

II Exchange Rate Regimes for Major Currencies

Since the creation of the IMF at Bretton Woods, the international exchange rate regime has undergone very substantial changes, which may be broken down into four main phases. The first was a phase of reconstruction and gradual reduction in inconvertibility of current account transactions under the aegis of the Marshall Plan and the European Payments Union, culminating in the return to current account convertibility by most industrial countries in 1958. The second phase corresponds to the heyday of the Bretton Woods system and was characterized by fixed, though adjustable, exchange rates, the partial removal of restrictions on capital account transactions in the industrial countries, a gold-dollar standard centered on the United States and its currency, and a periphery of developing country currencies that remained largely inconvertible. The end of convertibility of the dollar into gold in the summer of 1971 was a first step toward the breakdown of this system, which collapsed with the floating of major currencies in early 1973. This marked the beginning of the third phase.

During the third phase, the U.S. dollar remained firmly at the center of the system. The 1980s saw the gradual emergence of a European currency area, however, coupled with increasing capital market integration, and the 1990s witnessed the progressive drawing into an increasingly globalized economy of the developing countries and, with the collapse of the Soviet Union, of the transition economies. Many transition and developing countries put new emphasis on liberalizing their current account transactions. Capital mobility was increasing and globalization gradually took hold with the dramatic decrease in transaction costs associated with the telecommunications and information technology revolution and the attendant wave of financial innovations. Private capital flows came to play the major role in the financing of current account imbalances for many countries.

The exchange rate regime in the third phase was a mixed one. The currencies of the three largest industrial countries floated against each other and several medium-sized industrial countries' currencies also floated independently. At the same time, there were repeated attempts to limit exchange rate variability among various European Union countries, which

culminated in the Exchange Rate Mechanism (ERM) of the European Monetary System (EMS) and ultimately in the creation of the euro. The dollar, however, remained by far the major international currency in both goods and asset trade. For developing and (later) transition countries, a mixture of exchange rate regimes prevailed, with a growing trend toward the adoption of more flexible exchange rate arrangements.

The birth of the euro at the beginning of 1999 may mark a fourth phase in the evolution of the postwar exchange rate system, a phase that will likely see an increasingly bi- or tri-polar system characterized by a high degree of capital mobility and a variety of exchange rate practices across countries. This section seeks to draw some lessons from the past in order to forecast the likely evolution and behavior of the exchange rate system for industrial countries over the next five to ten years. This analysis will also establish a basis for considering exchange regime issues for developing and transition countries that rely to a great extent on industrial country currencies for their international commerce and finance.

Trends in Exchange Rate Behavior

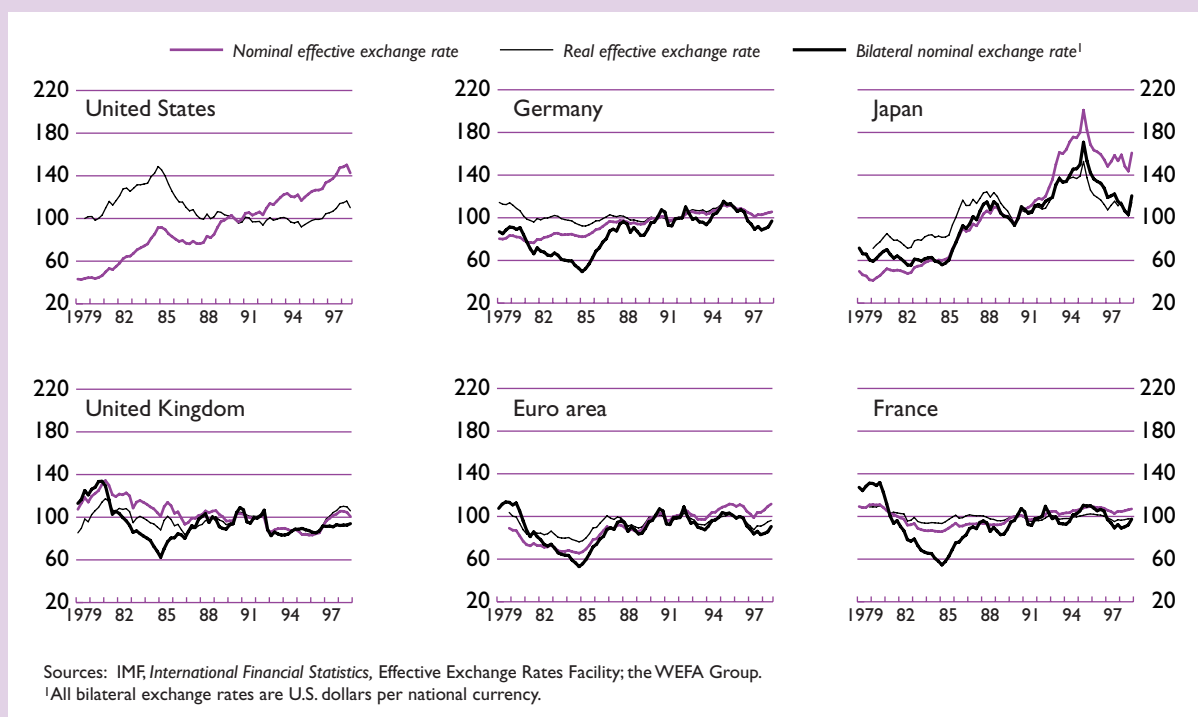
Over the past two decades, exchange rates of the major currencies—the U.S. dollar, the deutsche mark, and the Japanese yen—and those of other important industrial country currencies have exhibited substantial short-run volatility, large medium-term swings, and longer-term trends in exchange rates in nominal as well as real terms. Figure 2.1 illustrates this for five currencies and for the period extending from the first quarter of 1979 to the last quarter of 1998.²

Concerning short-term volatility, Table 2.1 reports that the standard deviation of quarterly changes in bilateral exchange rates of the deutsche mark, Japanese yen, French franc, and pound sterling against the U.S. dollar stands at between 5 percent and 6 per-

²Figure 2.1 and Table 2.1 also contain data for an index of a synthetic euro that will be referred to later in the text.

Figure 2.1. Selected Industrial Economies: Bilateral and Effective Exchange Rates

(Indices, average of 1990 = 100)



cent. The volatility of nominal and real *effective* exchange rates is also high although generally significantly lower than it is for the bilateral rates. Nominal exchange rate volatility is considerably higher than it was under the Bretton Woods system prevailing from 1945 to 1971 when, aside from a few exchange rate adjustments, standard deviations of quarterly changes in bilateral (and effective) nominal rates were essentially zero.

Medium-term swings in exchange rates have also been quite large, especially for nominal bilateral rates, as is apparent from Figure 2.1. They include, among others, the 1980–85 appreciation of the dollar followed by its subsequent depreciation over the next two years, and the 1990–95 appreciation of the yen followed by its sharp depreciation until mid-1998. These swings are also apparent in the extent of the range between the maximum and minimum values of the various indices. For example, the bilateral nominal index for the deutsche mark stood at 86.9 for the first quarter of 1979 and ended at 97.0 in the last quarter of 1998—a modest appreciation for the period as a whole—but it ranged from a high of 115.5 to a low of 49.5, a range of more than 130 percent. These medium-term swings appear also, but

more mildly, in nominal and real *effective* exchange rates. There are also (generally) mild longer-run trends in real effective exchange rates. The trend average quarterly real effective appreciation is 0.13 percent for the deutsche mark and –0.03 for the French franc; that for the Japanese yen at 0.70 percent is significantly higher. The causes of such longer-term trends in real effective exchange rates, whether attributable to so-called Balassa-Samuelsun productivity effects, to measurement problems, or to other causes have been widely discussed in the literature and need not be taken up here.³

Of these characteristics of the behavior of major currency exchange rates, the greatest concern has focused on their large medium-term movements, especially among the currencies of Germany (together with most of continental Europe), Japan, and the United States. Wide swings in these exchange rates have on occasion been identified with “misalignments” and have given rise to questions of whether and how they can be avoided, or at least moderated.

³See, among others, Balassa (1964), Samuelson (1964), and Isard and Symansky (1996).

Table 2.1. Selected Industrial Economies: Volatility of Bilateral and Effective Exchange Rates, 1980/II–1998/IV*(In percent)*

	Bilateral Versus U.S. dollar ¹	Nominal Effective Exchange Rate ²	Real Effective Exchange Rate ²
Germany			
Standard deviation of quarterly changes	5.26	1.63	1.69
Trend quarterly appreciation ³	0.72	0.47	0.13
Japan			
Standard deviation of quarterly changes	5.70	4.78	4.69
Trend quarterly appreciation ³	1.28	1.98	0.70
France			
Standard deviation of quarterly changes	5.14	1.62	1.54
Trend quarterly appreciation ³	0.30	0.19	–0.03
United Kingdom			
Standard deviation of quarterly changes	5.23	3.62	3.85
Trend quarterly appreciation ³	–0.12	–0.42	–0.13
United States			
Standard deviation of quarterly changes	...	3.14	3.10
Trend quarterly appreciation ³	...	1.39	–0.30
Euro area			
Standard deviation of quarterly changes	5.01	3.00	2.96
Trend quarterly appreciation ³	0.35	0.67	0.21

Sources: IMF, *International Financial Statistics*, and Information Notice System; the WEFA Group.¹All bilateral exchange rates are U.S. dollar per national currency.²Effective exchange rates are trade-weighted indices; the real effective exchange rate is based on the consumer price index.³Based on a regression of the natural logarithm of the level of the exchange rate on a time trend.

The recent movements in the value of the yen and the advent of the euro have given added weight to these concerns.⁴ Although exchange rate fluctuations are often equilibrating or reflect diverging cyclical positions or monetary policies, it seems likely that at least some large exchange rate movements for both advanced countries and emerging markets do not plausibly reflect economic fundamentals.⁵ Three questions arise in the context of the key currencies. First, is there any evidence that the volatility of exchange rates has changed over time? Second, can one expect the dollar/euro exchange rate to be relatively stable? Third, what are the medium-run prospects for more active management of the major currency exchange rates?

On the first of these questions, Figure 2.1 suggests that one can find periods of greater and periods of lesser volatility, and possibly that volatility was

higher at the beginning and again toward the end of the period extending from 1979 to 1998. This may be the case over relatively brief periods, but volatility does not follow any particular trend. Table 2.2 shows the pattern of standard deviations of the monthly growth rates of nominal and real bilateral (against the U.S. dollar) exchange rates of 12 currencies and of a synthetic euro, as well as by that of their effective counterparts, for the period June 1973 to November 1998 and three subperiods of equal length. As can be seen in the table, the near equality of standard deviations across subperiods is so striking that a formal statistical test of this fact is redundant.⁶ As could be expected, standard deviations of effective rates tend to be lower than those of bilateral rates.

⁴Surveys of the literature on the effects of exchange rate volatility on trade and investment are presented in IMF (1984) and Edison and Melvin (1990). For more recent results and discussions, see Commission of the European Communities (1990), Gagnon (1993), Frankel and Wei (1993), Frankel (1997), Del'Araccia (1998), and Eichengreen (1998).

⁵Flood and Rose (1995), for instance, are unable to find any (linear) relationship between exchange rate movements and a set of plausible macroeconomic fundamentals.

⁶Division of the sample period into two, four, and five subperiods yields similar conclusions. The results in Table 2.2 are based on period-average measures of the nominal exchange rate, since end-of-period data for the real and effective exchange rates, as well as for the nominal value of the synthetic euro, were not readily available. However, standard deviations of growth rates of end-of-period nominal bilateral exchange rates against the U.S. dollar (except for the synthetic euro) were also calculated. They are higher, as expected, than those reported in Table 2.2 but, like the latter, are quite similar across subperiods.

II EXCHANGE RATE REGIMES FOR MAJOR CURRENCIES

Table 2.2. Selected Industrial Economies: Volatility¹ of Monthly Bilateral and Effective Exchange Rates, 1973–98

(In percent)

	Bilateral Rate Versus U.S. dollar ²		Effective Exchange Rate ³			Bilateral Rate Versus U.S. dollar ²		Effective Exchange Rate ³	
	Nominal	Real	Nominal	Real		Nominal	Real	Nominal	Real
Australian dollar					Japanese yen				
Whole sample	2.3	2.3	2.4	2.3	Whole sample	2.9	2.9	2.5	2.5
First third	2.0	1.9	2.1	2.2	First third	2.6	2.5	2.3	2.4
Second third	2.8	2.8	2.6	2.6	Second third	3.0	3.1	2.5	2.3
Third third	2.0	2.0	2.2	2.2	Third third	3.1	3.2	2.8	2.8
Belgian franc					Dutch guilder				
Whole sample	2.7	2.5	0.8	0.8	Whole sample	2.7	2.5	0.7	0.7
First third	2.7	2.0	1.0	1.0	First third	2.7	2.0	0.8	0.8
Second third	3.0	2.9	0.6	0.6	Second third	2.9	2.9	0.7	0.7
Third third	2.6	2.6	0.8	0.8	Third third	2.6	2.7	0.7	0.7
Canadian dollar					Swedish kronor				
Whole sample	1.0	1.1	1.2	1.3	Whole sample	2.5	2.4	1.5	1.6
First third	1.0	1.0	1.0	1.1	First third	2.3	1.6	1.6	1.7
Second third	1.0	1.0	1.3	1.4	Second third	2.5	2.5	0.4	0.7
Third third	1.0	1.1	1.2	1.2	Third third	2.8	2.9	2.0	2.0
Finnish markkaa					Swiss franc				
Whole sample	2.5	2.5	1.4	1.4	Whole sample	3.1	2.9	1.4	1.4
First third	1.8	1.5	0.9	1.0	First third	3.1	2.5	1.5	1.4
Second third	2.7	2.7	1.2	1.2	Second third	3.3	3.2	1.2	1.2
Third third	2.9	2.9	1.8	1.8	Third third	3.0	3.0	1.4	1.4
French franc					British pound				
Whole sample	2.7	2.4	0.9	0.9	Whole sample	2.6	2.6	1.8	1.9
First third	2.6	1.9	1.0	1.1	First third	2.4	2.2	2.0	2.2
Second third	2.9	2.9	0.7	0.6	Second third	2.8	3.0	1.6	1.7
Third third	2.5	2.5	0.8	0.8	Third third	2.6	2.6	1.9	1.9
Deutsche mark					U.S. dollar				
Whole sample	2.8	2.5	0.9	0.9	Whole sample	...	...	1.7	1.7
First third	2.9	2.0	1.0	1.0	First third	...	...	1.7	1.9
Second third	2.9	2.9	0.8	0.8	Second third	...	...	1.7	1.6
Third third	2.6	2.6	0.9	0.9	Third third	...	...	1.4	1.4
Italian lira					Synthetic euro				
Whole sample	2.6	2.4	1.4	1.4	Whole sample	2.6	2.6	1.6	1.6
First third	2.5	1.7	0.7	0.8	First third	2.4	2.7	1.7	1.8
Second third	2.6	2.6	0.6	0.9	Second third	2.8	2.7	1.5	1.5
Third third	2.7	2.7	2.1	2.1	Third third	2.5	2.5	1.4	1.4

Sources: IMF, *International Financial Statistics*, and Information Notice System; WEFA.

¹ Volatility is measured by the standard deviation of the monthly growth rate (defined as the difference of the natural logarithm multiplied by 100) of the series.

² The series are monthly from June 1973 to December 1998 except for the real euro rate, which starts in January 1979. The real exchange rate is based on the consumer price index.

³ The effective exchange rate series are monthly from February 1979 to December 1998 with the following exceptions. The synthetic euro rate, the Japanese yen real rate and the Italian lira real rate start in February 1980 while the Australian dollar real rate, the French franc real rate, and the U.S. dollar real rate start in January 1980. The real effective exchange rate is based on the consumer price index.

On the second question, the likely future behavior of the euro, it is useful to begin by considering the past behavior of a synthetic euro—that is, an index of the exchange value of a composite of the 11 currencies that compose the new European currency. Note that the trade weights used to construct the bilateral and effective exchange rates for the synthetic euro relate only to trade with countries outside of the euro area. The behavior of these synthetic exchange rates is shown in the euro panel of Figure 2.1 (and in Table 2.1). The data indicate that the behavior of the bilateral nominal exchange rate of the synthetic euro is quite similar to that of the deutsche mark, the French franc, and other continental European currencies closely linked to the deutsche mark, as appears also broadly true for the euro's effective rates (which, however, show a slightly larger variability than the mark does).⁷ One important reason for the relatively high variability of the synthetic euro in the past, and for the likelihood that it will continue to be relatively high in the future, is that the euro exhibits the type of high variability in either nominal or effective terms that is typical of the currency of a large country (or group of countries with tightly linked currencies) relative to that of a smaller, more open economy that typically has higher trade volumes relative to GDP. Appendix I presents some evidence supporting this hypothesis.

The consistency of the synthetic euro's volatility across subperiods with substantially differing economic conditions and policies, in the euro area countries and outside, provides the basis for a reasonable forecast of the actual euro's volatility. There are also reasons to believe that the actual euro's volatility might be either modestly higher or modestly lower than that which has characterized the synthetic euro.⁸ On the higher side, some of the past monetary shocks in individual countries of the euro zone have,

to some extent, offset one another and thus have contributed to making the bilateral dollar exchange rate of the synthetic euro more stable than that of, say, the deutsche mark. Also, although the introduction of the euro did not alter the degree of openness of the euro area vis-à-vis the rest of the world, the euro area is less open than the economies of its participants are. This may mean that the monetary policy of the European Central Bank (ECB) will be less sensitive, directly or indirectly, to exchange rate fluctuations vis-à-vis the rest of the world than were the monetary policies of its predecessor national central banks. On the lower side, we may see more stable monetary policy on the part of the ECB than that of the previous average of the euro area's component policies, coupled with similar stability in the United States. Moreover, the development of broad and resilient markets for short-term instruments denominated in euros may facilitate stabilizing speculation. The prudent conclusion, however, remains that one should not expect significantly lower volatility in euro exchange rates than that which has been exhibited by its synthetic counterpart in the past.

Exchange Rate Regimes for Major Currencies: Some Issues

The remaining question is whether a major policy initiative aiming at stabilizing the euro/yen/dollar triplet (the Group of Three G-3 currencies), is warranted or likely. There are two fundamental reasons for seeking to stabilize the G-3 triplet: the harmful effects of large medium-term swings in the value of these three currencies on the European, Japanese, and American economies; and the adverse effects of such swings on the economies of third countries, including in the developing world.

To what extent do large, medium-term swings in G-3 exchange rates represent "misalignments" that might have untoward consequences for the allocation of resources and for macroeconomic stability? This question has been discussed in two chapters of a recent paper by IMF staff (Isard and Faruqee, 1998), "A Methodology for Exchange Rate Assessments" and "Application in Fund Surveillance over Major Industrial Countries," which describe an approach employed by the staff's Coordinating Group on Exchange Rate Issues (CGER). The CGER methodology begins by estimating a country's underlying current account, that is, the current account that would result if prevailing real effective exchange rates remained unchanged and if all countries moved to potential output over a medium-run horizon. It then estimates the "normal" saving-investment balance that would prevail at the same

⁷The higher trend appreciation of the euro's effective exchange rate as compared with that of the mark may appear puzzling at first. The puzzle disappears when one remembers that the exchange rate for the synthetic euro excludes intra-area trade. Consider the following simple and deliberately unrealistic numerical example. Assume a world made up exclusively of three identical countries and three currencies: the deutsche mark, the French franc, and the U.S. dollar. Let the trade weights assigned to the deutsche mark/franc and the deutsche mark/dollar rate be equal to each other and to 50 percent. Let the deutsche mark appreciate by 1 percent against the franc and by 3 percent against the dollar; in effective terms, the deutsche mark appreciates by 2 percent. Then, let France and Germany be the euro area, which trades only with the United States. Under this scenario, the synthetic euro appreciates by 2.5 percent in effective terms. This is because the franc, which comprises 50 percent of the index, appreciates by 2 percent against the dollar, and the deutsche mark, which accounts for the remaining 50 percent, appreciates by 3 percent against the dollar.

⁸This question was discussed in contributions by Cohen (1997) and by Bénassy-Quéré, Mojon, and Pisani-Ferry (1997) at a conference held at the IMF on *EMU and the International Monetary System*.

horizon. The latter estimate, which is derived independently of the exchange rate, is then compared with the former estimate, and the real exchange rate that would be required to bring the underlying current account into equality with the normal saving-investment balance is calculated. If that medium-term equilibrium exchange rate differs widely from current exchange rates (say, by more than 10–15 percent, to recognize the imprecision that necessarily attaches to this type of exercise), a judgement is formed on whether and in what sense the difference can be considered a misalignment.⁹ Both this and other methods for detecting discrepancies between current and equilibrium values of exchange rates would label a number of recent episodes as “misalignments.” Among those, the pattern of major exchange rates that prevailed in early 1985, the pattern of exchange rates that prevailed among a number of European currencies in early 1992, and the relationship between an overvalued yen and undervalued dollar of early 1995 figure prominently.¹⁰

The CGER methodology clearly has its limitations. Diagnosing the source of misalignments and drawing out their policy implications is both more difficult and more controversial than identifying a discrepancy between some necessarily normative, or model-bound, concept of an equilibrium exchange rate and current exchange rates. Isard and Faruqee (1998, p. 2) provide a convenient, brief summary of alternative views of the usefulness of calculating equilibrium exchange rates and evaluating whether currency values may have become “misaligned.” According to one view, current exchange rates always reflect fundamentals (which, themselves may be out of kilter, however) and can never be misaligned in a meaningful sense. A second view holds that, even though exchange rates may conceivably become misaligned, it is virtually impossible to identify such instances with any confidence, in practice. According to a third point of view, that of the authors of the IMF study and of this paper, quantitative assessment of instances of discrepancies between current and medium-term equilibrium exchange rates is useful and can provide a valuable input into policy evaluation. Ascertaining such a discrepancy, however, does not necessarily mean that exchange rates are misaligned: understanding the reasons for the discrepancy is critical. Thus, the pre-

vailing exchange rate may be appropriate even though it differs from its estimated medium-term equilibrium level if, for instance, the discrepancy reflects cyclical factors. Alternatively, the discrepancy may reflect misaligned policies rather than misaligned exchange rates, calling for a change in policies. Finally, there are cases where policies are appropriate but exchange rates are inappropriate, essentially because investors misjudge the policy stance. This would call for an effort on the part of the relevant authorities to influence incorrect market perceptions.

Views on whether how and to what extent it might be desirable to attempt to stabilize the exchange rates of major industrial countries differ widely. These views range from advocacy of a pure float, a view espoused especially by those who believe that exchange rates always reflect fundamentals and/or that the authorities do not possess knowledge superior to that of the market in such matters,¹¹ to proposals for the creation of a world currency. Intermediate proposals include target zones of the type suggested by Williamson (1985),¹² a quasi-fixed exchange rate regime among the G-3 to be achieved by monetary policy rules aimed at the exchange rate (McKinnon, 1996), a “virtual” Asian dollar peg (McKinnon, 1999), and various schemes for policy coordination that would take the exchange rate into account. Recent calls by some German and French policymakers for stabilization of the central triplet of currencies, along the lines of a target-zone type arrangement, have lent renewed interest to such schemes.

There are two basic objections under current circumstances to any scheme that would attempt to achieve substantial fixity of exchange rates among the euro, yen, and dollar. The first is that it would require largely devoting monetary policy in the three regions (or, more precisely, in at least two of them) to the requirements of external balance. To the extent that these requirements conflict with the domestic objectives that would otherwise dominate the determination of monetary policy, there could be very important costs from such a shift in monetary policy objectives in the major currency areas. Indeed, the fact that movements of exchange rates among the major currencies have, on many occasions, reflected divergences in relative cyclical positions and in the differential patterns of monetary policies needed to achieve reasonable price stability and support sustainable growth suggests that this concern is warranted.

⁹The estimates are derived, in an internationally consistent framework, for industrialized countries only, for data availability reasons and as the methodology assumes that countries have unrestricted access to international capital markets. The methodology also attempts to take cyclical and expectational factors into account. See Isard and Mussa (1998), Chapter 2 in the preceding publication, for a detailed account.

¹⁰These are the examples given in Isard and Faruqee (1998).

¹¹For a cogent defense of this view, see Feldstein (1988).

¹²See also Williamson (1994) and Williamson and Miller (1987).

Second, the three regions do not conform to the usual criteria for an optimum currency area,¹³ making the whole arrangement exceedingly vulnerable to asymmetric shocks as long as prices and wages are not fully flexible. The past decade has highlighted the lack of synchronization in economic activity in the three regions, and there is no reason to believe that differences across them would not prevail in the future. And, although Europe may be the region with the most evident labor flexibility problems, neither the economies of Japan nor the United States are likely to have sufficient real wage flexibility to adjust to large equilibrium movements in relative wages among G-3 countries without nominal exchange rate flexibility. In view of these objections and in the absence of the type of political commitment that accompanied the euro's introduction, any attempt at fixing the exchange rates of the triplet would lack credibility and would be rapidly undone by the market.

Looser forms of exchange rate stabilization, such as some variant of the target zone scheme originally proposed by Williamson, could also be envisioned. However, lack of political commitment and a number of technical difficulties would probably defeat the more ambitious, "harder," versions of the target zone schemes. Early versions of the target zone proposal were fraught with difficulties, in particular their partial equilibrium nature and their assumption that a number of real variables (e.g., real interest rates) could be attained through nominal (mainly monetary) policies. Later versions remove some of these flaws but serious problems remain. The calculation of the fundamental equilibrium real exchange rate poses conceptual and practical difficulties. There are insufficient instruments to hit the targets, given that the real exchange rate is an endogenous variable in the medium to long term and cannot be controlled by monetary instruments. And such schemes are at least as demanding of international macroeconomic cooperation as are more traditional attempts to manage nominal exchange rates.

It is difficult to imagine that the less ambitious, "softer" target zone proposals—with their very large and unannounced bands, adjustable parities, and scant policy commitments—would provide the transparency and the firm foundation for policies needed to avoid conflicts and anchor expectations. Even such looser arrangements would be unlikely to prove durable in the face of domestic economic circumstances calling for economic policies in the G-3 countries that are inconsistent with exchange rate commitments. Moreover, it is hard to see the overall

benefit in directing key macroeconomic policies (especially monetary policies) to achieve greater exchange rate stability among the G-3 if this entails greater domestic economic instability.¹⁴

Two points may be made to conclude this subsection. First, stability of major currencies' exchange rates does entail important external benefits for third countries, and instability entails important costs. Even if the direct effect of exchange rate volatility on net trade volumes is generally fairly small,¹⁵ large exchange rate swings between close trading partners may create substantial sectoral adjustment costs. There is thus a positive externality for the periphery in good management of the exchange rate regime at the core. Indeed, the surveillance mandate of the IMF gives it a responsibility in this respect. Both multilateral surveillance and the bilateral surveillance of Article IV consultations are needed to pay appropriate attention to the domestic and international implications of major currency exchange rates and of related economic policies.

Second, over the medium term, the current group of euro zone countries is likely to expand, notably to admit new members in central and eastern Europe. At the same time, a significant group of countries will continue to peg their currencies to or closely follow the dollar. At present, it appears less likely that a zone will emerge with the yen as a single anchor and key currency. The prospects for an enhanced international role for the yen hinge on a sustained and vigorous recovery of the Japanese economy and on the success of continuing efforts to foster deeper, more innovative capital markets. As discussed in Section III, regional currency areas may emerge in Asia over a longer horizon, notably among the ASEAN countries, and the yen could conceivably play an important role in such arrangements. In this world of large currency areas, where exchange rate fluctuations impinge on a significant share of world trade in goods and assets, multilateral surveillance of exchange rate arrangements and related policies will be particularly important.

¹⁴When the IMF staff extensively considered the issue of target zones and other proposals for stabilizing exchange rates among major currencies in 1994 (see Mussa and others, 1994), it reached essentially the same conclusions as in this paper. Such proposals are generally not desirable because they would require diverting key macroeconomic policies in the largest economies from their critical domestic stabilization objectives. And, for this same reason, such proposals are unlikely to be adopted.

¹⁵Eichengreen (1998) concludes that a growing consensus is emerging that the effect of exchange rate volatility on trade volumes, while significant, is small. See also Frankel (1997) for a discussion. Crockett and Goldstein (1987) contains an earlier analysis of these issues.

¹³These criteria are discussed in Section III.

Experience with the Exchange Rate Regimes of Medium-Sized Industrial Countries

Although floating rates have characterized the exchange rate regime among the world's three most important currencies for more than a quarter century, regimes for the currencies of medium-sized industrial countries have been more varied, across countries and over time.¹⁶ It is useful to reflect on this experience both for what it suggests for future exchange regimes of these countries and for the lessons it may teach concerning exchange regimes for emerging market and developing countries.

First, pegged exchange rate regimes have been used over extended periods by many medium-sized industrial countries, and these regimes appear to have functioned reasonably well in several instances. At one extreme, Luxembourg maintained a monetary union with Belgium from 1916 until the introduction of the euro at the beginning of this year. On a less rigid basis, Austria, Belgium, Denmark, and the Netherlands established and maintained tight pegs to the deutsche mark for a number of years in the ERM of the EMS. Maintenance of these exchange rate pegs generally required the subordination of domestic monetary policies to the policy of the Deutsche Bundesbank. In some circumstances, this may have meant that monetary policy was less well attuned to domestic economic objectives than might otherwise have been possible. On the other hand, during periods of turbulence such as the ERM crises of 1992–93, the exchange rates of the Austrian schilling and the Dutch guilder to the deutsche mark did not come under heavy and sustained pressure. Moreover, their monetary policies were not additionally burdened by the need to raise domestic interest rates significantly or for more than brief periods during the crises, to defend the exchange rate. In contrast, the market was considerably more skeptical of the sustainability of other ERM countries' currency pegs to the deutsche mark during the ERM crises. Speculative pressures led to the withdrawal of Italy and the United Kingdom from the ERM and devaluations by Spain, Ireland and Portugal. On some occasions, France was obliged to push its short-term interest rates to significant premiums over short-term German rates in order to sustain the exchange rate regime, despite economic fundamentals that suggested no overvaluation of the French franc vis-à-vis the deutsche mark. These experiences

suggest that in an environment of high capital mobility, pegged exchange rates among similar economies with strong linkages can be sustained, although this may require determined policy adjustments entailing significant but transitory economic costs.

More generally, although the ERM's adjustable peg system worked reasonably well to stabilize exchange rates among a growing number of European countries in the 1980s, it came under severe strain in the 1990s. The presence of some residual restrictions on international capital movements (removed completely only in 1990), as well as the willingness to make parity adjustments before disequilibria became too large, had contributed to the relatively smooth and successful functioning of the system in the earlier period. However, the system became vulnerable to asymmetric shocks due to increasing capital mobility and the hardening of exchange rate parities in response to the negotiation of the 1991 Maastricht Treaty on political and monetary union. In the event, the reunification of Germany's economy subjected the system to severe strains, culminating in the ERM crises of 1992–93. Where the market perceived that existing parities vis-à-vis the deutsche mark were overvalued or that cyclical conditions made the maintenance of high interest rates to defend exchange rate pegs questionable, exchange rates came under enormous market pressure. As a result, several ERM countries were forced to make significant adjustments to their central parities, or to abandon the ERM and float their currencies. Moreover, some other countries such as Finland and Sweden, which were not formally in the ERM, were forced to abandon their currencies' unilateral pegs. During the period from 1995, when Spain and Portugal realigned their ERM parities, until the advent of the euro in 1999, the ERM operated relatively smoothly, with wider fluctuation bands of plus or minus 15 percent. Progress in reducing macroeconomic imbalances and the imminent prospect of EMU also contributed to the ERM's smooth operation.

At least for the participating countries, the formation of EMU at the start of 1999 has removed the risk of exchange rate crises and vindicated efforts to achieve convergence, including through the pegging of exchange rates in the ERM. However, the lessons of the ERM crises of 1992–93 should not be lost. In an environment of high international capital mobility, when the market has some reason to question whether pegs can and will be sustained, pressures against the regime can become enormous and even very strong political commitments to sustain exchange rate pegs can be overwhelmed. Sustaining exchange rate pegs in an environment of high capital mobility requires the subordination of monetary policies to the exchange rate, combined with the credible capacity to tighten policy as may be re-

¹⁶The smaller industrial countries (with annual GDP below \$20 billion), which include Iceland, Luxembourg, and San Marino, maintain rigid exchange rate pegs or use the national currency of a larger country or region.

quired to defend the peg. Moreover, the comparatively minor damage suffered by countries that adjusted or abandoned their pegs in the context of the ERM crises provides testimony that, by and large, their businesses and financial institutions prudently avoided substantial exposure to foreign exchange risk before the onset of the crises. Unfortunately, many businesses and financial institutions in several emerging market countries hit by more recent crises failed to exercise this kind of prudence.

Second, a number of medium-sized industrial countries have successfully maintained floating exchange rate regimes. After an earlier episode of floating its currency in the 1950s, Canada repegged to the U.S. dollar in 1962, and then moved back to a floating rate regime in 1970, before the general collapse of the Bretton Woods system. Notwithstanding the similarities of the two economies and the large weight of the United States in Canada's external trade, the Canadian economy is subject to different shocks (especially from commodity prices), and a floating exchange rate helps to absorb these differential shocks and the cyclical divergences between the two economies. Unlike most of the other smaller continental European countries, Switzerland has maintained a floating exchange rate regime that has not borne any apparent, substantial ill effects to the Swiss economy. Australia and New Zealand, which have diversified trade partners as well as significant dependence on commodity exports, also have chosen floating exchange rates and their economies appear to operate successfully under these regimes.

For medium-sized industrial countries with floating rate regimes, exchange rates generally are not subject to benign neglect. Unlike the United States, where the Federal Reserve typically pays little attention to the exchange rate in adjusting the federal funds rate, these countries regard the exchange rate as a key economic variable with a significant role in the conduct of monetary policy. For example, monetary policy decisions in Canada have long been guided by a "monetary conditions index" in which movements in the exchange rate as well as movements in short-term market interest rates are considered important in judging the monetary policy stance. Also, when the Canadian dollar's exchange rate moves sharply in a manner considered inappropriate, as occurred in August 1998, the Bank of Canada may adjust official interest rates to resist potentially destabilizing market dynamics. Switzerland, which has had persistently low inflation and generally sluggish economic growth for most of the last decade, has responded to occasional episodes of upward pressure on the exchange rate by monetary easing. The Bank of England, in determining the degree of monetary tightening needed to resist rising inflationary pressures in 1997 and early 1998, took account of a

strong exchange rate as a factor likely to limit inflation, and, symmetrically, took account of a continued strong exchange rate in its subsequent decisions to ease monetary conditions as the projected inflation rate abated and the economy weakened.

Regardless of whether or not the floating exchange rates of medium-sized (as well as large) industrial countries are subject to benign neglect, exchange rates do move regularly and sometimes quite substantially in response to market forces. Intervention and adjustments of monetary policy may sometimes be used with a view to influencing exchange rates, but not with the intent or effect of creating de facto exchange rate pegs. This is very important because actual experience with fluctuations in market-determined exchange rates teaches and persuades private market participants, domestic and foreign, of the realities of foreign exchange risk. With such experience, institutions and practices evolve over time that enable the economic and financial system to adapt to the realities of a floating exchange rate regime.

Third, in the absence of an exchange rate peg, medium-sized industrial countries with floating exchange rate regimes have needed to establish an alternative nominal anchor for their monetary policies. During the 1970s, many of them were guided by the growth of monetary aggregates, for which some central banks announced formal targets. For Switzerland, the determined effort to contain inflationary pressures in the wake of the first oil shock in the mid-1970s was aided by a policy of monetary targeting. This firmly established the anti-inflation credentials of Swiss monetary policy and the independent credibility of the Swiss National Bank, even though monetary targets have since been abandoned. Despite some inflation slippage in the late 1980s, monetary policy credibility in Switzerland has never been seriously undermined. Other countries with floating exchange rate regimes have had less successful experiences with monetary targets and/or in achieving the fundamental objective of low inflation. For instance, in Australia, Canada, New Zealand, Sweden, and the United Kingdom, the establishment of monetary policy credibility has come more recently and has generally involved both the explicit adoption of an inflation target as the primary objective of monetary policy and the granting of operational independence to the central bank to pursue that objective. The lesson here is that, in the absence of an exchange rate peg as a nominal anchor, monetary policy generally needs a credible commitment to low inflation to provide an appropriate anchor, and this often can be facilitated by an inflation target and operational independence for the central bank.

In this connection, it should be emphasized that in the postwar era no industrial country has faced the

problem of stabilizing its economy and financial system from a situation of very high inflation (annual inflation rates in the triple digits or higher). Rather, in recent years, industrial country experience lies in reducing inflation from moderate levels to very low levels. Hence, an assessment of the merits of alternative policy approaches for situations of very high inflation requires a careful look at the experience of developing countries.¹⁷

Finally, while essentially all industrial countries now have very liberal policies toward capital account transactions, many developing countries, in contrast, still maintain extensive restrictions on capital account transactions and often adjust these restrictions in light of pressures on their balance of payments. For these countries, the recent experience of industrial countries may be of comparatively limited relevance. Rather, one must look back to the period when many industrial countries maintained and

manipulated fairly extensive controls on international capital flows. In general, pegged exchange rate regimes were more sustainable and less subject to massive speculative attack during this period, regardless of the other problems capital controls may have generated.

However, the recent experience of industrial countries is increasingly relevant for emerging market countries that already are significantly integrated into modern, global capital markets, and for other developing and transition countries moving toward more liberal capital account regimes. With substantial openness to global capital markets, maintenance of exchange rate pegs requires the undiluted commitment of monetary policy and the capacity of the economy and the financial system to withstand the pressures generated by the interest rate adjustments that may occasionally be necessary to defend the peg. Even with firm policies and sound economic and financial structures, maintenance of the exchange rate peg can involve significant short-term costs in the face of substantial domestic or external shocks.

¹⁷See Appendix III for a discussion and references.