Fixed Exchange Rates and European Monetary Union

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This essay discusses both the rationale underpinning the adoption of some form of exchange rate coordination, and the theoretical issues pertinent to the selection of an appropriate exchange rate regime. Section one forwards three classes of arguments against floating exchange rates. Section two delimits the n-1 problem, and how it affects the choice of the optimal exchange rate mechanism. Finally, section three discusses the implications for European monetary union.

Why exchange rate coordination?

In the wake of Friedman's 1953 paper, economists generally accepted that floating exchange rates provide extra freedom in attaining the twin policy goals of internal and external balance. The contention here is that there are circumstances in which a policy of flexible exchange rates is not optimal.

First, consider an exogenous financial shock. Let there exist two countries, Country A and Country B (de Grauwe, 1989). The exchange rate between the two countries is a managed float and Country A sets its monetary policy without regard for external effects. Imagine that there occurs an exogenous shift in investors' currency preferences, prompting them to desire more of Country A's currency and less of Country B's. The result is that the interest rate rises in Country A and falls in Country B. This induces a capital inflow into Country A and an appreciation of its currency.

Suppose Country B wishes to avoid the depreciation of its currency: it must contract its money supply in order to induce its

interest rate to rise. It is clear that the net result is a contraction in the world's money supply: the money supply in Country B has decreased, while the money supply in Country A is unchanged. This example illustrates a general principle: when an exogenous financial shock occurs, just as an interest rate target is optimal in a closed economy, so is an exchange rate target optimal in an open economy.

However, the argument goes deeper. Even in the event of a real shock (say, an exogenous increase in aggregate demand in Country A), floating exchange rates may not be optimal. Conventionally, a flexible exchange rate, by permitting the interest rate to vary to dampen the effects of a real shock, is an optimal response in these circumstances. However, the experience of the 1970s and 1980s has led to considerable debate concerning its the efficacy as an adjustment mechanism (Krugman,1989). In particular, the ability of financial markets to price currencies efficiently is doubted. The dominating influence of speculative flows, it is argued, confuses the relationship between fundamentals and the value of a currency. In these circumstances, traders may rely on backward-looking rules, and hence currencies may drift from long-run equilibrium values, even permitting speculative bubbles to appear in foreign exchange markets.

Moreover, if exchange rates are excessively volatile, their effectiveness as an adjustment mechanism is lost. Dixit (1987) gives the example of a monopolistic export industry. If it is uncertain whether

an exchange rate movement will persist, a firm in this position will not be quick to adjust export prices (particularly if there exists a sunk cost to entering the export market), and the phenomenon of "pricing to the market" will occur. That is, if flexibility is excessive, the benefits of flexibility are lost.

Two further classes of argument against floating exchange rates can be advanced. Firstly, even if flexible exchange rates are efficiently priced, an open economy may not relish the independence to set its own monetary policy which is offered by flexible exchange rates. If an open economy has a monetary authority that is weak on inflation, it may obtain a lower rate of inflation by fixing its exchange rate with an economy which possesses a strong monetary authority, and passively accepting the monetary policy set in this economy. The incentive to enter into an exchange rate agreement for this purpose is stronger the more highly valued is price stability as a policy objective.

Secondly, if a group of open economies satisfies certain criteria, adjustment can take place in response to any type of shock, without any requirement that exchange rates alter. These criteria are that goods, financial and factor markets are fully integrated, and that there exists a high degree of flexibility in local wages and prices. Dividing such a group into separate units, each with its own currency, constitutes a pure inefficiency. In other words, if other adjustment mechanisms are available, flexible exchange rate generate costs but not corresponding benefits.

It is clear, then, that tenable arguments can be forwarded in favour of some sort of exchange rate coordination. Suppose that a group of open economies, accepting one or more of these arguments, decides to coordinate exchange rates in some fashion. Now the problem is to construct an appropriate exchange rate mechanism. This

is the topic of the next section.

How should exchange rates be coordinated

In an economy with n goods, only n-1 independent relative prices exist. Similarly, in a system of n currencies, only n-1 bilateral exchange rates need to be determined. The implication is that a degree of freedom exists in the choice of policy instruments, and a numeraire for the system must be selected. This is termed the n-1 problem, and it has both symmetric and asymmetric solutions. The former is a solution in which all countries participate in providing the nominal anchor to the system. The latter, on the other hand, is a solution in which one economy in the system provides the nominal anchor, and all other economies passively accept the resulting constraints on their monetary policies.

The classic symmetric solution is to allow exchange rates to float: each economy sets its monetary policy independently and exchange rates are determined endogenously. In the context of co-ordinated exchange rates, an example of a symmetric solution would be the tethering by each economy of its currency to a basket of goods which would then serve as a nominal anchor to the system, as long as the economy refrains from sterilizing reserve flows (Giavazzi and Giovannini,1989). This symmetric solution seems fair in that no single economy has the power to set the system-wide level of interest rates solely for its own benefit. However, in the current context, attention will focus on the situation in which all the economies in an economic system prefer an asymmetric solution.

Borrowing from the theory of games, inflation may be construed as the inefficient outcome of a noncooperative game between the economy's monetary authority and the public (Rogoff,1989). To appreciate this, imagine that the monetary authority announces in period t the monetary policy

for period t+1. Suppose that the public forms its expectation of the inflation rate that will pertain in period t+1 in accordance with the announced policy, and enters into the appropriate nominal wage contracts. The monetary authority now has an incentive, if full employment is a policy goal, to unleash a surprise inflation in period t+1, as this will reduce real wages and hence expand output and employment. The public, however, will be aware in period t that the monetary authority is capable of deviating from its announced policy path. If it believes the monetary authority will succumb to the temptation to inflate, it will increase its inflation expectations and demand higher nominal wage contracts in the coming period. This has a self-validating effect in that the monetary authority, if it wishes to avoid a contraction in output, must then relax monetary policy so that the anticipated inflation rate is realized. It turns out that the solution to this time consistency problem, whereby the monetary authority may find it optimal at some future date to deviate from its announced policy path, depends on the monetary authority's anti-inflation reputation.

Reputation is important because the game between the monetary authority and the public does not take place one-off, but rather is repeated in every period. It follows that, in these circumstances, past experience conditions the public's level of confidence in the monetary authority's anti-inflation commitment. A monetary authority may establish a strong anti-inflation reputation early on by refusing to validate the inflation expectations of the public, even at the cost of allowing a recession. In contrast, if a monetary authority does succumb to the temptation to inflate, it will acquire the reputation of being soft on inflation, and the public will maintain high inflation expectations.

It can be argued that an open economy with a monetary authority that is weak (perhaps by dint of domestic institutions) may effectively purchase a strong anti-inflation reputation by fixing its exchange rate with an economy possessing a monetary authority whose anti-inflation credentials are assured. Here, an asymmetric solution to the n-1 problem is optimal. By allowing the economy with the strong monetary authority to provide the nominal anchor to the system, the ability of the monetary authorities of the other economies in the system to unleash a surprise inflation is removed and hence these monetary authorities gain a reputational bonus: that is, there is an advantage to "tying one's hand" (Giavazzi and Pagano,1988). In addition, the "strong" economy will gain in two ways. First, greater exchange rate stability stimulates trade flows within the system. Second, it gains in competitiveness relative to the other economies in the system in the period before inflation rates converge.

Prospects for EMU

It has been argued that the early history of the EMS conforms to the scenario delineated above (Collins,1990). The common objective of member economies was to reduce inflation: the problem was that monetary authorities in several economies lacked credibility. By allowing the Bundesbank to set monetary policy for the entire system, with the result that the EMS was effectively a DM-zone, external discipline was imposed on the weaker economies and hence reputational bonuses were obtained.

What has been described above are the factors explaining movement towards exchange rate coordination. However, the current EMS is a system of only quasi-fixed exchange rates. How do we move to full currency union? There are dynamic and strategic aspects to the problem.

The dynamic aspect is the following. Closer exchange rate coordination facilitates greater integration of markets

which in turn enables closer exchange rate coordination. This "bootstrap effect" is a manifestation of the Lucas Critique: a change in the policy regime (here, a change in the rules governing the money supply) alters the behaviour of economic agents . A critical factor in movement towards EMU is therefore the degree of responsiveness of real variables to changes in the rules governing the money supply.

The strategic aspect is that there exist spillover effects in choosing to join a currency union: Country A's decision to join influences, and is influenced by, the decisions made by Countries B and C. This creates a bargaining situation: each country seeks to exploit its strategic power in order to influence the design of the new currency union. Issues for negotiation include the number of seats each member will have on the board of the new EuroFed, and the par values at which exchange rates will be irrevocably fixed. With regard to the second of these issues, there is likely to exist a temptation for individual member economies to devalue "one last time" prior to the fixing of exchange rates, in order to secure maximum competitive advantage in the new currency union. More generally, the par values at which exchange rates are fixed should reflect underlying fundamentals. In this way, it is improbable that the other member economies would accept the fixing of the DM at its current value, which is considered too low in the wake of the unification boom in Germany. In a situation in which the no-agreement payoff is positive, that is, when there remain some benefits to flexible exchange rates, such pre-participation negotiation is likely to be all the more intense.

It must be concluded, then, that the issue of whether European Monetary Union is optimal is indeterminate. It depends on the outcomes associated with these dynamic and strategic problems. Note that, except in the scenario where the new "super" central

bank exactly replicates the characteristics of the strong economy's monetary authority, the monetary policy of the currency union will be different to that prevailing under the asymmetric solution. The closer is the outcome of the strategic problem to symmetry in policy making, the closer will monetary policy reflect some average of the policy preferences of the different member economies in the currency union. If the group of member economies fully satisfies the definition of an optimum currency area, this is unlikely to deviate much from the asymmetric solution. With full integration of markets, flexibility in wages and prices, and full factor mobility, there is no reason to suppose that Italians will be softer on inflation than Germans. However, if economies commit to a currency union prior to satisfying the criteria by which an optimum currency area is defined, preferences concerning monetary policy are likely to diverge and an inflation rate higher than that obtained under the asymmetric solution is possible.

This analysis suggests that lower inflation cannot be predicted with certainty to be an outcome of EMU, particularly if market integration is less than perfect. This is no bad thing if output is positively related to inflation and if full employment is more highly valued than price stability in Europe's welfare function.

Conclusion

This essay has discussed some of the issues relevant to monetary union. The theoretical justifications for exchange rate co-ordination were first described. Then the nature of the choice of exchange rate mechanism was examined. Finally, it was argued that the move to full EMU cannot be countenanced without a fuller evaluation of the extent to which the EC conforms to the definition of an optimal currency area, with well-integrated markets. In this light,

Mr. Pohl's call for a measured and conservative approach to EMU is vindicated.

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