Monetary Policy with a Flexible Exchange Rate

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Foreword

The decision on November 19, 1992 to allow the exchange rate of the Swedish krona to float has changed the conditions affecting monetary policy in Sweden. It has been nearly 60 years since the krona has had a flexible exchange rate for any considerable period; as a result, there is a great need for information and new ways of thinking. The pedagogical task of explaining of how an economy with a flexible exchange rate functions is a large one.

The purpose of this publication is to disseminate information on monetary policy with a flexible exchange rate and, at the same time, help to stimulate continuing and more detailed discussion pertaining to the conditions of economic policy in general. The report begins with an article dealing with the advantages and disadvantages of a flexible exchange rate. Thereafter, the manner in which monetary policy can be pursued with a flexible exchange rate is discussed in terms of objectives and indicators. The third article deals with Sweden's experience in 1931–1933, this country's most recent period with a floating exchange rate. The next two articles discuss the shaping of monetary policy in several countries that have had flexible exchange rates for many years. The countries in question are Canada, New Zealand and Switzerland which have similarities with Sweden, not least because they are relatively small, with economies that are dependent on foreign trade. The sixth article deals with the interplay between financial and monetary policy, with emphasis on the demands imposed by budget development. In the concluding article, an attempt is made to summarize the present conditions as they affect economic policy and the parties in the labor market.

In addition to the questions considered in this publication, a number of complex problems that arise as a consequence of the decision to float the krona require analysis and discussion. One aspect that deserves greater attention is the manner in which the labor market and wage formation procedures function in an economy with a flexible exchange rate. The articles presented are not, however, offered as the last word, but rather as initial contributions to the debate on monetary policy with a flexible exchange rate. It is the Riksbank's hope that they will be followed by many more. If this publication can contribute to stimulating continuing discussion on economic policy, it will have accomplished its purpose.

Stockholm, December 1992

Bengt Dennis

Pros and Cons of a Flexible Exchange Rate

HANS LINDBERG

There are obvious disadvantages associated with a flexible exchange rate due to the uncertainty it creates in the economy, notably in the sector dependent on foreign trade. If credibility in a long-term anti-inflation policy can be gained, there are, however, certain advantages.

Introduction

The basic concept of a market economy is that prices should be set freely, without Government intervention. Since an exchange rate is also a price, the choice of a flexible rate should be an obvious one. But an exchange rate is a relative price for a means of payment (»money«), and money is not an ordinary commodity. The supply side is characterized by a Government monopoly and if the price of money is changed, it is tantamount to inflation. The risk of inflation can be reduced in various ways by means of a fixed rate of exchange.

Even so, under certain circumstances it may be useful to adjust the exchange rate or even to let the currency float. In the simplest of theoretical worlds, an exchange rate that is allowed to float under controlled forms – a »managed float« is preferable but, upon more realistic analysis and confrontation with reality, the picture becomes more complex.

In Sweden's case, one cannot, in the true sense of the term, speak of a *choice* of a flexible exchange rate. The Riksbank was forced to abandon its defense of the fixed exchange rate. Nevertheless it may be worth while to discuss the criteria upon which a more unconstrained choice of exchange rate regime should be based. This article considers some of the factors that determine whether or not a fixed or flexible rate is to be preferred. The discussion is general in character and is designed primarily to identify the most significant aspects of this fundamentally extremely complex question. It is assumed that the most important task of monetary policy, irrespective of exchange rate regime, is to strive for long-term price stability.

The currency market

In a market that in theory functions ideally, exchange rates are determined by such »fundamental factors« as production, prices and interest rates. The exchange rates quoted at any given moment are based on the future-oriented evaluations of a large number of decision-makers, acting independently, who have access to the same information and who are assumed to

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interpret it in the same manner. In such a world, a small price change – occasioned, for example, by the fact that an investor sells an asset for reasons of liquidity – cannot cause any disturbances. Another (marginal) investor finds it attractive to purchase the asset and equilibrium is restored.

Because this ideal is probably not a satisfactory approximation of actual conditions, one may argue that a flexible exchange rate system itself generates new types of disturbances that are not present in a fixed-rate system. This occurs if the mobility of capital is not completely perfect, if speculative »bubbles« are common or if a more or less widespread pattern of herd behavior develops in the currency markets. A speculative bubble means that the players in the market do not make a correct (fundamental) evaluation of the worth of a currency. Ultimately, however, the bubble bursts and the exchange rate is adapted to its fundamental level. Herd behavior is characterized by the fact that players in the market ignore private information and instead passively follow movements of the »herd«, the rest of the market. Dornbusch and Frankel (1987) assert, for example, that the high volatility that has been observed in connection with flexible exchange rate regimes can be attributed to the interplay between currency dealers who do not evaluate the fundamentals of a currency and whose actions are instead guided by shorter-term considerations.

In itself, the existence of different currencies gives rise to transaction costs in connection with international transactions. The uncertainty and volatility that a flexible exchange rate regime can cause for relative prices increases these transaction costs and thereby make international trading and investing more difficult. This results in less efficient allocation of resources in the economy. Because of the risk of excessive fluctuations in exchange rates, there may be cause for a central bank – especially in a small, open economy – to counteract short-term fluctuations in rates by means of sterilized interventions. If the volatility constitutes a serious problem, a fixed exchange rate may be preferable.

Nominal sluggishness

If prices and wages are completely flexible, production and employment in an economy are determined independently of nominal quantities, including monetary policy and exchange rate policy. However, monetary policy, and with it the exchange rate system, will determine the rate of inflation in the economy. In a small economy with a fixed exchange rate the inflation rate must adopt to the rate in the countries to which the exchange rate is tied. A flexible exchange rate gives independence to monetary policy, but only in the sense that a country can choose a rate of inflation independently of the world around it. If, instead, movements in nominal prices and wages are sluggish – at least in a short-term perspective – the situation is different. Changes in prices and exchange rates then affect relative prices and real wages. Monetary policy has a real impact on the economy – on employment and production, for example – even if the impact is transitional. Monetary policy can then be used to prevent various types of external disturbances from destabilizing the economy.[1] The shaping of monetary policy and the choice of exchange rate

1. The other side of the coin is that monetary policy itself can contribute to instability. This aspect is described in greater detail below.

regime should be based on the type of disturbance that is dominant. The results described in theoretical literature are fairly complex and depend to a high degree on the precise nature of the disturbance.[2] However, the findings have certain basic elements in common. If the domestic disturbances are mainly real in nature, a floating exchange rate is preferable. If, for example, there is a change in productivity, the real exchange rate can be adapted quickly by means of a flexible rate. If the domestic disturbances are virtually all nominal in character, this is an argument for fixed exchange rates. To illustrate, if there is a change in the demand for money, money supply can be adapted automatically without causing an impact on employment, production and prices. In a corresponding manner, a fixed exchange rate stabilizes price levels if nominal wages rise. In such cases, production and employment will be low for a period but this adaptation is necessary if price stability is to be maintained. In the case of a small economy, one may also say that the more stable the situation is in the outside world, the stronger the argument for a fixed exchange rate.

Since there are always situations when fixed exchange rates are appropriate, as well as situations when a flexible rate is preferable, the optimal rate regime seems to be something in between: a so-called managed float, an exchange rate that is controlled continuously. An exchange rate band of the type that Sweden applied earlier also offers certain degrees of freedom and is therefore another conceivable compromise between fixed and flexible exchange rates.

Credibility problem

Up to this point, our discussion has been based on the assumption that the monetary policy program pursued is credible or »time-consistent«, that there is neither the possibility nor the incentive for a central bank to later deviate from its stated policy. For this reason, the greatest possible freedom of action should be sought; consequently, a totally fixed exchange rate should not be applied. The reality is, however, more complicated. The following examples of how freedom of action can create imbalances are described in detail in literature on the subject.[3]

A central bank declares that it intends to conduct a tight monetary policy in order to maintain a low rate of inflation. The parties in the labor market have confidence in the bank's promises and conclude wage agreements based on them. But the central bank is not satisfied with the level of employment that then develops, because it actually has a more ambitious objective for employment than it initially tried to demonstrate. When agreements on nominal wages have been concluded, the bank then has an incentive to break its promise and pursue a more expansive policy – devaluing or depreciating the national currency – which results in higher inflation and lower real wages. If the parties in the labor market have rational expectations, they will realize, from the start, that the central bank will break its promise and inflate the economy. The nominal wages fixed in agreements will therefore end up being higher. The consequence will be that the central bank will afterwards come to pursue an even

2. For an overview, see Genberg (1989).

3. For an overview of the literature, see M. Persson (1990) or Persson and Tabellini (1990).

more expansive policy, with the result that the inflationary expectations will be realized. The labor market parties perceive how expansive monetary policy will become, establish nominal wage scales accordingly, and in the end arrive at the real wages they anticipate. The rate of inflation thereby becomes higher, monetary policy more expansive, and the nominal wage level higher, with no improvement in the level of employment.

Central Bank independence

In theoretical literature, constitutional and institutional reforms have been advanced as potential ways of dealing with the conflict of objectives that underlies the credibility problem described above. Particular emphasis has been placed on the possibility of consistently appointing governors of central banks who assign greater weight to inflation targets than the Government does, and who are therefore more inclined to pursue a more restrictive monetary policy.[4] The central bank must also be sufficiently independent to successfully withstand pressures on a policy that conflicts with the often short-term wishes of special-interest groups. A central bank that carefully weighs how restrictive its monetary policy should be is preferable to a bank that adopts an extremely restrictive policy. In the case of the former, a certain weight is still given to employment objectives, which provides some opportunities for flexibility and stabilization policies. Thus a flexible exchange rate would be preferable since (it is assumed) the central bank will not abuse the freedom of action this system offers.

Rules

The proposal for an independent central bank may be said to focus on the bank's incentive to deviate from stated objectives. Another solution to the credibility problem is to limit the central bank's ability to act »after the fact«. This can be accomplished through various rules or commitments that control the direction of monetary policy. Policy rules and commitments can be more or less binding. In their least restrictive form, they may be unilateral declarations from the central bank. But they can also be incorporated in agreements, legislation or statutes and thereby become more binding restraints on the actions of the central bank.

A fixed exchange rate as an intermediate target of monetary policy is one example of a rule that controls the direction of monetary policy. A flexible exchange rate can also encompass rules or commitments in terms of intermediate targets – money supply, for example – or a rule can be formulated directly in terms of the ultimate target variable: the price level. In choosing between these alternatives, the type of policy rule and accordingly the exchange rate system that is appropriate from the point of view of credibility are important considerations.

Transparency and consistency

»Transparency« and consistency are two very important prerequisites for credibility.[5] Transparency means that deviations from monetary policy objectives can be detected easily. Moreover, the connection between instruments and targets (commitments) must be clear. The central bank

4. See Persson (1993), for example.

5. See Svensson (1990), for example.

must be able to control the targets that have been established for its policy. In other words, it should be possible to determine if a deviation is due to questionable monetary policy or to events beyond the bank's control. It should be noted that this is an idealized situation. In reality, the relationships between central bank instruments and both ultimate and intermediate targets are seldom precise.

With a fixed exchange rate, the instruments of monetary policy must be managed in such a way that they are consistent with the intermediate target, the fixed exchange rate. In the Swedish fixed-rate regime the link between marginal interest rates and the exchange rate was fairly simple. The price of the krona could be monitored continuously, as well as the manner in which the Riksbank dealt with overnight rate, i.e., the monetary instrument, relative to various disturbances in the currency market. The fixed-exchange-rate policy thereby fulfilled the requirement for transparency. With a flexible exchange rate, it can be more difficult to meet this requirement. The connection between instruments – the overnight rate, for example – and the commitments made in terms of money supply or price level is weaker. It can thus be difficult for players in the financial market to determine whether or not the monetary policy being followed is really consistent with established targets.[6]

On the whole, the criteria for visibility and consistency seem to support arguments for a fixed exchange rate. But visibility and consistency in no way suffice for a credible low-inflation policy. A unilateral announcement of a fixed exchange rate may in reality be perceived as a relatively weak commitment if the central bank, caught in a tight situation, has an incentive to abandon its fixed exchange rate policy. The same also applies to various forms of commitment within the framework of flexible exchange rates. Accordingly, policy rules and commitments must be viewed as binding if they are to enhance the credibility of a policy. The manner in which the rules are established consequently plays a decisive role. The direct or indirect costs that arise in the event of departures from stated rules are important factors, for example. The basic premise must be that, in practice, policy rules cannot be made inflexible. The authority that has approved a certain rule must also be able to revise it. As a consequence of this factor, combined with the difficulties of making established rules clear, the aspects – discussed earlier – pertaining to the position of the central bank once again become relevant. These aspects, among other factors, are what determine the cost of deviating from a rule.

Reputation, exchange rate cooperation and legislation

It should be noted that credibility problems can arise even without any real deviations between the objectives of the Government or the central bank and the results of actions in the private sector. All that is needed to create these problems is the failure of the Government and central bank to communicate their true preferences – due perhaps to a bad devaluation record in the past – and that the players in

6. There is also a basic question of consistency that has to be considered: the balancing of financial policy and monetary policy. In the case of both fixed and floating exchange rates, financial and monetary policies must be harmonized over the long term. See also articles by K. Andersson and L. Hörngren in this publication.

the financial market believe that the central bank and Government intend to inflate the economy, or at least adapt the exchange rate to the actual trend of wages. It is then natural for the Government and central bank to attempt to improve their reputations over time and build up their credibility by abstaining from inflating the economy and, in this manner, finally reducing inflationary expectations.

It is also possible for a country whose low-inflation policy is based on a fixed exchange rate to improve its credibility by associating itself with a system of multilateral exchange rate cooperation. Within the ERM, for example, no rate adjustments may be made without prior negotiations with the other member countries. But it is important that the cooperation be characterized by stability and that rate adjustments be uncommon, that changes within the framework of the system be perceived as costly (in the broad sense of the term).

The rules and commitments that control the direction of monetary policy can also be incorporated in legislation and constitutional provisions. But it should be possible to monitor adherence to such rules and commitments in order to ensure that the central bank views them as binding. Moreover, rules and commitments imposed on a central bank via legislation seem to presuppose that the bank has a relatively independent position. If a policy fails, there should be no question as to who really bears the responsibility.

Rules versus discretion

What, then, is the relationship between independent central banks and rules designed to achieve price stability and the need for to act discretionary action that may be required to stabilize employment, for example, in response to unexpected events? Is there a conflict? To begin with, there is no empirical support for the thesis that countries with independent central banks have greater variability in, for example, total production.[7] On the contrary, there are findings indicating that countries with relatively independent central banks often have a low rate of inflation. Bernanke and Mishkin (1992) offer several interesting observations in a study of six countries with flexible exchange rates. The countries that have followed a successful anti-inflation policy have relatively independent central banks. The procedures used in these countries to establish a firm policy are easy to oversee and observe. There are deviations from targets, but they are compensated for later on. Bernanke and Mishkin find that Germany and Switzerland, among other countries, have been successful in applying a so-called hybrid strategy in which rules control policy over the medium and long term while, thanks to long-term credibility, there is still scope for certain freedom of action over the short term.

Thus, a credible policy focused on long-term price stability can be given a different short-term focus. In reality, however, the central bank's reputation as an inflation fighter is of decisive importance in determining the credibility of the policy. Accordingly, for a central bank that is in the process of building such a reputation, freedom of action is limited.

This approach can also be applied to fiscal policy. Here, credibility is based on the assumption that, viewed over an economic cycle, the national budget will be in balance. In such cases, deficits can be permitted during a recession without

7. See Alesina and Summers (1991), for example.

damaging confidence in long-term budget balancing. Conversely, a country with a structural budget deficit has limited freedom of action in dealing with fluctuations in the economy by means of fiscal measures. Viewed in this perspective, long-term rules are not a barrier to freedom of action but rather a prerequisite.

The Swedish krona

In the light of the above arguments, it may be of interest to summarize the advantages and disadvantages of flexible and fixed exchange rates and relate them to the Swedish situation.

A flexible exchange rate itself creates various types of disturbances in the economy and accordingly creates considerable uncertainty in the sector that is dependent on foreign trade. If the latter constitutes a substantial portion of the country's economy, total production and employment are also affected by movements in exchange rates. Considering that Sweden is such an open economy, a fixed exchange rate for the krona thus appears to be appropriate. As a result of nominal inertia, monetary policy has a real effect and can be used to stabilize employment and production. It may therefore be essential to maintain some freedom of action, which is an argument for a flexible exchange rate. A certain freedom of action can also be achieved within the framework of a fixed-exchange-rate regime, through use of an exchange rate band of the type Sweden applied earlier against the ecu. The currency is then allowed to move within a fixed band, with the result that interest rates and the real exchange rate can be affected to a certain degree.

An anti-inflation policy can be applied successfully with both a fixed and flexible exchange rate. With a credible fixed rate of exchange as an anchor, the rate of inflation in Sweden can be adapted to the rate in other countries on a lasting basis. Credibility is also essential within the framework of a flexible exchange rate. When there is full credibility, a flexible exchange rate is preferable.

At first glance, a fixed rate of exchange appears to be a beneficial choice in terms of the two requisites for credibility: transparency and consistency. In the light of experience during the past autumn, participation in a multilateral exchange rate cooperation within the framework of the EC is advantageous if a fixed rate of exchange is introduced. Other types of policy commitments, as well as a more independent position for the Riksbank, can also enhance credibility. A flexible exchange rate can be difficult to manage from the point of view of credibility, at least where visibility is concerned. The precise connection between instruments and potential intermediate targets such as money supply and the end objective of price stability is unclear. Accordingly, commitments should preferably be made in terms of price stability. But it is difficult to »hit the mark« in this area, and the target must therefore be announced as an interval.

Regardless of whether the exchange rate is fixed or flexible, long-term price stability presupposes consistency between fiscal and monetary policy. The consolidation of the Swedish national budget must therefore continue. As a result of the depreciation of the krona following the decision to allow it to float, the competitiveness of Swedish industry has improved, slowing a further decline in the economy. Improvement in real economic conditions can facilitate continuing consolidation of the budget.

Although the massive increases in the

overnight rate in September and the consequent »crisis packages« were not adequate to preserve the fixed exchange rate, they demonstrated that the Government and the Riksbank were prepared to go much farther than many other countries in defending the fixed rate. The strong defense of the krona and the costs this involved were therefore not wasted. Thus, the conditions exist for pursuing a successful anti-inflation policy with a flexible exchange rate. With clear policy targets and concrete measures that make targets credible, the uncertainties with respect to economic policy can be reduced. A flexible exchange rate also implies a completely new division of roles in the fields of fiscal and monetary policy. However, freedom of action in economic policy is extremely limited in the short-term.

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Targets and Indicators with a Flexible Exchange Rate

LARS E.O. SVENSSON

A floating krona requires a new discussion about and new decisions on monetary policy. There are strong reasons why price stability should continue to be the ultimate objective of monetary policy and why price stability should be specified as a narrow range for the inflation rate. Intermediate targets such as the money supply may offer advantages, but at present there is no empirical basis for selecting an intermediate target. For the present, monetary policy should be focused on achieving the ultimate objective without using intermediate targets, with the help of a number of indicators of inflation pressure, inflation expectations and how expansive the monetary policy is. The current implementation of monetary policy via the so-called marginal borrowing rate may be expected to be effective also with a floating krona and does not require modification for the time being. Regular reporting by the Riksbank on monetary policy and the indicators is desirable for several reasons.

The Riksbank's decision on November 19, 1992, to abandon the fixed exchange rate for the krona and let the krona float necessitates a new discussion and new decisions about the design of Swedish monetary policy. This paper first restates a generally accepted conceptual framework for the characterization and design of monetary policy and then uses this framework to discuss the choices that have to be made. The discussion leads to certain preliminary conclusions. It also identifies a number of issues that require further study.

A conceptual framework for the design of monetary policy

A generally accepted conceptual framework for the design of monetary policy distinguishes between goals, intermediate targets, indicators and instruments.[1] As the term implies, the *goals* of monetary policy – price stability and full employment, for example – are the ultimate objectives of monetary policy. Monetary policy is complicated by the fact that the

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1. See Friedman (1990) and McCallum (1990), for example.

central bank only has very indirect control over the variables that usually constitute the goals. These variables react with long and variable lags to monetary policy. The variables themselves are sometimes observed with rather substantial delays, at rather long intervals, and with substantial statistical uncertainty. Some central banks, therefore, select *intermediate targets* such as various money-supply aggregates or the exchange rate. These intermediate targets have no intrinsic value, apart from their correlation with the goals. They are more controllable and more readily observed than end objectives (they are observed more often, with less time lag, and react more quickly to monetary policy). Properly chosen intermediate targets can, therefore, contribute to fulfilling the goals. *Indicators* are variables that provide the central bank with information on the state of the economy (inflation pressure and inflation expectations, for example) or on the monetary policy stance (that is, how expansive the monetary policy is). Indicators thus offer the central bank guidance on how monetary policy should be conducted in order to achieve the goals. Depending on the design of the monetary policy, a variable may be an indicator or intermediate target. To illustrate, the exchange rate is an intermediate target with a fixed exchange rate, but an indicator with a flexible. As a rule, the indicator function of a variable ceases if the variable becomes an intermediate target. Short and long interest rates, credit volume, employment and wage costs are other examples of indicators. Finally, *instruments* – such as the so-called marginal borrowing rate and liquidity – are variables that are subject to the direct daily control of the central bank and which the bank can employ to implement monetary policy. The instruments chosen and the rules by which the instruments are adjusted define the day-to-day implementation of monetary policy.

The design of monetary policy involves selecting goals, intermediate targets, indicators and instruments. In the remainder of this paper, the choice of a Swedish monetary policy with a flexible exchange rate will be discussed in terms of this conceptual framework.

Goals

Price stability and full employment are usually mentioned as possible goals of monetary policy. Research in recent years and practical experience during the postwar period have shown that an explicit monetary policy goal of full employment leads to a high rate of inflation without higher employment, while an explicit price-stability goal alone does not result in lower rates of employment or growth.[2] There are indeed good reasons why monetary policy should have only nominal variables as goals, rather than real ones. More and more countries have assigned priority to the goal of price stability. Price stability was also the goal of the earlier Swedish monetary policy with a fixed exchange rate, since a fixed exchange rate ultimately forces inflation in Sweden to conform with inflation in the countries against whose currencies the rate is fixed (which may be regarded as an operational definition of price stability). The discussion that follows is based on the assumption that price stability will remain the goal of Swedish monetary policy.

It is important for several reasons to make the price-stability goal specific and precise. Following a switch to a flexible exchange rate, it is essential to define the price stability goal precisely in order to

2. See Persson (1993, in progress).

give it substance, especially since the Riksbank has not been able to demonstrate what price stability involves in practice. A precisely defined goal means a stronger commitment to monetary policy and can increase its credibility. It also makes it possible to monitor how well the goal is being fulfilled and to criticize the Riksbank directly, even holding it accountable in the event the goal is not fulfilled. A clearly defined goal can also help to stabilize inflation expectations.

Against this background, price stability should be defined as a properly chosen range for the change in a well-defined and commonly known price index within a given time period. The consumer price index seems to be the most appropriate index. It also has the advantage that it is published monthly. Using this index involves certain technical problems; for example, it is affected directly by interest rates – which have a direct impact via housing costs – and it includes indirect taxes that can produce relatively large changes in the index over the short term. However, these problems can be solved by choosing as an operational index a suitable »net« price index that has such a target range that the consumer price index over a somewhat longer interval lies within its target range. Since there is reason to assume that the consumer price index underestimates the improvement in quality in the basket of commodities included in the index, it is appropriate to select a low, but positive, rate of inflation which may then correspond to a zero qualityadjusted inflation. Suitable ranges for the rate of increase in the consumer price index may be 0–4 or 1–3 per cent per year.[3] If the goal is not fulfilled and the rate of inflation becomes excessively high or low, it is important that the rate be adjusted in the opposite direction in the following years so that the average over a number of years lies within the target range. Such »mean reversion« is very important to ensure long-term credibility for the monetary policy. The alternative – »base drift« – means that each year is considered separately, without regard to the outcome in the preceding year, and can prove devastating for credibility.[4]

Three factors are of decisive importance for the credibility of the price stability goal: (1) that the Riksbank Act, and preferably also the constitution, firmly establish price stability as the goal of monetary policy; (2) that the Riksbank be allowed independence that will enable it to achieve the goal and resist short-term pressures and special interest groups; and (3) that the Board of Governors and management of the Riksbank can be held accountable if the goal is not met.[5]

Intermediate targets

An apparently difficult question in the design of Sweden's monetary policy is whether one or several intermediate targets should be chosen, and if so which one(s). An ideal intermediate target has a high correlation with the goal, but is much easier to control and monitor than the goal. Thus, monetary policy is made easier if it is focused on the intermediate target. It is easier to monitor how well the Riksbank meets the intermediate target and the Riksbank can more readily be held accountable if the intermediate target is

3. See article by Christina Lindenius for a report on how the price-stability goal is defined precisely in Canada and New Zealand.

4. See Bernanke and Mishkin (1992).

5. See Persson (1993, work in progress).

not met. But the problem, not surprisingly, is that it is difficult to find an ideal intermediate target.

A fixed exchange rate may appear to be a rather ideal intermediate target for a small country with an open economy. A more »visible« intermediate target is not available. Provided that the goal – price stability – is defined as the same rate of inflation as that prevailing in countries towards which the exchange rate is fixed, the intermediate target (a fixed exchange rate) will in the long run correlate very closely with the goal. In the short run, however, even with a fixed exchange rate substantial differences may arise between the domestic and foreign rates of inflation, as the overheating of the Swedish economy at the end of the 1980s demonstrated. The Riksbank can always control and defend the exchange rate as long as monetary policy is made completely subordinate to the exchange rate target. The advantages of a fixed rate diminishes rapidly, however, if the fixed rate cannot be made credible. If the fixed exchange rate is not credible, it cannot be defended without high interest rates relative to those in the outside world – and with temporarily very high interest-rate differentials if speculative attacks on the currency occur. After the Riksbank's decision, in connection with the most recent speculative attack in November, not to defend the krona by means of sufficiently large increases in the marginal borrowing rate, a fixed exchange rate does not seem to be a practical alternative for quite some time. In view of what occurred, any announcement soon thereafter of a new fixed rate would probably have less credibility than ever.

Can the exchange rate be an intermediate target even if it is not kept within the kind of narrow band employed during the fixed-rate regime of recent years? One possibility, of course, is to announce a new central parity with a greater bandwidth than before – plus and minus 6 percent, for example, as in the wide bands of the ERM. But such a wide band permits such large exchange rate movements that it is hardly meaningful. Nor can one exclude the fact that it may be difficult to defend even a wide band following the collapse of the former narrow band exchange rate regime.[6] There can be no advantage in announcing a new band if there is no intention of defending it forcefully. Consequently, I cannot see any advantages in such a wide band in the present situation. Although the exchange rate does not have a role as an explicit intermediate target, it is perfectly clear that it will be a very important indicator (see below).

Apart from the exchange rate, various money supply aggregates (from the monetary base to M3) are common as intermediate targets. In the academic literature, such broader aggregates as nominal expenditure and nominal GDP have also been proposed as intermediate targets.[7] Here, however, there is a conflict: although more narrow money-supply aggregates are easier to control, they may be very weakly correlated with the goal, while broader aggregates correlate more closely with the goal but are more difficult to control. A special problem is the fact that money supply aggregates have in many cases exhibited great instability – in connection with fiscal innovations or changes in credit market regulations, for example.

Many observers have considered Germany's use of M3 as an intermediate

6. The experiences of Finland, Italy and Spain illustrate the difficulties of defending a new band after a forced devaluation.

7. See Friedman (1990) and McCallum (1990).

target a model for other countries.[8] The Bundesbank calculates its intermediate target for the annual change in M3 based on forecasts of the annual change in velocity and real income, and on an explicit inflation goal.[9] However, this procedure requires empirical estimates of demand for money and experience in forecasting the velocity. Without careful review and supplementation of existing money-demand estimates for Sweden, as well as a number of new attempts to forecast velocity, I do not believe that such a procedure can be applicable in this country.[10] One particular problem is that the change from a fixed exchange rate to a flexible rate may itself affect the demand for money, in which case estimates with data from the period with a fixed exchange rate will no longer be applicable. Moreover, previous relationships between variables in the financial sector may have been radically altered in connection with the bank crisis. For the time being, therefore, the money supply aggregates will be important indicators (see below) but not intermediate targets. Comprehensive research and study should be undertaken as soon as possible, however, to ascertain the potential roles of the various variables – including nominal demand and nominal GNP – as intermediate targets for the Swedish economy.[11]

The preliminary conclusion from this review is that, for the present, no intermediate target should be selected. Pending adequate research, the goal – a range for the rate of change of the consumer price index or an adjusted range for the rate of change a »net« price index – will be the only objective of monetary policy. The policy will, however, be guided by a number of important indicators. I shall now discuss these indicators.

Indicators

Inflation reacts to monetary policy with a substantial time lag. Indicators of *inflation pressure* – indicators that predict inflation – are therefore important. Price and wage developments must, of course, be monitored continuously. Wage settlements, as well as job vacancies and unemployment, are important in predicting wage drift. The exchange rate, which affects total demand but also has a direct impact on the price level via import prices, is clearly an important indicator.

The list of indicators also includes the money-supply aggregates, credit volume, nominal aggregate demand and real business cycle variables. The budget deficit is a key indicator since it affects aggregate

8. See Bernanke and Mishkin (1992).

9. Velocity is defined as the ratio between nominal GNP and money supply. The rate of inflation then equals the rate of growth in money supply plus the rate of change in velocity minus the rate of growth in real GNP. Thus, given a forecast of velocity and real GNP, a desired rate of inflation can be achieved with a certain growth in money supply.

10. It is worth noting that Germany's financial market is less developed than Sweden's and that Germany lacks alternatives to bank deposits for interest-based savings by households and small companies. This contributes to the relatively stable demand for money in Germany, which can be expected to exceed that in Sweden, where private bonds, National Debt Office instruments, other instruments have already been introduced; cf. the experience in Canada, described in the article by Christina Lindenius.

11. As noted in the articles by Christina Lindenius and Kerstin Mitlid, Canada and New Zealand do not have an explicit intermediate target, while Switzerland has a target for its monetary base.

demand and because an overly expansive fiscal policy can lead to expectations of future printing-press financing of the deficit. The public debt – especially the portion that is denominated in kronor – may be regarded as a separate indicator; the greater the kronor debt, the greater the incentive for the government to depreciate the debt through a surprise inflation.

Indicators of *inflation expectations*, of both absolute inflation and inflation relative to other countries, must receive attention. Inflation expectations can be seen as forecasts of future inflation. They can also be seen as indicators of how expansive future monetary policy is expected to be, and hence as indicators of how credible the monetary policy and the inflation goal is.

For a monetary policy that focuses on price stability, it is of major importance that there be reliable indicators of inflation expectations for both short and long horizons. Assuming a fairly constant long real interest rate, the long nominal interest rate becomes an approximate indicator of long-term inflation expectations (since the nominal interest rate of a certain maturity may be regarded as the sum of the real interest rate of the same maturity and the expected average rate of inflation during the period to maturity). However, since short real interest rates may vary substantially, short nominal rates are not necessarily reliable indicators of short-term inflation expectations.

The difficulty in measuring inflation expectations more precisely from nominal interest rates lies in estimating the real interest rates for short and long maturities. If real rates can be estimated, inflation expectations can be calculated simply by subtracting the real interest rate for each period from the corresponding nominal rate. From this point of view, it would be exceptionally desirable to create a functioning market for indexed bonds.[12] A very significant side effect of such a market for monetary policy would be that it would be possible to determine real interest rates for a number of maturities directly from the market quotations for the bonds. It would then be possible to calculate more precise inflation expectations for various horizons, and these expectations would probably be among the most important indicators in a monetary policy with a price stability goal. Without fairly reliable estimates of real interest rates, estimates of inflation expectations become correspondingly less reliable.[13]

Interest rate differentials relative to other currencies, notably the Deutschmark, are also relevant indicators. If we assume that the real long interest rate is the same in both countries, the differential between long kronor and Deutschmark interest rates can be interpreted as an expected long-term inflation difference between Sweden and Germany. As long as this interest rate differential is significantly

12. As argued convincingly in Lindgren (1992), such a market is also desirable for efficiency reasons and should be of great importance to both private individuals saving for old age and insurance companies, among others. [See also Lindh & Ohlsson (1992).] The existence of indexed government debt would also have the advantage that the government's incentive to reduce the real value of the government debt through a surprise inflation would be reduced. An issue of indexed government bonds of both medium and long maturities should therefore have several favorable consequences.

13. It is also desirable to measure inflationary expectations in other ways. The surveys conducted regularly by the Swedish Institute of Economic Research through interviews of households to determine their inflationary expectations are very interesting in this connection. For a more detailed presentation of this type of study, see Jonung (1981). These surveys supplement, but are not a substitute for, measurements via indexed bonds.

positive, it must be interpreted as an expectation of a higher long-term inflation rate in Sweden than in Germany. The long interest rate differential relative to the Deutschmark may also be interpreted as an expected long-term depreciation of the krona relative to the Deutschmark, a parallel expression of the market's estimate of Sweden's long-term monetary policy relative to Germany's.[14]

Long-term expectations of inflation and currency depreciation may be regarded as indicators of how expansive monetary policy is expected to be over the long term. Other variables can be used as indicators of *how expansive monetary policy is in the short-term*. The growth of money-supply aggregates relative to a forecast of money velocity and income, as well as the growth of credit volume, are potential indicators of this type. Short interest rates are often used as such indicators. Theoretically, real short interest rates are probably the best indicator. With good forecasts of short-term inflation, real short interest rates can be estimated for maturities of a few months. But for longer maturities the estimates become more uncertain. (A one-year indexed bond would be very welcome here.)

The slope of the yield curve – the difference between long and short interest rates – is frequently used as an indicator of how expansive monetary policy is. A negative slope can be interpreted as a relatively contractionary monetary policy that is expected to result in lower interest rates and lower inflation later on. In contrast, a positive slope can be interpreted as an expansive policy that is later expected to produce higher interest rates and inflation. But such somewhat stereotype interpretations are based on implicit assumptions about the real yield curve, the yield curve for real interest rates. To evaluate monetary policy more precisely, inflation expectations for various horizons are needed, which require both nominal and real yield curves.

The yield curve of the krona relative to that of the Deutschmark may be regarded as an indicator of Swedish monetary policy relative to the German one.[15] Alternatively, it may be viewed as reflecting depreciation expectations for the krona relative to the Deutschmark over varying horizons. The importance that should be attached to this indicator depends on whether continued monetary integration with Europe – notably with its hard-currency bloc consisting of Germany, Belgium, Holland and Austria – is deemed to be important. If substantial weight is given to such integration, Deutschmark interest rates for different maturities become a natural benchmark. The relative yield curve then becomes an important device for measuring expectations of monetary policy for different horizons. A policy with the same expected rate of inflation as in Germany should be reflected in similar yield curves. Since the relative yield curve may be considered an approximate measurement of the expected rate of depreciation of the krona relative to the Deutschmark over different horizons, similar yield curves mean that the krona-Deutschmark exchange rate is expected to remain constant over time, which should result de facto in a rather stable krona-

14. This interpretation presupposes that the so-called foreign exchange risk premium is negligible compared with the interest rate differentials, which should be subject to further study.

15. This presupposes that the so-called term premia on krona-denominated bonds and treasury bills do not differ systematically from those on Deutschmark ones, something that should be subject to further research.

Deutschmark exchange rate. The relative yield curve therefore becomes a crucial indicator if the Riksbank plans to eventually peg the krona to the Deutschmark.

It is likely that the future will bring recurring conflicts between, on the one hand, demands for an expansive monetary policy with low interest rates to counter a recession and, on the other hand, demands for a policy that is credible over the long term and which will not result in long-term inflation expectations. The indicators we have discussed can then provide important information. The conflicts noted will be reflected in comparisons between short and long interest rates, and between short and long interest rate differentials vis-a-vis the Deutschmark. At the time of writing, the interest rate differential between a ten year krona and Deutschmark bonds is approximately 2.5 percentage points (about 10 per cent per year for a krona bond and about 7.5 per cent per year for a Deutschmark bond). The overnight interest rate differential is also approximately 2.5 percentage points (about 11.5 per cent per year for the krona and 9 per cent per year for the Deutschmark). The long interest rate differentials must of course be interpreted cautiously, especially before they have stabilized following the switch to a floating krona. However, if this long differential remains, it appears to be unacceptably large and irreconcilable with a price-stabilizing monetary policy. It may be interpreted to indicate that prices in Sweden are expected to rise by nearly 30 per cent more than prices in Germany over a ten-year period (assuming approximately the same real long-term interest rates in both countries), and that the krona is expected to depreciate by the same amount relative to the Deutschmark during this period (assuming a negligible foreign exchange risk premium).

In this situation, one alternative for the Riksbank is to maintain short interest rates at a high level through high marginal borrowing rates pending a decline in the long interest rate and the interest rate differential, and then, only after such a decline has occurred, to reduce short term rates unless the long rate and rate differential starts to increase. Another alternative is to accept the long rate and interest rate differential for the time being and reduce short rates now unless the long rate and rate differential increases further. It appears, though, that the latter alternative simply postpones the problem of a high long rate and rate differential – and the problem has to be dealt with sooner or later.

The possibility that the long rate will remain high for some time cannot be excluded, even if short rates are kept high in spite of the recession. This can be an unfortunate but unavoidable consequence of the low credibility of the anti-inflation policy – a credibility that in all likelihood is even lower after abandonment of the fixed exchange rate.[16] As was often said during the defense of the fixed rate, a floating krona is most likely no shortcut to lower interest rates.

The Riksbank should probably prepare a checklist of the most important indicators and issue regular reports on the indicators and its interpretation of the indicators, as a way of explaining and justifying the Riksbank's monetary policy.[17] Such a procedure appears to offer many benefits. It can have a substantial educational impact in the new economic situation and can increase understanding of the restrictions imposed on monetary policy. A

16. Compare Goodfriend (1992).

17. Such »Monetary Policy Statements« are published regularly by New Zealand's central bank, for example. See the article by Christina Lindenius.

requirement that the Bank regularly issues a consistent and convincing public motivation for its policy can also serve to some degree as a substitute for easily observable intermediate targets, so that the Riksbank can more readily be held accountable for its policy.

Instruments

The Riksbank can choose as an instrument either a price or a quantity over which it has complete day-by-day control. The marginal borrowing rate or the overnight rate are examples of prices; liquidity or borrowed reserves are examples of quantities. There is a substantial amount of theoretical literature dealing with the choice of instruments, taking into account the types of disturbances to which an economy is exposed.[18] Practical experience and empirical results indicate, however, that which instrument is chosen may not be very important.[19] Most central banks seem to apply some form of interest-rate control.

In Sweden's case, the present control of the marginal borrowing rate at which private banks borrow from the Riksbank, with the use of the so-called »interest rate scale« and repurchase agreements, appears to have worked well and there is no reason to assume that it should not work equally well with a flexible exchange rate. Accordingly, there is no cause to change this well-developed instrument in the near future. In these turbulent times some continuity is certainly an advantage. After some experience with a floating krona a review of the working of the instrument may be warranted.

18. See Friedman (1990).

19. See Bernanke & Mishkin (1992) and Goodfriend (1992).

Conclusions

The design of a Swedish monetary policy with a floating krona has been discussed with the use of a conceptual framework that distinguishes between goals, intermediate targets, indicators and instruments. Certain preliminary conclusions emerge from this discussion.

There are solid reasons why price stability should continue to be the goal of monetary policy and why it should be specified as a target range for the annual change in the consumer price index. For operational purposes, it may be appropriate to determine a range for a »net« price index (adjusted for the effects of interest rates, indirect taxes and energy prices, for example), where the target and range for the net index is adjusted in such a way that, over a longer period, the consumer price index lies within its range.

As regards the choice of an intermediate target, the empirical base required for such a choice is lacking at present. For the time being, therefore, no intermediate target should be selected. Since there can be advantages in having an intermediate target, priority should be given to a thorough study of possible intermediate targets.

In the absence of an explicit intermediate target, monetary policy should be focused on achieving the goal with the help of a number of indicators. The discussion of indicators has placed special emphasis on the need for indicators of inflation expectations. A functioning market for indexed bonds would be a substantial advantage in this context. Depending on the weight given to continued monetary integration with Europe – notably with its hard-currency bloc consisting of Germany, Belgium, Holland and Austria – the relative yield curve between krona and Deutschmark interest rates may be one of the most important indicators.

Regular reporting by the Riksbank on its monetary policy and on the most important indicators, including its interpretation of these indicators, appears to offer many advantages.

With respect to the selection of the instrument, the Riksbank's present use of the marginal borrowing rate should continue to work well also with a floating krona. There is, therefore, no reason to change this instrument in the near future. After some experience with the floating krona, a review of the working of the instrument may be warranted.

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Swedish Price-Stabilization Policy, 1931–1939

The Riksbank and Knut Wicksell's Norm

LARS JONUNG

The decision by the Riksbank on Thursday, November 19, 1992, to abandon fixed exchange rates and permit the Swedish krona to float has drawn attention to macroeconomic developments in Sweden at the beginning of the 1930s. There are remarkable similarities between monetary developments in 1931 and 1992. Then, as now, the Riksbank was compelled to abandon a fixed exchange rate and allow the krona to float after foreign currency reserves had been virtually exhausted in attempts to maintain its fixed exchange rate.

Introduction

When the fixed exchange rate was abandoned in 1931, the Riksbank and the government declared that the objective of the Riksbank would be to stabilize the domestic price level, which meant that the norm named after Knut Wicksell was accepted as the guide for Swedish policy. The Swedish Riksbank thereby became the first central bank worldwide to state explicitly that, with a floating exchange rate, price stabilization was the norm for its policies. The Swedish monetary policy experiment also attracted international attention during the 1930s. It was regarded by some economists as an example for the rest of the world.

When the Riksbank announced its decision in November 1992 to permit the krona to float, the Governor of the Riksbank stated that the aim of Swedish monetary policy with the new flexible exchange rate would be to hold inflation at about 2 percent. At the same time, the Minister of Finance expressed support for an economic policy aimed at low inflation. A little more than 60 years since Wicksell's norm was established as the basis for the Riksbank's policy, his norm appears to have found new relevance. Moreover, a number of other countries have adopted price stabilization, or low inflation, to act as the goal of monetary policy with floating exchange rates.

The purpose of this article is to describe Swedish price stabilization policy during the 1930s. Firstly, we give a brief description of Knut Wicksell's original proposal which he presented at the end of the 1890s. This is followed by an account of the 1931

monetary policy program and the Riksbank's policy from 1931 to 1939. Finally, the significance of fiscal and monetary policy during the 1930s is considered.

Knut Wicksell's proposal[1]

At the meeting of the Swedish Economic Association of April 14, 1898, »Doctor Knut Wicksell« held a lecture entitled »The influence of the rate of interest on commodity prices« in which he proposed that the aim of monetary policy should be to maintain a constant price level. This norm for monetary policy was based on the analysis which Knut Wicksell had developed in a study in German, »Geldzins und Güterpreise«, published in 1898. He now presented his ideas to a Swedish audience for the first time.[2]

Wicksell presented a simple rule for how a central bank should stabilize prices: when prices are rising, the discount rate should be raised until the movement of prices is halted; when prices are falling, the discount rate should be lowered until price stability is attained. This recommendation was based on Wicksell's development of the classical quantity theory. In brief, Wicksell incorporated the existance of a modern banking system into the quantity theory. He thereby arrived at a more dynamic version of the theory than was previously the case. The ideas presented by Wicksell were subsequently to play a key role in economic research and monetary policy in Sweden.[3]

Wicksell's proposal was incompatible with a regime of fixed exchange rates since his norm assumed that the Riksbank could control prices via monetary policy without external considerations. Flexible exchange rates were a precondition for an individual country like Sweden to conduct a completely independent monetary policy for the purpose of maintaining stable domestic prices. However, the international monetary system was based on the gold domestic standard during the decades preceding the First World War.

The outbreak of war in 1914 entailed the collapse of the international gold standard. During the war, prices and the money supply rose steeply in Sweden. The rate of inflation peaked at about 40 per cent during the last year of the war. In this situation, Wicksell and his fellow economists were extremely active debating policy issues. Economists were critical of the high inflation which they believed the Riksbank had erroneously released. Many of them argued for stable prices.

After the war, those in charge of economic policy decided that Sweden would return to the gold standard at the exchange rate that prevailed in 1914. This move required a considerable deflation, which contributed to unemployment and to a serious recession which was deeper

1. Apart from minor adjustments, the presentation in the following four sections has been taken from an earlier article, see Jonung (1979a). Erik Dahmén, Torsten Gårdlund, Lennart Jörberg, Karl-Gustav Landgren, Erik Lundberg and Bertil Ohlin provided valuable comments on this article.

2. Knut Wicksell (1851–1926) now appears as Sweden's most prominent economist. Torsten Gårdlund has described his life in an excellent biography (1990).

3. The dynamic aspect of Wicksell's theoretical structure was an important source of inspiration for the Stockholm School of Economics during the 1930s. The cumulative process thereby gained a decisive role for the development of economic theory in Sweden. See the contributions in Jonung (1991).

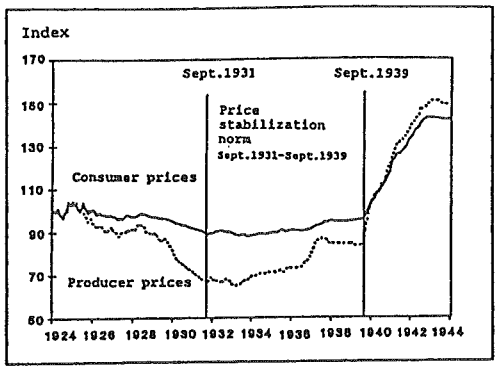
than the depression of the 1930s.[4] After the crisis, the krona was tied to gold at the pre-war parity. Sweden was the first European country to take this step.

The gold standard was gradually re-established throughout Europe. However, the gold standard of the inter-war period was short-lived. The growing international recession contributed to its collapse at the beginning of the 1930s.

The 1931 monetary policy program

The Swedish economy was affected relatively late by the depression that originated in the U.S. at the end of the 1920s. Prices in those countries whose currencies were tied to the gold standard declined during the final two years of the 1920s and at the beginning of the 1930s. Swedish wholesale prices followed this pattern during 1929, 1930 and for the first three quarters of 1931 (see Diagram 1). From 1928, Swedish exports decreased considerably as a result of the international depression. In mid-September 1931, Britain abandoned the gold standard following a wave of speculation against sterling. One week later, the Swedish Riksbank and government followed suit. The Riksbank's foreign currency reserves fell from some SEK 300 million in June to SEK 30 million in September. Moreover, part of the gold reserves had been sold. This outflow of currency compelled the Riksbank to abandon the gold standard. Right up until the end, the governor of the Riksbank attempted to get international loans to maintain the krona's link with gold.

DIAGRAM 1.
Consumer and producer prices, 1924–1944
Index 1924 = 100



At the same time as Sweden switched to a paper standard, the Minister of Finance, Felix Hamrin, stated that the aim of Swedish monetary policy would be to »protect the domestic purchasing power of the Swedish krona by all available means«. As noted in the introduction, this appears to have been the first time that a central bank explicity stated that its guideline was price stability. The norm proposed by Wicksell thirty years earlier now formed the basis of Swedish monetary policy. This declaration of monetary policy in 1931 must be regarded as a victory for the ideas which were first expressed by Wicksell and subsequently by other Swedish economists. It was probably also an economist, namely, Gustav Cassel, who prepared the monetary policy declaration in September 1931.

However, price stability was an unexplored objective for practical monetary

4. The newly independent Finland found itself facing the same alternatives as Sweden at the beginning of the 1920s. Was the Finnish mark, like the Swedish krona, to be appreciated through deflation? Finnish decision-makers opted for a different strategy than their Swedish counterparts. Following the considerable inflation of the war years, the Finnish mark was tied to gold at its existing exchange rate. This meant that Finland avoided the recessionary development which Sweden underwent. For a comparison of Finnish and Swedish monetary policies during and after World War I, see Haavisto and Jonung (1992).

policy. The Riksbank lacked the knowledge and experience of how to act. In these circumstances, the Bank took an unusual initiative. At the beginning of October and amid great secrecy, the Bank sent a questionnaire to three leading economists in Sweden: Gustav Cassel, David Davidson and Eli Heckscher.

At that time, Cassel was a world authority in monetary matters. Heckscher had a solid reputation as an economic historian and Davidson was well established in monetary theory. All of them had participated in the discussions during World War I. They had all conducted research concerning Swedish monetary policy. The Riksbank turned to representatives of the older generation of economists. At the age of 77, Davidson was the eldest. Cassel was 65 and Heckscher was youngest at 52. The Riksbank requested a prompt reply and within a few weeks, the three reports were ready.[5]

The questionnaire covered a number of central questions, for example: At what stage should the krona be linked to an international currency? What price stabilization norm should be adopted for Swedish monetary policy? Which price index and base period should be chosen for price stabilization? Which monetary policy instruments should be used?

The three economists displayed considerable agreement on the central issues although they prepared their reports independently. All three proposed that Sweden should maintain an independent currency, meaning a paper standard, as long as uncertainty reigned in the international arena. A transition to a fixed exchange rate should subsequently be considered. The aim of the paper standard was to stabilize the price level in accordance with Wicksell's norm. Davidson's and Lindahl's norm concerning a falling price level was discussed as an alternative, but it was regarded as being unsuitable for the time being. Accordingly, Davidson refrained from recommending the norm that bore his name.

The Riksbank received a list of other proposals. The Riksbank should construct a price index and calculate it on a weekly basis. Prices should be stabilized at the level that existed at the time of the establishment of the paper standard. All three economists advised strongly against implementing a deflationary or inflationary policy before the price level was stabilized. They pointed out that such a policy would create speculation and/or unrest in the labor market. Furthermore, it was stated that price stabilization was incompatible with fixed exchange rates. Changes in the exchange rate should now be used to stabilize domestic prices. The money stock should also be adjusted to suit the target for the krona's domestic value.

Heckscher proposed a number of changes in the legislation governing the Riksbank, which were necessary to eliminate the last links between the gold standard and the Riksbank's note issue. Heckscher also noted the importance of the Riksbank creating confidence among the public concerning the monetary policy program. This should be done through a series of public statements and announcements by the Riksbank, the government and the Riksdag (Parliament). Heckscher, who frankly admitted that he was uncertain or ignorant of the answers to several questions, also recommended that the Riksbank recruited an economist or a number of younger economists to conduct

5. A more detailed account of the reports from these three economists is presented in Jonung (1979b).

a detailed study of the problems of price stabilization policy.

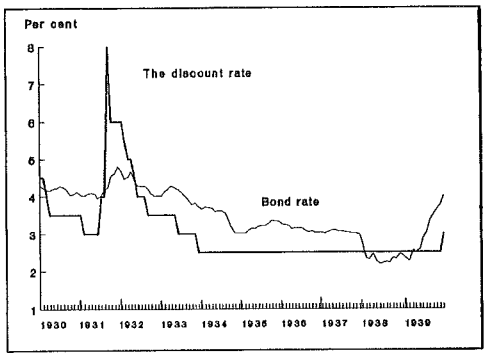
Cassel feared a crisis of confidence in the banking system. He suspected that nervous depositors would convert their deposits to notes on a large scale. This had occurred abroad and Cassel now advised the Bank to be prepared to meet any panic with an appropriate expansion in the stock of notes. If the Riksbank supplied depositors with the notes they demanded, no serious damage would arise.

As a result of these three reports, the Riksbank received a solid foundation for the new policy it was about to pursue. Cassel and Heckscher expressed in newspaper articles several of the recommendation which were found in their reports. As a result, their viewpoints became known to large sections of the public. Other economists were initially positive to the monetary policy program. It also had widespread support among the political parties in the Riksdag. The conditions for a new type of Swedish monetary policy, based on Wicksell's norm, appeared to exist.

The Riksbank's policy and price stabilization, 1931–1939

The Riksbank required access to price statistics which could be used as the basis of its new monetary policy. One of the first measures of the Riksbank after the collapse of the gold standard was therefore to design a consumer price index. Erik Lindahl and Dag Hammarskjöld were brought in for this task. Evidently on the basis of Cassel's advice, the new consumer price index was prepared on a weekly basis. The first figures were ready during the autumn. The price series were prepared and published with a precision of two decimal points. This can be interpreted as the expression of

DIAGRAM 2.
The Riksbank's discount rate and the bond rate, 1930–1940. Per cent.



a strong conviction in the possibility of using price indices as an indicator for monetary policy.

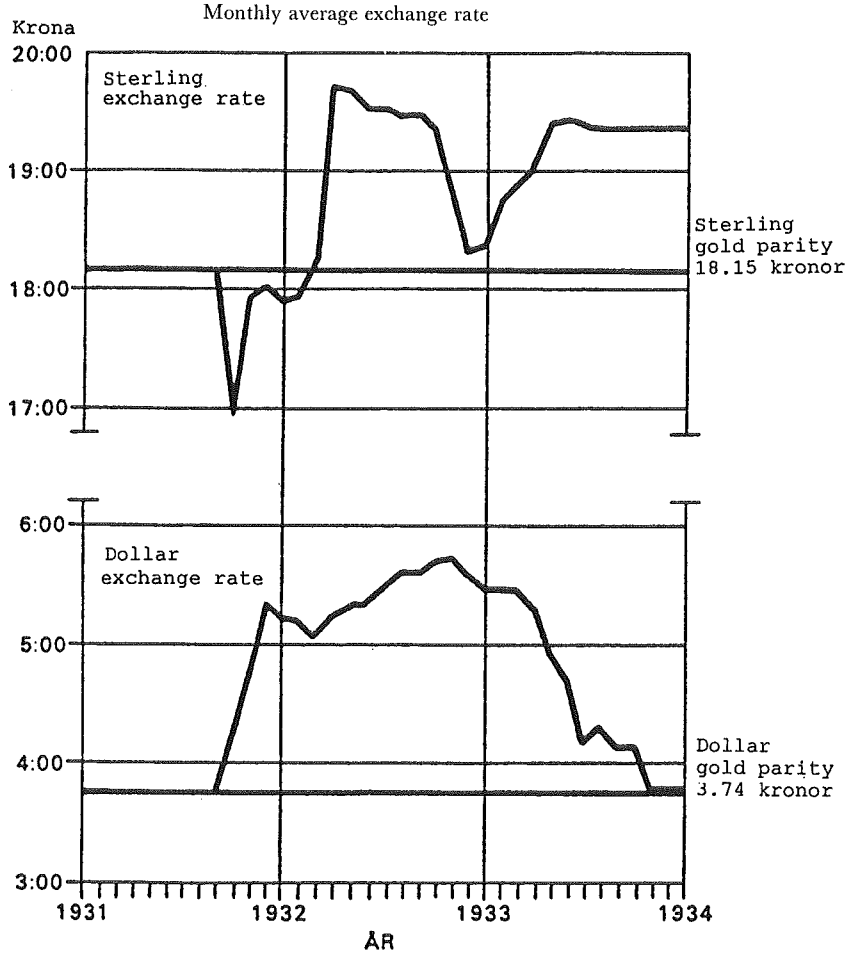
At the same time as the paper standard was introduced, the discount rate was raised from 6 per cent to 8 percent. The discount rate had previously been raised to offset currency flows when the krona had a fixed rate to gold (see Diagram 2). The Riksbank justified this steep increase as follows: With the departure of Sweden from the gold standard, the Bank expected an inflationary development. Experience from the paper standard and inflation during World War I contributed to expectations of rising prices. However, no inflation occurred during the autumn. One reason for this was that Sweden's primary trading partners, Great Britain and the other Nordic countries, had simultaneously left the gold standard. In addition, the world depression exerted strong deflationary pressure.

Initially, the Riksbank refrained from intervening in the foreign currency market since the Bank had virtually exhausted its currency reserves during September. Accordingly, the Swedish krona was permitted to float freely and the Riksbank

allowed the commercial banks to be responsible for trade in currencies. In the autumn, the sterling exchange rate moved slowly upwards from a bottom level of 16 kronor at the end of September. In November, sterling was trading at the old parity of 18.15 kronor of the gold standard era. At this stage, the board of governors of the Riksbank announced that the rate would be pegged at this level. Accordingly, a fixed rate for the krona was established less than two months after the introduction of a floating krona. This pegged sterling rate was maintained for three days. When the Riksbank's currency reserve was rapidly run down, the Bank abandoned the fixed sterling rate. Sterling immediately moved above its parity level when a flexible

DIAGRAM 3.

Sterling exchange rate (upper section) and the dollar exchange rate (lower section) in kronor, 1931–1933



Source: The Annual Report of the Riksbank.

exchange rate for the krona was reintroduced. After this episode, the Riksbank's currency reserve was less than when the gold standard was abandoned. In December, however, the sterling rate again fell below parity. Diagram 3 shows the sterling and dollar exchange rates during 1931 to 1933.

The attempt to peg the sterling rate demonstrates that the Riksbank's board of governors had counteracted the new aim of monetary policy. This measure, which clearly violated the spirit of the new monetary policy, was introduced on the Riksbank's own initiative. The Riksbank never presented any satisfactory explanation for its actions. The reasons behind the pegged sterling rate were presented in general and obscure terms in the Bank's annual report. If the aim had been price stability, the Bank should have permitted the sterling rate to move above parity since the consumer price index and the wholesale price index were falling slightly at this point in time. In particular, the Bank should have refrained from all attempts to peg the rate. It was probably the Riksbank's traditional propensity to maintain fixed rates which eclipsed other considerations.

The events of November 1931 demonstrated for the Riksbank that a return to a fixed exchange rate for the krona could only be considered when foreign reserves were sufficiently high to permit currency operations. During the period 1932–33, the accumulation of foreign currency reserves became an important objective for the Riksbank.

During the first quarter of 1932, the Bank reduced the discount rate in a series of stages (see Diagram 2). At the beginning of March, the death of Ivan Kreuger and the revelations relating to Kreuger's financial activities resulted in a substantial fall in the external value of the krona. For the first time since November 1931, the sterling rate exceeded parity and occasionally reached a level exceeding 20 kronor. The dollar, which was still linked to gold, also increased. Both of these rates subsequently remained substantially above parity throughout 1932 (see Diagram 3 for March–April 1932). Accordingly, the Kreuger crash meant that the krona depreciated – which offset the tendency towards declining wholesale and consumer prices (see Diagram 1).

The impact of the international depression on Sweden became increasingly evident during the spring of 1932. During this year, Swedish exports reached a record low of about 54 per cent of the 1929 level. Industrial output declined rapidly and unemployment increased steeply. In these circumstances, there were growing demands by economists and politicians for a more expansionary monetary policy. In May, the Riksdag recommended the Riksbank to implement a monetary policy which would increase wholesale prices while simultaneously keeping consumer prices constant.

During the summer, the Riksbank conducted substantial purchases of foreign reserves. Sterling and the dollar were kept above parity. Consumer prices remained virtually stable throughout the period. Monetary policy appeared to move in line with the request of the Riksdag to stabilize the price level. However, during the autumn, the dollar began to rise against sterling. If the Riksbank had acted in accordance with the monetary program, the krona would have moved down with sterling. The krona would have depreciated against the dollar and wholesale prices would have remain unchanged or moved up. Instead, the Bank steered a mid-course between the dollar and sterling

by permitting an appreciation of the krona against sterling and a depreciation against the dollar. The average sterling exchange rate fell from 19.50 in September to 18.32 in December. The dollar rate was also allowed to fall at the end of 1932. Accordingly, the Riksbank opted to increase the external value of the krona by, among other measures, selling part of its foreign reserves to push down the price of the dollar and sterling against the krona (see Diagram 3).

The appreciation policy had a definite impact on wholesale prices. The index decreased from 110 in October 1932 to 105 in March 1933, the lowest rate for the entire 1930s. The consumer price index also displayed a slight decrease during the same period. The Riksbank did not comply with the monetary program and the requests of the Riksdag during the winter of 1932–33. Once again, the Bank's board of governors allowed exchange-rate considerations to affect domestic price trends. As support for this view, one can firstly point to the actual policy pursued, in addition to statements by officials within the Bank.

Following the U.S. abandonment of gold in the spring of 1933, the international currency markets stabilized. Exchange rate fluctuations became smaller. At the same time, global economic conditions began to improve. During 1933, Swedish exports and industrial output again began to increase. In June the Riksbank decided to peg the sterling rate at about 19:40, that is, a rate of about 7 per cent above the old gold parity. Pegging the sterling rate was implemented on the initiative of the Riksbank and without any approval of the Riksdag. Since no formal decision was made and since the sterling rate was permitted to vary slightly from day to day, the pegging of the sterling rate did not attract great attention. In this manner, the Riksbank could de facto revert to a fixed exchange rate without encountering any formal obstacles or criticism. The pegged sterling rate could also be regarded as part of the program of price stabilization. As long as British prices were relatively stable, Swedish prices would also remain constant. In these circumstances, a conflict between a stable external and a stable internal value of the krona did not arise.

In July 1933, the Governor of the Riksbank, Ivar Rooth, presented an extensive analysis of the monetary policy situation for the Board of the Bank. His introduction became a defense of the stabilization of the sterling rate, whereby Rooth claimed that the Bank had held exchange rates higher than market values in order to conduct major purchases of foreign assets. These purchases were necessary in order to achieve an increase in wholesale prices as demanded by the Riksdag. However, Rooth now maintained that currency purchases represented a threat to the Riksbank. In the event of the establishment of a new international gold standard system based on the parities that prevailed during the old gold standard, the Riksbank would suffer major losses on its foreign currency purchases made at rates exceeding the gold parity.

In this context, Rooth pointed at the »profit motive« that had played a major role in the history of the Riksbank. The profit motive referred to the Riksbank's desire to maintain a profit on its activities. It can be traced back to the period when the Riksbank was also a commercial bank which competed with other commercial banks in the areas of note issuing, deposits and loans.

Rooth felt that the profit motive should be played down and not stop the Bank from maintaining a sterling rate above the

gold parity of 18.15, since the higher sterling rate of about 19.40 was necessary to achieve increasing wholesale prices. He also expected British prices to increase in the future and that Swedish prices would move in line as a result of the pegged sterling rate. Obviously, Rooth saw no conflict between the aim of raising wholesale prices and maintaining the prevailing sterling exchange rate. On the contrary, the fixed rate was regarded as a precondition for influencing wholesale prices in the desired manner. This was a correct conclusion as long as British prices changed in the manner that it was felt desirable for Swedish prices to move.

On the basis of the considerable currency inflow during the remainder of the 1930s, the pegged sterling rate of about 19.14 meant that the krona was undervalued. The foreign reserves and gold holdings of the Riksbank increased significantly between 1933 and 1939. The discount rate was decreased in the autumn of 1933 to the low level of 2.5 percent, a level at which it remained until 1939. The long bond rate also declined during 1932–1934 (see Diagram 2). Judging by the Riksbank's records, internal discussions related primarily to the growing foreign currency reserves. Rooth's pegging of the sterling rate was criticized in September 1933 by the Deputy Governor of the Riksbank, Erik Lamm. He claimed that the rate of 19.40 did not contribute to raising wholesale prices although he did not state why. Instead, he claimed that the krona should be allowed to appreciate further against gold because a future return to gold would otherwise result in large losses on the holdings of foreign assets and gold. Lamm admitted that at the time it was impossible to know the exchange rate for the krona in the event of the setting up of a new gold standard, but he obviously expected a rate at about parity. Otherwise he would not have recommended an appreciation of the krona. In other words, Lamm referred to the profit motive in order to change monetary policy in a deflationary direction.

Rooth admitted that he shared many of Lamm's viewpoints, but nevertheless defended his policy. He emphasized that the Riksbank was compelled to observe the the Riksbank was compelled to observe the Riksdag's directives regarding the aim of monetary policy. In Rooth's opinion, if the sterling rate was to be decreased from its rate of 19.45 to 18.20, wholesale prices would decline from 108 to a level of about 106–107. Consequently, a decrease would conflict with the Riksdag's instructions. He proposed that the pegging of the sterling at its prevailing rate should continue and his proposal won majority support.

The policy of maintaining a fixed pound rate was only once seriously tested. As a result of the international boom of 1936–37, British prices increased and Swedish prices began to follow this pattern at the end of 1936. Due to this development, a clear conflict arose between a fixed domestic price level and a stable exchange rate. Some economists, such as Gustav Cassel and Eli Heckscher, publicly demanded that the monetary policy program from 1931 be complied with, meaning that the krona should appreciate in order to isolate Swedish prices from the influence of rising international prices.

The favorable export trend in 1936–37 was the primary factor underlying a strong currency inflow, but demands for an appreciation of the krona also contributed to the currency inflow. In 1937, the commercial banks' reserve ratio – the ratio between their reserves and their deposits – reached its highest level for the period during which reliable bank statistics have existed.

Accordingly, there was pressure on the Riksbank to alter its policy but it decided to permit the sterling rate to remain unchanged. The Riksbank was influenced by the views of the Department of Finance. Finance Minister Ernst Wigforss opposed an appreciation. One of the occasions on which Rooth rejected demands for an appreciation was at a meeting with the Board in April 1937. His argument is interesting in that it most likely represented part of the Riksbank's traditional argument for fixed exchange rates. First, he declared that Swedish prices had moved in line with British prices during the past four years as a result of the fixed sterling rate. Accordingly, if Sweden wished to avoid international inflation, the krona would have to appreciate. Following this introductory comment, Rooth presented a long list of arguments against an appreciation: international cooperation was aimed at stable exchange rates; a revaluation would give rise to a decrease in profitability in the Swedish export sector; and the same would happen in the Swedish import-competing sector; an appreciation was perhaps not sufficient to halt inflation, and other means would probably also be required, which could lead to higher interest rates. Finally, he stated that the increase in Swedish consumer prices was not a sufficient reason for changing the exchange rate. The consumer price index was at 104 in April 1937, compared with an average of 101 in 1936. The cost of living was 161 compared with 158. However, Rooth did not mention anything about Swedish wholesale prices, which displayed a considerably steeper rise than the two series mentioned above (see Diagram 1). Accordingly, for the time being Rooth was unwilling to alter the krona's exchange rate, but if inflation continued in Britain and the U.S. an appreciation should be implemented. However, he believed that the boom would soon be reversed. In the autumn, Swedish wholesale prices began to decline and the argument for an appreciation was thereby weakened.

Swedish consumer prices remained relatively constant during 1938 and the first half of 1939. At the outbreak of war, the fixed exchange rate against sterling was abandoned and Sweden adopted a de facto paper currency. During the war, stable prices remained the objective of monetary policy but this was implemented primarily by means of an incomes policy, that is, by various forms of price and wage controls.

Price stabilization as a restriction on the Riksbank

A fixed rate for the Swedish currency is a permanent feature of the policy tradition of the Riksbank. The Riksbank has generally abandoned fixed exchange rates in connection with the outbreak of war. The switch in 1931 to a paper standard represents an exception. However, the Bank has endeavored to achieve a quick return from a paper standard, that is from flexible exchange rates, to a system based on fixed exchange rates. When the Riksbank was compelled in 1931 to leave the gold standard, price stabilization became the norm for the Bank's policy. During the 1930s, substantial stability was maintained in the consumer price index. Accordingly, it would appear that the Bank complied with the 1931 program.

However, it remains an open question as to the extent that the Bank really regarded price stability as the main aim of its operations. It appears more likely that this goal served as a significant restriction on monetary policy, while the Bank in actual fact was more interested in maintaining a

stable exchange rate rather than a stable price level. A number of circumstances form the basis for this interpretation. Most of them have been noted above. The Riksbank was traditionally oriented towards maintaining fixed exchange rates. The monetary policy program had been drawn up and inspired by economists and did not originate from within the Riksbank. The Bank accepted the program after it had virtually exhausted the entire foreign currency reserves in failed attempts to keep the krona linked to gold. The Riksbank's Board did not become overnight supporters of a paper currency and flexible exchange rates. As early as November 1931, the Bank attempted to peg the sterling exchange rate, a move which clearly contradicted the spirit of the new program. The same may be said of the appreciation of the krona in autumn 1932. Moreover, on its own initiative, the Bank introduced a fixed sterling rate during the summer of 1933, and it did not abandon the fixed sterling rate until 1937, when Swedish and British price levels were increasing.

Any discussion of the actual goals of the Riksbank's operations should also take note of the role of the governor of the Riksbank. Ivar Rooth was the governor of the Bank throughout the 1930s. Prior to his appointment in 1929, he was active in a commercial bank controlled by Ivar Kreuger. Rooth had not pursued any in-depth economic studies. He obviously had a rather orthodox opinion regarding monetary policy. He was regarded by many as not being independent. At the beginning of the 1930s, the Riksbank was deeply involved in advances to the Kreuger group. According to Jacob Wallenberg, the Riksbank's loans to the Kreuger companies were a considerable contributory factor underlying Sweden's abandonment of the gold standard on September 27, 1931. When the announcement that the Bank of England had suspended the exchange of its notes for gold reached Stockholm, a group of bankers, including Jacob Wallenberg and Ivar Rooth, met. This meeting was told that the prospects of Sweden being able to remain on the gold standard were good. At a later meeting , however, it was stated that a significant portion of the Riksbank's foreign reserves consisted of dollar-denominated bills of exchange, issued by Kreuger enterprises. The meeting realized that these bills were not worth much and, consequently, there was no choice for the Riksbank but to leave the gold standard.

It was not until Kreuger's death that the Riksbank saw the opportunity to conduct a more expansionary policy. The Riksbank allowed the news from Paris of his death to substantially decrease the international value of the krona. This change in the exchange rate, which remained throughout the greater portion of 1932, halted the decline in Swedish prices and contributed to a stabilization of domestic prices. After March 1932, claims of the Kreuger groups on the Swedish foreign currency reserve ceased. As a result, the Riksbank gained greater freedom of action in monetary policy.

The price stabilization program was also gradually relaxed. During 1932 and 1933, a number of demands were imposed on the Riksbank. Wishes were expressed that interest rates be pushed down, that wholesale prices be increased and that business and industry be provided greater assistance. These requests meant that price stabilization became less binding. Ernst Wigforss probably exerted a certain influence in this respect. He resisted an attempt to halt price increases through an appreciation in 1937, since he feared that a

decrease in employment would result from an appreciation.

The Impact of Fiscal and Monetary Policy during the 1930s

THE EFFECTS OF FISCAL POLICY

The global depression during the 1930s exercised a profound and sustained influence on the framing of economic policy. Prior to the 1930s, stabilization policy was synonymous with monetary policy. As a result of the depression, a number of countries, including Sweden, experimented with various fiscal policy measures. In the post-war discussion in Sweden, the expansionary fiscal policy, or the »crisis policy«, which was launched when the Social Democrats assumed power after the election of 1932, has held a prominent status. It has attracted far more attention than the monetary policy experiment. SwedenÆs strongly Keynesian-oriented stabilization policy during the post-war period can be traced back to Ernst Wigforss' crisis policy.[6]

What was the impact of the fiscal policy during the 1930s? The answer offered by economists implies that the crisis policy had little effect from a stabilization policy viewpoint. Two arguments are presented as evidence for this conclusion. The crisis policy measures were relatively limited and were of a short-term nature. An »active« expansionary fiscal policy was conducted only during the period of 1933–35. It subsequently became more contractive. Accordingly, the active fiscal policy phase lasted for only about two years. International economic conditions had already improved and were on the upturn during these years. The Swedish economy was instead pulled out of depression by an increase in exports – and not by the crisis policy.

The fairly constant volume of public expenditures during the 1930s comprised a source of stability, notably at the beginning of the decade. This effect was not the result of any deliberate »active« counter-cyclical policy but, instead, resulted from the traditional automatic working of the budget. Tax receipts decreased while public expenditures increased due to the recession. As a result of this, the public sector deficit was larger at the beginning of the 1930s than during the crisis policy period.[7]

THE EFFECTS OF MONETARY POLICY

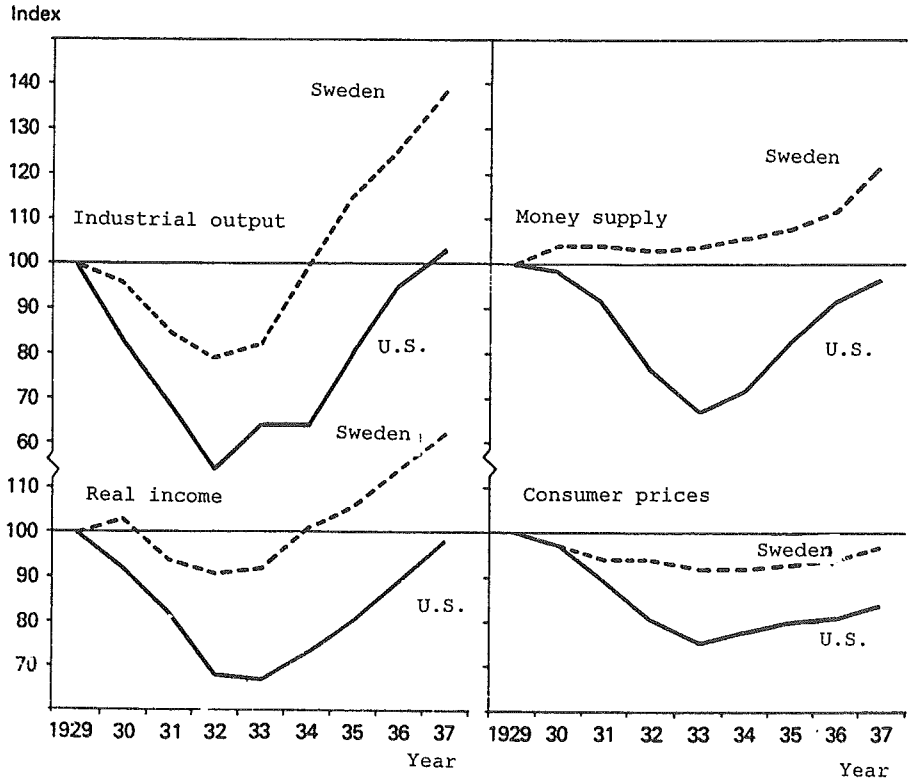
Although Sweden was hit hard by the global recession of the 1930s, macroeconomic performance in Sweden during the 1930s was better than in many other countries, particularly in comparison with those countries that remained on the gold standard at a fixed exchange rate. This pattern is described in diagram 4 which compares macroeconomic developments in Sweden and the U.S.[8] The U.S. depression was much deeper than that in Sweden. The fall in industrial production, real income, money supply and consumer prices was clearly larger in the U.S. than in Sweden.

6. The crisis policy entailed an official break with the principle of the balanced budget which had previously served as a norm. The crisis policy was inspired by the theories propounded by younger economists such as Gunnar Myrdal and Bertil Ohlin. Myrdal and Ohlin were central members of the Stockholm School. Their arguments for an expansionary economic policy during recession were developed and applied in Sweden before the Keynesian view made its international breakthrough.

7. See Bergström (1969).

8. A comparison of Swedish and American stabilization policy during the 1930s is presented in Jonung (1981).

DIAGRAM 4.
Industrial output, real income, money supply and consumer prices in Sweden and the U.S., 1929 – 1937
Index: 1929 = 100



This pattern can be explained as follows: Sweden abandoned the gold standard in September 1931, that is, at a relatively early stage of the international depression, and switched to a price stabilization program with a flexible exchange rate. The devaluation of the krona which occurred in autumn 1931, combined with the price stabilization program, contributed to isolating the Swedish economy from the depression in the world economy. The flexible exchange rate thus acted as means of halting the downturn in the Swedish economy. The switch to a flexible exchange rate created scope for a more expansionary domestic monetary and fiscal policy in Sweden. In contrast, the U.S. remained on the gold standard until 1933, which contributed to pulling the U.S. economy deeper into depression. The scope for internal expansion arose when the U.S. abandoned gold.[9]

9. The earlier a country moved off the gold standard, the earlier it gained the potential to counteract the depression. This conclusion is further developed in Eichengreen's synthesis (1992) of the gold standard during the inter-war period.

Conclusions

Judging from the development of the Swedish consumer price index during the 1930s, the 1931 monetary policy program was successful. The Bank managed to stabilize the internal price level. Accordingly, the Riksbank followed Wicksell's norm despite the lack of previous experience of such a monetary guideline. The Riksbank conducted its policy without any explicit use of any monetary aggregates as intermediate targets or indicators.[10] The 1931 devaluation, combined with the price stabilization policy, is the primary explanation for the fact that the Swedish economy experienced less of a decline during the international depression of the 1930s. A subordinate role must be attributed to fiscal policy measures.

A discussion of the present potential of a price stabilization policy lies outside the scope of this presentation. However, a number of recommendations can be drawn from the experiments of the 1930s. Firstly, it is important to gain broad support for the norm selected by the Riksbank as its policy guide. The norm should be well anchored among politicians and the public, as was the case with Knut Wicksell's norm in the 1930s. Secondly, the norm must be compatible with all elements of the economic policies of the government. During the 1930s, public sector finances were essentially in balance and wage formation did not represent a source of instability. In other words, the institutional framework during the 1930s was consistent with a price-stabilization program. The introduction of a price-stabilization norm, or a low-inflation norm, today would most likely require a reform of the »rules of the game« that determine Swedish economics and politics in order to be successful in the long run.

10. This point is stressed by Keleher (1991) who terms the Riksbank's policy as the Swedish market price approach to monetary policy.

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Formulation of Monetary Policy with a Flexible Exchange Rate in Canada and New Zealand

CHRISTINA LINDENIUS

Canada and New Zealand are small open, economies with flexible exchange rates. Except for the 1962–1970 period, Canada has had a flexible exchange rate during the entire post-World War II period. In New Zealand, a flexible exchange rate has been in force since 1985. In both countries, monetary policy is directed toward achieving clearly specified price-stability goals. Another common feature is that the central banks have been assigned an independent role. This article is a report on the formulation and direction of monetary policy in these two countries and the effects of the assigned price-stability goals on inflation and inflation expectations.

Canada

FLEXIBLE EXCHANGE RATE OVER A LONG PERIOD

Throughout most of the post-war period, Canada has been on a flexible exchange rate regime. In September 1950, Canada moved away from the Bretton-Woods system and adopted a flexible exchange rate until May 1962. The CAD was then pegged to the USD, within a band of ± 1 percent. Since this system was abandoned in May 1970, Canada has adopted a flexible exchange rate regime.[1]

Canada is considered to be particularly vulnerable to changes in its terms of trade caused by shifts in world market prices for its export products. Canada's major trading partner is the U.S., which receives about 75 per cent of Canada's exports and accounts for 70 per cent of its imports. However, the trend of Canada's terms-of-trade is negatively correlated to that of the U.S. A fixed exchange rate in relation to the USD would, therefore, result in major fluctuations in Canada's export sector and affect overall economic activity as well as prices. For this reason, Canada has a stated preference for a flexible exchange rate regime, since it limits the impact of external shocks on domestic activity and on domestic prices and costs.

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1. It should be mentioned, however, that during the 1978–1984 period, the CAD closely followed the USD trend.

THE MONETARY POLICY GOAL IS PRICE STABILITY

Through the Bank of Canada Act, monetary policy is assigned a wide mandate.[2] However, in macroeconomic terms, the central bank has only one policy instrument at its disposal, the liquidity in the banking system, which is used to determine short-term interest rates, and can therefore only pursue *one* goal. In Canada, monetary policy has thus been assigned one, clearly defined goal: price stability. Recently, the matter of whether the Bank of Canada Act should be revised so that price stability formally becomes the one goal of monetary policy has been the subject of debate in Canada. Such a revision has yet to be implemented.

The Bank of Canada expressed officially for the first time in January 1988 that monetary policy would focus exclusively on the goal of price stability. A significant step was taken in February 1991 when the Bank of Canada and the Government, in a joint statement, set out targets for the attainment of price stability.[3]

The specific targets for the year-over-year rate of increase in the consumer price index are as follows:

– 3 per cent at year-end 1992
– 2.5 per cent at mid-1994, and
– 2 per cent at year-end 1995.

The subsequent goal is to further reduce inflation until price stability has been achieved. Price stability has yet to be specified in operational terms and, for this reason, no precise definition of the price stability concept has been provided.[4]

The announced targets for reducing inflation are expressed in CPI terms. However, for operational purposes, CPI excluding food and energy is used, since these components are highly variable. There is also a possibility of making adjustments for major changes in indirect taxes. Fluctuations of ± 1 percentage points are permissible with respect to the declared targets for the trend of inflation. This is attributable to the fact that short-term price movements can affect the measured change in consumer prices and that, in practice, it is not possible to undertake policy changes to exactly attain the desired rate of consumer prices changes. It is, however, the mid-point of these target bands that is considered the objective of monetary policy actions; not the upper or lower band.

The established target path set for attaining price stability may not be altered other than under truly exceptional circumstances. This emphasizes the fact that the objective is to attain the targets; not for the targets to merely function as guidelines.

By announcing targets for reducing inflation, the authorities intended to raise the credibility of the economic policy and

2. Pursuant to the Bank of Canada Act, the role of the central bank is to »regulate credit and currency in the best interest of the economic life of the nation, to control and protect the external value of the national monetary unit and to mitigate by its influence fluctuations in the general level of production, trade, prices and employment, so far as many be possible within the scope of monetary action, and generally to protect the economic and financial welfare of Canada.«

3. The inflation goals were announced in connection with the budget for 1991.

4. Many who advocate »zero inflation« mean that since it is difficult to adjust inflation series for quality changes and other indexing problems, zero inflation can be interpreted as a small though positively measured rate of price increase. The work performed to date in Canada in preparing an operational definition of the concept of price stability indicates that the increase in CPI must be less than 2 per cent for price stability to have been attained.

to reduce inflationary expectations. A key purpose in announcing the schedule was to provide a clear indication of the medium-range trend of inflation and thereby influence private-sector decisions, particularly in the formation of wages.

From the standpoint of fiscal policy, the concrete targets for reducing inflation meant that the ambition of cutting back on public expenditure could be made more credible. In the early 1980s, the budget deficit and public debt had risen very rapidly in Canada; in 1985, the general government deficit had risen to almost 7 per cent of GDP, and net public debt to almost 35 percent. Fiscal restraint and strong expansion in the economy gradually led, however, to the budget deficit being reduced to 2.5 per cent in 1988. However, the budget consolidation was insufficient to reduce the debt burden and when the economy became recessionary in 1990, the budget deficit again increased. The general government deficit rose to slightly more than 6 per cent of the 1991 GDP, and net public debt to almost 50 percent.

In the budget announced in February 1991, the Government resorted to extensive spending cuts and a succession of additional measures were implemented during the remainder of the year. The aim of the 1991 budget was to achieve a better balance between fiscal and monetary policy, and thereby increase credibility for the economic policy and facilitate lower market interest rates. Three main tasks were stated for the budget; the stipulation of clear-cut inflation goals for reducing inflation to 2 per cent by year-end 1995, a tight fiscal policy to attain a balanced budget and a limiting of public spending. It is interesting to note that in connection with the 1991 budget, the Ministry of Finance distributed extensive information to the public concerning the significance of price stability and the importance of budget consolidation.

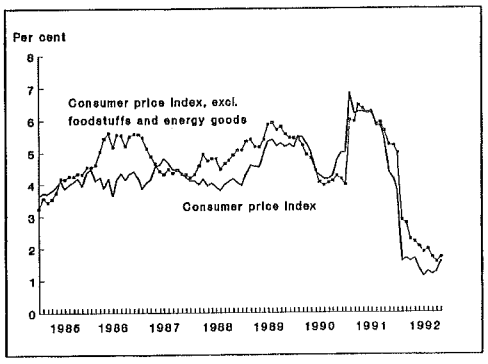
INFLATION AND INFLATIONARY EXPECTATIONS

If the private sector's expectations are effectively influenced by the targets set for reducing inflation costs are reduced in terms of unemployment and lost production, for attaining price stability. Has this result been achieved in Canada?

Over several decades, Canada has had a high rate of inflation. Between 1973 and 1979, price increases averaged 9 per cent annually, and 6.5 per cent between 1979 and 1989. Following several years of restrictive economic policy, and against a background of weak economic activity over the last two years, the rate of inflation, measured as CPI, has declined considerably (Diagram 1). The rate of inflation in October 1992 amounted to 1.6 percent. Inflation has been reduced *de facto* at a more rapid rate than that stated in the Government's and Bank of Canada's inflation reduction targets.

The announced targets for combating inflation, implied no change in the direc-

DIAGRAM 1.
Inflation in Canada (CPI)
January 1985 – October 1992
12-month change in per cent

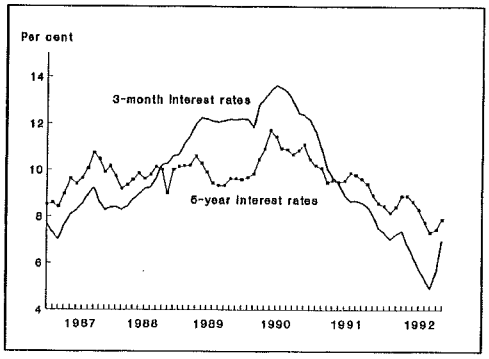


tion of monetary policy. Earlier, price stability had also been the goal of monetary policy. However, the target path constitutes an explicit, medium-term monetary policy undertaking, against which the public can evaluate monetary policy on a continuous basis. The substantial reduction in the inflation rate during 1991 and 1992 indicates an increased effectiveness of monetary policy in achieving the goal of price stability.

According to survey data, short-term inflation expectations have fallen considerably, in line with the actual downturn in the inflation rate, since the announcement of the inflation-reduction targets. This indicates a gain in near-term credibility of the antiinflation objective.

The short-term interest rates have fallen sharply since the announcement of the inflation-reduction targets. This is also attributable to low economic activity and the marked downturn in the inflation rate. Short-term interest rates fell from 14 per cent in mid-1990 to 7 per cent in October 1992 (Diagram 2).

DIAGRAM 2.
Short- and long-term interests rates in Canada
January 1987–October 1992



However, it is still too early to determine whether the declared targets for combating inflation has had a *lasting* impact on inflationary expectations. There are no clear signs that the longer-term inflationary expectations have adapted to the inflation-reduction targets. Long-term interest rates have declined but still remain at a relatively high level; interest rates fell from 11.5 in 1990 to 8 per cent in October 1992. Judging from the wage response to changes in the employment conditions, employee expectations do not appear to have been influenced to any appreciable degree.[5]

That long-term inflationary expectations have yet to be fully aligned with the inflation-reduction targets is not entirely surprising, however. It will probably be necessary, in fact, to achieve and retain the inflation-reduction targets before players in the private sector adapt their long-term inflationary expectations to them.

SEVERAL INDICATORS

The instrument of monetary policy in Canada is the liquidity in the banking system. By controlling the liquidity, the Bank of Canada influences short-term interest rates.

However, the monetary policy actions adopted by the Bank of Canada do not immediately affect the ultimate goal, infla-

5. There are significant rigidities in Canada's wage-fixing mechanism. These are due, firstly, to the fact that wage agreements frequently cover long periods and that wage negotiations in various sectors of the economy are in progress more or less continuously, i.e. long-term wage contracts and overlapping wage settlements. Secondly, parties in the labor market tend to base their wage demands/offers on historical inflation trends rather than on the anticipated trend of inflation. (Refer to »The role of the Exchange Rate in Canadian Monetary policy,« W.R. White, Paper prepared for the Joint Vienna Institute, November 6, 1992.)

tion. Because of time lags, the bank must have some idea about the relationships between the variables that it can influence over a short term horizon, and the ultimate goal, price stability. It is these variables that are the indicators of monetary policy.[6]

The Bank of Canada focuses on a range of indicators when monetary policy is being formulated. The indicators followed include the trends of various price and wage series, growth in nominal GDP and financial and monetary aggregates. In addition, analyses are made of trends in nominal spending in relation to the potential output of the economy. Exchange-rate developments are also followed on a continuous basis, although monetary policy is not formulated with the aim of establishing a particular exchange-rate level.

The Bank of Canada has no intermediary monetary policy goal. Although between 1975 and 1982, the bank used a monetary aggregate, defined as M1, as an intermediary goal, this was abandoned when financial deregulation and financial innovations resulted in the relationship between the intermediary goal and the ultimate goal becoming uncertain and unstable.

The information the bank obtains by following such indicators is used to assess the consistency of the overall stance of monetary policy with the goal of price stability and to determine which monetary policy action should be undertaken if the development tend to deviate from the established inflation reduction targets.

6. Refer to Lars E.O. Svensson's article »Objectives and indicators with a floating exchange rate« in this publication.

New Zealand

TRANSITION OF FLEXIBLE EXCHANGE RATES

After periods of being linked either to the sterling, the USD or a basket of currencies, the NZD moved to a crawling peg regime in 1979. Thereafter, the value of NZD was adjusted periodically to reflect inflation differentials with major trading partners. The weakening of the NZD which thus arose reflects the rapid pace of price increases which then characterized New Zealand's economy. In June 1982, following the imposition of a domestic price and wage freeze, the gradual devaluations of the NZD ceased.

In the early 1980s, major imbalances prevailed in the New Zealand economy; there were significant budget and balance of payments deficits and strong inflationary pressure. Accordingly, there were two additional devaluations in March 1983 and July 1984, of 6 per cent and 20 percent, respectively.

However, beginning in July 1984 and proceeding throughout 1985, there was a radical change in economic policy. A comprehensive reform program was introduced aimed at wide-spread deregulation of major parts of the economy. In addition, fiscal and monetary policy focused strongly on eliminating the budget deficit and achieving price stability. The economic reform program was directed toward medium-term rather than short-term goals.

In connection with the reform program, there was also a transition to a floating exchange rate. The decision in 1985 to allow the NZD to float was motivated by two factors. Firstly, New Zealand's exports are strongly focused on a few primary and semifabricated products; more than 70 per cent of its exports consist of such products.

This means that changes in world prices for these products can cause major fluctuations in New Zealand's terms-of-trade, and thus in domestic economic activity and prices. Secondly, there was no single, obvious currency to which the NZD could be tied. The most obvious currency, the Australian dollar, presented no advantages from an inflation standpoint.

EXPLICIT PRICE-STABILITY GOAL

Monetary policy has played a crucial role in New Zealand's economic reform program and has, since the program was introduced, been directed toward a permanent reduction of inflation. It was obvious for the economic decision-makers that monetary policy could not be directed toward effectively attaining several policy goals and that it must be concentrated on the accomplishment of a single task: price stability. After several decades of an inflation rate of between 10–20 percent, there was broad consensus among politicians and the public of the importance assigned to the goal of price stability.

A significant step was taken in the area of monetary policy in 1990 when a new Central Bank Act took effect. This radically altered the formal framework within which monetary policy is conducted. The Act is founded on the proposition that price stability is desirable both from equity and efficiency reasons. Accordingly, it explicitly stipulates price stability as monetary policy's sole objective. To establish credibility of the central bank's policy, the Act also changed the institutional framework in which the central bank functions. Under the new Act, the central bank enjoys a highly independent position to implement the measures required to attain the goal of price stability.[7]

The price-stability goal is defined in a written agreement, »Policy Targets Agreement,« between the Governor of the Central Bank and the Minister of Finance. The current agreement commits the Governor to achieve price stability by year-end 1993. Price stability is considered to be attained when annual consumer price index increases amount to between 0 and 2 percent. If exogenous shocks would occur, there is a proviso for renegotiating the indicated inflation goal; however, deviations are only permitted in strictly exceptional circumstances and may only be of a temporary nature.

Within the framework of the new legislation, the central bank establishes the direction of its monetary policy through the formulation of concrete inflation-reduction targets. In February 1991, the central bank announced the targets for the underlying inflationary trends for 1991 and 1992.[8] The inflation targets for 1991 and 1992 were set at 2.5–4.5 per cent and 1.5–3.5 percent, respectively. The direction of monetary policy has been affected by assessments of the actions required for attaining these levels.

The central bank is also required to issue a policy statement every six months on how

7. The minister of finance appoints the governor of the central bank, based on the recommendation of the board of the central bank. The mandate period is five years. Parliamentary elections are held every three years. The governor of the central bank is solely responsible for the formulation of monetary policy and for adopting the necessary monetary-policy decisions. The governor of the bank can be removed only for gross mismanagement; as long as the law is observed, which clearly specifies the goal of price stability, no controversy can arise in regard to monetary policy direction, irrespective of any contrary views presented.

8. The underlying inflation is obtained by adjusting the CPI for occasional, exceptional factors, such as major increases in the price of oil and significant changes in tax rates.

DIAGRAM 3.
Inflation in New Zealand (CPI)
1st Quarter 1985 – 3rd Quarter 1992
Percentage change

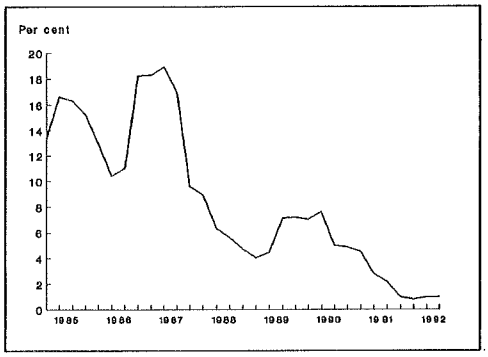
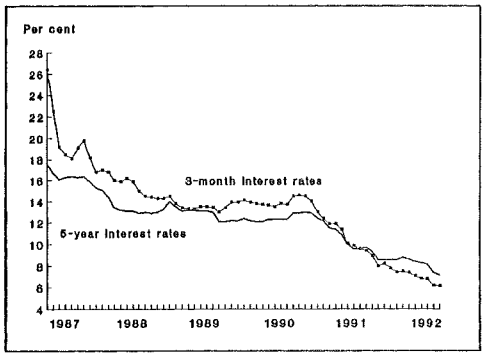


DIAGRAM 4.
Short- and long-term interests rates in New Zealand
April 1987 – August 1992



monetary policy has been conducted during the previous period and on how monetary policy will be implemented in the future.

The declared inflation-reduction targets have the effect of establishing discipline not only on monetary policy but also on fiscal policy. Inflation goals can only be revised following the joint agreement of the Central Bank Governor and the Minister of Finance.

INFLATION AND INFLATIONARY EXPECTATIONS

There has been a marked decline in the rate of inflation since 1990 (refer to Diagram 3). Weakness in domestic economic activity and the world economy, together with a stronger-than-expected NZD, resulted in weaker inflationary pressure in the economy during 1991 than was anticipated at the beginning of the year. During 1991, the underlying inflation rate was 1.7 percent, thus falling below the stipulated goal of 2.5–4.5 percent. Consumer prices rose only 1 per cent during the same period. During 1992, the increase in consumer prices has been less than 1 percent. The central bank expects to attain the price-stability goal during 1993, and that prices will be kept stable thereafter. Following many decades of high inflation, New Zealand, together with Canada, enjoy the distinction of being the OECD countries with the lowest inflation.

Although the low level of economic activity contributed to the rapid decline in inflation during 1991 and 1992, it is claimed that increased credibility of monetary policy and diminished inflationary expectations have been central factors in successfully combating inflation. Interest rates have declined considerably. Short-term interest rates were around 12 per cent at the beginning of 1991; today they are at the 6-percent level. Long-term interest rates have declined from 12 to 7 per cent during the same period (refer to Diagram 4).

In certain respects, the new Central Bank Act meant a codification of objectives and rules that had previously been implicit. However, a codification and a precision of the direction and responsibility for

monetary policy are considered to have had a significant effect on credibility and the combating of inflation. The clearness of the Act renders it virtually impossible for the Ministry of Finance and the Central Bank to deviate from the goal of price stability. The clear-cut inflation goal thus compels lower inflationary expectations. Another contributing factor has been the widespread political support for adopting both the legislation and the direction of monetary policy. It should be noted that the Central Bank Act was passed by parliament without a single dissenting vote.

SEVERAL INDICATORS USED

The monetary policy instrument used in New Zealand, as in Canada, is the liquidity in the banking system and monetary policy is formulated on the basis of a number of indicators. New Zealand's central bank has not established any intermediate goal.

In New Zealand, the central bank considers the following indicators when formulating its monetary policy:

- exchange rates,
- interest rate levels and the yield curve,
- inflationary expectations and inflation forecasts,
- trends of monetary and credit aggregates and
- real economic trends.

The weights assigned to the various indicators in formulating monetary policy have varied over time; exchange rates and interest rates are, however, assigned greater weight than trends of monetary and credit aggregates. However, neither interest rates nor exchange rates, nor any other variable, is used as an intermediate goal.

Summary of viewpoints

Although Canada and New Zealand are small economies, with exports amounting to about 25 per cent of GNP, both have decided to conduct monetary policy with a flexible exchange rate. The decisive argument here is that these countries are sensitive to changes in terms-of-trade.

In both countries, monetary policy focuses on a single goal, price stability. In New Zealand, this has been formalized in the Central Bank Act. In both countries, clearly defined inflation-reduction targets have been formulated through agreements between the Ministry of Finance and the central bank. At the same time, the central bank is allowed much freedom in conducting monetary policy to attain price stability.

Since the inflationreduction targets began being publicized, inflation in both Canada and New Zealand has declined significantly, and has *de facto* fallen below the established targets. Interest-rate trends have also been downward. Although this development coincides with a period of low economic activity, there are clear signs that credibility of monetary policy has risen and inflationary expectations have decreased.

Major structural changes were implemented in both Canada and New Zealand during the 1980s and these countries have, as related earlier, undergone a rapid disinflation process in recent years. These conditions have resulted in costs in terms of reduced production and rising unemployment. However, inflationary expectations and inflation have now been reduced and the economies are functioning more efficiently following the structural changes. Accordingly, the prerequisites appear to exist for increased growth and stable prices in the future.

Switzerland's Experience with a Floating Exchange Rate

KERSTIN MITLID

Historically, Switzerland has had a low rate of inflation. Since 1975, the country's average rate of inflation has been 3.5 percent. One of the principal reasons is widespread national support for the low-inflation objective, which, among other things, has resulted in a long period of balanced government finances. Switzerland has had a floating exchange rate since 1973 and its monetary policy has focused on stabilizing prices. Since 1975, the central bank has established fixed targets for growth in money supply. However, technical innovations in, and the increased internationalization of, the financial markets have made it more difficult to solely use a quantifiable measurement of money supply for directing monetary policy.

Goals and mandate

The Swiss constitution does not contain any clearly stated targets for monetary policy. The constitution stipulates solely that monetary policy shall be formulated in the national interest, although it does not define what this means. However, the constitution does contain goals for the government's macroeconomic policy, which include countering unemployment and containing inflation. Accordingly, the constitution does not provide the central bank with any help in attaining a balance between short-term efforts to affect employment and more long-term anti-inflationary policies.

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However, the Swiss central bank has stated that price stability is the overall and completely dominating goal for its monetary policy. In formulating monetary policy, the effects on employment can also be taken into account, but only when it does not conflict with the goal of price stability.

A key prerequisite for enabling a central bank to focus its monetary policy on carried out long-term price stability is that this policy can be undertaken independently, without taking other short-term factors into account. Although the Swiss central bank is an independent authority, separate from the government, the government has some influence. For example, the government appoints officials to the most senior posts, and the Swiss central bank's annual report must be approved by the government. However, in terms of direct influence over the formulation of monetary

policy, the only constitutional requirement is that the government and the central bank inform each other of important measures, prior to their implementation. Decisions on fiscal and monetary policy must also be coordinated.

Accordingly, although the central bank has no legal support for completely focusing monetary policy on price stability and despite the fact that it is not completely independent, it has nonetheless conducted a monetary policy based on the target of price stability. The probable reason is that there is widespread support for this target in the country. Although the effectiveness of its monetary policy has varied, the central bank has sucessfully contained inflation over long periods of time. The specific monetary policy problems encountered by the central bank during recent years are addressed in a later section.

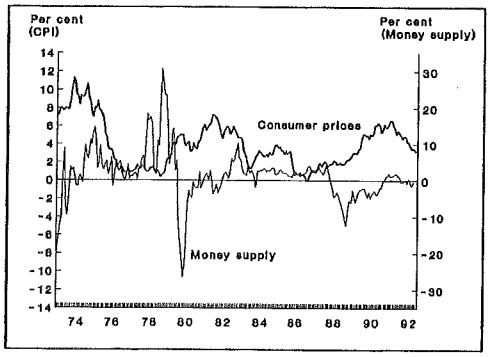
Intermediate goals and instruments

Switzerland has had a floating exchange rate since 1973. The Swiss central bank (SNB) takes a clearly monetarist approach in formulating monetary policy. Accordingly, monetary policy is determined by its affects on liquidity rather than interest rates.

DIAGRAM I.

Inflation and increase in money supply

Per cent change on a 12-month basis



For long periods, the correlation between growth in money supply and the rate of inflation has remained relatively stable in the Swiss economy. However, the rate of inflation has only been affected after a long time lag. It appears that it takes about two to three years for a change in money supply to have an impact. Accordingly, there is great uncertainty about how this policy functions, since a period of several years passes before the effects of monetary-policy decisions become apparent.

The central bank has been setting targets for growth in money supply since 1975. At first, a figure for total money supply was set, M1, and later a narrower concept was applied, the so-called monetary base. Because the correlation between M1 and the monetary base has been relatively stable, the central bank has selected the monetary base as the intermediary target, since this is a variable that can be directly affected.

Up to and including 1990, the monetary base target was set annually and made public in December each year. However, the practice of setting annual targets was abandoned following problems experienced after 1988, whereby factors such as financial innovations complicated efforts to, in the short-run, attain established targets. Instead, the current policy is to establish long-term goals for growth in money supply. The central bank has stated that an annual average growth of one per cent in money supply is compatible with the target of attaining and sustaining price stability. To increase the clarity of its monetary policy, the Swiss central bank currently publishes quarterly projections on growth in the monetary base, which also

describe the assumptions upon which the projections are based.

GNP growth is an important factor in determining demand for money. The potential GNP growth rate, that is, the rate of long-term growth compatible with stable prices (both largely determined by productivity trends), is thereby a key factor in determining the money supply target.

Accordingly, growth in money supply, defined as trends in the monetary base, has been and remains the intermediary target variable. However, the central bank also monitors other significant factors in order to gauge the effectiveness of monetary policy. Firstly, the SNB follows other money supply ratios, in order to assess the stability of the monetary base. Secondly, it monitors indicators that can provide knowledge about the speed and efficiency of the transmission mechanism through which changes in the monetary base affect prices.

In this context, exchange rate trends are probably the primary indicator. On several occasions, the central bank has deviated from established money supply targets, in order to affect exchange rate developments. When it considered the Swiss franc to be too weak, the bank has opted to temporarily reduce growth in money supply. The opposite has been applied when the bank considered that exchange rate trends were too strong. A depreciation of the domestic currency provides inflationary impulses, partly by stimulating the sector of the economy exposed to competition and partly via increased import prices. An appreciation of the exchange rate has the opposite effect – economic growth is impeded and the rate of inflation reduced. It is primarily changes in the real effective exchange rate that result in the central bank temporarily deviating from the money supply targets.

Real economic activity and real interest rates are other indicators that periodically attract the attention of the central bank and areas in which developments have resulted in decisions to deviate from established money supply goals.

Instruments of monetary policy

The monetary base is defined as the amount of bank notes in circulation plus the banks' noninterest-bearing accounts at the central bank. If the monetary base was instead defined from the asset side, it would consist of the sum total of currency reserves, the central bank's holdings of securities and its lending less the balance in the government's account.

Central bank

Assets	Liabilities
A. Currency reserves	D. Banknotes
B. Securities	E. The bank's borrowing in the central bank
C. Lending	F. The government's account

Monetary base = D+E=A+B+C-F

The central bank can affect the monetary base by intervening on normal market terms, either in the domestic securities market or in the currency market. If the central bank wants to reduce the rate of growth in the monetary base, it can reduce liquidity in the economy either by selling securities – that is by reducing its holdings of securities – or by selling currencies and thereby reducing the foreign currency reserve. The method utilised is of little significance, but the Swiss central bank normally opts to intervene in the currency market, since this is the most well-developed area. Liquidity is normally affected by swap transactions, which are a

combination of spot and forward transactions. This enables a temporarily reduction in liquidity. In the central bank's account, both the currency reserve and the monetary base is affected.

Only a limited degree of intervention in the domestic money market is applied. This is because the Swiss money market is underdeveloped. The reasons are twofold. Firstly, tax regulations make it highly unprofitable to issue securities or to trade in the money market. Secondly, the national debt is low and stocks of short-term government bonds are insignificant.

Monetary policy in recent years

In an international perspective, the Swiss rate of inflation has been low. Since 1975, the average rate of inflation has been 3.5 percent. A principal reason is the widespread national support for the inflation objective that has existed and still prevails in Switzerland, and that monetary policy has been and is an integral part in attaining this objective. The high priority assigned to low inflation has also been reflected in government finances, which have been balanced.

However, economic policy failed to contain inflation during two periods: from 1979 through 1981 and from 1989 through 1991. During these periods, the rate of inflation rose to more than 7 per cent and 6 percent, respectively.

To illustrate the difficulties and the considerations in formulating monetary policy under a flexible exchange rate regime, the following summary of some of the considerations underlying monetary policy during the years around 1990 is presented.

Many observers consider that one reason for the high rate of inflation during 1989 and 1990 was that monetary policy during 1988 and 1989 was insufficiently tight. During these years, there was a general decline in demand for money, due to the introduction of a new electronic payments system for interbank transactions. In connection with this innovation, the conditions for calculating compulsory cash reserves were changed. Although the central bank had anticipated that demand for money would decline, it was unable to accurately predict the actual extent of the decline. As a result, the money supply objective was set at an excessively high level. Short-term interest rate trends were used by the central bank to indicate the extent of the decline in demand for money. Due to the excessive supply of liquidity, short-term interest rates decreased sharply at the beginning of 1988, but subsequently recovered as the SNB adjusted the supply of money.

Another probable cause for the upward inflation trend during these years was the depreciation of the Swiss franc in relation to the Deutschmark during 1989 and 1990. Since Germany is a very important trading partner of and competitor to Switzerland, shifts in exchange rates relative to the DEM have considerable effects on the Swiss economy. Although the central bank attempted to contain growth in the monetary base during this period, to keep it in line with the objective of long-term price stability, the value of the Swiss franc also weakened in real terms. In other words, the exchange rate for the Swiss franc depreciated by a greater amount than was motivated by the differences between the rates of inflation in Switzerland and Germany. Exchange rate trends forced up the rate of inflation to unacceptable levels. To counter this development, the SNB placed further constraints on monetary policy and the growth in money supply

declined to a position below its targeted course.

In summary, it may be stated that although the Swiss central bank very clearly stipulates that money supply is the primary intermediate goal for monetary policy, the relationship between the intermediate and the final goal has proven to be somewhat unstable. This means that consideration must also be paid to other key factors when formulating monetary policy. As a result, the central bank is often forced to deviate from its stated money supply targets. The decision to stop setting an annual target for growth in the monetary base, in favor of a more long-term goal, reflects the problems caused by the short-term instability of the money supply target. A small economy with substantial foreign trade is often forced to take exchange rate trends into account in formulating monetary policy. If the shifts in exchange rates are matched by the changes in rates of inflation, this alleviates the effects on the real economy. This also reduces the need to take exchange rates into account when making decisions about monetary policy. However, actual developments have shown that shifts in exchange rates seldom reflect such differences in fundamental terms.

In a world consisting of deregulated and well-developed financial markets, it is becoming increasingly difficult to direct monetary policy solely on the basis of growth in money supply as the intermediate goal.

The Budget Development in a Medium-Term Perspective

KRISTER ANDERSSON

The net effect of large budget deficits as stimulators of the economy ceased long ago. Increasingly larger deficits and the accompanying increases in the national debt can lead players in the market to believe that there is a greater risk that a country will choose to inflate its debt. This can affect their behavior, with the result that a heavy burden is placed on monetary policy in order to achieve price stability over the medium term. A change in the division of roles between fiscal and monetary policy would have a positive impact on the Swedish economy.

The connection between fiscal and monetary policy

Before the krona was allowed to float on November 19, 1992, the means used for achieving price stability was a fixed exchange rate. This meant that in the long run the Swedish rate of inflation could not deviate from the rate in important competitor countries. With a flexible exchange rate, the means for achieving price stability is different but the requirement on economic policy is basically the same. It may be said that, in a way, there is always a correspondence between monetary and fiscal policy. If fiscal and budget policies are perceived to be weak, monetary policy must be restrictive if price stability is to be achieved. The burden on monetary policy to achieve price stability then becomes great. Such a policy mix may however not be the most appropriate given the economic situation. The economy could benefit from a change in policy mix.

A large budget deficit increases uncertainty about the seriousness of the efforts to achieve stable prices. There are in principle three ways to reduce a budget deficit: reduce government expenditures, raise taxes or to inflate the national debt. The last-named alternative involves allowing the rate of inflation to rise so that the real value of the national debt declines. Large budget deficits over a long period, and consequently a rising national debt, increase the risk that a country may elect this method. The degree to which inflationary expectations rise depends largely on how the country has acted earlier. An inability to tackle structural problems in the economy and persuing accomodating policies whereby short-term considerations are accorded substantial weight, increase

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inflationary expectations even when budget deficits are relatively small. In contrast, countries that have been unwilling to abandon the objective of price stability can show relatively large budget deficits for several years without necessarily causing an increase in inflationary expectations.[1] Greater uncertainty about anti-inflation policy results in an increase in the required rate of return in order to compensate for anticipated future inflation and possible depreciation of the currency. To the degree that the anti-inflation policy is less credible under a flexible exchange rate than with a fixed exchange rate, the need for budget consolidation increases.

To shed light on which measures may be necessary to achieve balance in Swedish government finances, some calculations are presented below. Like the Finance Department's long-term consequence calculations (L/T calculations[2]), these calculations are based on rough assumptions of economic development. Thus, they do not constitute a forecast. In contrast to the L/T calculations, the calculations do not show the consequences of decisions already taken and commitments made. We have instead sketched a declining expenditure ratio without explicitly taking into account decisions already made.[3] To better understand how the various assumptions affect the results, a sensitivity analysis is performed.

Budgetary developments

The budget balance of the Central government has weakened very sharply in recent years. At the end of the 1980s, the budget showed a surplus, although modest, considering that the economy was overheated. In 1990, the surplus turned into a deficit of approximately 1 per cent of the Gross National Product (GNP). In 1991, the budget continued to weaken and the deficit amounted to some 4 per cent of GNP, i.e. a decline of 3 percentage points. The decline in the central government's financial savings was, however, more than 5 percentage points. The difference was, among other factors, due to a reduction in certain reserves.

The 1992 central government budget deficit is estimated to amount to 11–12 per cent of GNP. Thus, the government's financial savings relative to GNP will have declined by approximately 15.5 percentage points since 1989. But the decrease in GNP during the same period has been limited to about 3 per cent. Fiscal policy has therefore been, and continues to be, very expansionary.

It is not the first time that the budget has weakened. Between 1976 and 1982, the central government budget deficit increased by 12 percentage points of GNP. We have now witnessed a comparable weakening, but over the course of two years. This weakening is not, however, mainly due to the approval of new expenditures but to decisions made earlier.

The size of the budget deficit becomes clear to agents in the financial markets when the National Debt Office issues

1. See, for example, Lars E.O. Svensson's article in this publication.

2. Long-term consequence calculations for the period 1992/93–1996/97, Appendix I:1:2, Revised Fiscal Plan, etc., Government Bill 1991/92:150.

3. Based on the L/T calculations, government expenditures as a percentage of GNP are estimated to decline from 32.6 per cent in 1992/93 to 28.0 per cent in 1996/97. As shown below, our estimates are based on a decline in the expenditure ratio to 27 per cent in the calendar year 1997.

government paper in order to provide financing. In October, the central government's borrowing requirement amounted to SEK 127 billion on an annual basis, compared with SEK 61 billion a year earlier. In November, the borrowing requirement increased by SEK 28 billion. In December, it is expected to increase by SEK 35 billion and the borrowing requirement for 1992, calculated on an annual basis, may amount to approximately SEK 160 billion.

The costs of supporting the banking system must be added to this figure, however. The calculations presented here include only interest expenses on the loans to the banking system and funds already paid to the banks. But additional costs for guaranteeing the banking system are not included.[4] Another uncertain factor is the international business cycle. Most observers agree that the German economy will be weaker than was foreseen only a few months ago. But there are other, and more positive signals, including those from the United States. On the whole, however, there is a risk that economic recovery will be slow.

An international comparison

The Swedish budget deficit is large, even by international standards. In a comparative study released recently by the OECD, in 1992, only Greece and Italy are expected to have larger deficits relative to GNP in the consolidated public sector. The comparison also shows that the weakening of the Swedish national budget between 1989 and 1992 is greater than that in any other OECD country. The rate of weakening is alarming and Sweden's situation may come to resemble the situation in Belgium and Ireland during the first years of the 1980s. The fact that budget deficits have increased in many countries, with the result that economic policies in these nations will be more restrictive, is an aggravating factor. It means that it is less likely that an individual country can receive a boost from outside sources.

The experience of other countries shows how difficult it is to reduce budget deficits. The consequence is that a large national debt is accumulated. Interest payments, as a percentage of the national budget, become substantial, forcing cutbacks in other outlays. This, in turn, causes individual citizens to feel that the goods and services provided by the public sector do not approximate the taxes they are paying. In a worst case scenario, this can lead to a tax revolt. Moreover, a large national debt constitutes a heavy burden on future generations.

Large budget deficits also have important distributional aspect. Persons with low incomes are more dependent than others on public services and will be affected disproportionately when an ever-greater percentage of government expenditure is used to pay interest on the national debt. In addition, a large budget deficit can undermine the credibility of an anti-inflation policy and lead to increased inflationary expectations. Higher inflation mainly hurts those with small and medium-size incomes. In a number of countries taxpayers have to pay for excesses committed in the financial sector that would have been inconceivable with a low rate of inflation.

4. The estimates do not include a capital contribution of SEK 10 billion to Nordbanken on November 3, 1992.

Cyclical and structural budget deficits

The Riksbank has earlier presented estimates of the structural budget deficit.[5] According to these calculations, based on the Swedish National Audit Bureau budget forecast for 1992, made in June, a lower limit for the size of the structural budget deficit was estimated to be approximately half of the deficit, or around SEK 60 billion. To the extent that the budget deficit exceeds the SEK 115 billion forecasted by the Bureau in June, the structural deficit will largely increase in a corresponding degree. Based on present budget figures, the structural budget deficit can be estimated to be slightly more than SEK 100 billion.

During the latter part of the 1980s, Swedish fiscal policy was not tight enough and the central government budget was not balanced over the business cycle. The consequent interest payments on the deficit themselves constitute a structural burden. In the same manner, the structural deficit becomes succesively larger if measures are not taken to restrict the interest burden.

To determine the fraction of the budget deficit that is structural, the budget must be related to the level of activity in the economy. In other words, one must know how overheated the economy is, or how deep the recession is. The longer the overheating lasts, the greater the budget surplus must be. It is therefore inappropriate to consider each year by itself, without determining where in the cycle the economy is positioned. Ideally, the starting point should be the theory of optimal debt ratio. The demographic trend should then be considered, as well as future revenues and expenditures. However, since it is difficult to explain even the simpler concept of the business cycle and its impact on the budget, such an approach is unmanageable and hard to grasp.

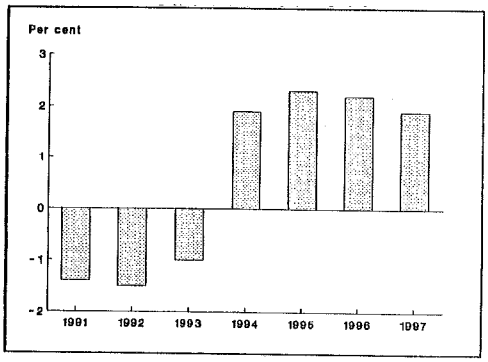
It is obvious that there has been a structural deficit in the national budget for a long time. It would naturally have been desirable to take corrective actions earlier. A delay in attacking the structural budget deficit only increases the deficit, thereby requiring even stronger measures later on. It is therefore of special interest to study what will be required in the future to eliminate the structural deficit.

Calculations up to and including 1997

ASSUMPTIONS

To obtain some idea of the budget development in a medium- and long-term perspective, the Riksbank has undertaken calculations for each year up to and including 1997. It should be emphasized that this is not in any sense a forecast. We have

DIAGRAM 1.
Real growth in GNP
Per cent



5. Krister Andersson, »The Budget Deficit and Fiscal Policy«, Quarterly Review, 1992:3, Sveriges Riksbank – the Swedish Central Bank.

TABLE I. *Some assumptions underlying the calculations*

Percentage changes

	1992	1993	1994	1995	1996	1997
Gross national product	– 1.5	– 1.0	1.9	2.3	2.2	1.9
Private consumption	– 2.0	– 2.5	0.0	0.5	0.8	1.0
Investments	–10.9	– 7.9	3.0	5.3	6.1	6.0
– industry	–10.0	– 5.0	12.0	14.0	12.0	10.0
Exports	2.0	2.8	4.5	7.0	6.5	6.0
Unemployment rate (open), per cent	4.8	6.2	6.2	5.9	5.5	5.3
Nominal interest rate, per cent	13.0	11.0	9.0	8.0	7.5	7.5
Inflation rate, per cent	2.1	3.5	2.5	3.0	3.5	3.5

assumed that real growth in the economy during this period will resume in 1994 and that the GNP will thereafter increase at a rate of between 2 and 2 1/4 per cent annually. (See Table 1 and Diagram 1.) This is a higher rate of growth than the average during the 1980s when the economy, despite overheating towards the end of the decade, grew at an average rate of 1.9 per cent per year. Moreover, due to the consolidation of balance sheets that is taking place in both the household and the corporate sector, there is reason to assume that the upturn will be dampened.

Exports are expected to contribute to increased activity in the Swedish economy. The international business cycle is expected to rise during 1994 and this factor, coupled with sharply increased Swedish competitiveness, is expected to result in a growing industrial sector.

Domestic demand is expected to be weak throughout the period. Private consumption is developing slowly since households are striving to reduce their financial liabilities. Decreases in the prices of private dwellings and other assets are causing a need to restore their wealth position over time. Household savings will thus be in the range of 5 per cent of disposable income. This is a low figure by international standards but a definite improvement compared with the unsustainable levels recorded during the 1980s. The motivation for households to establish a more sustainable level of savings will be strong. High unemployment, greater uncertainty with respect to pensions, and increased elements of self-financing in various welfare systems are strengthening the development toward increased savings.

The calculations include, as a *technical assumption*, a sharp decline in nominal interest rates, as a result of which the real interest rate at the end of the period will be down to 4 per cent. The trends of both interest rates and inflation rates depend, however, on how economic policy is conducted. The figures in Table I should be regarded as technical assumptions in the calculations and not as forecast values.

Accordingly, the figures have not been adjusted since the krona began to float. The calculations are based on a lower rate of inflation than may develop following the depreciation of the krona. A higher rate of inflation would further decrease the real disposable income of households.

The real economic development is consistent with the assumptions presented in Table I but if measures are not taken to reduce the budget deficit, interest rates will not decline as much as assumed. Even with a sharply reduced budget deficit, it is uncertain whether international developments will be such that interest rates will fall to the assumed levels. Measures to reduce the budget deficit cannot be based

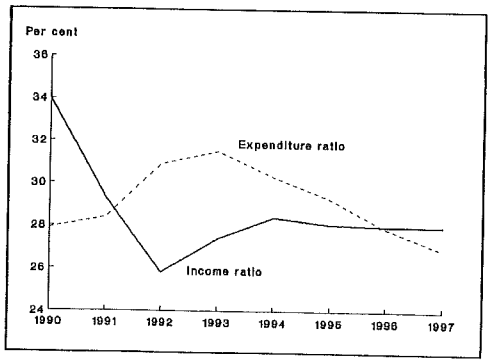
on overoptimistic interest rate assumptions, nor on unrealistic assumptions of growth. An alternative scenario incorporating higher interest rates is therefore presented. (See below.)

Furthermore, we have assumed that the income ratio of the central government will rise from the exceptionally low level estimated for 1992. In 1987, the income ratio was 35 per cent (due in part to a »one-time tax« on insurance companies) but this ratio has declined strikingly since 1990.[6] As a result of a lower inflation rate and the necessary rise in household savings, government revenues have not grown as rapidly as before. The tax system is now virtually proportional and we have in our calculations arrived at an income ratio of around 28 per cent for the years 1994–1997. The changed rules for disbursement of municipal tax funds also contribute to the possibility that the income ratio may be expected to rise from the 1992 level. However, there is cause for noting that, to the degree that the income ratio develops more weakly, the structural budget deficit will be correspondingly larger.

As far as government expenditures are concerned, excluding interest payments on the national debt, the political system has a decisive influence. During the latter part of the 1980s, government expenditures were equal to about 28 per cent of GNP. As a consequence of the recession, this figure increased to approximately 31 per cent in 1992. The expenditure ratio is expected to continue to rise during the coming year. In terms of the economy as a whole, Sweden will be the first industrial country with a total public expenditure ratio exceeding 70 per cent. The scope for private consumption will therefore be sharply limited.

6. See Andersson, K., op. cit.

DIAGRAM 2.
Central government revenue and expenditure ratios
Per cent of GNP



We have calculated the effects of a declining expenditure ratio in future years. As noted earlier, the calculations are based on achieving a certain expenditure ratio. We have calculated the effects of a decline in the government expenditure ratio, from approximately 32 per cent in 1992 to 27 per cent in 1997. (See Diagram 2.)

A declining expenditure ratio may naturally be questioned. It involves a decrease in government real expenditure, excluding interest payments, since expenditure is not increasing parallel with inflation. We have assumed that government expenditure, excluding interest payments, will have a yearly increase by about one per cent in nominal terms (Diagram 3). This in itself reflects an austere budget policy. The manner in which the budget would develop if government expenditures rose at the same rate as inflation during the 1993–1997 period is discussed below. The austerity of budget policies is further illustrated by the fact that, effective in 1995, we have included a net average contribution of SEK 12 billion to the EC budget.

We have included in our calculations the measures agreed to by the government and

DIAGRAM 3.
Central government revenues and expenditures
Annual change in current prices, excluding interest payments

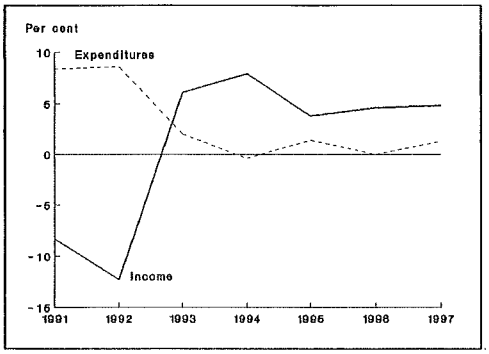
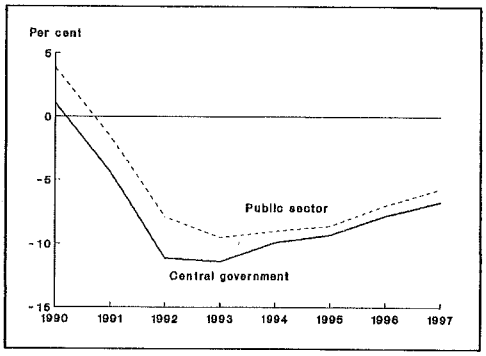


DIAGRAM 4.
Public sector and central government financial savings
Per cent of GNP



the Social Democrats during the autumn. Accordingly, the calculations presuppose savings of SEK 22.6 billion for 1993, SEK 36.2 billion for 1994, SEK 31 billion for 1995, SEK 30.6 billion for 1996 and SEK 30.2 billion for 1997.

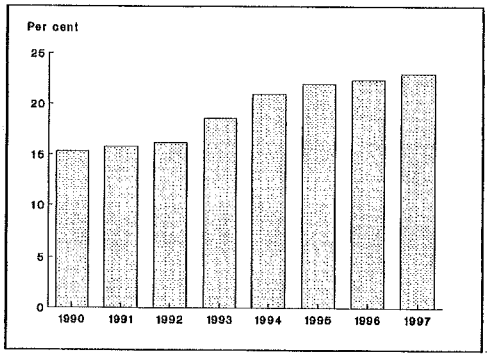
RESULTS

Based on the assumptions stated with respect to real economic growth, interest rates and budget austerity, we have estimated how the national budget will develop. If no additional measures are taken, the budget deficit will decline from approximately 11–12 per cent of GNP in 1992 and 1993 to approximately 7 per cent in 1997. The deficit in the consolidated public sector is estimated to be about 6 per cent of GNP in 1997 (Diagram 4). This means, that even after a number of years of growth, Sweden would not be able to fulfill the convergence criteria for the budget deficit not exceeding 3 per cent of GNP. The national debt will amount to approximately 90 per cent of GNP, far above the

TABLE 2. *Results*
Per cent of GNP

	1990	1991	1992	1993	1994	1995	1996	1997
Deficit in central government financial savings								
SEK millions	−14.9	62.9	158.6	162.4	146.1	144.2	127.2	114.5
As per cent of GNP	− 1.1	4.4	11.1	11.4	9.9	9.3	7.8	6.7
Income ratio	34.0	29.3	25.8	27.4	28.4	28.1	28.0	28.0
Expenditure ratio	27.9	28.4	30.9	31.5	30.3	29.3	27.9	26.9
Interest payments	5.0	5.3	6.0	7.2	8.0	8.1	7.9	7.8
Public sector expenditure ratio	61.8	64.2	68.8	71.4	70.8	69.6	67.9	66.5
National debt	45.9	48.4	59.7	71.0	78.2	83.8	87.7	90.3

DIAGRAM 5.
Central government interest payments
Per cent of total central government expenditures



convergence criteria (60 per cent). As noted earlier, these calculations do not include the cost of guaranteeing the payment and banking system.

Interest payments on the national debt will increase sharply during the period being studied despite the assumptions that real interest rates will be cut to less than half of its present level and a tight budget policy. Interest expenditure as per cent of GNP will rise up to and including 1995. Already in 1993, one krona in every five krona paid will be required for interest payments. In 1997, the ratio will rise to one krona in four. (See Diagram 5.)[7]

7. In 1997, interest payments will amount to approximately 30 per cent of other central government expenditure.

According to the L/T calculations, it is estimated that the national budget deficit will amount to SEK 101.8 billion in 1992/93 (6.9 per cent of GNP). However, some improvement in financial savings in the public sector – from a deficit of 5.7 per cent of GNP in 1992/93 to a deficit of 5.1 per cent in 1996/97 – is anticipated during the period. The above estimates are based on a larger deficit during the current year than that anticipated in the L/T calculations, and the deficit in 1997 will be nearly one percentage point higher than in the L/T calculation (6 per cent compared with 5.1 per cent).

SENSITIVITY ANALYSIS

If central government expenditure, excluding interest payments, should develop at a rate parallel with inflation, the deficits will be considerably larger. Earlier, we have often seen a real increase in government outlays. Between 1985 and 1991, for example, such outlays – excluding interest payments – rose at an yearly average of nearly 1.5 per cent in real terms. If expenditures increase at the inflation rate, the results will be as shown in Table 3.

With this development in government expenditures, the budget deficit in 1997, relative to GNP, would be nearly 4 percentage points higher. The expenditure ratio would decline from 32 per cent of GNP to 30 per cent, compared with a ratio

TABLE 3. *Budget developments if central government expenditures increase by the inflation rate*

	1993	1994	1995	1996	1997
Increased expenditure relative to the base calculations, SEK billions	6.0	19.0	27.0	44.0	56.0
Increase in budget deficit, SEK billions	6.5	19.6	29.5	48.9	64.8
Deficit, as per cent of GNP	11.8	11.2	11.2	10.8	10.5
– base calculation	11.4	9.9	9.3	7.8	6.7

of 27 per cent of GNP with a tighter budget policy.

The level of interest rates constitutes a substantial uncertainty factor. We have therefore prepared an alternative calculation showing the effects of a higher level of interest rates. If the nominal interest rate is one percentage point higher each year, the increase in the budget deficit will be SEK 8 billion next year, becoming gradually larger and amounting to more than one percentage point of GNP in 1997. In 1997, the deficit in the central government budget would thereby amount to approximately 8 per cent of GNP.

Moreover, if real growth is one percentage point lower each year during the 1993–1997 period while interest rates are one percentage point higher than in the base calculation, interest payments on the national debt will be SEK 24 billion higher, compared with our base calculation. Interest payments on the national debt in 1997 would account for 10 per cent of GNP, compared with the 8 per cent estimated in the base calculation. The deficit in the budget would rise by nearly 4 percentage points, compared with the base calculation, and the national debt would amount to approximately 110 per cent of GNP.

The estimates presented above provide cause for concern about budget developments. The structural budget deficit must be eliminated and steps must be taken to lay the foundation for high employment and growth and a low inflation rate.

Reducing the budget deficit

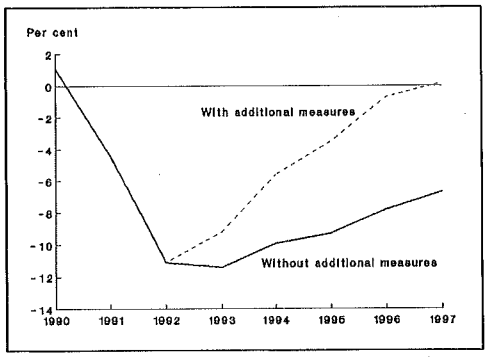
A consistent economic policy requires that short-term decisions be in harmony with long-term objectives. Swedish fiscal policy has been, and continues to be, highly expansionary. During the 1980s, the authorities did not succeed in making the reductions in expenditures and revenue increases required to balance the budget over the business cycle. The 1992 budget development has involved continued weakening, from a deficit of approximately 4 per cent to approximately 11–12 per cent of GNP.

As a consequence of the »crisis package« adopted in September 1992, fiscal policy will be somewhat less expansive. However, the impact of large budget deficits as stimulators of the economy ceased long ago. On the other hand, a better policy mix between fiscal and monetary policies would have a positive effect on the economy. The relative contraction of the economy that could result from tightening fiscal policy would be more than offset by the easing of market interest rates and monetary policy. In addition, consolidation of the budget would bring short-term economic policy in closer harmony with long-term objectives.

In an international context, it is often emphasized that so-called automatic stabilizers should be allowed to work without restraint on the *revenue side*, but not on the expenditure side. In practice, this means that lower tax revenues as a result of a recession should not be countered by higher tax rates as a means of maintaining the level of tax revenues. On the other hand, one should be more restrictive where expenditures are concerned. It is appropriate for countries such as Sweden, Italy and Greece, which have large deficits, to undertake additional measures to strengthen their budgets even if automatic stabilizers have not been allowed to have a full impact on the budget.

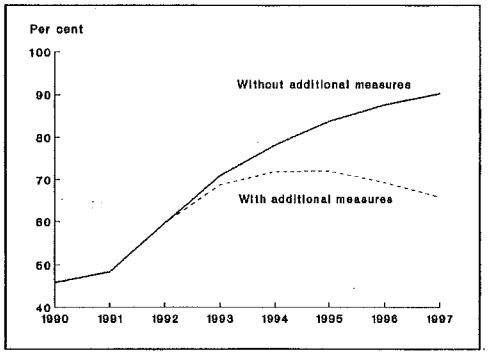
In Sweden, we have experienced a weakening of the budget in excess of that

DIAGRAM 6.
Central government financial savings
Per cent of GNP



Note: Additional measures involve reducing expenditures by SEK 30 billion each in the years 1993 and 1994 and by SEK 25 billion each in the years 1995 and 1996.

DIAGRAM 7.
Central government debt ratio
Per cent of GNP



Note: Additional measures involve reducing expenditures by SEK 30 billion each in the years 1993 and 1994 and by SEK 25 billion each in the years 1995 and 1996.

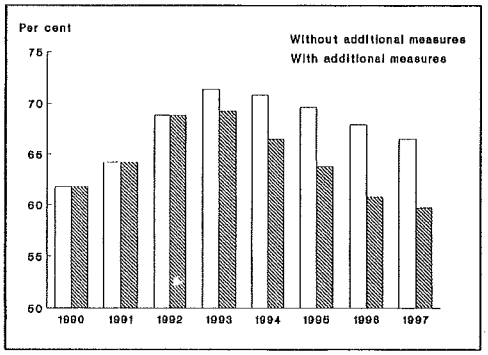
caused by the automatic stabilizers. As a result, the structural budget deficit is rising. The longer it takes before the deficit is reduced, the higher the cost of reducing the deficit.

We have studied various alternatives in order to asses the amounts required to balance the central government budget in 1997. Immediate measures produce the greatest impact and, viewed as a whole, is smallest in size. However, the deficit can not be eliminated in a short period and we have therefore also studied measures that are undertaken over a number of years. These measures go beyond those included in the agreement between the government and the Social Democrats and involve a decline in the level of real government expenditure. Moreover, it is assumed that other measures have already been taken so that there is virtually zero growth in central government nominal expenditures, excluding interest payments.

If central government expenditures, over and above the measures agreed by the government and the Social Democrats and zero growth in spending, is reduced by an additional SEK 30 billion each in 1993 and 1994 and by SEK 25 billion each in 1995 and 1996, the budget is largely in balance in 1997 (Diagram 6). The cuts in expenditures must be made in such a way that savings from prior years are carried over to following years.[8] By these measures, the debt ratio would be reduced from approximately 90 per cent of GNP to approximately 65 per cent (Diagram 7), and the public sector expenditure ratio would be about 7 percentage points lower, or around 60 per cent of GNP (Diagram 8).

8. We have assumed that expenditures, following the cutbacks, will grow at the same slow rate assumed earlier. Thus, expenditures increase by about one per cent a year, but from much lower levels.

DIAGRAM 8.
Public sector expenditure ratios
Per cent of GNP



Note: Additional measures involve reducing expenditures by SEK 30 billion each in the years 1993 and 1994 and by SEK 25 billion each in the years 1995 and 1996.

It may be questioned whether balancing the central government budget during the coming five-year period is a reasonable objective. If the aim is to meet the convergence criteria of a 3 per cent deficit in the consolidated public sector, it can be achieved through an increase in current expenditures of 3 per cent per year, in nominal terms, and by implementing measures amounting to SEK 110 billion. If the growth is somewhat lower than assumed, or if interest rates do not fall as much as we have in the calculations, it would not be possible to meet the convergence criteria even with measures of that magnitude. In addition, there are the costs of securing the financial system.

The need for budget consolidation with a flexible exchange rate

The decision to allow the krona to float does not affect the total need for budget consolidation. On the other hand, the desirable time frame for measures to reduce the deficit is affected. The division of roles for fiscal and monetary policy is now different and the possibility of affecting domestic demand by means of monetary policy and changes in exchange rates is greater. In principle, monetary policy can completely eliminate the initial contractive effect that may occur when the budget is strengthened. In order to enhance the credibility of economic policy, and to achieve growth and price stability, it is important that fiscal and monetary policy be consistent. A more austere budget would result in increased confidence that economic policy is designed to achieve price stability.

The calculations presented above show how desirable it is to reduce the budget deficit. It is important, for a number of reasons, to begin the budget consolidation as soon as possible. First, the necessary corrective measures will be smaller. Second, despite the sharp deterioration in government finances, we have not achieved increased economic activity. On the contrary, by undermining the credibility of economic policy, the structural budget deficits have worsened our economic situation. Third, we have a rapidly increasing national debt, and as a result, an increasing percentage of government expenditures will be interest payments. Increased inflationary expectations that can arise in connection with large national debts, economic policy may have to be more restrictive in the future if price stability is to be achieved. The higher interest payments, as well as the adjustment of the economy to a lower rate of inflation that is required over the medium term, mainly hurt those in society with small or medium-size income.

The recent depreciation of the krona will

further strengthen the competitiveness of Swedish industries and commerce.[9] To achieve price stability over the medium term, it is desirable that the budget for the next fiscal year is tight. Additional steps to reduce the budget deficit are necessary in order to lighten the burden on monetary policy.

Summary

The central government budget shows large and rising deficits at the same time as Sweden's gross national product is continuing to decline. It is obvious that the fiscal policy is expansionary, but without resulting in increased economic activity. A weak budget means that monetary policy has to bear a disproportionate amount of responsibility for achieving price stability over the medium term.

Even if the economy should expand more rapidly in the future that it did – on average – during the 1980s, and even if interest rates should drop significantly, there will continue to be very large deficits over the medium term. If government expenditure, excluding interest payments on the national debt, rises by just under one per cent per year in nominal terms, our calculations indicate a budget deficit equal to about 7 per cent of GNP in 1997. The national debt as per cent of GNP may more than double and amount to approximately 90 per cent. Similar conclusions were reached in the long-term consequence calculations presented in the revised Fiscal Plan.

It is therefore essential that steps be taken to reduce the budget deficit. We are not in a situation where we can wait for the economy to recover before measures are taken. Following the floating of the krona, it is even more important that the deficit be reduced. Otherwise the credibility of a long term anti-inflation policy and the possibility of achieving price stability in the medium term, may be questioned. This would lead to continuing high interest rates, with negative effects on the Swedish economy.

9. Even before the krona was depreciated, it was estimated that sharply increased productivity and slower growth in wages and costs, compared with competitor countries, would increase Swedish competitiveness by approximately 10 per cent between 1991 and 1993. A much larger improvement vis-a-vis Germany was expected. Swedish competitiveness, even without the depreciation of the krona, would thereby have been back at levels not seen since the mid-1980s.

Swedish Economic Policy under New Conditions

LARS HÖRNGREN

The decision to allow the krona to float means that Swedish economic policy is now subject to new conditions. However, a flexible exchange rate will not of itself provide greater freedom of action, assuming that price stability continues to be the overall objective of monetary and exchange-rate policy. The conditions for economic policy and wage formation in the years ahead are formed by the basic problems of balance in the Swedish economy, and not by whether the krona has a fixed or flexible exchange rate. The achievement of favourable economic development and high employment requires, now perhaps more than ever, consistency and a long term-approach in economic policy, combined with discipline in wage formation.

Introduction

The decision of the Riksbank on November 19 to permit the krona to float has fundamentally changed the conditions underlying Swedish monetary policy. With a fixed exchange rate, the main task is to ensure that currency flows are in equilibrium. The fact that the krona now has a flexible exchange rate means that this restriction on domestic interest rates no longer exists, which, in turn, means that monetary policy has a more direct impact on demand in the economy.

Both theoretical and empirical results indicate that the effects of monetary policy on such magnitudes as production and employment – regardless of the choice of exchange-rate system – are primarily temporary. In the long term, monetary policy essentially affects only nominal variables, primarily the price level. These circumstances, combined with the experience of the damaging effects of inflation on the functioning of the economy and the undesirable changes in the distribution of income and of wealth, provide the basis for the conclusion that price stability should be the overriding objective of monetary policy.

This was also the view that guided monetary policy during the period of fixed exchange rates. The discussion in this article is based on the assumption that price stability will remain the overall objective of monetary policy. This implies that also in the future there will be restrictions on interest-rate policy, although not as distinct as in a fixed exchange rate

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system. In simple terms, interest rates must be adjusted so that the price trend can be kept under control, which means that the switch to flexible exchange rates does not of itself create scope for lower interest rates. The manner in which the switch in exchange-rate policy occurred makes it particularly important to emphasize that the objective of pursuing long-term price stability – which was the aim of the fixed-exchange rate system and the factor underlying the far-reaching measures undertaken during the autumn to defend the krona – stands firm.

On this basis, it is a key task of the Riksbank to immediately establish credibility for a monetary policy focusing on price stability within a system of flexible exchange rates. This is a difficult task, not least because it must be undertaken following the abandonment of the ten-year old policy rule system, and the fall in the value of the krona. It is therefore important to clarify what the switch to a flexible exchange rate implies for the conduct of economic policy.

The purpose of this article is to discuss the new conditions for economic policy, and the resulting requirements for a favourable development of the Swedish economy. In this context, it is important to study both the principles of a system with a flexible exchange rate and the concrete problems faced by economic policy in the situation resulting from the floating of the krona. The conditions for wage formation under flexible exchange rates are also discussed briefly.

This article is only a brief treatment of the complex issues which arise as a result of the decision to permit the krona to float. Consequently, it should primarily be regarded as an introduction to a renewed – and hopefully – deeper discussion of Swedish economic policy. The solutions to the long- and short-term problems that are addressed must evolve from such a continuing discussion.

Conditions for price stability with fixed and flexible exchange rates

As noted in the introduction, the primary task of monetary policy is to pursue price stability. With a fixed exchange rate in relation to a country (or group of countries) with low inflation, the internal rate of inflation must be kept at a correspondingly low long-term level. Deviations from this path give rise to mechanisms which return the economy to price stability. For example, if overheating leads to prices rising faster than in the rest of the world, problems of competitiveness occur and demand decreases. Eventually this leads to recession and, thereby, a slowdown in the rate of price increases. In the long term, competitiveness and economic balans will be restored. Accordingly, with a fixed exchange rate, monetary policy imposes a long-term restriction on the price trend.

Of course, the objective is that this restriction should be binding even in the short term so that adjustments by means of periods of recession can be avoided. Consequently, price increases are expected to be stemmed by international inflation acting as a benchmark for price and wage formation. Awareness that rapid price and wage increases lead to profitability problems and unemployment is presumed to create moderation among employers and wage-earners. Thus, the fixed exchange rate is a signal that inflationary impulses will not be accommodated through adjustments in the exchange rate. This reduces uncertainty concerning long-term conditions for decisions relating to investment,

saving, etc., as well as the risk of the economic imbalances. The decisive factor in the achievement of these favourable effects is that declarations of a fixed exchange rate appear credible, meaning that policy is expected to remain consistent even if imbalances arise. Credibility depends to a great extent on how economic policy is pursued and on the formal and informal commitments made, for example, in the design of the fixed exchange rate system.[1]

A fixed exchange rate is also intended to have stabilizing and self-regulating effects on economic policy. These arise from the economic and political costs which decision-makers are compelled to bear if the economy has to undergo a recessionary period or if, in such circumstances, they deviate from the declared fixed-exchange rate policy. With a fixed exchange-rate, fiscal policy bears the responsibility for stabilizing demand. Monetary policy cannot be utilized for purposes other than the maintenance of the fixed exchange rate. Interest rates must be adjusted to the level required to keep currency flows in balance, regardless of whether this counteracts or amplifies cyclical movements. In the case of Sweden this is illustrated by the fact that monetary policy was not capable of significantly offsetting the overheating of the 1980s. For the same reasons, it has not been possible to reduce interest rates in recent years, since the long-term direction of economic policy has been questioned. This lack of credibility demanded increasingly higher interest rates to defend the exchange rate.

The division of responsibility is different with flexible exchange rates. Also in this system, it is essential that general inflationary expectations can be kept at a low level. However, the responsibility for this is now also shared by monetary policy. With flexible exchange rates, interest rates can be used to influence the domestic economy. If demand increases too quickly, due to expansionary fiscal policy, foreign demand impulses or similar developments, it is the responsibility of the central bank to ensure that inflationary expectations remain unaffected. This is done by raising short-term interest rates, which act as the central bank's policy instrument. Higher interest rates per se contribute to decreasing demand and increasing savings. In addition, the exchange rate is likely to appreciate, which contributes to decreasing the risk that the economy reaches its capacity ceiling, as well as reducing the short- and long-term risks of inflation.

Monetary policy with flexible exchange rates[2]

As stated above, under flexible exchange rates, responsibility for short-term price stability also rests with monetary policy. In addition, the principles of monetary policy change and become more complex in certain respects. With a fixed exchange rate, interest rates must be adjusted to ensure that currency flows are balanced The relationship between instrument and target is unambiguous due to the fact that the exchange rate functions as a so-called intermediate target for monetary policy. In principle, the same approach could be used with flexible exchange rates, but in prac-

1. The importance of credibility is discussed in greater detail in Hans Lindberg's article.

2. Lars E.O. Svensson's article discusses in greater detail the principles of monetary policy with flexible exchange rates. It also contains references to the relevant literature.

tice it has proved difficult to find a suitable intermediate target.

A useful intermediate target is characterized by having a stable relationship with the ultimate objective, at the same time as it can be controlled by monetary policy instruments. From a theoretical point of view, it is reasonable to use the money supply for this purpose.

This is based on the assumption that there is a stable (or at least a foreseeable) relationship between money supply, prices and real GNP. If output is primarily determined by factors such as capacity and population growth, a policy based on keeping the growth of the money supply at a low and stable level will also result in a low long-term rate of inflation. However, the practical results of working with the money supply as an intermediate objective are mixed. In many cases, it has proved difficult to find a measure of money supply that is stable in relation to the price trend and is also capable of being controlled by means of monetary policy instruments. This applies in particular in countries with highly developed financial systems in which households and companies are offered investment opportunities which act as attractive alternatives to traditional bank deposits. Transfers between deposits and, for example, mutual funds holding interest-bearing securities have disturbed the relationship. Moreover, the use of a certain definition of the money supply as a target may mean that previously stable relationships disappear. In such circumstances, there is a major risk that control of the intermediate target does not achieve the desired stability of the final objective.[3]

Experience indicates that with flexible exchange rates there is no dependable intermediate target that can play the role of the exchange rate in a fixed-rate system. The usual strategy adopted by central banks working with flexible exchange rates is instead to study a number of economic variables, or indicators, to determine how the economy will develop. Based on the economic outlook that emerges, the monetary policy instruments – which in practice mean short-term interest rates – are adjusted in a manner which is regarded as being compatible with long-term price stability, without the help of intermediate objectives.

New economic data arrive continuously and, thus, new indicator values, but generally speaking there is no reason to fine-tune monetary policy. The difficulties in assessing the current economic situation – not to mention making forecasts – as well as predicting the timing and impact of a certain measure, mean that a long-term approach should characterize the control of interest-rates also in a system of flexible exchanges rates.

The choice of variables that are useful as monetary policy indicators – i.e., those that provide a good guideline for the central bank's decisions on interest-rate policy – is an empirical matter. For natural reasons, there is little basis for determining what variables should be used as guidelines for Swedish monetary policy with a flexible exchange rate.[4] One variable that, on a priori grounds, can be expected to be an important indicator is the exchange rate. With a fixed exchange rate, monetary policy affects the economy not only

3. See Christina Lindenius' and Kerstin Mitlid's articles which deal with the practical experience of working with money-supply targets.

4. Even if empirical relationships can be demonstrated, they must be interpreted with caution since the data is of necessity drawn from a period with a fixed exchange rate.

through interest rates but also because interest-rate policy has an indirect impact on the exchange rate. Particularly in Sweden, which is highly dependent on international trade, the exchange rate affects both demand and price trends. In order to stabilize prices it is therefore important that excessively large exchange-rate fluctuations are avoided.

In this context, various types of disturbances can arise. Assume that an autonomous depreciation of the krona occurs. This results in an increase in demand in the tradables sector, while the higher prices of imports and import-competing products impact on the price level, potentially also affecting inflationary expectations and wage demands. Accordingly, there is reason to counter a substantial depreciation by means of an increase in interest rates. At the same time, higher interest rates contribute to a capital inflow, leading to an increased demand for kronor. In this way, the original depreciation is offset, which provides a stabilizing impact on the economy. Similarly, an appreciation could motivate decreases in interest rates.

The above argument applies to a disturbance which directly affects the nominal exchange rate. However, economic developments are primarily determined by the real exchange rate, i.e., the relative cost position. Besides being affected by the nominal exchange rate, the real exchange rate is determined by external and domestic price trends. If prices increase internationally, the exchange rate should be permitted to appreciate in order to counteract the spread of the inflationary impulse within the country. This illustrates that with a flexible exchange rate, it is possible for a small country to affect the real exchange rate without adjusting the domestic price level.

If, however, price impulses arise for internal reasons, for example, due to substantial wage and costs increases, it may prove necessary to prevent a nominal depreciation or even encourage an appreciation. Of course, a depreciation means that the real exchange rate is held constant, but the other side of the coin is that price increases are accommodated. In the worse case, this is made permanent in the form of higher inflation. In this case, a stable real exchange rate is incompatible with long-term price stability. Instead, monetary policy must be tightened and the inflationary impulse restrained. Accordingly, after a period of high inflation, it may prove necessary to have an unfavourable relative cost position, with the associated reduction in employment and corporate profits

This illustrates that a policy focused on long-term price stability basically demands the same discipline in price and wage formation, regardless of whether or not the country has a fixed or a flexible exchange rate. With a non-accommodating policy, excessively rapid price and cost increases, under fixed as well as flexible exchange rates, lead to a situation in which relative prices and real wages increase in a manner that threaten profitability and employment. In this respect, flexible exchange rates do not offer any greater freedom of action in the economy.

This also applies to economic policy. Hence, a flexible exchange rate does not alleviate the requirements on fiscal and budgetary policy. If a fiscal expansion increases demand or in some other way gives rise to inflationary expectations, this can of course be met by tighter monetary policy. The result will be higher interest rates and – even if inflationary impulses and imbalances can be counteracted in this manner – undesirable, long-term economic strains that are difficult to handle. Accord-

ingly, the importance of consistency in economic policy is equally important with either a fixed or flexible exchange rate.

Consequently, the choice between fixed and flexible exchange rates is of secondary importance when it comes to the basic conditions for economic policy, as well as price and wage formation. It is in this perspective that the requirements for a return to a balanced economy in Sweden must be discussed.

Fixed exchange rate 1982–92

The review in the preceding section demonstrates that the switch to flexible exchange rates alters the conditions for monetary policy. Accordingly, new monetary policy techniques need to be developed. However, of greater importance than these technical questions are the overall conditions for economic policy in the situation that has now arisen. As a first step in the analysis, it is useful to study development during the 1980s. Experience from the years after the devaluation in 1982 is important as a guideline for handling the consequences of the depreciation of the krona.

As stated above, with fixed exchange rate rests the responsibility for demand management essentially with fiscal policy. The considerable stimulus given by the devaluation in 1982 should therefore have been offset by means of tighter fiscal policy.[5] In addition, structural reforms designed to stimulate the economy's supply side, for example, a reform of the tax system, should have been implemented at an early stage. The lack of such measures meant that the economy hit the capacity ceiling, leading to a surge in prices and wages. The imbalances that built up during this period did not only lead to the current deep recession but also obstructed the restructuring of the economy, with a deterioration in the conditions for long-term growth.

The developments during the 1980s meant that a broad consensus arose concerning the disadvantages and risks associated with an accommodating exchange rate policy.[6] Parallel with this, there was a growing awareness of the importance of price stability in achieving favourable growth and sustained high employment. The credibility of the fixed exchange rate was strengthened after the peg of the krona to the ecu in May 1991. During the same period, there was a rapid decrease in the inflation rate. Wage increases also slowed, while productivity increased. In this manner, the Swedish relative cost position improved and this trend was strengthened by the announcement of a reduction in payroll taxes during the autumn of 1992.

Accordingly, in recent years the fixed exchange rate has played its role as a means of stemming inflation. This has occurred partly in the manner described above, i.e., through the tightening that inevitably follows a period of rapid cost increases. The recession has led to a considerable decline in the rate of inflation, but also in economic activity and employment. Mistaken expectations can of course be assumed to have contributed to the depth of the downturn. Parallel with this

5. Alternatively, the krona could have been revalued, but this was most likely regarded as being incompatible with the importance that was attached to the krona being immutably fixed.

6. See, for example, the contribution in Lars Jonung (ed.), »Devalveringen 1982 – rivstart eller snedtändning?« SNS Förlag, Stockholm, 1991.

development, a series of structural measures were implemented which have enhanced the long-term conditions for growth, but at the same time have increased the demands on the flexibility of the economy. The result has been substantial pressure on both the economy and economic policy.

In several respects, developments during the autumn were in the right direction, particularly in terms of the cost situation. However, this proved insufficient to create conditions in which a fixed exchange rate could be maintained. The combination of weak economic growth, a widening budget deficit and international currency turmoil led to such strains that the fixed exchange rate could no longer be maintained.

Conditions for economic policy

The immediate effect of the decision to allow the krona to float has been a depreciation (at the time of writing) of about 14 per cent against the ecu, the previous benchmark. In this respect, the Swedish economy finds itself in a situation similar to that after the devaluation in 1982. There are, however, considerable differences. On the one hand, it may be claimed that the risk of an inflationary impact is less on this occasion since the economy is in a deep recession. The current recession, which is due considerably to the overheating of the 1980s, ought to reaffirm the importance of a consistent economy policy in general and a low-inflation policy in particular. On the other hand, in the current situation there is no equivalent to the fixed exchange rate as an economic policy rule. This implies that expectations concerning economic policy and inflation must be stabilized by other means than an explicit intermediate target.

The absence of a simple policy rule, and the manner in which the former rule was abandoned, in certain respects make the task of handling the consequences of the krona's depreciation more difficult now than in 1982. To the degree that the rules appear unclear, it may be hard for private sector decision makers to form an opinion on the aims of policy, which means that credibility can be expected to be low. Consequently, the need for fiscal and monetary policy to display consistency between declared targets and actual measures also in the short run is greater than usual.[7]

In order to remove uncertainty concerning the aims of economic policy, price stability should now be made the explicit target of monetary policy. There is nothing new in focusing monetary policy on price stability. The fixed exchange rate was based on the same target. With a fixed exchange rate, the operational target is that the rate of inflation should be the same as that in countries to which the krona is linked. Assuming that these countries have low inflation, the result will be long-term domestic price stability. The fact that the exchange rate during a transition period is not available as an intermediate objective means that the ultimate target should be made more explicit than has been the case so far.

There may be good reasons for setting up long-term quantitative targets for the rate of inflation, thereby adding to the clarity of policy direction and providing a more stable base for expectations base.[8] For such

7. See Hans Lindberg's article for a discussion of the conditions for discretion in economic policy.

8. There are examples of such targets in Canada and New Zealand; see Christina Lindenius' article. Lars E.O. Svensson's article discusses how the concept of price stability can be made operational.

a quantitative target to be meaningful, however, it is necessary that the conditions that will make it credible exist. This in turn requires that economic policy is consistent with the target. Experience from the period of fixed exchange rates shows that verbal declarations are not sufficient. In the situation that has arisen in the aftermath of the decision to float the krona, an explicit target, as an isolated measures, would be of little value.

Consequently, other economic policies must be compatible with the price stability target. An important factor of uncertainty in this respect is the development of the government budget.[9] The pressure on government finances created by a deficit of the current magnitude risks raising fears that the budgetary problem neither economically nor politically can be managed without adding to the rate of inflation. The resulting expectations will destroy the goals laid out in verbal policy declarations. To create the conditions for a stable development in the long term, changes in the budget must be made. The fact that a large national debt also imposes an unreasonable burden on future generations adds to the urgency for effective action in this area.

It should be noted that the transition to flexible exchange rates can in certain respects facilitate a consolidation of government finances. Firstly, the depreciation of the krona has improved competitiveness, which stimulates the tradables sector. Consequently, fears that measures designed to consolidate the budget would lead to an excessively large fall in demand are dampened.

Secondly, and more important in this respect, the flexible exchange rate makes it easier to find an alternative trade off between monetary and fiscal policy. Over a period of time, demand in the Swedish economy has been supported by means of public expenditure, at the same time as interest rates were high because of lack of confidence in economic policy and the fixed exchange rate. If a consolidation of the budget is achieved, this would create the conditions for lower interest rates. As a stimulant for the economy, lower interest rates – a less restrictive monetary policy – would be more effective than the fiscal policy pursued to date. This assessment is based on the fact that major problems in the corporate, household and financial sectors are due to substantial indebtedness. Considerable interest payments and saving for amortization purposes restrict demand for labour, goods and services.

With a continuing negative budget trend, efforts to maintain demand by means of fiscal policy risk creating the opposite effect. Increased uncertainty concerning government finances lead – directly or indirectly – to reduced private consumption and willingness to invest, which hampers economic activity. Quite apart from the fact that the budget must be consolidated for reasons of government finances, measures which would provide the scope for lower interest rates would be beneficial from the viewpoint of stabilization.

This policy approach would improve the conditions for an economic upturn, with increased production and employment. The crucial decisions for such an outcome lie with the government and the parliament. In the present circumstances, it is impossible to achieve a major general decline in interest rates by means of monetary policy alone. On the contrary, substan-

9. Budget policy is discussed in detail in Krister Andersson's article.

tial cuts in short-term rates, which the Riksbank can affect by means of monetary policy, can further push up the long-term rates.

Wage formation under fixed exchange rates

The preceding section dealt with the economic policy conditions after the switch to flexible exchange rates. Strict and credible rules for economic policy create a stable environment for decisions in other parts of the economy and are of primary importance in this respect. However, it is impossible to disregard the fact that development in the near future will also be affected by other factors.

In the current situation, wage formation – particularly in the short-term – is an equally important factor as budget policy. As emphasized above, the change in exchange-rate policy does not create greater scope for freedom of action in wage formation. Accordingly, attention must be focused on the very serious labour market situation. Low general wage agreements appear to be a prerequisite for the recovery of employment and output in the Swedish economy.

Among other things, this means that the effects on competitiveness of the depreciation of the krona must not be regarded as providing the scope for general wage increases, a pattern which otherwise has been common after previous Swedish exchange rate adjustments. The improvement of the relative cost position creates the conditions for increased employment and, in the long term, investments in the tradables sector, which has been subject to severe pressure especially during the late 1980s.

Neither should an increase in prices, which may occur after the depreciation of the krona, give rise to demands for compensation. It is likely – perhaps even unavoidable – that real incomes in Sweden will decline in the immediate future. This reflects the fact that output has decreased and, consequently, there is less to distribute. Not least through government intervention, incomes have been kept at a level which is not defensible in the long run. For example, during 1991, real disposable household income increased by about five percent, at the same time as output (GNP) decreased by almost 2 percent. During 1992, disposable household income can be expected to have increased, although GNP continued to fall. As experience from the 1970s and 1980s indicates, attempts to use wage increases to prevent an adjustment of income to the decline in production lead to inflation and a worsening of the employment problem.

In this context, it should be emphasized that strained government finances limit the potential to offset increases in open unemployment by labour market policies. This means that the economic and social consequences of wage developments that disregard the labour market situation risk becoming increasingly serious. Accordingly, the responsibility for employment rests increasingly – and more crucially than ever – with wage formation, i.e., with the labour market parties.

At the same time, the need for flexibility in nominal and relative wages increases in an economy with a low rate of inflation. Since inflation and wage drift can no longer deal to the same extent with the adjustment of wages that have reached incorrect real levels, the risks of unemployment and misallocation of labour increase. The labor market parties must also accept considerable responsibility in this respect. It may be noted, however, that this is not the result of the switch in exchange-rate policy,

but is, instead, an adjustment to the demands that are imposed if the economy is to function well at a low rate of inflation.

Concluding comments

This article has discussed the conditions for Swedish economy policy after the shift to flexible exchange rates. Wage formation has also been dealt with, although only briefly. As noted, there are a number of important and difficult problems to be solved. However, apart from the technical issues related to the structure of monetary policy with flexible exchange rates, the fact remains that these problems have not resulted from the change in exchange-rate regime. On the contrary, it is the major imbalances characterizing the Swedish economy that have led to the switch to flexible exchange rates.

Nevertheless, the aim that the krona shall have a fixed exchange-rate remains. The economic policy guidelines discussed above are entirely compatible with this objective. Stabilization of the economy and government finances, which, in turn, requires low wage increases in the years ahead, is the path that most quickly leads to a situation in which the domestic conditions favour a return to a fixed exchange rate.

The timing of the reintroduction of a fixed krona exchange rate will also depend on developments in the rest of the world, particularly within the EC. The EC's exchange-rate system has recently been subjected to considerable pressure. There is substantial uncertainty concerning the future form of cooperation. However, there is every reason to believe that the EC countries will place great emphasis on internally fixed exchange rates and that the cooperation will be marked by a high ambitions concerning price stability. Accordingly, the adjustment to future exchange-rate cooperation with EC countries can be made on the basis of a determined and consistent economic policy, even if the krona continues to float for a certain period.

At the same time, it should be emphasized that in the wider perspective, the question of EC membership is by no means decisive to the problems discussed here. The conditions for economic policy and wage formation in the immediate future are determined by the basic imbalances in the Swedish economy. Consequently, regardless of Sweden's future relations with the EC, both the budget problems and the traditionally high inflationary tendencies must be tackled if the economy is to develop favourably in the long term.