SWEDISH ECONOMIC POLICY REVIEW 6 (1999) 7-33

EMU and the changing structure of macro risks

Hans Genberg*

Summary

The start of the EMU will change macroeconomic relationships not only among member countries but also among members and non-members. Given its close economic ties with member countries, a country, such as Sweden, cannot hope to insulate itself from the economic fluctuations in the EMU region—even with a floating exchange rate. This paper analyses how the creation of the euro affects the risk of macroeconomic fluctuations in out countries.

The EMU alters the nature of external shocks that affect non-members and the transmission mechanisms of these shocks. It follows that difficulties for policymakers in non-EMU countries will increase as traditional empirical relationships are altered, and as the experience built up from past relationships loses some of its reliability. So there is a risk that macroeconomic outcomes may deteriorate during the EMU's early years.

For countries that are in the process of joining the monetary union, additional problems may arise, which are associated with the possibility that spontaneous currency substitution may occur, reducing the importance of the domestic currency in favour of the euro.

In the longer term, the macroeconomic risks will fade as policymakers learn about the new environment and as some of the shocks associated with break-in difficulties of the EMU disappear. The remaining persistent effects of the EMU are then structural and microeconomic. The risk for outsiders is that the higher transactions costs and currency risk, which such a status implies, leads to a locational disadvantage for domestic firms, inducing them to transfer their activities to a member country. Macroeconomic policy instruments will not be able to deal with this risk, which would have to be borne by immobile domestic factors of production.

* *Professor, Graduate Institute of International Studies, Geneva, Switzerland. Specialises in international monetary economics and international finance.*

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EMU and the changing structure of macro risks

Hans Genberg*

The start of stage three of the EMU establishes a new context for macroeconomic analysis and policy. The consequences for member countries of the single currency, the common monetary policy determined by the European Central Bank (ECB), and the Stability and Growth Pact were analysed at length.[1] While undoubtedly member countries will experience the most extensive changes in their macroeconomic environment, outsiders will not be unaffected. EU members, such as Sweden and Denmark, and non-members, such as Switzerland, have very strong economic links with countries in the EMU zone, and the new macroeconomic situation in Euroland is bound to influence them as well.[2] For example, the majority of Swedish exports and imports is directly conducted with EMU members. In addition, Swedish firms compete strongly with EMU members, such as Finland and Germany, on home and third markets.

In view of the radically new macroeconomic environment brought about by the EMU, the objective of this paper is to analyse the macroeconomic risks that outsiders may be subject to. Will there be new sources of macroeconomic shocks? Will transmission mechanisms between countries be modified? Will macroeconomic policy be made more difficult? These are some of the questions that the remainder of the paper addresses.

The next section identifies the sources of macroeconomic fluctuations in small, open economies and classifies them according to market and geographical origin. It also looks at transmission mechanisms and the scope for national stabilisation policies. Examples from Sweden and Switzerland are used to illustrate the importance of

* *The paper has benefited from comments from the discussant, Anders Vredin, and from Peter Englund, Paul Söderlind, and an anonymous referee. Remaining errors, omissions, and opinions are my own.*

1 See, for instance, the April 1998 issue of *Economic Policy*.

2 This paper focuses on "small" outsiders. It also deals more with conceptual issues rather than the specific context of a particular country.

external events for macroeconomic outcomes and the role played by history and expectations in the creation and transmission of shocks. The classification serves as a background to Section 2, where the objective is to identify mechanisms associated with the start and operation of the EMU that may alter the nature of the macro shocks and the associated transmission mechanisms. Section 3 takes up issues specific to outsiders (such as Sweden), which will probably become EMU members in the near- to medium-term future. The final section of the paper brings together the main arguments and presents some tentative policy conclusions.

1. Sources of macroeconomic fluctuations in small economies

To analyse the relationship between the EMU and the changing structure of macroeconomic risks first requires a definition of what is meant by *macroeconomic risks* and secondly, a review of what the sources of these risks are. For the purpose of this paper, I consider macro risks simply as fluctuations and unpredictability of output, employment, inflation, and similar variables that influence economic welfare directly or that constitute targets for economic policy. This definition is not innocuous because it begs the question of whether these fluctuations constitute diversifiable or undiversifiable risks. International transmission of disturbances is an important source of macroeconomic fluctuations in small, open economies. This implies that there will be some, but not perfect, correlation between fluctuations across countries. So it should be possible to diversify away some of the risk associated with domestic macroeconomic fluctuations by holding an internationally diversified portfolio of assets. But as the literature on the *home bias* in investment portfolios has shown, there is relatively little international hedging of this type going on.[3] So defining macroeconomic risk as done here is justified.

[3] See, for example, Tesar and Werner (1995).

Analysis of the influence of the EMU on macroeconomic risk was conducted mainly for member countries. Two related issues were raised:

1. The reduced ability to conduct nation-specific stabilisation policies as a consequence of the loss of monetary autonomy and the constraint implied by the Stability and Growth Pact, and
2. The potentially destabilising effects of a centralised monetary policy for a region that happens to be out of phase, in the business-cycle sense, with the region as a whole.

How important these issues will turn out to be will depend on the frequency of asymmetric shocks that afflict the members and the degree of synchronisation of their business cycles—matters we have little information about at this stage.

For non-members, it is often assumed that the EMU will not lead to increased macroeconomic fluctuations. The reason is that these countries are unconstrained in their use of monetary and fiscal policies that can, in theory at least, be used effectively to counter external shocks and to pursue domestic objectives freely. But what if the EMU brings about new sources of fluctuations, changes the external transmission mechanisms, and alters the effects of domestic policies? In this case, policy strategies that were successful in the past may no longer be appropriate. The risk of policy errors may increase, and the outsider status will no longer represent the protective shield that it is often assumed to be. So it is important to analyse whether and to what extent the EMU presents a sufficiently different macroeconomic framework even for non-members that macroeconomic risks for outsiders may actually increase.

As a preparation for the discussion of this issue, it is useful to start by classifying the sources of macroeconomic shocks in small economies and to discuss the associated transmission mechanisms and policy responses.

Table 1 contains a classification that distinguishes sources of shocks by geographic location and economic agent on the one hand, and by the main market it affects on the other.

Table 1. Sources of macroeconomic disturbances.

		Asset markets	Goods markets
External	Private sector	The stability of the demand for euro-denominated assets is debatable.	Greater synchronisation of external shocks.
	Govern-ment	The policy strategy adopted by the ECB is a potential source of uncertainty.	The Stability and Growth pact may become a source of instability.
Internal	Private sector	Spontaneous currency substitution may occur.	
	Govern-ment	Risk of policy errors due to changes in transmission mechanisms and external shocks.	

There are several reasons for this type of classification. First, it will help to identify those disturbances through which the start of the EMU may make the greatest difference. Secondly, it focuses attention on the differences in policy responses that would be called for assuming that the nature of the disturbance was known. And finally, the table reminds us that there are potentially many sources of shocks in an economy, which implies that the information problem for the domestic policymaker is a serious one.

The table's structure and the discussion that follows reflect a conventional view of the sources of macroeconomic fluctuations in the economy. As in the well-known Mundell-Fleming model, shocks, in goods or asset markets, drive changes in output and employment. Transmission mechanisms that involve either direct effects on aggregate demand (e.g., through export fluctuations) or indirect effects, through changes in interest rates and exchange rates, create links between asset markets and goods markets as well as between foreign economic developments and the domestic economy. The nature and

origin of the shocks and the corresponding markets' characteristics will determine how the domestic economy will react to each type of disturbance and what policy response would be appropriate.

1.1. Disturbances in asset markets

In conventional models, disturbances in asset markets lead to macroeconomic fluctuations principally through their effects on exchange rates and/or interest rates.[4] When uncovered interest parity is assumed, the shocks are usually associated with changes in money demand or money supply. Thus, an increase in the demand for money abroad would increase the foreign interest rate and bring about either an increase in the domestic interest rate or a depreciation of the home currency depending on the monetary policy followed by the central bank. In either case, the domestic goods market would be affected through the credit cost or the relative price of domestic goods.[5] A disturbance of domestic monetary origin would have similar effects, but here, stabilising the exchange rate would prevent the real sector of the economy from being affected.

The assumption of uncovered interest parity appears to be violated. Empirical evidence instead points to the existence of a (priced) time-varying risk premium in the foreign-exchange market.[6] This implies that shocks to this risk premium may have an independent impact on the exchange rate quite apart from that which is the result of changes in the demand for money. This complicates the conduct of monetary policy because stabilising the exchange rate will no longer prevent the disturbance from having an influence on the domestic interest rate and hence on aggregate demand, as it would in the case of a simple shift in the demand for money.

In macroeconomics, the failure of the uncovered interest parity condition is usually modelled by treating domestic and foreign interest-bearing assets as non-perfect substitutes. This seemingly insignificant detail has important implications. It explains, for instance, why so-called surges of capital in- or outflows were notoriously difficult to deal with in developed and emerging markets. A particularly good

[4] The discussion that follows focuses on small economies with a flexible exchange rate.

[5] In the empirically not-relevant case of continuous purchasing power parity, relative prices would not be affected by the exchange rate, but the domestic-price level would.

[6] De Santis and Gerard (1998).

example, which is also close to home, is the experience of Switzerland in 1977-78. At that time, capital inflows brought about a nominal and real appreciation of the Swiss franc (CHF) of some 20% in a matter of months. The export sector experienced serious difficulties, and the Swiss National Bank (SNB) responded by a temporary exchange-rate floor, which was enforced by interventions in the foreign-exchange market. These interventions brought about a sharp increase in the money supply which led to a bout of inflation about two years later. Had the capital inflows and the appreciation of the CHF been due to an increase in the demand for CHFs, the policy of the SNB of increasing the money supply and stabilising the exchange rate would not have caused any increase in the inflation rate. But if the capital flows were the consequence of a demand switch between dollar-denominated and Swiss-franc-denominated assets, the policy of stabilising the exchange rate necessarily implied a fall in the domestic interest rate and an increase in aggregate demand in the economy. The point of the example is that when domestic and foreign assets are not perfect substitutes, fluctuations in their relative demand create a difficult problem for stabilisation policy, which must weigh the consequences of fluctuations in the exchange rate against those of the domestic interest rate.

Governments are potential sources of shocks in asset markets. Actual or latent changes in monetary policy, exchange-rate policy, and institutional or regulatory frameworks can bring about modifications in international asset preferences with consequences for the real sector through their influence on domestic interest rates and/or the exchange rate. As in the previous example, the difficulty of identifying the exact nature of the disturbance, and the lack of a sufficient number of policy instruments, limit the ability of central banks to offset such disturbances.

1.2. Disturbances in goods markets

There is a large body of empirical evidence that shows that business cycles are correlated internationally regardless of the exchange-rate regime.[7] This is presumably the result of either common shocks affecting several countries simultaneously, explicit or accidental policy co-ordination, or some form of international transmission of nation-specific disturbances. For small economies, this is consistent with the

[7] Baxter and Stockman (1989).

evidence that imputes a substantial portion of macroeconomic fluctuations to external forces.

The transmission of shocks in the goods market occurs via direct effects on aggregate demand or supply and via indirect effects on the interest rate and the exchange rate. For example, an increase in foreign demand for our exports will have a direct effect on aggregate demand, but the associated appreciation of the currency will dampen the expansionary effect somewhat. The size of the dampening depends on many factors, such as the:

- Properties of the domestic demand for money
- Anticipated persistence of the increased demand for exports
- Expected sustainability of the capital flows associated with the induced current account imbalance
- Response of domestic economic policies

Potentially, there are many changes in either the external or the internal economic environment that may lead to modification in the transmission mechanism. The start of the EMU may be one of them.

Government-induced disturbances in the goods market also have direct and induced effects. The latter depend importantly on if changes in government spending and taxes are expected to be financed by borrowing in the private financial markets or from the central bank. Interest rates and the exchange rate tend to react differently to a given change in fiscal policy, depending on if a country has a history of accommodative monetary policy or a reputation of monetary conservatism. A telling example is the reaction of the Swedish crown (SEK) and the CHF in the wake of the financial crisis in the autumn of 1998. Whereas the Swedish crown depreciated significantly at that time, the Swiss franc came under pressure in the opposite direction. It is hard to identify reasons, other than the history of exchange-rate policy in the two countries, to explain this difference.

1.3. Practical limitations to stabilisation policies

The discussion so far serves as a reminder that external disturbances often constitute a major source of macroeconomic fluctuations in small economies, and that a floating exchange rate does not provide insulation from these disturbances except in very special circumstances. In some cases, market-determined, exchange-rate move-

ments dampen fluctuations relative to a fixed rate. But in others, they constitute an independent source of instability. In theory at least, an autonomous economic policy can improve on the polar cases of an unfettered free float and a membership in a monetary union.[8] Armed with a reliable econometric model and accurate information about the nature of the economic environment (including sources of the shocks currently influencing the economy), benevolent policymakers should be able to improve on the laissez-faire market outcome and the delegation of responsibility of monetary policy to an external agent, such as the ECB. But in practice when these ideal conditions are not fully met, the success of activist stabilisation policies cannot be guaranteed. The consequences of limited information about the external environment and the domestic economy, as well as conflicting goals between policymakers and the general public must then be brought into the analysis.

Much of the debate about stabilisation policy in relation to EMU membership has focused on the problem of establishing credibility of domestic policies in the absence of external constraints, such as the Maastricht convergence criteria. Several potential EMU candidates previously suffered from a perceived and/or actual lack of policy discipline that led to high real and nominal interest rates (among other effects)—which explains this focus.

The practical consequences of a lack of credibility in the long-terms stability of a policy regime is that attempts to stimulate the economy in a downturn may have unintended effects because they are misinterpreted by the private sector as a return to old habits of excessively expansionary policies. A country that cannot count on an external agent, such as the ECB, to confer credibility may have to forego stabilisation policies to some extent until credibility is established independently.

A consequence of the emphasis on credibility is that central-bank independence has become recognised as an important institutional feature. Discretionary policymaking of an agency that is subject to political pressure can easily generate an outcome where economic policies are, on average, too expansionary, which lead to excessive inflation. A solution to this problem would be to tie the authorities' hands with binding rules, at the cost of eliminating their ability to offset shocks to employment. But making the central bank constitu-

[8] See, for example, Genberg (1989).

tionally independent from political pressures could preserve its ability to pursue counter-cyclical policies without succumbing to the temptation to inflate the economy ahead of elections. In other words, domestic institutional reform could ensure credibility of policies at the same time as it would preserve freedom of action to implement stabilisation policies. It would thus be superior to delegating monetary policy to an external agency.[9]

In models where these propositions were derived formally, the stabilising powers of the central bank are taken for granted. This is useful as a modelling strategy, but when practical conclusions are drawn, there is a tendency to forget that even if independence was granted, other problems associated with the pursuit of stabilisation policies still remain. As previously noted, these are due, *inter alia*, to difficulties in identification of shocks, uncertainty about and changes in transmission of monetary policy, and incomplete information about the economy in general.

The bottom line of this discussion is that even if you are not constrained by EMU membership and you have the opportunity to pursue stabilisation policies, it is not a foregone conclusion that doing so will result in a significant reduction in the variability of income and employment.[10] The remainder of the paper discusses whether the creation of the EMU makes the conduct of macroeconomic policy in non-member countries more or less difficult.

2. How will the EMU change the macroeconomic landscape for non-members?

The creation of a monetary union in Europe represents a significant structural change not only for the conduct of monetary policy in member countries, but also for their fiscal policy and the nature of their macroeconomic relationships in general. In view of their close economic ties with EMU countries, non-members, such as Sweden and Switzerland, will certainly be affected. In terms of Table 1 entries, these countries must be ready to deal with new and/or modified external shocks in asset and goods markets. It is also possible

[9] See Gottfries (1996).

[10] To my knowledge there is no empirical evidence that countries with a floating exchange rate have been able to stabilise their output levels better than those with a fixed rate.

that the transmission mechanisms that link their economies with Euroland will be modified as a result of the monetary union.

2.1. Temporarily increased risk of asset-market disturbances

Monetary uncertainty will almost surely increase in the first few years of the EMU, partly because of the difficulty to predict the evolution of money demand, and partly because of the policy strategy that the ECB adopted.

2.1.1. Potential instability in the demand for euros

There are at least three reasons why the start of stage three of the EMU will lead to some uncertainty about the demand for euros.

1. As documented in Spencer (1997), a significant amount of currency substitution has characterised the member currencies already during the ERM. With the introduction of the euro, the consolidated demand for the constituent currencies may avoid some of this instability. But at the same time, total cross-border holdings of money may be reduced as the need for foreign exchange for transaction purposes is eliminated. The net effect on the stability of the demand for euros is uncertain.
2. Prices of goods and services will increasingly be quoted in euros. Salary accounts may also be denominated in the new currency. But euro notes and coins will not be available until 2002. So economic agents will find it convenient to use credit cards or prepayment cards to a larger extent than before—to avoid the inconvenience of having to calculate in national currencies. The demand for conventional measures of money will be affected.
3. As the euro becomes more widely used as an invoice currency in international trade, it is possible that foreign residents will maintain euro-denominated deposits in EMU-located banks to a larger extent than they until now have had deposits in DM, FF, etc. At least during a transition period, the demand for aggregates that include such non-resident deposits will be more unpredictable.

2.1.2. The ECB must establish a track record

The ECB announced that it will adopt a strategy for its monetary policy that is a mix of M3 targeting à la Bundesbank and inflation targeting. This strategy is understandable but risky. Using a monetary aggregate as an intermediate target can be useful for the ECB in so far as it creates continuity with the strategy of the Bundesbank. But if

the demand for euros will be uncertain and unstable, the link between control of the supply of euro-M3 and inflation will be imprecise, leading to credibility and authority losses. Referring to inflation targeting emphasises the fact that the principal objective of the ECB is to maintain price stability. But in and of itself, it is not very informative about the means by which this goal is to be attained. For this reason, central banks, such as Sweden's Riksbank and the Bank of England, regularly publish inflation reports in which their forecasts for inflation and explicit policy measures are presented and justified. But the ECB has stated that it does not intend to publish internal inflation forecasts. This lack of transparency may contribute to the inevitable uncertainty surrounding monetary conditions in the early years of the EMU before the ECB has established a track record.

The increase in monetary uncertainty in the early years of the EMU will spill over to outsiders. All modern, exchange-rate determination models agree that disturbances in asset markets are the main factors responsible for unexpected exchange-rate fluctuations. If monetary conditions in Euroland become more variable, the exchange rates, vis-à-vis non-members, will thus become more volatile. Central banks in the affected countries can of course attempt to limit this volatility by a policy of interventions in the foreign-exchange markets. But such a policy would not necessarily succeed in insulating the economy from the foreign monetary uncertainty. Stabilising the exchange rate could destabilise either domestic interest rates or the domestic money supply with potentially negative consequences for economic stability as Switzerland has found out on several occasions.

2.1.3. Less attention paid to the external value of the euro?

Another type of monetary uncertainty may emerge if the dollar/euro and yen/euro exchange rates become more variable than the individual EMU members' currencies were before the monetary unification. It was suggested that this will be the case because Euroland is much less open to external trade than each individual member country, so there is less incentive for the ECB to moderate movements in the euro's external value. If this hypothesis turns out to be correct, it will translate into greater exchange-rate fluctuations also for non-members.

2.1.4. The implications of the Stability and Growth Pact are uncertain

The Stability and Growth Pact is another potential source of monetary and financial uncertainty associated with the EMU. Eichengreen and Wyplosz (1998) consider it as a minor nuisance as long as structurally adjusted budget deficits move into surplus. But this interpretation is not universally shared.[11] The change in the political landscape in Europe, especially the election of Mr. Schröder in Germany and the appointment of Mr. Lafontaine as the finance minister, has added to the uncertainty.[12] There may be less pressure to apply the constraints of the Pact to the letter, which will make it easier for national governments to pursue stabilisation programs based on fiscal policies. While this may contribute to macroeconomic stability, the danger is of course that the diminished external constraint will lessen fiscal discipline in general, making it harder for the ECB to control inflation. The resulting conflict would not be lost on financial markets, and interest rates may rise and become more volatile as a consequence. Non-members would be affected by this volatility through the channels that were discussed in Section 1.

If the Stability and Growth Pact does not deliver the fiscal discipline that it was designed to produce, additional exchange-rate disturbances may befall on non-members in case their monies become refuge currencies for investors who begin to have doubts about the medium-term solidity of the euro. The traditional candidates, such as the Swiss franc, for such a role as a refuge would feel the most pressure. But it is possible that even the Swedish crown would be affected. Domestic policies adopted to limit these fluctuations would, as in the previous case, compromise monetary stability, and the central bank may therefore hesitate to intervene.

[11] E.g., Bean (1998).

[12] The reaction of asset prices to the subsequent resignation of Mr. Lafontaine shows how closely financial markets seem to monitor developments related to fiscal policy and the Stability and Growth Pact.

2.2. Greater convergence of macroeconomic outcomes in Euroland

2.2.1. Convergence of inflation rates

With the introduction of a common currency and a common monetary policy, actual and expected inflation rates will probably converge and be even more correlated across member countries than at present. To be sure, exchange-rate stability within the ERM has already narrowed inflation differentials substantially, so the room for additional convergence is not huge. It was also pointed out that, even with a common monetary policy, measured inflation might differ due to relative price changes between traded and non-traded goods and to the failure of perfect price arbitrage across regions.[13] Nevertheless, the empirical results of Engle and Roger (1996) strongly suggest that additional inflation convergence will materialise. For this reason, and because the EMU is a more permanent arrangement than the fixity of exchange rates under ERM, *expected* inflation rates are surely going to be more similar across member countries in the future.

2.2.2. Convergence of nominal and real interest rates

Marston (1997) showed that differences in real interest rates across countries could be empirically attributed to deviation from uncovered interest parity and to failure of expected purchasing-power parity. With the elimination of exchange risk and with a common monetary policy, deviations from interest parity will be eliminated and money-market interest rates will be identical throughout Euroland. Adjusted for credit risk, nominal interest rates for longer maturities will converge completely. As already argued, the EMU will also bring about increased similarity of expected inflation rates. So it follows that real interest rates will show substantial uniformity across the region.

2.2.3. More similar economic structure?

Frankel and Rose (1997) argued that the creation of a monetary union brings about structural changes in member countries that make disturbances in goods markets more symmetric. A possible explanation for this would be that the elimination of currency risk and the reduction in transaction costs resulting from the common currency

[13] Cecchetti, Mark, and Sonora (1998).

will lead to more intra-industry specialisation in member countries. To the extent that shocks are industry-specific, they would thus be more evenly spread across the EMU region.

2.2.4. Convergence of business cycles

A common monetary policy, additional convergence of real interest rates and inflation rates, and a greater symmetry of disturbances in goods markets will contribute to making business cycles more similar. The process leading to the start of stage three of the EMU has contributed to a certain macroeconomic convergence in member countries. So the scope for more synchronisation is relatively limited.[14] Idiosyncratic regional shocks will still exist, and lingering differences in financial structure may for some time transmit the ECB's monetary policy somewhat differently across the monetary union.[15] While I think that the emergence of a more pronounced EMU-wide business cycle is likely, it is probably also true that the break with the past will not be as great in goods markets as in financial markets.

If the EMU leads to more synchronised movements in output and inflation in member countries, then outsiders will be subject to somewhat more uniform external shocks. As previously explained, external goods-market disturbances are primarily transmitted through their impact on exports. These are principally determined by the state of the business cycles in the main trading partners. When these cycles are out of phase, their effects tend to neutralise each other, thereby limiting their external impact. If the EMU leads to generally increased correlation of output movements in member countries, outsiders will be affected more strongly. Required changes in real exchange rates necessary to counter these shocks will hence be larger.[16]

[14] It might be argued that part of the reason for the observed convergence is the success of national stabilisation policies at eliminating country-specific economic cycles. It would then follow that a common monetary policy would actually lead to some divergence. In view of the substantial limit to monetary autonomy implied by the exchange-rate mechanism within the EU, I do not think that this is an empirically significant possibility.

[15] Dornbusch, Favero and Giavazzi (1998).

[16] This is the other side of the coin of the Frankel-Rose claim that a formation of a monetary union will make member countries more similar.

2.3. Challenges for macroeconomic policy

By staying outside the EMU, a country retains autonomy with respect to the conduct of its macroeconomic policy. While this does not mean that macroeconomic links with the rest of the world are broken, non-membership is usually thought of as an opportunity to shield the economy from foreign shocks. For example, in conventional economic models, when the economy is faced with a reduction in export demand, the exchange rate will either depreciate automatically so as to limit the impact on domestic employment, or else domestic monetary policy can be eased to achieve the same outcome. Inside a common currency area, the same demand shock would lead to some combination of a fall in employment in the affected region, a relative reduction in its wages, or an active fiscal policy to offset the initial reduction in demand.

Similarly, a non-member that experiences a shift in the demand for its money can, in principle, prevent this from destabilising the real economy by generating a corresponding change in the supply of money. But as argued in Section 1, when we allow for other types of shocks (e.g., variations in the risk premium associated with the domestic currency and changes in the demand for domestic assets in general), the difficulty of finding the appropriate stabilisation policy increases. Furthermore, when the underlying shocks are not observed directly by the policymaker but must be inferred from market signals, there is always a possibility of misinterpretation that leads to an inappropriate policy response. In other words, neither an automatically adjusting floating exchange rate nor a well-intentioned policymaker is going succeed in completely preventing external events from being transmitted to the economy. The question then is whether the task of the policymaker was altered by the creation of the EMU. The discussion in this section implies that it has.

The small western European countries that do not belong to the EMU have adopted different monetary-policy strategies as outsiders. The Swiss National Bank and the Swedish Riksbank opted to pursue their objective of price stability with a floating exchange rate. The Swiss emphasised long-run growth of monetary aggregates, and the Swedes explicitly adopted an inflation-targeting strategy. The Danes linked their fortunes to EMU countries by fixing the DEK to the ecu/euro in a narrow band, whereas the Norwegians adopted a less rigid exchange-rate target.

The EMU will complicate the conduct of monetary policy in all cases, but particularly for the floaters. For example, the Riksbank's inflation-targeting approach is to establish forecasts of what the inflation rate would be taking as given the current policy stance, and to adjust the policy instruments if the forecast is sufficiently different from the target inflation rate. The advent of the EMU complicates both steps in this process. External factors play a principal role for the macroeconomic evolution of small, open economies. To forecast inflation it is therefore crucial to have a good understanding of these factors and of the mechanisms that transmit the foreign impulses. The experience and knowledge that was accumulated within the Riksbank during the past six years will depreciate when the EMU starts operating. The information content of exchange-rate and interest-rate movements is likely to change, but it will take some time before empirical evidence allows us to evaluate exactly how. Likewise, forecasting the European business cycle and the European inflation rate as well as their consequences for the Swedish economy will become more difficult until experience with the new system is acquired. Established models that rely on empirical results from earlier periods may simply not provide as accurate forecasts as before.

Although the Swiss National Bank does not have an explicit exchange-rate target, the external value of the Swiss franc influences the conduct of monetary policy. The role of the franc as a refuge currency occasionally leads to strong pressures on the currency, which are difficult to manage without threatening the basic objective of price stability. The conflict arises because the SNB cannot observe the exact nature of the shock but only its consequence for the exchange rate, and because it does not have precise enough instruments to deal with changes in investors' judgement about the risk premium on Swiss franc assets. As argued in the first part of this section, the start of the EMU is a source of concern in this respect. If it will be associated with an increase in monetary uncertainty in member countries, there is potential for increased frequency and intensity of external asset-market shocks for non-members.

The discussion in this section implies that macroeconomic uncertainty in non-member countries may increase during the early years of the EMU. There are strong reasons to believe that the new institutional and policy framework will lead to the emergence of new types of external shocks and to a modification of existing channels of transmission. Asset markets and goods markets will be affected, but

the potential for instability in the former is probably greater. Consequently, exchange-rate and interest-rate volatility could increase for non-members.

The appropriate policy response to increased volatility in asset markets is to lean against the wind of the resulting changes in exchange rates. Except in very particular circumstances, the stabilisation of the exchange rate should only be partial, and the real side of the economies will not be insulated from EMU shocks.

Macroeconomic risk for outsiders may also rise because policy is rendered more difficult in the early years of the EMU. As traditional patterns of external disturbances and transmission mechanisms are altered, signals in economic statistics and empirical regularities from the past may lose some of their information content. The implication for an active stabilisation policy is that a more cautious approach is warranted, and that larger discrepancies between macroeconomic outcomes and policy objectives could be observed.

For individual investors the implications of these developments are ambiguous. If it is true that macroeconomic risks in non-members increase (at least temporarily) with the start of the EMU, then the potential benefits from international diversification may increase. But changes in the structure of disturbances and of international correlations complicate asset-allocation decisions because these are built on estimates of the variance/co-variance structure of returns, which themselves are likely to be altered because of the EMU.

3. Macro risks in the transition to the EMU

Countries that are currently on the outside, but that are probable EMU members in the medium-term future could face special sources of risks associated with the transition period. These risks stem from the possible emergence of currency substitution on the one hand and the process of determining and enforcing a conversion rate with the euro on the other.

3.1 Will the EMU bring about currency substitution in non-member countries?

The Canadian dollar is the dominant currency in Canada. It does not appear that there is substantial currency substitution in that economy even though the US, with its dollar, constitutes an extremely important trading partner. Prices as well as wages and salaries are almost

exclusively quoted in the local currency. On a smaller scale, Switzerland is another example where the local currency is alive and well even though it exists in the shadow of the DM and other EMU-members' currencies. But there are some signs that changes may accompany the creation of the single currency in Euroland. For example, the Swiss tourist industry is considering the need to quote prices in euros to attract clients from EMU countries. There have also been well-publicised hints by some highly export-oriented manufacturing firms that they will have to set wages of their Swiss workforce in euros. But right now, these are relatively insignificant developments from the viewpoint of the economy as a whole.

Should the possibility of significant currency substitution and price and wage setting in euros hence be taken as a theoretical curiosum with little practical relevance? I do not think so, when we are analysing countries, such as Sweden, which are widely expected to join the EMU in a not too distant future. Incentives to use a foreign money are much smaller in a country (Canada, Switzerland) where there is no chance that the local money will be officially abandoned, than in a country (Sweden) where there is a better than a 50% chance that the currency will cease to exist within the next five years.

By signing the Maastricht Treaty, Sweden explicitly indicated that it will join the EMU when convergence criteria were met. But Sweden did not join with the first group on January 1, 1999 because the government was unwilling to make a proposal to that effect to the parliament. The reason for the government's unwillingness is a perceived lack of popular support for membership—until recently. At the same time, preparations of financial institutions (including the central bank) and large industrial enterprises have proceeded with a resolve that indicates strong expectations that the country will join in the not too distant future. Current estimates are that membership could come early 2002, i.e., when the euro will completely replace currencies of member countries.

According to this scenario, the Swedish crown will disappear in less than five years from now. It would be surprising if some adjustments to this event do not start earlier. It is easy to think of scenarios where the use of euros in Sweden would become relatively widespread in anticipation of the official changeover. It is much harder to give estimates of the *extent* of the currency substitution phenomenon, let alone provide empirical evidence that substantiates the hypotheses. For these reasons, the following is meant not as a prediction of

what will happen in the next five years in Sweden, but rather as a list of possibilities.

Firms that compete with enterprises within the euro zone will face strong pressure to quote prices in euros. As a result, they will incur some currency risk to the extent that a large portion of their labour costs is denominated in SEK. Hedging this risk in financial markets is a possibility but it will add to costs for the Swedish firm relative to competitors in Euroland. So it may attempt to pass on the risk to employees by fixing salaries in euros. Workers may feel obliged to accept salaries denominated in euros if the alternative is lower salaries in crowns or that the firm leaves the country. Hedging the resulting foreign-exchange risk in financial markets is a possibility but perhaps not likely as a strategy for average workers. Instead, they may try to rearrange expenditures so as to get a better match with the currency denomination of revenues. For example, mortgages can be written so that interest and principal payments will be in euros. To the extent permitted, insurance policies might also be signed with companies offering to charge premia in euros. Consumer durables can be purchased in Euroland and paid for in euros. Internet trade will be increasingly used, and some of this will be denominated in euros.

With an increasing share of expenditures denominated in euros, some consumers will want to have their credit cards and prepayment cards denominated in euros. Retailers may find it necessary to accommodate these customers by quoting prices in euros. To reduce the exchange risk, they will, in turn attempt to pay their suppliers and workers in euros, thus enlarging the group of economic agents that operate in the *eurofied* economy.[17] In this way the euro will be introduced spontaneously into the economy even before Sweden has formally joined the EMU.

To the extent that the evolution just described will occur at all, it bears re-emphasising that it is much more likely in a country where there is a high probability that a foreign currency will replace the domestic currency, than in a country that will continue indefinitely with its own currency. The knowledge that a changeover will eventually occur provides the co-ordination mechanism necessary for a significant proportion of economic agents to start using the foreign currency. A large portion of the economy could at one point switch

[17] This term is an attempt to translate "dollarised".

over, as the usefulness of the old domestic currency dwindles for lack of a critical mass of users.[18]

3.2. Inflation targeting in the presence of currency substitution

It is now accepted that the main, if not the only objective of monetary policy should be to maintain price stability, usually interpreted to mean a steady inflation rate on the order of 2% per year. There are at least two reasons for this, one being that it is actually within the power of monetary policy to achieve this objective as opposed to one that involves some real variable such as the level of unemployment or the real exchange rate. The other reason for aiming at a low inflation rate is that a low inflation rate is more likely to be stable than a high rate, and stability implies predictability. Predictability, in turn, enhances the information content of the price system and facilitates long-term planning thus contributing to investment and growth.

In countries that make the objective of controlling inflation explicit, the price index used to measure the inflation rate is usually a consumer-price index. Sometimes it is adjusted to remove temporary, non-monetary sources of price changes such as sales taxes. When all transactions are denominated in the local currency, the relevant price quotes are obviously also in local currency. The resulting index then provides a convenient measure of the evolution of the purchasing power of domestic money holdings and wages, provided that the latter are also denominated in domestic currency. But what if a significant portion of domestic purchases is denominated in a foreign currency? Would the same price index still be as appropriate? And what if wage and salary contracts were stated in terms of foreign money, would a domestic-price inflation still be an appropriate target for monetary policy?

In this section, I attempt to give some answers to these questions, which are motivated by the possibility that the creation of the EMU will lead to spontaneous currency substitution as previously discussed.

To be specific, suppose incomes are fixed in SEK but that a significant proportion of expenditures is denominated in euros. The latter may come about because consumers actually buy some items

[18] Recent models of currency competition such as that of Kiyotaki and White (1989) emphasise the possibility of multiple equilibria and the importance of a coordination mechanism for the determining which of the them will be chosen.

directly abroad (e.g., through Internet-based trade) or because firms find it useful to quote prices in euros. In this case, the measured consumer-price index would presumably incorporate the euro-based prices converted into SEK using the market exchange rate, in principle, at the time of the transaction. A consequence for goods whose prices are denominated in euros is that fluctuations in the exchange rate will have an immediate and one-for-one effect on the SEK prices, just as if purchasing power parity was maintained continuously. Stabilising the domestic-price index would under these circumstances be considerably facilitated if the exchange rate did not fluctuate. To the extent that disturbances in asset markets led to pressures on the currency, it would be appropriate to offset these to maintain domestic-price stability.

Suppose next that wages and salaries were denominated in euros. In this case, would stabilising an SEK-based price index necessarily be appropriate? We must understand the real purpose of a stable, predictable, domestic-currency-based price index to answer this question. If it is to make it easier for firms or households to evaluate expected real wages, for example, then with nominal wages fixed in euros, the usefulness of a stable SEK price level (and hence one that would fluctuate one-for-one with the exchange rate) could be called into question. A policy to stabilise a euro-denominated domestic-price level might be preferable in the limit where all domestic wages and salaries were denominated in this currency. In the intermediate case where some fraction of wages is denominated in euros, the relevant price index may have to explicitly include the exchange rate. The issue seems to be entirely dependent on exactly why a stable price level is desirable in an economy. As far as I am aware, analysis of this issue always assumes that domestic wages and salaries as well as prices of goods purchased and sold on the domestic market are denominated in the local currency. If this is not the case, choice of the appropriate price index is more intricate and must be further analysed.

If finally incomes, expenditures, and all nominal assets of domestic residents became denominated in euros, then to focus on a domestic-currency-based inflation measure starts to lose its usefulness. What would matter for consumers would be the evolution of euro-denominated prices and wages. Converting prices into SEK using a floating-market exchange rate, and having this index be a target for policy would not serve any real purpose in the limiting case where the economy has become completely eurofied. It would be better to ig-

nore the exchange rate altogether. But when eurofication is only partial, the formulation of monetary policy would have to deal with the consequences of fluctuations in the euro exchange rate for the stability of the price index converted into SEK.

The implication of this discussion appears to be that the justification of targeting a domestic-currency price index (or inflation rate) may have to be reconsidered if the economy is affected by a significant degree of currency substitution in the sense that wages and/or prices are actually set in a foreign currency.

3.3. Is there a risk of speculative attacks in the transition?

According to the Maastricht criteria, a country must have declared a parity value for its currency relative to the euro and maintained its exchange rate within a band around this parity for two years before becoming a member. It is unclear at present if this requirement will be applied to the letter for countries, such as Sweden and the UK, should they apply for membership. But what is clear is that a conversion rate between the new member's currency and the euro will have to be declared *some* time before the membership taking effect.[19] This raises the spectre of at least two sources of risk: that the process of choosing the conversion rate leads to instability, and that the chosen rate will be "tested" by speculative behaviour on the foreign-exchange market.

The choice of the conversion rate can lead to conflicts between exporters and importers, between foreign-currency debtors and creditors, between current EMU members and the newcomers, to mention the most obvious. Because it is difficult to define an equilibrium conversion rate on purely scientific grounds, there is bound to be some negotiations between the conflicting interests leading up to the final decision. This decision may reflect a compromise between economic and non-economic considerations.[20] If the process of choosing the conversion rate becomes drawn out and politicised, there is a risk that market reactions lead to higher volatility during this period. To avoid such an outcome, it would be useful to make

[19] In the discussion of the choice of conversion rates for the current members, the market rate on the last day before the start of EMU was rejected as a possibility. It is highly unlikely, not to say inconceivable, that new members would be allowed to enter using this rate.

[20] The decision on the conversion rate between the East-Mark and the West-Mark at the time of the reunification is a good example of this.

the decision as transparent and objective as possible by, for example, letting the Riksbank play the main role in the process.

A choice of the conversion rate that is judged to be "wrong" by the players in the foreign-exchange markets can become an object of speculative pressure. The longer the time between the announcement of the conversion rate and the final membership in the monetary union, the greater the danger that some event will occur that leads to such pressures. This argues in favour of making the transition period as short as possible.[21]

4. Summary and conclusions

Conclusions of a paper, such as this one, are necessarily tentative. The EMU represents an important structural break, and it is difficult to foresee how economic agents and policymakers will adjust to such a change. Past experience is almost by definition only of limited value because the creation of the EMU is a unique event. Nevertheless, the analysis in the paper points to several potential new or modified sources of macroeconomic risks. During the initial break-in period of the monetary union, financial disturbances may become more frequent than in the past. Outsiders will be affected through pressures on exchange rates and interest rates. Attempts to counter these effects will lead to conflicts between avoiding exchange-rate misalignments, on the one hand, and maintaining internal macroeconomic balance on the other.

Business cycles in the EMU region already spill over to non-members through the usual trade channels. The scope for countries, such as Sweden and Switzerland, to insulate themselves from the effects of these cycles is already limited even though their exchange rates are not formally tied to the Euro. It is likely that the business-cycle influence from the EMU region will become even stronger than before due to the greater synchronisation of member countries' economies that the introduction of the common currency can be expected to bring about. Attempts to shield the economies from the stronger external influences will require larger real exchange-rate variations than in the past.

For countries that are likely to join the EMU in the not-too-distant future, there is a possibility that spontaneous adoption of the

[21] Chapter 10 of SNS (1999) contains additional reasons for keeping the transition period short.

euro ahead of the official schedule will occur. In this case, variations in the exchange rate will take on greater significance in the definition of the purchasing power of the domestic currency. This in turn means that the central bank must incorporate exchange-rate changes in the design of its policy to a greater extent that it has done in the past. This should not necessarily be done by seeking to achieve a target value of the exchange rate, but rather by continuously re-evaluating the importance of euro-denominated domestic trade and its implication for a properly defined measure of stability of the purchasing power of the domestic currency.

Several of the macroeconomic risks that were discussed in this paper are temporary in nature. As policymakers, inside and outside the EMU, acquire experience about the new system, some of the uncertainties associated with the introduction of the euro will fade, and others become manageable with standard policy instruments. So I do not view the EMU as a great threat to *longer-term* macroeconomic stability, even though I believe that policymakers will have to be more vigilant and less ambitious in the first few years of its existence. For the same reason, I do not believe that a decision about Swedish membership in the EMU should focus primarily on macroeconomic factors.[22] The long-lasting effects of the EMU are structural and microeconomic. The risk for outsiders is that the higher transactions costs and currency risk, which such a status implies, leads to a locational disadvantage for firms, which could transfer their activities to a member country.[23] Macroeconomic policy instruments could not deal with this risk, which would have to be borne by immobile domestic factors of production.

[22] I am of course not denying that being outside or inside the EMU has important macroeconomic implications. What I claim is that it is theoretically *and* empirically ambiguous whether macroeconomic stability is better served inside or outside.
[23] See Chapter 9 of SNS (1999) for an elaboration of this argument.

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