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GLOBALIZING CAPITAL

A HISTORY OF THE INTERNATIONAL MONETARY SYSTEM

Second Edition

— CHAPTER FIVE —

After Bretton Woods

It's our currency but it's your problem.
(U.S. Treasury Secretary John Connally)

Even more than the reconstruction of the gold standard in 1925 or the restoration of convertibility in 1958, the demise of the Bretton Woods international monetary system in 1973 transformed international monetary affairs. Ever since central banks and governments had been aware of the instrument that came to be known as monetary policy, the stability of the exchange rate had been the paramount goal to which it was directed. Monetary policy was used to peg the exchange rate except during exceptional and limited periods of war, reconstruction, and depression. But in 1973 policy was cut loose from these moorings, and exchange rates were allowed to float.

This transition was a consequence of the rise of international capital mobility. Throughout the Bretton Woods years, capital controls had provided some insulation from balance-of-payments pressures for governments that felt a need to direct monetary policy toward other targets. Controls offered the breathing space to organize orderly adjustments of the adjustable peg. Policymakers could contemplate changing the peg without provoking a destabilizing tidal wave of international capital flows. But the effectiveness of controls had been eroded over the years. The recovery of international financial markets and transactions from the disruptions of depression and war had been delayed, but by the 1960s it was well under way. With the reestablishment of current-account convertibility, it became difficult to distinguish and segregate purchases and sales of foreign currency related to transactions on current and capital accounts. Market participants found new and clever ways of circumventing barriers to international capital flows.

Stripped of this insulation, governments and central banks found the operation of pegged but adjustable exchange rates increasingly problematic. The merest hint that a country was considering a parity change could subject it to

massive capital outflows, discouraging officials from even contemplating such a change. Defending the parity did not prevent balance-of-payments pressures on pegged rates from continuing to mount, of course, or the markets from challenging pegs they suspected were unsustainable. In a world of high capital mobility, defending a parity required unprecedented levels of foreign-exchange-market intervention and international support. Support of this magnitude was something countries hesitated to extend when they doubted the willingness and ability of a government to eliminate the source of the payments imbalance.

The alternatives to pegged but adjustable rates were polar extremes: floating and attempting to peg once and for all. Large countries like the United States and Japan, for whom the importance of international transactions was still limited, opted to float. For them, the uncertainties of a fluctuating exchange rate, while not pleasant, were tolerable. For smaller, more open economies, especially developing countries with thin financial markets, floating exchange rates were even more volatile and disruptive. They opted for the other alternative: attempting to establish a fixed currency peg. Developing countries maintained tight capital controls in an effort to support currency pegs against major trading partners.[1] The countries of Western Europe, for whom intra-European trade was exceptionally important and whose Common Agricultural Policy (CAP) could be seriously disrupted by exchange rate swings, sought to peg their currencies to one another, there too behind the shelter of controls. They created new institutions to structure the international cooperation needed to support a collective currency peg.

But there was no turning back the clock. The ongoing development of financial markets, powered by advances in telecommunications and information processing technologies, hampered efforts to contain international financial flows. Doing so was not only difficult but also increasingly costly: with the development of competing financial centers, countries imposing onerous controls risked losing their financial business to offshore markets. Developing countries that failed to liberalize risked being passed over by foreign investors. Liberalization, though inevitable, exacerbated the difficulty of pegging the exchange rate, leading a growing number of developing countries to float.

The same trend was evident in Europe, although there the transformation took a different form. The interdependent economies of Western Europe had repeatedly sought to operate collective currency pegs. In the 1970s they had attempted to maintain the $2^1/_4$ percent fluctuation bands of the Smithsonian

[1]Many of these countries tightened controls in the 1970s and 1980s in response to the rise of capital mobility. Edwards and Losada 1994 document that this was the case in a number of Central American countries, for example, which had long pegged their exchange rates to the dollar.

Agreement in an arrangement known as the *European Snake*. In the 1980s they sought to limit exchange rate fluctuations by creating the European Monetary System (EMS). But with the removal of capital controls at the end of the 1980s, the EMS became increasingly difficult to operate. Orderly changes in parities became all but impossible. Strong-currency countries grew reluctant to support their weak-currency partners, given that effective support would have to be virtually unlimited in a world of liquid markets and high capital mobility. The limits to international cooperation in a Europe of sovereign monetary authorities became clear to see. A series of crises then forced the members of the EC to widen the fluctuation bands of the EMS from 2¼ to 15 percent in 1993.

The other option was to move further in the direction of hardening the exchange rate peg. A few countries—Hong Kong, Bermuda, the Cayman Islands, and subsequently, Argentina, Estonia, Lithuania, and Bulgaria—did so by establishing currency boards. They adopted parliamentary statutes or constitutional amendments requiring the government or central bank to peg the currency to that of a trading partner. A monetary authority constitutionally required to peg the exchange rate was insulated from political pressure to do otherwise and enjoyed the confidence of the markets. The problem with currency boards was that monetary authorities were constrained even more tightly than under the nineteenth-century gold standard from engaging in lender-of-last-resort intervention. Currency boards were attractive only for countries in special circumstances: typically they were very small, their banks were closely tied to institutions overseas and hence could expect foreign support, they possessed exceptionally underdeveloped financial markets, or they had particularly lurid histories of inflation.

The other way of hardening the peg was to move toward monetary union. Notwithstanding detours, this was the avenue pursued by the members of the European Community. In 1991 they adopted a plan to establish a European Central Bank (ECB) to assume control of their monetary policies, irrevocably peg their exchange rates, and replace their national monies with a single European currency. Whether other regions will emulate their example remains to be seen. What is clear is that informally pegged or pegged-but-adjustable exchange rates are no longer a feasible option. In most cases, the only alternative to monetary union has become more freely floating rates.

FLOATING EXCHANGE RATES IN THE 1970S

The transition to floating following the breakdown of Bretton Woods was a leap in the dark. Officials—especially those of organizations like the IMF that

were heavily committed to the old system—did not jump willingly; they had to be pushed. In July 1972 the governors of the International Monetary Fund set up the Committee of Twenty (C-20), composed of representatives of each of the twenty country groups represented by an IMF executive director, to prepare proposals for reforming the par value system.[2] Their "grand design" assumed, at odds with reality, the maintenance of adjustable pegs and concentrated on the provision of international reserves and on measures to encourage adjustment. Work on this proposal continued even after currencies were floated out of their Smithsonian bands in 1973 and the adjustable peg had expired.

While the Europeans and Japanese hoped for the restoration of par values, the United States, having endured repeated attacks on the dollar, was inclined to continue floating (especially once George Shultz replaced John Connally as secretary of the treasury). The Americans saw the problem as one of European countries intent on running surpluses and the solution—shades of the Keynes Plan—as a set of "reserve indicators" that would compel their governments to take corrective action. The governments of the surplus countries—particularly Germany—hesitated to submit to sanctions that could compel them to inflate. They opposed the use of IMF resources to buy up the overhang of dollars. Failure to surmount these obstacles forced the C-20 to abandon work on its grand design in 1974.

The members of the IMF then groped toward the Second Amendment to the Articles of Agreement, which legalized floating. At Bretton Woods thirty years earlier, a small group of countries had held the fate of the monetary system in its hands. And the same was again true: after the collapse of the C-20 process, the G-10, which had been responsible for the ill-fated Smithsonian negotiations, resumed its deliberations. The IMF established the ironically named Interim Committee (ironic because it existed for thirty years). The most important forum was the G-5, composed of finance ministers from the United States, Japan, France, Germany, and the United Kingdom, plus invited guests.

The French advocated pegged rates and a system that would prevent reserve currency countries from living beyond their means. They sought to limit America's exorbitant privilege of financing its external liabilities with dollars. U.S. treasury secretary Shultz and his undersecretary, Paul Volcker, were prepared to contemplate stabilizing the dollar only if bands were sufficiently wide that U.S. policy would not be significantly constrained and if the participating countries agreed on indicators whose violation would compel surplus countries

[2]The United States had come to feel isolated from the rest of the G-10 and realized that an amendment to the IMF Articles of Agreement regularizing a new system would require the assent of countries not represented there. It consequently backed the idea of negotiations with representatives of a larger group of countries within the framework of the IMF.

to revalue or otherwise share the adjustment burden. This inversion of the positions held by the United States and the Europeans at Bretton Woods, which mirrored the changing balance-of-payments positions of their respective economies, did not go unremarked upon.

The French, forced to acknowledge the depth of American resistance, agreed at the Rambouillet summit in 1975 to the face-saving formula of a "stable system" of exchange rates rather than a "system of stable rates." This concession opened the door to the Second Amendment to the Articles of Agreement, which came into effect in 1978. The Second Amendment legalized floating and eliminated the special role of gold. It obligated countries to promote stable exchange rates by fostering orderly economic conditions and authorizing the Fund to oversee the policies of its members.

Forecasts of the operation of the new system ran the gamut. Jacques Rueff, the French critic of Bretton Woods, predicted that the collapse of par values would provoke the liquidation of foreign exchange reserves and a deflationary scramble for gold like that which had aggravated the Great Depression.[3] This view neglected the learning that had occurred in the interim. From the experience of the 1930s, governments and central banks had learned that when the exchange rate constraint was relaxed, policymakers and not markets could control the money supply. Indeed, they had learned this lesson too well; they started up the monetary printing presses to finance budget deficits and oil-import bills. The problem of the 1970s became inflation, not the deflation Rueff had feared.

And there was no consensus forecast of the behavior of floating rates. Some believed that the demise of par values removed the problem of one-way bets and persistent misalignments. Floating rates would settle down to equilibrium levels from which they would have little tendency to diverge. The contrary view was that the world was about to enter a dangerous era of financial turmoil and instability.

Today we know that both positions were oversold. Nominal and real exchange rates proved to be more volatile than when currencies were pegged and than predicted by academic proponents of floating. Nominal rates frequently moved by 2 or 3 percent a month; their variability greatly exceeded that of relative money supplies and other economic fundamentals.[4] Real rates were nearly as volatile (see Figures 5.1 and 5.2). Still, there was not the financial chaos the opponents of floating had anticipated.

At first, it seemed that the pessimists would be proven correct. The dollar depreciated by 30 percent against the deutsche mark in the first six months of

[3] See Rueff 1972, chap. 5 and passim.

[4] This regularity, now well known, is perhaps best documented by Rose 1994.

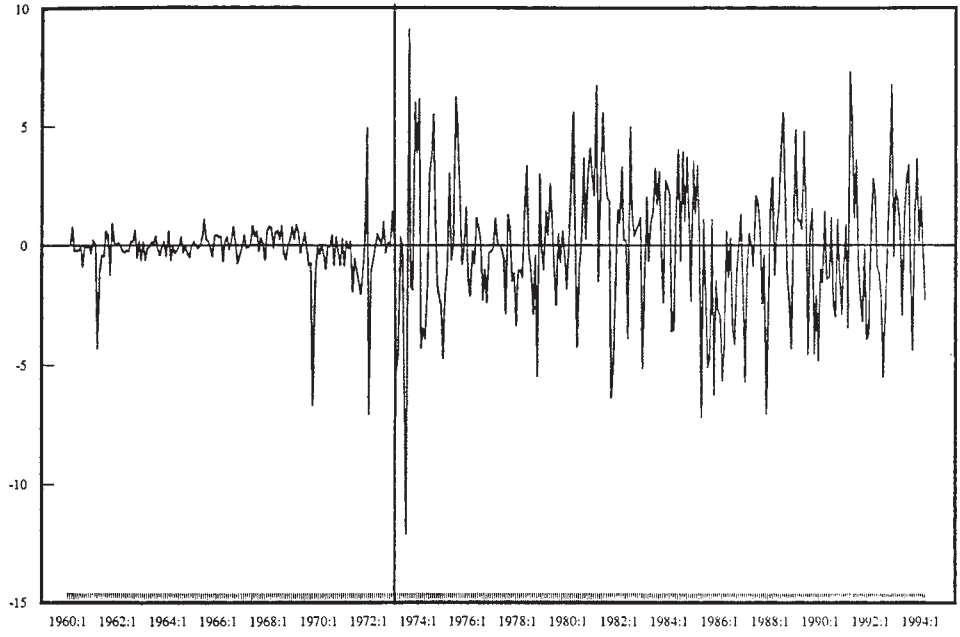

Figure 5.1. Monthly Change in the Deutsche Mark–U.S. Dollar Real Exchange Rate, February 1960–March 1994 (monthly percentage change in relative wholesale prices). *Source*: International Monetary Fund, International Financial Statistics various years.

floating. After that, however, it settled down. Much of the dollar's decline had been needed to eliminate its earlier overvaluation. Misalignments, though a subject of complaint, were not as severe as feared by the critics of floating (see *misaligned currency* in the Glossary). Sterling may have been undervalued in 1976, the dollar overvalued in 1978. The undervalued yen may have appreciated excessively in 1977–79. But none of these currencies was as seriously misaligned as the dollar would become in the mid-1980s. This was an achievement, given that economies were buffeted in the 1970s by two oil shocks and other commodity-price disturbances.

The absence of 1980s-style misalignments in the second half of the 1970s reflected two factors: that governments intervened in the currency markets, and that there was some willingness—in contrast to U.S. policy in the first half of the 1980s—to adjust monetary and fiscal policies with the exchange rate in mind. The Canadian dollar, French franc, Swiss franc, lira, yen, and pound sterling were actively managed. Intervention was on both sides of the market: it was used to support weak currencies and to limit the appreciation of

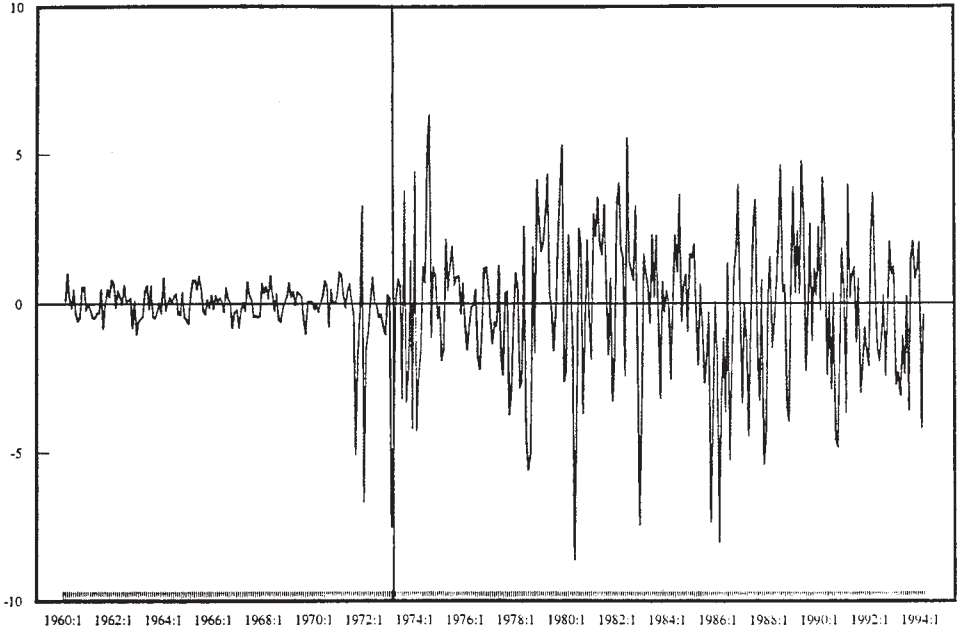

Figure 5.2. Monthly Change in the Japanese Yen–U.S. Dollar Real Exchange Rate, February 1960–March 1994 (monthly percentage change in relative wholesale prices). *Source*: International Monetary Fund, International Financial Statistics, various years.

strong ones. The Bank of Japan intervened both to support the yen in 1973–74 and then to stem its appreciation in 1975–77, for example.

The dollar/deutsche mark rate was only lightly managed; through 1977 intervention was modest. For the first two years of floating, the Federal Reserve confined itself to smoothing day-to-day fluctuations without attempting to influence the trend. But when the dollar fell by more than 11 percent against the deutsche mark in the six months ending in March 1975, the Federal Reserve, with the reluctant support of the German Bundesbank and the Swiss National Bank, undertook concerted intervention. For a time, their operations halted the currency's fall. But in 1977, responding to expectations of accelerating U.S. inflation provoked by the Carter administration's policies of demand stimulus, the dollar's depreciation resumed.

This time the Bundesbank agreed to make available a special credit to the U.S. Treasury's Exchange Stabilization Fund. Swap lines between the Bundesbank and the Fed were doubled. Intervention rose from DM 2 billion in the first three quarters of 1977 to more than DM 17 billion in the two quarters that

followed.[5] The dollar recovered for a time. When it weakened again in the second half of 1978, the two central banks undertook another DM 17 billion of intervention.[6]

Critical to the success, however limited, of these operations were domestic policy adjustments. To be sure, policies were not continuously directed toward exchange rate targets. The macroeconomic stimulus applied by the administration of President Jimmy Carter when it assumed office at the beginning of 1977 was adopted with full knowledge that its inflationary effects would weaken the dollar. The administration's hope was that other countries would also adopt more expansionary policies, limiting currency instability. Fearing inflation, the Japanese and Europeans refused to do so despite their awareness that the currency problem would be compounded.

But when currency fluctuations threatened to get out of hand, compromise ensued. The details were hammered out at the Bonn summit meeting in July 1978. The Carter administration announced an anti-inflation package to restrain wages and public spending. It agreed to raise domestic oil prices to world levels, eliminating a discrepancy that in the European and Japanese view aggravated the external deficits responsible for the dollar's decline. In return, the Europeans and Japanese agreed to expand. Japanese prime minister Takeo Fukuda submitted a supplementary budget that increased government spending by 1.5 percent of GNP in 1978. The Japanese authorities reduced the discount rate to an unprecedented 3.5 percent in March 1978. Bonn agreed to increase federal government expenditures and cut taxes by amounts sufficient to augment German domestic demand by approximately 1 percent in 1979. The French government made a similar commitment. "Remarkably, virtually all the crucial pledges of the Bonn summit were redeemed," in the words of Putnam and Henning.[7] These cooperative adjustments in policy may have been too modest to stabilize exchange rates, but they prevented the major currencies from diverging further.[8]

How did governments reconcile domestic policy objectives with the imperatives of exchange rate stabilization? In fact, the two did not always conflict. In all the countries that participated in the Bonn summit, there was a powerful faction that favored on domestic grounds the policy changes needed

[5] *Reports* of the Deutsche Bundesbank for 1977, 1978, and 1979 cited in Tew 1988, p. 220.

[6] There was also U.S. and foreign intervention in the markets for the Swiss franc and Japanese yen.

[7] See Putnam and Henning 1989, p. 97. Implementation of the U.S. promise to decontrol oil prices was delayed, however, until after the 1978 election, to the irritation of the Europeans.

[8] See Henning 1994, p. 129; Gros and Thygesen 1991, p. 37; and Sachs and Wyplosz 1986, p. 270.

to stabilize exchange rates. And where conflicts occurred, governments resorted to capital controls to mitigate the trade-off between domestic policy autonomy and currency stability. In 1977–78, as an alternative to more inflationary policies, the German authorities revoked the authorization for nonresidents to purchase certain classes of German bonds and raised reserve ratios on nonresident deposits with German banks in order to limit capital inflows into Germany and prevent further appreciation of the mark. The Japanese government supported the yen in 1973–74 by revising capital controls to favor capital inflows and discourage outflows.[9] In 1977 it imposed 50 percent reserve requirements on most nonresident deposits, in 1978 raising these to 100 percent and prohibiting purchases by foreigners of most domestic securities on the over-the-counter market.

Readers should not come away with the idea that the 1970s were copacetic. With the transition to floating, real as well as nominal exchange rates became more volatile than before. The contrast is evident in the behavior of both the yen/dollar and deutsche mark/dollar rates (again, see Figures 5.1 and 5.2). Not only were month-to-month changes in real rates larger than before, but movements in one direction could persist. But these problems, however serious, were not as severe as those that arose with the dollar's dramatic misalignment in the 1980s. The difference in the 1970s was more concerted intervention, more extensive use of capital controls, and greater willingness to adapt policies to the imperatives of the foreign-exchange markets.

FLOATING EXCHANGE RATES IN THE 1980s

Three events transformed the international monetary environment at the end of the 1970s. One, the advent of the European Monetary System, I discuss later. The others were shifts in the stance of U.S. and Japanese policies.

Few nations had been more committed than Japan to exchange market intervention. Like Germany, Japan experienced a period of rapid inflation after World War II and valued its nominal anchor. In an economy heavily dependent on exports, powerful interests resisted revaluation. Symptomatic was the Bank of Japan's effort to continue pegging the yen to the dollar at the level of 360 established in April 1949 even after Nixon closed the gold window in August 1971.[10] After two weeks, however, the Bank of Japan was forced to allow the currency to float up to 308 to the dollar, where it was repegged following

[9] See Horiuchi 1993, pp. 110–13.

[10] See Volcker and Gyohten 1992, pp. 93–94.

the Smithsonian negotiation. When the Smithsonian Agreement collapsed in February 1973, the yen was again allowed to float. At first, intervention was used to hold the currency within a narrow trading range. Starting with the first oil shock, however, the exchange rate was permitted to fluctuate more widely (see Figure 5.3).

This transition to a more flexible policy had important implications for the international monetary system. By the 1970s, with the considerable growth of the Japanese economy, the level of the yen had become an issue of concern to other countries. While the Japanese government continued to intervene selectively in the foreign-exchange market, the behavior of the dollar/yen rate came to resemble that of the dollar/deutsche mark rate: increasingly it was left to be determined by market forces and allowed to fluctuate over a considerable range.

The United States also gravitated toward greater exchange rate flexibility. If there had been any doubt about American priorities, it was removed by the appointment of Paul Volcker as chairman of the Federal Reserve Board in 1979 and Ronald Reagan's election as president in 1980. Volcker was prepared to let interest rates rise and the growth of the money supply fall to whatever levels were required to bring inflation down from double digits. The well-known Dornbusch model of exchange rate determination, which had gained wide currency in the 1970s, suggested that the exchange rate would overshoot its long-run equilibrium level in response to a change in rates of inflation and money growth.[11] This is what happened: Germany and Japan having abandoned policies of exchange rate targeting, the dollar appreciated by 29 percent in nominal terms and 28 percent in real terms between 1980 and 1982.

The Reagan administration followed with cuts in personal income taxes. It indexed tax brackets for inflation and increased military spending. As the budget deficit widened, U.S. interest rates rose: the differential in relation to foreign rates was a full point larger in 1983–84 than it had been in 1981–82. "The textbooks [did not] have much trouble explaining the source of this increase in U.S. interest rates," as Jeffrey Frankel put it.[12] The same can be said of the increase in the foreign-exchange value of the dollar. Foreign capital was attracted to the United States by high interest rates, pushing up the currency still further.

[11] See Dornbusch 1976. While the Dornbusch model suggested that the appreciation of the dollar should have occurred all at once, at the moment when the change in U.S. monetary policy took place, the currency actually strengthened gradually over the 1980–82 period. Michael Mussa (1994) suggests that this reflected a gradual realization on the part of the public that the change in policy that had taken place was credible and permanent.

[12] See Frankel 1994, p. 296.

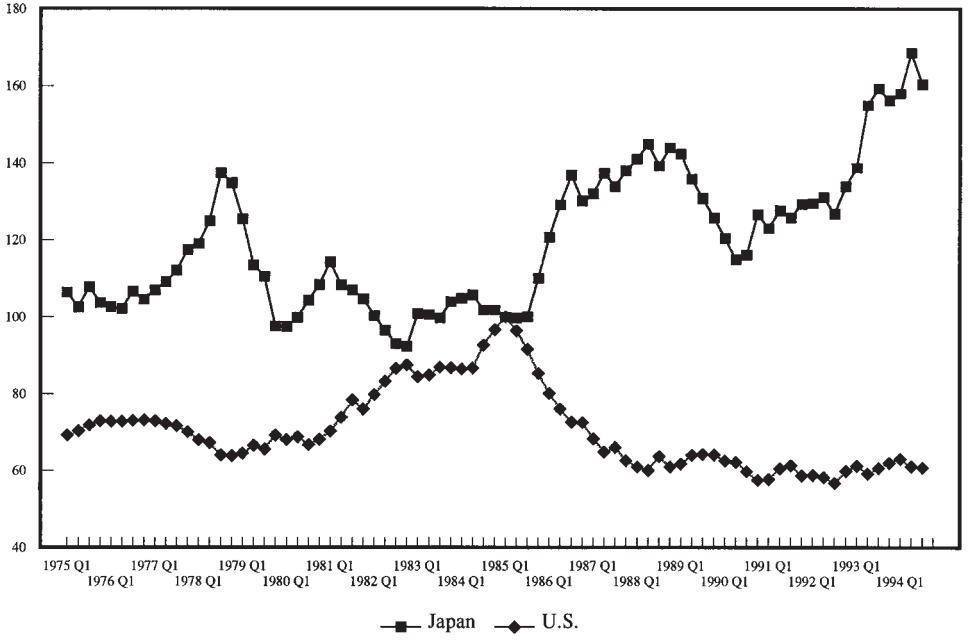

Figure 5.3. U.S. and Japanese Real Exchange Rates, 1975–94 (1985 = 100). *Source*: International Monetary Fund, International Financial Statistics, various years.

Initially this dramatic appreciation elicited little in the way of a policy response. There was scant willingness on the part of the United States to contemplate tax increases, cuts in government spending, or changes in Federal Reserve policy to bring U.S. interest rates down and render the dollar less attractive to foreign investors. Volcker's Fed still attached priority to the reduction of inflation; Treasury Secretary Donald Regan believed in entrusting the exchange rate to the market.

The dollar's appreciation in 1983–85 highlighted the need for cooperative adjustments of macroeconomic policies to counter misalignments. But in the 1980s, as on prior occasions, intellectual disputes precluded cooperation. U.S. policymakers such as Treasury Undersecretary Beryl Sprinkel were committed to the monetarist proposition that a stable rate of monetary growth would produce stable inflation and a stable exchange rate.[13] They denied that the dollar's strength reflected the crowding-out effects of deficit spending and high interest rates, ascribing it instead to the administration's success in containing

[13]This was the view of exchange rate determination espoused by Milton Friedman in his influential 1953 article on floating rates. See Friedman 1953.

inflation.[14] Not only was foreign exchange intervention inappropriate, in this view, but it was unnecessary since, by assumption, exchange rates were driven by the market to efficiency-maximizing levels.

The Europeans and Japanese continued to attach more importance to exchange rate stability. For historical reasons they had more faith in intervention and cooperation, and they subscribed to a model of the economy in which budget deficits and high interest rates were the source of misalignments. But however desirous they were of harmonizing policies, collaboration also required a course correction on the part of the United States.[15] Left to their own devices, the Europeans withdrew into the EMS, while the Japanese made the most of their improved export competitiveness.

Figure 5.4 shows that the difference between U.S. interest rates and foreign interest rates closely tracked the dollar's rise through the first half of 1984. After June, however, the dollar rose further to an extent that was not readily explained by interest rates and macroeconomic fundamentals. The currency continued to appreciate, by an additional 20 percent through February 1985, even though the U.S. interest rate premium began to fall.

This movement, widely interpreted as a speculative bubble, eroded the Reagan administration's resistance to foreign-exchange-market intervention.[16] At a secret meeting at New York City's Plaza Hotel in September 1985, G-5 finance ministers and central bank governors agreed to try to push the dollar down. They were united by their desire to head off protectionist legislation wending its way through the U.S. Congress as a result of the damage inflicted on domestic producers of traded goods. For the Reagan administration, congressional protectionism threatened its agenda of deregulation and economic

[14]Disinflation could indeed explain the real appreciation experienced by the United States in 1980–81 when U.S. monetary policy shifted in a more contradictory direction (this being the implication of the Dornbusch model), but it was more difficult to account for the further real appreciation of subsequent years. See discussion below.

[15]This was something which neither the Treasury nor the Fed was willing to contemplate. At the G-7 summit in Williamsburg, Virginia, in 1983, the Europeans pushed for reductions in U.S. deficits to stem the dollar's rise. The American response was that the strong dollar was not the result of U.S. deficits and high interest rates. See Putnam and Bayne 1987, p. 179 and passim. By the end of 1983 American producers of traded goods had begun to complain of the injury they suffered as a result of the dollar's appreciation. Treasury Secretary Regan therefore sought to pressure Japan to take steps to strengthen the yen. His initiative, which pressed the Japanese to open their capital markets to international financial flows, ironically led to an outflow of capital from Japan and a further weakening of the yen. The United States for its part offered little in the way of policy adjustments. See Frankel 1994, pp. 299–300.

[16]Paul Krugman (1985) and Stephen Marris (1985) provided analytical grounding for the bubble interpretation of the 1984–85 appreciation.

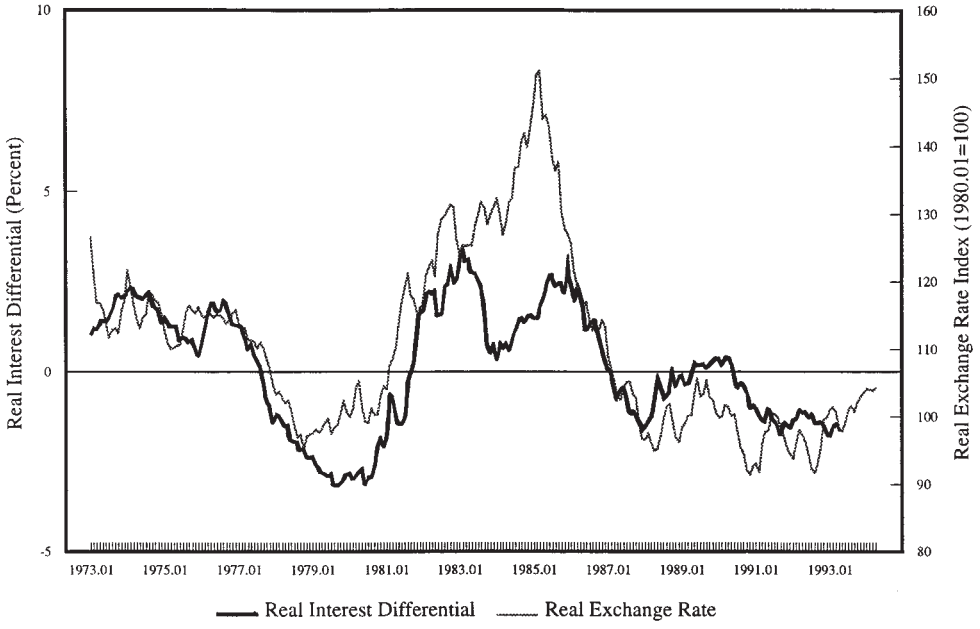

Figure 5.4. U.S. Dollar Real Exchange Rate and Long-Term Interest Differential, 1973–94. *Source*: International Monetary Fund, International Financial Statistics, various years. *Note*: Real exchange rate is U.S. consumer price index relative to trade-weighted average of consumer prices of other G-7 countries. Real interest rates are long-term government bond yields minus twenty-four-month moving average of inflation. Interest differential is real U.S. rate minus weighted average of real interest rates of other G-7 countries.

liberalization; for the Japanese and Europeans it jeopardized their access to the American market. The five governments issued a joint statement of the desirability of an "orderly appreciation of the non-dollar currencies" (a typically prosaic way for politicians to refer to dollar depreciation) and of their readiness to cooperate in attaining it.

The dollar fell by 4 percent against the yen and the deutsche mark the day the Plaza communiqué was released, and it continued to decline thereafter. However, no change in monetary and fiscal policies had been discussed at the Plaza, much less undertaken. This, in conjunction with the fact that the dollar had already begun to decline six months earlier, led some to conclude that the negotiation was inconsequential—that the currency's fall was simply the unwinding of an unsustainable appreciation. The contrary view is that the Plaza Accord and sterilized intervention undertaken in its wake signaled an impending policy shift—a new willingness to adapt policy in the directions needed to

stabilize the exchange rate.[17] That the dollar began to fall before the Plaza meeting can in fact be reconciled with this argument. Some months earlier (after the 1984 presidential election), the more pragmatic and interventionist James Baker and Richard Darman had replaced Donald Regan and Beryl Sprinkel at the Treasury, suggesting that new policies might be in the offing. Intervention had been agreed to at a G-5 meeting in January 1985, and the Bundesbank had intervened heavily (see Figure 5.5). All this suggests that intervention and cooperation in fact played a role in halting the dollar's rise.

Once it began falling, the dollar depreciated rapidly. The United States had run down its net foreign assets as a result of the external deficits of the early 1980s; a lower exchange rate was needed to offset a weaker invisibles account.[18] Even so, by the second half of 1986 the Europeans and Japanese began to complain that the process had gone too far. The dollar had lost 40 percent of its value against the yen from the peak the year before, creating problems of cost competitiveness for Japanese producers. The Japanese government intervened extensively to support the dollar. In September a bilateral deal between the United States and Japan, trading Japanese fiscal expansion for U.S. abstention from talking the dollar down, sought to stabilize the exchange rate. But absent a willingness to adjust macroeconomic policies in the United States and Europe, the effects were limited.

This realization prompted the Louvre meeting of G-7 finance ministers in February 1987, where more fundamental policy adjustments were discussed. The ministers agreed to stabilize the dollar around current levels; some observers went so far as to suggest that the ministers established a "reference range" of 5 percent.[19] The central banks concerned undertook intervention. The Japanese agreed to further stimulus measures, the Germans to limited tax cuts, the United States to more nebulous adjustments in domestic policy. The Federal Reserve in fact allowed U.S. interest rates to rise (reversing the downward trend that had begun in 1984), although whether its decision was motivated by the decline of the dollar or by signs of impending inflation remains unclear.

[17] See Feldstein 1986 and Frankel 1994 for the competing views.

[18] Some argued that in addition U.S. exporters had lost their foothold in international markets and that foreign producers had gained a permanent beachhead in American markets as a result of the early-1980s misalignment; a lower exchange rate was needed to offset this.

[19] See Funabashi 1988, pp. 183–86. Karl Otto Pöhl, who was president of the Bundesbank, recalls some confusion among G-7 ministers over what they had agreed upon. Pöhl's understanding was that formal *target zones* had not been established but that a first step toward their implementation had been taken. But others, especially finance ministers of the smaller countries involved, may have interpreted discussions as implying a formal commitment. See Pöhl 1995, p. 79.

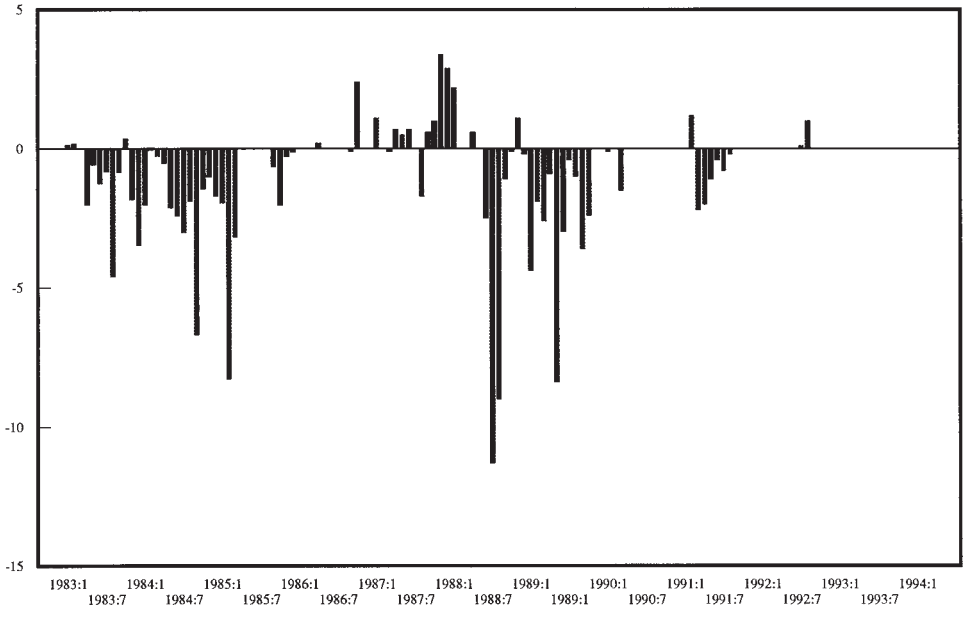

Figure 5.5. Bundesbank Operations in the Deutsche Mark–U.S. Dollar Market, 1983–94 (billions of D-marks). Deutsche Bundesbank, Annual Reports, various years. *Note*: Positive entries denote Bundesbank intervention on behalf of the U.S. dollar.

The International Monetary Fund played a surprisingly small role in these developments. The Second Amendment to the Articles of Agreement, in suggesting that the IMF's role was to encourage policy coordination among its members, removed the Fund's responsibility for overseeing a system of par values but spoke of the need for "firm surveillance" of national policies. But the leading industrial countries showed little interest in a forum where scores of smaller nations might have some say in their decisions. As a result, governments relied less on changes in underlying monetary and fiscal policies and more on foreign-exchange-market intervention than the Fund may have wished. The IMF is portrayed in the academic literature as a mechanism for applying sanctions and rewards to encourage countries to follow up on cooperative agreements.[20] In practice, the fact that the Fund was an unattractive venue in which to conduct negotiations, and that none of the countries concerned drew on Fund resources to finance their foreign-exchange-market intervention, prevented it from effectively carrying out this role.

[20]In technical terms, the IMF is portrayed as a "commitment technology." See Dominguez 1993, pp. 371–72.

The U.S. currency rallied in mid-1988 and again in mid-1989. But as with the Plaza and the 1986 bilateral United States-Japan accord, there was little willingness on the part of the United States to follow through with changes in domestic (in particular, fiscal) policies. Sterilized intervention not backed by a commitment to adjust domestic policies had only transient effects.[21] And the United States, Germany, and Japan lacked the web of interlocking agreements needed to lock in policy adjustments.

The dollar's decline resumed in the second half of 1989, and the United States settled into the policy of benign neglect of the exchange rate pioneered by the Carter administration. The administrations of presidents George Bush and Bill Clinton displayed little readiness to adjust policies to stop the currency's fall. A typical Bush reaction to a question about the declining dollar was, "Once in a while, I think about those things, but not much."[22] With this response, Bush was only swimming with the political tide. An overvalued currency, like the dollar in the mid-1980s, imposes high costs on concentrated interests (producers of traded goods who find it difficult to compete internationally) who powerfully voice their objections. In contrast, an undervalued currency, like the dollar in the mid-1990s, imposes only modest costs on diffuse interests (consumers who experience higher inflation and import prices) who have little incentive to mobilize in opposition. Thus, there was little domestic opposition to the dollar's decline. Its depreciation was driven by domestic considerations, such as the Fed's decision to cut interest rates in 1991 in response to the U.S. recession, and a second set of cuts in 1994, again taken to counter signs of a weakening economy.

The situation was reversed in other countries, where an undervalued dollar meant an overvalued local currency. By 1992 the low level of the dollar had become a huge problem for Japan, where the profits of tradable goods producers were squeezed, and for Europe, the one place where it could be argued that the interlocking web of commitments needed to support the maintenance of pegged rates existed.

THE SNAKE

The countries of Europe followed the other path, seeking to create an institutional framework within which they could stabilize their currencies against

[21]This had been the finding of the Jurgensen Committee, an intergovernmental working group commissioned to study foreign-exchange intervention. See Working Group on Exchange Market Intervention 1983.

[22]Cited in Henning 1994, p. 290.

one another. That European countries were more open to trade than the United States heightened their sensitivity to exchange rate fluctuations.[23] Europe, not the United States or Japan, was where floating currencies had been associated with hyperinflation in the 1920s. Europe was where the devaluations of the 1930s had most corroded good economic relations.

Still, Europe's steadfast pursuit of pegged exchange rates in a period marked by the quadrupling of oil prices, the breakdown of Bretton Woods, and the most serious business-cycle fluctuation of the postwar era is one of the most striking features of the period. Its motivation must be understood in terms of the development of the European Economic Community. The EEC was seen by its European founders and their American allies as a mechanism for binding Germany and France together and, by heightening their economic interdependence, for discouraging them from going to war. It helped prevent these and other European countries from reneging on their commitment to cooperate in the economic domain. The EEC created an interlocking web of agreements and side-payments that would be jeopardized if a country followed noncooperative monetary policies. The success of the Community, which by the 1970s had gone a considerable distance toward liberalizing intra-European trade, increased the share of member countries' total trade that took place with one another. To the extent that exchange rate stability was desirable for encouraging the expansion of trade (a proposition for which the evidence provides limited support), focusing on the liberalization of trade within Europe made it possible to achieve that objective by stabilizing intra-European rates. European experience thus supports those who suggest that stable and extensive trade relations are a prerequisite for a smoothly functioning international monetary system.

The EEC completed its customs union ahead of schedule by the end of the 1960s. Monetary unification was the next logical step, especially for those who saw the EEC as a nascent political entity. In 1969 the European Council reaffirmed its intention of moving ahead to full economic and monetary union (EMU). It was motivated in part by the incipient instability of the dollar and by fears that a disorderly revaluation of European currencies would endanger the EEC.[24] This led in 1970 to the formation of a study group of high-level officials chaired by the prime minister of Luxembourg, Pierre Werner.[25]

[23]This is argued by Giavazzi and Giovannini 1989.

[24]This is the interpretation of Harry Johnson (1973).

[25]See Werner et al. 1970. The Werner Report was not the EEC's first discussion of monetary integration. The Treaty of Rome had already acknowledged that the exchange rates of member countries should be regarded as a matter of "common interest." The revaluation of the Dutch guilder and German mark in 1961 then prompted discussion of how the customs union could be

The Werner Report described a process by which monetary union could be achieved by 1980. It recommended creating a central authority to guide and harmonize national economic policies, concentrating fiscal functions at the Community level, and accelerating the integration of factor and commodity markets. It did not recommend creating a single European currency or a European Central Bank, however, instead assuming that responsibility for exchanging European currencies at par could be vested in a European "system of national central banks." The transition was to be accomplished by a progressive hardening of exchange rate commitments (narrowing of fluctuation bands) and closer harmonization of macroeconomic policies. The recommendations of Werner's group were endorsed by the politicians, who set out on the path it delineated.

In retrospect, it was naive to think that Europe would be ready for monetary union in 1980, much less that it could achieve that goal without building institutions to support the operation of such an arrangement. Admittedly, it had established a customs union and created the Common Agricultural Policy that was the European Community's most visible function. The desire to avoid jeopardizing the CAP, whose administration would be complicated by frequent and sizable exchange rate movements, was a source of support for the Werner Report. But few political functions had been transferred to the European Parliament or the European Commission. The web of interlocking agreements needed to bond national governments to monetary unification—to prevent them from reneging on a commitment to follow guidelines for macroeconomic policy set down by the Community—remained underdeveloped. And the enlargement of the Community to incorporate Denmark, Ireland, and the United Kingdom in 1973 introduced new diversity that further complicated integration efforts.

If nothing else, the discussions surrounding the Werner Report provided a basis for responding to the collapse of the Bretton Woods System. The Smithsonian Agreement of December 1971 tripled the width of fluctuation bands against the dollar, allowing intra-European exchange rates to vary by as much as 9 percent. For the members of the EEC, exchange rate variability of this magnitude was an alarming prospect. They therefore sought to limit the fluctuation of their bilateral rates to $4^1/_2$ percent in an arrangement known as the Snake. They maintained that arrangement even after the Smithsonian "tunnel" collapsed in 1973.[26] Denmark, Ireland, and the United Kingdom, which were

extended to the monetary domain. By the mid-1960s this had led to the creation of the *Committee of Central Bank Governors.*

[26]Following the collapse of the Smithsonian arrangement, the floating Snake was referred to, not entirely seriously, as the "snake in the lake" to distinguish it from its predecessor, "the snake in the tunnel."

not yet members of the EEC, agreed to participate in the Snake within a week of its founding. Norway linked up a month later. The members of the Snake established Short-Term and Very-Short-Term Financing Facilities to extend credits to weak-currency countries. The European Monetary Cooperation Fund, with a board made up of governors of national central banks, was established to monitor European monetary policies, oversee the operation of credit facilities, and authorize realignments, mimicking the global role of the IMF. Countries were authorized to retain controls on capital movements within Europe, but current transactions were unrestricted as under the Articles of Agreement. The inspiration derived from the Bretton Woods System of pegged but adjustable rates was clear.

The Snake soon encountered difficulties (see Table 5.1). While all of Europe suffered a loss of competitiveness due to the dollar's post-1973 decline and the first OPEC (Organization of Petroleum Exporting Countries) oil-price shock, the weaker currencies were disproportionately affected.[27] Both foreign support and domestic policy adjustments remained limited, however, and could not contain exchange market pressures. In January 1974 France was forced to float; it rejoined the Snake in July 1975. The German Bundesbank then adopted a strategy of targeting monetary aggregates, which prevented it from accommodating the inflationary pressures caused by higher oil prices. The French government of Jacques Chirac, in contrast, adopted expansionary fiscal policies, forcing it to again leave the Snake in 1976.

All the while, Germany intervened in support of the currencies of its small northern European neighbors. But officials of both the Bundesbank and the Free Democratic Party on which the governing coalition relied grew increasingly concerned about the inflationary consequences. Purchases of foreign currencies for deutsche marks, if they remained unsterilized, threatened to bring German inflation rates up to those prevailing in the countries to which the Bundesbank lent support.[28] This tension was resolved by the Frankfurt realignment of October 1976 in which the currencies of the Benelux and Scandinavian countries were devalued against the deutsche mark, inaugurating a period of more frequent parity changes. While the complete story of the Frankfurt realignment is yet to be told, German officials appear to have demanded greater exchange rate flexibility as the price for continued cooperation. Any

[27]The Bundesbank was forced to intervene on their behalf. This was the first instance of what became a familiar pattern, in which a weak dollar was associated with a strong deutsche mark within Europe. The same problem afflicted the European Monetary System in 1992, as we shall see below.

[28]Alternatively, if the Bundesbank's intervention were sterilized, there would be good reason to worry that its effects would be neutralized. See note 21 above.

TABLE 5.1
Chronological History of the Snake

1972	
April 24	Basel Agreement enters into force. Participants are Belgium, France, Germany, Italy, Luxembourg, and the Netherlands.
May 1	The United Kingdom and Denmark joined.
May 23	Norway becomes associated.
June 23	The United Kingdom withdraws.
June 27	Denmark withdraws.
October 10	Denmark returns.
1973	
February 13	Italy withdraws.
March 19	Transition to the joint float: interventions to maintain fixed margins against the dollar ("tunnel") are discontinued.
March 19	Sweden becomes associated.
March 19	The deutsche mark is revalued by 3 percent.
April 3	Establishment of a European Monetary Cooperation Fund is approved.
June 29	The deutsche mark is revalued by 5.5 percent.
September 17	The Dutch guilder is revalued by 5 percent.
November 16	The Norwegian krone is revalued by 5 percent.
1974	
January 19	France withdraws.
1975	
July 10	France returns.
1976	
March 15	France withdraws again.
October 17	Agreement on exchange rate changes ("Frankfurt realignment"): The Danish krone is devalued by 6 percent, the Dutch guilder and Belgian franc by 2 percent, and the Norwegian and Swedish kroner by 3 percent.
1977	
April 1	The Swedish krona is devalued by 6 percent, and the Danish and Norwegian kroner are devalued by 3 percent.
August 28	Sweden withdraws; the Danish and Norwegian kroner are devalued by 5 percent.
1978	
February 13	The Norwegian krone is devalued by 8 percent.
October 17	The deutsche mark is revalued by 4 percent, the Dutch guilder and Belgian franc by 2 percent.
December 12	Norway announces decision to withdraw.

Source: Gros and Thygesen 1991, p. 17.

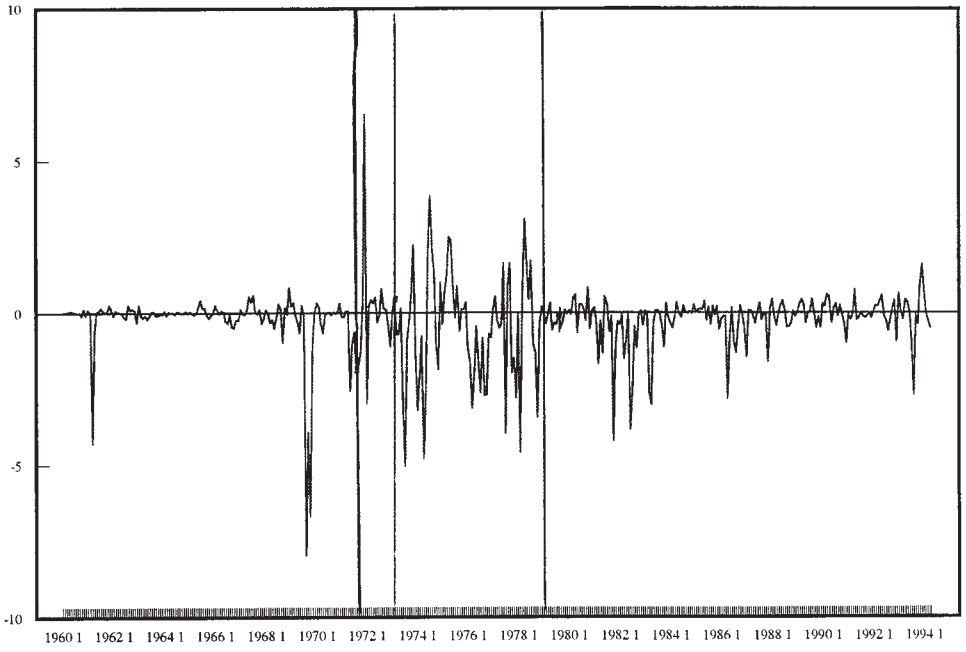

Figure 5.6. Monthly Change in the Deutsche Mark–French Franc Real Exchange Rate, February 1960–April 1994. *Source:* International Monetary Fund, International Financial Statistics, various years.

notion that monetary union could be achieved by pegging exchange rates within unchanging bands was thereby dealt a blow.

In the end, the Snake failed to provide exchange rate stability at the regional level. Intra-European rates were stabilized for limited periods, but efforts to hold them within narrow bands were frustrated. Not only did countries engage in serial realignments, but several were compelled to withdraw from the Snake entirely. Figures 5.6–5.8 distinguish four periods: a first before the closing of the gold window, a second through the collapse of the Smithsonian Agreement, a third corresponding to the European Snake, and a fourth denoting the European Monetary System. It is apparent that the critical French franc/deutsche mark exchange rate was less stable under the Snake than during Bretton Woods.[29]

Why was the Snake so troubled? For one thing, the economic environment, marked by oil shocks and commodity market disruptions, was unpropitious for efforts to peg exchange rates. The liberation of the Snake from the

[29]Note the contrast with the deutsche mark/Belgian franc rate, which was relatively stable during the years of the Snake, reflecting Belgium's success in staying in the system.

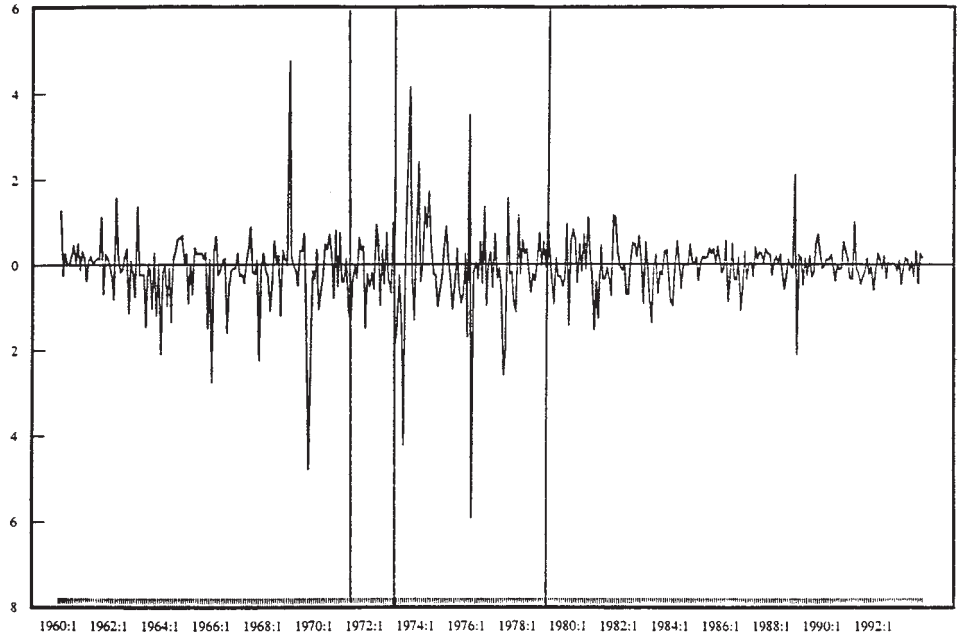

Figure 5.7. Monthly Change in the Deutsche Mark–Dutch Guilder Real Exchange Rate, February 1960–December 1992 (monthly percentage change in relative wholesale prices). *Source:* International Monetary Fund, International Financial Statistics, various years.

Smithsonian tunnel coincided with the first OPEC oil-price shock in 1973 and the 1974 commodity-price boom. Because different European countries relied to differing degrees on imported petroleum and raw materials, the impact was felt asymmetrically. Some countries experienced more unemployment than others. Some governments were exposed to more intense pressure to respond in expansionary ways. These dislocations interrupted the upward trend in France and Germany's intra-European trade, dimming enthusiasm in both countries for integration initiatives. In the same way that the goal of monetary union by the end of the century tied down intra-European exchange rates in the early 1990s—and questions about whether the Maastricht Treaty on European Union would be ratified undermined the stability of prevailing rates—the hope that the Snake might be a stepping stone to monetary union by 1980 encouraged the markets to support Europe's narrow bands only until the shocks of the 1970s made the Werner Report obsolete.[30]

[30]On the Maastricht Treaty and ratification difficulties in 1992, see discussion later in the text.

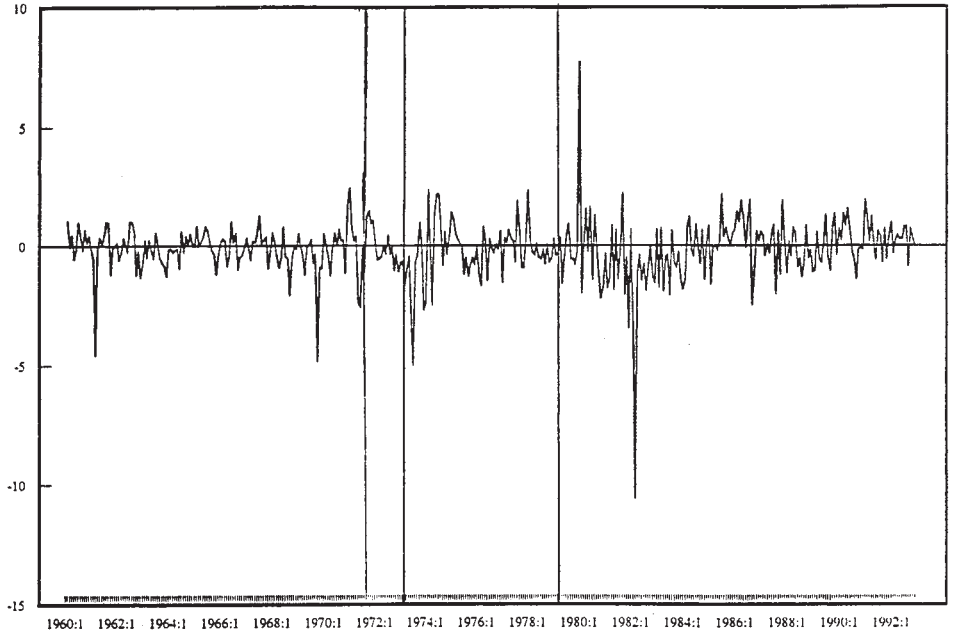

Figure 5.8. Monthly Change in the Deutsche Mark–Belgian Franc Real Exchange Rate, February 1960–December 1992. *Source:* International Monetary Fund, International Financial Statistics, various years.

Moreover, officials in different countries had different views of the appropriate response to disturbances. That monetary policy should be directed toward the maintenance of price stability was not yet an intellectual consensus. Some European policymakers, not having had the freedom to experiment with expansionary monetary initiatives under Bretton Woods, failed to appreciate how attempts to aggressively utilize monetary policy, especially in an environment of unbalanced budgets, could stimulate inflation rather than output and employment. Given Germany's aversion to inflation, the result was a lack of policy cohesion.[31]

Ultimately, the disturbances of the mid-1970s were so disruptive to the Snake because the political and institutional preconditions for the harmonization of monetary and fiscal policies remained underdeveloped. The fiscal federalism and centralization foreseen by the authors of the Werner Report, which

[31]Note the parallel with the failure to coordinate reflationary responses to the Depression of the 1930s, when incompatible conceptual frameworks in different countries stood in the way of international cooperation.

might have helped weak-currency countries cling to the Snake, remained wholly unrealistic. There was no entity in Brussels accountable to fiscal constituencies at the national level; governments consequently resisted ceding fiscal responsibility to the Community. The adjustments in national fiscal policies needed to hold exchange rates within the Snake were not made.

Analogous problems afflicted monetary policy. The European Monetary Cooperation Fund possessed little authority, central bank governors being unprepared to delegate their prerogatives. Meeting separately as the Committee of Central Bank Governors, they were supposed to set guidelines for national monetary policies but did little more than coordinate foreign-exchange-market intervention.[32] In the end, there existed no regional analogue to the International Monetary Fund to monitor policies and press for adjustments. The absence of such an institution meant that the strong-currency countries could not be assured that their weak-currency counterparts would undertake policy adjustments. Therefore the foreign support they were willing to provide was necessarily limited.

The Snake had been established as a symmetric system in reaction to French objections to the dollar's asymmetric role under Bretton Woods. But once the Snake was freed from the Smithsonian tunnel, the deutsche mark emerged as the Europe's reference currency and its anti-inflationary anchor. The Bundesbank set the tone for monetary policy continentwide. Yet there existed no mechanism through which other countries could influence the policies of the German central bank and no option other than exit through which they could control their own monetary destinies. This "accountability deficit" was the ultimate obstacle to the success of the Snake.

THE EUROPEAN MONETARY SYSTEM

The French sought to rectify these deficiencies by creating the European Monetary System in 1979. They sought to strengthen the oversight powers of the Monetary Committee of the European Community with the goal of creating an EC body to which national monetary policymakers could be held accountable. And they secured a provision in the EMS Act of Foundation authorizing governments to draw unlimited credits from the Very-Short-Term Financing Facility, seeming to oblige the strong-currency countries to extend unlimited support to their weak-currency partners. In practice, however, neither provision of the new system worked as intended by France and the small EC countries that depended on German policy.

[32] See Gros and Thygesen 1991, pp. 22–23.

The French had never wavered in their support for pegged rates; when the country was forced at Rambouillet to abandon the effort to establish such a system globally, President Valéry Giscard d'Estaing redirected his efforts to stabilizing the critical franc/deutsche mark rate. France's inability to stay in the Snake demonstrated that this was easier said than done. The experience inspired French officials to seek the construction of a sturdier structure within which intra-European exchange rates could be held. Critical to the success of their initiative was the cooperation of the German government. Giscard's German counterpart, Federal chancellor Helmut Schmidt, saw the creation of the EMS as a logical step toward a federal Europe—as a way of salvaging the vision of the Werner Report and of "bringing the French back in."[33] Linking the franc and other European currencies to the deutsche mark would also help to insulate the German economy from the effects of a depreciating dollar. In the same way that the dominance of the British and American delegations simplified the Bretton Woods negotiations, the fact that the EMS arose out of a meeting of the minds between the leaders of the two dominant EC member states finessed free-rider and coordination problems. Schmidt and Giscard's bilateral agreement received the endorsement of the European Council in July 1978, leading to the creation of the European Monetary System in 1979.[34]

Negotiating the EMS Act of Foundation still required reconciling French and German interpretations of the failure of the Snake. German officials argued that the Snake had operated satisfactorily for countries that subordinated other goals to the imperatives of price and currency stability. Their French counterparts complained that the Snake was a German-led system that accorded other countries inadequate input into policy. The Schmidt-Giscard initiative thus sought to create a new institution to reconcile France's desire for symmetry with Germany's insistence on discipline. The moribund European Monetary Cooperation Fund would be replaced by a European Monetary Fund (EMF) to manage the combined foreign-exchange-rate reserves of the participating countries, to intervene in currency markets, and to create *ecu* reserves to serve as European SDRs. The EMS would feature a "trigger mechanism," which would be set off when domestic policies jeopardized currency pegs. Violation of agreed-upon indicators would force strong-currency countries to expand and weak-currency countries to contract.

[33]As Schmidt put it in his memoirs, "I had always regarded the EMS not only as a mere instrument to harmonize the economic policies of the EC member countries, but also as part of a broader strategy for political self-determination in Europe." Cited in Fratianni and von Hagen 1992, pp. 17–18.

[34]On the chronology of EMS regulations, see Ludlow 1982.

Thus, Keynes's preoccupation at Bretton Woods, that surplus countries be forced to revalue or expand so as not to saddle deficit countries with the entire burden of adjustment, again took center stage. But as at Bretton Woods and again in the early 1970s when the United States sought to salvage the system of pegged but adjustable rates by appending a set of "reserve indicators" to compel surplus countries to adjust, the strong-currency countries, whose support for any reform was indispensable, were reluctant to agree. The Bundesbank realized that if the trigger mechanism failed, requiring it to purchase weak EMS currencies for marks, its mandate to pursue price stability could be compromised. If the EMF created unbacked ecu reserves to meet the financing needs of the deficit countries, the inflationary threat would be heightened.[35] The Bundesbank Council therefore objected to the agreement.[36]

Intense negotiations followed.[37] The French and German governments dropped their proposal for a trigger mechanism that might require changes in Bundesbank policy and for the transfer of national exchange reserves to a European Monetary Fund. Although the EMS Act of Foundation still spoke of foreign support "unlimited in amount," and although no restrictions were placed on drawings on the Very-Short-Term Financing Facility, an exchange of letters between the German finance minister and the president of the Bundesbank conceded the German central bank the right to opt out of its intervention obligation if the government were unable to secure an agreement with its European partners on the need to realign.[38] If it proved impossible to

[35] It remained unclear to what extent the EMF would be empowered to create additional ecus. The Brussels Resolution of December 5, 1978, authorized only swaps of ecus for gold and dollar reserves, which did not imply net liquidity creation. However, an annex to the Bremen conclusion (reached at the Bremen meeting of the European Council in early 1978) had spoken cryptically of ecus created against subscriptions in national currencies "in comparable magnitude." See Polak 1980.

[36] There was resistance to the mandatory triggering of interventions and policy adjustments in other branches of the German government as well, and in Denmark and the Netherlands.

[37] Schmidt, by his own account, threatened to change the Bundesbank law, compromising the central bank's independence if it failed to go along. His account is as yet uncorroborated, and some authors doubt that he would have carried out the threat. See Kennedy 1991, p. 81.

[38] See Emminger 1986. Extracts from the correspondence appear in Eichengreen and Wyplosz 1993. This correspondence remained secret, and not until the 1992 EMS crisis was its import fully appreciated. This secrecy accounts for the appearance in the interim of passages like the following: "But the most important single feature of the EMS has not yet been mentioned. A self-fulfilling speculative crisis cannot take place unless the market can commit larger sums of money than governments can mobilize. The market must be able to swallow their reserves. That cannot happen in the EMS, where governments can mobilize infinite amounts by drawing on reciprocal credit facilities." Kenen 1988, p. 55. I suggest below that self-fulfilling attacks were in fact possible because foreign support was not infinite.

reestablish appropriate central rates, raising fears that its commitment to price stability would be threatened, the Bundesbank could discontinue its intervention.

Thus, not only was Germany's obligation to provide foreign support effectively circumscribed, but it was made contingent on the willingness of other countries to realign. Germany assumed the strong-currency-country role that had been occupied by the United States at Bretton Woods. It followed that the Bundesbank Council, like the U.S. delegation at Bretton Woods, sought to limit the surplus country's intervention obligations and the balance-of-payments financing that would be made available to weak-currency countries.

Unlike the United States in 1944, however, Germany had a third of a century of experience suggesting that deficit countries would hesitate to adjust; hence, it acknowledged the necessity of allowing the latter to devalue (in less embarrassing EMS-ese, to realign). Experience with the Snake had fallen into two periods: a first before the Frankfurt realignment when the system had been strained by the failure to realign; and a second of greater exchange rate flexibility that had been more satisfactory. Germany and its EMS partners drew the obvious conclusion.[39]

The parallels with Bretton Woods extended beyond the desire for managed flexibility. The currencies of countries agreeing to abide by the Exchange Rate Mechanism (ERM) were to be held within $2^1/_4$ percent bands, as they had been in the final years of the Bretton Woods System.[40] Capital controls were permitted as a way of preserving governments' limited policy autonomy and of giving them the breathing space to negotiate orderly realignments. Clearly, the postwar international monetary agreement cast a long shadow.

Eight of the nine EC countries participated in the ERM from the outset (the United Kingdom being the exception). Italy, saddled with stubborn inflation, was permitted to maintain a wide (6 percent) band for a transitional period.[41] None of the original participants in the ERM had to withdraw from the system over the course of the 1980s, in contrast to experience with the Snake, although France came close at the start of the decade.

Central rates were modified on average once every eight months in the first four years of the EMS (see Table 5.2). Over the next four years, through

[39]Moreover, in contrast to the early years of the Snake, when it was hoped that the stability of exchange rates could be tied down by the Werner Report commitment to complete the transition to monetary union by 1980, the EMS Act of Foundation entailed no such commitment, implying the need for greater exchange rate flexibility.

[40]Countries in weak financial positions were permitted to operate wider 6 percent bands for a transitional period after entry.

[41]That transitional period was extended to 1990.

TABLE 5.2

Revaluations of the Deutsche Mark against other EMS Currencies (measured by bilateral central rates, in percent)

	Belgian/Luxembourgian franc	*Danish krone*	*French franc*	*Dutch guilder*	*Irish pound*	*Italian lira*	*Total EMS*[a]
Weight[b] (in %)	16.6	4.0	32.0	17.4	1.8	27.5	100
Realignment date with effect from:							
September 24, 1979	+2.0	+5.0	+2.0	+2.0	+2.0	+2.0	+2.1
November 30, 1979	—	—	—	—	—	—	+0.2
March 23, 1981	—	—	—	—	—	+6.4	+1.7
October 5, 1981	+5.5	+5.5	+8.8	—	+5.5	+8.8	+6.5
February 22, 1982	+9.3	+3.1	—	—	—	—	+1.6
June 14, 1982	+4.3	+4.3	+10.6	—	+4.3	+7.2	+6.3
March 21, 1983	+3.9	+2.9	+8.2	+1.9	+9.3	+8.2	+6.7
July 22, 1983	—	—	—	—	—	+8.5	+2.3
April 7, 1986	+2.0	+2.0	+6.2	—	+3.0	+3.0	+3.8
August 4, 1986	—	—	—	—	+8.7	—	+0.2
January 12, 1987	+1.0	+3.0	+3.0	—	+3.0	+3.0	+2.6
January 8, 1990	—	—	—	—	—	+3.7	+1.0
Cumulative since start of the EMS on March 13, 1979	+31.2	+35.2	+45.2	+4.0	+41.4	+63.5	+41.8

Source: Gros and Thygesen 1991, p. 68.

a. Average revaluation of the deutsche mark against the other EMS currencies (geometrically weighted); excluding Spain.

b. Weights of the EMS currencies derived from the foreign trade share between 1984 and 1986, after taking account of third-market effects, and expressed in terms of the weighted value of the deutsche mark.

— = not applicable.

January 1987, the frequency of realignments declined to once every twelve months. The change reflected the gradual relaxation of capital controls, which made orderly realignments more difficult to carry out. In addition, it reflected changes in global economic conditions. The first four EMS years were punctuated by a recession that, like the post-1973 downturn that had marked the birth of the Snake, magnified policy divergences in Europe. The pressure of unemployment in some EMS countries greatly aggravated the strains on the new system.

This became evident in 1981, when France's new Socialist government, led by François Mitterrand, initiated expansionary policies. The budget deficit was allowed to rise by more than 1 percent of GDP, and the annual M2 growth rate exceeded the government's 10 percent target. The franc weakened as soon as the markets began to anticipate that the electorate would install a government ready to hit the fiscal and monetary accelerator. Incoming officials, led by Minister of Economic Affairs Jacques Delors, recommended an immediate realignment as a way of starting the new government off with a clean slate. This was rejected on the grounds that it would stigmatize the Socialists as the party that always devalued.

In the new Mitterrand government's first four months in office, the French and German central banks were forced to intervene extensively in support of the franc. By September, devaluation could no longer be resisted. Face was saved by placing the change in the context of a general realignment of EMS currencies.[42]

But absent fiscal and monetary retrenchment, the French balance of payments was bound to weaken further. The market acted on the expectation, selling francs and forcing intervention that drained reserves from the Bank of France. Tightening capital controls put off the day of reckoning but could not do so indefinitely.[43] The franc was devalued against the deutsche mark again in June 1982 and a third time in March 1983.[44] The French government was driven to ponder withdrawing from the EMS and even from the EC.[45]

[42]The parallel with the 1936 Tripartite Agreement extended beyond the attempt to salvage the Socialist government's reputation by placing the realignment in the context of a broader agreement. In 1936 the newly appointed government of Léon Blum had also initiated expansionary fiscal policies, reduced hours of work, and stimulated demand. It had considered but rejected the possibility of devaluing upon taking office. It was then forced to allow the franc to depreciate four months later.

[43]On changes in French capital controls, see Neme 1986.

[44]On both occasions the franc/deutsche mark adjustment was dressed up by also realigning other rates.

[45]That the French government considered this last option might seem incredible. But, as noted above, France's withdrawal from the EMS would have jeopardized the CAP, the EC's

In the end, this option proved too radical, given France's investment in European integration. The day was carried by the moderate wing of the Mitterrand government, led by Delors and Treasury Director Michel Camdessus, and the government scaled back its policies of demand stimulus. It was not that expansionary fiscal and monetary policies were incapable of spurring the economy. To the contrary, they were quite effective: French GDP growth, unlike that of other countries, did not go negative even in the depths of the European recession. What French policymakers did not anticipate was how quickly the external constraint would bind.

The Socialists' policies of demand stimulus provoked such rapid reserve losses because of the lack of policy coordination between France and Germany. Just when the French embarked on their expansionary initiative, the Bundesbank took steps to suppress inflationary pressures. Any hope that the Bundesbank might be pressured into lowering interest rates was dashed in October 1982 when Germany's Socialist-Liberal coalition was replaced by the more conservative government of Helmut Kohl. Unlike the Schmidt government, Kohl and his colleagues had no desire to encourage the Bundesbank to reduce German interest rates.[46] It became clear that the European economy would not emerge from recession at the rate assumed in French forecasts. Lower levels of demand in Europe, in conjunction with a widening inflation differential between France and Germany, implied more serious losses of French competitiveness.[47] Fortunately for the EMS, the French Socialists ultimately bowed to these realities.

The second four years of the EMS were consequently less turbulent than the first. As the European economy began to recover, policies of austerity became more palatable. The threat to policy convergence receded. The dollar's appreciation in the first half of the 1980s made it easier for European governments to live with a strong exchange rate against the mark. The Mitterrand debacle had served as a caution, effectively reconciling Germany's most important EMS partner to policies of currency stability.

The dispersion of inflation rates across countries, as measured by their standard deviation, fell by half between 1979–83 and 1983–87. Although

central program, which meant that withdrawing from the EMS could have seriously eroded European solidarity. See Sachs and Wyplosz 1986.

[46] See Henning 1994, pp. 194–95.

[47] In addition, supply-side rigidities afflicting the French economy meant that demand stimulus produced more inflation and less output than the government had hoped. Additional social security taxes, higher minimum wages, and reduced hours of work caused employers to hesitate before taking on workers. With the aggregate supply curve shifting in at the same time the aggregate demand curve shifted out, inflation rather than growth resulted.

capital controls were partially relaxed, important restrictions remained, providing governments some time to negotiate realignments. None of the four realignments that took place in the 1983–87 period exceeded the cumulative inflation differential. None therefore provided devaluing governments an additional boost to their competitiveness that might permit them to continue running more inflationary policies than Germany without suffering alarming losses of competitiveness. Thus, policy signaled a hardening commitment of EMS countries to nominal convergence. Europe's "minilateral Bretton Woods" appeared to be gaining resilience.

RENEWED IMPETUS FOR INTEGRATION

While the European Community seemed on the road to solving its exchange rate problem, other more fundamental difficulties remained. Unemployment was disturbingly high, often in the double digits, and policymakers felt hamstrung by their commitment to peg the exchange rate.[48] They worried about European producers' ability to compete with the United States and Japan. All this led them to contemplate a radical acceleration of the process of European integration as a way of injecting the chill winds of competition into the European economy and helping producers to better exploit economies of scale and scope. The initiative turned out to have profound and not wholly anticipated consequences for the evolution of the European Monetary System.

The dynamics that followed were complex. In their most schematic form, the interplay between monetary unification and the integration process unfolded as follows.

- The renewed commitment to pegging exchange rates on the part of the member states of the European Community and the emergence of Germany as the European Monetary System's low-inflation anchor limited the freedom of European countries to use independent macroeconomic policies in pursuit of national objectives.
- Governments therefore turned when pursuing distributional objectives and social goals to microeconomic policies of wage compression, enhanced job security, and increasingly generous unemployment and other social benefits.

[48] I suggest below that the unemployment problem of the 1980s was in fact related to the advent of the EMS, but not for the reasons emphasized by policymakers at the time and echoed in most historical accounts.

These reduced the flexibility and efficiency of the labor market, leading to high and rising unemployment.[49]

- This problem, "Eurosclerosis," lent additional impetus to the integration process. The Single Market Program, embodied in the Single European Act of 1986, sought to bring down unemployment and end the European slump by simplifying regulatory structures, intensifying competition among EC member states, and facilitating European producers' exploitation of economies of scale and scope.
- The attempt to create a single European market in merchandise and factors of production accelerated the momentum of monetary integration. Eliminating currency conversion costs was the only way of removing hidden barriers to internal economic flows—of forging a truly integrated market. Abolishing the opportunity for countries to manipulate their exchange rates was necessary to defuse protectionist opposition to the liberalization of trade. Both arguments pointed to the need for a single currency as a concomitant of the single market. This vision found expression in the Delors Report of 1989 and the Maastricht Treaty adopted by the European Council in December 1991.
- Integral to the creation of the single market was the removal of capital controls. But the elimination of controls rendered the periodic realignments that had vented pressures and restored balance to the European Monetary System more difficult to effect. After the beginning of 1987 there were no more realignments of ERM currencies. This came to be known, for obvious reasons, as the period of the "hard EMS."[50]
- Thus, the same dynamic that heightened the desire for currency stability removed the safety valve that had permitted the members of the ERM to operate a system of relatively stable exchange rates. No sooner did this occur than, starting in 1990, a series of shocks intervened. A global recession elevated unemployment rates in Europe; the dollar's decline further undermined European competitiveness; and German unification raised interest rates throughout the European Community.
- At this point, national political leaders began to question the Maastricht blueprint for monetary union. The markets, in turn, began to question the

[49]I am suggesting, in other words, that the two popular explanations for high unemployment in Europe—which emphasize, respectively, the commitment to a strong exchange rate and social policies that introduced microeconomic rigidities into the labor market—are not incompatible with or even entirely distinct from each other. The policies that led to wage compression and increased hiring and firing costs were themselves a response to limits on the autonomous use of macroeconomic policy imposed by the EMS.

[50]The adjustment of the lira's band in 1990, when Italy moved from 6 to 2¼ percent margins, did not involve a change in the lira's lower limit.

commitment of political leaders to the defense of their EMS pegs. Ultimately, the pressures that mounted within the EMS could not be contained, and the whole structure came tumbling down.

Two milestones along this route were the Delors Report in 1989 and the Maastricht Treaty in 1991. Since the days of the Snake, French governments had bridled at their lack of input into Europe's common monetary policy. By the second half of the 1980s it had become clear that the EMS had not solved this problem. In a 1987 memo to the ECOFIN Council (a council of EC-member economics and finance ministers), French finance minister Edouard Balladur argued for a new system. "The discipline imposed by the exchange-rate mechanism," he wrote, "may, for its part, have good effects when it serves to put a constraint on economic and monetary policies which are insufficiently rigorous. [But] it produces an abnormal situation when its effect is to exempt any countries whose policies are too restrictive from the necessary adjustment."[51] A monetary union governed by a single central bank in whose policies all the member states had a say was one solution to this problem.

The presidency of the European Commission having been assumed by the former French economic affairs minister Jacques Delors, Balladur's appeal was received warmly in Brussels. More surprising was the German government's broadly sympathetic response. Revealingly, the critical reaction came not from the German Finance Ministry but from Foreign Minister Hans-Dietrich Genscher, who expressed a willingness to consider replacing the EMS with a monetary union in return for accelerating the process of European integration. Germany desired not just an integrated European market in which economies of scale and scope could be efficiently exploited, but also deeper political integration in the context of which the country might gain a foreign policy role. Monetary union was the quid pro quo.

The Delors Committee, consisting of the governors of the central banks of EC member states, a representative of the EC Commission, and three independent experts, met eight times in 1988 and 1989. Its report, like the Werner Report before it, supported the achievement of monetary union within a decade, although it did not set an explicit deadline for the conclusion of the process. Like its predecessor, the Delors Committee envisaged a gradual transition. But whereas the Werner Report had recommended removing capital controls at the end of the process, the Delors Report advocated removing them at the beginning, reflecting the linkage between monetary union and the single market. And the Delors Report, in a concession to political realities, did not propose ceding fiscal functions to the EC. Instead, it recommended

[51] Cited in Gros and Thygesen 1991, p. 312.

rules imposing ceilings on budget deficits and excluding governments' access to direct central bank credit and other forms of money financing.[52]

Most striking, the Delors Committee recommended the complete centralization of monetary authority. Whereas the Werner Report had described a system of national central banks joined together in a monetary federation, the Delors Report proposed the creation of a new entity, a European Central Bank (ECB), to execute the common monetary policy and to issue a single European currency. National central banks, like regional reserve banks in the United States, would become the central bank's operating arms.

In June 1989 the European Council accepted the Delors Report and agreed to convene an intergovernmental conference to negotiate the amendments to the Treaty of Rome required for its implementation. Again it is revealing that the intergovernmental conferences, which started in December 1990 and were completed at Maastricht one year later, took both EMU and political union as their charge.

Following the Delors Report, the Maastricht Treaty described a transition to be completed in stages. Stage I, which commenced in 1990, was to be marked by the removal of capital controls.[53] Member countries were to fortify the independence of their central banks and to otherwise bring their domestic laws into conformance with the treaty. Stage II, which began in 1994, was to be characterized by the further convergence of national policies and by the creation of a temporary entity, the European Monetary Institute (EMI), to encourage the coordination of macroeconomic policies and plan the transition to monetary union.[54] If the Council of Ministers decided during Stage II that a majority of countries met the preconditions, it could recommend the inauguration of Stage III, monetary union. But to prevent Stage II from continuing indefinitely, the treaty required the EU heads of state or government to meet no later than the end of 1996 to determine whether a majority of member states satisfied the conditions for monetary union and whether to specify a date for its commencement. If no date were set by the end of 1997, Stage III would

[52]Committee for the Study of Economic and Monetary Union 1989, p. 30.

[53]A few countries, Greece, Ireland, Portugal, and Spain among them, were permitted to retain their controls beyond this deadline. In addition, other countries were permitted during Stage I to reimpose controls for no more than six months in response to financial emergencies. As we shall see in the next section, these provisions were utilized in the 1992–93 EMS crisis.

[54]Creating a temporary entity, the European Monetary Institute, to carry out these functions in Stage II, the transitional phase, was a step back from the Delors Report, which had proposed establishing the European Central Bank at the start of Stage II and not merely at the start of Stage III, monetary union. This compromise was in deference to German opposition to any arrangement that entailed the delegation of significant national monetary autonomy before full monetary union was achieved.

commence on January 1, 1999, if even a minority of member states qualified. When Stage III began, the exchange rates of the participating countries would be irrevocably fixed. The EMI would be succeeded by the ECB, which would execute the common monetary policy.

Germany was reluctant to consent to these deadlines and did so only after obtaining safeguards to ensure that the monetary union would be limited to countries with a record of currency stability.[55] To that end, the treaty specified four "convergence criteria." These required a qualifying country to hold its currency within the normal ERM fluctuation bands without severe tensions for at least two years immediately preceding entry. They required it to run an inflation rate over the preceding twelve months that did not exceed the inflation rates of the three lowest-inflation member states by more than 1.5 percentage points. They required it to reduce its public debt and deficit toward reference values of 60 and 3 percent of GDP, respectively.[56] They required it to maintain for the preceding year a nominal long-term interest rate that did not exceed by more than two percentage points that of the three best-performing member states in terms of price stability.

In December 1991, when treaty negotiations were concluded, satisfying these conditions appeared to be within the reach of a majority of member states. Little did observers know how quickly the situation would change.

EUROPE'S CRISIS

The intergovernmental conference having been successfully concluded the previous December, the European Monetary System entered 1992 on a wave of optimism. It had been five years since the last realignment of ERM currencies. All the member states of the European Community but Greece and Portugal were participating, and Portugal was about to join.

The optimism with which the stewards of the European Monetary System were imbued had been fed by the system's success in surmounting a series of shocks. The collapse of the Soviet Union's trade dealt a blow to European economies (such as Finland) that depended on exports to the East. The end of the cold war called for an infusion of aid to the transforming economies of

[55]This reluctance was characteristic of the Bundesbank in particular, which expressed strong opposition to any blueprint for the transition that entailed binding deadlines. See Bini-Smaghi, Padoa-Schioppa, and Papadia 1994, p. 14.

[56]These last conditions were weakened by a number of qualifications. For example, debts and deficits may exceed their reference values if they are judged to do so for reasons that are exceptional and temporary or if they are declining toward those values at an acceptable pace.

Eastern Europe; this left fewer resources for the structural funds and the EC's other cohesion programs. German economic and monetary unification in 1990 spawned budget deficits, capital imports, and a surge of spending that placed upward pressure on interest rates continentwide. The dollar's decline against the deutsche mark and other ERM currencies further damaged Europe's international competitiveness. The continent then entered one of its deepest recessions in the postwar period. And with the conclusion of negotiations at Maastricht, the public debate over monetary union intensified. Yet despite these disturbances, the countries participating in the ERM were able to resist the pressure to alter their exchange rates. Countries outside the EC that shadowed the EMS—Austria, Norway, and Sweden—continued to do so successfully.[57]

Denmark's June 2 referendum on the Maastricht Treaty was the turning point. The Danish no raised questions about whether the Maastricht Treaty would come into effect. If the treaty were repudiated, the incentive for countries to hold their currencies within their ERM bands in order to qualify for monetary union would be weakened, and high-debt countries like Italy would have less reason to cut their deficits. The lira, which had been in the narrow band since 1990, plunged toward its lower limit. The three currencies of the wide band (sterling, the peseta, and the escudo) weakened. Pressure mounted with the approach of France's September 20 referendum on the treaty. On August 26 the pound fell to its ERM floor. The lira fell through its floor two days later. Other ERM member countries were forced to intervene in support of their currencies. The Bundesbank intervened extensively on their behalf (see Figure 5.9).

On September 8, the Finnish markka's unilateral ecu peg was abandoned. Currency traders, some of whom were said to have been unable to distinguish Sweden from Finland, turned their attention to the krona; over the subsequent week the Riksbank was forced to raise its marginal lending rate to triple digits. All the while, the lira remained below its ERM floor. A crisis meeting on September 13 led to a 3.5 percent devaluation of the lira and 3.5 percent revaluation of other ERM currencies.

But what European monetary officials hoped would end the crisis only marked its start. The first discontinuous realignment in five years reminded

[57]The one exception was Finland, which suffered the collapse of its Soviet trade and a banking crisis. In November 1991 the Bank of Finland, which pegged the markka to the ecu but, not being a member of the EMS, did not enjoy the support provided ERM countries through the Very-Short-Term Financing Facility, devalued by 12 percent. Despite this, the British pound remained firmly within its fluctuation band. The Portuguese escudo joined the wide band in April. Divergences between ERM exchange rates actually moderated, with the French franc moving up from the bottom of its band and the deutsche mark, Belgian franc, and Dutch guilder moving down.

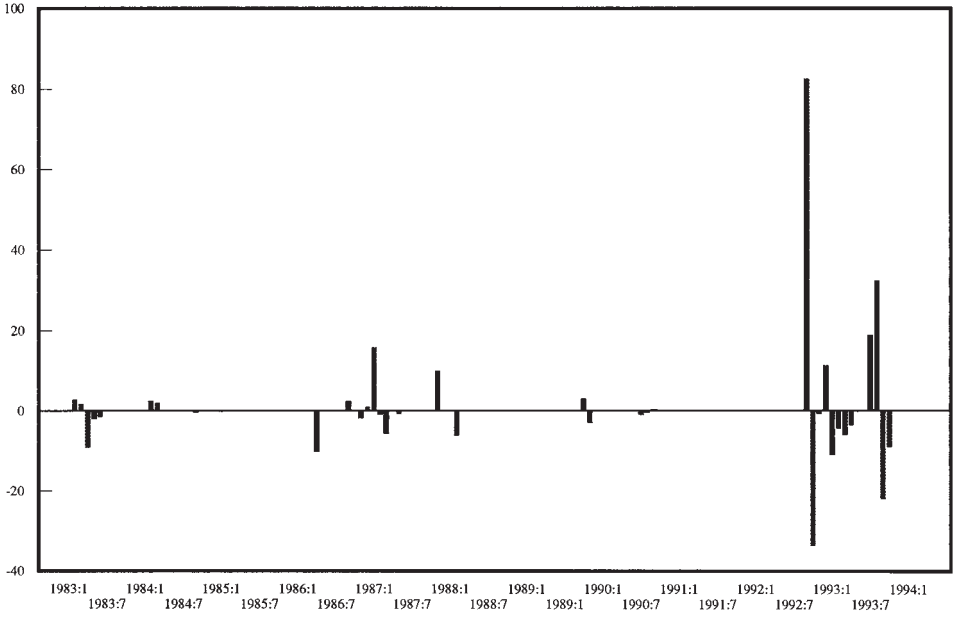

Figure 5.9. Bundesbank Operations in the European Monetary System, 1983–94 (billions of D-marks). *Source:* Deutsche Bundesbank, *Annual Reports*, various years. *Note:* Positive entries denote Bundesbank intervention on behalf of other EMS currencies.

observers that changes in EMS exchange rates were still possible. Pressure mounted on Britain, Spain, Portugal, and Italy (whose realignment, many observers believed, had been too small). Despite further interest-rate increases and intervention at the margins of the EMS bands, these countries suffered massive reserve losses. British ERM membership was suspended on September 16, and the two interest-rate increases taken earlier in the day were reversed. That evening Italy announced to the Monetary Committee that the inadequacy of its reserves in the face of speculative pressure forced it to float the lira.[58]

Following Italy and Britain's exit from the ERM, pressure was felt by the French franc, the Danish krone, and the Irish pound. The outcome of the French referendum, a narrow *oui*, failed to dispel it. The franc hovered just above the bottom of its band, requiring the Bank of France and the Bundesbank to undertake extensive interventions.[59] Pressure on Spain, Portugal, and Ireland led their governments to tighten capital controls.

[58]The committee also authorized a 5 percent devaluation of the peseta.

[59]In the week ending September 23, 160 billion French francs (about $32 billion) were reportedly spent on the currency's defense. Bank for International Settlements 1993, p. 188.

Six additional months of instability were inaugurated by Sweden's decision in November to abandon its unilateral ecu peg after the government failed to obtain all-party support for austerity measures. The Riksbank had suffered massive reserve losses in the course of defending the krona; in all, it spent a staggering $3,500 for each resident of Sweden![60] Spain was forced to devalue again, this time by 6 percent, as was its neighbor and trading partner, Portugal. Norway abandoned its ecu peg on December 10, and pressure spread to Ireland and France. While the franc was successfully defended, the punt was not. In the face of Ireland's removal of controls on January 1, 1993, increases in Irish market rates to triple-digit levels did not suffice.[61] The punt was devalued by 10 percent on January 30. In May, the uncertainty surrounding Spain's springtime elections forced yet another devaluation of the peseta and the escudo.

Once again there were reasons to hope that unsettled conditions had passed. In May the Danish electorate, perhaps chastened by the fallout from its earlier decision, endorsed the Maastricht Treaty in a second referendum. The Bundesbank lowered its discount and Lombard rates, moderating the pressure on its ERM partners. The French franc and other weak ERM currencies strengthened.

With French inflation running below that of Germany, French officials incautiously suggested that the franc had assumed the role of the anchor currency within the ERM. Oblivious to the fragility of the position, they encouraged the Bank of France to reduce interest rates in the hope of bringing down unemployment. The Bank of France lowered its discount rate, anticipating that the Bundesbank would follow. But when on July 1 the cut in German rates came, it was disappointingly small. The French economics minister then called for a Franco-German meeting to coordinate further interest-rate reductions, but the Germans canceled their plans to attend, leading the markets to infer that Germany lacked sympathy for France's potentially inflationary initiative. The franc quickly fell toward its ERM floor, requiring Bank of France and Bundesbank intervention. It was joined there by the Belgian franc and the Danish krone. A full-blown crisis was at hand.

The last weekend of July was the final chance to negotiate a concerted response. A range of alternatives is said to have been mooted, including

[60]Reserve losses incurred in the six days preceding the devaluation are reported to have amounted to $26 billion, or more than 10 percent of Sweden's GNP. Bank for International Settlements 1993, p. 188.

[61]Ireland's difficulties were aggravated by the descent of the pound sterling (fueled by further British interest-rate cuts). Between September 16 and the end of the calendar year, sterling declined by 13 percent against the deutsche mark.

devaluation of the franc (which France vetoed), a general realignment of ERM currencies (which other countries vetoed), floating the deutsche mark out of the ERM (which the Dutch vetoed), and imposing deposit requirements on banks' open positions in foreign currencies (suggested by Belgium but vetoed by the other countries). The diversity of these proposals indicated the lack of a common diagnosis of the problem. By Sunday evening the assembled ministers and central bankers were faced with the impending opening of financial markets in Tokyo. With no course on which they could agree, they opted to widen ERM bands from 2¼ percent to 15 percent. European currencies were set to float more freely than had ever been allowed in the age of par values, snakes, and central rates.

UNDERSTANDING THE CRISIS

Three explanations for the crisis can be distinguished: inadequate harmonization of past policies, inadequate harmonization of future policies, and speculative pressures themselves.

According to the first explanation, some countries, most notably Italy, Spain, and the United Kingdom, had not yet brought their inflation rates down to those of their ERM partners. Excessive inflation cumulated into overvaluation, aggravating deficits on current account. These problems were exacerbated by the weakness of the dollar and the yen. Currency traders, for their part, understood that substantial current-account deficits could not be financed indefinitely. In this view, the move to the hard EMS in 1987 was premature; countries should have continued to adjust their central rates as needed to eliminate competitive imbalances.[62]

Yet the data do not support this interpretation unambiguously.[63] Table 5.3 shows the EC's Committee of Governors of Central Banks' own estimates of

[62]Two clear expositions of this view are Branson 1994 and von Hagen 1994. Understandably, it has found its way into official accounts. See Bank for International Settlements 1993, Commission of the European Communities 1993, and Committee of Governors of the Central Banks of the Member States of the European Economic Community 1993a, 1993b.

[63]One reason that these data speak less than clearly is that Europe experienced a massive asymmetric shock: German unification. The increase in consumption and investment associated with unification raised the demand for German goods. In the short run this pushed up German prices relative to those prevailing in other ERM countries. The implication is that inflation rates elsewhere in Europe not only had to stay as low as Germany's; they had to lag behind. Unfortunately, it is impossible to know by precisely how much inflation rates in countries other than Germany had to fall. One way of going about this is to look at the "competitiveness outputs" to which relative prices are an input. Eichengreen and Wyplosz 1993 considered the current account of the

TABLE 5.3
Indicators of Cumulative Competitiveness Changes, 1987–August 1992 (in percent)

	Relative to Other EC Countries[a]		*Relative to Industrial Countries*	
Country	*Producer Prices*	*Unit Labor Costs*[b]	*Producer Prices*	*Unit Labor Costs*[b]
Belgium	4.0	5.6	1.3	2.7
Denmark	3.6	6.4	–0.5	3.8
Germany (western)	1.7	0.5	–3.8	–5.5
Greece	n.a.	n.a.	–10.2	–15.6
France	7.9	13.3	3.3	7.2
Ireland	6.4	35.7	1.3	27.9
Italy	–3.0	–7.0	–6.4	–9.8
Netherlands	1.5	5.2	–1.4	1.9
	From ERM Entry[c]–August 1992			
Spain	–2.1	–7.5	–8.1	–13.8
Portugal	n.a.	–4.6	n.a.	–6.9
United Kingdom	–1.7	–0.4	–4.0	8.3

Source: Eichengreen 1994b.
a. Excluding Greece.
b. Manufacturing sector.
c. Spain: June 1989; Portugal: April 1992; United Kingdom: October 1990.
n.a. = not available.

cumulative competitiveness changes on the eve of the 1992 crisis.[64] Of the countries that participated in the EMS from 1987, only Italy shows an obvious deterioration in competitiveness. Italian unit labor costs rose by 7 percent relative to other EC countries, by 10 percent relative to the industrial countries.[65] The only other country in this group whose labor costs rose at comparable rates is Germany, which did not suffer a speculative attack. In other words,

balance of payments and profitability in the manufacturing sector as two variables whose values would deteriorate in the event of inadequate adjustment to changing competitive conditions. Only for Italy do both measures deteriorate in the period leading up to the crisis. For Spain the current account deteriorates, but profitability does not; for the United Kingdom the opposite is true. Other countries whose currencies were attacked—Denmark, France, and Ireland, for example—experienced a significant deterioration in neither of these variables in the period preceding the crisis.

[64] It distinguishes two indicators, producer prices and unit labor costs, and two comparison groups, other EC countries and all industrial countries. The latter should pick up the effect of the depreciation of the dollar and the yen.

[65] While the second figure is higher for Greece, that country had not yet joined the ERM.

there is nothing in Table 5.3 that obviously justifies the attacks on the French franc, Belgian franc, Danish krone, and Irish punt.[66]

It is also not clear from the unit labor cost and producer price data in Table 5.3 that sterling was overvalued. One might object that the problem lay in the period before the country entered the ERM in October 1990.[67] It is unclear that this was the markets' perception, however: sterling's one-year-ahead forward rate also remained within its ERM band until only weeks before the September crisis. Indeed, this is the fundamental flaw of explanations that attribute the crisis to excessive inflation and overvaluation: if the attacks were prompted by the cumulative effects of excessive inflation and current-account deficits, the markets' doubts should have found reflection in the behavior of forward exchange rates and interest differentials. Because inflation and deficits are slowly evolving variables, their effects should have been mirrored in the gradual movement of forward rates to the edges of the ERM bands and the gradual widening of interest differentials. Yet little movement in these variables was apparent until they suddenly jumped up on the eve of the crisis.[68] Until then, they continued to imply expected future exchange rates well within the prevailing ERM bands. None of these measures suggests that the markets attached a significant probability to devaluation until just before the fact.[69]

The obvious complement to this emphasis on past policy imbalances is future policy shifts. Countries that had been pursuing policies of austerity in order to maintain external balance experienced mounting unemployment. (Table 5.4 tabulates their unemployment rates in the years leading up to the crisis.) The German unification shock required a rise in German prices relative to those prevailing elsewhere in Europe. As long as exchange rates remained

[66]The evidence for the three countries that entered the ERM between June 1989 and April 1992, Spain, Portugal, and the United Kingdom, is less clear-cut. Spain and Portugal experienced more inflation than their richer ERM partners, but this was to be expected of rapidly growing countries moving into the production of higher-value-added goods. See the discussion of the Balassa-Samuelson effect in the penultimate section of Chapter 4. Even though countries like Spain had more scope to run inflation than their more industrialized ERM partners, one can still argue that the Spanish government overdid it.

[67]See Williamson 1993.

[68]A careful study of the evidence is Rose and Svensson 1994.

[69]This skepticism should not be overstated. Even if the data fail to speak clearly, their muffled voices still suggest that ERM currencies were not attacked randomly. Italy is the one country for which the evidence of competitive imbalances is unambiguous, and the lira was the first ERM currency to be driven from the system. Some indicators do suggest problems in the United Kingdom, Spain, and Portugal; theirs were the next ERM currencies to be attacked and to be realigned or driven out of the system. Yet the fact that the evidence of competitive imbalances is far from overwhelming and that other currencies were attacked as well suggests that this is not the entire story.

TABLE 5.4
Unemployment Rates, 1987–92[a]

	Percentage of Civilian Labor Force			
Country	*1987–89 Average*	*1990*	*1991*	*1992*[b]
Belgium	10.0	7.6	7.5	8.2
Denmark	6.6	8.1	8.9	9.5
Germany (western)[c]	6.1	4.8	4.2	4.5
Greece	7.5	7.0	7.7	7.7
Spain	19.1	16.3	16.3	18.4
France	9.9	9.0	9.5	10.0
Ireland	17.0	14.5	16.2	17.8
Italy	10.9	10.0	10.0	10.1
Luxembourg	2.1	1.7	1.6	1.9
Netherlands	9.2	7.5	7.0	6.7
Portugal	5.9	4.6	4.1	4.8
United Kingdom	8.7	7.0	9.1	10.8
EEC				
Average	9.7	8.3	8.7	9.5
Dispersion[d]	2.7	2.6	3.3	3.7
ERM original narrow band				
Average	8.1	7.2	7.1	7.4
Dispersion[d]	2.2	2.2	2.8	2.9
United States[e]	5.7	5.5	6.7	7.3
Japan	2.5	2.1	2.1	2.2

Source: Eurostat.
a. Standardized definition.
b. Estimates.
c. For 1992, unemployment rates (national definition) are: 14.3 percent for eastern Germany and 7.7 percent for the whole of Germany.
d. Weighted standard deviation.
e. Percentage of total labor force.

pegged, this change in relative prices could be accomplished only by faster inflation in Germany or slower inflation abroad. Predictably, the Bundesbank preferred the second alternative. It raised interest rates to ensure that adjustment did not take place through German inflation. Hence, adjustment could occur only through disinflation abroad. With European labor markets slow to adjust, disinflation meant unemployment.

In turn, rising unemployment meant waning support for the policies of austerity needed to defend ERM pegs. There might come a time when a government dedicated to such policies would be thrown out of office by a

disaffected electorate or when, in order to head off this possibility, the authorities would choose to abandon their policies of restraint. Anticipating this eventuality, the markets attacked the currencies of the countries with the highest unemployment rates and weakest governments.[70] As predicted, there is a correlation between the incidence of the crisis and the countries with the most serious unemployment problems.

This explanation also provides a link between market behavior and the controversy over the Maastricht Treaty. If the treaty were not going to be ratified (which seemed possible in the interval between the Danish and French referendums), it would not pay to endure unemployment as a way of demonstrating one's commitment to participate in the monetary union. It is no coincidence, then, that exchange rate tensions surfaced when the Danes rejected the treaty in June or that they peaked immediately before France's September 20 referendum.

Yet this explanation also sits uneasily with the observed behavior of forward exchange rates. If observers attached a significant probability to an expansionary policy shift, why then did the one-year-ahead forward rates of the ERM currencies that were attacked in the second week of September not move outside their ERM bands in July or August? Aside from the Italian lira, the only ERM currency whose forward rate fell out of its band before September was the Danish krone—not surprisingly given Denmark's rejection of the treaty.[71]

This brings us to the third factor that could have been at work in 1992–93: self-fulfilling attacks.[72] The mechanism is best illustrated by example. Assume that the budget is balanced and that the external accounts are in equilibrium so that no balance-of-payments crisis looms. The authorities are happy to maintain current policies indefinitely, and those policies will support the exchange rate in the absence of an attack. Now imagine that speculators attack the currency. The authorities must allow domestic interest rates to rise to ensure its defense, since speculators must be rendered indifferent between holding domestic-currency-denominated assets, on which the rate of return is the domestic interest

[70]This process is formalized by Ozkan and Sutherland (1994).

[71]Again, this skepticism should not be overstated. A recession that raised European unemployment rates clearly lowered governments' comfort levels. There is no question that it raised public opposition to the policies of austerity required to maintain the exchange rate peg. Still, it is unclear whether policymakers became so uncomfortable that they were prepared to abandon their previous policies or that market sentiment, as measured by forward rates, attached a significant probability to this eventuality.

[72]The seminal contributions to this literature are Flood and Garber 1984 and Obstfeld 1986. The example that follows is drawn from Eichengreen 1994b. Readers will recognize the parallel with the interpretation of the 1931 sterling crisis developed in Chapter 3.

rate, and foreign-currency-denominated assets, the return on which is the foreign interest rate plus the expected rate of depreciation. But the requisite rise in interest rates may itself alter the government's assessment of the costs and benefits of defending the rate. The higher interest rates required to defend the currency will depress absorption and aggravate unemployment, also aggravating the pain of the prevailing policies. They will increase the burden of mortgage debt, especially in countries like the United Kingdom where mortgage rates are effectively indexed to market rates. They will induce loan defaults, undermining the stability of fragile banking systems. They will increase debt-servicing costs and require the imposition of additional distortionary taxes. Enduring austerity now in return for an enhanced reputation for defending the exchange rate later may become less appealing if a speculative attack increases the cost of running the first set of policies. Even a government that would have accepted this trade-off in the absence of an attack may choose to reject it when subjected to speculative pressure.

In such circumstances, a speculative attack can succeed even if, in its absence, the currency peg could and would have been maintained indefinitely. This is in contrast to standard models of balance-of-payments crises, where speculators prompted to act by inconsistent and unsustainable policies are only anticipating the inevitable, acting in advance of a devaluation that must occur anyway.[73] In this example, devaluation will not occur anyway; the attack provokes an outcome that would not obtain otherwise. It serves as a self-fulfilling prophecy.

There are reasons to think that models of self-fulfilling crises are applicable to the ERM in the 1990s.[74] Consider the choice confronting EU member states attempting to qualify for membership in Europe's monetary union. The Maastricht Treaty makes two previous years of exchange rate stability a condition for participation. Even if a country has its domestic financial house in order and its government is willing to trade austerity now for qualifying for monetary union later, an exchange-market crisis that forces it to devalue and abandon its ERM peg may still disqualify it from participation. And if it no longer qualifies for EMU, its government has no incentive to continue pursuing the policies required to gain entry. It will be inclined therefore to switch to a more accommodating monetary and fiscal stance. Even if in the absence of a speculative attack there is no problem with fundamentals, current or future, once an attack occurs the government has an incentive to modify policy in a

[73] See Krugman 1979.

[74] This is argued by Eichengreen and Wyplosz (1993), Rose and Svensson (1994), and Obstfeld (1996).

more accommodating direction, validating speculators' expectations. In other words, the Maastricht Treaty provided particularly fertile ground for self-fulfilling attacks.

THE EXPERIENCE OF DEVELOPING COUNTRIES

In much of the industrialized world, then, the two post–Bretton Woods decades were marked by movement toward more flexible exchange rates. This was true of the dollar/yen and dollar/deutsche mark rates; it was true of intra-European exchange rates after the EMS crisis of 1992. The trend was a response to the pressures imparted by the rise of international capital mobility.

The same trend was evident in the developing world, although it was slower in coming. Floating was challenging for countries with underdeveloped financial markets, where disturbances could result in high levels of exchange rate volatility. It was unappealing to very small, very open developing countries, where exchange rate fluctuations could severely disrupt resource allocation. The vast majority of developing countries therefore pegged their currencies behind the shelter of capital controls.

At the same time, pegging proved increasingly difficult to reconcile with the effort to liberalize financial markets. Developing countries had resorted to policies of import substitution and financial repression in the wake of World War II. In Latin America, for example, where countries suffered enormously from the depression of the 1930s, the lesson drawn was the need to insulate the economy from the vagaries of international markets. Tariffs and capital controls were employed to segregate domestic and international transactions. Price controls, marketing boards, and financial restrictions were used to guide domestic development.[75] The model worked well enough in the immediate aftermath of the war, when neither international trade nor international lending had yet recovered and a backlog of technology afforded ample opportunity for extensive growth. With time, however, interventionist policy was increasingly captured by special-interest groups. Trade and lending picked up, and the exhaustion of easy growth opportunities placed a premium on the flexibility afforded by the price system. As early as the 1960s, developing countries began to shift from import substitution and financial repression to export promotion and market liberalization.

[75]The strategy was articulated in the publications of the UN's Economic Commission for Latin America; for critical analyses of this doctrine see Fishlow 1971 and Ground 1988.

The consequences were not unlike those experienced by the industrialized countries: as domestic markets were liberalized, international financial flows became more difficult to control. Maintaining capital controls became more onerous and disruptive. And with the increase in the number of commercial banks lending to developing countries, international capital movements grew in magnitude, making their management more troublesome. It became increasingly difficult to resist the pressure to allow the currency to appreciate when capital surged in or to let the exchange rate depreciate to facilitate adjustment when capital flowed out.

Larger developing countries were most inclined to unpeg their exchange rates. Whereas 73 percent of large developing countries still pegged as late as 1982, by 1991 that proportion had fallen to 50 percent.[76] Comparable figures for small countries were 97 and 84 percent. Even there, startling transformations could take place: for example, Guatemala, whose currency was fixed to the U.S. dollar for sixty years, and Honduras, which fixed to the dollar for more than seventy years, broke those links in 1986 and 1990. Free floats remained rare; governments concerned about the volatility produced by thin markets managed their exchange rates heavily.

The diversity of developing-country experience spawned a debate about the efficacy of alternative policies. Countries that stayed with pegged-rate arrangements throughout the period enjoyed relatively low inflation rates, unlike countries that maintained flexible-rate arrangements throughout the period and those that shifted from fixed to floating rates.[77] Pegged exchange rates, it was consequently argued, imposed discipline on policymakers, forcing them to rein in inflationary tendencies. The obvious problem with the argument was that causality could run in the other direction: it was not that pegged exchange rates imposed anti-inflationary discipline but that governments able to pursue policies of price stability for independent reasons were in the best position to peg their currencies.

Sebastian Edwards considered this question in detail, analyzing the determinants of inflation in a cross section of developing countries and controlling for a wide variety of factors in addition to the exchange rate.[78] His results suggest that a pegged exchange rate provided additional anti-inflationary discipline even when other potential determinants of inflation are taken into account.

[76] A growing share of countries that continued to peg did so against a basket rather than to a single currency. See Kenen 1994, p. 528.

[77] See Kenen for data and further discussion.

[78] See Edwards 1993.

This evidence suggests that an exchange rate peg will be particularly appealing to governments seeking to bring high inflation under control. Pegging the currency can halt import-price inflation in its tracks and dramatically reduce the inflation rate. This allows order to be restored to the tax system and the adequacy of the government's fiscal and monetary measures to be evaluated. It is not surprising, then, that pegging the exchange rate has been an integral element of "heterodox" stabilization programs in Latin America, Eastern Europe, and elsewhere in the developing world.

But using a pegged exchange rate as a nominal anchor in a stabilization program is not without costs. Domestic inflation still takes time to decline, which can lead to real overvaluation. As the current-account deficit widens, the currency peg, and the stabilization program itself, can collapse in a heap. A currency peg effectively buttresses anti-inflationary credibility only if the government makes a significant commitment to its maintenance; hence, a peg that is intended only to accompany the transition to price stability may get locked in, heightening financial fragility and exposing the country to risk of a speculative crisis. Conversely, countries that announce their intention of moving away from their temporary peg may find that the latter provides little anti-inflationary credibility.

An extreme response to this dilemma is the establishment of a currency board. A country adopts a parliamentary statute or constitutional amendment requiring the central bank or government to peg the currency to that of a trading partner. This is accomplished by authorizing the monetary authority to issue currency only when it acquires foreign exchange of equal value. Since changing the law or constitution is a formidable political task, there is relatively little prospect that the peg will be abandoned. Knowledge of this fact should speed adjustment by producers and consumers to the new regime of price stability, halting inflation and minimizing the problems of overvaluation that typically afflict newly established currency pegs.

Currency boards have operated in small, open economies such as Hong Kong, Bermuda, and the Cayman Islands and in developing countries less open to trade such as Nigeria and British East Africa. They operated in Ireland from 1928 to 1943 and in Jordan from 1927 through 1964.[79] A currency-board-like arrangement was adopted by Argentina in 1991 as part of its effort to halt years of high inflation, by Estonia in 1992 to prevent the emergence of analogous problems, and by Lithuania in 1994.

[79]A comprehensive list of currency board episodes appears as Appendix C in Hanke, Jonung, and Schuler 1993.

The resemblance between currency boards and the gold standard is striking. Under the gold standard, statute permitted central banks to issue additional currency only upon acquiring gold or, sometimes, convertible foreign exchange; the rules are similar under a currency board except that no provision is usually made for gold. Under the gold standard, the maintenance of a fixed domestic price of gold resulted in a fixed rate of exchange; under a currency board, the domestic currency is pegged to the foreign currency directly.

The weakness of the currency-board system is also the same as under the gold standard: limited scope for lender-of-last-resort intervention. The monetary authority must stand by and watch banks fail—in the worst case scenario, watch the banking system collapse. Unless it possesses excess reserves, it is prevented from injecting liquidity into the domestic financial system. And even if it possesses excess reserves sufficient to permit lender-of-last-resort intervention, undertaking it may be counterproductive. Investors, seeing the currency board issue credit without acquiring foreign exchange, may infer that the political authorities attach a higher priority to the stability of the banking system than to the exchange rate peg. They will respond by shifting funds out of the country ahead of possible devaluation and nullification of the currency-board system, draining liquidity from the financial system faster than the authorities can replace it. In a currency-board country, as under the gold standard, there may be no effective response to financial crisis.[80]

In a sense, of course, this is the reason to have the currency board, which reflects a decision to sacrifice flexibility for credibility. But the rigidity that is the currency board's strength is also its weakness. A financial crisis that brings down the banking system can incite opposition to the currency board itself. Anticipating this, the government may abandon its currency board in fear that the banking system and economic activity are threatened.

This problem is more serious in some countries than in others. In a small country with a limited number of financial institutions and a concentrated banking system, it is possible to arrange lifeboat operations in which the stronger banks bail out their weaker counterparts. Where domestic banks are affiliated with financial institutions abroad, they can call on foreign support. It follows that currency boards have operated successfully for relatively long periods in Bermuda, the Cayman Islands, and Hong Kong. In Argentina, however, none of these conditions prevails. In 1995, when a financial crisis in Mexico interrupted capital flows to other Latin American countries, the Argentine financial system was threatened with collapse. Only an $8 billion

[80]This argument is elaborated by Zaragaza 1995.

international loan organized by the IMF, used in part to fund a deposit insurance scheme and recapitalize the banking system, helped tide it over.

Another response to the problem is for countries to peg collectively rather than unilaterally. The one notable instance of this approach is the CFA franc zone.[81] The thirteen member countries share two central banks: seven utilize the Central Bank for West African States, while six use the Bank for Central African States. The two central banks issue equivalent currencies, both known as the CFA franc, which are pegged to the French franc. That peg remained unchanged for forty-six years, before the currencies of the CFA franc zone were devalued against the French franc in 1994. Thus, not only have the members of these monetary unions enjoyed currency stability against one another, but they long maintained a stable exchange rate against the former colonial power.

The franc zone countries suffered sharp deteriorations in their terms of trade in the second half of the 1980s when the prices of cocoa and cotton declined. Yet they consistently enjoyed lower inflation than neighboring countries with independently floating currencies (Gambia, Ghana, Nigeria, Sierra Leone, and Zaire) and nearby countries with managed floats (Guinea-Bissau and Mauritania), while output performance in the CFA franc zone was not obviously inferior.

Two special circumstances played a role in the stability of the CFA franc-French franc rate. First, all member countries maintained restrictions on payments for capital-account transactions, and several maintained limited restrictions on payments for current-account transactions. Here as elsewhere, capital controls appear to have been associated with the viability of the currency peg. Second, the CFA franc countries received extensive support from the French government. In addition to foreign aid (France being the largest bilateral donor to its former colonies), they received essentially unlimited balance-of-payments financing. France guaranteed the convertibility of the CFA franc at its fixed parity by permitting the two regional central banks unlimited overdrafts on their accounts with the French Treasury.

The contrast with the EMS is worth noting. Where intra-European currency pegs have had to be changed every few years, the link between the French franc and CFA franc remained unchanged for nearly half a century. Where the unlimited support ostensibly offered under the EMS Act of Foundation has not exactly been extended, it has been provided by the French Treasury to the members of the CFA franc zone. The difference is attributable

[81] CFA stands for Communauté Financière Africaine. A basic reference to the economics of the CFA franc zone is Boughton 1993.

to the credibility of the franc zone countries' commitment to adjust, which assured France that its financial obligation would ultimately be limited. The two central banks were required to tighten monetary policy when making use of overdrafts. France could be confident that adjustment would take place because of the magnitude of the bilateral foreign aid it provided, which the recipient countries could not afford to jeopardize.

In the 1990s, the same factors that destabilized currency pegs elsewhere—the growing difficulty of containing international capital movements and the increasingly controversial nature of government policies—forced a devaluation of the CFA franc. Despite persistent deficits, the two African central banks hesitated to tighten monetary policies to the requisite extent. Tight credit conditions threatened to destabilize banking systems already weakened by the consequences of the collapse of commodity prices. This was too costly politically for the governments concerned, leaving them reluctant to tighten. And draconian wage cuts led to the outbreak of general strikes in Cameroon and other franc zone countries, causing the authorities to relent. In the absence of adjustment, the French government made clear that there were limits on the financial assistance it was prepared to extend. As a price for its continued support, it required adjustment, partly through a devaluation. Hence, the CFA franc was devalued by 50 percent against the French franc at the beginning of 1994.

CONCLUSIONS

The quarter-century since the collapse of the Bretton Woods System brought frustrated ambitions and uncomfortable compromises. Efforts to reconstruct a system of pegged but adjustable exchange rates failed repeatedly. At the root of that failure was the ineluctable rise in international capital mobility, which made currency pegs more fragile and periodic adjustments more difficult. Capital mobility increased the pressure on weak-currency countries seeking to defend their pegs. It heightened the reluctance of their strong-currency counterparts to provide support, given the unprecedented magnitude of the requisite intervention operations. Growing numbers of governments found themselves forced to float their currencies.

Many liked these circumstances not a bit. Developing economies with thin financial markets found it difficult to endure the effects of volatile exchange rate swings. Currency fluctuations disrupted the efforts of European Community members to forge an integrated European market. Even the United States, Germany, and Japan lost faith in the ability of the markets to drive their

bilateral exchange rates to appropriate levels in the absence of foreign-exchange-market intervention.

This dissatisfaction with freely floating exchange rates prompted a variety of partial measures to limit currency fluctuations. But if there was one common lesson of the Shultz-Volcker proposals to augment Bretton Woods with a system of reserve indicators, of the European Snake of the 1970s, of the European Monetary System, and of the Plaza-Louvre regime of coordinated intervention, it was that limited measures could not succeed in a world of unlimited capital mobility.

— CHAPTER SIX —

A Brave New Monetary World

He who follows historical truth too close at the heels is
liable to be kicked in the teeth.
(Sir Walter Raleigh)

Every decade seems exceptionally turbulent and eventful to those who live through it. Even so, those affected by the operation of the international monetary system in the decade from 1997 could reasonably make this claim. The period opened with the Asian crisis, a shattering event for a region accustomed to stability and one in which exchange rates played a central role. Crises in Brazil, Turkey, and Argentina followed ad seriatim. The message seemed to be that emerging markets were incapable of managing the explosive combination of capital mobility and political democracy.

But no sooner had observers reached this unhappy conclusion than peace broke out. There were no more emerging-market crises of consequence between late 2002 and 2008. In part, this reflected favorable external circumstances. Low interest rates and ample liquidity made debts easy to service once the Fed cut interest rates to stave off deflation. The world economy expanded strongly, not just because of accommodating credit conditions but also because of the emergence of China and India as growth poles. High tides lift all boats, and the high commodity prices flowing from strong expansion of the global economy lifted the balance-of-payments positions of commodity exporters worldwide.

Worldwide booms not lasting forever, there were still worries that, if global growth slowed, instability would return. Emerging markets do not acquire the institutional strength of high-income countries overnight.[1] Their banks have weak controls, their financial systems are illiquid and opaque, and their corporate governance is often rudimentary. The fact that standards in emerging markets drew closer to those in the high-income countries in the

[1]This is, after all, why they are referred to as "emerging" rather than "emerged."

post–Asian crisis decade was scant comfort insofar as the advanced countries themselves continued to display shortcomings in these areas.[2] In an environment of incomplete information and imperfect contract enforcement like this one, financial volatility is a fact of life. And when volatility spikes up, the stability of the exchange rate can be among the casualties.

Yet that significant problems did not develop in emerging markets when the United States invaded Iraq in 2003 or liquidity problems broke out in U.S. and European markets for mortgage-backed securities in 2007 testifies to the extent of policy reform. Foremost among these reforms was greater exchange rate flexibility. From the late 1990s a growing number of emerging markets, foremost in Latin America but also in Asia and Emerging Europe, embraced greater currency flexibility. Where rising capital mobility made it impossible to run an independent monetary policy and simultaneously maintain a stable exchange rate, and where political pressures made it impossible to subordinate monetary policy to the imperatives of currency stabilization, governments squared the circle by accepting greater exchange rate flexibility. To be sure, often that acceptance was reluctant. Still, important countries from Brazil and Mexico to India and South Korea curtailed their intervention in foreign exchange markets.

But with the monetary authorities no longer targeting the exchange rate, another mechanism was needed to anchor expectations. To this end, central banks embraced inflation targeting. They announced a target for inflation, released an inflation forecast, explained how their monetary policy decisions were consistent with hitting that target, and issued an "inflation report" accounting for misses.[3] This gave investors a focal point around which to form expectations and make allocation decisions.

[2]As evidenced by the Enron and Worldcom accounting scandals in the United States. The Enron Corporation, a large U.S.–based energy trading company, failed at the end of 2001 as a result of widespread, institutionalized accounting fraud. Worldcom, a U.S. telecommunications company, then revealed that some $4 billion of expenses had been improperly accounted for in 2001 and the first half of 2002, wiping out all of its purported profits in this period and forcing it to lay off some 17,000 employees.

[3]This alternative to the exchange rate as a way of anchoring expectations of monetary policy was developed first in New Zealand in the 1980s and elaborated subsequently in Sweden and the United Kingdom following their ejection from the ERM in 1992. (Sweden actually had only "shadowed" the ERM but was expelled from the shadows nonetheless.) Inflation targeting was less pure and less completely developed in some cases than others. It is also important to note that the level and rate of change of the exchange rate continued to play a role in these inflation-targeting regimes insofar as movements in the exchange rate had implications for current and expected future inflation. The difference was that the exchange rate was no longer a target of policy in and of itself. A good introduction to inflation targeting in emerging markets is Mishkin (2004).

Floating was not free. Countries with large amounts of foreign-currency debt on their national balance sheets intervened to prevent their currencies from depreciating. They worried that depreciation would dangerously raise the cost of servicing that debt; this was a lesson of the Asian financial crisis.[4] Countries committed to export-led growth, for their part, intervened to slow appreciation of their currencies. They worried that appreciation would slow export growth, disrupting the operation of a tried-and-true development model.[5] Table 6.1 shows the evolution of exchange rate regimes since 1996, the last pre–Asian crisis year.[6] There is a noticeable decline in the share operating soft pegs (from 57 to 46 percent) and corresponding increases in the share with hard pegs (including monetary unions) and floats. It was of course mainly the advanced countries of Europe that moved to hard pegs and mainly emerging markets that moved to floats of one sort or another (with the share of emerging markets operating soft pegs declining from 78 to 41 percent and the share floating rising from 13 to 47 percent). Thus greater flexibility was clearly evident among the middle-income countries, although it did not occur across the board.

This embrace of greater flexibility was least evident in Asia. Asian countries had long pursued export-led growth. The IMF and World Bank emphasized the need to cultivate more balanced economies (more balanced, specifically, between exports and production for the home market) and advocated a more flexible exchange rate as the balancing mechanism. They pointed to the 1997–98 financial crisis as underscoring the urgency of these steps. But Asian governments, just having seen their currencies collapse in the crisis, hesitated to entrust them to the markets. They worried about the consequences of abandoning a proven growth model.

They also worried about seeing their currencies appreciate against the Chinese renminbi. China's emergence as an economic power was the single most momentous global development of this period, and no one was more profoundly affected than the country's Asian neighbors. Other Asian countries depended on China's demand, and they competed with it in third markets. But China did not face the same pressure as other countries to increase exchange rate flexibility. Since it still had capital controls, it had some scope for running

[4]This phenomenon came to be known as "fear of floating" after Calvo and Reinhart (2002).

[5]This was sometimes referred to as "fear of appreciation," after Sturzenegger and Levy-Yeyati (2007).

[6]The literature distinguishes de jure exchange rate regimes—the official regime reported by governments to the IMF—and de facto regimes inferred from the actual behavior of the currency and policies toward it. Table 6.1 displays a measure of the de facto regime, that of Reinhart and Rogoff (2004), extended forward in time.

TABLE 6.1
Evolution of Exchange Rate Regimes (percentage of members in each category)

	Shares		
	1990	*1996*	*2006*
All Countries			
Hard Pegs[a]	16.88	18.23	26.92
Soft Pegs[b]	67.53	56.91	45.60
Floating[c]	15.58	24.86	27.47
Total	100	100	100
Members	154	181	182
Advanced			
Hard Pegs[a]	4.35	8.33	54.17
Soft Pegs[b]	69.57	58.33	4.17
Floating[c]	26.09	33.33	41.67
Total	100	100	100
Members	23	24	24
Emerging Markets			
Hard Pegs[a]	6.67	9.38	12.50
Soft Pegs[b]	76.67	78.13	40.63
Floating[c]	16.67	12.50	46.88
Total	100	100	100
Members	30	32	32
Other Developing			
Hard Pegs[a]	22.77	22.40	25.40
Soft Pegs[b]	64.36	51.20	54.76
Floating[c]	12.87	26.40	19.84
Total	100	100	100
Members	101	125	126

Source: Reinhart-Rogoff 2004; and Eichengreen-Razo Garcia 2006 databases.

a. Includes arrangements with another currency as legal tender, currency union and currency board, and monetary union/monetary association.

b. Includes conventional fixed peg to a single currency, conventional fixed peg to a basket, pegged within horizontal bands, forward-looking crawling peg, forward-looking crawling band, backward-looking crawling peg, backward-looking crawling band, and other tightly managed floating.

c. Includes managed floating with no predetermined path for the exchange rate and independently floating.

an independent monetary policy.[7] Because it was not a democracy, political pressure to orient monetary policy toward targets other than the exchange rate was also less intense.[8]

To be sure, Chinese policymakers still felt the heat. With labor productivity rising at 6 percent per annum but the currency hardly moving, the country's external surplus exploded. Preventing that surplus from affecting domestic monetary conditions became more difficult as financial markets developed and more ways were found around capital-account restrictions. There was also the threat of trade sanctions by the United States, which was running ever-larger bilateral deficits with China. In July 2005 the authorities in Beijing responded to these pressures, widening the fluctuation band for the renminbi and allowing it to appreciate a bit faster against the dollar. But the adaptation was slight. The impact on Chinese competitiveness was negligible. And in the absence of a more dramatic adjustment, other Asian countries hesitated to move.

The principal beneficiary of this state of affairs was none other than the United States. To prevent China's enormous export earnings from fanning inflation, the People's Bank had to mop up the foreign earnings of exporters.[9] The logical place to park the foreign exchange it thereby acquired was in U.S. Treasury bonds, the market in which was deep and liquid. This was a trade to which both countries could agree. The United States in effect had a comparative advantage in producing and exporting liquid financial assets, while China had a comparative advantage in producing and exporting manufactured goods.[10] The United States was happy to consume more than it produced. Ample Chinese savings and the appetite of the Chinese authorities for U.S. Treasury bonds, as well as for the securities of federal agencies like *Fannie Mae* and *Freddie Mac*, helped to finance the budget deficits that followed the Bush tax cuts of 2001. They allowed U.S. homeowners to

[7]It was those controls that enabled it to skate through the 1997–98 crisis without having to change its exchange rate (see below).

[8]The other Emerging Asian power, India, was a vibrant democracy. It "compensated" for this fact, as it were, by allowing its currency to exhibit more flexibility than China's and, to the extent that such flexibility had uncomfortable consequences, by attempting to limit currency appreciation with the use of capital controls.

[9]In the absence of such steps, they would have used that foreign exchange to buy renminbi, causing inflation had the authorities allowed the money supply to increase and currency appreciation otherwise. The solution was to mop up the incipient increase in the money supply by selling so-called sterilization bonds.

[10]This is the explanation for the combination of large U.S. deficits and large Chinese surpluses offered by Caballero, Farhi, and Gourinchas (2006).

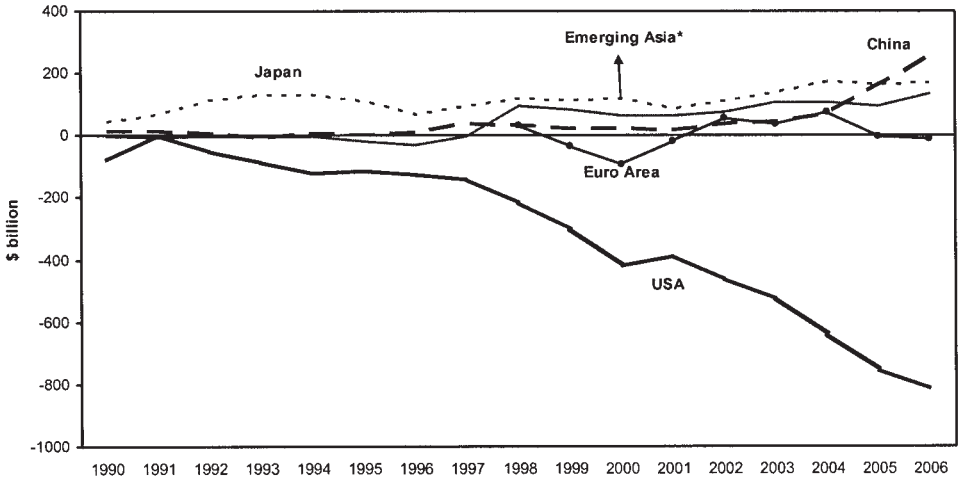

Figure 6.1. Current Account Balances, 1990–2006 (billions of dollars). *Source*: IFS and Asian Development Bank. *Note*: Emerging Asia includes the four ASEAN countries (Indonesia, Malaysia, Philippines, and Thailand) and four NIEs (South Korea, Singapore, Hong Kong, and Taiwan).

refinance their mortgages and use the interest savings for consumption.[11] This situation was sometimes characterized, not inappropriately, as a case of financial co-dependency.

If China could grow at double-digit rates while keeping its exchange rate low, then other countries thought the strategy worth a try. Similarly, if China could bullet-proof its economy by stockpiling dollar reserves, then other countries sought to do likewise. There were several years around the middle of the decade when nearly the entire universe of emerging markets was running current account surpluses and the United States was absorbing the vast majority of their excess savings (see Figure 6.1). The result was a peculiar situation where savings in poor countries were financing consumption in one of the richest.

The question was how long this peculiar situation could last. In the event, it lasted long enough to acquire its own name: the problem of "global imbalances." But sooner or later China and other emerging markets would sate their appetite for dollar reserves. Sooner or later they would want a better balance between consumption and savings and between the production of traded and nontraded goods. Achieving this would mean boosting domestic demand while

[11] Warnock and Warnock (2005) show that Chinese policies had a noticeable impact on U.S. interest rates in this period.

allowing their currencies to rise. American households, for their part, couldn't stay on their consumption binge indefinitely. Sooner or later, prompted by a decline in house prices or a rise in interest rates, they would start saving again. If these adjustments were gradual, then the dollar would fall smoothly against foreign currencies, and falling demand in the United States could be offset by rising demand in the rest of the world. But if there was a sharp drop in U.S. demand not offset by an increase abroad, global growth would be jeopardized. And if these events precipitated a sharp drop in the dollar, investors might be caught wrong-footed and financial stability could be at risk.

A significant fall in the dollar would inflict losses on the very same emerging markets that had invested so heavily in U.S. Treasury securities in previous years. Unavoidably this would raise questions about the wisdom of investing so heavily in a currency that did not hold its value. This realization created an incentive to look around for another form in which to hold foreign exchange reserves.[12]

And for the first time in nearly a century there existed a rival, the *euro*, capable of supplanting the dollar. The decision to irrevocably lock the exchange rates of 11 European countries in 1999 and assign responsibility for their common monetary policy to a newly created European Central Bank (ECB) was the other momentous monetary event of this period.[13] It showed that there was another feasible response to the tensions between international capital mobility, pegged exchange rates, and political democracy. This was to eliminate the dilemmas of managing the exchange rate by eliminating the exchange rate itself. The question, yet to be answered, is whether that response was durable—whether Europe's monetary union was built to last. Another question is whether that response is of wider applicability—in other words, whether other parts of the world can similarly form monetary unions—or whether the facilitating conditions are peculiar to Europe.

Replacing ten and more fragmented national markets and currencies with an integrated market and a single currency lent enormous stimulus to the development of European bond markets. Bond markets display scale economies—transactions costs fall and attractions of issuance rise with market size—so the stimulus from the euro was immediate. In a matter of years the euro had overtaken the dollar as the leading currency in which to denominate international bonds. The increased size and liquidity of European financial

[12]And for a more stable unit in which to denominate international financial transactions, invoice trade, and set oil prices.

[13]While there were 11 founding members of the euro area, there were only 10 currencies, Belgium and Luxembourg already operating a currency union. Issuance of the physical euro then followed in 2002.

markets in turn made them an attractive repository for the reserves of central banks. For the first time in many years, reserve managers now could do more than complain about the dollar. They could do something about it.

THE ASIAN CRISIS

Asia had long seemed insulated from the extremes of exchange rate volatility. Strong governments could resist the pressure for transfer payments that fueled inflation in other regions. Capital controls were still prevalent. Above all, rapid growth led by exports and grounded in the maintenance of stable exchange rates fostered confidence among investors.

The Asian crisis was shattering precisely because it occurred against this favorable economic and financial backdrop. Between 1992 and 1995 the Chinese economy had grown at double-digit rates. Indonesia, Malaysia, Singapore, South Korea, and Thailand had all grown at rates exceeding 7 percent. In 1994–95, the year-over-year rate of growth of exports from Malaysia, the Philippines, Singapore, and Thailand peaked out at more than 30 percent.

Equally striking was the recovery of capital inflows following the Mexican crisis. By 1996 net private capital inflows reached 5 percent of GDP in Korea, 6 percent in Indonesia, 9 percent in Thailand, and 10 percent in the Philippines. Given continuing efforts to protect domestic industry against acquisition by foreigners, a significant fraction of these inflows took the form of short-term credits from foreign banks.

Asia's admirable economic record was part of what made foreign investment there so attractive, but the fact that capital flowed in large quantities even to troubled countries like the Philippines indicated that additional factors were at work. Prominent among these were low interest rates in the major financial centers, which stoked the search for yield. The cost of borrowing in yen fell to low levels as a result of depressed conditions in Japan, while yields on investment in the United States were depressed by a soaring stock market. International investors turned to emerging markets for relief. They borrowed in yen and dollars to invest in high-yielding Asian securities in the strategy known as the *carry trade*. That Asian currencies were pegged to the dollar, even de facto, minimized the risk that profits would be wiped out by exchange rate movements. And Asian governments had long used the banks as instruments of economic development. Pressing the banks to channel funds to industry had obliged the authorities to support those banks in the event of difficulties. Foreign investors thus lent extensively to Asian banks in the belief that the latter would not be allowed to fail.

Not for the first time, then, global conditions helped to set the stage for problems in emerging economies. But while global factors were complicit, the fundamental problem was the inconsistency of capital-account policy, exchange-rate policy, and the political situation in those emerging markets themselves. Stabilizing the exchange rate encouraged foreign investors to assume that currency risk was absent. The result was large and ultimately unmanageable capital inflows. This problem was particularly acute in countries that had liberalized the capital account—South Korea, for example, which joined the OECD in 1996, obliging it to relax capital-account restrictions. Even worse, that it relaxed restrictions on offshore bank borrowing but not on inward FDI heightened the economy's exposure to the most volatile and footloose form of foreign capital. This was a flawed sequencing strategy. Governments opened the capital account before moving to a more flexible exchange rate, where both economic theory and common sense dictated the opposite. But the legitimacy of Asian governments derived from their ability to deliver rapid growth, which rendered them reluctant to discourage investment by foreigners. Insofar as the regional growth model rested on exports and exports depended on exchange rate stability, they were similarly reluctant to allow their currencies to adjust.

It was against this backdrop that the region was hit by a series of shocks. Export growth slowed, reflecting the effects of intensifying Chinese competition and an inventory correction in the global electronics industry. The dollar rose against the yen, undermining competitiveness in Asian economies whose currencies tracked the greenback. Then Japanese long rates ticked up, encouraging Japanese institutions to invest at home rather than in other Asian countries as before.

The collapse of the Bangkok Bank of Commerce in mid-1996 was the first indication of impending problems. Of all Asian currencies, the Thai baht was the most clearly overvalued. Capital inflows had fueled an investment boom and driven up domestic prices. Much of that investment, moreover, was of dubious quality. Cranes devoted to the construction of high-rises with little realistic prospect of occupancy dotted the skyline of Bangkok. Investors were led to ask questions about the management of the firms undertaking these projects, and there was growing uncertainty about the ability of outsiders to enforce their rights. As recognition of these problems sunk in, foreign banks and residents unwound their positions in local markets. The Bangkok bourse declined steadily from the middle of 1996. The baht came under pressure.

The IMF had warned the Thai government, more than once, that the currency was overvalued and that its situation was untenable. Still the authorities

held out in the hope that good news would turn up. They hesitated to restrain investment for fear of slowing growth, and they refused to alter the exchange rate for fear of damaging confidence. In an effort to put off the day of reckoning, they encouraged Thai banks to borrow offshore, providing favorable tax and regulatory treatment. But that day could not be put off indefinitely. By the summer of 1997 the country's international reserves were approaching exhaustion. On July 2 the government was forced to devalue and float the baht.

While Thailand's crisis was widely foreseen, what was not anticipated was its spread to other countries. Pressure was immediately felt by the Philippines, reflecting that country's substantial dependence on capital inflows and its relatively rigid dollar peg. Once the Philippine authorities floated the peso, ten days after the baht, pressure spread to Indonesia and Malaysia, investors there fearing similar vulnerabilities. Jakarta and Kuala Lumpur resisted initially but were soon forced to let their currencies follow the baht. Although an attack on the Hong Kong dollar was rebuffed, the decision of the Taiwanese authorities to allow the New Taiwan dollar to decline preemptively reminded investors that no peg was secure. Speculation against the Korean won and the Indonesian rupiah intensified accordingly (see Figure 6.2).

In Korea, an election campaign and uncertainty about the composition of the new government further unsettled investors. Already in November the authorities had been forced to accede to speculative pressure by widening the currency's fluctuation band from 4½ to 20 percent. The won's fall greatly heightened worries about other currencies. South Korea was the world's eleventh largest economy, and if its financial defenses were not impregnable then it seemed likely that no Asian countries' were. Thus, the pressure on Korean markets caused high anxiety throughout the region. The crisis was contained only in late December when G-7 governments convinced the international banks that had extended short-term loans to Korea to renew their credits, buying time for the government to put reforms in place. It helped that the election earlier in December had brought to office a government committed to the maintenance of debt service at all costs and prepared to implement the IMF's recommendations.

The contrast with Indonesia, whose government failed to show similar resolve, was not reassuring, causing capital to now hemorrhage out of the country. These problems culminated in a run on the banking system—residents shifted from deposits to currency with such speed that the government found it impossible to print money quickly enough to satisfy their demands despite running its printing presses around the clock—and a debt moratorium was declared on January 27, 1998. The entire banking and financial system was shut down, disrupting production and precipitating a painful recession.

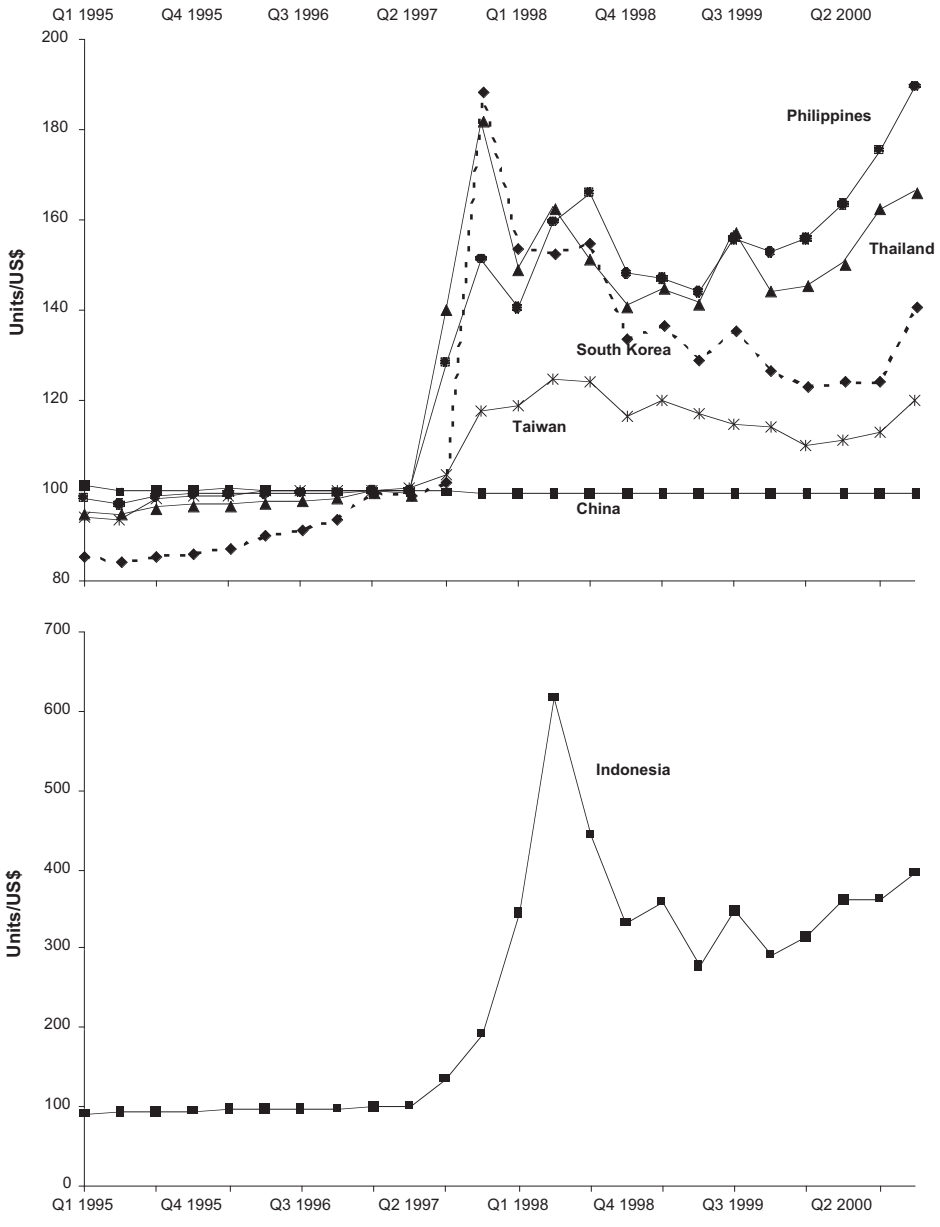

Figure 6.2. Asian Exchange Rates, 1995–2000 (units per U.S. dollar). *Source*: IFS and Global Finance Database. *Note*: Q1 1997 = 100.

The financial crisis caused sharp drops in output across Asia. China, almost alone, was immune. But within a year the fundamental strength of the region's economies had reasserted itself. Currency devaluation enhanced competitiveness. Insolvent banks were recapitalized and restructured, and lending started up again. Corporate governance and prudential supervision were strengthened. Restrictions on direct foreign investment were relaxed. More flexible exchange rate regimes were officially installed.

The question was how much had really changed. Some saw the quick resumption of growth as evidence that there was no need for fundamental change.[14] This belief encouraged, rather than wholesale reform, tinkering at the margin. Banks and firms were required to reveal a bit more about their financial affairs. The adoption of international accounting standards was encouraged. But the fundamentals of investment- and export-led growth remained unchanged. In line with long-standing practice, governments remained reluctant to see their currencies fluctuate too freely and, especially, to appreciate too strongly.

Yet neither was it feasible to restore fixed pegs; the crisis had shown this to be too risky. Some countries like South Korea, with relatively deep and liquid markets, embraced greater flexibility. Sometimes this meant that the currency was too strong for comfort. But whether Korean growth was slower after 1997 because of real appreciation or because a now more mature economy naturally tended to grow more slowly was unclear. More generally, Asian growth was slower after 1997.[15] China aside, investment rates were lower than before the crisis (see Figure 6.3). Governments better appreciated the downside of using tax and regulatory policies to maximize the quantity as opposed to the quality of investment. The cost of encouraging higher-quality investment might be slightly less capital formation and slightly slower growth, but the compensating benefit was reduced risk.

With investment falling relative to saving, current accounts across the region moved into surplus.[16] Asian central banks accumulated international reserves, which they held to bolster confidence and bullet-proof their economies against financial reversals. This war chest of reserves rendered officials and to some extent investors more confident that currency stability would be maintained.

The other initiative designed to enhance currency stability was the regional network of swap lines and credits known as the *Chiang Mai Initiative*,

[14]See for example Radalet and Sachs (1998).

[15]This downward shift in the trend is documented by Asian Development Bank (2007). China, of course, was an exception to the rule.

[16]The exception, to repeat, was China, where there certainly was no shortage of investment and no slowing of growth. But, in China, rather than investment falling relative to saving, saving rose relative to investment, similarly producing a current account surplus.

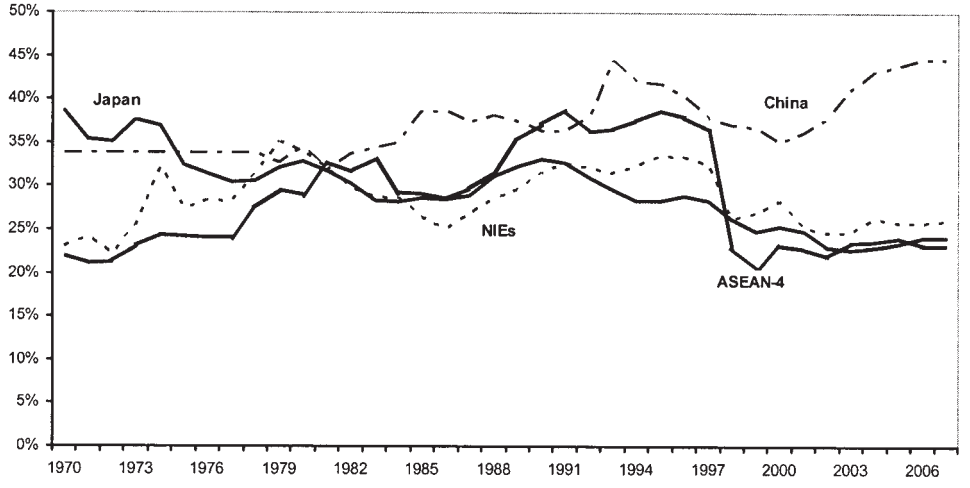

Figure 6.3. Asian Investment Rates, 1970–2007 (as percent of GDP). *Source*: IMF World Economic Outlook Database. *Notes*: NIEs are Hong Kong, Singapore, South Korea, and Taiwan. The ASEAn-4 is Indonesia, Malaysia, Philippines, and Thailand.

or CMI (named after the Thai city where it was announced in the spring of 2000). Asian central banks agreed to provide financial support to their neighbors in the manner of the Short- and Very-Short-Term Financing Facilities of the European Monetary System. Thus, the next time a country suffered a capital-flow reversal and its currency came under attack, official funding would be available to replace private funding.

The CMI was inspired not just by the EMS but also by a Japanese proposal, tabled during the financial crisis, to establish an Asian Monetary Fund. Crawling to the IMF for financial support had embarrassed proud Asian governments. They resented the invasive conditions that the Fund attached to its aid and its failure to quickly contain the crisis. In 1998 there had been political obstacles, internal as well as external to the region, to quick progress on the establishment of an Asian stabilization fund.[17] But by 2000 it proved possible to put in place a scaled-down version.

The CMI was supposed to be a vehicle for mutual support without invasive IMF-style conditionality. It was supposed to enable Asian currencies to float jointly rather than separately. The problem was that governments, like private lenders, would not lend without assurances. So if the "Asian way" of

[17]Internally, Asian governments worried about Japanese dominance of an AMF, since only Japan was in a position to provide significant finance at the height of the crisis. Externally, the U.S. Treasury and the IMF worried that a competitor institution might undercut their influence.

not interfering in the sovereign affairs of other countries meant minimal conditionality, it also meant minimal lending. The CMI was not activated on behalf of Indonesia when the rupiah fell sharply in the summer of 2005 due to the interaction of energy-price subsidies with high oil prices, or at the end of 2006 when political instability and the bungled imposition of capital-account regulations caused the Thai baht to crash. It was tempting to conclude that the initiative was a hollow shell.

And yet there were also positive developments. Asian central banks and governments consulted more regularly about policies. By 2005 a number of countries, China, India, Singapore and Malaysia among them, had adopted similar trade-weighted baskets as the basis for managing their currencies. Others like Korea, the Philippines, and Thailand adopted similar inflation-targeting regimes. As procedures for the conduct of monetary policy converged, the correlation of currency movements increased. Asian currencies, excepting only the Japanese yen and new Taiwan dollar, moved in greater synchrony against the U.S. dollar and the euro between 2005 and 2007 than they had in 2000–2004.

There was even discussion of an Asian monetary union, paralleling the monetary union that Europe established in 1999. But Asian governments moved cautiously in the face of skepticism. In Europe, efforts at regional currency stabilization were of long-standing. They were part of a politically led process of regional integration. In Asia, in contrast, regional integration is driven by economics (the growth of regional production chains and financial links), not by politics. Given very different political systems and traditions in different Asian countries, one can reasonably question whether the political preconditions for deep integration, and the political will to create transnational institutions of monetary governance (a regional central bank), will develop anytime soon.

EMERGING INSTABILITY

The exchange rate regime had clearly played an important role in the Asian crisis. Together with the ill-conceived relaxation of capital controls, it had encouraged lending by foreign investors attracted by high-yielding Asian securities and under the misapprehension that currency risk was absent. Together with government guarantees perceived to eliminate bankruptcy risk, it had encouraged foreign borrowing by Asian banks. When problems surfaced and capital flows turned around, those same foreign investors and banks, and most

of all the citizens of the countries that were the recipients of their largess, suffered the consequences.

The role of the exchange rate was broadly similar in other emerging-market crises, although each national context was unique. Argentina, Brazil, and Turkey had all experienced high inflations rooted in large budget deficits and compounded by structural problems. The debt crisis of the 1980s, by curtailing capital inflows, had heightened distributional conflict. Tax evasion was rampant, and the government was under intense pressure to extend transfer payments. The structural problems hampering growth, including high levels of public employment and price controls on household consumption items, similarly reflected the pressure for governments to lavish favors.

The early 1990s, when international lending resumed with help from the *Brady Plan*, in which nonperforming loans were cleared from the balance sheets of the money-center banks by securitizing them and selling them off, was thus a propitious time for stabilizing. To bring down their inflations, Argentina, Brazil, and Turkey pegged their exchange rates. Argentina set a one-to-one parity against the dollar, while the others established a rate that was allowed to depreciate only slowly over time.

Exchange-rate-based stabilization, as this approach was known, was a tried-and-true method for bringing down inflation, having been used by Germany in 1923 and in many other countries since. Pegging the exchange rate signaled that a new regime was in place and that the authorities were now prepared for the belt tightening needed to prevent the currency from again depreciating and inflation from resuming. Simply by checking the foreign exchange quotation, investors could verify that officials were keeping their promises. This enabled governments to tie themselves to the mast. It meant that they would pay a high price, in credibility and political capital, if they failed to follow through. It also helped to coordinate expectations. Producers reluctant to stop raising prices unless their suppliers did the same at least knew that import prices would be stable. They were encouraged to all move at once.

The limitation of exchange-rate-based stabilization was that it addressed the symptoms, not the underlying causes of inflation. Where that cause was a chronic budget deficit, it did not guarantee fiscal consolidation. A further problem was that the strategy was brittle. For it to work everything had to go right. Otherwise the exchange rate peg could collapse—pegs being notoriously fragile—bringing the whole stabilization effort crashing down. Finally, the scheme did not come with an exit strategy. It was not clear whether a government could relax the peg, no matter how successfully it had brought down inflation, without creating fears that old problems were returning. And history showed

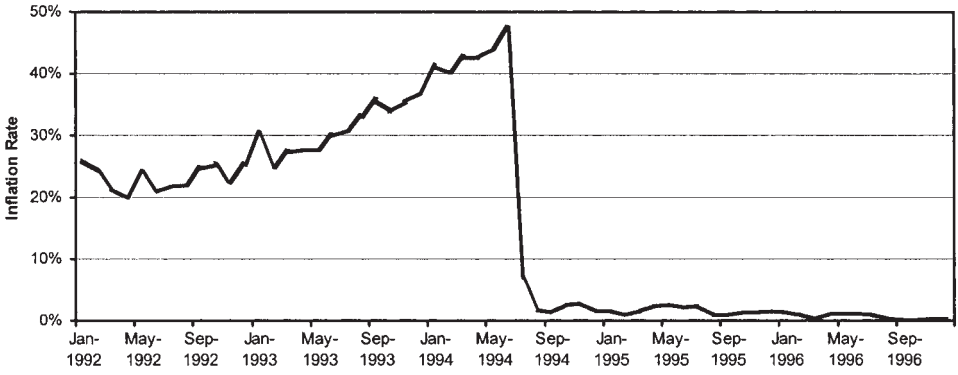

Figure 6.4. Brazil: Monthly Inflation Rates, 1992–1996. *Source*: National CPI, IFS.

that governments which held onto pegs for dear life, not so much because of any intrinsic merits but because they saw no alternative, were setting themselves up for a nasty fall.

The crises in Argentina, Brazil, and Turkey each illustrated these points in different ways. Brazil's *Real Plan* of July 1994 signaled the government's resolve by pegging the country's new currency, the "real," to the U.S. dollar at a parity of one to one. With this strategy, the country's high inflation was successfully brought down (see Figure 6.4). After a brief period of appreciation, as flight capital returned to the country, the exchange rate was permitted only limited movements against the dollar, although its level and the band of permissible fluctuations were adjusted periodically. The rate against the dollar was allowed to depreciate by a total of 20 percent between July 1994 and December 1998, while the prices of traded goods rose by a not dissimilar 27 percent.[18]

The problem was that nontraded-goods prices did not fall into line. Between mid-1994 and end-1998, these rose by fully 120 percent, not 27 percent. Whereas the prices of importables and exportables were given by world prices and the exchange rate, the prices of household and government services were marked up over wages. And wages rose strongly. The result was an enormous overvaluation and dangerous loss of competitiveness.

And as export growth slowed, the Brazilian economy stagnated. Slow growth fanned opposition to the stabilization program. In turn this raised questions about whether the government would stay the course.

[18] 27 percent thus being the sum of the 20 percent depreciation and the 7 percent cumulative rise in the foreign prices of Brazil's imports and exports. Ferreira and Tullio (2002, p. 143).

This challenge was intrinsic to exchange-rate-based stabilization. The strategy quickly reduced traded-goods inflation: this was all but guaranteed by pegging the exchange rate. But nontraded-goods inflation was slower to adjust. It came down only as wage and price setters gained confidence in the stability of the new low-inflation environment. Inevitably this led to a loss of competitiveness and rising unemployment in the medium run.[19] By utilizing this tactic, the authorities were in effect gambling that they would be able to hold out until wages and prices adjusted more fully and competitiveness was restored.

They faced three obstacles. First, wage and price increases were cumulative. To reverse the erosion of competitiveness without changing the exchange rate, not only would wage and price inflation have to fall to world levels but they would have to fall even further to offset the excessive increases of preceding years. And wage and price increases significantly below rest-of-world rates would be strongly resisted by unions and industry associations. Second, fiscal discipline had to be strict. Anything less would excite investors, causing them to pull their money from the country, pushing up interest rates, and quickly rendering the fiscal situation unsustainable. Clearly, fiscal austerity was not easy politically. Third and finally, the external environment had to be favorable. Otherwise growth would slow further, causing political opposition to the government's policies to boil over.

All three obstacles conspired against Brazil. There were limits to feasible wage and price flexibility, given the country's tightly regulated markets. In 1997, with the Asian crisis, global growth slowed, and in 1998, with Russia's opportunistic debt default, investor sentiment turned against emerging markets.

Above all, there was lax fiscal discipline. At the outset of the stabilization, the Congress had approved reductions in transfers from the federal government to the states. To boost revenues it raised income tax rates. But the pressure for public spending remained intense. Where real GDP grew by little more than 10 percent between 1995 and 1998, real federal government expenditures rose by 31 percent. Policymakers could blame an unfavorable financial environment—interest payments on the public debt rose by 108 percent over the period that culminated with the Asian crisis and the Russian default—but investors could still blame the policymakers for failing to cut other spending. Particularly damaging to confidence was the politically motivated burst of public spending during the run-up to the 1998 presidential election. As investors jumped ship, the Banco Central was forced to raise interest rates to defend the currency, aggravating the fiscal problem.

[19]In the very short run the macroeconomic effects of stabilization were likely to be positive, as lower interest rates typically unleashed a consumption boom.

President Fernando Henrique Cardoso was reelected in the fall and responded with a plan for $23 billion of budgetary economies and by negotiating a $41.5 billion backup line of credit with the IMF. But pushing through budgetary economies to stabilize the exchange rate at the cost of other social priorities was problematic in a democracy. In December 1998 Cardoso's deficit reduction bill was voted down by the Congress, due in large part to opposition from his own party. The next month the governor of Minas Gerais, Itmar Franco, announced that he was suspending his state's debt payments to the federal government, preferring to use the resources to aid the poor and unemployed. Investors bailed out en masse. Within a week the central bank had all but exhausted its reserves. Its governor, Gustavo Franco, resigned. The exchange rate was devalued by 10 percent, but this was too little too late. Capital flight resumed, and within two days the new devalued rate had to be abandoned. The real was now floating whether policymakers liked it or not.

But now came the surprise. The exchange rate stabilized much more quickly, after only sixty-one trading days, than those of other crisis countries like Mexico, Indonesia, South Korea, and Thailand. Inflation was quickly brought back down to the single digits. Industrial production fell for only a month, after which it commenced a steady rise. Again this was in contrast to Mexico, Indonesia, South Korea, and Thailand, in each of which industrial output had fallen for a year or more.

It is tempting to attribute this success to the magical powers of the new central bank governor, Arminio Fraga, a Princeton-trained economist who had previously worked for the hedge fund manager George Soros. While Fraga's aura of calm competence and financial connections may have helped, more important surely was that he offered a viable alternative to exchange-rate pegging, namely inflation targeting. He made clear his commitment and that of the central bank to moderating inflation. He operationalized that commitment in a way that permitted his actions to be monitored. But he did not put the Brazilian economy into a straitjacket from which there was no escape.

The other factor contributing to this positive outcome was the condition of the banking system. In contrast to Mexico, Indonesia, South Korea, and Thailand, the Brazilian banking system was not thrust into chaos by devaluation. This reflected a combination of good luck and good policies. The authorities had set capital adequacy requirements for banks in 1994 and raised these well above international standards in 1997.[20] The central bank was empowered to

[20]While the Basel Accord required risk-based capital requirements of at least 8 percent, Brazil raised its minimum requirement to 10 percent with the outbreak of the Asian crisis and to 11 percent with the onset of South Korea's.

compel financial institutions to implement adequate internal controls. Public banks were privatized, and foreign banks were permitted to enter. All this encouraged the banks to strengthen their balance sheets. In addition, the country's long history of financial instability had shrunk the banks' loan portfolios, resulting in unusually low loan-to-capital ratios. Similarly, Brazil's long history of exchange rate instability had encouraged banks and the corporations to which they lent to hedge their foreign currency exposures. It had fostered the development of hedging markets. Thus, some $71 billion of the $95 billion of private sector foreign liabilities outstanding at the end of 1998 was hedged through purchases of indexed securities and foreign exchange derivative contracts.

As a result, the central bank could raise interest rates to stem currency depreciation and inflation without worrying that this would destroy the banking system as it had in Mexico four years before. There was no reason to anticipate the abandonment of stabilization measures, since the banking system could withstand them; confidence in the authorities' program was correspondingly strengthened. The banks, for their part, could keep lending, facilitating the quick resumption of growth. And growth in turn fostered public support for the central bank's stabilization efforts.

Turkey, like Brazil, had suffered high inflation for twenty years. There too distributive conflict had encouraged tax evasion, applied pressure for redistributive spending by the government, and fostered structural distortions. But by 1999 the public had had enough and elected a government committed to stabilization. Officials quickly secured $4 billion of backing from the IMF.[21] Their strategy again emphasized fiscal austerity, structural reform, and a preannounced path for the exchange rate. The government was supposed to run a surplus to be used to meet interest payments, which would be achieved through a combination of tax increases and spending cuts. The privatization of Turk Telekom, a state-owned telecommunications company that enjoyed an effective monopoly, and of other state-owned firms in energy, tourism, and metals further promised to give a one-time boost to revenues. Reforms of agricultural price supports, the social security system, tax administration, and last but not least, the banking system would then follow. This agenda was nothing if not ambitious.

The major innovation in the Turkish program, which indicated learning from past experience, concerned the exchange rate. In the short run the currency would be confined to a narrow band and allowed to depreciate by no

[21] There had been a series of previous failed stabilization efforts. The most recent one, in 1994, had not been backed by an IMF lending package.

more than 20 percent a year, mimicking Brazil's initial strategy. But after eighteen months the band would be widened, allowing the currency more freedom. The width of the band would then increase by 15 percent each year until the exchange rate was effectively floating. This was a clear acknowledgment of the exit problem and an effort to address it.

But this still meant very limited exchange rate flexibility in the first eighteen months, which in turn allowed the familiar contradictions of exchange-rate-based stabilization to develop. There was a mounting problem of overvaluation. Deteriorating export competitiveness meant a current account deficit that had to be financed with capital inflows. Disappointing growth meant rising unemployment and opposition to austerity. Privatization was politically contentious in a country where public enterprises were an important source of employment. Again, everything had to go exactly right for the strategy to work. Unfortunately, no country, and certainly not Turkey, was that lucky.

The spark for the crisis flared in the banking sector.[22] Turkey had not strengthened bank regulation as successfully as Brazil. Neither bank privatization nor the introduction of foreign competition had gone as far. Among other things, Turkish banks were allowed, even encouraged, to allocate dangerously large shares of their portfolios to government bonds. Now, as slower growth undercut confidence in the authorities' economic policy strategy, bond prices fell. In November 2000 Demir Bank, a large player in the government securities market, acknowledged serious financial problems. As it sold off its holdings, primary dealers were flooded with sell orders, forcing them to stop providing quotations and triggering a panic. The central bank's dilemma was whether to raise interest rates to attract back flight capital, while denying liquidity to the interbank market and allowing other banks to fail, or to abandon its exchange rate target. Only when the IMF agreed to accelerate its disbursements was the government able to modify its targets rather than abandoning them.

But no sooner did it do so than in February 2001 the financial system was hit again, this time by a falling out among politicians. Overnight interest rates jumped to a stratospheric 6,200 percent, forcing the authorities to float the currency. The central bank, now with encouragement from the IMF, announced that it would install an inflation-targeting regime once the volatility had subsided.

The collapse of the peg led to a more serious recession in Turkey than in Brazil. Industrial production fell for thirteen successive months, not just one. Problems in the Turkish banking system largely account for the difference.

[22]This complicated situation is summarized and described by Özatay and Sak (2003).

Still, by March of 2002 growth had resumed. Industrial production recovered robustly. CPI inflation, after having risen to more than 70 percent in February 2002, fell back to 45 percent in 2003, 25 percent in 2004, and the single digits thereafter. Here favorable external conditions helped.[23] More fundamentally, Turkish voters had lost patience with governments that exposed them to financial instability and were now prepared to reward those that made painful investments in stabilization. There was also the lure of EU accession—the hope, however remote, that economic and financial stabilization would help to make Turkey a plausible candidate for membership in the European Union. Finally, there was a strategy, inflation targeting, capable of anchoring expectations.

Argentina's experience had many of the same features, although in more extreme form (as with many things Argentine). Under the presidency of Raúl Alfonsín, the country had succumbed to hyperinflation, with prices tripling every month. A new president, Carlos Menem, was elected in 1989; after eighteen months Menem and his self-confident, Harvard-educated economy minister, Domingo Cavallo, opted for radical therapy. The old currency, the austral, was replaced by a new one, the peso, which was fixed to the dollar at a parity of one to one.[24] Under this currency-board-like arrangement, the central bank could emit an additional peso only if it acquired an additional dollar of reserves.[25] These restrictions were written into law, leaving no scope for the central bank to finance the budget deficit. The government signaled its commitment to the plan by making it legal to write contracts in foreign currency and by allowing dollars to be used as means of payment.

With these basics in place, inflation fell toward U.S. levels. Fiscal reforms were put in place: the budget of the central government, excluding even one-off privatization revenues, was nearly in balance in 1992, and the federal authorities actually ran a surplus of 1 percent of GDP—including interest payments on the debt—in 1993. Given how the economy had contracted by 10 percent in absolute terms in the 1980s, it now had scope to expand even in the face of this austerity. Real GDP rose by more than 6½ percent per annum between 1991 and 1997, slowing gradually after 1993.

[23] Among other things, the beginning-of-decade recession in the United States was over, and strong global growth was underway.

[24] The austral had replaced the peso in 1985 as part of an earlier (unsuccessful) stabilization effort.

[25] In fact only two-thirds of the monetary base had to be backed by international reserves; the remaining third could be backed by dollar-denominated Argentine central bank securities (although these could not increase by more than 10 percent a year). Exceptional provisions like these were why purists objected to calling this arrangement a currency board.

The question was whether this bounce was sustainable. To encourage investment, the authorities pointed to the success with which the country skated through the Mexican crisis. The currency-board regime, about which even the IMF had initially voiced concern on grounds of inadequate flexibility, became the object of admiration. Growth and price stability bought time for privatization, deregulation, tariff reductions, and banking-sector reform. The strength of the banking system, in particular, was widely praised, reflecting the removal of restrictions on entry by foreign banks but also the high quality of supervision.[26] Given these accomplishments, the Menem government could claim that the success of its program rested on more than just the thin reed of "convertibility," the term used to denote the one-to-one peso-dollar parity.[27]

But there were also unsettling developments. Although import-price inflation fell immediately to U.S. levels, wage inflation was slower to come down. Inflation continued to run at nearly 10 percent in 1991–94, a dramatic improvement from 1990 but still well in excess of the United States. Like other countries relying on exchange-rate-based stabilization, Argentina faced a problem of real overvaluation, creating a current account deficit and dependence on foreign finance. And while the federal government ran small deficits, the provincial governments ran large ones. They financed these by issuing debt that was implicitly backed by the central bank. Public debt as a share of GDP rose from 28 percent in 1993 to 37 percent in 1998. Even if the level was not yet alarming, the trend was, given that it occurred in a period of rapid economic growth.[28] Every week saw another strike by an aggrieved union objecting to reductions in pay and prerogatives. Productivity growth was disappointing, not surprising given the slow pace of labor market reform and how provincial governments outcompeted companies for funds. Output grew rapidly

[26]By the end of the 1990s foreign banks accounted for 70 percent of the assets of the banking system. Moreover, a 1998 World Bank financial sector review rated Argentina second only to Singapore among emerging markets in terms of the quality of bank supervision (Perry and Servén 2003). The one thing the authorities did not do was to apply prudential norms discouraging the use of the dollar in financial contracts—precisely because they wished to reinforce the credibility of the rigid dollar-peso peg. This would come back to haunt them when the peg collapsed.

[27]The term harked back to experience under the gold standard, when the credibility of the monetary regime rested on the "convertibility" of domestic currency into gold, on demand, at a fixed price.

[28]One could only imagine, in other words, what would happen to the ratio when growth of the denominator slowed. Equally worrying was that some public sector spending was off budget, i.e., it was not captured by the budget, that revenues in this period were augmented by one-off privatization receipts, and that larger interest payments on the country's Brady bonds would soon come due.

only because there were large numbers of discouraged workers to be drawn back into the labor force.

In retrospect, early 1997 was the high point. From there Argentina was battered by a series of negative shocks: the Asian crisis in the second half of 1997, which unsettled financial markets; Russia's default in 1998, which caused international investors to draw back from emerging-market debt; and Brazil's devaluation in 1999, which undercut Argentine competitiveness. Against the backdrop of weak fundamentals, the impact was severe. Growth fell from 4 percent in 1998 to -3 percent in 1999.

Lacking exchange rate flexibility, the only response available was to cut costs. This grinding deflation was demoralizing. It was inflammatory given the country's long history of distributional conflict, lower prices meaning more burdensome debts. And as both prices and growth fell, government revenues fell with them, forcing either continued cuts in spending or larger deficits, as in the run-up to the presidential election at the end of 1999.

With the benefit of hindsight, the government's failure to abandon the currency peg in 1997 for a freer float was an opportunity lost. Once growth slowed and confidence evaporated, the authorities reasonably feared that abandoning convertibility would do more to damage confidence than restore it. Their failure to move earlier was understandable, if regrettable. Through the first half of 1997, convertibility had served them well. If the economy now needed greater flexibility, then this could be obtained either by imagining a radical improvement in labor market flexibility or by leaving some future administration to grapple with the problem.

The IMF's failure to push harder for modification of this rigid currency regime is harder to justify. The Fund had seen hard pegs come to grief in other countries. Unlike the cases of Brazil and Turkey, it had programs with Argentina throughout this period. It was in continuous contact with the authorities and possessed detailed knowledge of their problems. Among other things, it saw the government repeatedly overshoot the benchmarks for the debt-to-GDP ratio specified in its programs. But it failed to push for a change in the regime while there was still time.[29] To the contrary it sent conflicting signals by augmenting its program in December 2000 and, even more extraordinarily, in August 2001.

[29]The conventional defense of the IMF (e.g. Mussa 2002) was that it does not have a mandate to dictate a country's exchange rate regime. Members are free to operate any regime they choose, and the Fund is only responsible for determining whether other policies are compatible with that choice. Critics would counter that the IMF has considerable leeway in interpreting and applying its mandate and that it failed to utilize that flexibility appropriately at the end of the 1990s.

Argentina clung to its peg with growing desperation. President Fernando de la Rua, elected in 1999, raised taxes in an effort to lure back investors and reduce interest rates, but this only depressed the economy further.[30] As growth stalled out, reflecting problems of overvaluation, and political disquiet mounted, there was a growing awareness that something had to give. The question was what. Suspending interest payments on the foreign debt would fill the holes in the government budget and current account but only encourage capital flight. Devaluing the peso could help to restore competitiveness, but it would gravely damage the banking system, the majority of whose liabilities were now in dollars.[31] Full dollarization might have strengthened confidence temporarily but would not have obviated the need for a grinding deflation, given the inadequacy of competitiveness. All this is to say that there was no obvious way out at this late date.

De la Rua brought back Cavallo, who had left public office in 1996, as economy minister to deal with the crisis. Cavallo now imposed a tax on financial transactions, subsidized exports, and announced the intention of replacing the dollar peg with a multicurrency basket peg—implicitly blaming the dollar's rise for the economy's competitiveness problems.[32] But the writing was on the wall. Provincial governments, unable to borrow, began issuing quasi-currency notes to pay salaries and service debts, putting paid to the notion that Argentina was a land of hard currency. The federal government fed more bonds to the banks, draining the system of liquidity. Interest-rates on its ten-year U.S.-dollar denominated issue rose to an astronomical 35 percent in November. Savers shifted from peso to dollar deposits; those in a position to do so moved their money to offshore banks. By November the country was experiencing a full-fledged bank run.

Forced to do something, on December 3 the government limited withdrawals from bank accounts to 250 pesos per week per account. It prohibited investors from transferring funds abroad. This was the notorious "Corralito" (in English, "little corral" or "playpen"). So much for the idea that convertibility meant

[30]The IMF backed de la Rua's contractionary policy with a three-year $7.2 billion standby in March 2000, augmented by a further $13.7 billion in January 2001.

[31]Recall how the government had authorized the use of foreign currency for, inter alia, bank deposits as a confidence-building measure. The banks also made loans in dollars, but these were to domestic firms whose revenues were in pesos. Thus, devaluation would destroy the ability of these borrowers to repay and damage the banks. The other steps the authorities had taken to strengthen the banking system, such as raising capital and liquidity requirements, strengthening internal controls, and enhancing transparency, were little help in this situation.

[32]Since Argentina did not trade mainly with the United States, a rise in the dollar undercut its competitiveness in third markets. Of course, this had been a shortcoming of the dollar peg from the start, and now announcing a plan for modifying it under duress was not confidence inspiring.

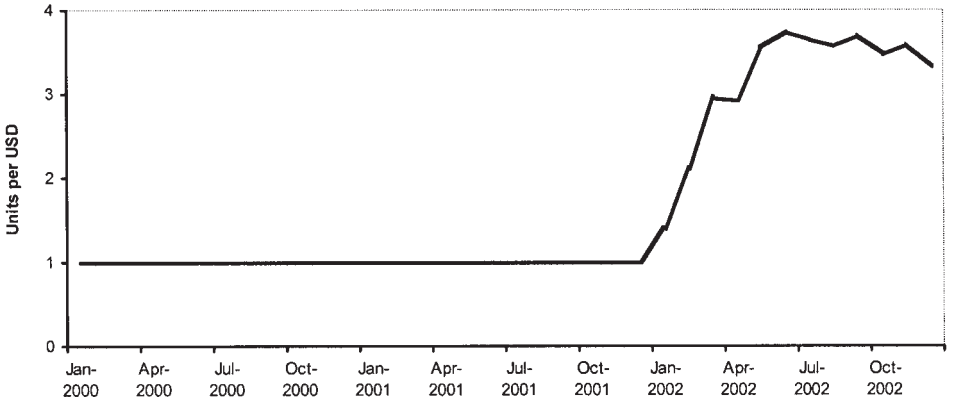

Figure 6.5. Argentina Peso–U.S. Dollar Exchange Rate, 2000–2006. *Source*: End of Period Exchange Rate, IFS.

not just hard money but also freedom to transact and the sanctity of contracts. These steps may now have been unavoidable, but they did not comply with the IMF program, causing the Fund to belatedly withdraw its support. On December 20 the president resigned, and two revolving-door presidents, neither of whom could marshal congressional support for crisis measures, followed within a month. Foreign exchange trading was suspended on December 21. A moratorium on the public debt was announced on December 23. Finally the peso was devalued, and bank deposits were forcibly converted into local currency at a rate of 1.4 pesos to the dollar. To make life easier for borrowers, dollar loans were converted into pesos one for one, effectively bankrupting the banking system.[33]

This was the mother of all financial crises. The banking system and bond markets seized up. GDP fell by nearly 12 percent in 2002—a Great Depression by any standard. Unemployment rose to 18 percent, CPI inflation to more than 20 percent. By mid-2002 the peso had depreciated to more than 3 to the dollar (see Figure 6.5). Amidst protests over increases in the cost of living, deregulation was partially rolled back.

At the end of 2002, restrictions on deposit withdrawals and foreign investment were finally relaxed, although court cases disputing their operation continued for many years. The economy stabilized and then recovered. The peso's sharp depreciation had boosted competitiveness, and the central bank now intervened to prevent the currency from appreciating. In addition the

[33]In addition, the government had financed its deficits partly by feeding sovereign bonds to the banking system (by making these high-yielding assets eligible for fulfilling the banks' liquidity requirements), so when the government defaulted the banks took another hit.

devaluation of debts had lightened the financial load. Growth ran in the mid-to-high single digits, although this would have to continue for many years before living standards recovered to the levels prevailing in 1997. And there were growing doubts about its sustainability, given the government's dirigiste policies.

Apologists for the currency board insisted that blame for this catastrophe rested not with the exchange rate regime but with the government's failure to maintain fiscal discipline and push through structural reforms over political opposition. A more realistic assessment is that these ancillary requirements for a smoothly functioning currency board are simply too demanding for a democratic society. By locking itself into a rigid peg with no exit, Argentina effectively sealed its fate.

Will such crises be back? To echo Mao Zedong's remark about the effects of the French Revolution, it's still too early to tell. Economic-policy weaknesses in countries like Argentina were papered over by strong global growth and high commodity and energy prices, which will not prevail indefinitely. At the same time, the fact that more countries moved in the direction of exchange rate flexibility removed a critical financial vulnerability. Even Argentina, which intervened to prevent the peso from appreciating against the dollar, displayed more flexibility than before.

Moreover, there have been many fewer cases of runaway inflation than in the 1980s, so there are fewer countries sufficiently desperate to resort to exchange-rate-based stabilization, which brings down inflation now only at the cost of creating financial vulnerabilities later. If the new culture of price stability is permanent (another question to which Mao's French-Revolution comment applies), then there are likely to be fewer exchange-rate-based stabilizations and fewer subsequent crises. This is not to say that currency crises will become a thing of the past, but that they will have different origins and take a different form.

GLOBAL IMBALANCES

From the late 1990s these developments conspired to produce global imbalances on a scale never witnessed previously in modern international monetary history. China, which had been largely unscathed by the Asian crisis, grew at a breakneck clip on the back of investment in excess of 40 percent of GDP. Chinese saving exceeded even these high levels of Chinese investment. Saving by households alone approached 25 percent of GDP. This was entirely consistent with the *life-cycle model*, economists' standard framework for

understanding savings behavior. That model emphasizes the incentive for those of working age to save for retirement. It observes that net saving by households will be the difference between saving by the young and dissaving by the old. In an economy like China's, which has sustained a growth rate of 10 percent per annum, the incomes of current labor-force participants will be a multiple of those once earned by the elderly. Hence saving by the young will be significantly higher than dissaving by the old.[34]

But, if this was not enough, another 25 percent of GDP was saved by Chinese enterprises, which enjoyed enormous revenue growth and felt little pressure to pay out dividends. With national saving approaching 50 percent of GDP and thereby exceeding even China's extraordinarily high investment rates, the country ran continuous current account surpluses.

And with the *ASEAN* economies no longer encouraging investment at all cost, their national savings exceeded their investment as well. In Latin America, more stable policies similarly encouraged saving. With strong growth in China and India pushing up energy prices, Middle East oil exporters earned more than they could invest at home; they too ran current account surpluses.

All this excess saving had to go somewhere. If all these countries were in current account surplus, in other words, someone else had to be in deficit.[35] That someone was the United States. The United States had long run current account deficits, as shown in Figure 6.6.[36] In effect, other countries purchased financial claims on America, and America purchased merchandise from other countries. Foreign central banks and governments were prepared to accumulate financial claims on the United States because U.S. securities were traded in deep and liquid markets. The United States was able to place debt securities with foreign central banks and governments while paying a lower interest rate than other borrowers. This was the "exorbitant privilege" of which the French had complained in the 1960s.[37] Moreover, whereas other countries accumulated

[34]The classic statement is Modigliani (1970). The model is applied to China by Modigliani and Cao (2004). The main way in which household savings in China diverged from the model was that there was less than predicted dissaving by the old. This may have reflected uncertainty among older individuals about whether they would continue to receive the social services traditionally provided them by the state-owned enterprises in which they had once been employed (see Chamon and Prasad 2007).

[35]The global current account balance (that is, the sum of the current account balances of all countries) having to sum to zero, unless there is trade with other planets. In practice, the reported current accounts of all countries do not sum to zero, but this presumably reflects statistical discrepancies rather than inter-terrestrial trade.

[36]Most notably in the mid-1980s prior to the Plaza and Louvre Agreements discussed in Chapter 5.

[37]See Chapter 4.

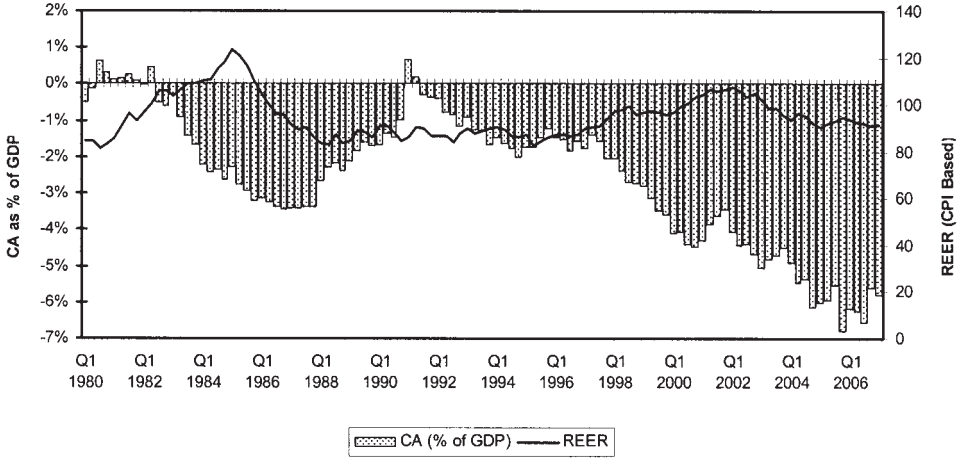

Figure 6.6. U.S. Current Account Deficit and Real Effective Exchange Rate of the Dollar, 1973–2007. *Source*: Bureau of Economic Analysis and IFS.

U.S. debt securities, U.S. investors acquired foreign equity: they purchased shares in foreign companies or even purchased those companies outright. While this meant that American investors took more risk, they earned higher returns on their foreign assets in consequence. The United States could thus run continuing deficits without seeing its net foreign financial obligations explode (see Figure 6.7).

But in the second half of the 1990s, small current account deficits gave way to large current account deficits—large absolutely and as a share of U.S. GDP. This was the era of the "New Economy." Productivity growth accelerated in the United States as the country's prior investments in information and communications technologies came to fruition. Faster productivity growth promised a higher return on capital, encouraging investment. The effects were most clearly evident in the NASDAQ boom. High share prices reflected hopeful expectations of high future profits and encouraged additional investment. With investment rising relative to savings, that additional investment was necessarily financed by foreigners.

As yet there was little disquiet over the U.S. deficit. The current account being the difference between saving and investment, the deficit was growing, it was said, because investment in America was becoming more attractive. The United States was disproportionately responsible for developing the new generation of microprocessor-based technologies. Of all the advanced countries, it had the most flexible markets. Its firms were thus well positioned to reorganize

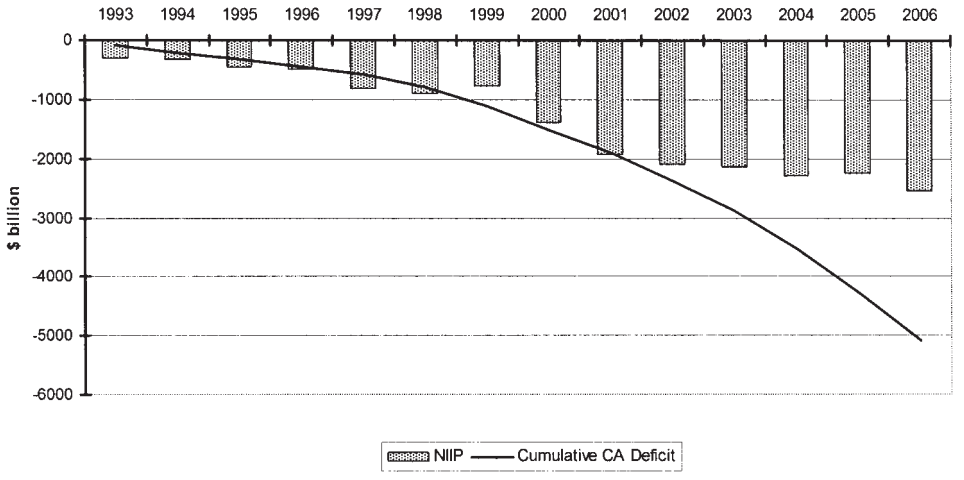

Figure 6.7. U.S. Net International Investment Position and Cumulative Current Account Deficit, 1993–2006 (billions of dollars). *Source*: Bureau of Economic Analysis.

their operations to capitalize on the opportunities afforded by high-speed computation, broadband, and the Internet. It was no wonder then that investment surged or that foreigners willingly financed it. Nor would there be a problem of repaying these obligations to foreigners, since a more rapidly growing economy would have a correspondingly greater capacity to service its debts.

This happy scenario grew less plausible after the turn of the century, although it took some time for popular and even professional commentary to cotton onto the fact. Once investors discovered that the New Economy was overhyped and the NASDAQ bubble burst, it became harder to argue that U.S. current account deficits were investment driven and benign. But the deficit nonetheless continued to grow, from a bit more than 4 percent of GDP, the level that economists customarily took as the safe upper bound, to 5 percent in 2003, 6 percent in 2005 and 7 percent in 2006.

The source, or the culprit as it was increasingly seen, was low U.S. saving. The Bush administration cut taxes on assuming office in 2001. A federal budget that had swung into surplus in the 1990s now swung back into deficit. But where the explanation for the fall in government savings was obvious—with federal spending as a share of GDP holding steady, it was the fall in tax take, pure and simple—explaining the fall in household savings was less straightforward. Personal savings rates first fell to the low single digits and then turned negative around the middle of the decade. Diehard proponents of the New Economy argued that households were spending more because U.S.

economic fundamentals were so strong. That households could look forward to higher future incomes justified more spending now. But this Panglossian view became harder to sustain after the NASDAQ crash and especially after productivity growth showed signs of slowing.

The alternative explanation focused on the series of dramatic interest rate cuts by the Fed in the 2001 recession. Reversing out those cuts without choking off the subsequent recovery had to be done gradually. In the meantime, low interest rates fueled an unprecedented housing boom. Higher real estate prices made households feel wealthier. Feelings aside, low interest rates enabled them to refinance their mortgages and divert the interest savings to consumption. These observations made for less optimism about the sustainability of the deficit, however, since unusually low interest rates would not last forever and house prices could not just go up but also would eventually come down. For the time being, however, this was a problem for the future.

As always, it took two to tango. The United States, in other words, was able to run large deficits only because other countries were willing to run large surpluses. The United States was able to save less than it invested because other countries saved more. Federal Reserve Chairman Ben Bernanke described global imbalances, not without reason, as reflecting a global savings glut.[38] But it was a global savings glut superimposed on a U.S. savings drought.

One view was that this situation was likely to persist for some time. Growth in China centered on manufacturing industry, which exported much of what it produced. The consumer electronics it assembled could not all be sold to Chinese households. Necessarily, some were sold through big-box retailers in the United States. Keeping the exchange rate down against the dollar was part and parcel of selling those additional manufactures into foreign markets. And as China grew, its central bank demanded additional foreign-currency reserves to smooth the flow of international payments and insulate the economy from financial volatility. It was able to accumulate those reserves only because Chinese exports grew faster than Chinese imports. Meanwhile the United States, as the source of those reserves, was happy to import more than it exported and consume more than it produced. Thus, this status quo was in the common interest. It was likely to continue for twenty years, which was how long it could take to absorb an additional 200 million Chinese peasants into the manufacturing sector.

This situation also resembled that of the 1950s and 1960s, which is why it came to be known as Bretton Woods II.[39] Then as now, there had been a

[38] See Bernanke (2005).

[39] This analogy and the Bretton Woods II label were originated and popularized by Dooley, Folkerts-Landau, and Garber (2003).

key-currency country at the center of the system running deficits and supplying the rest of the world with international liquidity. At the periphery had been a set of fast-growing economies exporting their way to higher incomes, running surpluses, and accumulating the additional reserves appropriate for their now larger economies. The country with the exorbitant privilege of supplying the reserves had been the same: the United States. The only difference was the identity of the catch-up economies running chronic surpluses and accumulating reserves. Back then it had been Europe and Japan. Now it was China and other Asian countries. But the implication was the same. If the original Bretton Woods System had lasted the better part of twenty years, then so too might its successor.

Left to market forces, exchange rates in catch-up economies tend to appreciate.[40] Since productivity is growing relatively fast, currency appreciation is needed to prevent disequilibrium from developing between the growth of exports and imports. Currency appreciation avoids the development of that disequilibrium by increasing the command of consumers over traded goods. This is one way in which higher productivity translates into higher living standards. But under the Bretton Woods System this mechanism had been suppressed. European and Japanese currencies had been pegged to the dollar and, with few exceptions, were prevented from moving.[41] Now there was no formal agreement to stabilize exchange rates against the dollar, but the catch-up economies could still intervene in the market to prevent their currencies from appreciating.

Market pressures do not stay bottled up forever. In the case of the original Bretton Woods System, they exploded in the early 1970s. The fear now was that Bretton Woods II might reach its end even more quickly.

Recall that this state of affairs ostensibly rested on the compatibility of U.S. and Chinese interests. The United States was happy to consume more than it produced. China was interested in saving and exporting its way to prosperity and in accumulating the international reserves needed to smooth a larger volume of international transactions. But by 2005, both officials and investors had developed second thoughts. U.S. politicians saw the flood of merchandise imports from the developing world as unfairly burdening manufacturing industry. They blamed the reluctance of China and its neighbors to let their currencies rise and threatened trade sanctions in response to this supposed manipulation.

[40] More precisely, they will tend to experience *real exchange rate* appreciation. The price of locally produced goods will rise relative to the price of imports through either inflation or currency appreciation.

[41] Similarly, the balance-of-payments surpluses that resulted translated into only limited inflation because of capital controls and tight financial regulation, which permitted the liquidity associated with those surpluses to be effectively sterilized.

For China, saving 50 percent of GDP and investing nearly that much were not sustainable economically or politically. It simply was not possible to deploy that much additional capital year after year—to build that many new factories and dams—without significant inefficiencies. And it was not socially palatable for households to defer that much consumption indefinitely. As Chinese savings fell, something that would happen even more quickly as the population aged, the country's external surplus would shrink.[42] And this phenomenon of population ageing was not limited to China; it was present also in other East Asian countries, such as Japan and South Korea.

Foreign reserves, meanwhile, had risen far beyond the levels needed to smooth international transactions. The standard rules of thumb for reserve adequacy were the equivalent of three months of imports or the cost of interest and principal payments on the foreign debt for a year. By 2005 reserves not just in China but in emerging markets generally far exceeded those benchmarks. This pointed to the desirability of stimulating domestic demand to narrow the external surplus and slow reserve accumulation while allowing the currency to appreciate to prevent that additional demand stimulus from fanning inflation. With these goals in mind, and to head off trade sanctions by the United States, China announced in July 2005 that it was revaluing the renminbi by 2.1 percent and that, henceforth, it would allow the currency to appreciate against the dollar.

But 2.1 percent paled in comparison with the change in the Chinese exchange rate needed to contribute to an orderly correction of global imbalances, which observers put at 20, 30 or even 40 percent.[43] Letting the currency appreciate against the dollar by 5 percent per annum, the pace now signaled by the Chinese authorities, was barely enough to keep the problem from worsening.[44] And with China reluctant to move faster, other countries hesitated to allow their own currencies to appreciate.

China's reluctance had several sources. Officials hesitated to mess with success; the currency peg had served the country well. There were limits on how quickly spending on infrastructure, education, and social services could

[42] A larger share of the elderly in the population was a consequence of the one-child policy first implemented in 1979. Its implication for saving flowed from the life-cycle model (see above). And, insofar as uncertainty about public support for the elderly was likely to decline with the development of a more robust social safety net, dissaving by the elderly would only accelerate.

[43] See, for example, Goldstein and Lardy (2003).

[44] Or, more precisely, it was barely enough to keep up with differential labor productivity growth (the increase in Chinese productivity minus the increase in U.S. productivity). Recall that labor productivity in China was growing by 6 percent per annum—or roughly 4 percent faster than in the United States.

be increased. There were questions about whether the country's troubled banks could cope with the balance-sheet effects of a more volatile exchange rate. Officials warned that the country still lacked hedging markets on which banks and firms could protect themselves from unpredictable exchange-rate swings.

There were also worries that curtailing intervention in the foreign exchange market might lead not just to a modest appreciation of Asian currencies against the dollar; it might precipitate a dollar crash. In the late 1990s, finance for the U.S. current account deficit had originated with foreign investors lured by the siren song of the New Economy. Now the main foreign purchasers of U.S. assets were central banks and governments, and their purchases mainly took the form of the debt securities that were the favored form of reserves. If those foreign central banks and governments now curtailed their purchases, the dollar would fall sharply. This might catch investors wrong footed, causing financial disruptions and threatening global growth. And it would cause those same central banks and governments to suffer capital losses on their existing reserves, the majority of which were denominated in dollars.

In the ideal scenario, central banks and governments would curtail their accumulation of dollars only gradually. Any effort to diversify their existing reserve holdings so as to protect their portfolios from a decline in the dollar would also proceed gradually. And if smaller capital inflows into the United States meant slower growth of demand in the United States, this should be offset by measures to stimulate demand in other countries.

But realizing this outcome presupposed international cooperation. While it was in the collective interest for central banks to diversify out of dollars only gradually, it was in the individual interest of each central bank to diversify quickly if it could get away with it–if it could do so surreptitiously to avoid exciting the markets. But if enough central banks succumbed to the temptation, investors would catch on, and the dollar would come crashing down. What was in the collective interest, in other words, was not obviously in the individual interest. Similarly, in return for undertaking currency and spending adjustments in the global interest, Chinese authorities wanted something back from the United States.

The IMF had been established in 1944 to help organize collective action on international monetary matters, and it now sought to organize solutions to these problems. It pushed central banks to release more information on the currency composition of their foreign exchange reserves through its *Special Data Dissemination Standard*, the idea being that greater transparency meant less scope for surreptitious portfolio adjustments. It brought together the United States,

Japan, China, the euro area, and Saudi Arabia (as a representative of the oil exporters) to discuss mutually advantageous macropolicy adjustments.

But progress on reserve transparency was slow. Only a couple of dozen countries participated, and even they released information on reserve composition only with a lag, leaving considerable scope for opportunistic portfolio adjustments. The IMF's multilateral consultations, for their part, produced much talk but little action. The Fund had no ability to compel action by large countries that did not borrow from it. It was especially feeble when dealing with surplus countries—in the present instance China.[45] The IMF's membership now agreed to strengthen the Fund's authority for exchange rate surveillance, and specifically its authority to warn of significantly undervalued currencies. A new decision on exchange rate surveillance was agreed by its Executive Board, with the dissent only—no surprise here—of China. But only time would tell whether the IMF was finally prepared to use its bully pulpit and whether its calls from the rostrum would be heard.

By late 2007 these issues assumed a growing urgency. U.S. house prices peaked in 2006, and by 2007 residential construction was in decline. There were fears that U.S. consumption might follow. If there was less demand at home, then more American products would have to be sold abroad and the dollar would have to fall to price those U.S. goods into foreign markets. The dollar had already begun falling in anticipation of this eventuality. Then the subprime crisis, centered on residential-mortgage-backed securities and derivatives originated and disproportionately held in the United States, erupted in the second half of 2007. Investors awoke to the fact that these securities were complex, opaque, and risky. Suddenly U.S. markets appeared less attractive as a destination for foreign funds. Capital inflows slowed, and market participants began to talk of a dollar crash.

The incentive to scramble out of dollars to avoid losses was all the greater insofar as there was something to scramble into, namely euros. The euro area also had deep and liquid financial markets, which made it an increasingly attractive place for central banks to hold international reserves. But if investors shifted into euros in large numbers, the result would also be an uncomfortably strong euro exchange rate—uncomfortably strong for European exporters in particular. Evidently, the euro was a mixed blessing for the countries that adopted it. Some commentators went so far as to suggest that its costs exceeded its benefits.

In the event, their arguments did not carry the day. In order to understand why, it is necessary to go back in time, back to the early 1990s.

[45]This was the same problem that Keynes had emphasized and that had motivated adoption of the *scarce-currency clause* way back in the 1940s. See Chapter 4 for discussion.

THE EURO

In the early 1990s it could be reasonably questioned whether the long-standing aspiration of creating a single European currency would ever be realized. Europe's convergence process had been knocked off course by the EMS crisis. The United Kingdom and Italy had endured speculative attacks and been forced to abandon the Exchange Rate Mechanism—the United Kingdom permanently. Other countries had felt similar pressures and responded by widening the narrow $2^1/_4$ percent bands of the ERM to +/–15 percent. The idea that countries would prepare for monetary union by learning to live with limited exchange rate flexibility appeared increasingly incongruous. Europe seemed to be taking a step back from permanently fixed exchange rates rather than moving forward.

The basic explanation for the 1992–93 crisis was that policymakers were not credibly committed to subordinating other goals of policy to the maintenance of exchange rate stability. When growth slowed and unemployment rose owing to the delayed effects of the 1990–91 recession in the United States, they became reluctant to raise interest rates in order to defend the currency. They were tempted instead to allow the exchange rate to depreciate to restore external competitiveness. Market participants appreciated the existence of these incentives. And in the absence of capital controls, they could force the issue.

But, starting in 1993, the situation began to change. With expansion underway in the United States, expansion followed in Europe. If further austerity measures were needed to prepare for monetary union, it would now be easier to implement them against the backdrop of more vigorous growth. European policymakers, for the most part, reaffirmed their commitment to completing the transition to monetary union. Meanwhile, two countries, the United Kingdom and Denmark, whose commitment had always been questionable, dropped out of the process, eliminating a drag on the others.[46]

At German insistence, the Maastricht Treaty had set targets for inflation, interest rates, exchange rate stability, and fiscal stability for countries seeking to qualify for participation in the monetary union. It was the fiscal criteria—a budget deficit of not more than 3 percent of GDP and a public debt of not

[46]In addition, the wider (+/–15 percent) bands of the post-1993 EMS may have helped by eliminating one-way bets. No longer did currency speculators all line up on one side of the market, since if they were now mistaken that a currency could be driven below the bottom of its band it might recover subsequently by as much as 30 percent, inflicting large losses on those with short positions.

more than 60 percent—that were key. The idea was that meeting the deficit target would require constructing a durable social consensus; it would require hard choices over whose fiscal ox to gore. The fiscal criteria would effectively filter out countries lacking the requisite stability culture and unable to live within their means. They would bar from participation countries inclined to press for a loose monetary policy to make it easier to finance for their budget deficits.[47]

In the event, this criterion proved a less effective bar than its German architects had hoped. Faster growth, which augmented public-sector revenues, meant that deficits now declined even in the absence of policy initiatives. Governments could take one-off measures—typically in the form of additional taxes—to temporarily squeeze under the 3 percent limbo bar but abandon fiscal discipline subsequently. Some resorted to accounting gimmicks. For this combination of reasons, all EU members that aspired to participate in the monetary union when it commenced in 1999 could claim that they satisfied the deficit criterion, aside only from Greece where conditions were still too chaotic for this pretense to be maintained.

In any case the fact that important decisions were made by consensus made it difficult to bar member states in a dubious position. With significant decisions requiring the unanimous consent of EU members, countries left out of the monetary union could threaten to retaliate by obstructing progress in other areas. When the Maastricht Treaty was signed the expectation had been for a small monetary union centered on France and Germany and including perhaps Austria, Belgium, Luxembourg, and the Netherlands.[48] The decision, taken at the May 1998 Economic Council in Brussels, was instead for a large monetary union that included also Ireland, Italy, Spain, Portugal, and Finland.

The changeover was painstakingly planned. A European Monetary Institute was established as a kind of European Central Bank with training wheels to prepare for a common monetary policy. To reassure Germany that fiscal discipline would not be lost once the monetary union commenced, a *Stability Pact* providing for continued oversight of national budgets (and for fines on countries deemed as running excessive deficits) was agreed at the June 1997

[47]In contrast, the interest rate, exchange rate, and inflation criteria were less useful filters. If the requisite fiscal adjustments were made and expectations developed that a country would be permitted to join the monetary union, its exchange rate would tend to stabilize as a result. Its interest rates and inflation would similarly come down toward German levels purely as a consequence. These criteria were therefore less useful for identifying countries with the requisite stability culture.

[48]Assuming, of course, that Austria joined the EU, something that only happened in 1995 as part of the third enlargement (which included also Finland and Sweden).

Amsterdam Council. An ERM II was established to stabilize exchange rates between the euro and the currencies of EU members that had not yet entered the monetary union. The prospective members of the euro area agreed that they would irrevocably lock their exchange rates as of January 1999 at the same levels prevailing in mid-1998.[49] These preparations allowed for a remarkably smooth changeover at the beginning of 1999. With the common monetary policy now under the direction of the European Central Bank, the members of the euro area could begin preparing for the next stage, which was the replacement of national currencies with euro notes and coins.[50] This changeover was completed smoothly as well at the beginning of 2002.

A monetary union among a group of nations accounting for 20 percent of the world's output and 30 percent of its trade was unprecedented. And its steward, the European Central Bank, was as yet entirely unproven. Not surprisingly, the operations of the euro area and the ECB were scrutinized as if under a microscope. Some critics complained that the new central bank, concerned to establish its anti-inflationary credentials, was excessively rigid and insufficiently responsive to unemployment. Others complained of the opposite, that the ECB allowed inflation to repeatedly stray above its target of 2 percent. But second guessing was par for the course. And the fact that the critics were divided into two roughly equally sized camps suggested that ECB policy was not too bad.

Similarly, some observers complained that the euro was excessively weak against the dollar for the first couple of years, indicating a lack of confidence in the new unit. Then, as the euro recovered against the dollar, they complained that its excessive strength was damaging European growth. But as time marched on, it became clear that those complaints were anachronistic. Swings in the dollar-euro exchange rate were entirely normal reflections of swings in relative U.S.-European growth rates and interest rates. Because the euro area was a large economy, it had less reason to worry about the economic impact of those swings than the small open national economies that had been its predecessors.

There were also worries that inadequate fiscal discipline was creating pressure for the ECB to inflate. First Portugal in 2002 and then France and

[49]This ruled out last-minute devaluations designed to enable a country to enter the monetary union at an artificially competitive exchange rate. Such devaluations would have been problematic, since competitiveness would have been gained at the expense of other members, and since speculators anticipating last minute devaluations might have attacked the currencies in question in advance and destabilized the transition process. The agreement that there would be no more parity changes eliminated both dangers.

[50]In the interim Greece joined the euro area (at the beginning of 2001).

Germany in 2003 violated the Stability Pact's 3 percent ceiling on budget deficits. The big boys could credibly threaten to fine a shrimp like Portugal, which was left with no choice but to raise taxes, thereby consigning itself to a recession. But France and Germany were less inclined to fine themselves. The framers of the Stability Pact had anticipated that an individual country might violate its provisions but not that several countries would do so at the same time. Although Germany was not allowed to vote when the decision was being made of whether to subject it to sanctions and fines, France was—and vice versa. Thus the two countries could collude to prevent either of them from being sanctioned. The Stability Pact was repeatedly bent and broken. In the more cosmetic language of the EU, the pact was "reformed" to permit greater budgetary flexibility.[51]

Whether this should be regarded as troubling remained unclear. The fear that countries with large deficits would apply irresistible pressure to the ECB to inflate appeared increasingly dubious as the new central bank gained a reputation for valuing price stability. Increasingly, governments recognized that with a common monetary policy the only tool that remained for dealing with country-specific shocks was national fiscal policy. Effective use of this instrument required a budget close to balance in good times so that a larger deficit in bad times would not damage confidence. As they gained better appreciation of this fact, governments made slow but steady progress in the direction of balance. One interpretation is that the monetary union no longer needed the Stability Pact, any more than the ECB needed training wheels.

Still, adapting to a single monetary policy was not easy. Slow-growing economies like Italy, which competed head-to-head with China in the production of specialty consumer goods, would have preferred a looser ECB policy and weaker euro exchange rate. Fast-growing economies like Ireland, whose English-speaking population and hospitable foreign-investment climate enabled it to make the most of the high-tech boom, experienced rapid increases in property and other asset prices; they would have preferred a tighter ECB policy to cool down their overheated economies. Complaints about ECB policy as either too loose or too tight thus tended to fall along predictable national lines.

More generally, the "convergence economies" (EU lingo for relatively poor countries that had not yet "converged" to EU living standards and were still grappling with economic and financial problems) tended to experience booms on joining the euro area. Entering the monetary union meant that interest rates, which had been high owing to poor prior finances, came down

[51] In 2005.

abruptly to French and German levels.[52] Borrowing costs having fallen, households went on a consumption binge and firms rushed to invest. Their additional demands pushed up wages, often dramatically. Once the party was over, the country then found itself with excessive wages, lagging competitiveness, and rising unemployment. Adjustment required a grinding deflation. Portugal, which had the lowest per capita income of the founding members of the euro area, was first to find itself in this position. The solution—head off the problem by exercising fiscal restraint—was easy to recommend but difficult, politically, to execute.

But if there was plenty to worry and complain about, there was little serious thought of abandoning the euro and reintroducing national currencies.[53] It was not clear that the economic benefits of backtracking would exceed the costs; a country that abandoned the euro and reintroduced its national currency might engineer an improvement in export competitiveness—assuming, of course, that currency depreciation was not neutralized by wage inflation—but only at the cost of an increase in interest rates and hence in its debt-service burden. Abandoning the euro, something for which the Maastricht Treaty made no provision, would clearly lead to political recrimination. It would raise questions about the stability of the euro area generally, which would not be appreciated by the remaining members. A country that took this step would not be welcomed at the table where other EU policies were decided.

Not least, the procedural difficulties of exiting were formidable. The decision to reintroduce the national currency would presumably require a lengthy parliamentary debate. If the conclusion of that debate was to reintroduce the national currency and convert bank deposits, wage contracts, and other financial obligations into that unit, which would then be depreciated against the euro in order to restore competitiveness, then investors would be able to see what was coming. They would scramble out of local banks and markets in order to shelter their assets from depreciation, precipitating the mother of all financial crises. This danger could have been averted were it possible to agree to and implement the decision to exit overnight. But this was not possible in a democracy.

[52] While nominal interest rates (on risk-free assets) came down to rest-of-euro-area levels, real interest rates (on which the cost of borrowing depended) were even lower in fast growing economies, since inflation rates were higher, reflecting the faster rate of increase in the prices of nontraded goods. Thus, where policymakers would have liked higher interest rates to restrain demand where growth was unusually fast, monetary union delivered the opposite.

[53] A few populist politicians did actively campaign against the euro. Italian welfare minister Roberto Maroni, for instance, declared in June 2005 that "the euro has to go" and called for the reintroduction of the lira. But his views were not representative of informed or even public opinion.

This willingness to live with the euro and to do what was needed to make it work also reflected the perception that the single currency had important benefits. Most obviously it minimized the scope for disruptive intra-European exchange rate changes. Events like the March 2004 Madrid train bombings no longer had the capacity to disturb exchange rates between the euro area countries precisely because there were no longer exchange rates between the euro area countries. The single currency did not entirely ring fence the area from financial risks. There still could be shocks to financial markets and banks. But intra-European exchange rate fluctuations could no longer be a source of such risks. Nor could they act as an amplifying mechanism.

The other visible effect of the euro was to stimulate the growth of European securities markets. Bond markets in particular are characterized by scale economies. The larger the market, the more attractive it is as a platform for transactions, since it then becomes easier for investors to put on and take off positions without moving prices. Larger markets thus tend to offer greater liquidity and lower transactions costs. They feature well-defined yield curves. There is a standardized, low-risk asset in a wide range of maturities, in other words, whose interest rates serve as a benchmark off of which riskier credits can be priced.

Hence there were immediate gains from moving from ten and more segmented national markets, each of which dealt in securities denominated in a different currency, to a single bond market, continental in scope, on which euro-denominated securities were traded. Nationally focused bond funds quickly lost market share to areawide bond funds.[54] The outstanding stock of securities issued by corporations in the euro area rose from 32 percent of GDP at the end of 1998 to nearly 75 percent of GDP by mid-2005. Not just this, but it became possible to float larger bond issues. It became easier for companies that did not possess an investment-grade credit rating to issue bonds. In turn this was a boon to European competitiveness. It meant that European companies enjoyed a lower cost of capital. They could borrow more cheaply for investment, and they were no longer beholden exclusively to their banks. It also meant that banks, firms, and households could more easily diversify their portfolios to include assets issued in different countries, reducing "home bias" and improving international risk sharing.

Another effect of the euro was to enhance price transparency and encourage cross-border trade. Suddenly it was easier for a Dutch consumer to compare prices posted by his local purveyor with those at a shop across the border in Belgium—and vice versa. This made for more intense product market competition. Retailers and wholesalers came under more pressure to meet the

[54]A study of this is Baile et al. (2004).

prices offered by the competition since those prices were now easier to compare. Studies by the OECD and others suggested that product market competition is critically important for stimulating productivity growth in high-income economies.[55] More competitive product markets force producers and suppliers to shape up or lose business and ultimately die. Post-euro studies were not all agreed on the magnitude of this effect, but they did not dispute its existence.[56] Nor did they dispute that a more intensely competitive market environment, while posing difficulties for adjustment, was precisely what Europe needed.

A pro-reform impact of the euro on labor markets was less evident.[57] European labor markets continued to be characterized by heavy regulation and rigidity, and the euro did little to change this. This was unfortunate, since the absence of a national monetary policy heightened the value of both labor mobility and wage flexibility, but it was not surprising. Policymakers did not have to agree to do anything in order for the euro to intensify product market competition and eliminate pockets of monopoly power; if they simply did nothing greater product market competition would result. But enhancing labor mobility by making technical credentials and pensions more portable, and making employment relations more flexible by reducing hiring and firing costs, required action on their part. Adoption of the euro provided an incentive for such action but by no means guaranteed it.

INTERNATIONAL CURRENCY COMPETITION

Against the background of global imbalances, the advent of the euro also raised questions about the dollar's future as the dominant international currency. Ironically, the euro's short-run impact was to reinforce the dollar's preeminence. Before 1999, the Bank of France had held some fraction of its foreign reserves in deutsche marks, while the Bundesbank had held some fraction of its in francs. When the two currencies were replaced by euros, those claims no longer constituted foreign-currency reserves; now they were simply domestic-currency reserves of the consolidated banking system. The strength of

[55] See for example OECD (2003).

[56] Micco, Stein, and Ordenez (2003) estimated a 6 percent increase in cross-border trade in the euro area in the early years of the single currency, in contrast to other authors who suggested larger effects. On price dispersion and product market competition under the euro, see Foad (2007). Parsley and Wei (2007) revise downward the magnitude of the euro's impact on price dispersion by comparing very narrow product categories, in their case the 10 main ingredients of the typical Big Mac meal at McDonald's outlets inside and outside the euro area.

[57] A survey with evidence is Duval and Elmeskof (2006).

the dollar exchange rate toward the end of the New Economy era also worked to raise the value of outstanding dollar reserves relative to those denominated in other currencies. As a matter of accounting, the share of the dollar in global reserves actually rose slightly in 1999–2000.

After that, however, the euro began gaining ground on the dollar in terms of the share of combined euro and dollar reserves held in the European currency. Euro area financial markets were deeper and more liquid than the separate domestic-currency financial markets of the pre-euro area, which made the euro more attractive than the currencies it replaced as a form in which to hold reserves. The euro was increasingly used as a currency for invoicing trade, most notably by Europe's neighbors in Central and Eastern Europe but increasingly in other parts of the world. It was used as a currency in which to denominate international bonds, given its stability and the appetite that existed in Europe for such issues. In 2004, five years after the creation of the single currency, international debt securities issued in euros actually exceeded those issued in dollars, where issuance was dominated by non-euro-area EU member states and other mature economies. And what made sense for firms engaged in merchandise trade and underwriters and issuers of international securities made sense for reserve managers as well.

Still, the most striking feature of the currency composition of international reserves through 2007 was its stability. There was no flight from the dollar and to the euro. Rather, the dollar's share of their combined total declined only very gradually.[58]

The euro area continued to expand with the adoption of the single currency by Slovenia in 2007 and Cyprus and Malta in 2008, and with the prospect of more new EU members in Central and Eastern Europe (and someday—who knows—perhaps also by the United Kingdom, Denmark, and Sweden). This created the possibility that Euroland might surpass the United States as international trader and as the world's largest financial market. Historically, there had been room for only one dominant international currency at any point in time. This now inclined some observers to imagine that there might come a tipping point at which central banks shifted en mass out of dollars and into euros.[59]

But the idea that reserves had to be held in one form and one form only was increasingly archaic. The dollar had so dominated international transactions after World War II because only one country possessed deep and liquid financial markets. The United States emerged from World War II far ahead of

[58] This according to the IMF's COFER release of September 29, 2007, which put the figures as of the second quarter of 2007 at $2.4 trillion of dollar reserves and $0.9 trillion worth of euro reserves. The pound sterling and the yen were next but lagged very far behind.

[59] This was the view, for example, of Chinn and Frankel (2007).

all others in terms of financial freedom and development. Germany and Japan had restricted the access of foreigners to their financial markets and resisted the internationalization of their currencies, Germany to limit inflationary pressures, Japan to create room for maneuver for industrial policy. But now that the advanced countries had eliminated capital controls, a variety of competing markets in which reserves might be held existed. And one of those markets, that for the euro, possessed the stability and liquidity needed to render it attractive.

A wholesale shift out of dollars, while not likely, was not inconceivable. There might be a loss of confidence in U.S. policy. Depreciation of the dollar might get out of hand. In this sense, the prospects of the dollar were wrapped up with the problem of global imbalances and with the rise of reserve holdings in China and the rest of the developing world. What would happen to the dollar would depend on how the international monetary system evolved more generally. As for the prospects for that, only time would tell.

— CHAPTER SEVEN —

Conclusion

Since the collapse of the Bretton Woods System in the early 1970s, a slow but then dramatically accelerating shift away from the earlier regime of pegged-but-adjustable exchange rates has occurred. As late as 1970 the idea of floating the exchange rate was almost unheard of except as a temporary expedient in extraordinary circumstances. But by 1990 roughly 15 percent of all countries had moved to floating rates. By 2006 this share had risen to nearly 30 percent. The movement away from pegged-but-adjustable rates was especially prominent in the advanced countries. By 2006 such intermediate arrangements had essentially disappeared, in favor of monetary unification in Europe and floating elsewhere. In emerging markets, where monetary unification was generally not an option (at least not yet), soft pegs did not disappear, but floating similarly gained ground.[1]

These trends are most immediately the consequence of rising capital mobility. In the aftermath of World War II, memories of the debt crisis of the 1930s and the fact that defaulted foreign bonds had not yet been cleared away discouraged investors from looking abroad. Those who might have done so were constrained by tight controls on international capital flows. The maintenance of capital controls had been authorized by the Articles of Agreement negotiated at Bretton Woods in order to reconcile exchange rate stability with other goals: in the short run, concerted programs of postwar reconstruction; in the long run, the pursuit of full employment.

Those capital controls were integral to the Bretton Woods System of pegged but adjustable rates. By loosening the link between domestic and foreign finance, they allowed governments to alter domestic financial conditions in the pursuit of other goals without immediately destabilizing the exchange

[1]The "not yet" alludes not so much to the possibility of monetary unions in other parts of the world as to the likelihood that EU members presently classified as emerging markets will eventually adopt the euro (a process that began with Slovenia in 2007). By the time they do so, of course, many of them will presumably have graduated to advanced-country status.

rate. Controls were not so watertight as to obviate the need for exchange rate adjustments when domestic and foreign conditions diverged significantly, but they provided breathing space to organize orderly realignments and ensured the survival of the system.

Controls on capital movements were also seen as necessary for reconstructing international trade. If volatile capital flows destabilized currencies, governments might again be tempted to defend them by raising tariffs and tightening import quotas, as they had in the interwar years. If countries devalued, their neighbors might again retaliate with tariffs and quotas of their own. The lesson gleaned from the 1930s was that currency instability was incompatible with a multilateral system of free international trade. Insofar as the recovery of trade was necessary for the restoration of global growth, so were currency stability and, by implication, limits on capital flows.

But the conjunction of free trade and fettered finance was not stable. Once current account convertibility was restored at the end of the 1950s, it became difficult to know whether a specific foreign exchange transaction had been undertaken for purposes related to trade or currency speculation. Firms could under-invoice exports and over-invoice imports to spirit capital out of the country. More generally, it became impossible to keep domestic markets tightly regulated once international transactions were liberalized. As financial markets joined the list of those undergoing decontrol, new channels were opened through which capital might flow, and the feasibility of keeping finance bottled up diminished accordingly.

The consequence was mounting strains on the Bretton Woods System of pegged but adjustable rates. Governments could not consider devaluing without unleashing a tidal wave of destabilizing capital flows. Hence parity adjustments during the period of current-account convertibility were few and far between. The knowledge that deficit countries hesitated to adjust rendered surplus countries, now fearing the cost, reluctant to provide support. And the freedom for governments to pursue independent macroeconomic policies was constrained by the rise of capital mobility. When doubts arose about their willingness to sacrifice other objectives on the altar of the exchange rate, defending the currency could require interest-rate hikes and other painful policy adjustments that were politically unsupportable. Confidence in currency stability and ultimately stability itself were the casualties.

These same unstable dynamics are evident in the evolution of the European Monetary System constructed by the members of the European Community after the breakdown of Bretton Woods. Exchange rate stability was necessary for the smooth operation of Europe's customs union and for the construction of an integrated European market. To buttress the stability of intra-European rates,

capital controls were therefore maintained when the EMS was established. Controls provided autonomy for domestic policy and breathing space for organizing realignments. But again, the conjunction of free trade and fettered finance was not stable. The liberalization of other intra-European transactions, which was after all the raison d'etre of the European Community, undermined the effectiveness of controls, which were themselves incompatible with the goal of constructing a single European market. Once controls went by the board, the EMS grew rigid and brittle. The 1992–93 recession then forced the issue. Currency traders knew that governments had limited political capacity in an environment of high unemployment to raise interest rates and adopt the other policies of austerity needed to defend their currency pegs. When the attacks came, governments were forced to abandon the narrow-band EMS.

The obvious conclusion is that greater exchange rate flexibility is an inevitable consequence of rising international capital mobility. It is important, therefore, to recollect the period prior to 1913 when high international capital mobility did not preclude the maintenance of stable rates. Before World War I there was no question of the priority attached to the gold standard peg. There was only limited awareness that central bank policy might be directed at targets such as unemployment. And any such awareness had little impact on policy, given the limited extent of the franchise, the weakness of trade unions, and the absence of parliamentary labor parties. There being no question of the willingness and ability of governments to defend the currency peg, capital flowed in stabilizing directions in response to shocks. Workers and firms allowed wages to adjust because they knew that there was little prospect of an exchange rate change to erase the consequences of disequilibrium costs. Together these factors operated as a virtuous circle that lent credibility to the commitment to pegged rates.

The credibility of this commitment obviated the need for capital controls to insulate governments from market pressures that might produce a crisis. The authorities could take the steps needed to defend the currency without suffering dire political consequences. Because the markets were aware of this fact, they were less inclined to attack the currency in the first place. In a sense, limits on the extent of democracy substituted for limits on the extent of capital mobility as a source of insulation. But with the extension of the electoral franchise and the declining effectiveness of controls, that insulation disappeared, rendering pegged exchange rates more costly and difficult to maintain.

Karl Polanyi, writing more than half a century ago, described how the operation of pegged exchange rates had been complicated by the politicization of the policy environment.[2] Polanyi saw the spread of universal suffrage and

[2]Polanyi 1944, pp. 133–34, 227–29, and passim.

democratic associationalism as a reaction against the tyranny of the market forces that the gold standard had helped to unleash. The consequent politicization of the policy environment, he recognized, had destroyed the viability of the gold standard itself.

The construction after World War II of a system in which capital controls reconciled the desire for exchange rate stability with the pursuit of other goals would not have surprised Polanyi. Nor would the politicization of the policy environment. What would have surprised him, presumably, was the resurgence of market forces, the extent to which they undermined the effectiveness of capital controls, and how they overwhelmed the efforts of governments to stabilize their currencies.[3]

A consequence of the market's unanticipated resilience was the post-1971 shift toward more flexible exchange rates. But this trend was uneven. Managed floating is most evident in emerging markets—by which is meant middle-income countries increasingly integrated into global finance. Unlike the poorest countries, these middle-income countries have the institutional capacity to define and implement an independent monetary policy. They are able to substitute inflation targeting for a rigid exchange rate peg as the anchor for monetary policy. They too find the enforcement of capital controls more difficult as their financial markets develop, and they too are conscious of a larger constituency favoring integration with global capital markets. For all these reasons, a growing number of them find managed floating a logical option for exchange-rate policy.

Poorer countries—countries that might be referred to as "not yet emerging" markets—lack the same capacity to run an independent monetary policy. The underdevelopment of their financial markets means that controls on capital flows are still relatively effective. They are reluctant to throw open their capital markets, since it is not clear that foreign capital will flow into appropriate uses or be prudently managed. For them, relaxing capital controls goes hand in hand with developing domestic financial markets and institutions—which means that it will be a slow and laborious process. And so long as restrictions on capital mobility remain in place, pegging the exchange rate remains viable. But if less-developed countries see in their advanced-country counterparts an image of their future, as Karl Marx wrote, then the future will bring better developed financial markets and institutions, political pressure for

[3]It is understandable that neither he nor John Maynard Keynes, Harry Dexter White, and the other architects of the postwar international monetary system, working in the aftermath of the Great Depression, appreciated fully the resilience of the market or anticipated the extent to which markets would frustrate efforts to tightly regulate economic activity and, in the case of exchange rates, to use capital controls as a basis for management.

the relaxation of statutory restrictions on financial freedom, and pressure to shift toward more flexible exchange rates.

Anyway, that is one image of the future. Another is suggested by Europe. There the tension between capital mobility, political democracy, and pegged but adjustable exchange rates was met not by floating the exchange rate but by eliminating it, if not entirely then at least within the euro area where separate national currencies were replaced by the euro. Of course, nothing ensures that Europe's grand experiment will succeed. In particular, it is not clear whether the members of the euro area will successfully meet Polanyi's challenge. In an age of embedded liberalism, the commitment to free markets is tempered by the pursuit of full employment and other social goals, and monetary policy is a handmaiden to these loftier objectives, not an end in itself. It is not clear that a euro area made up of a collection of national economies all still with quite different structures will be able to agree on what single monetary policy best meets these needs. Europe not being a political federation, it is not clear that its countries will succeed in defining a common set of interests, much less in charging the European Central Bank with carrying them out.

To be sure, Europe has many things going for it. Its national economies continue to converge. It has gone further than other parts of the world in building a functional set of regional political institutions. Europeans have a shared heritage and a reasonably common understanding of the social goals to which monetary and exchange rate policies are ultimately subservient. They have an incentive to make a success of their grand monetary experiment insofar as its collapse would be a blow to the larger project of European integration. Even in narrowly financial terms, the costs of exiting from the euro area would be extremely high. All these are reasons to think that Europe will have to make its monetary union work.

But what is feasible in Europe is not likely to be feasible elsewhere. Asians and Latin Americans fantasize about regional monetary union, but fantasy is not reality. In these other regions, different countries have drawn different lessons from past conflicts, and there is less willingness to compromise national sovereignty in order to create a regional monetary union. The ability to agree on the social goals for which monetary policy should be enlisted is correspondingly more limited. But as economic and social systems develop, countries there too will feel pressure to move toward more open political systems and more open financial markets. There too the combination of political democracy and capital mobility will force the abandonment of currency pegs.

Floating will be the remaining alternative. A floating exchange rate is not the best of all worlds. But it is at least a feasible one.