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GLOBALIZING CAPITAL

A HISTORY OF THE INTERNATIONAL MONETARY SYSTEM

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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).

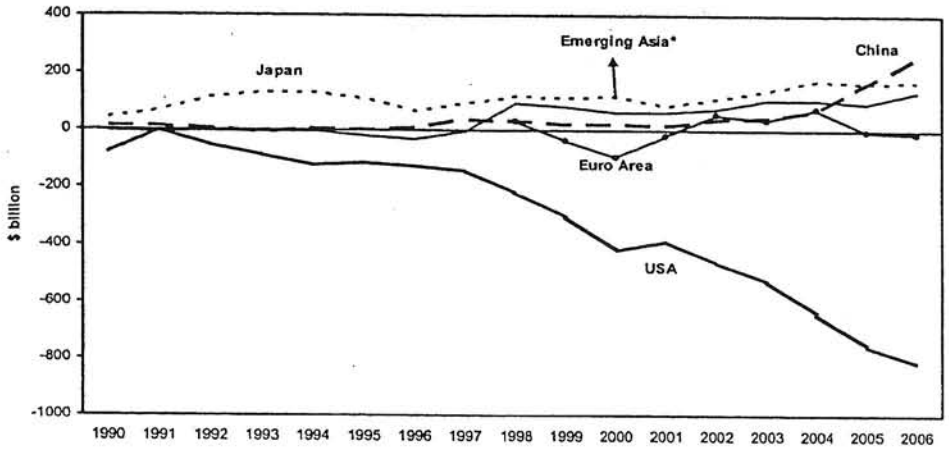

Figure 6.1. Current Account Balances, 1990–2006 (billions of dollars). *Source*: IFS and Asian Development Bank. *Note*: Emerging Asia includes the four ASEAN countries (Indonesia, Malaysia, Philippines, and Thailand) and four NIEs (South Korea, Singapore, Hong Kong, and Taiwan).

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.

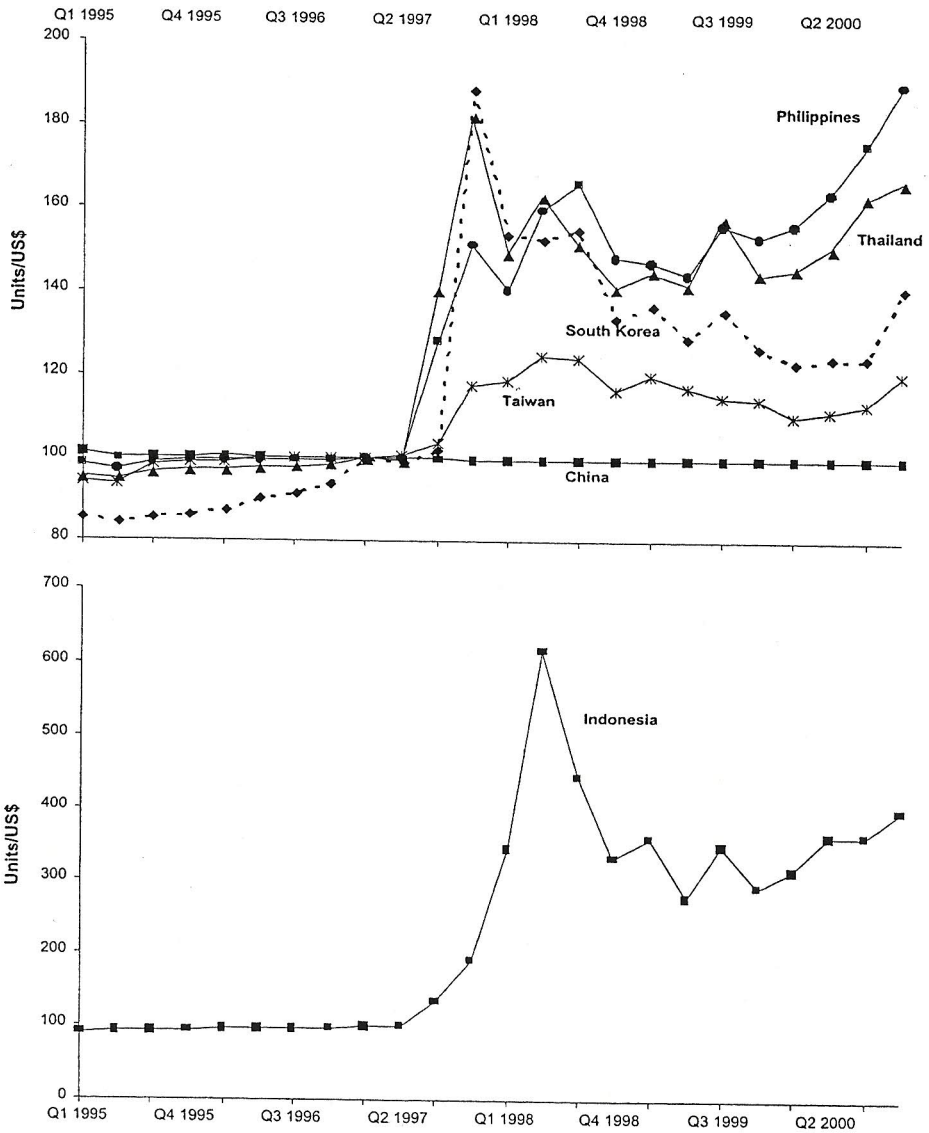

Figure 6.2. Asian Exchange Rates, 1995–2000 (units per U.S. dollar). *Source*: IFS and Global Finance Database. *Note*: Q1 1997 = 100.

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.

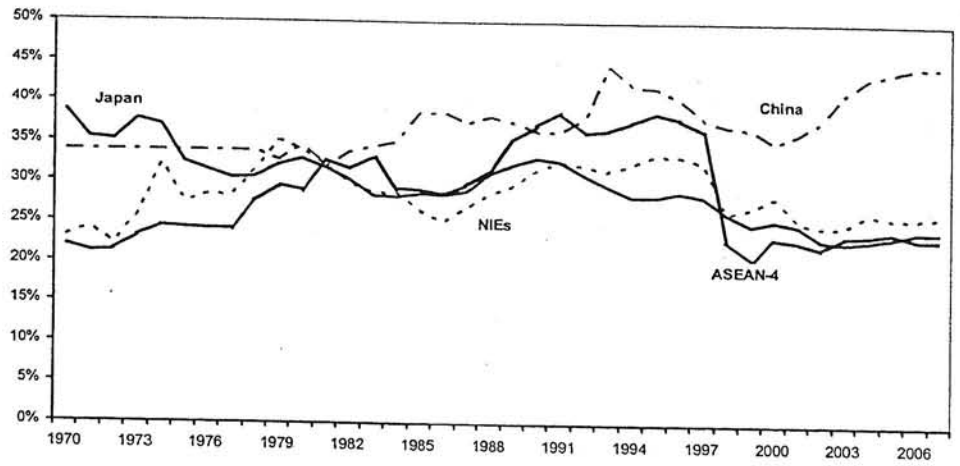

Figure 6.3. Asian Investment Rates, 1970–2007 (as percent of GDP). *Source*: IMF World Economic Outlook Database. *Notes*: NIEs are Hong Kong, Singapore, South Korea, and Taiwan. The ASEAn-4 is Indonesia, Malaysia, Philippines, and Thailand.

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

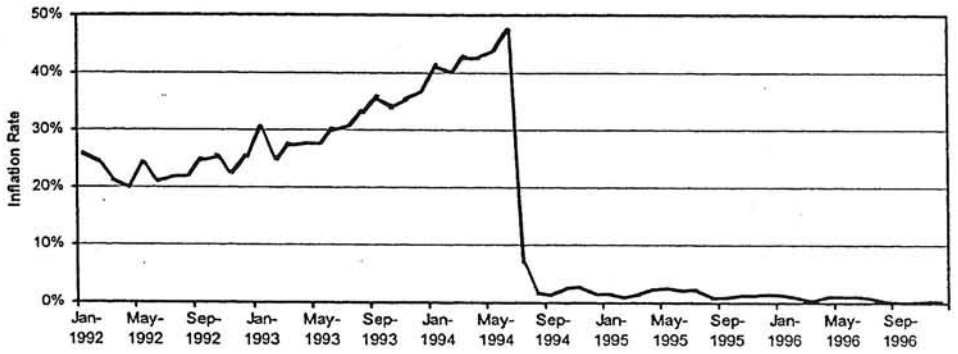

Figure 6.4. Brazil: Monthly Inflation Rates, 1992–1996. *Source*: National CPI, IFS.

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.

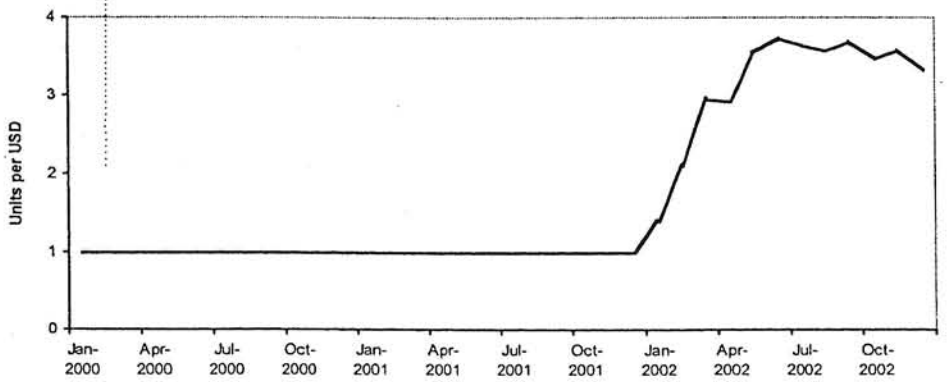

Figure 6.5. Argentina Peso–U.S. Dollar Exchange Rate, 2000–2006. *Source*: End of Period Exchange Rate, IFS.

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.

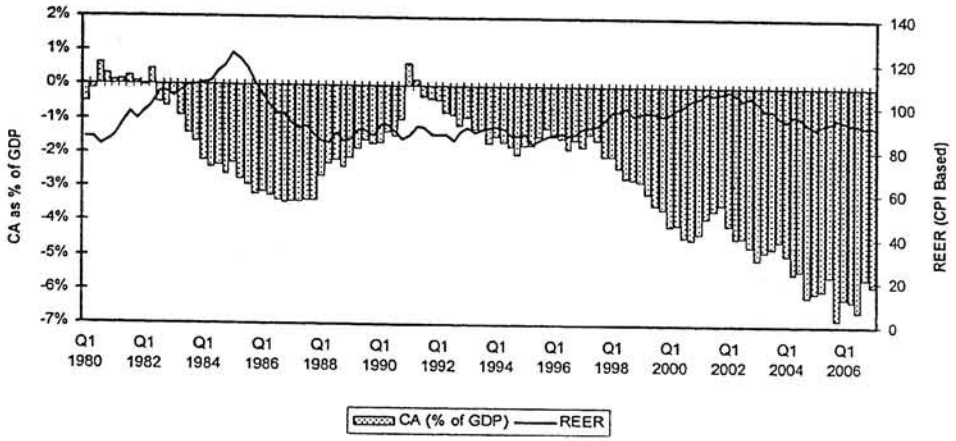

Figure 6.6. U.S. Current Account Deficit and Real Effective Exchange Rate of the Dollar, 1973–2007. *Source*: Bureau of Economic Analysis and IFS.

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

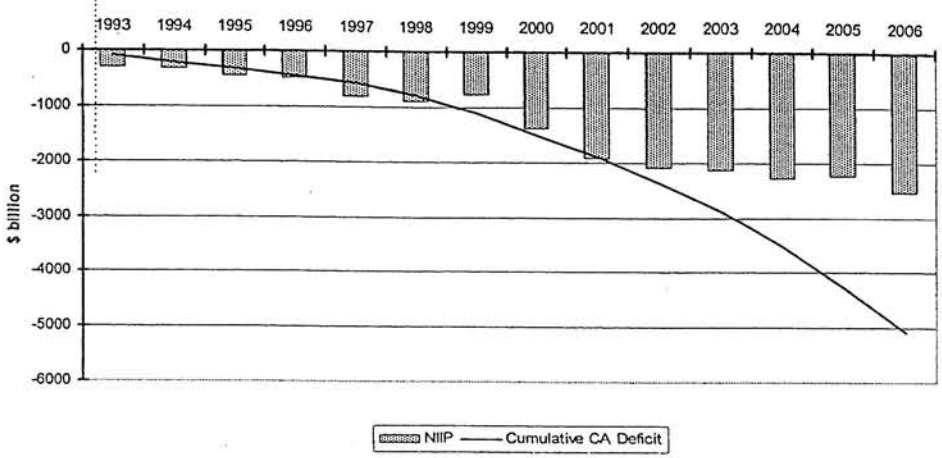

Figure 6.7. U.S. Net International Investment Position and Cumulative Current Account Deficit, 1993–2006 (billions of dollars). *Source*: Bureau of Economic Analysis.

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 2¼ 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.

— GLOSSARY —

adjustment mechanism—The changes in prices and quantities by which market forces eliminate balance-of-payments deficits and surpluses.

ASEAN—Association of Southeast Asian Nations. Members are Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Vietnam.

balance of trade—The difference between merchandise exports and imports. A positive (negative) difference indicates a trade surplus (deficit).

Balassa-Samuelson effect—The tendency for prices to rise rapidly in fast-growing economies where the rapid increase of productivity in the tradable-goods sector induces increases in the demand for the products of the service sector.

Bank rate—See central bank discount rate.

beggar-thy-neighbor devaluation—An exchange rate devaluation by one country that, by compressing its demand for imports, leaves its trading partners worse off.

bimetallic standard or bimetallism—A commodity-money standard under which the authorities grant legal-tender status to coins minted with two metals (say, gold and silver). See also monometallic standard.

Brady Plan—Named after U.S. treasury secretary Nicholas Brady, this plan sought to normalize conditions in international financial markets following the debt crisis of the 1980s. Commercial banks were encouraged to issue securities backed by nonperforming loans to developing countries as a way of cleansing their balance sheets. The market for "Brady bonds" provided the platform for the resumption of lending to developing countries through the bond market in the 1990s.

brassage—The fee paid for coining precious metal under a commodity money standard. It covered the expenses of the mint master and allowed him a modest profit.

capital account—The component of the balance of payments that reflects foreign investment. A capital-account deficit signifies that outward investment exceeds inward investment.

capital controls—Regulations limiting the ability of firms or households to convert domestic currency into foreign exchange. Controls on capital-account