

Speech

First Deputy Governor Lars Heikensten

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The Swedish krona and monetary policy

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Over the past year the Swedish krona has weakened markedly. Both we at the Riksbank and other players in the currency market have been surprised by this. In that the exchange rate is an important factor in our assessments of future inflation, it also plays a part in the direction of monetary policy. The fact that, for the first time in years, the Riksbank has intervened in the currency market has also contributed to the recent heightening of attention on the exchange rate.

Today I shall first endeavour to clarify the krona's role in the Riksbank's intellectual framework for monetary policy. A policy that targets inflation requires us to forecast the exchange rate, which is my next theme and by no means an easy task. In that context I shall also say something about the Riksbank's view of the krona's long-term real equilibrium exchange rate and its course in the past year. Another question I shall be considering is how exchange rate movements affect inflation. Before concluding, I will also talk a bit about interventions and transparency — a topic that has featured in the debate since we took the decision in June.

The krona's role changed in the 1990s

In the period since the fixed exchange rate was abandoned the Riksbank has not targeted the level of the krona. For monetary policy the primary consideration is how inflation prospects relate to the 2 per cent inflation target. But in the Riksbank's assessment of inflation the exchange rate is, of course, an important factor.

SVERIGES RIKSBANK

Telephone
+46 8 787 00 00

Telefax
+46 8 21 05 31

E-mail
registratorn@riksbank.se

Through producer and consumer prices for imported goods and services, the exchange rate has a direct effect on inflation that normally is comparatively rapid. Moreover, the exchange rate influences inflationary pressure indirectly and usually with a longer lag via effects on the level of economic activity. All else equal, a weaker exchange rate leads to stronger demand for Swedish goods and services and thereby to rising resource utilisation. The exchange rate can also influence inflation expectations indirectly, with effects in the first place on price setting.

Since the Riksbank introduced the inflation target, our view of the exchange rate and inflation has changed by degrees. In the early years with a flexible exchange rate, monetary policy was influenced a good deal in practice by short-run exchange rate fluctuations. The focus then shifted and today it is clearer that what matters for monetary policy is the entire path of the exchange rate and inflation in the coming years.

The monetary policy reaction to a shift in the exchange rate depends on the cause of the shift, its perceived duration and the economic situation in general. Exchange rate movements are not to be considered as isolated events, neither should monetary policy's reactions to them be mechanical. If a depreciation stems from an international slowdown, for example, the consequences for monetary policy will differ from a case where the roots lie in a lack of confidence in Sweden's economic policy.

The situation at the beginning of June can serve as an illustration. The problem was not simply that the krona was under-valued. That had been the case, though not so dramatically, for a long time. What led us to conclude that the situation was sufficiently serious to warrant action was a conjunction of several factors. The depreciation occurred very rapidly and we had not received any new information that justified such a marked movement. That meant that the future, relatively optimistic path for the krona on which monetary policy had been formulated now appeared less realistic. The depreciation was, moreover, particularly troublesome in that it coincided with a substantial price rise and accordingly heightened the risk of inflation expectations shifting to a rate of price increases that exceeded the Riksbank's target. The increase in inflation stemmed both from transitory factors and from persistently high resource utilisation.

Forecasting exchange rates is difficult

As I said, it is the exchange rate's path in the coming two years that is important for monetary policy. So how can one arrive at a picture of the exchange rate several years ahead? The central banks that target inflation can be said to have three main approaches.

- One alternative is to assume that the exchange rate will be unchanged during the forecast period, quite simply to adopt a *cut-off rate*. This, however, raises a number of problems. As exchange rates are liable to shift rather rapidly and the assumed rate is of considerable importance for the forecast rate of inflation, this approach may entail sudden changes in the assessment of inflation and thereby in the repo rate. Another problem is the risk of being trapped in a game situation with the market. So there are sound reasons for not resorting to a

more short-term pattern of reactions. Sooner or later, other central banks have generally come to the same conclusion.

- Another alternative is to base an exchange rate forecast on market pricing or other assessments of *market expectations*. This approach, which is used by a number of central banks, reduces but does not eliminate the risks associated with rapid fluctuations and speculation. Another problem here is that the picture of expectations is liable to vary with how they are measured. On the other hand, this approach has the advantage of presumably being most credible in the eyes of market players; it is, after all, based on their assessments!
- The Riksbank has chosen a third alternative, which is to make an *independent assessment*. Here the initial position — the cut-off rate — is naturally one important component and so are the market's expectations. In addition, we consider other relevant information that is available, not least the exchange rate that can be said to be more fundamentally reasonable.

Which of these three approaches is most appropriate — given that game situations and the risk of sudden shifts could be disregarded — is not self-evident. Personally I cannot see why we should not treat the exchange rate in much the same way as other forecast variables. We normally try to consider all the relevant information that can be gathered on a particular variable. It seems reasonable to do so in this case, too. Another matter is the considerable degree of uncertainty that surrounds virtually all forecast variables and particularly the exchange rate. That is why we also produce an assessment of risks. Our policy is then based on an overall assessment, including a valuation of the various risks.

Exchange rate theories

It is often said that for the conduct of economic policy, the best help in practice is a good theory. In the case of exchange rates, however, the relevant theories have not been particularly successful at either explaining or predicting movements of the Swedish krona or other currencies in recent years.

A basic difficulty with theories for determining exchange rates is the fact that an exchange rate is a nominal price, whereas economic analysis is constructed to explain relative prices. For that reason, exchange rate analysis tends to focus on real rates, which in principle are defined as the basket of goods a particular country has to provide in order to obtain a given basket from abroad. In such an expression for the real exchange rate, the numerator is usually written as the product of the nominal exchange rate and a suitable price index in foreign currency and the denominator as a suitable domestic price index.

A common approach is that the real exchange rate is constant. The term equilibrium is used here to denote internal balance with full employment and external balance with stable external debt. So with a fixed real equilibrium exchange rate, the nominal exchange rate is ultimately determined by the country's rate of inflation relative to inflation abroad. If inflation is lower in the rest of the world, the nominal exchange rate will depreciate so that the real rate remains constant. This is the doctrine of purchasing power parity. While it is the

most common starting point for determining an exchange rate in the longer run, the theory is known to be rather poor at explaining nominal exchange rates in both the short and the medium term.

In practice the real equilibrium exchange rate is liable to be affected by many different factors, two of which seem particularly self-evident.

Terms of trade. Suppose that a country exports cars and imports wine. A deterioration in terms of trade then means that the price of cars falls relative to the price of wine in a common currency. In order to be able to sell more cars with a view to buying an unchanged quantity of wine and thereby leave the balance on current account unchanged, the country's real exchange rate has to depreciate.

Productivity growth. Suppose instead that the country becomes more efficient at manufacturing cars. This can lead to better quality cars for a given input of resources and a given price in the domestic currency. The cars can then command a higher price in the world market and the real exchange rate can appreciate. In practice, high productivity growth tends to be associated with a higher potential GDP growth rate. In a country where growth is higher than in the rest of the world, the real exchange rate can therefore be expected to show an appreciating trend. However, the relationship between productivity growth and the exchange rate is not stable. Economic theory is not clear cut on this point - some lines of reasoning could lead to the opposite conclusion.

An additional factor that is closely related to the real exchange rate is the balance on *current account*. A succession of current-account deficits leads to growing external debt and rising interest payments. The real exchange rate must then depreciate if the country is to achieve enough additional exports to finance the interest payments.

Besides these more fundamental explanations with links to the theory of purchasing power parity, there are numerous notions connected more or less closely with the flows in currency markets. The nominal exchange rate is the price of a currency; like prices of other goods, this price is naturally affected from time to time by more or less temporary fluctuations in demand and supply. It is explanations of this type that market players are most prone to put forward for short-run exchange-rate fluctuations.

The most general flow-related explanation is probably the *short-term interest rate differential*. Textbooks teach that international currency flows and nominal exchange rates are susceptible to differences in current and expected monetary policy. Today, when monetary policy throughout the industrialised world is focused on price stability, so that interest rate differentials between countries are tending to decrease, the explanatory power of this variable is presumably weaker.

Another factor that has been of major importance for nominal exchange rates from time to time is the state of the government finances. High and growing *government debt* leads to expectations of a suspension of payments or a monetary policy realignment in a more inflationary direction. That in turn results in a depreciation of the exchange rate.

The picture in Sweden

Since 1975 the Swedish krona has weakened in nominal terms by as much as 90 per cent. But at least half of this depreciation can be explained by Sweden's higher inflation. And in this respect there has been a decisive change. We now have the same policy commitment to price stability as the rest of the world.

That leaves around 40 per cent of the depreciation to account for. Our work at the Riksbank suggests that in the 1970s and '80s, the major part of the real exchange rate's weakening can be attributed to deteriorating terms of trade, low GDP and productivity growth compared with the rest of the world and growing external debt. One of the models we have used indicates that about three-quarters of the depreciation stemmed from relatively poorer growth in Sweden and about a quarter to worsening terms of trade.

The picture in the 1990s looks different. As far as we can tell at present, in the past decade neither productivity nor GDP growth has been poorer than in the rest of the world (Fig. 1). So in this respect, too, there seems to have been a change for the better. It is partly against this background that the krona's persistently weak average path in the latter part of the 1990s is surprising.

In the more recent discussion in the media and on the markets, attention has focused on more specific flows. This discussion is not always completely accurate. One reason for this is that it is not the individual flows, but rather the complete picture including all of the flows, various currency strategies, etc. that determines developments. We have little knowledge of the extent to which the players in the economy take exchange rate positions when they buy and sell various types of securities. We know from financial theory that large fluctuations in financial prices can often occur without any connection to large flows.

Concern about the government finances can hardly have been a crucial factor in the latter 1990s. Neither is it probable that the short-term interest rate differential played a sizeable part, though an effect at times cannot be ruled out.

In the more recent discussion, attention has focused on more specific flows. There were periods last year, for example, when the paths of the Stockholm stock exchange and the Swedish krona were rather closely related. It looks as if the krona tended to fall when foreign *investors quit the market*. The sizeable *purchases of foreign securities* by Swedish investors have a similar effect; recently, these purchases have mirrored the opportunities provided by the new pension system. Flows that are comparatively small in this context have also been occasioned by the *repayment of government external debt*. At the same time, purchases of kronor have presumably decreased in that *export receipts have fallen* significantly for a number of large companies this year and big concerns have *increased their cash holdings in foreign currency accounts*.

Moreover, in recent years *increased unrest* in the international financial markets has tended to hit the Swedish krona; this was particularly evident during the financial crisis in autumn 1998. It seems to be a consequence of a generally heightened aversion to risk in the major financial centres, such as New York and London. Money is then withdrawn from countries whose currencies and economies took a beating in similar situations in the past; since the crisis in the early 1990s

Sweden is unfortunately included in this category even though the current macroeconomic situation does not warrant this.

Finally, the *generally stronger dollar* should be mentioned as a partial explanation for the weak krona. Many economists consider that according to conventional theory the dollar's strength is inexplicable and the dollar is markedly over-valued. In this situation the Swedish krona, like most other currencies in the OECD area, has depreciated against the dollar.

One problem with explanations of this kind is that they come and go. It is also easy to show that they lack universal validity. One currency's depreciation is attributed to a heavy dependence on commodities at the same time as another's is said to stem from the opposite, for instance a large IT sector. While the Swedish krona has been falling with the stock exchange, both the Swiss franc and sterling have appreciated, and so on. The explanations are therefore of little value for forecasting.

Under these circumstances it has seemed to us that there are good reasons for attaching major importance to the available assessments of the krona's more fundamental value. Many other observers appear to do the same when they predict an appreciating krona in the somewhat longer run. It is quite simply improbable that Sweden can continue to have large trade surpluses and, as a consequence of an unduly under-valued currency, more profitable firms than the rest of the world without this leading to a reversal of the occasional flows that have recently gone against the krona. In forecasting work and monetary policy decision-making we then, as I mentioned earlier, have to combine this assessment with risk scenarios, so that different risks, including the possibility of the krona being weaker than in the main scenario, are weighed against each other.

Smaller pass-through to consumer prices

As I have indicated, the exchange rate concerns us because it influences inflation. Since 1993 exchange rate fluctuations have been comparatively marked but the effects on price developments have been smaller than expected.

Consumer prices for imported goods are dependent on a variety of factors. Besides exchange rate movements, these include the development of world market prices and the level of resource utilisation in Sweden. The importance of domestic resource utilisation has to do, for example, with the fact that most imported goods are handled and processed in Sweden before reaching consumers and that raising prices is generally more difficult when demand is weak.

When we look back at the 1990s in order to draw conclusions about the future, all these factors have to be born in mind. Let me cite a couple of examples.

During 1994 and much of 1995 a comparatively weak exchange rate led to rising import prices but the pass-through to consumer prices was smaller than the Riksbank had anticipated. One explanation was that capacity utilisation turned out to be below the Riksbank's assessment both because it was overestimated initially and because demand was weaker, partly as a result of the Riksbank's interest rate

hikes. Another explanation was the krona's marked appreciation towards the end of 1995.

In 1998 the krona weakened again in connection with the Russian crisis. On a 12-month basis the depreciation amounted at most to about 10 per cent. Even so, import prices did not rise; on the contrary, they actually fell a good way into 1999. This largely reflected the factor that triggered the crisis: one of the largest price falls in modern times in commodity markets, including a barrel price of oil down towards USD 10. The result was markedly decreased international export prices — the equivalent of our import prices.

A factor that may have contributed to the exchange rate pass-through to consumer prices being smaller after the Asian and Russian crises is that importers turned away from traditional trading partners in the United States, for instance, in favour of countries whose currencies have not appreciated against the krona. Our imports from Eastern Europe and Southeast Asia, for example, have increased markedly since 1995.

It is conceivable that the krona's depreciation at the time of the Asian and Russian crises has been exaggerated because the TCW index measures the exchange rate against the most important industrialised countries and uses weights based on export and import shares from 1989–90. In order to throw light on this, we have constructed a simple, broader preliminary import-weighted index that covers 44 countries. The results again show that the krona was weak in 1998 and 1999 but not as weak as the TCW index indicated. One reason why the exchange rate pass-through to consumer prices became smaller than expected may have to do with changes in the composition of imports.

There are, however, also reasons for supposing that the krona's direct pass-through to inflation has decreased. Simple estimations indicate a marked reduction in the early 1990s, followed by some further fall (Fig. 2). A variety of factors may have contributed to this.

- Exchange rate movements, upwards or downwards, may now be perceived as a more transient phenomenon, whereas the devaluations under the fixed exchange rate regime were regarded as more permanent. If importers expect a price change to be temporary, they will no doubt be more prone to absorb the exchange rate fluctuations in their profit margins. That this may have been the case is indicated by some preliminary studies.
- Generally increased confidence in the low-inflation regime may also have tended to reduce the exchange rate's pass-through to inflation. More stable expectations about future inflation should make prices less volatile.
- During the 1990s, moreover, competition in the Swedish economy has generally increased, for instance as a consequence of EU membership, continued tariff cuts, the reduction of other barriers to trade and deregulation of the domestic economy. Increased IT trade and the advent of new low-cost producers have had a similar effect. Although such changes are of the one-off type, in the past decade they have affected a series of markets and thereby presumably had a more protracted effect on the aggregate price level.

The conclusion from all this is that the pass-through from the exchange rate to consumer prices has probably decreased. At the same, this conclusion should not be taken too far, so that the tendency is assumed to be permanent. As we have seen, there have been periods when the rate of price increases for imported consumer goods has been held back by other factors than just an altered exchange rate pass-through.

In a situation where resource utilisation is high, a weakening of the exchange rate is no longer perceived as transient and favourable one-off effects have ceased to act, the pass-through from exchange rate movements can be larger than what we have observed in recent years.

Currency interventions and transparency

Before concluding, I would like to say something with reference to the discussion that arose in connection with the Riksbank's currency interventions in June.

First I should underscore that for a number of years now we have taken great pains to be as open and clear about monetary policy as it is possible to be. I have no qualms about claiming that during the past five years we have become one of the world's most transparent central banks. What we have achieved in this respect is something of a cultural upheaval. The most recent step, in spring 1999, was that we began publishing the minutes of the new Executive Board's monetary policy meetings. As I have explained in other contexts, transparency and clarity serve several purposes. They can enhance monetary policy's credibility and legitimacy. They can also make monetary policy more predictable. In my opinion, moreover, they have had a favourable effect on the Riksbank's internal atmosphere and efficiency.

As regards currency market interventions, we should likewise naturally aim to be as open and distinct as possible. The arguments about credibility and legitimacy apply here as well. There is also reason to believe that interventions will be more successful if they are perceived as a monetary policy signal, with information about the central bank's assessment of price developments and thereby the future path of the instrumental rate.

When the Riksbank intervened last June we made a point of demonstrating that the measure's context was monetary policy. The measure was announced and communicated in speeches by Urban Bäckström and myself. At the time of the first intervention, moreover, the Executive Board issued a press notice and Urban Bäckström took part in a broadcast interview in which a good deal of time was devoted to this issue.

The degree of openness was also substantial in the sense that we informed our counterparties that the interventions had been made and confirmed this when questions were asked. Moreover, the size of the interventions could be calculated later from the weekly publications of the Riksbank's balance sheet. So on this occasion we were more transparent and distinct than is customary with currency interventions, compared both with our earlier record and with most other central banks.

We did, however, depart from the customary procedure in one respect. The Executive Board's monetary policy decisions are normally recorded in separate minutes that are published about a fortnight later. We have chosen not to publish any minutes after the interventions. This is primarily because, as a monetary policy instrument, the effective implementation of interventions is a considerably more complex matter than a repo rate decision. As you know, a central bank does not control the currency market in the same way as the market for overnight loans. By setting the repo rate, the Riksbank determines interest rates in the market, whereas in currency interventions the Riksbank is one of many players. Releasing information that might weaken the Riksbank's market position is therefore a problem.

Preparations for a currency intervention normally include, for example, a strategy for the intervention's size, the criteria for how and when the interventions should be made, the choice of currencies, deliberations about counterparties and contacts with other central banks. In my view, it would not under normal circumstances be reasonable to publish this type of operative deliberation. That might prejudice the possibility of achieving the approved or envisaged goal.

Another question concerns the Executive Board's position on the publication of minutes when the Board's discussion has more to do with matters of principle, including information about the views of individual members. This, too, is a complex issue because information of this type can also affect the effectiveness of the measures that are taken. One possibility I consider worth testing would be to wait for some months before the Board evaluates the measures comprehensively and publishes more detailed minutes. This, in any event, is a matter to which the Board intends to return later this autumn with the aim of establishing a procedure for preparing these matters and providing information about them in ways that are appropriate to the current exchange rate regime. At the same time, it should be underscored that the arrangements we lay down will not be set in concrete. There must be some latitude for unforeseen circumstances. It is worth mentioning that when the Executive Board came into being in January 1999 and chose to work with public minutes, the interval before they were published was comparatively long, 6 to 8 weeks. Since then it has proved possible to reduce the lag to only a fortnight without giving rise to serious detrimental effects.

Conclusion

The main message in my address today has been that in the current monetary policy regime the exchange rate ought to be regarded mainly as one of a number of forecast variables. The problem here is that, like other currencies, the Swedish krona is difficult to forecast in the time perspective that is relevant for monetary policy, namely a couple of years ahead. The situation is complicated, moreover, in that the exchange rate is a variable that in certain situations monetary policy can conceivably affect directly. We try to use all the available information in order to arrive at our forecast. At the same time, the monetary policy decision is reached in the light of other, alternative paths for the exchange rate.

In the course of the last three decades the krona has depreciated. The main causes have been Sweden's higher inflation and lower growth. Since the

realignment of Sweden's economic policy in the early 1990s, these factors no longer apply.

The fact that, on average, the krona has been under-valued in the 1990s has not posed such large problems for monetary policy as might have been expected. Various factors have helped to limit the pass-through to inflation. However, some of these factors cannot be seen as permanent. For instance, resource utilisation is likely to be higher than during the decade that followed the crisis of 1990–92.

Interventions are an instrument the Riksbank has used very sparsely in recent years. Today I have only commented very briefly on our reasons for acting in the early summer. I have had more to say about my view of transparency in connection with interventions. Although, as usual in the context of monetary policy, there are grounds for striving for a high degree of openness and clarity, the comparison with repo rate decisions does not really hold. In the case of currency interventions the Riksbank is a minor player and it is difficult for our ambitions to have an impact. This must be borne in mind in the autumn when we establish a procedure for preparing for and informing about currency interventions.