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Who Needs Bands? Exchange Rate Policy Before EMU

Prepared by Tamim Bayoumi 1/

Authorized for distribution by Peter B. Clark

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Abstract

Two issues are discussed. The first is which countries might benefit from entry into EMU before the millennium. Germany and her immediate neighbors appear the most likely to gain; however, our knowledge is too uncertain to say whether all, some, or no countries would reap net economic benefits. The second issue is how to avoid exchange rate instability in the transition to EMU. Experience from earlier exchange rate regimes suggests that an early announcement the parities at which different currencies would enter EMU could reduce such instability if governments were willing to accept the required limitations on domestic policies.

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### Summary

The Maastricht treaty marked an important shift in European monetary arrangements. While discussion of a single currency in western Europe was certainly not new even in official circles, none of the earlier plans had been agreed by the relevant national governments. By providing a specific path to European monetary union (EMU), the treaty moved the discussion of a single European currency from the theoretical to the practical. Events since the signing of the treaty, however, in particular the exchange rate problems experienced by a number of countries in 1992 and 1993, have made the exchange rate path to EMU envisioned at that time less tenable.

This paper focuses on two issues associated with EMU. It examines, first, which countries might benefit from entry into EMU before the millennium, and second, which exchange rate policies are best designed to move countries with individual national currencies to a currency union. On the first issue, a considerable amount of empirical work has been done to assess the suitability of EU members' joining EMU, looking at both the potential benefits and costs. The paper provides a brief overview of this literature, concluding that Germany and its immediate neighbors (Austria, Denmark, France, and the Benelux countries) are more suitable for EMU than other members of the EU. However, relatively little is known about whether all, some, or no countries would benefit economically from joining a single currency before the millennium because knowledge of the benefits from EMU, which is an essential part of any assessment of the economic value of membership, is too uncertain to provide the required level of precision.

The second issue that is discussed is the exchange rate path to EMU. A path to EMU was initially provided by the Maastricht Treaty. As far as monetary policy and exchange rates were concerned, the treaty outlined a gradual evolution from a system limiting exchange rate fluctuations between member countries to the permanent and fixed exchange rates implied by a single currency using the existing exchange rate mechanism (ERM). In the autumn of 1992 and 1993, however, the ERM came under market pressures that forced Italy and the United Kingdom to suspend membership, the Nordic currencies to abandon their unilateral pegs against the ECU, Ireland, Portugal, and Spain, to devalue their parities, and the remaining participants to widen the bands of fluctuation of their currencies from 2½ percent to 15 percent.

These developments are inconsistent with the gradual evolution of the exchange rate regime envisioned in the Maastricht treaty. The second part of the paper discusses possible exchange rate arrangements in the transition to EMU. The focus is on the experience of earlier exchange rate regimes, with particular emphasis on the pre-1914 gold standard. These experiences suggest that one potential way of avoiding financial instability during the transition would be to announce at an early stage the parities at which different currencies would enter EMU. Such a policy would work, however, only if governments were willing to accept the implied limitations on domestic policies needed to validate such a commitment.



## I. Introduction

The signing of the Treaty on European Union (the Maastricht treaty) on 7 February, 1992 marked an important shift in European monetary arrangements. While discussion of a single currency in western Europe was certainly not new even in official circles (the Werner report in 1970 also presented a path for moving to a single currency), none of the earlier plans had been agreed by the relevant national governments. By providing a specific path to European monetary union (EMU), the Maastricht treaty moved the discussion of a single European currency from the theoretical to the practical. Events since the signing of the treaty, however, in particular the exchange rate problems experienced by a number of countries in 1992 and 1993, have made the exchange rate path to EMU envisioned in the Maastricht treaty less tenable. At the same time, many of the deadlines in the treaty are fast approaching, making this an opportune time to reconsider issues associated with the transition to EMU.

This paper focuses on two such issues. First, which countries might benefit from entry into EMU before the millennium, and second, which exchange rate policies are best designed to move countries with individual national currencies to a currency union. There is a considerable amount of empirical work assessing the suitability of EU members for joining EMU, looking at both the potential benefits and costs. The benefits include the gains from lower transactions costs, greater competition, and more integrated markets. The costs come from the loss of monetary independence, and largely depend upon the size and correlation of underlying disturbances and the availability of mechanisms other than the exchange rate for alleviating country-specific disturbances. Rather than adding to this already extensive literature, this section of the paper will provide a brief overview of the existing evidence. The basic message is that while we know a significant amount about the relative suitability of different countries for EMU, we know relatively little about whether all, some, or no countries would benefit economically from joining a single currency before the millennium. The reason for this is that our knowledge of the benefits from EMU, which are an essential part of any assessment of the economic value of membership, is too uncertain to provide the required level of precision.

The second issue that is discussed is the exchange rate path to EMU. A path to EMU was initially provided by the Maastricht Treaty. As far as monetary policy and exchange rates were concerned, the treaty outlined a gradual evolution from a system of limiting exchange rate fluctuations between member countries to the permanent and fixed exchange rates implied by a single currency using the existing Exchange Rate Mechanism (ERM). In the autumn of 1992 and 1993, however, the ERM came under market pressures which forced Italy and the United Kingdom to suspend membership, the Nordic currencies to abandon their unilateral pegs against the ECU, Portugal, Spain, and Ireland to devalue their parities, and the remaining participants to widen the bands of fluctuation of their currencies from 2½ to 15 percent.

These developments are inconsistent with the gradual evolution of the exchange rate regime from one of narrow exchange rate bands to a single currency, as envisioned in the Maastricht treaty. 1/ The second part of the paper is devoted to discussing possible exchange rate arrangements in the transition to EMU. The focus is on the experience of earlier exchange rate regimes, with particular emphasis on the pre-1914 gold standard. These experiences suggest that one potential way of moving to EMU whilst avoiding the financial instability of 1992 and 1993 would be to announce the rates at which different currencies would enter EMU. Such a policy would only work, however, if governments were willing to accept the limitations on domestic policies implied to validate such a commitment.

## II. Who Should Join EMU Initially?

There has been a considerable empirical literature on the suitability of EMU for the potential participants. 2/ Its guiding principle has been the theory of optimum currency areas, initiated by Mundell (1961). Mundell noted that membership in a currency union involved certain benefits and costs. The benefits involve reduced transaction costs between participants in a currency union, which provide direct benefits through the reduced level of resources required to provide such services and indirect benefits through more scope for economies of scale, greater competition, and more integrated markets.

The costs involve the loss of monetary sovereignty. A single currency implies that monetary and exchange rate policy can no longer be directed exclusively at domestic concerns, but must take account of the situation of all members of the union. As long as all regions face the similar disturbances, the costs will be relatively small. However, if members face dissimilar underlying disturbances, the potential costs will be higher. In addition to the nature of the underlying disturbances, the costs depend upon the effectiveness of non-monetary mechanisms such as labor mobility (as emphasized by Mundell) or fiscal policy to alleviate the impact of these disturbances. They also depend upon the likely effectiveness of monetary and exchange rate policies in the same context. 3/

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1/ The consistency of the currency arrangements with the Maastricht criterion remains in doubt. The issue depends upon whether the 15 percent ERM bands can be described as "normal," as defined by the treaty. A protocol also stipulates that the currency participate in these bands without "severe tensions," a form of words which could be used to expand the criteria for EMU membership beyond simple maintenance of either the old 2½ percent or new 15 percent ERM bands.

2/ See Eichengreen (1992) and Bean (1992) for surveys.

3/ McKinnon (1963) argued that more open economies were better candidates for a currency union since monetary policy became less effective in these circumstances, while Kenen (1969) emphasized the role of the composition of output in the efficacy of the exchange rate.

The empirical literature on the potential costs of EMU has come to some relatively consistent conclusions. In terms of underlying shocks, the current members of the EU appear to include a core of countries involving Germany and her close partners (Austria, Belgium, Denmark, France, Luxembourg, and the Netherlands) who face relatively similar underlying disturbances and are hence relatively good candidates for EMU. By contrast, there also appears to be a periphery of countries which have relatively idiosyncratic underlying disturbances, and who are probably less well suited for a single currency. 1/ Finland, Greece, Portugal, and the United Kingdom, are fairly clearly members of this group, while Italy, Spain, and Sweden are most probably also in this category.

To the extent that other factors have differing implications within the EU they tend to reinforce this distinction between the core and the periphery. Intra-regional trade is highest within the core countries, making them the better candidates for a monetary union using the McKinnon criterion. Labor mobility, which provides one mechanism for adjusting to idiosyncratic disturbances, appears to be generally lower within individual EU countries than it is in the United States, and economic area of similar size and wealth but with an already existing currency union. Labor mobility between EU countries is even lower, and appears likely to remain so given large linguistic and cultural differences. Federal fiscal transfers, which provide another way of adjusting to disturbances, are projected to remain relatively unimportant in the EU, 2/ although domestic fiscal policy may accomplish the same role.

The literature on the potential benefits from EMU is somewhat less developed than that on the potential costs. 3/ The direct benefits from lower transactions costs, which come from freeing the resources required for transactions between currencies (including customs inspections) are relatively small, less than 1 percent of GDP. Any major gains from EMU are therefore likely to come from the indirect benefits of economies of scale, greater competition, and more integrated markets. 4/ It is also

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1/ See Weber (1990) and Bayoumi and Eichengreen (1992, 1993). A more positive view of prospects for EMU is provided in Bini-Smaghi and Vori (1993), who find most disturbances in Europe to be industry-specific, and argue that exchange rate changes are not a useful way of alleviating such disturbances. However, using a similar methodology and a wider data set Bayoumi and Prasad (1995) find country-specific disturbances are important for Europe.

2/ Structural Funds are important for certain poor countries, although not for the EU as a whole. However, they reflect long-term income differentials, not short-term disturbances.

3/ A widely quoted set of estimates are contained in Commission of the European Communities (1990).

4/ The distribution of these benefits could be significantly altered by fiscal transfers, such as Structural Funds, as such "side-payments" could be used to transfer some of the potential benefits between countries.

relatively clear that the benefits are going to be largest, at least in the short-run, for smaller economies and those which are most involved in inter-regional trade. Unfortunately, it is impossible to provide any accurate estimates of the size of these indirect benefits. Supporters of EMU, not surprisingly, believe the gains could be large, with EMU providing increasing benefits over time as greater competition and more integrated markets move the EU onto a higher growth path. Skeptics, equally predictably, are unconvinced. We simply do not have enough information to be able to differentiate between these very different analyses.

This uncertainty about the economic gains from EMU make it very difficult to assess which countries would benefit from membership before the millennium. The analysis of the costs makes it fairly clear that Austria, France, Germany, and the Benelux countries, are better placed to join a currency union than the remaining countries in the EU. These countries are also likely to receive relatively large benefits because of their high level of regional trade. However, whether entry into EMU would provide net economic benefits for all members of the EU, for only the core countries, or for no countries at all is still an open question.

The impact of EMU would not, of course, be limited to the economic sphere. The greater economic integration that would be generated by a single currency would also have profound social and political implications. Given the uncertainties involved in assessing the net economic benefits of a single currency, these non-economic considerations may well play a relatively important role in the decision of whether or not to join the single currency. In any case, the rest of this paper puts aside the question of the initial composition of EMU, and moves on to the issue of what exchange rate policies might best be pursued to avoid financial instability in the transition from several national monies to a single currency.

### III. From National Monies to EMU

The Maastricht treaty envisaged a gradual transformation from the existing ERM arrangements to a single currency through a number of stages. Stage 1 involved an expansion of Structural Funds, greater surveillance of national policies by the Commission, and the participation of all currencies in the narrow bands of the ERM (which were, at that time, plus or minus 2½ percent of the central parity). Stage 2, to start in 1994, involved a strengthening of EU surveillance over macroeconomic policies and the creation of the European Monetary Institute (EMI) as a precursor to the European Central Bank which would control the money supply in EMU. The EMI could "formulate opinions or recommendations on the overall orientation of monetary policy or exchange rate policy," however national authorities would retain power over monetary decisions. Finally, Stage 3, which would start sometime between 1997 and 1999, would involve the creation of the European Central Bank (ECB) and the eventual replacement of national monies by the ECU.



Entry into Stage 3 of EMU required a country to comply with a number of convergence criteria involving fiscal deficits, government debt, inflation, interest rates, and the exchange rate. The criteria were to be initially evaluated during 1996, at which point the initial membership of EMU could be decided. While all of these convergence requirements were important, this discussion will focus on the exchange rate requirements.

One exchange rate requirement was that the currency was a member of the ERM, and that in Stage 2 its exchange rate was fluctuating within the normal exchange rate bands, which were universally interpreted at the time as being the "narrow" 2½ bands used by long-term ERM members in 1991. Another requirement was that a country had not experienced "severe tensions" or devalued its ERM exchange rate parity against any other member on its own initiative within the last 2 years. Since this criterion was most likely to be to be considered in mid-1996 it significantly limited the ability of individual governments who wished to join EMU from devaluing their central parity after mid-1994. However, these arrangements did not exclude all realignments after this time. Countries could revalue during Stage 2, or could change their parities at the initiative of others. More importantly, nothing was said to prevent a "last realignment" on the eve of Stage 3, just prior to entering into EMU.

The first requirement, that currencies were to join the narrow bands of the ERM, did not appear particularly onerous at the time of the Maastricht treaty. With the accession of the pound sterling, peseta, and escudo to the Mechanism in 1989-90, every currency except the Greek drachma was already participating in the System (although sterling, the peseta, and the escudo were using the wider 6 percent bands). In addition, there had been no realignments of parities since 1987. 1/ Within two years, however, market pressures significantly loosened the ERM arrangements and, to all intents and purposes, invalidated the original plan of moving gradually from the narrow ERM bands to EMU.

The problems began in the early autumn of 1992, after the Danish electorate rejected the Maastricht treaty in a referendum in June and when opinion polls indicated that the French electorate might also reject the treaty in their referendum later in the year. These developments created considerable doubt as to the future of the EMU project. This uncertainty rapidly became evident in exchange rate markets, where market pressures quickly mounted on those countries whose exchange rates and monetary policies appeared most out of line with domestic economic conditions. 2/ These sustained pressures resulted in significant changes in the ERM. Over the course of the next three months the pound sterling and lira suspended their membership in the ERM, the peseta and escudo devalued their central

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1/ When the lira moved from wide to narrow bands in 1990, the central parity was devalued but the lower parity remained unchanged.

2/ For a detailed chronology of the period and analysis of events, see IMF (1993).

rates, and several other currencies, most notably the French franc, came under significant pressure. 1/ Outside of the ERM itself, the Nordic currencies were also forced to abandon their unilateral pegs against the ECU.

The remaining currencies entered a period of calm through early 1993. However, exchange rate pressures recurred later in the year. As in 1992, these pressures appear to have been triggered by perceived tensions between the monetary policies required to maintain the exchange rate peg and the domestic economic situation. While a number of currencies were involved in this second round of market pressure, the focus was on the French franc. As in 1992, these market pressures eventually resulted in significant changes in the ERM. However, in this case it took the form of a widening of the intervention bands from 2½ to 15 percent. 2/

The very wide latitude in exchange rates afforded by the new bands has in essence moved the ERM back to a system in which exchange rates are determined by market forces. The ERM currencies have generally remained reasonably close to their central parities in spite of the new exchange rate flexibility afforded by the wider bands, presumably reflecting market perceptions about the policies of member governments. 3/ However, this should not obscure the fact that the exchange rate system within which these countries are currently operating is significantly different from the earlier one, with market forces playing a much more important role in day-to-day determinant of exchange rates under the new bands than under the old.

The new bands appear large enough to allow exchange rates to move a considerable distance from their equilibrium values. The exchange rate parity chosen by Great Britain in her disastrous decision to rejoin the gold standard in 1925 is generally estimated to have been overvalued by around 10 percent, implying that both the correct and incorrect parities could have fallen within the existing 15 percent ERM bands. Nor do market signals necessarily give the correct information in such situations. The appreciation of sterling prior to rejoining the gold standard was believed by Keynes (amongst others) to have reflected anticipation of the new regime, not fundamentals, a supposition supported by modern theory. 4/

The exchange rate tensions of 1992 and 1993 reflected many factors, of which the most important was the interaction between the macroeconomic consequences of German reunification and cyclical conditions in other European countries. Reunification of the eastern and western halves of

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1/ The Irish pound devalued its central parity later in the year.

2/ Except in the case of the Dutch guilder and the deutsche mark, where the 2½ bands were retained.

3/ Although the renewed pressure on several currencies and the devaluation of the central parities of the peseta and escudo in early 1995 indicate that this situation may not last.

4/ Miller and Sutherland (1994).

Germany led to a significant expansion in domestic Germany demand, reflecting both the new investment opportunities for German business and the expansion of the fiscal deficit. High demand led to price pressures, which in turn caused the monetary authorities to raise interest rates. This forced the other members of the ERM to raise interest rates in order to maintain the exchange rate peg. However, this rise in interest rates was incompatible with the domestic needs of other countries in which domestic demand was already weak.

As this inconsistency between the external and domestic requirements of monetary policy became clear, market participants began to expect an ERM realignment. Since any such realignment would involve a significant losses to anyone holding the devaluing currencies, they switched assets out of the weak currencies, a move which undermined the market exchange rate. In short, perceived tension in policies led to overwhelming market pressures for a change in the exchange rate.

The problems of the ERM in 1992 and 1993 have close parallels with the collapse of the Bretton Woods fixed exchange rate system in the early 1970s. 1/ In both cases there was a significant shift in the macroeconomic policy of the center country, caused by the pressures of economic reunification in the case of Germany within the ERM and by the effects of the Vietnam war on the United States at the end of Bretton Woods. In both cases the other participants in the system were unwilling to change their macroeconomic policies to conform to this shift by the center country, or to allow exchange rate parities to be altered for fear of undermining confidence in the system. Finally, both crises occurred after a period of liberalization of international capital markets.

The fact that both the ERM and Bretton Woods ran into severe problems after a period when capital markets were liberalized has led some to argue that the real culprit is highly open international capital markets. In particular, Barry Eichengreen and Charles Wyplosz have drawn the lesson from the experience of the ERM in 1992-93 that capital markets need to be curtailed through capital controls during the remainder of Stage 2. 2/

Their argument is based on a model in which, with high capital mobility, market participants' beliefs about the exchange rate become self-fulfilling. If markets decide that an exchange rate is wrong, then the pressure against the authorities become so strong that the peg cannot be held regardless of whether the peg is fundamentally sound or not. The result is a world with multiple equilibria, in which governments are unable to impose any order on exchange rates. Even if a government is prepared to defend an exchange rate peg, the markets can overwhelm the barricades and sack the citadel.

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1/ Bordo (1995). The collapse of the Bretton Woods system is described in more detail in Garber (1992).

2/ Eichengreen and Wyplosz (1993).

Although appealing in some respects, I do not find this analysis fully convincing. The exchange rates which came under most pressure in both 1992 and 1993 were clearly those where the resolve of the government to raise interest rates appeared weakest. Since monetary and exchange rate policies are, in the end, simply different sides of the same coin, this implied an unwillingness to defend the exchange rate peg. It is noticeable that in those countries where the authorities were clearly prepared to defend the peg, most noticeably the Netherlands, the exchange rate came under little or no pressure throughout 1992-93. It appears difficult to square this observation with the notion that speculators were choosing exchange rates to "knock off" their pegs without regard to economic fundamentals.

To be fair, Eichengreen and Wyplosz recognize this point. Their argument is that if the exchange rate crisis had not occurred, the peg could have been maintained, implying a world of multiple equilibria. In the absence of private market activity, however, almost any policy can be maintained. It is always private individuals which undo inadvisable government policies, since the governments who have embarked on the policies presumably remain committed to them. At this level the difference between the multiple equilibrium explanation and the conventional one comes close to one of semantics.

What remains difficult to explain is why the mood of market participants change so rapidly from one month to the next. It is clear that at some point actions become self-reinforcing. As pressure on an exchange rate mounts it became prudent for market participants who have not yet started to "speculate" to hedge their bets by liquidating their own holdings of that currency. This makes it difficult to predict exactly when a currency will come under pressure. I suspect that the answer to this question lies more in the area of social psychology than economics. But the observation that market behavior involves elements of herd behavior, which makes it almost impossible to predict what will happen from one day to the next, is very different from saying that markets were wrong, or that the original doubts about policies which create such pressures are unfounded.

At the same time, history provides a striking example of a successful fixed exchange rate regime in an environment of high capital mobility, namely the pre-1914 gold standard. During the heyday of the regime, which lasted for 34 years from 1879-1913, exchange rates between the major participants were unchanged. At the same time international capital markets were extremely open and net capital flows were large. While there are many differences between the nineteenth century and the present day, particularly in the role of government policy over the cycle, the fact that governments at that time were able to maintain fixed exchange rates for such a long period must put into question the notion that private capital flows inevitably destabilize a fixed exchange rate regime.

Economists who study international monetary arrangements characterize the different regimes according to their different "rules of the game." <sup>1/</sup> During the gold standard, the rule was that full convertibility of the currency into gold (i.e. a fixed exchange rate) would be maintained except in the face of certain well defined events which were not under the control of the authorities, principally wars. In the face of such events the government was allowed to suspend gold convertibility, however they were expected to come back to the system *at the original gold parity*. As a result, even in countries where gold convertibility had been temporarily suspended, investors retained a belief that the value of their investment was secure in the long-run. In the nomenclature of game theory, the gold standard as a fixed exchange rate regime with well defined escape clauses.

The U.S. Civil War provides a good illustration of how the system operated. Gold convertibility was suspended soon after the beginning of the war (in January 1862) due in part to a run on the banks caused by government demand for specie. From then until 1879 the value of the currency (nicknamed greenbacks) was determined in private markets. The gold value of these greenbacks depreciated significantly during the war, falling at one point to around 40 percent of the pre-war value. After the war, the government did not rejoin the gold standard at the new depreciated level of the currency. Rather, policies were directed towards restoring the pre-war value of the currency in terms of gold.

Some of these moves were discretionary, such as accumulating gold reserves in such a way as to vindicate the announced rate. These policies were reinforced by legislation, including the Contraction Act of 1866, which provided funds for a withdrawal of U.S. notes. The most important piece of legislation, however, was the Resumption Act of 1875. The Act laid down the date in 1879 on which gold convertibility was to be recommenced at the pre-civil war parity. This policy created significant political controversy, and between 1875 and 1879 there were several attempts to repeal the Act. However, all of these were unsuccessful, and the pre-war gold parity was reestablished on January 1, 1879. <sup>2/</sup>

The important point is that the parity at which the United States reentered the gold standard was never in serious doubt. Even when gold convertibility was suspended and the currency was floating against other currencies, private investors had an expectation as to what the exchange rate would be in the long-run. As a result, private capital flows generally operated to stabilize the value of the currency, rather than destabilize it. This is particularly true in the period after the passage of the Resumption Act, when there was a clear date at which the pre-civil war parity was likely to be recommenced.

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<sup>1/</sup> Bordo and Kyland (1995) and McKinnon (1993).

<sup>2/</sup> See Bordo and Kyland (1995) for a longer discussion of this period.

If transactions in private capital markets were generally stabilizing even when convertibility was suspended but predicted to be resumed, such centripetal forces were even stronger when gold convertibility was still in force. This explains why the gold standard system could last for such a long period of time. Because the future value of the currency was known with some certainty, there was no reason for market participants to put pressure on the currency today. Hence, the rules of the game in the pre-1914 gold standard tended to make private capital flows stabilizing.

The Bretton Woods system and the ERM were, by contrast, adjustable peg fixed exchange rate systems. In both cases the government agreed to limit exchange rate movements around a par value, but also retained the right to change the par value in the appropriate circumstances. 1/ Since such changes in the par value involved a permanent change in the rate of exchange between one currency and another, revisions implied permanent losses for private investors. Furthermore, since these losses were incurred between one day and the next, they were too large to be easily compensated for through differences in interest rates across currencies. Even annualized interest rates in three figures do not imply very large returns overnight. Hence, if a devaluation appeared likely to occur, market participants tried to switch out of the currency, and private market "speculation" becomes destabilizing.

A formal version of this argument can be found in the literature on exchange rate target zones. If the exchange rate peg is credible, as it was under the pre-1914 gold standard, then the exchange rate responds less to changes in fundamentals under a fixed exchange rate system (a target zone) than it would under a free float. The target zone stabilizes the exchange rate because market participants realize that the necessary policies will be taken to keep the rate within the band. 2/ However, if the exchange rate peg is thought likely to change, then opposite result can occur, with the exchange rate becoming more sensitive to changes in fundamentals with the zone than without it. 3/ In this case, as the exchange rate moves towards the edge of the band, the probability of a revaluation of the central parity sets up a one way bet in which market participants can hope to gain significantly by speculating against the currency while the losses incurred if the parity is not revalued are relatively small.

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1/ In the Bretton Woods system changes in the par value were supposed to occur only in the case of a fundamental disequilibrium in the balance of payments, and theoretically generally required the agreement of the IMF. In practice, however, such changes appear to have been made on a unilateral basis.

2/ This is the essence of the original target zone model developed by Krugman (1992).

3/ See Bertola and Cabalero (1992). This also helps to explain why the widening of the ERM bands in 1993 reduced exchange rate instability, as the excess sensitivity to fundamentals falls once the bands widen.

This analysis has direct implications for exchange rate policy in the transition to EMU. The experience of the pre-1914 gold standard indicates that a fixed exchange rate regime is most stable when the par values in the system are expected to be maintained over long periods of time. From this perspective the exchange rate arrangements in the Maastricht treaty were like a badly written book. There was a beginning and a middle, but no well defined end. With no guidance as to future parities, market participants' confidence in existing ERM parities began to erode after the Danes rejected the Maastricht treaty in a referendum. Fundamentals made the direction of potential parity changes relatively clear--nobody was expecting a devaluation of the deutsche mark against the other currencies. As a result, the system was susceptible to destabilizing capital flows which, in the event, unwound the existing ERM arrangements relatively quickly.

The lessons from history are that one way of avoiding such market pressures would be to provide a credible commitment as to the future value of the currency, as illustrated by the U.S. Resumption Act of 1875. In the context of EMU this could be achieved by announcing the eventual exchange rate parities at which the different currencies will enter EMU. 1/ If underlying economic policies are consistent with this parity, which is a big if, then the current exchange rate will remain reasonably close to the bilateral rates at which EMU will occur. Deviations from these exchange rate parities would then reflect such factors as interest rate differentials and expected time of entry into EMU. Indeed, the exchange rate becomes a measure of the confidence of market participants in the announced parity, and hence the confidence that they have about entry into EMU. 2/ Such a commitment would therefore justify an exchange rate convergence criterion similar to the original one in the Maastricht treaty.

Such a commitment also provides a simple and clear focus with which to justify directing macroeconomic policies towards EMU. During the 1980s a number of European countries used their exchange rate peg as a signal of their commitment to lowering the rate of domestic inflation. A preannounced EMU parity could provide a similar role with respect to monetary union,

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1/ These parities need not be set in stone. Even during the gold standard period countries could, and did, suspend convertibility in response to exceptional events. However, to operate as a reasonable commitment device it would be necessary to ensure that such a change in parities was only made in the face of shocks which were large, unexpected, and independent of government policies. There is also the so called end-game problem, that, once parities are chosen, national governments have an incentive to cheat in various ways. All I would mention in this context is that some level of trust would appear implicit in any agreement to join a common currency.

2/ In the case of the United States after the Civil War, the passage of the Contraction Act in 1866 caused a significant strengthening of the greenback in terms of gold.

providing a public signal of a country's commitment to joining the currency union. 1/

To make any announcement of such future exchange rate parities credible the national governments involved would have to implement policies consistent with such an exchange rate commitment. As discussed earlier, the U.S. during the greenback period followed a number of policies to bolster their commitment to returning to the original gold parity in addition to the Resumption Act. European governments who wish to join EMU are already constrained by the convergence criteria in the Maastricht treaty. However, it is possible that these obligations will not be sufficient to convince private markets of their commitments to the announced parities. The new exchange rate commitment and convergence criterion could therefore impose new constraints upon the governments concerned. In general, it does not appear unreasonable to expect a government which is committing to fixing its exchange rates against other currencies permanently by entering into a currency union to be able to maintain the policies required to validate a preannounced EMU parity.

The alternative is to allow the current system of wide bands and little or no guidance about future ERM parities to continue. Such a policy could produce difficulties. Continuing exchange rate instability might make it more and more difficult to define and agree on correct final parities for EMU, making entry into the single currency more difficult. At the same time, the behavior of private exchange rate markets may well be of very limited use in deciding the future parities as exchange rate changes in private markets may well reflect expectations about the future peg rather than fundamentals, as appears to have been the case for Great Britain prior to April 1925.

#### IV. Conclusions

Moving to a single currency provides a number of challenges. This paper has discussed two such issues. On the question of which countries are likely to benefit economically from an early entry into EMU, it was suggested that Austria, France, Germany, and the Benelux countries, are likely to experience relatively high levels of benefits and relatively low levels of costs. However, the uncertainties surrounding the estimates of the benefits are simply too large for one to say whether all EU members, the core countries alone, or no countries will benefit economically from EMU. Turning to the issue of exchange rate policies in the transition from separate monies to EMU, it was suggested that one method of avoiding

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1/ In addition, as with the ERM in the late 1980s, it is possible that such a commitment could actually lower the costs of achieving EMU through beneficial credibility effects. The existence of such credibility effects has been widely debated in the literature.



exchange rate instability during the transition was to announce the rates at which separate currencies would enter EMU at a relatively early stage.

### References

- Bayoumi, Tamim, and Barry Eichengreen, "Is There a Conflict Between EC Enlargement and European Economic Unification?," CEPR Discussion Paper No. 646 (1992), Greek Economic Review, forthcoming 1995.
- , and ———, "Shocking Aspects of European Monetary Union," in The Transition to Economic and Monetary Union in Europe ed. by Francesco Torres and Francesco Giavazzi (Cambridge: Cambridge University Press, 1993).
- , and Eswar Prasad, "Currency Unions, Fluctuations, and Adjustment: Some Empirical Evidence," paper presented at the American Economic Association Meetings (Washington, January 6-8, 1995).
- Bean, Charles, "The Economics of EMU," Journal of Economic Perspectives, Vol. 6 (Fall, 1992), pp. 31-52.
- Bertola, Giuseppe, and Ricardo J. Cabalero, "Target Zones and Realignments," American Economic Review Vol. 82 (June 1992), pp. 520-36.
- Bini-Smaghi, Lorenzo, and Silvia Vori, "Rating the EC as an Optimal Currency Area: Is it Worse than the U.S.?" Banca d'Italia Temi di Discussione No. 187 (1993).
- Bordo, Michael D., "Is there a Case of a New Bretton Woods International Monetary System?" American Economic Review, forthcoming 1995.
- , and Finn E. Kyland, "The Gold Standard as a Commitment Mechanism," in Modern Perspectives on the Gold Standard, ed. by Tamim Bayoumi, Barry Eichengreen and Mark Taylor (Cambridge: Cambridge University Press), forthcoming 1995.
- Commission of the European Communities, "One Market, One Money: An Evaluation of the Potential Benefits and Costs of Forming an Economic and Monetary Union," European Economy, Vol. 44 (October 1990).
- Eichengreen, Barry, Should the Maastricht Treaty Be Saved? Princeton Studies in International Finance, No. 74 (Princeton: International Finance Section, December 1992).
- , and Charles Wyplosz, "Unstable EMS," Brookings Papers on Economic Activity: 1 (1993), The Brookings Institution (Washington), pp. 51-143.
- Garber, Peter M., "The Collapse of the Bretton Woods Fixed Exchange Rate System," in A Retrospective on the Bretton Woods System: Lessons for International Monetary Reform, ed. by Michael D. Bordo, and Barry Eichengreen (Chicago: University of Chicago Press, 1993).

International Monetary Fund, World Economic Outlook: October 1993  
(Washington: International Monetary Fund, 1993).

Kenen, Peter B., "The Theory of Optimum Currency Areas: An Eclectic View,"  
in Monetary Problems of the International Economy, ed. by  
Robert A. Mundell, and A.K. Swaboda (Chicago: University of Chicago  
Press, 1969).

Krugman, Paul, "Target Zones and Exchange Rate Dynamics," Quarterly Journal  
of Economics, Vol. 106 (August 1992), pp. 669-82.

Miller, Marcus, and Alan Sutherland, "Speculative Anticipations of  
Sterling's Return to Gold: Was Keynes Wrong," Economic Journal  
Vol. 104 (July 1994), pp. 804-12.

McKinnon Ronald I., "Optimum Currency Areas," American Economic Review,  
Vol. 53 (1963), pp. 717-25.

———, "The Rules of the Game: International Money in Historical  
Perspective," Journal of Economic Literature, Vol. XXXI (1993),  
pp. 1-44.

Mundell, Robert A., "A Theory of Optimum Currency Areas," American Economic  
Review, Vol. 51 (1961), pp. 657-65.

Weber, Axel, "EMU and Asymmetries and Adjustment Problems in the EMS: Some  
Empirical Evidence," CEPR Discussion Paper No. 448 (1990).

