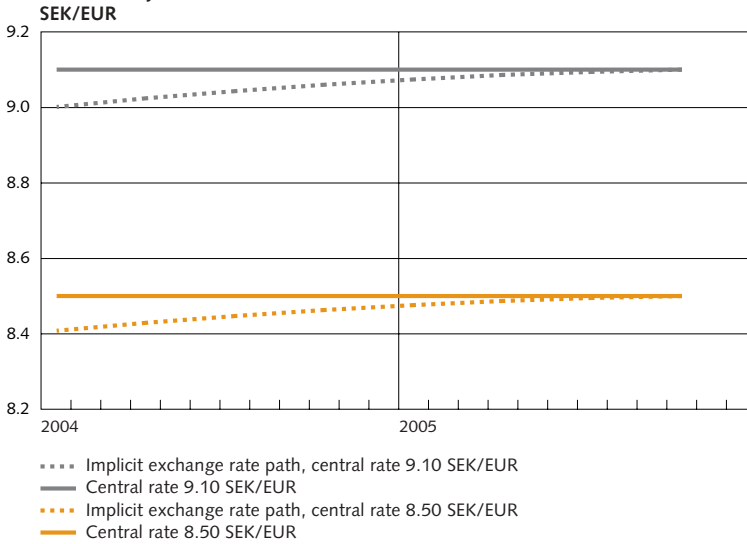
A further consequence of the interest rate parity condition is that the freedom of action for monetary policy will be limited by the reduction in the Riksbank's possibility to affect interest rates on securities with different durations the closer we come to the point of membership. At present, the Riksbank's repo rate changes have an impact on the long-term bond rates through monetary policy expectations. Following entry to ERM II and as the point of membership of the Eurosystem approaches, these interest rates would to an increasing extent be determined by the expected interest rate trends in the euro area.

<sup>2</sup> Minor deviations as a result of liquidity differences and inadequate capital mobility can be expected to remain.

<sup>3</sup> The review in the section on pp. 10–16 shows that the principle of uncovered interest rate parity was a good description of the relationship between interest rates and exchange rates in Finland, Italy and Greece during the ERM period. Following the decision to join the monetary union, their exchange rates largely followed the paths implied by the short-term interest rates and the principle of interest rate parity.

<sup>4</sup> This calculation also assumes that the so-called expectations hypothesis will hold.

**Figure 3. Hypothetical exchange rate paths for two different central rates and the assumption of a gradual downward adjustment in the repo rate to the ECB's key rate from Q1 2004**



Source: The Riksbank.

## Monetary policy under ERM II

If the response in the referendum on 14 September 2003 is a "yes" vote, the conditions for monetary policy will change, as pointed out earlier. The experiences of previous ERM countries could form a starting point for assessing how monetary policy can be conducted during the transition to the monetary union (see the section on pp. 10–16). At the same time, there are circumstances which mean that these countries' experiences cannot easily be applied in an analysis of the consequences of Swedish ERM II participation. These include the fact that the euro is now a reality and that Sweden can be considered to show a more far-reaching convergence prior to Eurosystem membership than Italy and Greece did.

The considerations the Riksbank needs to take into account prior to ERM II participation can be illustrated on the basis of some possible monetary policy scenarios under ERM II. These scenarios are of a principle nature and only isolate some of the aspects that need to be considered when shaping monetary policy. The first scenario describes a situation where the current principles for Swedish monetary policy are retained during the entire ERM II period (referred to as *continued inflation targeting* in the description below). The second scenario entails, on the contrary, Sweden refraining from monetary policy independence as soon as possible after a "yes" vote in the referendum (*principal exchange rate target*). The third is an intermediate form, with a gradual transition from an inde-

The considerations the Riksbank needs to take into account prior to ERM II can be analysed by studying some possible monetary policy scenarios under ERM II.

pendent inflation targeting policy to the ECB's monetary policy (*combined inflation target and exchange rate target*).

#### CONTINUED INFLATION TARGETING

**A monetary policy concentrated on an inflation target could be desirable if Sweden has problems with domestic price stability.**

An independent monetary policy concentrated on an inflation target could be desirable during the ERM II period if Sweden has, or can be expected to experience, problems with domestic price stability. As it can be expected that the relationship between interest and exchange rates will be affected by the uncovered interest rate parity condition, a more significantly positive/negative interest rate differential could entail the exchange rate being stronger/weaker than the central rate. This strategy could lead, if the divergence between the repo rate and the ECB's key rate becomes tangible, to such major effects on the krona that it becomes significant in the assessment of the exchange rate. The size of the exchange rate fluctuations would depend on the shocks to which Sweden's and the euro countries' economies were exposed.

#### PRINCIPAL EXCHANGE RATE TARGET

**With a pure exchange rate target combined with interventions in the foreign exchange market all deviations from the chosen central rate could in principle be eliminated.**

A second alternative would be to change over to a pure exchange rate target with a narrow official band. Combined with interventions in the foreign exchange market, this could entail a very strong signal that the central rate would become the conversion rate and all deviations from the chosen central rate could then in principle be eliminated. One argument against this strategy is that an official and precise foreign exchange target involves the Riksbank largely relinquishing the opportunity to influence price trends in Sweden. With the current interest rate differentials, this could entail monetary policy stimulation, as the repo rate would be immediately lowered to the level prevailing in the euro area. Ultimately, this could lead to a higher inflation rate. At the same time, this strategy contributes to making the allocation of roles between monetary policy and fiscal policy in the monetary union clearer at an earlier stage. It could thus contribute to both increased confidence in the central rate and, with well-balanced fiscal policy, to maintained price stability.

#### COMBINED INFLATION TARGET AND EXCHANGE RATE TARGET

**A third strategy is to combine an inflation target with a target for the exchange rate.**

A third possible strategy is to combine an inflation target with an endeavour to keep the exchange rate stable close to the central rate. More specifically, this could involve largely retaining the present monetary policy system, while the Riksbank would also be prepared to set the interest

rate with the aim of stabilising the exchange rate around the central rate and to intervene in the foreign exchange market if necessary. Such a strategy could lead to retained price stability and sufficient exchange rate stability to fulfil the convergence criteria, at the same time as preserving confidence in the central rate also becoming the final conversion rate.

# ■ Will prices rise automatically if we take part in the monetary union?

STEFAN LASÉEN AND ANNIKA SVENSSON

One question that has from time to time received much attention in the general debate is whether the changeover to the euro has in itself led to an increase in consumer prices in the countries in the euro area. Did companies take the opportunity to raise their prices when national banknotes and coins were replaced with euros? There is a widespread perception amongst consumers and consumer organisations that this was the case. Surveys and questionnaires show that households have perceived a large increase in inflation (see Figures 1 and 2).

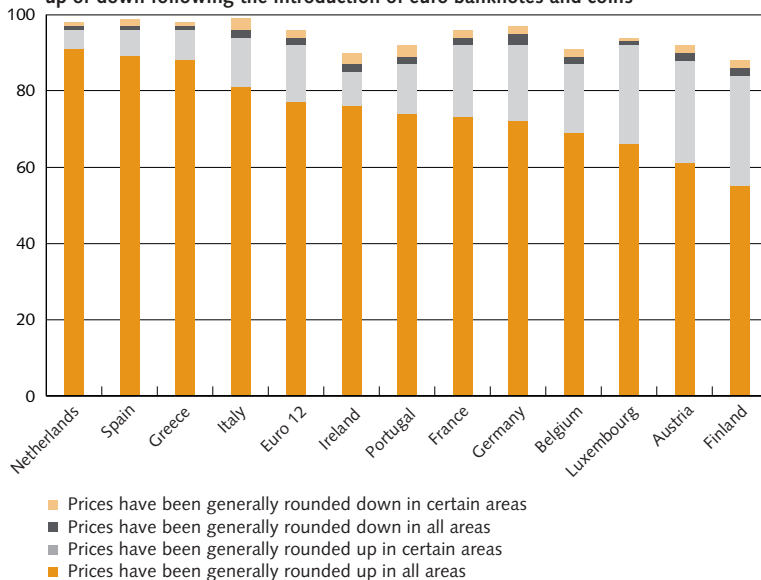
Even before the introduction of euro banknotes and coins there were fears that the introduction might lead to higher prices. However, it is not easy to detect such price increases in the overall price index. The annual rate of increase in the harmonised consumer price index, HICP, was 2.4 per cent in 2001 and 2.2 per cent in 2002. The fact that aggregate price increases have been relatively small is also supported by the European Commission's Eurobarometer (see Figure 3) and by studies made by Eurostat and the central banks of the Netherlands and Belgium.

Distinguishing the price effects that may be attributed to a particular event – in this case the introduction of the euro – is a complicated matter. Prices are influenced by a large number of factors, such as competitive conditions, cost structure, available technology, product type, market form and seasonal variations. If Sweden adopts the euro it will therefore be important to monitor and analyse actual, expected and perceived price trends, both before and after a changeover.

## What does economic theory say?

One difficulty in trying to ascertain whether changing the means of payment affects prices is that there is no single, common theory for companies' pricing behaviour. The discussion here concerns two common theories on possible price effects of the euro introduction. The first theory is based on pricing behaviour being connected with "menu costs". The other is based on psychological research and focuses on psychological pricing and rounding-off effects.

**Figure 1. The general public's perception of whether prices have been rounded up or down following the introduction of euro banknotes and coins**

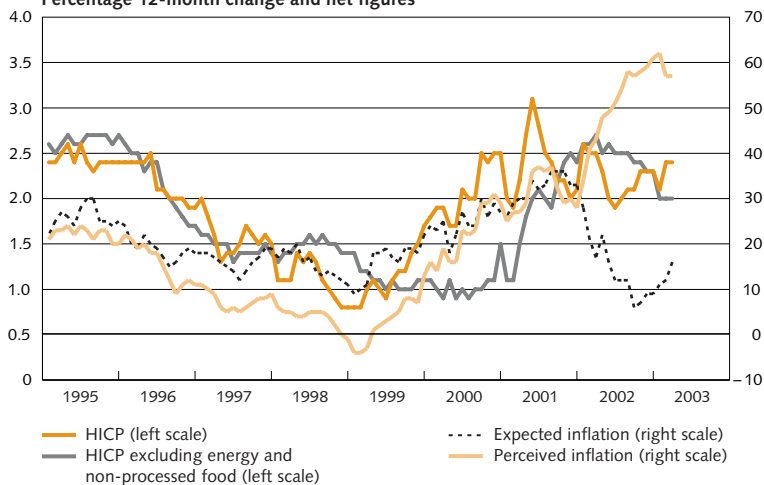


Note. The percentage responding "Prices haven't generally been rounded" and "Don't know" are not shown in the figure. The questions were asked during October and November 2002.

Source: Standard Eurobarometer 58 – Figure 4.4, page 68. Survey no. 58.1.\*

\*The survey can be found at [http://europa.eu.int/comm/public\\_opinion/](http://europa.eu.int/comm/public_opinion/)

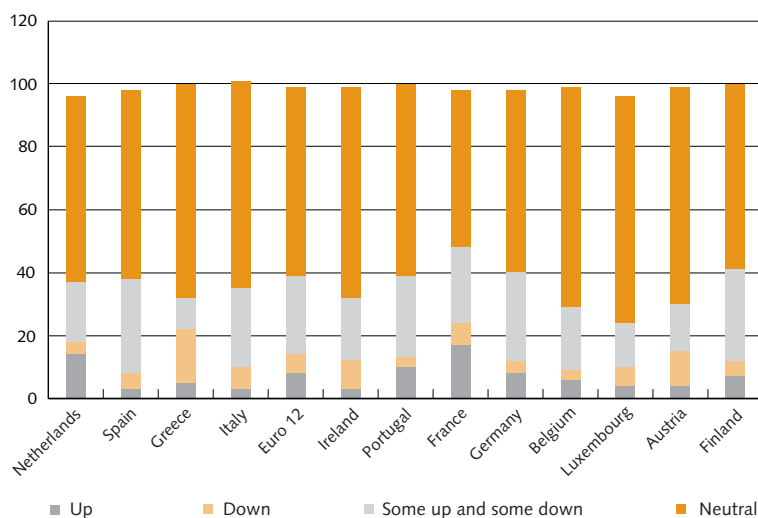
**Figure 2. Actual, expected and perceived inflation in the euro area**  
Percentage 12-month change and net figures



Note. Expected and perceived inflation are based on the European Commission's consumer survey where the following questions were asked: "By comparison with what is happening now, do you think that in the next 12 months: there will be a more rapid increase in prices, prices will increase at the same rate, prices will increase at a slower rate, prices will stay about the same, prices will fall slightly, don't know?"; "Compared with what it was 12 months ago, do you think the prices: have risen a lot, have risen moderately, have risen slightly, have hardly changed, fallen slightly, don't know?"

Sources: Eurostat and the European Commission.

Figure 3. Companies' price conversion to euro, February 2002



Note. The data is based on a survey of 4,406 company managers.

The question was: "How did you proceed for the conversion of your prices?"

Source: European Commission, Flash Eurobarometer reports – SMEs and the euro.

Given that costs for preparing and implementing price adjustments can be substantial, prices are adjusted infrequently.

Given that menu costs (outlays for preparing and implementing price adjustments) can be substantial, prices are adjusted infrequently. Large menu costs could motivate companies adjusting their prices in connection with the introduction of the new banknotes and coins, as the costs for relabelling prices – writing new menus – would be unavoidable in this situation.

Consumers most often know what a product should cost and base their purchasing decisions on how the actual price relates to this cost.

Experimental and psychological research in recent years has put forward a number of arguments that could explain why changing the means of payment could have effects on inflation. One argument is that consumers most often know what a product should cost and base their purchasing decisions on how the actual price relates to this cost (reference price). Prices set in euro will then make such comparisons difficult, at least to begin with. Meanwhile, an inflation impulse could arise, as a result of consumers making incorrect assessments and perceiving euro prices as more attractive. In addition, it is common to price products according to psychological levels; 9.99 instead of 10.00 kronor, as this is assessed to have a more stimulating effect on demand. A changeover to the euro as the physical means of payment entails an adjustment of prices to new psychological numbers.

There are thus theoretical arguments in favour of companies taking the opportunity to raise their prices in a cash changeover. In connection with this, it is important to note that a one-off shift in price levels as a result of a cash changeover will only lead to higher inflation during a lim-



ited period. More lasting effects could arise if inflation expectations are affected or if individuals' and companies' fundamental pricing and wage-setting behaviour changes. However, there is no indication that this occurred when the euro was introduced.

It is important to note that a one-off shift in price levels as a result of a cash changeover will only lead to higher inflation during a limited period.

### Price trends in the euro area

It is difficult to find grounds in the overall consumer price index for the impression that prices have generally risen since the euro was introduced as a means of payment. Figure 2 shows the percentage 12-month change in HICP for the euro area. The month-on-month change can be found in Figure 4. Inflation rose moderately the first three months of 2002, but not to the extent that the general public perceived. However, there were large price increases in some HICP components, such as hotels, restaurants and cafés and for food and non-alcoholic beverages, i.e. products and services purchased relatively often (see Figure 5). It is not entirely clear what conclusions can be drawn from this. Food and non-alcoholic beverages do show greater price increases than normal in all euro countries. However, this also applied to countries that have not adopted the euro, which could indicate that the introduction of euro banknotes and coins is not the main reason for the price increases. This conclusion is supported by the fact that we know that the weather conditions reduced harvests of certain food products. It can also be noted that hotel, restaurant and café prices show greater increases than normal in the Netherlands and Finland and to

It is difficult to find grounds in the overall consumer price index for the impression that prices have generally risen since the euro was introduced as a means of payment.

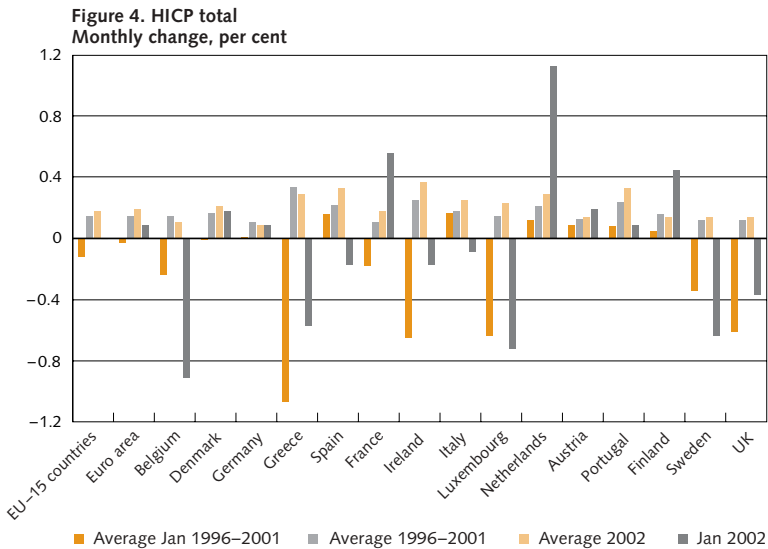
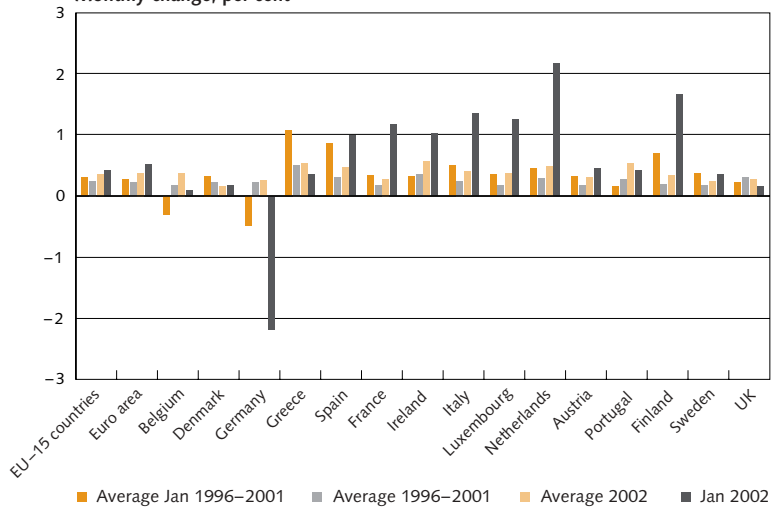


Figure 5. HICP components; hotels, restaurants and cafés  
Monthly change, per cent



Source: Eurostat.

some extent in Italy and France, but lower increases than normal in Germany.

## Surveys made after the introduction of banknotes and coins

The studies made after 1 January 2002 can be divided into two categories: analysis of existing data and special surveys.

The studies made after 1 January 2002 can be divided into two categories. The first has analysed already existing data such as HICP and its components, while the second is based on surveys made with the explicit purpose of analysing price effects of the new banknotes and coins. Eurostat has made analyses of the first category to try to distinguish the effects linked to the introduction of the euro. Three approaches have been used:

- Statistical survey of HICP components whose development cannot be explained by earlier patterns.
- Comparison of price trends in the euro area with price trends in the other European countries.
- Identification of the HICP components showing the largest changes since 1995.

During the first half of 2002, prices in the euro area rose by 1.4 per cent compared with the same period in 2001. Table 1 shows how much of this increase is due to “unusual” price changes in various product groups, i.e. price increases that cannot be explained by price changes in previous

years. The conclusion drawn is that prices have increased by 0–0.2 percentage points as a result of the cash changeover. If price changes in Sweden, Denmark and the UK are taken into account, the contribution is reduced to 0–0.14 percentage points. Eurostat's third approach, which entails distinguishing the HICP components that have shown the largest changes since 1995, confirms the general public's impression that price increases on certain product groups have been greater than normal. These product groups are primarily restaurants and cafés, as well as vegetables and tobacco. However, the survey should be interpreted with caution, as the only distinction made is an "unexpected" effect, which does not need to be connected with the introduction of euro banknotes and coins. A different approach is thus necessary to take the study further.

**TABLE 1. BREAKDOWN OF INFLATION IN THE EURO AREA; CONTRIBUTION TO UNEXPECTED PRICE CHANGES PER PRODUCT GROUP**

Percentage points			
Product group	From December 2001 to January 2002	From Q4 2001 to Q1 2002	From 2 <sup>nd</sup> half year 2001 to 1 <sup>st</sup> half year 2002
Restaurants, cafés, etc.	0.07	0.05	0.10
Health		0.03	0.04
Rents	0.02	0.02	0.03
Garden, plants, etc.	0.01	0.01	0.01
Meat	-0.01		
Hairdressers	0.00	0.01	0.01
Bread and cereals	0.00	0.01	
Electrical goods, etc.			-0.02
Others	0.07	0.03	0.03
Total	0.16	0.16	0.20

Source: Eurostat.

The central bank of the Netherlands has analysed the price effects of the euro in a number of studies. The method used is an analysis of data from questionnaires where companies themselves have responded to questions on pricing in connection with the cash changeover. In these studies the price increase is divided into two parts. The first attributes the price increase to motivated price increases as a result of increased costs arising in connection with the introduction of the new banknotes and coins. The second attributes the increase to unmotivated rounding-off effects. Two surveys have been carried out, one in January and one in June 2002. The results show that prices in the Netherlands have increased by 0.2–0.4 percentage points in January and by around 0.6 percentage points in June as a result of the changeover to the new banknotes and coins. Two thirds of the increase is attributed to rounding-off effects, while one third is due to increased costs. Some possible explanations for prices rising slightly more in June are that the parallel price-labelling in national currencies and euros

The central bank of the Netherlands has analysed data from questionnaires where companies themselves have responded to questions on pricing.

The Belgian central bank has analysed the use of decimals in pricing before and after the changeover.

came to an end in February, that the introduction of psychological prices was delayed and that certain changes were made in the survey sample.

The Belgian central bank has also studied whether the introduction of euro banknotes and coins affected prices. The bank has analysed the use of decimals in pricing before and after the changeover. Prior to the changeover, prices in Belgium were expressed to approximately 70 per cent in whole francs, while the use of one or two decimals now almost entirely dominates the price picture. In addition, there is an in-depth analysis of the breakdown of the decimal parts for prices in Belgium. The study shows that prices ending in 00, 50, 95 and 99 are the most common and that they have increased in number during 2002. Three conclusions can be drawn from this study. Firstly, the price adjustment process began in 2001. Secondly, companies had the objective of achieving a neutral price transfer, which they succeeded in achieving for the majority of products and services. Thirdly, the changeover resulted in relatively large price increases in certain product categories. However, the total effect is estimated to be less than 0.2 percentage points.

## Conclusions

Studies from a number of central banks as well as price statistics indicate relatively small price increases on aggregated levels as a result of the introduction of new banknotes and coins in the member states in 2002.

It is conceivable that certain price increases will arise in connection with a changeover from Swedish kronor to euros. This is partly due to increased costs for preparations and the implementation of price changes caused by the changeover to the euro, and partly due to companies wanting to round off euro prices to new psychological numbers. However, studies from a number of central banks as well as price statistics indicate relatively small price increases on aggregated levels as a result of the introduction of new banknotes and coins in the member states in 2002.

Nevertheless, the general public appears to have perceived the price increases in the euro area to be greater than indicated by the statistics. One explanation for this could be that prices have been increased on products that are purchased on a daily basis.

There are several reasons why the price effects that could conceivably be caused by the introduction of a new instrument of payment need not cause any major problem. The most important reason is that these effects, if they do occur, would only give rise to one-off effects on price levels in certain sectors. The inflation rate would therefore be higher, but only during a limited period. As long as the effects do not spread to other sectors or affect inflation expectations, this is only a temporary problem. When it comes to a possible introduction of the euro in Sweden, the discussions in the other countries have led to a high level of awareness among consumers and companies. This has in turn led to the Swedish

retail trade and restaurant industry promising to refrain from implementing unmotivated price increases in the event that euro banknotes and coins being introduced in Sweden.

# ■ Monetary policy in the Eurosystem

CLAES BERG

If Sweden decides to introduce the euro, the Riksbank's monetary policy for Sweden will be replaced by the European Central Bank's monetary policy strategy for the euro area. The following discussion compares the Riksbank's inflation target strategy of the past ten years with the ECB's monetary policy. Price stability is the overall monetary policy target for both central banks, and the similarities are therefore considerable despite the differences in target definition, forecasting, decision-making, communication and accountability.

## Targets

**The Riksbank's inflation target entails keeping annual inflation measured by the CPI at 2 per cent, with a tolerance for deviations up to  $\pm 1$  percentage point.**

Both the Riksbank and the ECB have been charged with the task of maintaining price stability and, to the extent it does not conflict with the price stability target, promoting a balanced development of economic activities. Moreover, each bank has been delegated the task of operationalising their respective price stability targets. The Riksbank's inflation target entails keeping annual inflation measured by the Consumer Price Index (CPI) at 2 per cent, with a tolerance for deviations up to  $\pm 1$  percentage point. As the effects of monetary policy are exerted with a time lag, the Riksbank aims in practice to ensure that future expected inflation is in line with 2 per cent. The underlying assumption is that policy affects inflation with a time lag of one to two years. However, there is sometimes reason to refrain from reaching the target as defined above since inflation can be affected by transitory factors, such as rapidly rising or falling energy prices or changes in indirect taxes and mortgage interest expenditure. For this reason, the Riksbank also uses measures of inflation that exclude these kinds of transitory effects. One such example is the price index UND1X. In addition, there may be reason in the wake of a shock to bring inflation back to the target in the longer term in order to avoid overly negative implications for production and employment.

The ECB defines price stability as a year-on-year increase in consumer prices of below 2 per cent. This target relates to inflation measured by the Harmonised Index of Consumer Prices (HICP) and is to be achieved over the medium term, which means that the ECB also disregards transitory

effects on inflation. Thus, the ECB's formulation of its target is similar to that of the Riksbank. There are differences, however, one of which being that the ECB's target is defined in terms of HICP.<sup>1</sup> The consumption basket in HICP excludes mainly mortgage interest expenditure for owner-occupied housing, but also the major part of other owner-occupied housing costs. Nevertheless, the differences between HICP and the measures of inflation used by the Riksbank are generally not especially large (see Table 1).

The ECB defines price stability as a year-on-year increase in consumer prices of below 2 per cent.

**TABLE 1. MEASURES OF SWEDISH INFLATION**

Percentage 12-month change

	CPI	UND1X	HICP
Outcome			
1993–2001	1.8	2.1	2.1
1995–2001	1.3	1.8	1.6
2000	1.3	1.4	1.3
2001	2.6	2.8	2.7
2002	2.4	2.5	2.0
Forecast			
2003	2.5	2.4	2.6
2004	1.5	1.2	1.4
March 2005 (12-month figures)	2.0	1.8	1.9

Note. The forecasts are taken from the March Inflation Report in 2003.

Sources: Statistics Sweden and the Riksbank.

Another difference is the target level itself. While the Riksbank has a symmetrical inflation target with a midpoint of 2 per cent, the ECB's target is to keep inflation below 2 per cent, with no lower limit specified originally. However, in the ECB Governing Council's evaluation of the strategy in May 2003, it was stated that the target is to keep inflation close to 2 per cent in the medium term. The difference in target level is therefore marginal and is not judged to have any real significance.

The most important difference in the definitions of the Riksbank's and the ECB's targets is that the ECB's target is defined for the euro area as a whole. This means that the inflation rates of individual Member States can deviate from the euro area average and can be both higher and lower than 2 per cent without constituting neglect of the Eurosystem target (see Table 2).

The most important difference in the definitions of the Riksbank's and the ECB's targets is that the ECB's target is defined for the euro area as a whole.

<sup>1</sup> HICP is a narrower measure than CPI due to the fact that areas that are not harmonised are presently excluded.

**TABLE 2. HICP IN THE EURO AREA AND SWEDEN**

Percentage 12-month change

	1999	2000	2001	2002
Austria	0.5	2.0	2.3	1.7
Belgium	1.1	2.7	2.4	1.6
Germany	0.6	1.5	2.1	1.3
Portugal	2.2	2.8	4.4	3.7
Spain	2.2	3.5	3.7	2.7
Finland	1.3	2.9	2.7	2.0
France	0.6	1.8	1.8	1.9
Greece	2.1	2.9	3.7	3.9
Ireland	2.5	5.3	4.0	4.7
Italy	1.7	2.6	2.3	2.6
Luxembourg	1.0	3.7	2.4	1.8
Netherlands	2.0	2.3	5.1	3.9
Euro area	1.1	2.1	2.4	2.2
Sweden	0.6	1.3	2.7	2.0

Sources: Eurostat and Statistics Sweden.

## Implementation of monetary policy

### STRATEGY

**The ECB's implementation of monetary policy is based on inflation prospects in the euro area as a whole.**

As mentioned above, the ECB's implementation of monetary policy is based on inflation prospects in the euro area as a whole. The cyclical development and inflationary trend in an individual Member State are of significance mainly through their impact on overall inflation in the area. This means that developments in large Member States play a more important role than developments in small ones.

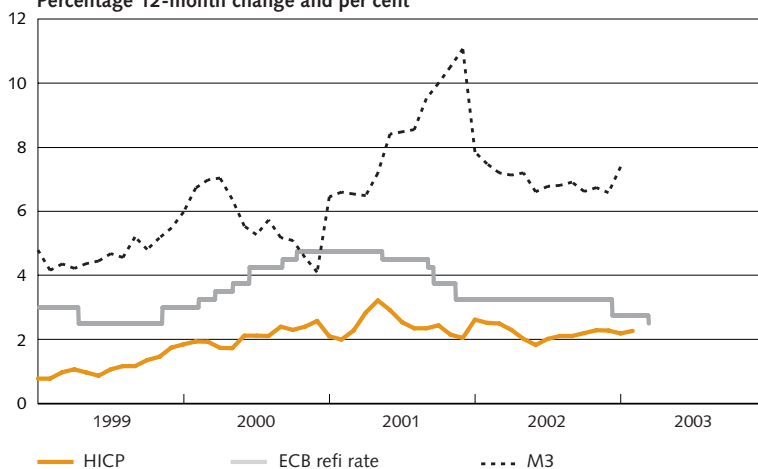
**The ECB attaches special importance to money supply and credit variables in its shaping of monetary policy.**

The ECB attaches special importance to money supply and credit variables in its shaping of monetary policy. The bank has defined a reference value for annual growth in the money supply measured by M3, which currently stands at 4.5 per cent. However, the reference value does not entail a mechanical adaptation of monetary policy according to developments in M3. The interest rate adjustments that have been implemented by the ECB have generally not been motivated on the basis of M3 developments. This has been evident on several occasions in recent years when the refi rate has been lowered in spite of the fact that the rate of M3 growth clearly exceeded the reference value (see Figure 1). The evaluation of the ECB's strategy in May also resulted in money supply measures being given a role mainly as indicators of the inflationary trend in the medium and long term. In this regard, the ECB's formulation of monetary policy has thereby approached that applied in Sweden.

As regards the effects of participation in the euro area on the Swedish economy, it is reasonable to believe that the ECB's price stability target will constitute a credible long-term benchmark for inflation expect-



**Figure 1. Inflation, the refi rate and money supply growth in the euro area**  
**Percentage 12-month change and per cent**



Sources: The ECB and Eurostat.

tations. In the shorter term, however, there is a risk that price and wage developments in different countries could deviate from the average level in the euro area. This gives cause to discuss the role of domestic stabilisation policy in the event of an introduction of the euro in Sweden (see section on pp. 51–58).

#### DECISION-MAKING

In both the Riksbank and the ECB, monetary policy decisions are taken by a committee. The Executive Board of the Riksbank consists of six members, including one governor and five deputy governors. The ECB Governing Council comprises the governors of the NCBs (currently twelve), and the six members of the ECB Executive Board, giving a total of eighteen people.

In Sweden, the Executive Board of the Riksbank generally takes interest rate decisions eight times a year on the basis of its assessment of future inflation. The Executive Board adopts the forecast of inflation on which the interest rate decisions are based. In the absence of unanimity between the Board members, decisions are taken by majority resolution. In the event of equal votes, the Executive Board chairman (the Riksbank Governor) has the casting vote. Members who do not support the assessment of the majority have the right to enter a reservation against both the interest rate decision and the inflation forecast.

In the euro area, the ECB Governing Council takes monetary policy decisions twelve times a year on the basis of a broad assessment of both inflation prospects and developments in various monetary and credit

aggregates. The Executive Board of the ECB implements the decisions taken by the Governing Council. The practical implementation of monetary policy transactions is carried out by the NCB of each Member State.

**The decision-making process of the ECB Governing Council differs from that of the Riksbank in a number of respects.**

The decision-making process of the ECB Governing Council differs from that of the Riksbank in a number of respects. Firstly, the ECB Governing Council does not adopt an inflation forecast in the same way as the Riksbank's Executive Board. Economic assessments and projections are used as bases for the decisions, but the ECB Governing Council does not present a forecast or projection of its own as a basis for the decisions. On the other hand, the ECB Governing Council can of course take a position on forecasts, and its members can put forward their own assessments as a basis for the discussion. As a rule, the ECB Governing Council does not vote on monetary policy, and individual members can not enter a reservation against the decisions taken.

**Firstly, the ECB Governing Council does not adopt an inflation forecast in the same way as the Riksbank's Executive Board.**

**Secondly, the data on which decisions are based are produced by employees of both the ECB and the NCBs.**

Secondly, the data on which decisions are based are produced by employees of both the ECB and the NCBs. The employees of the NCBs participate in two Broad Macro Projection Exercises (BMPE) per year. Their role in these is to develop projections for inflation, growth and other important macro variables together with the ECB staff. Although the employees of the NCBs possess particular competence regarding assessments of developments in their own country, the focus lies on an analysis of the entire euro area.<sup>2</sup>

## OPERATIONAL FRAMEWORK

**The most important means of control for both the Riksbank and the ECB is the repo rate.**

The most important means of control for both the Riksbank and the ECB is the repo rate, which determines the overnight lending rate (the shortest money market rate). The overnight rate is the opportunity cost for the banks' financing and thus affects interest rates for households and firms as well. One difference between the Riksbank's current operational framework and that of the ECB is that the ECB requires credit institutions to hold funds in accounts of the NCBs (minimum reserves). The primary function of the minimum reserves is to stabilise short-term rates, as it is only necessary for the credit institutions to meet the minimum reserve requirements on average each month. This enables temporary deficits during the month to be offset by surpluses on other occasions and daily fluctuations in liquidity to be limited. The Riksbank has instead chosen to stabilise short-term rates by performing market operations that ensure that the banking system receives the liquidity it requires every day at the repo

<sup>2</sup> In addition to BMPE, a number of more short-term inflation projections (Narrow Inflation Projection Exercise, NIPE) are performed each year. These are done to a large extent by employees of the NCBs. Furthermore, the ECB staff produces its own projections twice a year.

rate  $\pm 10$  basis points. Consequently, the Swedish overnight rate has been very stable in recent years, while the shortest euro area rate has fluctuated more. This can be attributed in part to the differences in the operational frameworks. At the same time, it should be easier to stabilise the overnight rate in a market with few participants in a single country than in a market with a large number of participants in many different countries.

#### COMMUNICATION AND ACCOUNTABILITY

There are good reasons for why the primary objective of monetary policy should be price stability and for delegating responsibility for this objective to an independent central bank that is evaluated regularly and held accountable through an open, transparent process. By explaining its interest rate decisions in an open, transparent way, a central bank helps to stabilise expectations of inflation and economic developments. This also facilitates economic decisions on the part of households and firms.

The Riksbank explains its monetary policy in a forward-looking perspective by publishing forecasts of inflation and growth in economic activity in Inflation Reports. Alternative development paths are also discussed. This makes it easier for the general public to form an idea of how monetary policy will be conducted in the future and how great the uncertainty is regarding future policy. The forecasts of inflation that are presented in the Inflation Reports represent the majority opinion of the Executive Board. The assessments are explained during a press conference at which the Riksbank also answers questions. When interest rate decisions are taken, a press release is also published, which explains monetary policy based on inflation prospects (the majority opinion) and describes certain tactical considerations. The minutes of the meetings at which decisions are taken are published with a time lag of approximately two weeks and account for the considerations of individual members and any reservations they have entered against the majority opinion. In addition, the Riksbank Governor gives an account of monetary policy twice a year before the Parliamentary Standing Committee on Finance.

The ECB publishes a monetary policy bulletin every month. In the beginning, the ECB was criticised for not making its inflation forecasts public. The Monthly Bulletin has been developed since 1999, however, beginning with an editorial that explains the monetary policy decisions taken since the previous bulletin and providing an overview of inflation prospects and money supply growth. For example, it was clear in the bulletin in December 2002 that inflation prospects for 2003 and 2004 were a decisive factor for the rate cut that was implemented at the time. Furthermore, the bulletin now contains forecast intervals twice a year for both

**The Riksbank explains its monetary policy in a forward-looking perspective by publishing forecasts of inflation and economic growth in Inflation Reports.**

**The ECB publishes a monetary policy bulletin every month which explains the monetary policy decisions taken and provide an overview of inflation prospects and money supply growth.**

GDP growth and inflation.<sup>3</sup> The press release published by the ECB Governing Council after the first meeting of each month is also given great significance in the communication of monetary policy decisions. On this occasion, a press conference is organised at which the chairman of the Governing Council presents the Council's deliberations and answers questions together with the vice-chairman. Transcripts of the press conferences are published on the ECB's web site on the same day. In addition, the president of the ECB appears before the European Parliament's Committee on Economic and Monetary Affairs once every quarter. Transcripts of these hearings are published on the ECB's web site. The ECB also presents its Annual Report to the European Parliament.

The minutes of the monetary policy meetings are not published.

The minutes of the monetary policy meetings are not published, however. The reason given for this is the risk that members of the ECB Governing Council could be put under pressure if their positions were made public. Thus, the deliberations or reservations of individual members do not become known.

## Conclusion

In the event of membership in the Eurosystem, the most significant change for Sweden as regards the implementation of monetary policy would be the ECB's formulation of monetary policy based on inflation prospects for the euro area as a whole.

In the event of membership in the Eurosystem, the most significant change for Sweden as regards the implementation of monetary policy would be the ECB's formulation of monetary policy based on inflation prospects for the euro area as a whole. Although this allows inflation in a small Member State to deviate periodically from the euro area average, there is good reason to assume that the ECB's target would serve as an anchor for long-term expectations of inflation in Sweden as well. As regards the publication of forward-looking inflation forecasts, a number of steps have been taken by the ECB and this trend is likely to continue. As far as Sweden is concerned, the change in target variable and target level in the event of membership in the Eurosystem is judged to be small.

Although interest rate decisions would no longer be taken by the Executive Board of the Riksbank following Swedish membership in the Eurosystem, the Riksbank Governor would become a member of the ECB Governing Council and would thereby be able to exert some influence on the decisions. It is also worth noting that employees of the Riksbank would be involved in the production of background data for the decisions. It is important that this is given particular attention as regards the Riksbank's future role if both Sweden and a number of new EU Member

<sup>3</sup> However, these forecasts comprise assessments of the future by the Eurosystem's experts, i.e. a collaboration between experts from the ECB and the NCBs, and are not the assessment of the ECB Governing Council itself. A moratorium of one month before and after the broad projection exercises applies for all forecast published by for the NCBs.

States join the Eurosystem. In accordance with the decision of the heads of state and government in the EU to reform the voting modalities in the ECB Governing Council, the Riksbank Governor, in the event of Swedish membership in a fully enlarged monetary union, would have the right to vote 57 per cent of the time and the right of attendance and expression at all meetings.<sup>4</sup> By contributing with good analysis and solid arguments, it is always possible to exercise influence over the assessments that form the basis of the interest rate decisions. This also applies to representatives of a small country.

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<sup>4</sup> The decision must be ratified by all Member States before entering into force and entails a total of no more than 21 votes in the ECB Governing Council after the EU and EMU have been enlarged. Each member of the Executive Board will have a permanent vote, thus giving the Executive Board six votes. A system of rotation will be implemented for the NCB governors following a division of the Member States into three groups. The first group will comprise the central bank governors of the five Member States that are largest in terms of GDP and financial sector. This group will share four votes and therefore have the right to vote 80 per cent of the time. The second group will consist of half of the NCB governors, rounded upwards (14 if there is a total of 27 in a fully enlarged monetary union). This group will share eight votes, which implies the right to vote 57 per cent of the time. The third group will comprise the remaining central bank governors and share three votes, giving each governor the right to vote 38 per cent of the time.

# ■ The role of the Riksbank in the event of entry into the monetary union

IRMA ROSENBERG AND CHRISTINA NORDH BERNTSSON

Swedish participation in the monetary union will entail a transfer of responsibility for monetary policy to European level and making the Riksbank a part of the Eurosystem. What role will the Riksbank have in this system and how will its role change in Sweden?

## Direct changes in the Riksbank

Responsibility for monetary policy and the ability to determine the level of the key interest rate will be transferred from domestic to European level.

If Sweden decides to participate in the monetary union, responsibility for monetary policy and the ability to determine the level of the key interest rate will be transferred from domestic to European level. The decisive factor in the setting of the key interest rate will be developments in inflation in the euro area as a whole, and not Swedish inflation as is the case today. Decisions on the level of the key interest rate are taken by the ECB Governing Council, which comprises the six members of the Executive Board, who manage the ECB's day-to-day business, and the NCB governors of the euro area countries.

The Riksbank Governor will then become a member of the ECB Governing Council. As a rule, the Governing Council's decisions are reached through consensus, although technically a simple majority is sufficient. Initially, the Riksbank Governor will have the right to vote at all meetings, but these voting rights will be rotated between the NCB governors once the euro area has been enlarged to incorporate more than fifteen Member States. In a fully enlarged monetary union, the Riksbank Governor will have the right to vote 57 per cent of the time, but will have the rights of attendance and expression at all meetings.<sup>1</sup>

As regards the Riksbank's second main objective, to promote a safe and efficient payment system, entry into the monetary union will not result in any marked changes in the delineation of responsibilities. One

<sup>1</sup> The Riksbank Governor will not be permitted to seek or receive instructions from any institution in this work. As the Riksbank Governor will be a member of the ECB Governing Council in a personal capacity, this applies also to instructions from the Executive Board of the Riksbank. However, as regards the aspects of the Riksbank's operations that are not covered by the ESCB Statute, the Riksbank's Executive Board will continue to have collective responsibility.

change, however, will be the requirement for the Riksbank to inform the ECB Governing Council when providing emergency liquidity assistance.

Under existing procedures in the Eurosystem, the Riksbank will continue to conduct all the operational activities it carries out today, although these will be adapted to the ECB's regulatory framework. Both monetary and exchange rate policy operations will be decentralised, so the Riksbank will continue to conduct such operations. Moreover, the Riksbank will manage both its own assets and the Riksbank's share of the Eurosystem's commonly held foreign reserve assets. The Riksbank will also be responsible for ensuring the supply of cash in Sweden.

## The Riksbank's role in the Eurosystem

If Sweden joins the monetary union, the Riksbank will become part of a bigger entity, the Eurosystem. It will then be important to assess how the Riksbank can contribute to ensuring that this entity functions as efficiently as possible. As a small central bank, the Riksbank will have to prioritise if it is to make a constructive contribution and thereby increase its chances of winning support in the areas, and for the work procedures, it believes to have greatest significance. The Riksbank's focus on high-quality analysis, transparency and cost-efficiency, which has been a guiding principle for its operations over the past decade, will guide the Riksbank's priorities in the Eurosystem co-operation as well.

However, Swedish participation in the monetary union will change the focus of monetary policy analysis and the way the analysis is conducted. The Riksbank will be participating fully in a comprehensive co-operation in the Eurosystem. In addition to the ECB Governing Council's monetary policy meetings once a month, the NCBs are involved in the work of various committees led by the ECB. These committees hold discussions on a number of issues of relevance for monetary policy decisions.

The NCBs are required to contribute with statistics and various kinds of economic assessments about their domestic economy as a basis for forecasts and model simulations. In the event of Swedish participation in the monetary union, the Riksbank also intends to contribute to the ECB's monetary policy analysis by producing in-depth, high-quality analyses that will enable the ECB's analytical framework and decision-making basis to be developed further.

Given that comprehensive forecasting activities are carried out at the ECB, at the majority of NCBs and in various committees, it may prove appropriate to shift the focus of the Riksbank's analysis somewhat. In-depth analyses in areas that the Riksbank considers to be of particular importance may be given greater weight than is the case today.

As regards the objective of promoting a safe and efficient payment system, there will be no marked changes in the delineation of responsibilities.

High-quality analysis, transparency and cost-efficiency will guide the Riksbank's priorities in the Eurosystem co-operation as well.

In-depth analyses in areas that the Riksbank considers to be of particular importance may be given greater weight.

The Riksbank strives to achieve a high degree of transparency, both internally and externally. Transparency is and has been an important means for the Riksbank to create understanding and gain credibility for monetary policy and for further developing the bank's analysis. For this reason, the Riksbank will endeavour to ensure that the ECB is as transparent as possible, especially in areas where transparency is judged to increase understanding of the ECB's operations.

Another aspect of the monetary union is the organisational factor, which has a bearing on the issue of cost-efficiency. The start of the monetary union involved the creation of a very large system of central banks with a new central bank (the ECB) and all the NCBs, in a way that has no historical precedent. The ECB and the NCBs are jointly responsible for developing this system further so that it produces a well-balanced monetary policy that is implemented as cost-efficiently as possible. This objective is shared by the majority of central banks, but the concrete implications of it vary from country to country. Differences in history, experience and culture have resulted in different views of what a central bank should do and of what is best done in a centralised or a decentralised way. It is also more difficult to discuss cost-efficiency at European level than at national level, partly due to questions of legitimacy. The NCBs have an important role in enhancing legitimacy by representing the Eurosystem domestically and by providing information about its activities. A far-reaching centralisation could impair the NCBs' chances of performing this role in an effective way.

The Riksbank sees opportunities for promoting cost-efficiency in the Eurosystem, for example by supporting changes that entail better operational cost-efficiency. This could be achieved by centralising certain operational activities, striving for greater harmonisation, purchasing more services externally and exposing more activities to competition.

## The Riksbank's role in Sweden

**A new important task for the Riksbank will be to inform the Swedish public about the ECB's activities.**

A new important task for the Riksbank will be to inform the Swedish public about the ECB's activities. As representative of the Eurosystem in Sweden, the Riksbank will work proactively to increase knowledge of the analytical framework of the ECB's monetary policy, the ECB's structure and decisions of broader interest. As a member of the ECB Governing Council, the Riksbank Governor will have a pivotal task in accounting for and explaining the ECB's monetary policy analysis and decisions, within the scope of the communication guidelines agreed upon by the ECB Governing Council.

One important issue is what role the Riksbank should have in the



economic policy analysis and debate in Sweden. Swedish entry into the monetary union will entail a transfer of monetary policy to the ECB Governing Council. This implies that the means for conducting stabilisation policy which the Riksbank has controlled – the key interest rate – will be determined on the basis of developments in the euro area as a whole. In the event of shocks to the Swedish economy specifically, there might be a need to be able to implement domestic measures to stabilise the economic situation in Sweden (see the section on pp. 51–58). It is natural that the Riksbank should contribute to a discussion of this need at different points in time and when it might be appropriate to take specific measures. The Riksbank's comprehensive co-operation within the Eurosystem, including the Riksbank Governor's participation in the ECB Governing Council's monetary policy discussions and decisions, will give the bank considerable knowledge of developments in the euro area. This knowledge, in combination with the bank's knowledge of the Swedish economy, will provide the Riksbank with a solid foundation for assessing stabilisation policy needs in Sweden.

In the economic policy debate on the methods for conducting stabilisation policy following Swedish entry into the monetary union, the Riksbank has emphasised the importance of creating a framework for this policy, with distinct objectives and means, transparency in analysis and decision-making processes, and thereby good opportunities for evaluation.<sup>2</sup> One element of such a framework could be a more systematic public debate about the stance of stabilisation policy. For example, the Parliamentary Standing Committee on Finance could invite representatives from other institutions, such as the National Institute of Economic Research and the Riksbank, to give their assessments of the economic situation for the near future as a complement to the government's assessments. A regular process designed to broadly illustrate the economic situation would enable potential problems to be identified and counteracted at an early stage.

Furthermore, the Riksbank will still be required to analyse financial stability in Sweden. The Riksbank will also be participating in a comprehensive international co-operation, in addition to that related to the ESCB, in which matters of economic policy will be analysed and discussed. This will enable the Riksbank to contribute to the Swedish economic policy debate also in a broader perspective than that of stabilisation policy alone.

**The Riksbank's considerable knowledge of developments in the euro area and the Swedish economy will provide it with a solid foundation for assessing stabilisation policy needs in Sweden.**

**One element of a stabilisation policy framework could be a more systematic public debate about the stance of stabilisation policy.**

<sup>2</sup> See the Riksbank statement regarding the report "Stabilisation policy in the monetary union" (SOU 2002:16), registration number 02-773-DIR.

## Conclusions

Swedish participation in the monetary union will change the focus of the Riksbank's monetary policy analysis and the way this analysis is conducted. An important role for the Riksbank will be to contribute to the ECB's analysis and provide information in Sweden about the ECB's activities. The Riksbank should also continue to contribute to the economic policy debate in Sweden, particularly with regard to stabilisation policy. Other aspects of the Riksbank's activities – especially the analysis of financial stability and the operational activities – will not be affected to any great extent by participation in the monetary union.

# ■ Economic balance and stabilisation policy

ROBERT BOJE AND SARA TÄGTSTRÖM

The single monetary policy of the euro area implies that Sweden, like other Member States, will relinquish its ability to adjust interest rates at national level to counteract macroeconomic shocks that specifically affect the domestic economy. The single monetary policy does not prevent economic activity and inflation in an individual euro country from deviating from the rest of the euro area for relatively long periods of time. One important question is the extent to which Sweden will be affected by country-specific shocks if we become members of the Eurosystem.

Another is how to manage such shocks in the event they occur. Will it be sufficient to rely on the smoothing effects automatically produced by the tax and contribution system or may we need more discretionary stabilisation policy measures? To what extent will it be possible to reduce the problems of country-specific shocks and thereby decrease the need for discretionary stabilisation policy measures through structural reforms, e.g. increased flexibility in nominal wage costs? On the basis of these questions, the following section discusses the opportunities provided by economic policy in the event of Swedish membership of the Eurosystem.

## Risk of country-specific shocks

### DEGREE OF COVARIANCE IN CYCLICAL DEVELOPMENTS

The Committee on Stabilisation Policy for Full Employment if Sweden joins the Monetary Union, STEMU (SOU 2002:16), made the assessment that it was not possible to say with certainty whether there would be fewer or more macroeconomic shocks and whether these would be smaller or larger if Sweden were to join the monetary union compared with remaining outside. On the other hand, STEMU believed it reasonable to conclude that the shocks and their impact would change character to a certain extent. An increase in trade and continued economic integration is likely to increase the covariance in the cyclical developments of the different euro area countries, at least in the long term. A higher degree of covariance will also enable the single monetary policy to stabilise the Swedish economy to a greater extent. However, it should be pointed out

**An increase in trade and continued economic integration is likely to increase the covariance in the cyclical developments of the different euro area countries.**

that any differences in the transmission mechanism<sup>1</sup> of various countries could lead to adjustments of the single interest rate level having different effects in the Member States of the euro area even in the event of common shocks.

WHAT SIGNIFICANCE WILL THE SINGLE INTEREST RATE LEVEL HAVE FOR REAL INTEREST RATES IN THE VARIOUS EURO COUNTRIES?

**A monetary policy based on an assessment of average inflation in a group of countries will be a blunter instrument than a monetary policy that is tailored to the economic conditions of an individual country.**

The single monetary policy implies that all euro area countries have the same level of nominal interest rates for their shortest money market rates. This means that countries with a high inflation rate will have low short-term real rates of interest (e.g. Republic of Ireland), while countries with a low inflation rate will have high short-term real rates of interest (e.g. Germany). As regards longer-term rates, dissimilarities exist due to differences in liquidity and credit risk. To the extent that differences in inflation rates reflect necessary adjustments of the real exchange rate, i.e. the relative price level between an individual Member State and the rest of the euro area, the difference in real interest rates is justified from the perspective of the real economy and therefore not a problem. If this is not the case, however, an excessive difference in real interest rates is likely to constitute a more serious problem. It is unavoidable that a monetary policy based on an assessment of average inflation in a group of countries will be a blunter instrument than a monetary policy that is tailored to the economic conditions of an individual country.

WHAT SIGNIFICANCE WILL THE LOSS OF THE FLOATING EXCHANGE RATE AGAINST THE EURO HAVE FROM THE PERSPECTIVE OF STABILISATION POLICY?

**It is in Sweden's interests to have a long-term development of prices and wage costs that is on a par with that abroad, irrespective of whether Sweden joins the monetary union.**

If price and wage cost growth in Sweden – given potential differences in productivity – were stronger than that abroad during a period, this would lead in a system of fixed exchange rates to a deterioration in Swedish competitiveness in relation to those countries against which the exchange rate is not permitted to fluctuate. This is what happened in the 1970s and 1980s and is also what forced Sweden into a number of devaluations of the krona with the aim of restoring competitiveness. Under the current regime of a fully floating exchange rate, relatively stronger growth in prices and wage costs in Sweden compared with abroad leads instead to

<sup>1</sup> The term transmission mechanism is a collective term for the channels through which an interest rate adjustment affects the economy.

an “automatic” depreciation (weakening) of the krona. The depreciation of the krona prevents a deterioration in Swedish competitiveness in the event of excessive rises in prices and wage costs. In the short term, this can be an advantage. At the same time, it may reduce the incentives to remedy the causes of the excessively high rate of increase in prices and wage costs. If the rate of increase in prices and wage costs is higher in Sweden than abroad for a long period of time, there is a risk that this will lead to a sustained weakening of the krona exchange rate. A national monetary policy aimed at maintaining price stability counteracts such tendencies.<sup>2</sup> It is in Sweden’s interests to have a long-term development of prices and wage costs that is on a par with that abroad, irrespective of whether the exchange rate is fixed or floating and regardless of whether Sweden joins the monetary union. Temporary deviations, which are not justified by differences in productivity, could however be parried in a system of floating exchange rates.

If the krona is replaced with the euro, it will not be possible to parry an excessive increase in prices and wage costs compared with other euro countries through a depreciation of the krona vis-à-vis the euro. Such a development would thereby impair Sweden’s competitiveness in relation to these countries and lead relatively quickly to higher unemployment. Particularly with regard to sectors exposed to competition, the threat of higher unemployment and lower profits should – in the absence of the devaluation option – have a disciplinary effect on wage formation. At the same time, it should be noted that the euro is allowed to fluctuate against all other currencies.

Consequently, a floating exchange rate can contribute in certain situations to maintaining Swedish competitiveness. However, it is a common conception that the Swedish krona fluctuates relatively sharply compared with other currencies and that Sweden for this reason is also more exposed during periods of turbulence. But does the value of the Swedish krona fluctuate more than other currencies?

In the Inflation Report in March 2001, the Riksbank studied how the value of the krona, in trade-weighted terms, had varied over the period 1994–2001. The results showed that the krona had been relatively stable since 1999 and that it had not fluctuated more than the currencies of other countries with inflation targets. The results also showed that the value of the krona had varied appreciably less than that of the euro. It should be emphasised in this context, however, that two countries whose exchange rates vary equally can nevertheless be affected to different

**If the krona is replaced with the euro, it will not be possible to parry an excessive increase in prices and wage costs compared with other euro countries through a depreciation of the domestic currency.**

**The value of the krona has varied appreciably less than that of the euro.**

<sup>2</sup> One effect of monetary policy is exerted through the exchange rate. When the Riksbank raises the repo rate, this usually leads to a strengthening of the exchange rate, which partly reduces demand pressure due to lower export demand and partly reduces “imported” inflation.

extents by currency fluctuations. One important factor is the degree of openness. Swedish exports amounted in 2002 to 43 per cent of GDP, while the proportion of euro area exports was considerably smaller. On the one hand, participation in the monetary union would eliminate foreign exchange uncertainty in trade between Sweden and the euro area. On the other hand, Sweden conducts a relatively large part of its trade with countries outside the euro area – around 60 per cent of exports – which means that Sweden could be affected more by fluctuations in the euro than many other euro countries. The overall effect on currency stability if Sweden were to join the euro area would depend on both of these factors. It should be remembered, however, that Swedish trade with the euro area will increase in line with an enlargement of the euro area.

## The smoothing function of automatic stabilisers

### WHAT SMOOTHING EFFECTS DO AUTOMATIC STABILISERS HAVE?

One common conception is that cyclical fluctuations ought to be met with the help of automatic stabilisers and that discretionary stabilisation policy measures should only be taken in exceptional cases. The reason for this is that measures may be taken too late, thus leading to a reinforcement of the cyclical fluctuations instead of an alleviation. In Sweden, relatively high taxes are levied on consumption and income, and transfers are largely based on the principle of loss of income, e.g. unemployment allowance. The tax and contribution system automatically contributes in this way to bolstering demand during economic declines while the opposite applies during booms.

**Sweden is one of the countries in which the effect of automatic stabilisers is greatest.**

What smoothing effect do automatic stabilisers have in Sweden? Using the OECD's Interlink model, the effect of automatic stabilisers on production was calculated for a number of OECD countries over the period 1991–2000.<sup>3</sup> The results showed that Sweden is one of the countries in which the effect of automatic stabilisers is greatest. The European Commission report entitled "Public Finances in EMU – 2001" presented the results of a simulation study in which the smoothing effects of automatic stabilisers on cyclical movements were studied for various kinds of shocks in a number of countries. For Sweden, the results showed that the smoothing effects of automatic stabilisers are greatest in the event of shocks to private consumption. In this case, the smoothing effect amounted to approximately 30 per cent, indicating that a shock to private consumption equivalent to 1 per cent of GDP only has a final impact of

<sup>3</sup> Van der Noord, P. (2001), "The size and role of automatic stabilisers in the 1990s and beyond", OECD Economic Department Working Paper, 230.

0.7 per cent of GDP. The results also suggest that the smoothing effect is around half as large for shocks to investment and export demand.

#### CAN AUTOMATIC STABILISERS BE DESTABILISING?

One disadvantage of automatic stabilisers is that they react automatically regardless of the kind of shock that hits the economy. For certain kinds of shocks, therefore, they may delay a necessary adjustment to a lasting change in economic conditions. The simulation study of the European Commission analysed the smoothing effect exerted by automatic stabilisers in the event of a permanent negative productivity shock. The results indicated that Sweden is one of the countries in which automatic stabilisers have their greatest smoothing effect on such a shock. This indicates that the necessary adjustment to certain lasting changes in economic conditions may take longer in Sweden than in other EU Member States. The results showed, however, that the smoothing effect is relatively small – around 17 per cent.

**The necessary adjustment to a lasting change in economic conditions may take longer in Sweden than in other EU Member States.**

#### CAN THERE BE REASON TO REDUCE THE SIZE OF AUTOMATIC STABILISERS?

Automatic stabilisers are not designed to stabilise the economy but are a result of the structure of the tax and contribution system. While automatic stabilisers have favourable effects from the perspective of stabilisation policy, the tax and contribution system can distort resource allocation. In order to increase labour market mobility, it may in reality be important to reduce the marginal effects of the tax and contribution system. However, this would lead to a decrease in the size of the automatic stabilisers. The advantage of increased labour market mobility would then have to be weighed up against the disadvantage of the weaker effect of the automatic stabilisers. In light of this, it may therefore be desirable not to increase the size of automatic stabilisers, but instead to attempt to achieve stabilisation through other measures, such as greater flexibility in nominal wage costs.

**Greater flexibility in nominal wage costs may be required.**

### Discretionary stabilisation policy measures

In the event of large country-specific shocks or shocks which hit Sweden harder than the rest of the euro area and which are not remedied by the single monetary policy or automatic stabilisers, there may be reason to resort to discretionary fiscal policy measures. This could enable the avoidance of a situation in which unemployment becomes unacceptably high

and the business cycle in Sweden deviates unduly from that of the euro area. Fiscal policy stimulus could also be justified during extreme “low interest rate periods” when the impact of monetary policy can sometimes be low.

#### WHAT IS IT THAT NEEDS TO BE STABILISED?

**According to STEMU, fiscal policy should aim to avoid an excessive output gap. The Riksbank concluded that there may be reason to examine whether it would be preferable to have a national inflation target.**

In the event of membership in the monetary union, one important question for the formulation of the national stabilisation policy framework is what target stabilisation policy should strive to achieve. According to STEMU, the ECB's inflation target will constitute a nominal anchor for Sweden as well, at least in the long term, and it seems natural in such a case that the aim of national stabilisation policy should be to avoid an excessive output gap (difference between actual and potential output). In its statement on the Committee's submission, the Riksbank said that there may be reason to examine whether it would be preferable to have a national inflation target for fiscal policy, partly in light of the difficulties involved in measuring the output gap. Such an inflation target would be defined to impose a limit on how much Swedish inflation would be allowed to deviate from the rate in the euro area. It would have to be applied in a flexible manner in order to take account of the need for necessary adjustments of the relative price level between Sweden and the euro area.

**The difference in inflation between Sweden and the rest of the euro area should be a pivotal indicator for decisions on national stabilisation policy.**

Different targets have different advantages and disadvantages, and it is reasonable that decisions on stabilisation policy should be based on an analysis of several different indicators.<sup>4</sup> Of most importance for the credibility and effectiveness of stabilisation policy is that the reasons for stabilisation policy decisions, and the assessments on which these are based, be accounted for in an explicit, transparent way. The difference in inflation between Sweden and the rest of the euro area should under all circumstances be a pivotal indicator for decisions on national stabilisation policy.

#### WHEN SHOULD STABILISATION POLICY MEASURES BE IMPLEMENTED?

The extent to which large shocks should be remedied using discretionary fiscal policy measures in an individual euro area country is dependent on the choice of stabilisation policy target and the kind of shock. Large domestic demand-side shocks should be counteracted with fiscal policy

<sup>4</sup> A number of conceivable indicators are shortage measures on the labour and product markets, and the change in the rate of increase of price and wage rises in absolute terms and in relation to abroad.



measures, irrespective of whether the objective is to stabilise domestic inflation or the output gap. Permanent shocks to foreign trade or to relative productivity, however, should not normally be met with any measures. This would only risk delaying a necessary adjustment to a lasting change in economic conditions. For temporary shocks to foreign trade or productivity, on the other hand, there may be reason under certain circumstances to employ stabilisation measure.<sup>5</sup>

**There may be reason to counteract large domestic demand-side shocks and temporary shocks to foreign trade and productivity with stabilisation policy measures.**

#### HOW SHOULD THE TARGET BE REACHED?

There is a broad spectrum of conceivable stabilisation policy instruments available to fiscal policy on both the income and expenditure side of the budget. A comprehensive discussion of appropriate fiscal policy instruments is beyond the scope of this article and so we will confine ourselves here to STEMU's conclusions regarding the characteristics stabilisation policy instruments should have: (i) The impact of the instruments should be as general as possible. By this is meant that the base for the change in taxes or expenditure should be wide enough to enable the measure to affect a large part of the economy. (ii) The instruments should be used temporarily and symmetrically over time. By this is meant that a tax rise during an economic boom, for example, should be followed by a corresponding cut during a decline. (iii) Stabilisation policy should be kept separate from distribution and allocation policy as far as possible.

Temporary and symmetrical changes in taxes and expenditure, which are aimed at a large part of the economy, reduce the risk of the measures producing long-term distribution and allocation effects. Measures that give rise to large distribution effects can be difficult to use symmetrically over an economic cycle; it is politically easier to lower taxes and increase expenditure during economic declines than to raise taxes and reduce expenditure during a boom.

#### THE DECISION-MAKING PROCESS FOR STABILISATION POLICY

Historical experience has shown that different kinds of political incentives and target conflicts run the risk of raising obstacles to effective stabilisation policy. The delay in the decision-making process, i.e. the time that passes between the identification of a problem until a measure is taken, could become lengthy as fiscal policy decisions often become the subject of protracted political negotiations. This can result in measures being tak-

**In some cases, stabilisation policy runs the risk of reinforcing cyclical fluctuations.**

<sup>5</sup> A summary of some relevant studies can be found in Boijte, R. & Shahnazarian, H. (2003), "National stabilisation policy in the event of Swedish Eurosystem membership", *Sveriges Riksbank Economic Review* 1.

en too late and having an impact at the “wrong” cyclical phase. Stabilisation policy may then risk becoming procyclical in some cases, i.e. instead of stabilising the economy it helps reinforce the cyclical fluctuations. Political difficulties involved in conducting sufficiently tight fiscal policy during an economic boom can also contribute to a rise in central government debt. This problem is illustrated by the generally excessive expansionary fiscal policy of the 1970s and 1980s. The proposals that have been put forward in the debate, such as appointing a consultative body of experts, delegating certain fiscal policy instruments to a politically independent authority, the need for clearer decision-making processes, greater transparency and improved evaluation should all be seen in the light of these problems.

### Concluding remarks

Participation in the monetary union implies that national monetary policy can no longer be used to stabilise the domestic economy if Sweden should fall out of step with the other Member States. Instead, national fiscal policy will play a more important role in stabilisation policy. The fiscal policy framework must be revised prior to Swedish participation in the monetary union. Crucial questions in the construction of this framework are what the target of stabilisation policy should be, what instruments should be used to reach this target and when stabilisation policy measures should be implemented. Another important question is how to minimise the problems inherent in the political decision-making process, which run the risk of measures being taken too late and not being used symmetrically. In addition to such a framework, there is also reason to consider how the need for stabilisation policy measures could be reduced through factors such as greater flexibility in nominal wage costs.

## ■ Further information

Further information from Sveriges Riksbank can be found in the following publications:

- The euro in the Swedish financial sector – progress reports (nine)
- The Riksbank's statement on the submission "Stabilisation policy in the monetary union (SOU 2002:16)"

Information about EMU can also be found on the Riksbank's web site, [www.riksbank.se](http://www.riksbank.se)

The publications can be downloaded from the bank's web site or ordered free of charge from Sveriges Riksbank.

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